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The personal minimums contract

Just about every pilot I've ever met has a set of personal minimums they use to help make the go/no-go/go-back decision. But almost none of them write those minimums down, and that can be a problem.

It may not sound like a big deal, but the very act of writing down your personal minimums can force you to think more critically about them—"I won't fly VFR if visibility isn't good" is very different than "I won't fly VFR if visibility is less than 5 miles."

And there's something about writing it down that takes the emotion out of decision making. When you're looking at a piece of paper carrying your signature that says "I won't fly if the ceiling is below 3,500 feet," then you're less likely to have the "yeah, but I really want to get there and maybe it will be OK" conversation with yourself when the ceiling is only at 3,100.

All of this may seem obvious, and I suppose it is, but we know that accidents can happen because pilots who are anxious to get somewhere push themselves or their aircraft beyond their limits. Determining those limits when you're not worried about missing the family reunion leads to better, more fact-based decision making.

To help you think about and set your own personal minimums, the AOPA Air Safety Institute has created two personal minimums contracts—one for VFR and one for IFR flights. You can find them on the website—just search for "personal minimums contract." The contracts take into consideration things like recent experience, aircraft equipment, terrain, and weather.

If you've already done some serious thinking about your minimums, filling them out will only take a few minutes.

Carry your contracts with you and update them periodically to reflect your comfort level, experience, and equipment. If you're a relatively new pilot, they can make a great record of how your skills and comfort grow over time. Even if you're a high-time pilot a contract can make the difference between good decisions and those you'll regret.



Mark R. Baker
President & CEO, AOPA



ON THE COVER: Doug Ward and Judie Ohm, owners of Log Cabin Airport (WS69), Mondovi, Wis., with their 1947 Piper J-3 Cub. Log Cabin Airport will hold its 30th Annual Fly-In, Sunday, September 4, 2016. Read all about it in "Dialogue" on page 5.

Photographer Unknown



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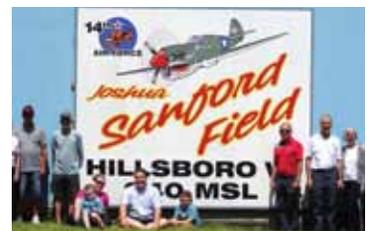
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Memories Made... Memories To Come! The Log Cabin Airport Fly-In, Mondovi, Wis.

by Dave Weiman

So often, we publish articles after an event, reporting on what happened and who participated. That's all well and good, provides interesting stories, ample recognition for organizers and participants, and hopefully an opportunity to plug the dates of the event for the following year. But at least for one event, the **Log Cabin Airport Fly-In** in Mondovi, Wis., we are giving you advanced notice so you can attend and be a part of history in the making!

Doug Ward and Judie Ohm – owners of the Log Cabin Airport (WS69) – are pictured on the cover of this issue of *Midwest Flyer Magazine* with their 1947 Piper J-3 Cub, equipped with an 85 hp Continental engine. In contrast, elsewhere in this issue, is a story about Piper's newest aircraft built 69 years later, the M600, equipped with a 600 shp Pratt & Whitney PT6A-42A turbo prop engine (see article on page 47.)

On Sunday, September 4, 2016, Ward and Ohm will celebrate the 30th anniversary of the fly-in beginning at 9:30



am. Lunch will be served at 12:00 noon.

Think for a moment as to what you were doing 30 years ago...where you were living and working...the people in your life...and the airplane you were flying. Rest assured, Doug Ward and Judie Ohm will recall many memories on September 4, but they will also be creating new ones with those of us who fly in.

What started as a cow pasture in the 1960s when Ward purchased the land for the airport is today a well-groomed 2500 ft. airstrip (Rwy 18/36). Ward built his first log cabin home there in 1980. Ohm's log home was built in 2014.

The airport offers a small-town atmosphere where everyone knows everyone else, and many stories are exchanged.

Ohm is the author of the book "Turret Tales," which describes Ward's experience as a ball turret gunner on a B-17 Flying Fortress during World War II. The book can be purchased from Amazon.com, at the EAA AirVenture Museum bookstore in Oshkosh, Wis., or directly from Ohm at the **Log Cabin Airport Fly-In**.

For additional information about the book or fly-in, email logcabinairport@tcc.coop or call 715-287-3377. In the meantime, mark your calendar for Sunday, September 4, 2016, for the Log Cabin Airport Fly-In, Mondovi, Wis. □

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| January 1 | February - March |
| March 1 | April - May |
| May 1 | June - July |
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Ask Pete!

by Pete Schoeninger



Pete Schoeninger

Q: My prop (on my Cessna 172L) is marked MTM7653. What do those numbers mean? Could I put a seaplane prop on it for better takeoff performance?

A: The first two numbers are diameter in inches. The second two numbers show how far forward in inches the prop would travel in one revolution with no slippage. If you look at type certificate 3A12 (peruse the FAA's website), and go 172L airplanes, you will see that the seaplane prop has the numbers 80-42. Note the seaplane prop, with bigger diameter, but much flatter pitch, will also turn up about 125 more RPMs, providing more low speed thrust – just what you need to get a seaplane off the water! Note the language SEAPLANE ONLY, so you can't use that big seaplane prop on your land plane. But you could have your mechanic send your prop out to get the pitch flattened a little, for a bit more zip on takeoff.

Q: I've had the itch for a while to sell my older Bonanza and move up to a newer model. Finally, I have the scratch to do it, and I have found a nice one through a dealer. I realize

that the dealer will only at best give me wholesale value on my trade in, so maybe I will have a \$10,000 loss doing it this way vs. selling it out right. But on the flipside, I don't have the hassle of selling it myself.

A: The bite might not be that bad if you consider sales tax issues. Sales tax laws and rates vary by state, but in some situations, you only pay sales tax on the "boot" or cash price on top of your trade in. So if you're paying \$200,000 for the newer airplane and your sales rate is 6% in your area, you will have a sale tax obligation of \$12,000 on an outright purchase. If the dealer allows you \$90,000 on your older airplane, you will pay \$110,000 to boot, thus you will have a tax obligation of 6% on the \$110,000 difference or \$6,600. So maybe you lose \$10,000 by trading in your old airplane vs. selling it outright yourself, but you then save \$5,400 in taxes by trading. **BEFORE DOING ANYTHING LIKE THIS, CHECK TAX LAWS IN YOUR STATE!**

Q: I've had my 1976 Cessna 172M for sale for a few months for \$59,000. I made up a sheet and put it on the sale board at our local airport. I have provided rides to several local prospects, but so far, no serious interest. What am I doing wrong? I thought it would be a popular airplane on the market.



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A: Two big mistakes many private sellers make: 1) You've got to advertise in at least three airplane sale sites that have internet presence (including a classified ad in *Midwest Flyer Magazine*). Your chances of selling locally are remote. The average distance of a new buyer from seller is often 500 miles or more. 2) Unless your airplane is way above average, you're priced out of the market. Be realistic. Remember, it cost you hundreds of dollars a month (reserve for annual, insurance and hangar rent) to own the airplane, so holding on to it for a long time to get a few more dollars is often a losing proposition. People who ask for a ride, want a free ride, and are not interested in buying your plane. And, most people who say, "I'm gonna think about it," either don't have the funds to buy your airplane, or don't have the guts to tell you that your airplane is not quite what they are looking for.

Q: The fabric on my older Maule is getting pretty rough. Can you recommend a fabric shop?

A: You didn't say where in the country you are, so I can't help with a specific name. But ask your local mechanic, or inquire at your nearest FAA FSDO and ask for a maintenance inspector. They may know good fabric shops in your area, or call the factory. If you're near the Maule facility, they, and other fabric airplane manufacturers, sometimes work on older airplanes as well as build new ones.

Q: What does an aircraft title company do, and should I consider using one?

A: If you are making a long distance sale, it is usually worth the expense to use the services of a title company for convenience and peace of mind. Very briefly, title companies take the worry for the buyer in sending a deposit to an unknown seller. The buyer will send the deposit to the seller, and the balance of the purchase price to the title company, not the seller. The seller sends a signed bill of sale to the title company, not the buyer. When everybody says OK, the title company will simultaneously file the bill of sale to change ownership with the feds, and send all funds to the seller via wire transfer. For the package deal including title search, escrow, etc., expect to pay about \$600 - \$700 or so for a \$100,000 transfer, a fee often split between buyer and seller. I have had good luck with Debbie King at King Aircraft Title Company: 405-376-5055.

Q: Last fall, I over-flew my home airport at night, and noted some wisps of fog through the runway lights. But on short final, I suddenly found myself in the fog and could no longer see runway lights...all this at about 20 feet above the runway. I quickly did a go-around, but it scared the heck out of me. What happened?

A: When you looked straight down at the runway lights, you were looking through perhaps 10-20 feet of fog. But when you were close to the ground

about ready to flare for landing, you were looking ahead through several hundred feet of fog. Fog is very possible in the fall, especially on cool, clear nights when temps drop quickly after sunset. Have a plan to get to another airport, preferably at a higher elevation, if needed.

Q: I just lost a bet. A fellow airport bum told me he could tell without looking in the cabin if an old Mooney departing our airport had a manual or electric gear retraction mechanism. And it turned out he was right! Tell me his secret if you know it, please.

