Vol. 26 • Issue 2 North Dakota Aviation Council Spring 2014

Martin Schow -2014 North Dakota Aviation Hall of Fame

By Lina M. Schow Lamsters, Stanton, North Dakota

Immigrants from Christiana, Norway in 1866, Robert and Minnie (Noben) Schow gave birth to Martin C. Schow, on February 25, 1892 in Noble Twp., Cass County, north of Fargo, North Dakota. Martin had three brothers: Arnilot, Robert, and Karl, and two sisters, Lillian (Larson) and Beatrice (Leupp).

Martin attended a country school through the eighth grade, but continued self-education for the remainder of his life. His father, Robert, taught a very young Martin how to think and reason by allowing him to work beside him while farming, and in his machine and blacksmith shop. Robert often asked Martin how he would do things, or questioned him about how something worked and why, therefore, Martin learned to reason and to create from an early age.

Regent, North Dakota in Farina Township became a boom area in 1910. It called for settlers and businesses. Martin, age eighteen, moved along with the family. They started the first machine and blacksmith shop and horse and car livery business. Martin became known as the "Gasoline Engine Expert" in the area. He drove and operated the livery car service, as well as the engine repair.

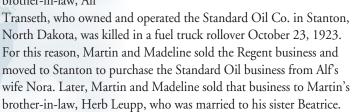
The year 1917 was in the "Go West Young Man, Go West" era. Martin and his brother, Arnilot, borrowed money from their father to buy two Avery tractors and filed on a homestead north of Forsyth, Montana near Vananda, where they farmed one thousand acres. They were sure they had found "Utopia." It was hard work, but they were young and energetic. For entertainment, they wrestled and boxed anyone who wanted the challenge. Martin never lost a match, could run six miles in thirty minutes and would out shoot anyone who chose to contest.

Martin married Olga Anderson on October 18, 1917. They worked the homestead together for three years. Nineteen twenty the drought came to Montana. The crops started to come up, but wilted and died. Olga, who was pregnant with their first child, went into premature labor and died in Martin's arms on April 18, 1920. Martin's brother Arnilot went for a doctor, however, by the time he arrived, Olga and the baby had passed away. It was here, kneeling by her bedside, in which aviation was born in Martin's life. He promised God and himself that he would do everything in his power and the will of God to never, as long as he lived, place himself at the mercy of fate and would do all that is intrinsically possible to preserve life and help his fellowman in all ways. This was 1920, but the event and the promise were to affect the rest of Martin's life.

Martin's father passed away on November 20, 1920, causing

him to leave the homestead, and return to Regent to take care of the business. On July 9, 1923 he married Madeline Tooker. Madeline's description of Martin was, "gentle, kind, intelligent and handsome." The community still called him the "Gasoline Expert."

His friend and brother-in-law, Alf



The years between 1923 and 1937 were exciting years. These were known as the "Golden Age of Aviation." Here is where Martin's goal, aviation, began to take shape. The first step was to establish a garage known as the Stanton Motor Company. Here, he not only sold cars and tractors, but he could build and repair. Madeline was his bookkeeper. Three daughters were born to Madeline and Martin: Geneva Evelyn, Mildred Angeline and Lina Mae.

In 1926-1927, Martin, with the help of his wife Madeline and young friend John Osterhouse, constructed the now famous OX-5 Travel-Air called the "Sakakawea." The blueprints were Martin's own. Parts were gathered from crashed planes and the Travel Air plant in Wichita, Kansas. The propeller was built by the American Door and Sash Co. in Wichita, Kansas. Madeline covered the plane with Indian Head Linen, which they "doped" later for strengthening. Madeline also upholstered the seats of the plane.

Martin had never flown in an airplane, and the only plane he had seen was a "Jennie." However, he knew how his plane was constructed, for he had done it himself. He knew why it would fly, how it should sound, and most of all he knew why it was important





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PROCLAMATION AVIATION MONTH MARCH 2014

WHEREAS, aviation impacts every sector of our communities and state; and

WHEREAS, many North Dakota businesses use aviation as a tool for conducting daily operations, including the transportation of personnel and freight, air emergency service and medical evacuation, wildlife control, and law enforcement observation; and

WHEREAS, North Dakota's aviation industry promotes the state's diverse economic opportunities by enabling development efforts, and creating opportunities for communities, businesses, and citizens; and

WHEREAS, beyond the movement of goods and services, the state's aviation industry supports thousands of jobs and contributes over \$1.6 billion annually to the state's economy; and

WHEREAS, airlines operating from North Dakota flew a record 2.2 million passengers in 2013 and contributed over \$500 million to the state's economy through air tourism; and

WHEREAS, North Dakora is home to world-class aviation education opportunities, product development, and technological advancement; and

WHEREAS, aviation is an essential part of our state's agriculture industry, with more than 2.6 million acres of crops sprayed in 2013.

NOW, THEREFORE, as Governor of the State of North Dakota, I do hereby proclaim March 2014, AVIATION MONTH in the state of North Dakota.

Jack Dalrymple
Jack Dalrymple
JGovernor

ATTEST:

Alvin A. Jaeger Secretary of State

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HELPFUL WEB SITES

Martin Schow -2014 North Dakota Aviation Hall of Fame

that this project needed to succeed. It was needed to serve and protect. Now it was time to teach himself to fly this plane, for pilots were very scarce in the twenties. By powering on, powering off, lifting slightly, and setting it down, a feel of the plane became apparent. When he felt this comfort of knowing the airplane, he took to the skies and flew a pattern around the field before setting it down. Madeline took snapshots with a small camera. The Hazen Newspaper quoted, "It was a beautiful site" and "Wouldn't it be nice if Hazen had an Airfield?" With great trust in him, John Osterhouse and Madeline were his first students.

The same year as the birth of his first airplane, Martin attended "Lindbergh Days" on August 27, 1927. He attended the banquet, sat at Lindbergh's table, listened to his famous speech and shook his hand.

Martin built hangers and developed his NW-SE Runway just west of Stanton starting between the stock yards and the elevators.

He called this the "Sakakawea Airfield" and encouraged other small towns and rural areas to develop similar fields. Martin and Madeline purchased a Waco in Wichita, Kansas and an Eagle Rock plane in Denver, Colorado.

Essential For Martin and John Osterhouse decided to start the "Sakakawea Flying School." They started the America's Barnstorming era in this part of the state. Wherever Existence" they went, they gave rides, performed some aerobatics and talked aeronautics. They gathered enough students to make a business of it. John Osterhouse also began teaching students in Regent. They put on air shows in many areas. These drew even more interest. They did parachute jumps, wing walking, spot landings, loops and spins of various kinds.

Martin's planes were never put away without making certain they were ready to go at a moment's notice. For example: On a trip via a commercial airline, a man sitting next to Martin asked where he was from. Martin answered, "Stanton." The man asked, "Would you happen to know a man named Martin Schow? Martin said, "Why do you ask?" The man said, "I need to thank him for saving my eye site." Martin said, "I am Martin Schow, and are you Lee Giffey?" A firecracker, thrown by accident in a young boy's face, made the airplane the only way to get to the nearest medical facility in time, and at that time it was Bismarck. By the time they got to Bismarck, it was dark of course. People from Stanton called ahead and people with car lights lit the runway for Martin and Lee. There were no runway lights and no control towers in those days. Martin never charged for any medical runs.

Martin's aviation skills were in demand in a number ways. Martin was the first to use his airplane to transport a prisoner, Jacob Allmer, from Sidney, Montana to Mercer County. Martin also used the plane to locate a drowning victim, Mr. Careful, by flying fifteen feet above the Missouri, River.

On November 2, 1933 Martin piloted Major Phillip Fleming of the Army Engineering Corps over the proposed Garrison Dam Site. At that time the engineers said that building a dam on the Missouri at that site was not a good idea. Now, it is known as one of the largest earthen dams in the world. It was bid in 1946 and came to

completion in 1954.

Martin's Motto:

"Aviation Is

Martin helped manage the dedication of the Ben Eielson Airfield in Mandan on May 2, 1933. On July 3-5, 1936, he helped manage the 75th Anniversary of Dakota Territory and the



16th Anniversary of the Little Big Horn at the Pioneer Days Festival Air Show in Bismarck.

The exciting times ended when the "dirty thirties" drought began. Farmers were unable to pay for repair work or buy tractors. The blowing sands and hard times were a replay of Montana. Sadly, the Stanton Motor Co. garage burned.

The unforgiving conditions did not stop Martin. He continued to work day and night to keep people going and help with their

> depressed living. Some paid with animals; however, some just could not pay, although they wanted to. Even under these challenging conditions, Martin still kept his airplanes ready for emergencies.

