

NORTH DAKOTA

Aviation QUARTERLY

www.ndac.aero

Vol. 30 • Issue 4

Fall 2018



Milnor Airport Flour Drop

This past September, at least 15 aircraft attended the Milnor Airport Flour Drop. More than 50 brown bags of flour were dropped, along with caution tape added to each bag as a streamer. It was inspiring to see pilots working together to create both a fun and safe environment for this event. Travis Grefsrud, who was awarded the first-place trophy, placed a flour sack only 13 feet away from the center of the target while flying his newly purchased Cessna 182.



Proud Member of



AIR ELITE

A Diamond Service FBO



Elevated customer service and facility standards



Local expertise



Benchmarking The Ritz-Carlton training



Elevated FlyBuys Rewards



BismarckAero.com
701 • 223 • 4754

North Dakota Aviation Quarterly (NDAQ)

Official Publication of the North Dakota Aviation Council

Statements of fact and opinion are the responsibility of authors alone and do not imply an opinion on the part of officers and members of NDAC, or NDAQ staff. If you've received more than one copy of this newsletter, please share it with a friend.



2018-2019 ND AVIATION COUNCIL BOARD MEMBERS

Airport Association of ND
Jim Lawler

ND Experimental Aircraft Association
Jake Werner

ND Agricultural Aviation Association
Andy Tibert

ND Pilots Association
Ron Lundquist

Darren Hall,
Chairman

Jim Lawler,
Treasurer/Secretary

Jon Simmers,
Past Chairman

ND Association of Air Museums
Don Larson

ND Professional Aviation Mechanics Association
Chad Symington

ND Business Aviation Association

ND AERONAUTICS COMMISSION
Kyle Wanner, Director
Mike McHugh

Editorial Committee, ND Aviation Quarterly

Jim Lawler, Mike McHugh, Gaye Niemiller, Zach Peterson, Joshua Simmers

Executive Director: **Staiger Consulting Group**

Mike Krumwiede mike@scgnd.com • Stacy Krumwiede stacy@scgnd.com

Send Address Changes To: ndaero@nd.gov

North Dakota Aviation Quarterly • P.O. Box 5020 • Bismarck, ND 58502-5020

ND Aviation Quarterly is published four times a year (winter, spring, summer and fall).

Advertising deadline is the 1st of the preceding month.

Advertising Contact: 701-328-9653 • ndaviation@yahoo.com • www.ndacaero.com

HELPFUL WEB SITES

ND Aeronautics Commission: aero.nd.gov

ND Aviation Council: www.ndac.aero • ND Pilot's Association: www.ndpilots.com

FAA-Fargo FSDO: www.faa.gov/fsdo/far/ • FAA Safety: www.FAASafety.gov

From the Editor

Greetings to fellow aviators, aviation enthusiasts, subscribers, and supporters of the North Dakota Aviation *Quarterly*, and all those in the aviation industry that help make the dream of flight possible. Without all of us working together, the aviation community would not be what it is today, and the stories of so many that work in, or are served by this industry, would cease to exist.

In this edition of the *Quarterly*, you will enjoy the stories and share in this experience. Our focus is always to bring you timely, relatable, and meaningful content, and this edition promises to meet those goals. Stories are not only an account of events, but a testimony to "being there." Whether you're making a "go / no-go" choice, betting on a new technology, asking ATC for assistance, or checking the maintenance manual, you're living in a moment that will someday become a story of decision making, confidence, or humility. As many of us know, these three things often go hand-in-hand.

I invite you to share your stories with us and those around you, to help inspire and grow the next generation of the aviation industry. Shared experience is one of the most powerful forces that bind us together as pilots and as a community.

Cheers,

Zach Peterson



Daren Hall, Chairman
North Dakota Aviation Council
dhall@fargojet.com

CHAIRMAN'S COMMENTS

Living in the Age of Airplanes: if you haven't watched it yet, this film is a must-see if you love airplanes or aviation. Don't let the title do all the talking though; it's a story about what airplanes have given the world in the short time they've been around and how they help us accomplish what used to be considered impossible. It's truly inspiring. Buy it, watch it, share it!

Living in the Age of Airplanes:
www.airplanesmovie.com

It's really incredible how far our industry has come in such a short time. Reading the headlines of most any aviation magazine or website, we are now Living in the Age of Imagination. Last week, these topics were either a headline in a magazine or in a conversation I had: NextGEN ATC, Uber eVTOL, UAS, SuperSonic flights, private flights to space, landing on Mars, Solar Impulse, and so on. Who would have ever imagined you would be sharing the pattern around Fargo's Hector International Airport with an MQ-9 Reaper? In Fargo, it's just another day at the airport when you see one taxi by, but for others, it's an incredible sighting, only seen at one other commercial service airport in the country. North Dakota is literally an epicenter in the development of new technologies in aviation and with that comes opportunity.

I recently returned from the National Business Aviation Association's annual convention where I listened to Bertrand Piccard share his incredible journey of the Solar Impulse trip flying around the world without a single drop of fuel. Future technologies were certainly taking center stage as was the need and concerns around the current workforce shortages and what the future holds. I would like to encourage you to reach out, plug in, and give back. Our youth today have never had more opportunities than what we are seeing today throughout our entire industry. In North Dakota, we have youth programs



at our aviation museums and high school aviation courses in West Fargo, Minot, Grand Forks, Bismarck, and Williston. All are great opportunities for young minds to start exploring and hopefully be inspired along the way to chart a future in aerospace.

Solar Impulse Story: <https://solarimpulse.com>

Intro video: <https://youtu.be/SU5PWdZyxTQ>



*The sky
is not the
limit, it's our
playground.
Keep
Dreaming,
Start Flying!*





**Offering Aircraft Maintenance,
Avionics and Flight Instruction**

Mandanaero.com
701.663.9925





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



DIRECTOR'S Chair

Flight Training Program Receives National Award

I was recently in attendance at the National Association of State Aviation Officials (NASAO) conference that took place this year in Oklahoma City. At this event, Aeronautics staff member Mike McHugh and I were honored to receive on behalf of the state of North Dakota a national aviation education award for our Flight Training Assistance Program (FTAP).

During a time when aviation organizations throughout the country are looking to provide outreach and programming to entice our youth to consider careers in aviation, it's exciting to see one of North Dakota's aviation education programs receive this prestigious award. The current shortage of an aviation workforce has been documented in multiple industry and university-led research papers and has resulted in a nationwide concern that a lack of pilots and aircraft mechanics may eventually lead to large-scale deficiencies of air service opportunities for rural communities throughout the country. In fact, many community leaders are already citing negative impacts that have been seen due to a shortage of pilots. North Dakota wants to continue to do our part to help train the next

generation of aviators, while at the same time work towards keeping our rural community airports thriving. The FTAP is one way that our state tries to go above and beyond to help in this area.