A: Some old Mooneys had a large manual gear lever. It was a bar between the front seats. When the bar was flush on the floor, the gear was up, and when the bar was moved by hand to the vertical position, the gear was down. The bar had a mechanical lock to hold it in either the up or down position. On takeoff, when a pilot wants to retract the gear, you grasp the gear handle, and lower the handle from vertical, toward the floor. Very few pilots are able to complete this 90 degree change of position without changing their hand position from palm up to begin the retraction process to palm down to finish the movement to horizontal on the floor. At the point where most pilots have to change position of their hand, the gear is about halfway up. So if you watch an old Mooney take off, you may see the gear retract quickly to about the halfway point, then a slight hesitation during change of hand position on the bar, then it retracts fully and quickly.

EDITOR'S NOTE: Pete Schoeninger is an aviation consultant and aircraft appraiser who lives in Wisconsin. He is an experienced fixed base operator, aircraft salesman and airport manager. Email your questions about all things aviation to: Pete.Harriet@gmail.com. For assistance with aircraft appraisals or fixed base operator and airport management consultation, call **262-533-3056**. Any answers provided in this column are the opinion of the author and not necessarily this publication, or its editor, publisher, owners and affiliates. □

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  MFM56

George The Autopilot, ADS-B FAA Rebate Program & Instrument Training

by Michael J. "Mick" Kaufman



Michael Kaufman

In this issue of *Midwest Flyer Magazine*, we will solve the mystery of "George," the autopilot, with thanks from several of our readers. We will

explore some interesting comments from an anonymous caller and his take on ADS-B and begin a multi-issue session on getting your instrument rating and staying current.

I received a phone call and email from several of our readers on how the autopilot got to be known as "George." Thanks to Wayne and Donna Pingel of Adams, Wis., and David Johnson of Eden Prairie, Minn., for providing me with this information (see below).*

Another phone call from an anonymous caller provided some interesting comments as well, and I want to share some of his thoughts. He seemed quite well versed on the ADS-B subject, and my guess was that he worked in the avionics industry, for the FAA or as a contractor for them. His take on ADS-B is as follows:

ADS-B was the take-off on an Alaskan project known as "CAPSTONE," which was tested and then implemented to provide weather and traffic in Alaska in a cost-efficient manner. The airline industry saw great potential, as did the FAA, giving controllers a method of seeing the position of aircraft on the ground during poor visibility conditions with great accuracy. The FAA also saw ADS-B as much more accurate and a cost-effective way of controlling aircraft in flight, as compared to radar. I asked the caller how well the program was going so far, and he admitted, not so well.

Some of the FAA hopefuls have fallen short, and there is already an ADS-B Phase II in progress that will

not be compatible with the current ADS-B equipment. It is still under development and will be using satellites to relay aircraft positions to controllers, which is currently done by ground-based equipment under the current ADS-B system.

Due to shadowed signals from the spacing of the receiving antennas, controllers are not able to get the accurate pictures of ground traffic and flight traffic as they had hoped.

I asked my caller about the recently announced rebate program that would give pilots \$500.00 toward the purchase of a new ADS-B out unit. I asked why the FAA would give this money away on an obsolete piece of equipment? The answer was "out of embarrassment." You see pilots are not buying these units as was hoped, and the equipment manufacturers have spent a lot of money on the research and development and have lots of units

sitting on the shelf, hoping to recover their expenses. This makes sense, as those who already purchased a unit are not eligible to receive this rebate, so it is clear that the program is designed to help the equipment manufacturer, not the pilot.**

If you are one of the 18,000 aircraft owners who has bought an ADS-B unit, you might think twice before spending thousands of dollars again to equip your aircraft, only to find out that the FAA is rewarding latecomers. There are still 142,000 aircraft that have yet to be equipped and the clock is ticking.

Technology, too, is changing at a rapid rate, and what might be state-of-the-art today, could be obsolete in a year or two.

For instance, I have in my office a \$5,000.00 computer that I would gladly sell for \$50.00, or how about the \$5,000.00 Loran unit still in my aircraft? Any takers? \$50.00 and that,

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I guess we have to accept that technology will continue to change, but one would hope there could be more cost-effective solutions of complying with Federal Aviation Administration mandates, so that all publicly-funded airports remain accessible to all aircraft.

I will continue to be vigilant on this subject and report more in the next issue.

Advanced Instrument Flight Training

For the past 25 years, I have dedicated my flight instruction to giving advanced flight training with most of these efforts spent on “instrument training.” I would like to share some of the knowledge and experience I have gained over the years with our readers in this and the next several issues of *Midwest Flyer Magazine*. Most of these thoughts and comments are directed specifically to the new instrument pilot and those thinking about getting an instrument rating.

I can make a true statement when I say that there are a lot of pilots who get their instrument ratings and never use them, or they don't stay current, or should I say “proficient.”

Many new instrument pilots, having passed the checkride, have never flown in the clouds or if they have, it was just popping in and out of a thin layer of scattered clouds.

There is nothing in the Federal Aviation Regulations that states you

must have actual experience to get the rating. And there are instrument flight instructors teaching who have never had true instrument experiences themselves. I am not critical of instructors who don't give their students some hard IMC (Instrument Meteorological Conditions) experience, as this is the result of how their training schedules play out.

I have found that trying to give a new instrument trainee any actual experience during the early part of their training is counter-productive, but once they have mastered the basic instrument approach, we then go for it.

On one occasion during a required instrument cross-country, we shot approaches in IMC so low we never broke out, nor saw the ground, and ended up going missed. What a great experience for the student, and he did not have an autopilot in his airplane.

If you happen to be one of those pilots who just got the rating and have not flown hard IMC, your instructor probably will tell you to file an IFR flight plan and use the system in VFR conditions first to become familiar with Air Traffic Control (ATC) procedures. After you have this comfort level, start with higher minimums first and gradually wean yourself into the system. This does not always work, as you may need to go somewhere, and it is one of those low IMC days. You may not have the confidence level to depart alone or you get discouraged, wondering why you spent all of that money on the rating and are not using it. If you

should decide to launch into that low ceiling and poor visibility on your own the first time by yourself, you may be in for a big surprise as it is nothing like flying with the hood on. Until you build some experience, you could be overwhelmed and have a disastrous outcome.

My advice is not to cancel the flight, but rather find an EXPERIENCED instrument instructor to go with you on those first low IMC flights. Yes, it will cost some money, but for safety and the experience gained, it will be well worth it.

There are two ways to go about getting an instrument rating. The first way is to take one or two lessons a week, which drags out close to a year. The disadvantage of this method is that you need to repeat three-fourths of what you did previously, and it ends up costing more money and the number of hours prior to the checkride is greater than with an accelerated training program. The advantage to this method over the accelerated program is that the student retains the knowledge longer and better because of the repetition.

I prefer the accelerated training program, which can usually be done in 10 days if properly structured with a good training syllabus, and it is very cost and time efficient for the trainee. There are some disadvantages to the accelerated program, as well. It can be compared to drinking from a fire hose, as it requires 100% concentration and dedication by the trainee.

If you think you can work part-time or dedicate some time to your business while doing this type of course, “forget it.” The syllabus I use requires 4 hours of ground school, 4 hours of flying and 4 hours of homework and quizzes to do in the evening. Now, picture doing this for 10 days straight. If you are over 30 years of age, I require a break near the middle of our training for a minimum of two days and a maximum of two weeks.

Another disadvantage to the accelerated training is that if you do not use it immediately after getting your rating, you do not retain it as well as with an extended training program.



I spent eight years working for a company called "PIC," Professional Instrument Courses, that did these 10-day accelerated courses. I did one full instrument rating a month, and one or two finish-up courses for individuals, who had gotten tired of a program with one or two lessons per week. It was the traveling, spending 200 nights a year in motels, that took its toll, so I have had to slow down as well. I can attest to the importance of a well-structured syllabus and the success in doing an accelerated program.

In my next several columns, I will continue with the topic of instrument training for the new instrument pilot and those contemplating getting the rating, as well as information on avionics and the ADS-B program as new developments occur.

Stay safe and remember, it is much safer to fly IFR in a structured environment than "scud running" around all of those cell phone towers.

* George: The first man to fly in a

Sperry Autopilot aircraft, Navy Lt. Patrick N. L. Bellinger, would go on to pilot the Curtiss NC-1 for the world's first successful trans-Atlantic crossing in 1918. Over the years, Bellinger and many other pilots would take to calling the Sperry Autopilot system "George" — a colloquialism for the seemingly magical, invisible copilot that had joined them in the cockpit of their aircraft. To this day, the term "George" is used unofficially to represent the autopilot system.

The first "practical" autopilot was invented by George DeBeeson. (This seems to be the most likely reason for the informal name "George" for the autopilot system on aircraft.)

Another comment on that same page: The term "George," as a reference to autopilots, originated in the Royal Air Force during World War II. It is a reference to the aircraft's "owner" King George. Also, at the time, there was a popular radio show referenced in an earlier answer that may have reinforced the use of "George." I have spoken to a number of British WWII pilots. Everyone assumed it was a reference to King George. None of these pilots were aware of the name of the inventor of the earliest autopilot. They were, however, aware of the name Sperry.

And another: Perhaps from the Old Tyme Radio Show "Let George Do It!" wherein the hero hired himself out to do jobs too tough for his customers.