Martin purchased the John Anderson ranch three miles south of Fort Clark in 1940. He took the livestock he had accumulated to the ranch, built a hanger and an East-West Airstrip. The pilots he had taught and others flew

in to talk about aeronautics and have coffee and cookies. Each left happy they had stopped. Martin and Madeline had a special way of always making everyone feel at home.

Martin, Madeline, nephew Duane Larson and daughter Geneva put on some incredible air shows and continued to promote aviation by influencing many young people that air travel is not only fun but necessary. The World War II years were hard work on the farm. Work had to be done with all necessities rationed. Unwaveringly, Martin continued to keep the airplanes at a ready mode.

During the fifties, there were some harsh winters. Snow fell and lay so deep that even the team of horses could not get through to feed herds of livestock. Some ranches had cattle away from home and could not get to them. Martin and nephew Duane helped out by hauling a bale or two at a time to feed some of these herds until the National Guard could get through to help.

Martin became ill in 1959. He sold his ranch to Charles and Monica Folk and moved back to Stanton. He recovered slowly and did some repair work, visited with youth about aeronautics, assisted in the re-organization of the churches, and helped his daughter, Lina and son-in-law, John on their newly purchased Wilbur Stephen's ranch West of Stanton.

Martin passed away August 22, 1977. The buriel ceremony ended with a missing man formation flown by nephew Duane Larson and Warren Enyart.

Martin C. Schow was only one of the remarkable men who made the airplane a reality and began the advancement of aviation for domestic use and the defense of our nation. Martin was not as some say, "Ahead of his Time." Martin C. Schow was just right for the time in which he was born.

Dedication and Commitment

Did you ever go to a wonderful movie, or watch a great television series, read a great book, or maybe say "good bye" to a longtime friend who is moving away. I'm sure we all have. The only thing you can think of at that time is, "I don't want this experience to end!" I want the movie to keep going, because it fulfills a fantasy for me. I want the television series to continue, because every episode has been as good as or better than the last, and I don't understand why the writers can't keep that going. I want the author to write a sequel to the book and keep the story line going. Seeing a friend move away is always a traumatic experience. You feel as though no one can fill that special friendship that you had with that person.

That's pretty much how I feel after every symposium. As the planning for a symposium begins, the members of the council work together on a monthly basis to begin, then on a daily basis as the days begin to count down to 30 days before the event, and finally on an hourly basis as the symposium begins. We deal with all the ups and downs associated with the planning and preparations. We deal with "the good, the bad, and the less than attractive" aspects of pulling off the best symposium we can afford in funding, time and talents. I think we succeed, and then, as the final curtain closes, we go off to our respective jobs and lives, and look forward to the next symposium, which appears as only a mirage on horizon. We really are a dedicated group! Remember to communicate with a member of the aviation council as your summer goes along and tell them how much you appreciate their dedication. It's the only pay they get!

The North Dakota Flying Farmers (NDFF) organization is calling it quits. I really hate to see this chapter close, but I understand the obstacle they are up against. The council will miss the longtime and time-honored contributions their organization has made to the success of the NDAC. We will emotionally miss having an organization on the council that truly represented the "grass roots" of aviation in the State of North Dakota. The NDFF members were those that were truly "farm kids" who learned to fly by the "seat of their pants," by "dead reckoning in most instances, and in the end, using the technology of GPS. Finally, and most of all, we will miss "the people" who have been the "faces of NDFF!" They have devoted their time, their talents and their effort to their organization that at one time was the backbone of the NDAC. It is my hope that one day there will be resurgence in membership, and the NDFF will again become members of the NDAC. As we hold that hope in our hearts, we say with fond regrets, "Thank You."

4 NORTH DAKOTA AVIATION QUARTERLY

Powder River! It's been looming in the background for quite some time. I remember a number of years back when it first hit the radar. It caused the identical negative response by pilots flying in or near then as it has now. The difference being, at this time there are a much larger number of flights that will be affected because of the oil development in Western North Dakota. Those private and business flights originate out of the "oil patch" and head for

Denver and Casper, all points in Texas, along with several other destinations. They will all be adversely affected by the proposed Powder River MOA. Operating IFR, as most of these flights will be, will require pilots to fly around MOAs, adding potentially hundreds of miles to their flights. In addition, if the plan is implemented, flights originating from or flying to locations directly located under the active MOA may not be able to operate. . As you receive this Quarterly, the deadline for public response will have already expired. It is my hope that our concerns have been heard and heeded.

The 2014 UMAS in Grand Forks was a resounding success! As a council, we didn't hear any "disparaging words," so we think everyone else had a good time as well. The various technical presentations by the many highly regarded presenters to the NDPAMA, AAND and NDPA provided very interesting and educational topics. Everyone came away with up-to-date information and training that will be put to good use by those attending. I certainly hope you were able to attend some of these high-powered presentations and came away with an "up-beat" outlook that will assist you in making improvements during the coming year at your job, business or occupation. There will be



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many more articles and pictures in this edition of the Quarterly that will tell you more about "the Great Alerus Aviation Happening." The vendors seemed to really like the convention accommodations. Interactions at the booths were excellent, according to many vendors. We want to extend our thanks to all the vendors that attended the symposium and hope they will make arrangements to join us again in Fargo in 2015 at the Fargo Holiday Inn. We sincerely hope your booth attendance was good. The city and people of Grand Forks, the Canad Inn, and the Alerus Center did a fantastic job hosting the 2014 UMAS. We are sincerely appreciative of their hospitality!

I would like to thank those members that are leaving the NDAC. They have all done an outstanding job for us, and their expertise will be missed. I especially want to thank Mark Scheele who headed up the Symposium Committee and did a terrific job bringing it all together. Mark deserves a "salute" from his fellow aviators, and I hope you each have a chance to tell him that. Mark Scheele and Julie Neidlinger are leaving the council, where they so aptly represented the NDPA. Matt Hovdenes is no longer a rep on the council for NDAAA, but I know will continue to be keep us informed when the "triple A" needed arises. Rick Audette, who was also on the Symposium Committee and did an excellent job as our "Grand Forks Connection" leaves us from AAND. As we look forward to next year, we have these previously mentioned members of the council who won't be returning, but we have several new and exciting representatives on the North Dakota Aviation Council for 2014/15. As we make plans for next year's symposium, we also have the ever-present job of monitoring the "state of the state" aviation climate and are tasked with looking to the future to prepare for any issues that may threaten our industry. We need to be watchful so that we don't allow those potential issues to surprise us, thus forcing us to react to them rather than to prepare for them.

I certainly hope you have a wonderful summer. Take time to lie on your back in the grass and watch the clouds float by like I did as a kid. Watch the birds take wing and realize that, because of Orville and Wilbur, we are able to do the same thing. Take time to enjoy the simple things in life and appreciate the opportunity to visit with your parents. That time will come to an end quicker than you are ready for. Because of the memoirs and experiences they are more than willing to pass on, they possess the "life lessons" we can learn and benefit from.





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Looking Back and Moving Forward

Spring has finally arrived and another successful Upper Midwest Aviation Symposium is behind us. I am always thankful for all the aviation professionals and volunteers who take the time to gather for this annual event, and I was very impressed by the content that was made available. Due to the recent accomplishments of aviation throughout the state, it is very fitting that the Governor signed a proclamation naming the month of March, *Aviation Month* in the State of North Dakota.

In looking back at 2013, North Dakota's commercial service airports finished the year with a record high of 1,139,434 passenger boardings. This is a 10% increase in passengers from the previous year and is the 6th consecutive record breaking year for the state in passenger enplanements. This growth trend is expected to continue as the current state-wide totals for the year to date in 2014 show an increase of 8.5% over this same time last year.

Fuel sales and state aircraft registrations in North Dakota were also at a record high level in 2013, and we are very excited to see continued growth within the North Dakota business aviation community. The importance of agricultural aviation in North Dakota can also not be overstated, as on average, 3.8 million acres of cropland are sprayed by 110 aerial spray companies, utilizing approximately 225 aircraft.

It is always exciting to hear about the past year's progress, however it is always important to continue to have conversations on what issues and challenges lie ahead for the North Dakota aviation industry. In seeing the growth of aviation at both our commercial service and general aviation airports, our airport leaders throughout the state are working hard to prepare for long awaited construction projects. This spring, the North Dakota Aeronautics Commission is planning to award the largest amount of state dollars ever allocated towards airport projects in any one year. This is great news for airports throughout the state, as we live in a time when airport infrastructure needs throughout North Dakota have never been greater.

I would like to take this opportunity to provide updates on

multiple projects and issues that your state aeronautics commission is working towards, as we continue to move forward to improve the aviation outreach and infrastructure needs throughout the state. Our state agency is excited to be able to work with industry leaders and be a part of the much needed solutions that are present during this critical growth stage of aviation in North Dakota.