The North Dakota Aeronautics Commission established the FTAP program in 2006 when the state was starting to see a noticeable decline in the number of pilots living within our rural communities. The lack of available flight instruction was seen as a contributing factor that was impacting people's decision on whether to start or finish their training. The FTAP program was looked upon as a part of the solution and the state began its work to partner with interested airport authorities to help locate and fund the transportation of flight instructors to rural communities. As a part of the program, the state can fund up to 75 percent of the costs associated with the transportation of flight instructors with the local airport authority covering the other 25 percent of the cost.

Since the programs inception, we have seen measured success throughout multiple communities that have taken advantage of the program. Over 15 airports and more than 100 students have participated in the program which has resulted in rural community airports gaining active pilots, based aircraft, and increases in fuel sales. Some individuals that have been given the opportunity to train through this program are now providing instruction to other students at other airports around the state and the cycle of growth continues.

In the future, we hope access to a flight instructor is never cited as a reason that individuals choose not to learn how to fly. As always, feel free to contact our office to learn more about flight training opportunities that can be made available in your area.

Wishing you smooth flying, Kyle



**We are committed to helping
your business thrive.**

We offer Jet and Avgas,
full or partial transport loads.

Contact us today for your competitive quote!



The Most Trusted Wings In Aviation™

Eddie Anderson
(406) 261-8929
eddiea@cityservicevalcon.com

- All major and minor repairs
- Annual/100 hr. inspections
- FAA-DAR services
- PT6 hot section inspection and repair by Pratt & Whitney trained technicians



MAINTENANCE, INC.

Casselton Regional Airport (5N8)
#8 Airport Road, Casselton, ND 58012
Trent Teets • 701-347-4680

701-347-4556 FAX
email: trent@aicaviation.com • www.aicaviation.com

Flight Training Program Receives National Award

On September 25th, The National Association for State Aviation Officials (NASAO) awarded the North Dakota Aeronautics Commission an award for aviation education. This award is given to one agency per year, to recognize the development of aviation education resources available to students of all ages. The award was presented in recognition for the agency's FTAP program, which provides flight training assistance to rural airports by helping fund travel costs for instructors.

Pictured (Cassandra Issakson (Minnesota); Mike McHugh, NASAO Chairman Ronnie Mitchell (Nebraska); and Kyle Wanner, Director of the ND Aeronautics Commission



To learn more about the aviation education resources visit:
www.aero.nd.gov/education-programs/flight-training-assistance-program
or contact Mike at mmchugh@nd.gov or call 701-328-9650

An advertisement for Ulteig. The background is a close-up of an airplane's wing and engine, with a semi-transparent flight simulator overlay showing various gauges and instruments. The Ulteig logo is in the bottom left corner, and the tagline 'Making the connections so you don't miss yours.' is in large white text across the bottom right.

Ulteig
We listen. We solve.™

**Making the connections
so you don't miss yours.**



Did you know ND Aeronautics Commission is on Facebook?

facebook



Mike McHugh, Education Coordinator
North Dakota Aeronautics Commission

701-328-9650
mmchugh@nd.gov



Did you read the FAA Reauthorization Bill?

Generally speaking, I do not comment on legislation, but after reading the FAA Reauthorization Bill I am truly excited! The first thing that struck my attention was the bipartisan support. It is not often that we see support for a bill with 93 senators voting in favor. Next, I noticed how deep this bill impacts the industry; among many other items, the bill covers airport infrastructure needs, UAS, the use of state highway specifications for some airports (lowering project costs), and an entire section on the aviation workforce. Finally, the bill has lasting impacts, funding the FAA through fiscal year 2023 with NO MENTION OF ATC PRIVATIZATION.

I will concentrate my comments on the section regarding the aviation workforce. We have all heard about the needs of the aviation industry. We have an alarming shortage of labor among pilots and mechanics. This bill addresses the workforce shortage by creating a task force to provide recommendations to congress which will encourage high school aviation education and develop aviation career pathways. It also creates

a framework to work with the industry or with industries to expand scholarship opportunities and enhance educational outreach efforts. Specifically for maintenance technicians, there is \$5 million available in grants to support workforce demands. These efforts from Washington, D.C., show that our lawmakers recognize the value of aviation and the importance of exposing our youth to educational opportunities. It is exciting to see that the labor shortage that has been discussed for years is being addressed in congress. I hope that the task force created will develop useful strategies in developing the workforce, and raising awareness for aviation education in K-12 education. I believe that every group represented by the North Dakota Aviation Council can find some benefit in this bill. If you have a couple a free minutes, the approximately 1,200 page document can be found online and I encourage you to take a look. There is a lot more in the bill than I have room to discuss here. I am sure we will hear more from others in the coming months.

We devote ourselves
to delivering the
**BEST
SOLUTIONS**
possible to each
individual client—
whatever it takes.

Bolton-Menk.com



**BOLTON
& MENK**

Real People. Real Solutions.

Nominate your airport for Airport of the Year

Applications can also be found online at aero.nd.gov.

Submit the following information to ndaero@nd.gov

ND Airport of the Year Nomination Form

Instructions:

- Base nomination on events and accomplishments for the previous calendar year.
- Be complete, yet concise, and keep the categories separate.
- Each criterion will be valued at 25 points each for a total possible 100 points.
- Mail form to: Airport of the Year, PO BOX 5020, Bismarck, ND 58502 or email to ndaero@nd.gov

The nomination forms are required to be postmarked by January 15th.

☐ Commercial Service

☐ General Aviation

Airport: _____

Sponsor (Owner): _____

Airport Manager/Director: _____

Nominated by: _____

Aviation Advocacy and Community Outreach

Describe special community relations, aviation advocacy & education as well as airport promotional events held or participated in during the year. (Airport day, young eagles, educational programs, airport outreach programs etc.)

Airport Management & Commitment to Aviation Advancement

Describe any new processes, programs, implemented by the airport and any additional information that demonstrates the airport's commitment to the advancement of aviation.

(Tenant relations, employee development, business partnering, maintenance changes, etc.).

Special Events and Recognition

List all general aviation promotion/aviation events hosted or attended by the airport (air shows, fly-ins, etc). List awards or acknowledgements received during the previous year.

Airport Construction & Beautification Projects

List the important airport projects and describe the impact they are having on the airport.