** ADS-B Rebate: Eligible equipment: Avionics that are certified to FAA Technical Standard Orders and meet the program rules (software upgrades of existing equipment are not eligible). Rebates are not available for aircraft already equipped with rule compliant ADS-B or for aircraft the FAA has previously paid or committed to pay for upgrade(s) to meet the ADS-B mandate.

EDITOR'S NOTE: Michael J. "Mick" Kaufman is a Certified Instrument Flight Instructor (CFII) and the program manager of flight operations with the "Bonanza/Baron Pilot Training" organization. Kaufman conducts pilot clinics and specialized instruction throughout the U.S. in a variety of aircraft, which are equipped with a variety of avionics, although he is based in Lone Rock (KLNR) and Eagle River (KEGV), Wisconsin. Kaufman was named "FAA's Safety Team Representative of the Year" for Wisconsin in 2008. Email questions to captmick@me.com or call 817-988-0174. □

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What Are You Allowed To Do Inside Your Aircraft Hangar At An AIP Airport?

by Gregory J. Reigel

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What can you do inside of your aircraft hangar? The lawyerly answer is “it depends.” More specifically, it may depend in large part upon whether your hangar is on an airport that receives funds from the FAA through the Airport Improvement Program (“AIP”). If your hangar is on an airport that does not receive AIP funds, then any restrictions or limitations on use of your hangar would likely be dictated within your lease with the airport owner or operator.



Greg Reigel

However, many airports receive AIP grant funds from the FAA for use in runway and taxiway construction/repair, as well as various other airport improvement projects. In exchange for its receipt of AIP grant funds, an airport sponsor agrees to certain grant assurances. These grant assurances are contractual obligations that require the airport sponsor or owner to operate the airport in a certain way.

One of these AIP grant assurances requires the airport sponsor to make the airport property available for aviation or aeronautical uses. Conversely, the airport sponsor also agrees that it will not allow airport property to be used for non-aeronautical uses unless it receives permission from the FAA.

One of the most common, and obvious, uses is aircraft hangar construction. But, once an aircraft storage hangar is built on an AIP airport, how can the hangar be used? If you were thinking “aircraft storage,” of course you are right. But typically an aircraft doesn’t completely fill all of the space within a hangar. So, what about storage of other items, such as tools, equipment, automobiles, snowmobiles, and having an office or personal living space.

In the past, the FAA has taken a very restrictive view regarding permitted hangar use. However, the FAA recently issued a notice of final policy that clarifies what you can and cannot do within an aircraft storage hangar located on an AIP airport.

According to the FAA, permitted aeronautical uses for hangars include:

1. Storage of active aircraft;
2. Final assembly of aircraft under construction;
3. Non-commercial construction of amateur-built or kit-built aircraft. In expanding its policy to include all amateur/kit-built construction, rather than just final assembly, the FAA recognized that “[i]t may be more difficult for those constructing amateur-built or kit-built aircraft to find

alternative space for construction or a means to ultimately transport completed large aircraft components to the airport for final assembly, and ultimately for access to taxiways for operation.’

4. Maintenance, repair, or refurbishment of aircraft, but not the indefinite storage of non-operational aircraft. The FAA does not establish an arbitrary time period beyond which an aircraft is no longer considered operational. Rather, the FAA leaves it to the airport sponsor to decide whether a particular aircraft is likely to become operational in a reasonable time; and

5. Storage of aircraft handling equipment (e.g. towbars, glider tow equipment, workbenches, and tools and materials used in the servicing, maintenance, repair or outfitting of aircraft).

Non-aeronautical use within a hangar that is used primarily for aeronautical purposes, may still be permitted provided that use does not interfere with the aeronautical use of the hangar. What does that mean? The FAA will consider certain uses to be interfering with the aeronautical use if they:

1. Impede the movement of the aircraft in and out of the hangar or impede access to aircraft or other aeronautical contents of the hangar;
2. Displace the aeronautical contents of the hangar. The hangar owner may park a vehicle inside the hangar while he or she is using the aircraft and the FAA will not consider that to be displacing the aircraft;
3. Impede access to aircraft or other aeronautical contents of the hangar; or
4. Are stored in violation of the airport sponsor’s rules and regulations, lease provisions, building codes or local ordinances.

But what about that “pilot lounge” or “man/woman cave” within the hangar? Is that a permitted use?

Unfortunately, the FAA’s policy does not provide a “bright line” answer. According to the policy, the FAA “differentiates between a typical pilot resting facility or aircrew quarters versus a hangar residence or hangar home. The former are designed to be used for overnight and/or resting periods for aircrew, and not as a permanent or even temporary residence.”

Although the FAA then goes on to state that a hangar may not be used as a residence, it does not explain what that means. As a result, in the absence of a clear definition, it is likely that this type of determination would be made on a case-by-case basis. So, while some form of pilot lounge or office is likely permitted, at what point that area within the hangar becomes an unpermitted, non-aeronautical use will likely be decided based upon the facts of each case.

Keep in mind that the FAA’s policy on aeronautical use of hangars applies regardless of whether you lease the hangar

from the airport sponsor or if you constructed the hangar at your own expense where you hold a ground lease with the airport sponsor for the hangar pad. Once the airport sponsor receives AIP grants and airport land designated for aeronautical use is made available for construction of hangars, the hangars built on the land are subject to the airport sponsor's obligation to use the land for aeronautical purposes.

But at least now we have a little more guidance with respect to use of an aircraft hangar at an AIP airport. Construction of an amateur-built or kit-built aircraft is

allowed. Residing in the hangar is not allowed. Other uses may be allowed if they do not interfere with the aeronautical use. And although some gray areas remain, the current policy does at least provide some additional clarification and guidance for aircraft hangar use.

EDITOR'S NOTE: Greg Reigel is an attorney with Shackelford, Melton, McKinley & Norton, LLP, and represents clients throughout the country in aviation and business law matters. For assistance, call 214-780-1482, email greigel@shackelfordlaw.net, or Twitter @ReigelLaw. □

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Keeping Ahead of the Proficiency Curve

by Harold Green

We pilots tend to like lots of communication and navigation equipment in our airplanes. The more the merrier. Redundancy has become a catch phrase and is considered good, and for good reason. Then there seems to be logic that says if two are better, three will be even better, yet, etc.

I once knew a fellow who had five (5) GPS units in his airplane; three installed and two hand held units just in case.

Dual VOR receivers have been considered the minimum for IFR flight for years. (The FAA just says you must have equipment appropriate to the navigation facilities to be used. They don't specify redundancy.) Now, with the advent of the glass cockpit with real time weather, coupled autopilots, traffic avoidance systems, engine monitoring, auto leaning, etc., we have another level of redundancy. As a further result we have a plethora of information at our fingertips. This requires more diligence on the part of the pilot to manage that information.

The principal focus of this discussion is the pilot flying IFR in a single-pilot environment. However, with less critical emphasis, it applies to the VFR pilot as well.

We have, for the most part, come to accept that the pilot must be in good physical and mental condition to fly safely. Further, the pilot must be current, whatever that means, in the airplane. These facts are not new, but their acceptance by pilots has been growing over the past few years due in large part to programs by the FAA, AOPA and others. This is a very good thing and has obviously contributed greatly to the safety of general aviation.

Given all of this, what is truly critical to safe flight?

There is one element, which by itself would cause the entire system to fail if it were to fail. That element is the pilot. Now, since the pilot meets all the criteria listed in the previous paragraph, what are the chances of failure? Probably very little in regard to the physical or psychological well being of the pilot. However, pilots, being the complex organisms they are, training and capability must be taken into account for if the pilot cannot use the equipment, it is a useless addition to the gross weight of the airplane.

There is a saying that the three most useless things in aviation are the runway behind you, altitude above you and the fuel in the truck. You could add to that list, "The equipment in the airplane you can't use."

Training can be broken down into two issues as well. There is training on the really cool new stuff, and then there



Harold Green

is training on the old stuff that no one loves any more.

The cool new stuff presents a well-known set of challenges. Typically, the pilot learns how to load a flight plan, perhaps just a "Direct To" destination, and an instrument procedure. Once this is learned, there is generally a reduced learning incentive for many of the other functions. With the presence of a full-glass cockpit, including a multi-function display, there are many toys here to play with as well. Typically the pilot new to this technology learns to obtain weather data, read engine gauges, etc., but leaves its many capabilities until later. Often "later" comes only when forced into it.

All goes well until something unanticipated happens or the pilot makes an error in set up. Then, things can get tense in a hurry when flying in IMC. This is a reflection of the fact that all too often pilots are trained only in proper operation of the essentials of their equipment, but are not trained in how to recover from an error, and all too often they are trained only on each piece of equipment at a time, rather than on the system as a whole. This is evident with the inclusion of a coupled autopilot.

The autopilot should be a definite requirement for IMC flight with a full-glass cockpit airplane. However, if the pilot makes an inappropriate system entry, it is not unheard of for the autopilot/GPS to decide they want no further involvement with the whole thing and therefore decouple, sometimes without warning the pilot. Now life becomes interesting, particularly since the pilot often is unaware that this has happened. All of this is made more difficult by the fact that it takes a lot of time to learn all that can be known about the capabilities of this equipment, and even more time to learn how to avoid and/or correct mistakes.

Mostly things work well and we certainly would rather have this equipment than not. We just need to think in terms of the overall system and thoroughly learn to take advantage of the capabilities available.