Pavement Condition Index Study: The Aeronautics Commission recently completed an interactive website regarding pavement conditions at airports across the state. The intention of the study was to provide the decision makers at the local, state, and federal level with the tools necessary to ensure that timely pavement maintenance and rehabilitation is completed to preserve the airport infrastructure in the most cost effective way possible. To view this interactive website please our website or the direct link, which can be found at: http://www.nd.gov/ndaero/airport/idea/index.html

Updating the State Aviation System Plan: The last state aviation system plan was updated in 2008, and with the tremendous growth and infrastructure needs present in our state, it is imperative that we update this system plan to help decision makers in choosing a path forward for our aviation system. The completion of key system plan information and executive summaries are planned to be completed before the start of the next legislative session this January. I encourage you to visit the project website found at www.ndaviationplan.com

Updating the Economic Impact of Aviation in North

Dakota: The last economic impact of aviation update was conducted in 2009, and with the tremendous changes and growth of aviation around the state occurring, we felt it would also be of value to update the information regarding the economic benefits of the aviation community throughout the state. The goal of this study is to have preliminary economic impact numbers available





by the start of the next legislative session. The full report should be available in the spring of 2015.

UAS Test Site: North Dakota has recently been selected by the Federal Aviation Administration as one of the six test sites throughout the United States. The North Dakota Aeronautics Commission and the Aviation Council both have a representative that serves on the Northern Plains Unmanned Systems Authority and will continue to work to represent the interests of the commercial service and general aviation communities throughout the duration of this test site. It is important to be reminded that this test site will not impede upon current aviation operations, and restricted airspace will **not** be utilized with this test site effort. A certificate of authorization will be approved from the FAA for all airspace utilization by the test site with the overall goal of integrating UAS into the National Airspace System.

Statewide AWOS Maintenance Contract: The Aeronautics Commission has approved a statewide maintenance contract with Remote Systems Integration to ensure that scheduled maintenance is being done with the Automated Weather Observation Systems (AWOS) equipment throughout the state. Starting this July, all airports that have installed AWOS equipment and are no longer within their five year maintenance free window can expect to see information from the North Dakota Aeronautics Commission explaining the new program.

Updated Aeronautical Chart: The new 2014-2015 aeronautical chart of North Dakota is currently available from our office. Any pilot, or airport sponsor, can stop by or call the office to request free copies of this aeronautical chart.

Aviation Education: The Aeronautics Commission provides grant funding for aviation educational programming. Applications are accepted at any time by our office from aviation enthusiasts, airports, or aviation organizations. Please contact our office if you would like to learn more about how we can help you or your organization build the next generation of aviators within your community.

The North Dakota Aeronautics Commission will work to continue to provide good communication and transparency to the aviation community throughout the state. There are many challenges involved in ensuring that aviation continues to prosper in North Dakota, and the solutions involve all of us. It is important for the individual members of our aviation community to have a unified message on important issues and to involve local, state, and federal leaders in the discussions that surround the importance of aviation and your local airport.

As we work together to continue the success aviation has had throughout the state, please feel free at any time to stop by my office, send me an e-mail, or give me a call if you have any questions or issues you would like to discuss. Meanwhile, I hope you have the opportunity to grab one of our airport passport books and take advantage of the warmer weather by visiting one or more of our 89 public airports throughout the state of North Dakota. Safe Flying! **Vic's Aircraft Sales**

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The Powder River Proposal

Rod Brekken – Chairman, North Dakota Aviation Council

The Powder River Proposal has AGAIN been submitted for FAA approval by the United States Air Force. This is the third time a proposal has been submitted that formulates a plan to quadruple the size of the current MOA airspace already present in that region.

This article is being written to provide you with a list of concerns and solutions that have been discussed by the aviation community regarding the Powder River Proposal. If the Federal Aviation Administration deems that the Air Force is able to officially justify the need for an expanded MOA, then the North Dakota aviation community would appreciate discussions on whether it is possible to raise the ceiling of the proposed MOA airspace in Southwestern North Dakota from 500 feet to a minimum altitude of 8000 feet. This would allow aircraft operations in the area to operate under the proposed MOA without a large amount of mitigation being required.

If raising the ceiling to 8000 feet is not approved, there are multiple concerns of how the current MOA proposal would negatively affect the North Dakota aviation community.

Some of those concerns have been outlined below: **Safety Concerns**

- Sharing airspace with low-flying, high speed bombers and fighters, along with poor radar and communication services in the area is a major operational safety concern.
- Allowing greater than Mach 1 operations above 10,000' MSL could be unsafe if VFR traffic is in the area.

Economic Impact to Businesses and General Aviation

 The proposed enlargement of the MOA would increase the direct operating cost of business aviation due to the extra miles required to be flown to avoid active MOA airspace.
 The loss of productive time for the passengers should also be a consideration.

Access for Non-Emergency Medical Flights

 The proposed MOA could prevent IFR non-emergency related medical flights into and out of airports within the area.

Flight Training

• The proposed MOA could discourage flight training in and around the area.

IFR Flighs

 The proposed MOA could prevent IFR flights into and out of airports within the area.

Weather Modification Program

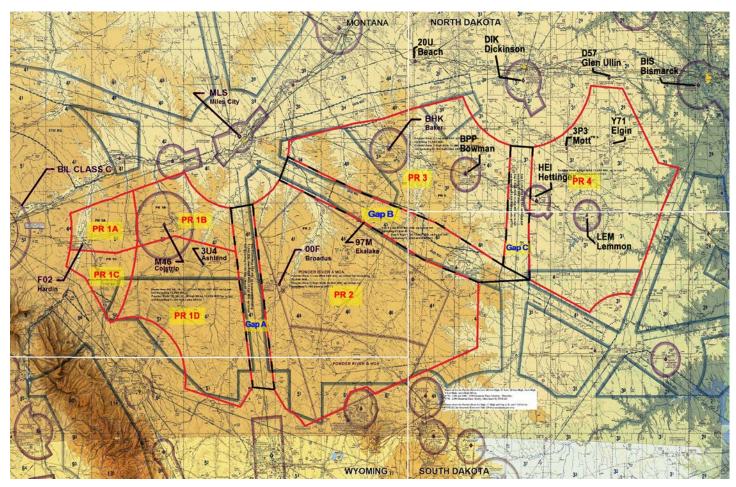
 The operations of the Weather Modification Program in Southwest North Dakota would be negatively affected by this proposed MOA.

Aerial Applicators

 Aerial Applicators transitioning between the airport and their fields would be utilizing the same airspace as the military aircraft without radar or communications being available.

If the Federal Aviation Administration deems that the Air Force has officially justified the use of all of the current proposed





airspace, altitudes, and amount of time in which the airspace will be utilized, then it could be proposed that the following mitigations need to be in place before the FAA would allow the Powder River MOA expansion to be approved.

1. Develop a Memorandum of Understanding with North Dakota based Weather Modification, Inc.

There is a significant state sponsored and regulated weather modification program that operates in the affected region in the months of June-August. That operation will be affected by this proposal, and their input should be very important to results of the airspace utilization. Their flight operations are on a 24/7 reaction time, and an agreement with the Air Force should be in place to mitigate any negative impacts that the MOA would have to this operation.

2. Install adequate radar/communications equipment and ATC procedures that would allow IFR aircraft to be able to utilize areas within the activated MOA's.

A lack of low altitude radar coverage and voice communications exists within the proposed region that shares responsibilities between Salt Lake, Denver and Minneapolis Air Traffic Control Centers. With the proposal of the 500' AGL military operations, this lack of radar/communication coverage should be a priority on the list of mitigation priorities to ensure the safe separation of flight of both military and civilian aircraft. Adequate radar/communications equipment installation, and a development of Memorandums of Agreement with the Air Traffic Control Facilities is imperative to allow IFR traffic to operate in and around activated MOA airspace in a manner safe for all aircraft operations.

3. MOA Activation Notice Enhancements

The FAA NOTAM system is the only communication option that currently exists enabling the public to learn about the activation of MOA airspace. An enhanced communication methodology needs to be developed to ensure that the public has access to timely information regarding when MOA airspace is activated.

Below are examples of communication enhancements:

- Local Unicom frequencies can be utilized similar to ATIS or AWOS that an aircraft can tune to for current updated MOA information.
- A phone number for the public to call with an hourly upgraded message stating all new updates for the MOA airspace utilization.
- A website page that is continually updated with information regarding airspace activation.
- A 24/7 telephone number available to the public, so they can talk with "a person" if they have any questions regarding the airspace utilization.

4. Efficient Airspace Utilization Plan

A plan needs to be in place that provides the details of the "activation and deactivation airspace process" that the Air Force will utilize in cooperation with Air Traffic Control. This plan would help to ensure that the airspace is only active when needed for military training operations.

Please feel free to pass this information along to all affected members of the aviation community!