Tailwheel Endorsements | Seaplane Ratings

Rick Mercil | 218.779.9161



Airspace, Airports, ATC, Mediation, Military

www.pittmanaviationconsulting.net

Darrel Pittman 701-391-7760 atcpn@bis.midco.net

Connecting
your community
to the world



Partners in your airport's success

Your airport is an important connection to moving people and commerce. That's why we listen to your needs to deliver solutions in planning, layout and design of runways, taxiways, aprons, hangars, roads, parking, facilities and more.



100% employee owned

Let's talk about your next project.

mooreengineeringinc.com

consult@mooreengineeringinc.com

ND - Bismarck · Minot · West Fargo

MN - Fergus Falls · St. Cloud



moore
engineering, inc.

Dakota Territory Air Museum holds its 22nd Annual Sweepstakes Drawing

By Don Larson, President, Board of Directors

On August 18, the Dakota Territory Air Museum held its 22nd Annual Sweepstakes Drawing. Todd Mixell of Brooklyn Park, MN was the lucky winner of the 1943 J-3 Piper cub. We sold a maximum of 3,000 entries which were sold by mid July. The annual sweepstakes has been a huge fundraiser for our museum over the past 22 years. Initially, we did not sell nearly the number of tickets as we have the past several years. In fact, I think we sold around 600 to 800 tickets the first two or three years and it was conducted as a raffle. Then we learned that we could not use the U.S. Postal service to conduct a raffle so we decided to change from a Raffle to a Sweepstakes. I'm sure it is the same reason EAA and AOPA do the Sweepstakes. We also decided



*DTAM Sweepstakes winner
Todd Mixell and Don Larson*



Todd Mixell and Cameron Johnson heading home

to start using the internet rather than just the U.S. Postal Service. Over the years, we have built a database in excess of 4,000 folks around the world that have bought into our annual fundraiser. We have a huge number of folks who have bought numerous entries every year. Mr. Mixell was our fourth winner from Minnesota. We have had a couple of winners from South Dakota and seven winners from North Dakota. The last time we checked, about 30 percent of our buyers are from our four state region. You can see who the yearly winners have been on our website: dakotaterritoryairmuseum.com. On behalf of our board of directors, I want to express our deep appreciation to each and every one of you who have participated in our major fundraiser over the past 22 years.

Annual Sweepstakes Drawing event





Change of Flight Plan

By Chris Brown, pilot (Bismarck)

Have you ever had to change a flight plan? Get a last minute reroute while

already punching in an ad-hoc crossing restriction? Ever create a flight plan and forget to send it? Well, this article is not about any of those things. It is about one pilot's plan of flight, and the journey that unfolded.

Ever since I was a little guy, I have had a strong desire -some may say an obsession- with how things work. To add fuel to the fire, friends gave me the book *What Makes it Go, What Makes it Work, What Makes it Fly, What Makes it Float* when I was nine years old. Today, that book is now on our coffee table! That was probably my initial flight plan, as it dangled the lure of flight in front of me.

A few years later, my dad started to take flying lessons and I reviewed his Cessna Pilot Center books along with him. His Private Pilot Certificate "set the hook" and I also wanted to learn to fly. April 25, 1982 was my first flight and the logbook entry looks bland. But it ignited the fire that was already smoldering and sent me along the flight plan. On January 1,

1983, I earned my Private Pilot ASEL. By this time I was a senior in high school with plans to attend UND to start my training for a career in aviation. So far, the flight plan seemed to be as originally plotted.

Advisors suggested I obtain a Class I Medical prior to arriving at University of North Dakota (UND). Work on the Commercial/Instrument would start upon my arrival. Apparently, I had defective color vision and esotropia (a lack of stereo vision). The Aviation Medical Examiner (AME) could not issue a Class I or II Medical. I was handed my first reroute.

The medical experts were amazed. How could I fly a plane or drive a car without stereo vision? How could I dress myself without color vision? (Well that is open for interpretation, it was the 1980s.) Obviously, my brain had figured out how to compensate for the lack of stereo vision, but the AME was insistent: No fly. My dreams of being a commercial aviator seemed like they were being crushed before my (bad) eyes! What now?

Letters and calls to the FAA landed me an appointment with what we now call an Operations Safety Inspector (OSI). I remember meeting the gentleman at the base of the Bismarck Control Tower in his 1980s Chrysler K-Car. We piled into the car and drove a half mile or so from the tower. We got out and he waved to the tower. The light gun shined on us: green, white, red. Back into the car and we drove further away.

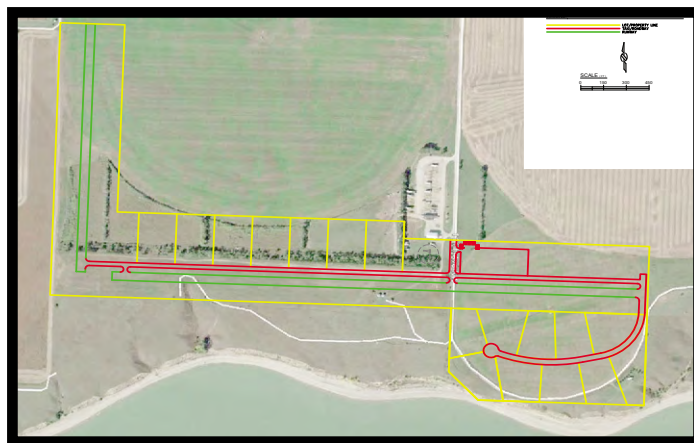


RED MIKE AIRPARK

A 17 LOT RESIDENTIAL AIRPARK TO BE LOCATED ON THE NORTH SHORE OF LAKE SAKAKAWEA.



- 3,500 FOOT CONCRETE RUNWAY
- TAXI WAYS TO YOUR GARAGE/HANGER
- PLANNED COMMUNITY OF AVIATION ENTHUSIASTS
- ON THE SHORE OF LAKE SAKAKAWEA
- CLOSE TO LUND'S LANDING MARINA AND LODGE & RESTAURANT
- CLOSE TO LINKS OF NORTH DAKOTA GOLF COURSE



Inquiries Can Be Made with:

BRIAN LEE
AIRPARK MANAGER
701-870-2320 - CELL

MITZI BESTALL
701-580-8116 - OFFICE
970-261-6888 - CELL

REDMIKEAIRPARK.COM
REDMIKEAIRPARK@GMAIL.COM



We got out and he again waved to the tower: white, green, red. He opened his briefcase and filled out a Statement of Demonstrated Ability (SODA). He saw me drive up to the tower without crashing, so I could figure out depth perception. I saw the primary colors, so that was good enough to authorize a Class II Medical. Reroute accepted. My flight plan would continue, but no airlines in my future.