Now the point of all this is that we have tremendous capability in general aviation aircraft, today. In fact, our equipment far exceeds anything available to any aviation operation just 20 years ago. Just having weather presentation in the cockpit is a huge safety factor, to say nothing of all the other capabilities available. (Personally, I also like the safe taxi feature almost as much. Saves a lot of embarrassment at large, strange airports.) But, in order to take advantage of this equipment, we need to know how to use it.

One of the things that has changed is that it is no longer adequate to know how to use each piece of equipment...we also need to know how it works as a system.

For example, what can cause the GPS to disconnect from the autopilot? Questions like this need to be answered. A simple traditional check out by the local flight instructor cannot cover everything that you need to know in a short span of time. Scheduling time just to learn the system is

a step in the right direction. If you are a certificated pilot accomplishing your first checkout in an aircraft with a full-glass cockpit, you can expect to spend more time learning the system than flying the airplane. Obviously, each of us must take it upon ourselves to explore the capabilities of the equipment in the aircraft we fly and obtain the training necessary to safely operate that equipment.

Since everyone knows the FAA plans on doing away with VORs, new students are reluctant to put forth the effort to learn how to navigate using the soon-to-be obsolete equipment. Naturally they must do so in order to pass their checkride, but they do so grudgingly and only to the extent they must.

I am of the belief that if the equipment is installed in the airplane, we should know how to use it. Same philosophy the examiner used when you took your checkride. As a general aviation pilot, it is usually the case that there is only one pilot to fly the airplane, communicate with ATC and operate the

equipment. Therefore, it behooves us to become extremely familiar with all those new goodies while maintaining our proficiency with the old.

When giving an FAA Part 61.56 checkride in a technically advanced aircraft (TAA), the pilot who flies frequently and uses the TAA equipment on a regular basis, stands out dramatically in a positive manner. When the system is used to its fullest extent, the TAA offers tremendous capability for safety and increased utilization of general aviation aircraft.

EDITOR'S NOTE: Harold Green is an Instrument and Multi-Engine Flight Instructor (CFII, MEII) at Morey Airplane Company in Middleton, Wisconsin (C29). A flight instructor since 1976, Green was named "Flight Instructor of the Year" by the Federal Aviation Administration in 2011, and is a recipient of the "Wright Brothers Master Pilot Award." Questions, comments and suggestions for future topics are welcomed via email at harlgren@aol.com, or by telephone at 608-836-1711 (www.MoreyAirport.com). □

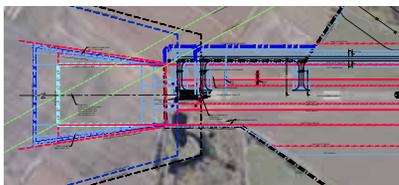
Kansas State Polytechnic Launches New Flight Academy For High School Students

SALINA, KAN. – The Kansas State University (KSUP) Polytechnic campus introduced the "Fly K-State Academy" – a three-day flying program, June 27-29, 2016 for high school students entering their freshman through senior year. In this immersive experience, students completed four missions and

earned three and a half hours of flight time while staying overnight on campus and participating in group activities and outings around the city.

Registration details and the program schedule can be found at <http://polytechnic.k-state.edu/profed/flyacademy> or by contacting the office of professional education and outreach at 855-552-0079 or profed@k-state.edu. □

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The New FAA Part 107 For Unmanned Aircraft... Less Protection For Airports Than Before

by Russell A. Klingaman, Esq.

On June 21, 2016, the FAA published its Final Rule for the new Part 107 of the Federal Aviation Regulations (FARs) entitled “Operation and Certification of Small Unmanned Aircraft Systems.” Part 107 will govern all commercial and some governmental UAS operations in the United States. It will not govern model/hobby UAS operations. Part 107 does not provide for any restrictions on UAS operations near non-towered airports.

The FAA chose not to restrict UAS operations near airports despite recommendations from AOPA, NBAA, ALPA, and GAMA that UAS operations be restricted and/or prohibited near airports. The FAA rejected these recommendations on the grounds that, “Part 107 has specific risk mitigation and hazard reduction provisions” that facilitate the integration of UAS operations into existing manned aircraft operations in uncontrolled airspace. (Final Rule, p. 351).

The FAA explained the lack of restrictions for UAS operations near non-towered airports as follows: “First, small UAS pilots will be required to pass initial aeronautical knowledge testing before receiving a Part 107 airman certificate.” The FAA further explained that, “the remote pilot in command will be required to ensure that the [UAV] will pose no undue hazard to other aircraft, people, or property in the event of a loss of control of the aircraft for any reason.” (Final Rule, pp. 351-52).

The FAA acknowledges that there are risks associated with close operations between manned and unmanned aircraft. The FAA does not believe, however, that these risks are a serious problem because Part 107 “will prohibit remote pilots from operating their small unmanned aircraft in a manner that interferes with operations and traffic patterns at airports, heliports, and seaplane bases.” (Final Rule, p.352).

The FAA states that, in order to avoid interfering with operations in a traffic pattern, UAS pilots should, “avoid operating in the traffic pattern or published approach corridors used by manned aircraft.” (Final Rule, p. 353). The FAA hopes that most UAS pilots will always yield the right-of-way to manned aircraft, and otherwise avoid operating in the vicinity of airports. *Is this hope far-fetched?*

Several comments to the proposed rules — including EAA and the National Association of State Aviation Officials — suggested that the FAA require UAS pilots intending to fly within 5 miles of all non-towered airports to notify airport authorities in advance of their operations. The FAA rejected



Russell Klingaman

this suggestion because — while airport operators have the ability to manage operations on the surface of the airport — “airport operators may not regulate the use of airspace above and near the airport.” (Final Rule, p. 354).

The FAA concluded: “The FAA does not consider the notification of airport operators to significantly enhance the safety of integration with existing operations.” (Final Rule, p. 354). The FAA further explained: “The requirement for notification creates a burden on the airport operator with little benefit to users of the airport, because the airport operator would have no requirement to disseminate knowledge of small UAS operations to other airport users.” (Final Rule, pp. 354-55). These statements by the FAA about notice-of-operations are remarkable given that such notices are the rule applicable to all model/hobby flying near airports.

It should be recognized that Part 107, with regard to operations near airports, is significantly different than the rules used as part of the 333 Exemption process. In a typical 333 Exemption situation, the blanket Certificate of Authorization (COA) used by the FAA prohibits UAS operations near airports as follows: five nautical miles from an airport having an operational control tower; three nautical miles from an airport having a published instrument flight procedure, but not having an operational control tower; and two nautical miles from a heliport or an airport not having a published instrument flight procedure or an operational control tower. These rules will soon become obsolete.

While dropping any specific prohibitions on UAS operations near non-towered airports in Part 107, the FAA is putting 100% of its faith in safe integration of UAS operations into the National Airspace System — including airspace at or near airports — in the new UAS-specific airman certificate. The FAA’s name for the new certificate is: “A Remote Pilot Certificate with a Small UAS Rating.”

To obtain a Remote Pilot Certificate with a Small UAS Rating, the applicant must take and pass an initial aeronautical knowledge test. After passing the test, the applicant will apply for a Remote Pilot Certificate using either a paper application or the FAA’s electronic application process. The FAA will then forward the application to the Transportation Security Administration (TSA) for a background check to determine whether the application poses a security risk. If the applicant passes the TSA review, a Remote Pilot Certificate will be issued.

Notably, Part 107 does not require any specific training or flight instruction requirements for UAS Remote Pilot Certificate applicants. In addition, Part 107 does not require applicants for a Remote Pilot Certificate to demonstrate any flight proficiency or aeronautical experience.

So, how will a UAS pilot applicant learn enough about

the National Airspace System and manned aircraft operations near airports, to be safe? Here is the FAA's answer to this question: "Knowledge testing is the most flexible and efficient means for insuring that a remote pilot possesses the requisite knowledge to operate in the NAS because it allows the applicant to acquire the pertinent knowledge in *whatever manner works best for him or her*. The applicant can then take and pass the aeronautical knowledge test to verify that he or she has indeed acquired the pertinent areas of knowledge." (Final Rule, p.408).

The UAS pilot test will cover the following areas of knowledge: (1) regulations applicable to small UAS operations; (2) airspace classification and operating requirements, and flight restrictions affecting small unmanned aircraft operations; (3) effects of weather on small unmanned aircraft performance; (4) small UAS loading and performance; (5) emergency procedures; (6) crew resource management; (7) radio communication procedures; (8) determining the performance of small unmanned aircraft; (9) maintenance and inspection procedures; (10) physiological effects of drugs and alcohol; (11) aeronautical decision making and judgment; and (12) *airport operations*.

This last item, "*airport operations*," may be the most important part of the knowledge/testing aspects of Part 107. The FAA, however, does not appear very concerned about UAS operations near airports.

It may surprise you to learn the FAA expects only a small number of UAS operations to occur near airports. (Final Rule, p. 432). *Does this seem accurate? Does it appear to downplay the risks of UAS operations near airports?*

The FAA merely acknowledges that there may be instances where, "a small unmanned aircraft unexpectedly ends up flying near an airport due to adverse conditions." (Final Rule, p. 432). To avoid any mishaps, the FAA states: "In those instances, the remote pilot in command will need to have an understanding of airport operations so that he or she knows what actions to take to ensure that the small unmanned aircraft does not interfere with airport operations or traffic patterns."