Welcome Spring

Did you ever notice that when you leave home for the symposium it is winter and when you return it is spring. More often than not it holds true. This year was no different, at least for us in middle part of the state. With spring comes the weather that we had been dreaming about all winter; cool calm mornings, smooth air and sweatshirt temperatures. Time to look into the logbook and see when the last time you flew was, seeing as how I cannot remember that far back. The logbook for the aircraft should have been checked last fall when the ol' bird was put into storage, but we know that didn't happen, and now, we must scramble to get it airworthy for the good flying ahead. It is now time to check for rust on the airframe and get the rust out of the pilot.

Where should we start? First let's give the pilot a good preflight: current medical certificate, plastic pilot certificate, government issued photo ID and a biannual flight review with in the last 24 calendar months. After all is in order, let's give the aircraft the best preflight of the season: change the oil, look for bird nests, mice homes, make sure that there is no water in the fuel tanks, and that we now have the spring air in the tires. If you choose to go it alone, spend some time reacquainting yourself with the aircraft, first by refreshing yourself with the POH and then by a leisurely flight into the open spaces. Then, let's do some abnormal airwork, to

include steep turns, slow flight, and when comfortable, a couple of stalls. Now back to the landing strip for traffic pattern orientation and landings and takeoffs. Remember you must have made three takeoffs and landings within the preceding days to be legal to carry passengers.

My challenge to you this year is practice power off landings to a predetermined landing mark. As I give instruction and BFRs, this seems to be the biggest area of lack of proficiency. Remember, upon engine failure, first fly the airplane and establish the best glide speed before losing any altitude. Then, attempt a restart while looking for a suitable landing site, fly directly to the landing site and spiral down to a landing.

On a different front, there are a couple of items of interest to pilots. There are bills in both houses now to eliminate the need for a 3rd class medical certificate. It basically exempts pilot requirement for a 3rd class medical if you are flying for pleasure or business, not compensated, in aircraft with less than a 6000 pound GTOW and below 14,000 feet, and day VFR. The other that has surfaced is user fees. You need to make your positions known to your congressional delegation on these matters.

Till Next time, HAPPY LANDINGS





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Tail Feathers #1

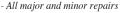
How do you navigate through your life? Nautically you do so with a rudder. Aeronautically you also do so with a rudder. So, if we stay with the aeronautical theme for this first column, did you know that a DH108 Swallow didn't have a rudder OR even a tail!? A bird doesn't have a rudder, so how do they do it? Then there are the v-tails, the inverted v-tails, the x-tails, and the pelikan tail. There are fuselage mounted tails, cruciform style tails, t-tails and stabilator tailplanes too! There are tailplane mounted rudders, and twin tailboom mounted rudders, and wing mounted rudders. Why so many? Well, we live in an age of innovation, that's why. Everyone believes they have the best idea. Some do, and some don't. The next time you go out to your airport see how many different tails you have on your airport. Remember that the most important asset you have is "what you use to navigate through life." If you have a good sturdy rudder, you will do well. If it's sort of flimsy, you can go off course and end up in all kinds of trouble. Make sure you have a good sturdy rudder!

Joke for this quarter

In the early 1930s, a farmer and his wife went to a fair. The farmer was fascinated by the airplanes and asked a pilot how much a ride would cost. "\$10 for 3 minutes," the pilot replied. "That's too much," said the farmer. The pilot thought for a second and then said, "I'll make you a deal. If you and your wife ride for 3 minutes without uttering a sound, the ride will be free, but if you make a sound, you'll have to pay the \$10." The farmer and his wife agreed and went for a wild ride! After they landed, the pilot said to the farmer, "I want to congratulate you for not making a sound! You are a brave man." "Maybe so," said the farmer, "but I gotta tell ya, I almost screamed when my wife fell out."

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

Do you have airport events, aviation awards, or aviator adventures to share? We would like to hear them! Submit your ideas or stories for consideration to ndaviation@yahoo.com.



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North Dakota Aviation History

UMAS 2014 is complete. Reports are that everyone enjoyed the experience. It was a success. The council thanks all who were able to attend.

Once again, I will be representing the NDEAA group from the western part of the State. Todd has stepped down and has located another representative for the eastern part. By the next UMAS, I will have 18 years on the council, all with the NDEAA or NDPA. It's been enjoyable spending time with this aviation community. Soon, I too will need to pull away from the council. I'm not a native North Dakotan, but thanks to all of you, I feel like one!

I'm thankful to be part of the North Dakota Aviation Hall of Fame and to have a vote to install our North Dakota Aviation Pioneers. They helped make our state the leader in aviation!

Air Traffic Control (ATC)

When I came to Bismarck from Salt Lake City, Utah after the ATC strike (3 August 1981), I looked out the tower window and saw the first snowfall, I did not think much about it. Well, when spring finally came around and the first snowfall was still on the ground, my thought was, what the heck am I doing here in North Dakota? But then I met a real nice lady, enter Marlette. We got married, and the rest is history. At Bismarck I trained a number of new controllers. All have been transferred to other places, except one, he stayed in Bismarck, I understand he just retired. After Bismarck, I went on to other facilities doing the same training for new FAA controllers.

When I arrived at Bismarck tower, there were not any controllers left, all went on strike. They had four trainee controllers. We instructed the trainees in tower control and sent two to Minot tower. They lost all their controllers as well. We then needed to teach the remaining two how to do the approach control side. There was no radar. In FAA terms, Bismarck tower was a manual approach control. By that, I mean all the separation was accomplished by communication reports from the aircraft. They

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had no radar screen to let the controller see the traffic! Not too difficult for an experienced controller that knew how; I had done it many times in my earlier career. Now we had to teach the trainees how to do it. First they had to learn the rules of manual control.

When I started in ATC, the book on ATC control was about 1/4-inch thick. Today that same book is around 2-inches thick. The phraseology has become cumbersome, for both controller and pilot.

August 3, 1981

As mentioned above I came to BIS after the ATC strike. Before retiring from ATC in 2006, between the USAF and the FAA, I had been in that business since 1955. When the strike of 1981 was being planned, I spoke out against that action, but to no avail; it happened anyway. I had been involved in ATC far too long to give up my career for anything like that. Again the rest is history. I hope we never have to go through another crisis like that again. I'm attempting to write a book about the strike; it is taking a lot of my memory bank to put everything in perspective.

I'm starting to run out of space, so I'll continue later.

See ya next time, cleared for takeoff.





Thinking about resurfacing your tarmac or runway?

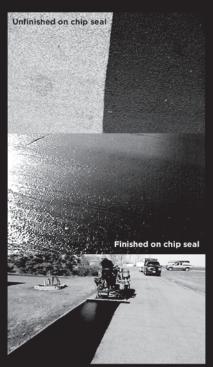
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GO GLASS GO RECYCLE GO GREEN

2013 Commercial Service Airport of the Year

The Grand Forks
International Airport
has received the "2013
Commercial Service
Airport of the Year"
award. The award was
presented March 4, 2014
at the Upper Midwest
Aviation Symposium
held in Grand Forks.
The award is sponsored
by the North Dakota
Aeronautics Commission
in partnership with the
Airport Association of



The Grand Forks International Airport is congratulated for a tremendous year of accomplishments.

North Dakota. This award is for excellence in maintaining safety, project management, and community awareness.

Presenting the award was Tim Thorsen, President of the Airport Association of North Dakota and Kyle Wanner, Director of the North Dakota Aeronautics Commission. Accepting the award for the Grand Forks International Airport was Airport Authority Member, Gary Malm and Airport Director, Patrick Dame.

In 2013, the Grand Forks International Airport constructed an expansion to their air cargo facility and a new 20,000 square foot snow removal equipment building. The air cargo building expansion allowed FedEx to increase the productivity of their

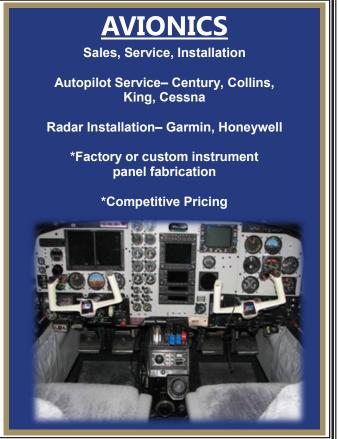
operation and better serve the increase in air cargo traffic at the airport. The new Snow Removal Building has allowed a much more efficient use of staff time and snow equipment operation. The airport also developed a Part 139 inspection software system that allows Commercial Service Airports to use to track field condition reports, fuel farm inspections,

wildlife issues, daily inspections, work orders and any airport security issues.

The Grand Forks International Airport posted their best annual passenger number on record in 2013, boarding 146,068 people. This is an 8% increase over their previous passenger record set in 2012

This past year, the Grand Forks International Airport, through the partnership of the Grand Forks Chamber of Commerce, was also able host a Business-After-Hours event. The Airport set a record for attendance at this Chamber function with 388 in attendance.