Getting my Commercial/Instrument in a Part 141 environment proved challenging and fun at the same time. The log shows that June 1, 1985 the ASEL Commercial and Instrument were issued. Hurrah! But now what? Being this was the 1980's, the road traveled in commercial aviation was a hard, rutted prairie trail. Corporate flight departments did not seem to be an option with my "limited" abilities. So, with a bit of resignation, I filed the commercial ticket in my back pocket and pursued a career in business.

After leaving UND in 1987, I went to work for a regional transportation company serving in various roles. During my 12 years with the company, they bought a Cessna 182RG that I piloted over a multi-state region. While I enjoyed the ability to fly that plane, and learned many lessons along the way, it wasn't my primary job. I yearned to be able to fly for a living.

After leaving that company, my flying went in fits and starts. Some piloting for companies I worked for as an adjunct to my daily role. Some flying with the Civil Air Patrol. And some general messing around. My wife, Jodi, and I bought in to a local co-ownership of a 182RG in 2012. Lots of great adventures with the plane began and also planted the

seed for the beginning of a great friendship with one of the other owners. We were about to reach the destination on the flight plan filed after UND, and a new flight plan was being contemplated.

While meeting with the other co-owners of that plane, we would frequently talk about just general flying. In the fall of 2015, Jodi and I made the decision to sell our share of the 182RG and discussions ensued about what is next. One day, I got a call from a former co-owner to meet and talk about flying light twins for a couple of local businesses, a couple of days a week. I thought to myself, "Hmmm, this sounds interesting, but why would they want a guy without a multi-rating?" It turns out that my years of flying around, in all types of weather, to all types of airports, along with a bit of gray hair, was what was needed more than the actual rating. This seemed like a dream come true! Thirty-four years after the idea of becoming a commercial pilot was a dream, it was becoming reality!

The new flight plan was filled out and filed. Destination: Professional Pilot. Flying was now my primary job with managing the aircraft through Bismarck Aero Center for the clients. I kept pinching myself to see if I was dreaming! Soon, I was flying the Navajo multiple times per week across North Dakota. While the hours didn't build fast, the cycles sure did. Hundreds and hundreds of takeoff and landings, lots of instrument time and approaches, weather, winter, etc. The experience came on fast and strong.

Flying the Navajo was good, but I wanted to stretch my abilities. Getting the Certified Flight Instructor (CFI) ticket



guidance by **GARMIN**™

What's in your aircraft?

- ▶ GTX 345
- ▶ G600 & G500
- ▶ GTN Series
- ▶ Flightstream

Call Kris Hexom
701.223.4754
krish@bismarckaero.com
Lead Avionics Technician



Presenting the Garmin GTX 345

after all these years away from school seemed like a good idea. So, in the spring of 2017 I began to poke around to see who could instruct me through the CFI process. It is then I met one of the best instructors I had ever flown with, Jon Ternes. At the time I didn't know why, but ATC just issued an ad-hoc hold at a waypoint a ways away from the known destination. I accepted the hold and just kept on trucking.

Jon and I saddled up in my friend's 182RG and worked through all the stuff I had not practiced in 30 years. All the while with me figuring out how to "teach" Jon and him doing his best to imitate stupid pilot tricks. Several times during the training I chuckled to myself and announced, "I am out of words." The mental gyrations of doing a maneuver and talking through/teaching it is a skill to be learned. As Jon and I became better friends, we would talk about flying turbine planes- how they worked, flew, and behaved. I was intrigued, but it seemed a dream too far to fly a King Air or Conquest. I was happy flying the Navajo and now getting to give back as a flight instructor. I had been in the "hold" for a while, and the "expect further clearance" was a ways out. I didn't seem to care and was happy in my endeavors.

The winter of 2018 brought a surprise when a local 135 outfit asked if I was interested in part-time work flying charters in King Airs. Was I interested? Absolutely! While the total hours was not reflective of my experience, the cycles were. I embarked on learning about the 135 world. GOM, OpSpec, POI, all new terms and concepts. When can I go, when should

I stay? How long can I fly? What are the plane systems? Lots of ground and flight training ensued. It was a mountain to climb for a guy in the back half of his life. Why was I doing this? Could I do it? Part 91 was sure simpler. The checkride was passed and I started to pick up charters in a C90 and 200. I was pinching myself again to see if this was really happening!

In the spring of 2018, my clients shifted their business model and my career as a professional pilot flashed before my eyes. As quickly as it came to be, it was gone. What next? I had structured my life around this flying gig. What would replace it?

And just like that, ATC came on the horn with another re-route. My good friend Jon was now the director of operations for the 135 outfit I worked for part-time. He had an opening just pop up. Why not come on full-time? Reroute accepted. As I was already trained and operating, the transition was easy. The flight plan now often contains the words MEDVAC, SID, STAR and Flight Level.

Funny how the flight plan came full circle 36 years later. From dreaming of flying for a living, to doing it in cool airplanes for a great company. While life may deal you all kinds of flight plan changes, work each one of them as a new challenge. You never know where it will take you.

Smooth rides and tailwinds.

Chris Brown is a pilot for Bismarck Air Medical, instructor for Bismarck Aero Center, and business consultant.

Hillsboro Regional Airport 3H4



Hillsboro Runway Construction is COMPLETE!

We invite you to come check it out!

Fargo Air Museum recently earned certification

The Fargo Air Museum recently earned certification with the National Museum of the United States Air Force (NMUSAF). Since the 1970s, the Civilian Museum Loan Program has been coordinating with organizations to display excess combat material to a wider audience. This program is proud to assist civilian institutions in fostering a deeper appreciation and interest in aerospace history and technology. More than 600 aircraft are on loan to civilian museums all over the world. The Fargo Air Museum is proud to be considered legally and professionally qualified to fulfill the requirements of this loan program. We will be responsible for historical property and aerospace vehicles which may include aircraft and missiles. In partnering with the NMUSAF's program, we honor the history of the those who served as we share these pieces with the public.

OPENING DOORS & PROVIDING SOLUTIONS



From concept and quality design to full-service installation and follow-up support, we'll partner with you for the best bi-fold and hydraulic doors to meet your needs. We offer customized solutions for new and existing buildings and unmatched customer service, *so you'll find the door is always open.*



1021 7th St. N.E. - West Fargo, ND 58078 // 701.277.8836 // www.MidlandDoorSolutions.com



If not, you should be.