Let's all hope that the Part 107 knowledge testing procedure is sufficient to prevent unmanned aircraft from crashing into manned aircraft near airports.

EDITOR'S NOTE: Russ Klingaman is a partner with the law firm of Hinshaw & Culbertson LLP in Milwaukee, Wis. As an instrument-rated private pilot and aircraft owner, he has a special interest in aviation law. Klingaman teaches aviation law at Marquette Law School and UW-Oshkosh, and is the immediate past-president of the Lawyer Pilots Bar Association. Klingaman handles a broad range of business disputes involving contracts and intellectual property. He also handles FAA enforcement cases and lawsuits involving serious personal injuries and/or property loss. Questions and comments about the foregoing topic may be directed to Russ Klingaman at rklingaman@hinshawlaw.com. □



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Time To Modernize!

by Mark R. Baker
President & CEO

Aircraft Owners & Pilots Association

We all know the general aviation fleet is getting older. In fact, the average age of a single-engine piston airplane in the United States is about 47 years old. And if you own or rent one of these airplanes, you know that most of them are still equipped with avionics and technology from the 1960s, '70s, or '80s.

That's one reason the GA community is united behind changes



Mark Baker

to Part 23 airplane certification requirements—changes designed to promote innovation and lower the cost of bringing new airplanes to market. But we think that's just part of the answer, and we're asking the FAA to develop a comprehensive policy for GA fleet modernization. While Part 23 changes have the potential to make new airplanes safer and more affordable, they don't address the fact that most of us won't be buying one of these new airplanes anytime soon. For one thing, these proposed changes won't happen overnight. For another, cost will continue to be an obstacle for many of us. And we can't overlook the fact that, at current rates of production, it will take decades for aircraft manufacturers to make enough planes to replace the existing fleet.

What we really need is to be able to update our existing aircraft at a more affordable price.

Today, it is extremely expensive and time consuming for equipment manufacturers to meet the certification standards for putting new equipment in Part 23 aircraft. Often the barriers are so high as to be insurmountable. But it's different for experimental aircraft. Let me give you an example of what I mean.

Research conducted by a joint FAA-industry working group found that a homebuilder can install an autopilot for about \$2,500, while putting an autopilot in a Part 23 airplane would cost between \$10,000 and \$15,000. And there are no big differences in those autopilots—they both have the same functionality and capability. They also represent largely the same "risk" when it comes to failure.

So, why the big pricing gap? The time, money, and investment spent on certifying one unit and not the other has a whole lot to do with it.

We don't think it has to be that way. And, we don't need a rulemaking process to change it. Instead, we're asking the FAA to review its policies and procedures for putting new equipment in older airplanes to make them more consistent with the risk-based approach to certification that the agency is already taking toward some types of equipment, like angle of attack indicators.

We believe this is common sense for GA pilots and our industry. But I won't pretend it's simple. Harmonizing the rules, practices, policies, and culture of the FAA will take time and persistence.

At AOPA, we believe it's worth the effort, and we're prepared to do the work. □

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**News & Information You’ll Want To Know In
Kansas, Missouri, Nebraska & Iowa**
by *Yasmina Platt*

*Central Southwest Regional Manager
Aircraft Owners & Pilots Association*

Some pilots need reasons to fly and I can always find good reasons to! My latest idea was to develop “air trails” for pilots and their passengers to not only enjoy the friendly sky and the wonderful views it provides, but also to land at some neat airports, visit some cool towns, explore the outdoors, try some other aviation and non-aviation activities, eat at some good airport restaurants, stay at unique hotels or camp out under the wing, and learn some history lessons among other things. To date, I have developed two: New Mexico’s Route 66 National Scenic Flyway (over and along the famous byway) and an Ozarks Air Trail, which I will summarize below. Two others are in the works: one around Nebraska and one around Texas.



Yasmina Platt



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for different water activities, waterfalls, fish-filled lakes and rivers, hiking and biking trails, off-roading trails, horseback riding trails, zip-lining, fly boarding, golfing, museums, awe-inspiring caverns, shopping, interesting history... the Ozarks offer enjoyable and fun year-round adventures and activities to pilots with average to above average skills.

The Ozarks, covering portions of three states (Arkansas, Missouri and Oklahoma), truly have it all, including great fly-in options! The area provides a stunning backdrop for a long vacation or some weekend getaway fun – your choice! The proposed route (see map) includes activities and airports for pilots and travelers of all ages and interests. It includes nine different stops with two of the stops having multiple airports to choose from. A mixture of community

and backcountry airstrips, paved and non-paved runways, and public and private airports was selected to ensure there is something for everybody based on pilot skills and experience and aircraft capabilities. The route was designed in a circular fashion, but you can start/stop the route from any airport and fly it in any order or direction you prefer.

Have additional time and would like to explore other places on your way to/from the Ozarks area? Other nearby locations are also mentioned as good destinations and you can check out the blog titled “friendly airports and helipads in the Central Southwest Region” covering NM, TX, LA, OK, AR, KS, MO, NE and IA for a list of those airports that allow camping and have on-site restaurants, aviation museums, aircraft viewing areas, etc.,

that you may consider stopping at.

To read the details on the Ozarks Air Trail or any of the other air trails (existing or future), visit <http://blog.aopa.org/aopa/category/central-southwest/>.

Fly safe, fly often, and enjoy the air trails!

EDITOR'S NOTE: Yasmina Platt has accepted a position with AECOM – an international airport planning and development consulting firm headquartered in Los Angeles and New York. Platt looks forward to staying connected with general aviation, and hopes her path crosses with the many pilots and aviation officials she has met over the past several years while with AOPA. *Midwest Flyer Magazine* will announce the appointment of Platt's replacement as the AOPA Central Southwest Regional Manager in a future issue. □

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PRODUCTS & SERVICES

Leading Edge Air Foils Launches New, Easy-to-Use Website

LYONS, WIS. – Leading Edge Air Foils, LLC (LEAF) has launched a new, easy-to-use website at www.leadingedgeairfoils.com. Readers can check it out on their Smart Phone, tablet or computer and shop the entire catalog at LEAF's webstore featuring a full line of ROTAX parts, instruments, wheels and brakes, tires, exhaust systems, consumables, ELTs, lighting, fuel tanks and components, pilot supplies, and much more.

Leading Edge Air Foils, LLC (LEAF) is the Central USA independent ROTAX Service Center (iSC) and one of the oldest and largest suppliers of ultralight and light sport aircraft parts.

LEAF operates from a manufacturing and warehouse facility

located on the east side of two grass air strips leased by Wag-Aero. Experienced technicians are available for everything from maintenance to overhaul on all ROTAX two and four stroke aircraft engines. LEAF maintains a substantial inventory of ROTAX engines and spare parts in addition to many other ultralight and light sport aircraft parts.

Readers can view the 140-page catalog electronically at onlinecatalog.leadingedgeairfoils.com to make browsing and shopping more convenient.

For additional information, contact customer service at 1.800.532.3462, or via e-mail at info@leadingedgeairfoils.com. LEAF offers same-day shipping on most items. □

Illinois Natives Settle In Ontario With Cessna 185 Floatplane

Lured by a love of fishing and hunting, Illinois natives Steve and Ellen Riggins purchased a cottage north of Dryden, Ontario, in 2003, and made the permanent move in 2007. Another hobby – flying – led the Riggins to build a hangar for their Cessna 185 floatplane, complete with a hydraulic door from Schweiss Doors of Fairfax, Minn.

“We’re now permanent residents in Canada,” Steve Riggins says, “but I still have the farming operation in Illinois and go back there for planting and harvesting seasons. My wife and I are both outdoors people and have fished in Canada for years. Canada just seemed like a good choice for us to go where we have unlimited fishing and hunting opportunities. There’s almost as much water as there is land, and there are moose up there -- something we didn’t have in Illinois.”

The Riggins hangared their plane at Dryden Regional Airport when they first arrived in Ontario. When they made the move to Inorwic Lake, they worked on plans for their own hangar. Their experience with hangars and with their farm buildings provided some knowledge of bifold doors.

“I never had a hydraulic door before; I wanted to try one,” Steve Riggins said. “Headroom was the main factor in my choosing a hydraulic door.” The Riggins chose a hydraulic door from Schweiss Doors, with a remote control opener. Schweiss Doors manufactures hydraulic and bi-fold lift-strap doors. Doors are custom made to any size for any type of new or existing building for architects and builders. For more information, visit www.bifold.com.

Steve Riggins can conveniently taxi his Cessna 185 to his new hangar located on Inorwic Lake. He has the hangar set up with two remote controls, one for the Schweiss hydraulic door and the other for rail systems off the lake to bring the plane and his Lund boat into the hangar.





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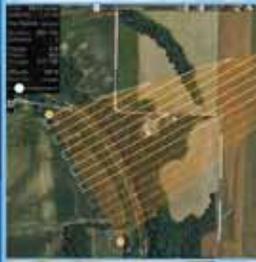
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The Grand Hotel On Mackinac Island... For That Special Getaway or Annual Vacation Destination



The Grand Hotel, Mackinac Island, Michigan.