2013 General Aviation Airport of the Year

The Gwinner Municipal Airport has received the "2013 General Aviation Airport of the Year" award. The award was presented on March 4, 2014 at



The Gwinner Municipal Airport is congratulated for a tremendous year of accomplishments.

the Upper Midwest Aviation Symposium held in Grand Forks. The award is sponsored by the North Dakota Aeronautics Commission in partnership with the Airport Association of North Dakota. This award is for excellence in maintaining safety, project management, and community awareness.

Presenting the award was Tim Thorsen, President of the Airport Association of the North Dakota and Kyle Wanner, Director of North Dakota Aeronautics Commission. Accepting the award for the Gwinner Municipal Airport were Rick Hoistad, Andy Stroh, Chad Decker, Grover Riebe, and Mark Bopp from the Gwinner Airport Authority.

In 2013, the Gwinner Airport Authority took an active role with local pilots and students to encourage additional utilization of the airport. During career days at the local schools, the airport invited interested students to tour the airport and planes on the field. The airport has an active flight instruction program with over a dozen students currently learning how to fly.

In 2013, the Gwinner Airport completed a large airport rehabilitation project that reconstructed the existing

60'x5,000' asphalt runway with a 75'x5,000' concrete runway. The project included the installation of edge drains, shifting the runway approximately 220' to the southeast to eliminate obstruction penetrations, and replacing all edge lights and visual approach aids to the airport. A new card troll fuel system with 100LL and Jet A fuel was also installed at the airport. The total cost of the 2013 construction projects was approximately \$6.6 million dollars. After the Federal Aviation Administration and the North Dakota Aeronautics Commission grant participation, it left approximately \$787,000 for the Gwinner Municipal Airport Authority to fund. With local airport revenue, substantial help from the Bobcat Company, and a loan, the airport authority was able to accomplish this major project for the benefit of the community.

The Gwinner Municipal Airport plans to host a grand opening for the newly constructed airport in the spring of 2014.











Many enjoyed the Symposium and all the events it had to offer this year.







Mike Devries presents Stephen Kilpatick a NDPAMA scholarship.





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Lori Jury receives NDPA scholarship



Marlette Pittman wins iPad given by the council





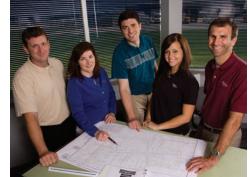


Doreen Welsh • Keynote Speaker during the Symposium



Martin Schow family attending the Hall of Fame event.







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Aircraft Owners and Pilots Association (AOPA) launches **Rusty Pilots Initiative** to help lapsed pilots get back in the air. The AOPA launched an easy and fun new way for pilots who have gotten away from flying to get back in the cockpit.

AOPA's Rusty Pilots program allows lapsed pilots a way to return to flying in a matter of hours through a free session of ground school that fulfills the Federal Aviation Administration's (FAA) flight review requirement for ground instruction.

After the seminar, which includes topics such as a refresher on airspace and the most pertinent regulations, pilots can work directly with a local flight school or flying club to schedule dual flight-time in order to complete a flight review.

"Once a pilot, always a pilot," said Brittney Miculka, AOPA's senior manager of pilot community development. "It's much easier for people to get back into flying than they might think. This program makes it both easy and fun."

The potential of the Rusty Pilots program is substantial. An AOPA survey found that as many as 500,000 pilots earned a private pilot certificate but later stopped flying. The research determined that 87 percent of those pilots, "either intend to come back or might come back to flying." The remainder said they were unable to fly due to medical reasons.

AOPA will partner with flight schools and flying clubs around the nation to offer the Rusty Pilots program. Participating schools and clubs will receive free course materials that include a presenter's guide and attendee resource guide. AOPA will help flight schools and clubs identify lapsed pilots in their areas, and it will promote the events.

In addition, AOPA will hold free Rusty Pilots programs the evening before each of its six AOPA Regional Fly-ins in 2014, and also before its Frederick, Md. homecoming fly-in. Longtime Air Safety Institute presenters Mark Grady and Pat Brown will present the material at AOPA's Rusty Pilots Fly-in sessions.



Fly North Dakota **Airports Passport Program awards Biggest Year Yet**



Tim Thorson, Jay Dugan, Keith Veil, Richard Cavett, William Ueckert, Dale Seckerson, Kyle Wanner, Mark Scheel.



What a great year for the North Dakota Passport program, inducting nine new individuals into the ranks of pilots who have either completed, or flown to a great portion, of North Dakota airports. To date, we have had six bronze recipients, three silver recipients, and 10 gold recipients, bringing our total number of recipients to 19.

The "Fly North Dakota Airports" program is sponsored by the North Dakota Aeronautics Commission, the Airport Association of North Dakota, the North Dakota Pilots Association, and the North Dakota Department of Commerce, Tourism Division to encourage pilots to experience our beautiful state. This program is a great opportunity for pilots to see North Dakota, practice approaches and landings, and a great way to support general aviation airports, businesses, and tourism.

The Program has three award levels:

BRONZE - Flying to 30 airports and attending one FAAST Seminar. SILVER - Flying to 60 airports, visiting one air museum, and attending two FAAST Seminars.

GOLD - Flying to all 89 North Dakota airports, visiting both of our states air museums, and attending three FAAST Seminars.

This years "Flying Legacy" passport award recipients are:

Bronze Level: Chris Frolander, Tyler Gaugler

Silver Level: John Vold

Gold Level: Richard Cavett, Jon Kreilkamp, Jay Dugan, Dale Seckerson, Keith Veil, William Ueckert

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NATA Presents, Excellence In Pilot Training

Award

NATA annually recognizes individuals, offices, and organizations that have helped improve the general aviation community by demonstrating excellence in their field and the highest level of customer service.

Mike Paulson, Flight School Manager at Fargo Jet Center, has been selected as the recipient of the National Air Transportation



Mike Paulson, Flight School Manager at Fargo Jet Center

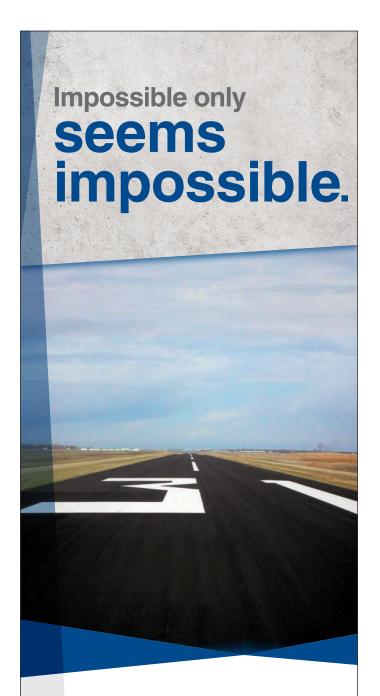
of the National Air Transportation Association (NATA) Excellence In Pilot Training Award.

"Mike's enthusiasm towards aviation is magnetic," says Darren Hall, Vice President of Marketing for Fargo Jet Center. "He truly exemplifies excellence in pilot training through his longstanding and continued passion for sharing and teaching the wonder of flight with others," adds Hall.

"Professionalism, dedication and excellence are just a few of the words to describe Mike."

Professionalism, dedication and excellence are just a few of the words to describe Mike Paulson. His passion for aviation was acknowledged at an early age when he soloed in 1973 at the age of 16 in Fargo. His longstanding career in aviation as a flight instructor is very unique; he truly loves teaching others to fly. Over the past thirty years, he has had many opportunities to take on virtually any pilot position, but has chosen to teach flight at all levels and continues today with the same passion and smile that's been with him from the beginning.

During his career, Mike has logged more than 18,500 total hour's flight time of which 11,000 are logged as flight instruction hours given. His training, certifications and special designations include: Airline Transport Pilot, Airplane Single Engine Land and Sea, Multi Engine Land and Sea, Designated Check Airman, Advanced Ground Instructor, FAA Gold Seal Instructor, National Association of Flight Instructors – Master Certified Flight Instructor, FAA Designated Pilot Examiner authorized for Private through ATP and CFI, FAASTeam Representative for North Dakota – Fargo area. Mike has also taught aviation classes at North Dakota State University for the past 23 years.



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NORTH DAKOTA AVIATION QUARTERLY

NATA Industry Excellence Awards Program and FAA AMT Award presentations

Fargo Jet Center (FJC) was presented the **FAA Diamond Award** at the Upper Midwest Aviation Symposium. In addition to the Diamond award, FAA FAAST Team manager Jeff Boe presented FAA AMT training awards to FJC mechanics.