Jon Scraper, leader of our North Dakota aviation team, is passionate about aviation engineering. He's been finding innovative solutions for airports for more than 20 years. Call Jon to see what he and the other 200 aviation professionals at Mead & Hunt can do for your airport.

Mead & Hunt

jon.scraper@meadhunt.com
701-566-6448

The Passion of Flight

By Kyle Schmaltz

As a young child, nothing was more intriguing than aviation. My makeshift hangars that were built with cardboard and duct tape were simply amazing to me. The best part of driving to town for ice cream was driving past the airport. Being curious, I always told myself that one day it would be me flying those magnificent machines through the air. Little did I know!

Seeing the excitement in my eyes, my father decided to surprise me with a Introduction Flight at Minot Aero Center on October 16th, 2015. This was the introduction of something more magnificent than I could have ever imagined. The dream was slowly coming true. That next year, I heard rumor of an aviation based class starting up at my high school, Minot High. At the beginning of the school year, I remember registering for my classes not knowing where my future would lead. I knew it had to be somewhere in the aviation field, but it was such a broad spectrum at the time. Yes, I was taking flight lessons on-and-off, but I didn't think I could make a career of it. Being nosy, I decided to try out the new class, Aviation Technology taught by Meric Murphy. This was the true beginning of what would come.

The class taught myself and others the real patience of learning to fly. It was so addictive trying to master the art of flying every day in class, making it enjoyable every day. Looking back, I can't remember a day I didn't enjoy. As time continued, our class of 70 turned into "ace" pilots. We continued to learn tips, tricks and everything in between from our role model Meric. At a point, we asked ourselves, "What's next?" The North Dakota Aeronautics Commission, along with the Farstad Foundation, helped us find what would be next. They blessed us by giving us new equipment for our simulators, scholarships, and allowing us to take flight.

In March of 2017, the North Dakota Aeronautics Commission invited our class to the Upper Midwest Aviation Symposium. This was a way not only to show our experiences from the class, but show the true potential you can get from the class. At the end of the presentation, we were all joyful to find out we were granted another scholarship to help the students in our class pursue such fields as becoming a A&P or a Private Pilot.



Kyle when he achieved his complex add on.

On May 30, 2017, two days after I graduated high school, I passed my Private Pilot Checkride. My first thought after passing was to give grace to the man who taught me everything I knew, Meric Murphy. As the months passed, I began to work on my Instrument Rating at Minot Aero Center. Following that, I begin immediately to start on my Commercial Certificate all while staying local to Minot. More recently, I achieved my Flight Instructor Certificate.

If you would of asked me two years ago what my passion was, I would of been clueless. However the people, experiences and challenges is what's brought me to where I am today. They made it possible for me to "fly those magnificent machines through the air," and to me, that sounds like passion.



Here I am after I passed my Private Pilot Checkride.

**Do you have an
interesting aviation
story to share?**

Submit your ideas or
stories for consideration to:
ndaviation@yahoo.com
or call (701) 220-2797

Moorhead Aviation Services



King Aviation

3309 70th St. S. • Glyndon, MN

218.287.1400

SERVICES OFFERED: Avionics Service & Installation • Aircraft Maintenance
• FBO Services • Flight Training • Pilot Service • Sightseeing Flights

Maintenance
Mike Koenig • 701.866.1495

Avionics Service & Installation
Ryan Paulson • 319.423.5371

Like us on Facebook Moorhead Municipal Airport

Aviation Weather

By Darrel Pittman

Everything can be perfect with the pilot and the airplane, but unforeseen weather conditions may cause disastrous results.

Weather doesn't just affect us pilots, the complete transportation network is affected and often causes unanticipated problems. Farmers, businesses and the general public also suffer the consequences of adverse weather conditions like the recent hurricanes on the East Coast and the Gulf.

My interest in weather began even before I learned to fly an airplane. An important part of an air traffic controller's early training concerns reporting weather conditions. This knowledge is used throughout their career.

At the Minot International Airport, the controllers on duty check the Automated Surface Observation System (ASOS) for any corrections that need to be made in their reports.

While teaching at the University of North Dakota, part of the curriculum included instructing Russian and Chinese students in how to report local weather conditions to American pilots who been given permission to fly over and into foreign airspace.

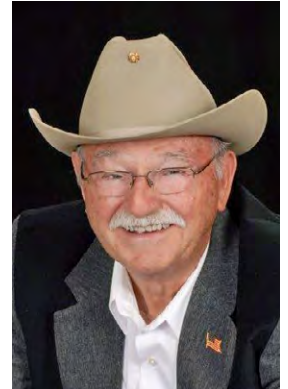
Mostly ATC reports current weather; however, accurate forecasts are also important to the pilot for planning destinations and choosing routes.

You may have noticed while watching your local television weather that sometimes they refer to different models. Usually these models include the U.S. Model, the Euro Model and the Next-Gen Model.

If all goes as planned, in early 2019 the National Weather Service will implement FV3; this is an advanced weather forecasting computer model. The weather satellite GOES - 16 was launched in 2016 and has been joined by GOES -17, launched this year.

Let us hope these advances all work for us, helping us to be prepared and aware.

*Cleared for
Takeoff, Darrel*



The advertisement for Prop Works features a background image of a propeller and a propeller assembly. The logo 'PROP WORKS' is prominently displayed in a large, bold, serif font, with 'PROPELLER SYSTEMS' in a smaller, sans-serif font below it. The text 'Overhaul • Repair • Sales' is in a large, bold, sans-serif font. Below this, the contact information for Winnipeg and Edmonton is provided. A list of aircraft manufacturers and services is shown, followed by the text 'FACTORY TRAINED TECHNICIANS - EASA APPROVED' and 'AMO #105-99'. The website 'www.propworks.ca' is at the bottom in a large, bold, sans-serif font.

PROP WORKS
PROPELLER SYSTEMS

Overhaul • Repair • Sales

Winnipeg 1-888-679-2965
Edmonton 1-888-457-1910

Avia • Dowty • Hartzell • Hamilton Standard
Hamilton Sundstrand • McCauley • MT Propeller
Sensenich • Governors • Non-Destructive Testing

FACTORY TRAINED TECHNICIANS - EASA APPROVED
AMO #105-99

www.propworks.ca

FAA Relaunches ADS-B Rebate

By AOPA Communications staff

The FAA on Oct. 12 reopened the \$500 rebate program to support Automatic Dependent Surveillance-Broadcast (ADS-B) Out equipage. The program that had ended in September 2017 will now close Oct. 11, 2019. The agency is making \$4.9 million available under the new rebate program, which will help to fund 9,792 new ADS-B Out installations.