Dave Weiman Photo

The next time you want to do something special for a friend or your significant other, jump in your plane, fly to Mackinac Island, Michigan, and stay at the glorious “Grand Hotel.” The Grand Hotel is by far the most lavish hotel on the island, and priced accordingly.

Once only accessible by ferry, visitors today have the option of flying to the island and landing at a top-notch, state-owned airport – Mackinac Island Airport (KMCD). A spacious ramp awaits you, but there are no services, other than a state park ranger who will call for a horse-drawn taxi and collect a \$15.00 per night tie-down fee. Bring your own tie-down ropes, and stakes if the ramp is full and you have to park on the grass, which is seldom.

Refreshing is the fact that there are no automobiles on the island. Transportation is by horse-drawn carriage, horseback, bicycle or you walk. During the summer, there are 500 horses on the island. Year-round, there are only 600 residents.

If you need fuel, the closest airport with 100LL and Jet A is 5 nm across the bay at Mackinac County Airport (83D) in St. Ignace, Michigan. Nice, friendly people, and it is self-service. The common traffic advisory frequency for both Mackinac County Airport and Mackinac Island Airport is 122.7, and Mackinac Island Airport has AWOS, as do a few other airports in the area.

Mackinac (MACK-in-awe) became one of our nation’s favored summer resort destinations during the Victorian era. Vacationers arrived in large lake excursion boats from Buffalo, Cleveland, Chicago and Detroit seeking the cooler weather on the island. They danced to Strauss’ waltzes, listened to Sousa’s stirring marches, dined on whitefish and strolled along the broad decks.

Mackinac Island became a summer getaway beginning in

1886, but accommodations were limited. To accommodate overnight guests, boat and railroad companies financed the construction of the Grand Hotel, which opened in 1887. Room rates then were \$3 to \$5 a night.

In the 1890s, the front porch of the Grand Hotel, said to be the longest in the world, became the principal meeting place for all of Mackinac Island, as well as a promenade for the elderly and a “flirtation walk” for island romantics.

In 1895, Mark Twain gave a lecture in the Grand Hotel Casino. Admission: \$1.

In 1897, the West Wing was added to the hotel, and by the turn of the century, the automobile found its way onto the island until the 1930s when an island-wide ban on any motorized vehicle was put into place.

In 1919, W. Stewart Woodfill was hired as a desk clerk, and later purchased and became the sole owner of the hotel.

In 1947, Mackinac Island and the Grand Hotel was the site of the film “*This Time For Keeps*,” starring Jimmy Durante and Esther Williams. The outdoor pool was built especially for Ms. Williams, and the room she stayed in is named in her honor.

The Grand Hotel was also featured in the motion picture “*Somewhere In Time*” in 1980, starring Christopher Reeve, Jane Seymour, and Christopher Plummer. A hat worn by Reeve in the movie is on display off from the main lobby.

In 1951, R.D. (Dan) Musser joined the hotel staff and in 1960, W. Stewart Woodfill appointed him president. The Mussers purchased the Grand Hotel in 1979.

R.D. (Dan) Musser III was named president of the Grand Hotel in 1989, the East Wing was added, and the U.S. Department of Interior designated the hotel a national historic landmark.



GRAND FROM EVERY VIEW

From your first view of Grand Hotel, this family-owned National Historic Landmark is truly one of a kind. Begin your getaway with a one-mile, horse-drawn taxi ride from Mackinac Island Airport. Your overnight stay in a uniquely decorated guest room includes a full breakfast and five-course dinner daily. Amenities include complimentary children's programs, nightly dancing to the Grand Hotel Orchestra, spectacular views of the Straits of Mackinac from the world's longest porch, golf on The Jewel, a visit to Grand Stables and Sadie's Ice Cream Parlor. Historic Mackinac Island offers activities for the entire family including visits to Fort Mackinac, bicycling, horse-drawn carriage tours and the unique charm of downtown Mackinac Island.

1-800-33GRAND • grandhotel.com



In 1998, five new rooms were named in honor of former First Ladies Lady Bird Johnson, Betty Ford, Rosalynn Carter, Nancy Reagan, and Barbara Bush. In 2002, the Jacqueline Kennedy Suite was added.

Construction began on the Millennium Wing in 2000 – a 200-seat addition to the main dining room and 42 new guest rooms.

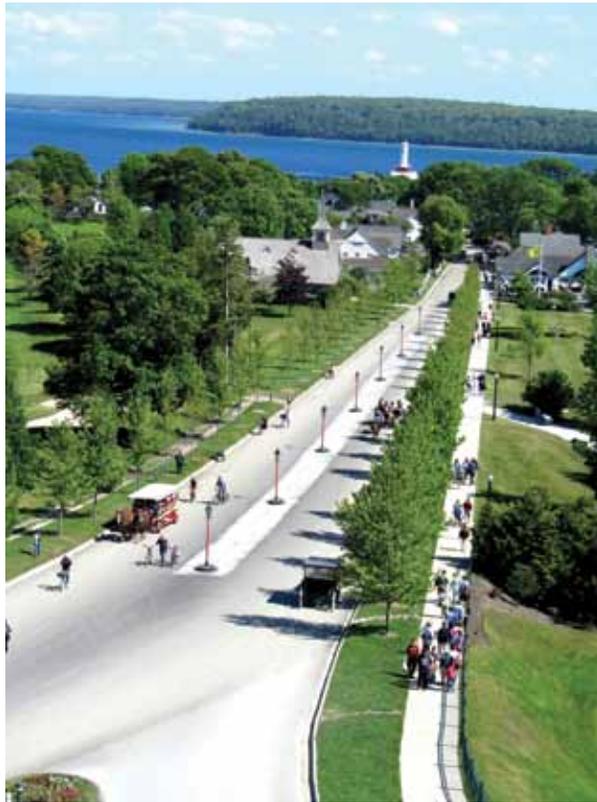
While many of the original timbers used to build the foundation of the hotel are still in use, the Grand Hotel has made numerous improvements since then and was certified as a Green Lodging Michigan Leader by the Michigan Department of Energy, Labor & Economic Growth in 2009.

In addition to the excellent biking, hiking and running trails; horseback riding; island carriage tours; garden tours; tours of Fort Mackinac and the Governor's Mansion (Wednesdays, 9:30 to 11:30 a.m.) on Mackinac Island, the Grand Hotel offers additional activities.

The hotel features an 18-hole golf course called "The Jewel," with unparalleled scenic beauty, lush landscaping and meticulously manicured tees, fairways and greens. The "Grand Nine" is located across the street from the hotel, with views of Lake Huron and Round Island. The "Woods Nine" is set in the interior of Mackinac Island, with views of the Mackinac Bridge and the Upper Peninsula.

The hotel has a clay-based tennis court called the "Four Har Tru" that overlooks the Straits of Mackinac. If you could use some pointers, there are clinics and programs based on your skill level, equipment to rent, and a pro shop.

The Esther Williams Swimming Pool, named after the



One of many spectacular views from the Grand Hotel, Mackinac Island, Michigan.
Dave Weiman Photo

actress and competitive swimmer, is 220 feet long, heated and serpentine in design. There's also a sauna and two whirlpools on the pool deck.

Poolside food and beverage service is available at the Pool Grill (seasonal), and complimentary snow cones are served daily (while supplies last).

Pickleball is one of the newest additions to the Grand Hotel with the only clay pickle ball court in Michigan. Don't worry if you have never played the sport... instruction is available.

The Vita Course is a half-mile outdoor exercise course on the hotel grounds. Along the jogging trail, exercise stations are designed to challenge and motivate.

Make your stay at the Grand Hotel even more relaxing with a visit to Astor's Salon and Spa – a full-service Aveda Salon where you can get facials, massages, manicures, pedicures and many other rejuvenating, nurturing and relaxing services. Hair styling and other services are also available.

At the Grand Hotel, live music is provided for your listening and dancing pleasure. The full-time staff of musicians includes skilled veterans from New York City, and some of the finest vocalists and harpists in the country.

An evening at the Grand Hotel can begin with the sounds of a jazz quartet while you enjoy dinner in the hotel's main dining room. After dinner, a harpist will perform classical standards and popular songs in the parlor. And for a nightcap, move to the Terrace Room for a dance or two as the Grand Hotel Orchestra plays your favorite requests.

If you desire more rest, sit on the front porch, overlooking the Mackinac Bridge and the Straits of Mackinac.

Like most vacation destinations, the Grand Hotel offers special packages, and depending on the time of the year you visit, there are deals to be had for couples and families.

Rates begin at \$129.00 per night per person, including accommodations, full breakfast, five-course dinner and free admission to the Richard and Jane Manooogian Art Museum, and there is absolutely no tipping allowed! A dress code applies in the lounge and dining room after 6:30 pm: a suit and tie for the men, and dresses or pantsuits for the ladies.

For additional information and reservations, refer to their website at www.grandhotel.com or call 906-847-3331 or 1-800-334-7263 (www.mackinacisland.org). □

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Wichita Aero Club Announces Scholarship Recipients

WICHITA, KAN. – The Wichita Aero Club has awarded two Edward W. Stimpson Scholarships for 2016 and, for the second year in a row, has increased the amount of the award to \$5,000 each. “We are very pleased to announce that Zavier Luciano, an Aviation Maintenance Technology student at Wichita Area Technical College, and Talon Michelle Wanless, an Electrical Engineering student at Wichita State University, have been chosen to receive scholarships from the Wichita Aero Club this year,” said John O’Leary, Vice President of Airbus Americas Engineering and Chairman of the WAC Education Committee. Zavier and Talon were selected from among 10 applicants who qualified for consideration. No applicants met the qualifications for the H. Dean Humphrey Scholarship this year, so the committee chose to award two Stimpson scholarships.