FAA Diamond Award presented to Fargo Jet Center

(L to R): Jeff Boe – FAAST Team Manager, Rod Brekken – FJC Maintenance Trainer, Nick Eull – Manager Fargo FSDO, Mike Clancy – FJC Director of Maintenance, Jim Sweeney – FJC President, Gary Kwasniewski – FAA Maintenance Inspector FAA AMT Bronze Award — minimum of 12 hours of eligible aviation maintenance knowledge training. Presented to: Arlen Sandland, David Mohn, Gerald Anton, Gregory Artman, Jason Fischer, Kelly Bosch, Kristofer Hexom, Kyle Huschka, Michael DeVries, Richard Feist, Ryckylee Heintz, Robert Wagner, Rodney Brekken, Russel Braddock, Ryan Baker, Ryan Paulson, Scott Reiland.

FAA AMT Silver Award — minimum of 40 hours of eligible aviation maintenance knowledge training. Presented to: Benjamin Thornton, Christopher Eggl, James Dwello, Keith Murray, Kent Stevens, Michael Clancy, Seth Lundberg, Travis Collins

On March 3, 2014 at the NATA Industry Excellence Awards in Washington DC, FJC was presented with the 2014 AMT Five Star Employer Award.



NATA 5-Star Award: Jim Sweeney receives NATA AMT Five Star award from NATA President Thomas Hendricks.





Having traveled all over the United States and living in the Northern climates with the occasional Southern stays, I can indisputably say that warm weather winters are better for airplanes. In fact, if you live in the Northern tundra where summer comes once a year (North Dakota), you might try convincing yourself that a southern winter vacation would be a much better place for your aircraft in the winter. But you just can't beat flying on a cold, crisp winter day. Your airplane's powerplant has been reborn as it takes a hold of that cold, crisp, dense air. The engine will develop more power and your wings will find increased lift, with control surfaces grabbing air like they never have before! Your dull Skyhawk may seem like a finely tuned race-plane compared to the last flight during a 90 degree humid summer day. The winter days can be incredibly clear as far as the eye can see and the air perfectly smooth. But, before you go to the hangar and crank up your trusty magic carpet, think twice about pre-heating your powerplant.

Cold starts can spell disaster for your powerplant's cylinders. One un-preheated cold start from temps 20 degrees F and below can inflict more cylinder damage than hundreds of hours of normal operation or cruise flight. Contrary to popular belief, cold start damage isn't caused by lack of lubrication, but instead by loss of clearance between the piston and cylinder.

When the powerplant is cold, there is a favorable amount of clearance between the piston and the cylinder walls, usually about .010" or more of clearance. This is essential as the engine heats up to operating temps. The aluminum piston will expand about twice as fast as the steel cylinder, and the clearance will get significantly lower. It's okay, but there must always be at least a few thousandths of an inch between the piston and the cylinder, so that the oil film is not penetrated and metal-to-metal contact is evaded.

During the cold start, the piston heats up quickly, however,



the cylinder warms up considerably slower because of its greater thermal mass and is covered with cooling fins and covered in cold air. Therefore, there is often a period of time—when the piston is up to temperature, but the cylinder is still playing catch-up—where the clearance can actually become nothing with the outcome of metal-to-metal contact or scraping of the piston and cylinder wall. So, you may want to contact your mechanic and install an engine pre-heat system, or have the local FBO pre-heat it for you, because cold starts can be a very distressing situation for aircraft cylinders.

Now, let's say you had your engine plugged in and your preheater system worked flawlessly. Your airplane is fired up and ready for action with the heater cranked up, so you can actually warm up a bit to stop shaking, making winter flying quite enjoyable. For those of you who stay in the Northern climates and would rather wait until a warm up to fly again, winter storage for your aircraft is probably inevitable.

You should consider taking extra time to prepare your aircraft for that first spring flight. Aircraft have a tendency to deteriorate in different ways when they are put into storage, than they do being used on a regular basis.

A little spring weather will no doubt bring on the birds. The first thing birds do is build a nest. After you have owned an aircraft for awhile, you will probably become familiar with all the places birds normally try to build in. So, the first step to springtime preflight might be to look for birds' nests. This inspection will probably involve removing the cowling and various areas to inspect for nests.

It is also important to have the oil changed in the spring. During the winter, moisture is absorbed by the oil and combined with moisture that formed on engine parts, allowing rust to form and cold corrosion to set in. This oil/rust mixture is abrasive and not good for engines. Next year, if you don't expect to fly more than one or two short flights during the winter, it would be beneficial to use an approved preservative, such as Aeroshell fluid 2F, which is considered a "flyaway" product. This provides added protection during extended periods of storage, without putting a pure preservative in the engine. There are some necessary steps if you do this, so seek your local mechanic. Once spring hits and you return to normal flying, you will drop the oil and switch back to normal oil.

During your spring preflight, look for signs of corrosion. Hopefully, you were able to hangar the aircraft during the winter. However, corrosion can occur anywhere. It is important to check battery areas for corrosion if not removed for storage. Any that is observed should be removed as soon as possible. While you're making this inspection, take a can of approved LPS lubricant and hit all the rod ends, hinges, and accessible moving parts. If you

didn't remove the battery for the winter storage period, remove it now and charge it. Check the specific gravity for the proper reading and adjust the water level, as necessary, with distilled water. If any corrosion gathered, you may need to clean the terminals before reinstalling it.

Next, move on to the wheels, tires, and brakes. Slide the wheels off and inspect the bearings for corrosion. A fresh bearing packing will ensure minimal wear to the bearings now that you are flying again. Inspect the tires for cracks from dry-rot. If it looks good, inflate to the proper pressure. The brake rotors are steel or stainless steel and corrode very quickly when sitting through winter. Most of the rust will be wiped off during the first few flights but, performance may not be as good as expected, and they may vibrate. Brake cylinders are the low point for any moisture in the brake system. Its good practice to pump some fresh hydraulic oil through the brakes and refill the master cylinder.

The fuel system should be an area of major inspection following extended storage periods. Follow manufacturer's instructions regarding the proper procedure for sumping your aircraft's fuel tanks. Hopefully, you stored your aircraft with full tanks during the winter to reduce the accumulation of moisture. Nevertheless, some still may be found. Don't forget to check your fuel filter and inlet screens for contamination.

Some of us will utilize a winterization kit for increasing engine operating or oil temperatures during flight. Be careful running these. You may want to consult your mechanic due to the nature of cooling problems these kits create. If you installed it for winter ops, don't forget to remove it now, or you may be surprised when your temps redline.

Finally, give the aircraft a good wash and clean the windows. The best thing for Plexiglas when it becomes very dirty is good old soap and water. Then follow through with an approved Plexiglas cleaner. This is one of the biggest problems I see. It seems as if nobody wants to wash their airplane. It is especially important to clean your airplane on a regular basis, as corrosion can form from winter flying. Just think of all the vehicles dragging salt, debris, and contaminants onto the ramp, then you taxi through it and never clean it off. Remember, our aircraft are mostly aluminum! If you don't want to, or have the time, I suggest you have your mechanic clean it. Following a good bath, take some time to inspect the pitot and static ports for bug nests. Another tube that mud daubers love to build nests in is the engine breather.

After a good preflight exterior inspection and washing, run the engine up. Do a normal preflight run-up in accordance with the manufacturer's checklist. In the cockpit, be sure to check the radios by communicating with a local tower or Unicom. Perform all of the standard preflight movements. Let the oil get good and warm. Shut down the engine and remove the cowl. Inspect for any oil leaks or fuel leaks. During the winter, O-rings may have dried out, and a leak could develop.

For those that are agricultural aviators, pay special attention to all of these details, as well as all of the spray system components. You may wish to replace all rubber connections due to deterioration from pesticides and fertilizers used. It is money well spent, because you do not want to pay for damages incurred from a ruptured chemical line. Be sure to go through all nozzles and check for seals and wear, and replace as necessary. Also make sure all of your GPS equipment is up to date with the latest updates and servicing.



If you had not had the chance to fly regularly during the off season or winter months, you may want to start flying earlier than your first job of the year. You would be surprised at how your piloting skills may have deteriorated over your winter break. Be sure to take time and start flying and refreshing yourself with all of your approved flight manuals, you may have forgotten more than you thought! And, take the time to go through your pilot logbook and currency requirements, as well as getting your flight medical up to date.

Wintertime can offer some excellent flying weather. However, if you're storing your aircraft for winter, then don't forget to do a thorough preflight inspection. Review the logbooks carefully for any maintenance that might be due. Spending a little extra time preparing your aircraft and your skills for the flying season can pay off with reliable safe flying.

Paul and I have been working in the shop on a few projects this winter, with one in particular that we hope to have flying soon... our original Red Baron Super Stearman! We are excited to add the Stearman to our line-up of air-show acts, keeping the old bi-planes of the barnstorming era alive! We look forward to showcasing it to the general public with this summer's air-shows and fly-ins.