Lancaster Avionics technician Scott Kuhns installs a FreeFlight Systems UAT control head in a Cessna 172. The UAT will provide both ADS-B Out and In capabilities. Photo by Mike Collins.

Beginning Jan. 2, 2020, aircraft flying in airspace where a transponder is necessary today will be required to be equipped with compliant ADS-B Out technology.

In a statement provided to AOPA prior to release, FAA Acting Administrator Daniel Elwell said, “The ADS-B mandate is not going away. We are about 15 months from the January 1, 2020 deadline and now is the time for aircraft owners to equip.”

AOPA President Mark Baker said, “Pilots across America thank Acting Administrator Elwell for reopening the ADS-B out rebate that will make our skies safer and more efficient by incentivizing even more pilots to adopt the cutting-edge technology. This is the last opportunity for GA aircraft owners to take advantage of the FAA rebate in meeting the 2020 deadline.”

The previous rebate program, which ran from September 19,

2016, to September 18, 2017, issued more than 10,000 rebate payments.

Baker continued, “Over the past four years, AOPA has worked with the FAA and manufacturers through the Equip 2020 Working Group to develop lower cost solutions, especially for those flying legacy aircraft which often are not already equipped with a Wide Area Augmentation System GPS sensor, a necessary component for ADS-B Out. As a result of this collaboration, the cost of the equipment has dropped from more than \$5,000 a few years ago to less than \$2,000 today.”

A number of avionics manufacturers have recently released lower cost products that meet compliance regulations. The Appareo Stratus ESG and Garmin GTX 335 transponders are both \$2,995 plus installation, and the Garmin GDL 82 universal access transceiver—which works in conjunction with an existing transponder—is \$1,795 plus installation. uAvionix has promised lower cost products that replace aircraft navigation lights, including the skyBeacon, a UAT priced at \$1,849 plus installation, which is eligible for installation on certified aircraft as well as experimental and light sport aircraft.

As before, there are five steps aircraft owners should follow to meet the mandate and receive the \$500 rebate. First, purchase the equipment and schedule installation. Second, get a Rebate Reservation Code by reserving a position online. Third, install the equipment. Fourth, conduct the required equipment performance validation flight and get an Incentive Code. Fifth, claim the \$500 rebate online using the Rebate Reservation Code and Incentive Code.

A number of aircraft owners have seen issues with the performance validation flight requirement of the original rebate program, and AOPA recommends a number of steps to minimize the odds of failing the validation flight.

As with the earlier rebate program, the FAA reports that the new rebate program is available only to those who have not yet equipped their aircraft. Full rebate rules are available on the FAA website.

Copyright © 2018, Aircraft Owners and Pilots Association.
Reprinted from AOPA Communications, all rights reserved.



SCHWEISS

THE DOOR LEADER

DOORS

HYDRAULIC

ONE-PIECE DOORS

— OR —

BIFOLD

STRAP LIFT DOORS

SCHWEISSDOORS.COM

507-426-8273



AERIAL APPLICATION

AIRCRAFT MAINTENANCE, REBUILDS & SALES

FLIGHT INSTRUCTION

AERIAL IMAGERY & PHOTOGRAPHY

AIRSHOWS

NORTH VALLEY AIRCRAFT

(701) 845-2100

NORTHVALLEYAIRCRAFT.COM

LOCATED ON THE BARNES COUNTY AIRPORT KBAC



Aviation and Advocacy: The Goal is Building Relationships

By Staiger Consulting Group, NDAC Executive Director

This time of year, the election is fresh on our minds. Most of us are glad when the political ads disappear from our TVs, door knobs, and yards.

But it's also a time to remember that these policy-makers may have a direct impact on aviation at some point in their service. That includes other key leaders in city and state chambers of commerce or other organizations with influence.

Consider any opportunities that come your way to establish contact with these folks, and they might reach out to you when their policy work focuses on an aviation issue. Think of yourself as a resource person and so will they. The long-term goal is for our members to build relationships and to be that go-to person within our industries.

We know some of you would rather eat a toad than do this. But it works. It's one of the most effective things you can do for yourself, for aviation, and for NDAC. We promise to help and personally encourage if you need a little guidance.

For Questions or Comments ND Aviation Council
admin@scgnd.com 701-223-3184

*Stacy Krumwiede,
Bonnie Staiger,
Mike Krumwiede*





INTERSTATE ENGINEERING

Engineering • Surveying • Planning




*From aviation planning and design
to construction management, we are the*
professionals you need, people you trust.

www.interstateeng.com

North Dakota | Minnesota | Montana | South Dakota

NORTHSTAR AVIATION INSURANCE, INC. ✈️

SERVICE
Prompt, Knowledgeable & Personal

UNDERWRITING AVIATION
Personal & Business Aircraft
Ag Sprayers
FBO's
Hangars
Airports

THOROUGH
We research all insurance
markets for your best value!

EXPERIENCE
Over 40 years of service

East Side Terminal
Hector International Airport
P.O. Box 5591
Fargo, ND 58105

Marc Lepage
Office: (701) 235-2041
FAX: (701) 239-4235
Home: (701) 280-9056

Are we having fun yet?

By Ron Lundquist

As someone who flies for a living, I have to say most days -or nights in my case- are great. I have fun at my job, or I try to. They throw me the keys to a multi-million dollar piece of machinery and trust I am going to bring it back the way it left. I get to work with very professional people, who for the most part do their job right every time. Great gig, huh? You bet it is.

It's not all fun and games however. A recent flight had me going from, "Isn't this fun!" to "I think this needs to be over now." It had the distinct feel of a check ride!

I'll say here that the aircraft we were flying was a 757-200 of which Boeing built 913. There was also a 757-300, which was essentially a stretched out 200. They built 137 of the 300's and it was nicknamed the flying pencil. It was also referred to as an airborne bowling alley as the 300 was the longest narrow body aircraft ever produced. The 757 was supposed to be a replacement for the 727 and was manufactured from 1981 to 2004. Easy on gas, good performance and just a joy to fly.

Our night started out flying from Indianapolis to Memphis. All in all, the first leg was very forgettable. Good weather, running early, no issues. We were on the ground in Memphis about three hours waiting for the freight that had arrived from around the world to be sorted and loaded onto aircraft for the final leg of its journey. The weather in Portland, Maine (PWM), our next destination, looked pretty good but the city sits on the Atlantic and some mornings the temperature dew point spread is zero. That can change the visibility from 10 miles to nothing in a matter of minutes. The company forecasters had good visibility (vis) predicted with a chance of one mile and fog for our arrival time. We departed Memphis and spent over two hours heading northeast with a nice tailwind and clear moonlit skies.