Both Wichita Aero Club Scholarships are designed to encourage and support students who have already demonstrated success in a major course of study at a post high school institution and have established a clear aviation-related career path.

Zavier Luciano enrolled in the Airframe and Powerplant

program at Wichita Area Technical College in February of 2016. He has spent much of the past decade as a mechanic at Spirit AeroSystems, Boeing, BE Aerospace, Cessna and United Technologies working on interiors, electrical and structural components. He is pursuing an Associate Degree in Aviation Maintenance and an Airframe & Powerplant Certificate. Luciano is a sport pilot and hopes to continue flight training and obtain his private pilot certificate.

Talon Wanless is pursuing her goal of being a third generation aviation professional. Currently a junior in Electrical Engineering at Wichita State University, she is also serving as an avionics and electrical intern at Textron Aviation and following in the footsteps of both her father and grandfather. She participated in both the BEETS (Bridge for Engineering and Engineering Technology) and BEST Robotics programs, and was a member of the National Honors Society while in high school, and earned the distinction of being a Presidential Scholar at Wichita State in 2014.

For more information on the Wichita Aero Club, the Ed Stimpson and Dean Humphrey Scholarships or events, call 316-641-6766 or visit www.wichitaeroclub.org. □

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A GA Pilot's Perspective On Flying The Space Shuttle

by Jim Hanson

In the June/July 2016 issue of *Midwest Flyer Magazine*, I shared my experience flying a King Air 200 to Cape Canaveral, simulating a space shuttle landing on the 15,000 ft. runway. Upon landing, we toured the Cape, and got a briefing as to current NASA projects.

Prior to our visit, my brother, Bob, and I had the opportunity to fly a space shuttle simulator – an experience described here.

My sponsor called at 7 p.m. and said that if I could come out to the Cape at 2:00 a.m. the next morning, he could get another pilot and me on the simulator for a couple of hours. I didn't have another pilot available on short notice, but did have my non-pilot brother, Bob. We went out to the Cape, where they were doing configuration changes on the simulator. They needed someone to just fly the thing while they did the work, and it wasn't anything on which any of the astronauts could get valuable training, as they practice as an entire crew. The simulator was an accurate replication of the entire multi-deck crew quarters, as NASA simulates EVERYTHING on the mission, even things as small as stowing things in drawers, to keep surprises to a minimum.

The simulator is what the simulator people call six-axis of motion simulation, capable of roll, pitch, yaw, as well as combining these actions to simulate G-forces, deceleration, and less than 1 G feelings. It has full visual simulation, from side windows all the way around. The simulator looked like the cockpit of an airline jet, but with more overhead switches. Even the flight instrumentation was the same (*Columbia* was later updated to a "glass cockpit," replacing mechanical gauges). Some major differences were: control sticks instead of wheels, a "side stick" on the left side of the cockpit that operated the dive brakes and allowed the craft to fly laterally without tipping the wings. The airspeed indicator/Mach meter went to Mach 28, and the altimeter readings started at about 350,000 feet! The "distance to go" readings on the Horizontal Situation Indicator went to 9,999 miles, instead of 999. The area where engine instruments would normally be displayed was given over to flight management displays, much like the newer airliners. These displays could display



With the crowds gone after hours, we had Atlantis all to ourselves. We were free to consider and contemplate all that this magnificent flying machine had accomplished. This is by far the best of the Shuttles displayed. Atlantis Shuttle Pilot, Jon McBride, said, "On this, our last mission, Atlantis was flawless. The aircraft could have been turned around and sent on another mission – no discrepancies."

energy management and energy reserves, as well as checklists, procedures, crew advisories, and systems diagnostics.

The simulator is not capable of simulating a launch, and launches are fully automatic, unless an abort back to Kennedy would occur (the least likely occurrence, since loss of a main engine only a few seconds after liftoff allows either abort to Spain or to proceed to orbit).

The simulator is initiated at main engine cutoff (about 90-100 miles high), with a metallic "BANG" (separation of main tank), and a slight deceleration. The shuttle "coasts" into orbit from there.

The visuals on the simulator were stunning, with Earth below, and the black of space above. Landmasses were easily identifiable, and seemed to be proceeding in slow motion below. I was enthralled by the spectacular effects, and the instructor asked if I would like to fly the vehicle.

In space, all movement is by reaction-control rockets, as there is no

aerodynamic control. With a limited supply of reaction-control fuel available, control movements are normally kept to a minimum to conserve fuel, but this was a simulator – I kept telling myself! – with an unlimited amount of fuel. I tried roll and pitch maneuvers, and found I was prone to introduce PIO (Pilot Induced Oscillation), but could manage if I concentrated. The instructor asked, "Are you a helicopter pilot?" I replied that I was, and asked why he had asked. "You're doing a great job," he said. "Most people over-control."

I found that once I put in a control input (roll, for example), the craft would continue rolling forever. To stop the roll, an equal amount of opposite roll was required, and if you overshot, a roll back in the original direction would stop the vehicle just where you want it. It flies a lot like a helicopter – no stability, and the proper procedure is to put in a control input, then take it back out.

We were flying very nose-high relative to the Earth. "Does that bother you?" asked the instructor. "We find that about half of the pilots are bothered by flying nose-high... it is unnatural for an airplane.

"We *could* just roll inverted, and it would be like doing an inside loop around the earth, but we need to have our payload bay doors open and pointed toward the Sun (they are solar

collectors/heat dissipaters), so we can't do that." He grabbed the attitude indicator on the instrument panel, and turned it upside down (not something you can do in an airplane), so that we were now flying "nose down" according to the instrument. "Feel better?" he asked. "We put that in for the pilot's comfort."

While "in space," my brother, Bob, got to play "payload specialist." We explored the cabin, and on the back of the cockpit were several "windows" looking back at the payload bay. On the side of the payload bay was the "Canadian Arm," built to do the heavy lifting in space. It is so lightweight that it cannot support itself in the 1 G gravity of Earth, but can maneuver large items in orbit.

Bob's "mission" was to grab a satellite with the arm, and place it in orbit. The arm can be controlled in several ways – with a computer keyboard (L-R, up-down), or with a joystick. Punching "operation" on the keyboard un-stowed the arm, and pre-positioned it to pick up objects from the payload bay. Everything in the payload bay was stark white against the blackness of space, but we knew that there was only a short time to accomplish the "mission" as we were in low Earth orbit and would shortly be in total darkness in the Earth's shadow.

Bob maneuvered the arm with the joystick—and a lot of coaching from the instructor—to the "grab handle" fastened to the satellite. Once there, he inserted his fingers into a small bowling-ball type device (since replaced with a "grab trigger"). This device controls the mechanical "fingers" of the arm, and pressure exerted on the arm is proportional to the amount of pressure the astronaut exerts on the trackball. He picked up the satellite, cleared the payload bay, and released it into orbit.

For the landing, we turned the tail towards the direction of flight, and fired retro-rockets in the vicinity of Guam to slow our speed and drop us from orbit (at the time, all shuttles were landing at Edwards. NASA wanted more experience before attempting a Cape landing). We did a "somersault" to go nose-first again. Though the shuttle has full auto-land capability (it has five computers that continually monitor the flight, and the computers will automatically "vote" to exclude any computer that doesn't agree with the rest), most pilots elect to hand-fly all or part of the approach and landing. *After all, how many of these space landings do you get to make?* I hand-flew it, following the cues on the Collins FD-109 flight director (the same model used in many corporate jets) for lateral and pitch guidance.

The descent profile is initially shallow, then goes to about 40 degrees (plus or minus 2 degrees) during the critical portion of the re-entry, then shallowing again. Too shallow,



Author Jim Hanson in the Atlantis cockpit procedures simulator. Unlike when he first flew the Columbia simulator in 1981 (using gyros familiar to any jet pilot), the instrumentation for all Shuttles were eventually upgraded to glass cockpits.

the vehicle skips back into space; too steep, it burns up. Since it followed the first flight of *Columbia*, this simulator had the ability to depict the heating of the windshield and front-fuselage structure, as they found it was disconcerting for the pilots to watch the structure turn cherry red, then give off "plasma flares."

These plasma flares look (at least in the simulator) like flaming bits of jellied napalm tearing away from the structure. It is not part of the structure, but part of the thin atmosphere itself that is energized and dissipated.

This phenomenon is responsible for the "communications blackout" on re-entry. In any case, fire in your windshield is not what most pilots would like to see. No matter how much you concentrate on your instrument scan, you can't help but watch the plasma flares!

At about 350,000 feet, the first indications of Earth's atmosphere become apparent. The altimeter starts to wake up, the Mach meter comes off the peg at Mach 28, and the spacecraft starts to exhibit aerodynamic buffet. The flight profile calls for banks from left to right to "load" the craft with G forces to dissipate energy. Things are happening fast. The last 6,000 miles of re-entry – from retro-fire to touchdown – take only about 30 minutes.