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NDPAMA Notes

By Mike DeVries, NDPAMA

NDPAMA

First of all, I would like to thank everyone that made the trip to Grand Forks. It was a great symposium! I heard only good things. A round of applause to the Planning Committee chaired by Mark Scheele for all of the work they did to ensure everyone had an enjoyable experience. Rick Audette did an excellent job as the lead for the site committee. Ice Breaker, Airport tours, exhibit hall, food, and accommodations were great, thanks to all who worked very hard behind the scenes to bring it all together.

This article is reprinted with permission from the author. I felt that after reading the article in AviationPros.com it is very appropriate for this issue of the *Aviation Quarterly*, it applies not only to mechanics, all of us need to realize that sleep/rest deprivation can effect each one of us in one way or another. As we are approaching the end to a very long winter, flying activity will be increasing. We need to understand the consequences of sleep/rest deprivation and give our bodies' adequate time to bring our awareness back to safe levels. Remember this as the crop dusting season begins and the days get long, or after a long day in the office we decide it might be a good idea to pull the airplane out and fly somewhere for dinner, as we get tired our decision making skills, vision acuity, and mental alertness diminish.

Studies reveal data that sleep deprivation is a cultural norm in the aviation maintenance workplace, although mechanics as a group are not generally cognizant of the fact that they do not get enough rest.

Maintenance and Fatigue: A Way of Life

Reprinted with permission from aviationpros.com

We in maintenance would be wise not to take fatigue in our workplace too lightly. Can you imagine calling your supervisor and saying, "I won't be coming to work today, I am too tired?" Don't be surprised if you hear, "Right, and don't you be surprised if your paycheck looks a little tired."

The list of human factors that can affect aviation maintenance is broad, and is certainly not limited to fatigue. It encompasses a wide range of challenges that influence people very differently; maintenance professionals do not all share equal capabilities, strengths, weaknesses, or limitations. Unfortunately, in the sequence of events leading up to an airplane taking off for flight, aviation maintenance is one of the first places where the human errors can begin.

Aviation maintenance technicians often work long hours under pressure, including working through the night. This often results in not just extreme fatigue but errors, some of which may potentially be life threatening to pilots and passengers as well as to the AMT.

It is no secret that fatigue can come in different forms: physical, mental, and emotional. Physical fatigue can bring about muscle soreness, oxygen debt, or extreme tiredness caused by sleep deprivation, illness, or poor nutrition. Emotional fatigue resulting from performing undesirable tasks, sometimes under challenging conditions such as lack of proper tools, inadequate lighting, and meeting completion deadlines in terms of time, may affect the degree of high levels of focus and concentration associated with complex tasks and create mental fatigue. The mental fatigue combined with the physical or emotional, leads to increased errors and risks in safety sensitive arenas.

Fatigue-related accidents

There are countless documented errors and accidents attributed to tiredness and fatigue in the maintenance workplace. Studies have shown that fatigue can have consequential effects on a person's cognitive ability. Cognition refers to mental processes such as awareness, perception, reasoning, and judgment. Fatigue has drawn parallels to the effects of alcohol. In 2000, Williamson, Feyer, Friswell, and Finlay-Brown conducted a study on driver fatigue and found that after 17-19 hours without sleep, performance on some tests was equivalent or worse than that at 0.05 percent blood alcohol content. Response speeds were up to 50 percent slower for some tests and accuracy measures were significantly poorer at this level of alcohol. After longer periods without sleep, performance reached levels equivalent to the maximum alcohol dose given to participants

(0.1 percent blood alcohol content). The findings reinforced that sleep deprivation is likely to compromise decision-making ability and accuracy needed for safety on the road and in other industrial settings. (Abstract, Physical, Emotional and Mental Fatigue in the Aviation Environment, www.ukessays.com.)

Further FAA studies and self-reporting by AMTs indicate the average sleep is routinely five to six hours per night, two to three hours short of the required eight hours. Additional studies reveal that sleep deprivation is a cultural norm in the aviation maintenance workplace, although mechanics as a group aren't cognizant that they don't get enough rest.

How to enhance safety?

Education and training alone are most likely not enough to deter mechanics from working while fatigued when many organizations push 14-16 hour days. A combination of pressures including customer satisfaction, management pressure, time pressures, along with interruption of revenue associated with the loss of use of an aircraft, seem to win out and over-ride common sense as well as documented safety policy and procedures.

So how do you cope with this problem but also further enhance safety?

- Be aware of and eliminate foods and snacks that provide quick energy. Eat a balanced diet.
- Avoid caffeine before bed and try not to go to bed too hungry or too full, as this interrupts and prevents deep solid rest.
- Exercise regularly, but not before bedtime as it increases energy levels.
- Coordinate your rest environment at home with family members to allow undisturbed sleep.

Healthy lifestyles do indeed make a positive difference but may not be enough. The cultural norm in the maintenance world, as well as aviation in general, is that no workday is too long. We intellectually realize that a lack of required rest periods is detrimental to safety, but as employers are we willing to consider other factors like staffing levels, the availability of break periods, promises to customers, and the value of a dollar to increase safety margins in maintenance?

Effective fatigue risk management requires a partnership between the employer and the employee. Although unrealistic to aim for "zero fatigue" in all cases, an appropriate objective for fatigue risk management is to ensure that risks are as low as reasonably practical (Stewart & Holmes, 2008).

Opportunities exist in the maintenance environment to modify methods of task performance. Secondary inspections or operational and functional checks could provide the opportunity to "catch" and correct errors before they become a potential incident or accident. Schedule the most safety-critical tasks, or those most susceptible to fatigue, at times when fatigue will have the least impact.

It would be foolish to think we can avoid the reduced mental functioning brought about by fatigue, but by bringing awareness to it we can at least mitigate it. Senior management should establish a clear policy on fatigue, which includes how issues will be dealt with. Middle management should implement those policies, day to day. Ultimately, the quality of work rests with the individual maintenance technician. It is their responsibility and obligation to

gain an understanding of fatigue and commit to employ any and all remedies to assure they remain well rested and able to perform tasks in a safe and effective manner.

About the author: DeborahAnn Cavalcante earned her Masters in Aeronautical Science, with a specialization in Safety Management from Embry Riddle Aeronautical University in Daytona, FL, and her Bachelor of Science from VA Tech in Business and Risk Management. DeborahAnn Cavalcante leads Diversified Aviation Consulting (DAC) and along with her associates has firsthand experience in air carrier operations, private charter aircraft, general aviation operations, military/civilian interface, FBO management, maintenance repair station training, safety training, human factors training, and customer service training. For more information on DAC visit www.dac.aero. (Reprinted with permission from aviationpros.com)

Eternal FLIGHT



The National Association of State Aviation Officials (NASAO) announced that **Henry M. Ogrodzinski**, President and CEO for the last 18 years died January 22. Henry's two year battle with cancer came to an end at his home on Capitol Hill at the age of 65.

NASAO's Chairman Christopher Willenborg (Massachusetts) told his membership this morning, "It is with deep sadness to inform you that our dear friend Henry passed away last night. Over the past 18 years, Henry led our organization with tremendous passion towards aviation and sincere concern for all NASAO Members, Friends, and aviation industry stakeholders. His strong leadership qualities, extensive experience in the aviation industry, and ability to effectively communicate on Capitol Hill made him one of the most recognized and respected spokespersons regarding aviation related matters nationally."



Phil Petrik died on February 12, 2014, at his home in Sidney, Montana. Phil purchased Burns Flying service in 1971 and renamed it Richland Aviation. He started his aviation career doing aerobatics at airshows and providing flight instruction. Soon, he

added Ag spraying, and followed with air charter. His aviation career consisted of building airplanes, doing airshow aerobatics, crop spraying, flying charters, instructing all levels of flight, aircraft restoration, as well as holding his aircraft mechanics license. He was also an FAA check airman for both land and seaplanes from private through airline transport. One of his favorite accomplishments was to earn his formation flying card in the T-28. He said he'd never worked so hard at flying and been yelled at so much! He was a pioneer in several areas of aviation and is respected by many all across the nation. Over his career he logged well over 30,000 hours and was most at home in the cockpit.

Lois L. Watts, 93, Bismarck, died March 11, 2014, at Missouri Slope Lutheran Care Center, Bismarck. Lois married Robert (Bob) K. Watts July

4, 1943. Bob served in the Army Air Corp as a flight instructor and flew the "Hump" from Burma to China during World War II. During the war, Lois visited Bob in San Antonio, Texas, Long Beach, Calif., and Reno, Nev. In 1976, Lois resigned from teaching and became the office manager for their business, Capitol Aviation. Capital Aviation was the local Cessna dealer, specializing in charter flights around this region, fishing trips to Canada and Alaska and business and aircraft radio installation and repair. Bob and Lois sold their business in 2001. They donated their original hangar to the Buckstop Junction historical site.