Before descent to PWM we listened to ATIS: Calm winds, 1500 overcast, temp 23, dew point 23, altimeter 30.00, approach in use ILS 11. When I heard the temp and dew point, I heard the proverbial foot stomping. I suggested to my First Officer (FO) with that bit of info, "Why don't we just brief up a Cat 3 ILS and if we don't need it, oh well." He readily agreed. Actually a Category 3 ILS is flown the same way a Cat 1 or 2 is but with different minimums. Below a certain vis, we are required to couple up the autopilot which does a great job until it doesn't. Below a certain altitude, if everything isn't pretty much perfect when it's low vis it's a go around. When we're going to do a Cat 3, we have listed in our Quick Reference Handbook (QRH) a list of items on the aircraft that need to be working. A few requirements are three hydraulic systems, three radio altimeters and three autopilots. Another must-have is at least two working generators so we run the Auxiliary Power Unit (APU) in case one of the engine driven generators should fail. Chances of that actually happening are pretty slim but that's procedure.

Upon checking in with PWM approach control, we were advised a new ATIS was out and advise when we had it. We still had the frequency in standby on the #2 radio so with the

push of a button we had the new weather. Winds calm, 100 feet overcast, 1,000 feet visibility and fog. Looks like a Cat 3! This approach had minimums of 600 feet vis for touchdown RVR, 600 Mid RVR, 300 for the rollout and the Decision Altitude was 50 ft AGL. I was confident that we'd make it in without any issues.

We were vectored and cleared for the ILS Runway 11. Shortly before turning onto the localizer, the needle swung rather abruptly left then to the right. After that, all seemed well and we proceeded inbound. Tower kept on reading the current RVRs to us and they were slowing dropping. Just inside 1,000 feet agl, we received a master caution that an engine generator had dropped offline. Rather than discontinue the approach and burn a bunch of gas trying to get it back, we continued which I thought was at this point the safest course of action. Everything that was being powered by our failed generator automatically switches to the APU generator so there's nothing for us to do. And this is precisely why we run the APU.

At about 100 feet prior to decision altitude the localizer starting to swing back and forth. As I said before the autopilot does a great job of flying the approach until it doesn't. It knows to just follow the localizer and glide slope and that's what it tried to do. As the airplane started to bank back and forth, I called for a go-around and pressed the go-around switches on the back of the thrust levers. It can take anywhere from 30-40 feet for the airplane to reverse direction and start climbing after a go-around is initiated, so I figure we had to be close to 50 feet AGL before we were headed away from the ground.

Things can happen very quickly on go-arounds and since we were fairly light, we climbed like a rocket. The Rolls Royce RB211 engines are rated at 40, with 100 pounds of thrust each, so there is plenty of power which is comforting. If you have to level off in a few thousand feet though, you can blow through your assigned altitude or accelerate so fast that you overspeed the flaps. Lightweight and in cold temps, I've seen climb rates in excess of 6,000 feet per minute.

It was pretty much a textbook go-around, but there is a cadence back and forth to make sure the airplane stays under

SKIP FRYHLING

REALTOR • PILOT

Living, Working, Flying and Playing in our Community

701-425-8728



1022 E. Divide Ave., Bismarck, ND 58501

control and gets configured properly. As we pointed the nose up, the first officer announced on the radio we were going missed approach. Before the gear was even in the well the tower started its inquiry as to why we went missed, to which the FO kept replying “stand by”. I said a lightly loaded 757 can get away from you really quick and diverting your attention to answer the radio isn’t the thing to do in the middle of the procedure. Remember the old axiom? Aviate, Navigate, THEN Communicate. We kept the aircraft at flaps 5 and 180 knots as to not go too fast away from the airport. Once we caught our breath, the FO reported the localizer fluctuations. There was a long pause and the tower said “that may have been us. There was a vehicle in an area where he shouldn’t have been.” The critical area. The ILS critical area refers to a designated area of an airport that all aircraft, vehicles, persons or physical obstructions must remain clear of when one or more Instrument Landing Systems are in use, to protect against signal interference or attenuation that may lead to navigation errors or accident. Not sure exactly where the vehicle was but their timing couldn’t have been worse.

We were vectored on a downwind for the same approach and since we had a minute, the FO ran the checklist for the generator trip. One reset attempt is allowed but nothing happened. We still had the APU running so we were good. If we hadn’t had the APU generator, we would have been finding a new destination.

The FO had the approach loaded into the FMS again so we briefed the highlights of the approach since we’d just done it. We ran another approach check and we were ready. The visibility had now dropped even further, 600 RVR touchdown,

600 at the mid and 600 at rollout. With everything working, we actually don’t need to see anything to land (or let the autopilot land) but the reported vis has to be at or above mins. I think the tower controller got a little annoyed when we kept asking, “Confirm the ILS critical area is clear?”

We spotted the runway at minimums and landed. The vis deteriorated as we passed the midway point of the runway but I figured if we couldn’t see anything by the time we rolled to the end, we could call for a tug and they could tow us in. The visibility improved somewhat as we slowed so we turned off and taxied to the ramp.

After shutdown we debriefed on what we did right, what we did wrong and what we could improve on. I thought we had performed rather well considering the circumstances. When you are faced with situations that you don’t see every day, training really kicks in. We practice Cat 3 approaches when we go back for recurrent training every nine months. We don’t get to do them much in actual conditions. Go-arounds are another thing that’s practiced in the simulator but not done in the airplane very often. I forgot to add that this was also the time of day when our bodies’ circadian rhythms were at their lowest. Doing normal things at that time can be a real challenge!

Unfortunately we had one more leg to do that morning albeit a short one. As we prepared for it, my First Officer joked, “Are we having fun yet?” I laughed and said, “You know, I really am and breakfast is on me.”



MINOT AERO CENTER

THE MINOT AERO CENTER & PIETSCH AIRCRAFT
 2400 N. BROADWAY MINOT, ND 58703
 701.857.4738

KMOT

WWW.MINOTAEROCENTER.COM

AVFUEL

Change is Certainly in the Air

By Ryan Anderson, Aviation Manager, Basin Electric Power Cooperative

Looking out the window this morning, it was evident that fall is here. The first frost of the year has shown up, the trees are changing colors and losing their leaves, and those pumpkin spice drinks seem to be popping up everywhere! Yes, change is certainly in the air. Cooler temperatures, the return of football, and the colors of the season make this my favorite season of the year. I suppose the reason I look forward to these changes is because they are welcomed, anticipated, and expected.