Budd W. Henderscheid, 89, Fort Clark, passed away peacefully on March 13, 2014, while visiting his son's family in Patuxent River, Md. Budd enlisted in the U.S. Marine Corps and served from March 1943 to October 1945 in the south Pacific

with MAG 45 on Peleliu and New Caledonia. Returning home, he farmed for many years south of Center and near Fort Clark. He received his commercial pilot license and was an aerial applicator/crop duster for 22 years.



Jim "Fang" Maroney, 59, Milwaukee, Wisconsin, left this earth on March 23, 2014 in Madisonville, Tennessee on route to an event in New Smyrna, Florida. Jim was born November 24,1954, a native of Casselton, North Dakota to Maury and Myrtle Maroney. As a toddler, growing up in Casselton, Jim

was seen always with an airplane in his hands and grew proficient at flying RC aircraft. Jim began his flying career at the age of four, taking his first flight in a modified J3 Cub. Jim's entire life was devoted to aviation with a career spanning personal, military and commercial flight.

Roger Kinnischtzke, 76, Glen Ullin, died April 27, 2014, at his home near Glen Ullin. Roger served on the airport authority board many years and was an advocate for Glen Ullin Airport.

Art Contest Winners

2ND PLACE 3RD PLACE 1ST PLACE



Maurice Gayton - Bismarck



Carlee Nordland - Bismarck



Malachi Stein - Bismarck



Rebecca Kaese - Fargo



Arthur Kaese - Fargo

Art contest theme: Flying Saves Lives

> Thank you to all who entered!

Fargo Air Museum announces new hires



Scott C. Fletcher

The Fargo Air Museum announces the hiring of Scott C. Fletcher as Director of Administration, Fundraising and Donor Relations. He will oversee the strategic activities of the museum, including operations, strategic planning, fundraising and corporate sponsorship. Previously, Fletcher was the Chief Operating Officer for Aviation at Northland Community and Technical College Aviation programs in Thief River Falls, Minnesota. His

career included various leadership positions with US Airways, Mesa and ProAir Airlines as the Director of Maintenance. He also was a consultant in helping develop the State of Minnesota's Unmanned Aerial System airspace intergration team. Fletcher served in the US Air Force, including a tour in Desert Storm. He is involved in various professional and civic organizations.



Courtney Ficek

The Fargo Air Museum also announces the promotion of Courtney Ficek as the Assistant Director of Communications. Ficek is a graduate of Minnesota State

University Moorhead with a degree in Mass Communications and interned as a graphic designer at the Air Museum.

Welcome Scott and Courtney!









Garmin's SVT™ 3-D synthetic vision renders terrain-alerting data into a realistic virtual landscape, showing obstacles, traffic, airports and more. A scaled version of SVT is standard on the



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GARMIÑ. **G600 / G500**

Retrofit glass is now within your grasp.

If you love the idea of flying a glass cockpit – but hate to think of parting with your current aircraft – this is clearly the retrofit option you've been waiting for: The Garmin G600. Or its lower-cost lookalike, the G500.

Leveraging our industry-leading G1000™ integrated cockpit technology, these twin-screen Garmin units combine primary flight (PFD) and multifunction (MFD) display capabilities in one easy-to-install, 10-inch wide bezel – providing a perfect-fit replacement for the standard gyro cluster in your panel. The PFD's attitude display is over 50% larger than those of traditional 3-inch flight instruments. And for easier scanning, both the PFD and MFD are paired directly in the pilot's field of view.

Best of all, a scaled version of Garmin's SVT™ Synthetic Vision Technology now comes standard on the G600 – or as an option on the G500. With SVT, pilots are offered a realistic 3-D virtual reality display of terrain, obstacles, runways and traffic information, all shown in context on the PFD. It's like having a clear-day "out-the-window" view in any weather or flight situation. And it promises to bring a whole new level of situational awareness to your Garmin retrofit glass cockpit.

HOW THE UNITS COMPARE:	G500	G600
Approved for Class 1 Aircraft (typically piston singles under 6,000 lbs.)	Yes	Yes
Approved for Class 2 Aircraft (typically piston twins and turbine aircraft under 6000 lbs.)	Yes	Yes
Approved for Class 4 Aircraft (typically piston or turbine aircraft between 6000 lbs. and 12,500 lbs.)	No	Yes
 Software design assurance level Garmin SVT[™] Synthetic Vision Technology 	Level C Optional	Level B Standard
 GAD 43 replaces select A/P gyro attitude with AHRS reference and provides bootstrap heading, yaw information, and baro corrections 	Optional	Standard
 GWX 68 Radar interface (radar LRU sold separately) Internal TAWS-B terrain alerting 	Optional No	Standard Optional

North Dakota Aviation Quarterly

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CALENDAR of EVENTS

2014

Saturday, June 7, 2014

Milnor June Jamboree Fly-In / Drive-In Pancake Breakfast 7 a.m. – 11 a.m. (Rain or Shine) Contact: Mark Gainor 701-680-1001

Saturday, June 7, 2014

Devils Lake Regional Airport 3rd Annual Fly in Breakfast 8 a.m. – 11 a.m. Contact: Tanner Sotvik 701-662-4416

Sunday, June 8, 2014

Mandan "Planes and Pancakes" Open House & Airport Ribbon Cutting In conjunction with Buggies & Blues Car Show

8 a.m. – 11:30 a.m. Contact: Jim Lawler 701-391-1394

Sunday, June 15, 2014

Garrison Municipal Airport Fly In Breakfast – Father's Day Contact: Jim Wilcox 701-897-1571

June 16, 2014

Race Starts www.airraceclassic.org

Saturday, June 21, 2014

Kindred/Davenport (K74) Fly-In Breakfast Airport Name Rededication 7 a.m. – 10 a.m. (Rain date: June 22nd) Contact: Ron Lundquist 701-388-2126

Saturday, June 21, 2014

Mercer County Regional Airport, Hazen Fly-In Breakfast 7 a.m. – 11 a.m.

Contact: Gary Benton 701-880-0512

Tuesday, June 24, 2014

Fargo Fly-In / Fargo Jet Center 6:30 PM – Appareo Systems Presentation ADS-B with Ipad and Stratus Contact: Darren Hall at 701-235-3600

Sunday, June 29, 2014

Civil Air Patrol hosts, Movie on the Ramp Bismarck Aero Center Contact: Shae Helling 701-770-4725

Sunday, July 13, 2014

Maddock Municipal Airport – new runway! JT Rice – ND Chapter of Pilots for Christ 2nd Annual Celebration and Golf Ball Drop 9 a.m./coffee, 11 a.m./service, Noon/lunch

Helicopter and Airplane rides to follow. Coffee, lunch and rides complimentary. Contact: Pat Tracy 701-739-9024

Sunday, July 27, 2014

Civil Air Patrol hosts Movie on the ramp – "Hot Shots" Bismarck Aero Center Contact: Shae Helling 701-770-4725

July 28 - August 3, 2014

EAA AirVenture, Oshkosh, WI

Saturday, August 16, 2014

Kulm Municipal Airport, Fly-In Breakfast in conjunction with Windfest 7 a.m. – 9:30 a.m. Airplane rides available Contact: Lorence Holmgren 701-830-2205

Sunday, August 24, 2014

Milnor Municipal Airport Fly-in Barbecue Supper 4 p.m. – Dark (Rain or Shine) Contact: Mark Gainor 701-680-1001

Saturday, September 6, 2014

Barnes County Airport, Valley City Wings and Wheels Air Show (Rain Day: Sept 7th) Contacts: Shawn Anderson 701-840-2029 Dennis Helland 701-840-0105

Saturday, September 13, 2014

Hangar Dance – benefits Civil Air Patrol Bismarck Aero Center 8 p.m. – 11 p.m. Contact: Shae Helling 701-770-4725

Saturday, September 13, 2014

Lisbon Municipal Airport Fly-In Breakfast 8:00 a.m. – Noon Contact: Larry Ketterling 701-680-2115

Sunday, September 14, 2014

4th Annual Fly-In / Drive-In Bismarck Aero Center Pancake Breakfast 7:30 a.m. – 1 p.m. Contact: Shae Helling 701-770-4725

Saturday, September 20, 2014 Beulah Municipal Airport, Beulah

Fly-In Breakfast 8 a.m. – 11 a.m. (Free Breakfast) Contact: Kevin Lee 701-870-2311

Sunday, September 21, 2014

Enderlin Airport, Sun-Fest Fly-In 8:00 a.m. – Noon Contact: Bobby Geske 701-799-6082

September 22-23, 2014

2014 AAND/SDAMA Fall Airports Seminar Radisson Hotel, Bismarck Registration will take place at a later date Contact: Tim Thorsen 701-355-1808

Saturday, October 25, 2014

Fargo Air Museum Raffle Drawing Contact: Helen O'Connor 701-293-8043



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