I would venture to guess that for most of us, there are some aspects of change that we are excited about and look forward to. But for the most part, it is in our human nature to resist change. We become comfortable when we can find what works. We like to get in a rut and stay there as it's said. The same can be said about our aircraft. I've been flying the same model of Citation for the past 17 years and let me tell you, the routine of doing the same thing is comfortable! But just as with the seasons, change is inevitable.

Within our flight department, we recently found ourselves thrust into a sharp season of change by transitioning into the Embraer Phenom 300...think 75 & sunny one day then waking up to a blanket of snow the next! In no way was this a bad change for us; just drastically different. We had (and still have) a lot of work to accommodate for the change. Everything now has

a newness to it: flight planning, weight and balance, avionics set up, systems, and of course my fellow pilots would all say the braking! It all brings with it an unfamiliarity that can leave you unsettled because of the differences.

Perhaps some of you are looking at making a big leap between airframes. Maybe you are making a move to a Technically Advanced Aircraft (TAA). But most likely not all changes will be as drastic. Perhaps you are looking to do a complete panel upgrade to create that TAA. Maybe just a new GPS unit. An improvement to the autopilot is always nice or maybe it is your first autopilot. Perhaps the ADS-B mandate is forcing you into some form of change as it did us with our Caravan. Regardless the cause, I can't urge you enough to properly prepare for your season of change.

First, what regulatory requirements will need to be met in your transition? Are you moving from fixed gear to retractable gear and will now require a complex endorsement from an instructor? Not as common but still required in different airframes are high-performance and high-altitude endorsements. Will you now have any new maintenance requirements? Instructions for Continued Airworthiness (ICAs) are often included in improvements accomplished through the use of a Supplemental Type Certificate (STC). Be sure to visit with your maintenance



Evolved.

Perfectly designed to thrive in its environment.
Adaptable enough to evolve with the times.
Building smart for a solid future. It's second nature at KLJ.

KLJENG.COM



ENGINEERING, REIMAGINED

provider to make sure you understand any new requirements and the frequency of accomplishing the ICAs.

Next, talk with your insurance agent as to how this change may affect your premium. Are there any training prerequisites that your underwriter will require? For our department, we insisted on the assistance of a mentor pilot to bring our chief pilot up to speed on the aircraft. This was a mutual requirement also sought by the insurance agency. After discussion with the broker, we agreed on a set flight hour requirement that each pilot would need to receive with a mentor pilot before serving as PIC. Through a bit of networking, we were extremely fortunate to find a fantastic mentor pilot from another flight department who had already made the same transition we were about to undergo; Citation Encore to the Phenom 300.

Another step to prepare you for a change in operations is to talk with your sales representative. Check to see if they can provide any training materials to assist in learning how to efficiently operate your new equipment. Often times avionics manufacturers will provide PC, App, or web based training software. The advantage of the software is that it serves the same purpose as a simulator to let you learn the new equipment in real time without having to operate the aircraft; a fundamental step before you even get into the aircraft.

Perhaps it goes without saying, but be sure to actually read the user guide! It is not a good day if you are trying to figure out how to load a GPS approach while in the soup. Another useful tool is to power the aircraft with your local FBO's power cart or your own external power source to practice the setup and function of your new equipment.

When you are ready to get into the air, find out if there is a local flight instructor with prior experience that you can glean from. If there isn't someone local, perhaps your sales rep or another operator can point you to an instructor who is well versed in the new equipment. After training with an instructor, it is still a great idea to bring along a safety pilot to assist with the flight. More importantly the safety pilot is there to help you see and avoid other traffic and obstacles while you are heads down trying to figure out the new box.

Remember, distractions remain the biggest safety concern with any new technology or automation. Even if you have changed to a new and sophisticated way of getting from point A to B, remember that your priorities in doing so have not; Aviate, Navigate, and Communicate! Changes in the way you fly or the equipment you have on board can be rewarding and beneficial IF you are prepared to use them correctly and as intended. Fly safe and keep the greasy side down.

Devils Lake Aero Service



- aircraft maintenance
- annual inspections
- major & minor repairs
- major & minor alterations



Tanner Sotvik 701-662-4416

300 Dakota Aero Drive - Devils Lake, ND
Devils Lake Regional Airport

Vic's Aircraft Sales

701.293.8362

Featuring the Vista Carousel System



- Mid-Steel Construction
- Four individual aircraft supports - adjustable for aircraft wheel bases each to hold one airplane, Conventional or Tailwheel, up to 3200 lbs.
- HP Explosion-Proof Motor and Drive for each airplane support
- Two (2) Sets of Urethane-lined wheels for each drive assembly
- Main Frame to be constructed with formed and welded 12-Gauge channel, support plan to be Broke 12-Gauge
- Price includes basic approval-drawing for verifications of dimensions and setup, and assembly-drawings for installation
- Unit comes with Standard 1-Year Warranty

Visit us online for carousel details.

www.vicsaircraft.net/carousel.html



1968-2018

Celebrating 50 years of excellence
in aviation education.

Check out our website for event details throughout the year: **aero.und.edu/50th**



UND AEROSPACE
UNIVERSITY OF NORTH DAKOTA

    @UNDAerospace • 1.800.258.1525 • flyUND@aero.UND.edu • fly.UND.edu





Old to New!

Stay in “touch” with new Garmin upgrades!

Fargo Jet Center can help with all your installation needs to breathe new life into your aircraft!

Aircraft Pictured:

1981 Cessna 182RG

GARMIN® Upgrades

- GTN750 WAAS GPS
- GNC255A
- GDL88 ADS-B Transceiver
- G500 with GAD43e
- GTX330ES ADS-B
- Fabricated new instrument panel



701-235-3600
fargojet.com

North Dakota Aviation Quarterly

P.O. Box 5020

Bismarck, North Dakota 58502-5020

PRSRD STD
US POSTAGE
PAID
UNITED PRINTING

Building a
community
of Aviation

Save the Date



Upper Midwest Aviation Symposium

March 3-6 • Bismarck Ramkota Hotel

REMINDER!



2020 IS COMING! Are you ready?

Beginning in 2020, all aircraft that fly in Class A, B, or C airspace or above 10,000 are required to be equipped with ADS-B out equipment.

Your checklist for On-time departure with ADS-B:

- ✓ **Research** the equipment you need based on where you fly.
- ✓ **Find** an installer to discuss your needs.
- ✓ **Schedule** your installation.
- ✓ **ADS-B Equipped** Cleared for Takeoff!

www.ndac.aero
North Dakota Aviation Council

faa.gov/go/equipadsb **2020**