The drill for landing at Edwards is to approach the California coast at Mach 5, cross Edwards at 50,000 feet at Mach 2, make a 270-degree turn, and land – all in about 7 minutes. The glide angle seems improbably high, but then I remembered that the glide angle is only about 3.7-1. By comparison, most general aviation aircraft are in the 8 or 10 to 1 glide ratio range.

The craft scrubs off speed all the way down, to a final approach speed of 240-270 knots, depending on weight.

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During the last 3,000 to 5,000 feet of altitude in the approach, pilots can experience “ground rush,” as the ground comes up suddenly. There are no landing flaps to deploy, but raising the nose on the delta-wing craft causes huge amounts of drag.

The landing gear goes down about 12-15 seconds before touchdown, at an altitude of only 300-400 feet. With the delta wing, little or no flare is needed, as it builds a big ground cushion of lift underneath. Just hold the attitude you have until touchdown. Touchdown occurs at about 185 kts (200 mph), and a drag parachute is deployed.

We had about 15 minutes left in our time window, and the instructor asked if I'd like to try it again – this time with more wind. Through the magic of simulation, we repositioned up to 150,000 feet and Mach 7.5, and tried it again. This time, the glide angle looked REALLY steep, and it was. Thirty-five knots of wind is the limit for landing the shuttle except for emergency conditions, because if the wind is higher than 35 knots, the pilots may not see the landing area over the nose in the final phase of landing.

I am grateful to have been able to fly the simulator, especially now that *Columbia* is gone, because we were using the actual telemetry data to replicate *Columbia* (the only shuttle to have flown in orbit at the time). Astronauts say that all of the shuttles fly differently due to their mod status, weight (*Columbia* was the heaviest of all the shuttles), and built-in idiosyncrasies. It was an interesting exercise for a pilot that flies jets, gliders, and helicopters, using techniques from each of the three aircraft types. In aviation, you never know when some seemingly unrelated bit of knowledge will help you out. Who would have thought that glider and helicopter flight skills would help fly a space shuttle?



EDITORS NOTE: Jim Hanson is the long-time manager of the Albert Lea, Minnesota airport. Even before this flight, people often described him as “spacy.” If you would like to bring Jim “down to Earth,” he can be reached at his airport office at 507-373-0608, or via email at jimhanson@deskmedia.com. □

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Port Washington, Wisconsin... A Midwest Town With New England Flair!



A typical catch with Harbor City Charters.
Photo Courtesy of Harbor City Charters

PORT WASHINGTON, Wisconsin has long been known for having some of the best trophy fishing on Lake Michigan, but what many pilots didn't realize until recently, they can fly there!

“Port” is a historic fishing town with a New England flare that is sure to impress. The state-of-the-art marina is located in the heart of downtown Port Washington where you can walk to everything – hotels, shops, restaurants and your choice of 13 different taverns. Summertime in Port is extremely popular as it hosts numerous festivals, the biggest of which is the annual “Fish Day Festival” held in July (www.portfishday.com).

For the fishing enthusiast who would like to fly in for the trout and salmon experience on Lake Michigan, there is a private grass airport (2800 feet long) on the north side of the city called “*Didier Farms Field*.” The GPS coordinates are as follows and can be found using Google Maps or any other site: N43 26.629 W87 52.161. (<http://harborcitycharters.com/getting-here/>)

You won't find “*Didier Farms Field*” on any sectional maps, but the owners are happy to provide free rides downtown, where you can spend the entire weekend on foot and never have to eat at the same place twice. Fuel and car rental is available at West Bend Municipal Airport (KETB), 13 miles west of Port Washington, if you would rather use a hard-surface runway.

Fishing charters depart twice per day, usually at 5:00 AM and 1:00 PM, and can accommodate six (6) guests.

For more information on Port Washington, Wisconsin, visit www.visitportwashington.com.

For information on fishing charters and a ride from the “*Didier Farms Field*,” contact Harbor City Sport Fishing at 262-284-2000 or visit www.pwfishing.com.

For information on West Bend Municipal Airport (KETB) and car rental, call West Bend Air at 262-334-5603. □

Minnesota Seaplane Pilots Association Safety Seminar & Fly-In... By Land & By Sea!



A 1951 SA-16A Albatross on takeoff at Gull Lake, Brainerd, Minn. The aircraft is equipped with two Wright R-1820-80A, 1525 hp engines; has a range of up to 1700 miles; carries 675 gallons of fuel on the outriggers and 200-gallon drop tanks; cruises at 225 mph with a fuel burn of 100 gph; has an overall length of 62 feet 4 inches; a height of 26 feet 11 inches; and a wingspan of 96 feet 6 inches. Empty weight is 23,750 lbs. Gross weight is 35,500 lbs. Useful load is 11,750 lbs (<http://tpaero.com/grumman-hu-16-albatross>),

Photos by Brad Thornberg

BRAINERD, MINN. – The Minnesota Seaplane Pilots Association (MSPA) held another blockbuster safety seminar and fly-in, May 20-22, 2016 at Madden's on Gull Lake near Brainerd, Minnesota. Attendance continues to grow due to the efforts of MSPA President Randy Schoephoerster and the organization's board of directors and sponsors. Schoephoerster is the owner of Air Trek North, a flight school at Minneapolis Airlake Airport in Lakeville, Minnesota (www.airtreknorth.com). Ben Thuringer of Brainerd, Minn. is Vice President; Steve Guetter of Lakeville, Minn. is Treasurer; and Hans Meyer of Minneapolis, Minn. is Secretary.

Good weather welcomed some 20 aircraft on wheels that landed at East Gull Lake Airport (9Y2) and Brainerd Lakes Regional Airport (KBRD), and as many as 50 floatplanes on Gull Lake.

Speakers included Chris Meyer and Rachel Obermoller of the Minnesota DOT Office of Aeronautics (www.dot.state.mn.us/aero/). Obermoller did a presentation with fellow seaplane pilot, Ben Thuringer, of Madden's resort, on how to license a seaplane base. Meyer did a presentation on returning an aircraft to service after maintenance. Dr. Randle Corfman, president of the Minnesota Pilots Association (MPA), discussed "Bush Pilot Medicine." Former air traffic controller and state aeronautics official, Mark Schreier, reviewed Federal Aviation Regulations. Kevin Morris of the Minneapolis FAA FSDO discussed the causes of Minnesota seaplane accidents. Troy MacVey of Mac's Seaplanes, Rising Sun, Indiana, described a Cessna 195 seaplane accident (www.macsseaplaneservice.com). CFII, author and aviation

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Some 20 aircraft on wheels landed at East Gull Lake Airport (9Y2).

comedian, Rod Machado, lightened up the crowd at the closing banquet. Also featured at the banquet was Myron Angstman of Bethel, Alaska, who spoke on flying on floats throughout the rugged terrain of western Alaska (www.angstmanlawoffice.com).

An opening airshow drew a crowd of 400 people, and an

accuracy landing contest involved 13 floatplanes. A simulated hangar dance and buffet luncheon were additional highlights.

Wipaire, Inc. and Lake & Air donated a Lightspeed Zulu headset as the grand door prize of the event. Wipaire also sponsored the band in O'Madden's Pub following the banquet and beverages for the receptions.

The mission statement of the Minnesota Seaplane Pilots Association is to promote seaplane flying and safety programs; to promote a forum for the purpose of educating government officials, the legislature and the public on seaplane operations; and to create safe and compatible seaplane base facilities in Minnesota.

The 2017 Minnesota Seaplane Pilots Association Safety Seminar & Fly-In will be held May 19-21, again at Madden's On Gull Lake. For more information on the association or safety seminar, visit www.mnseaplanes.com.

For more information on Madden's On Gull Lake, visit www.maddens.com.



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AN IDEA WORTH SHARING

Starting A Hamburger Social At Your Airport

by John P. Chmiel, Manager
Wausau Downtown Airport (KAUW)
President, Wausau Flying Service
Wausau, Wisconsin

Photos by Jeffrey Gaier

When we first came up with the idea of “Hamburger Social Night At The Airport,” I personally called the airport people I knew at each airport in our area. I told them exactly what we were trying to do – establish informal dinner socials at airports during the week to encourage pilots to get in their airplanes and fly to other airports to meet and network with the local pilots there. Email or snail mail would not have had the same impact as a personal telephone conversation. But not everyone I spoke with embraced the idea.

The stakeholders are the first that should be contacted: airport manager; airport committee/commission chairperson; FBO manager/owner; and airport support group/EAA chapter. Once I spoke with someone at another airport who is willing and ready to take on an event, they took it from there for their airport.



Hamburger Social hosts, Liz and Jeff Gaier of Marshfield, Wisconsin

A misconception of the social is that it is just a fly-in during an evening of the week. This is far from true. Socials differ from fly-ins in many ways.

First, the social lasts about 2 hours max! The social is pilot oriented, not necessarily public oriented (although it can be). Responsibility should be distributed enough among pilots at an airport that it won't turn into work for any one individual. If it is work, you're doing it wrong! It should be completely low-key, informal and fun for all.

Second, the goal is to give people an excuse to go flying, experience another airport in the area, and network with other pilots and their families.

Third, the only way the social works is if all the airports in your area host a hamburger social at their airport. They fly to your airport and you fly to their airport and everyone benefits, socially and as an aviation community. Airport managers, fixed base operators and EAA chapters need to



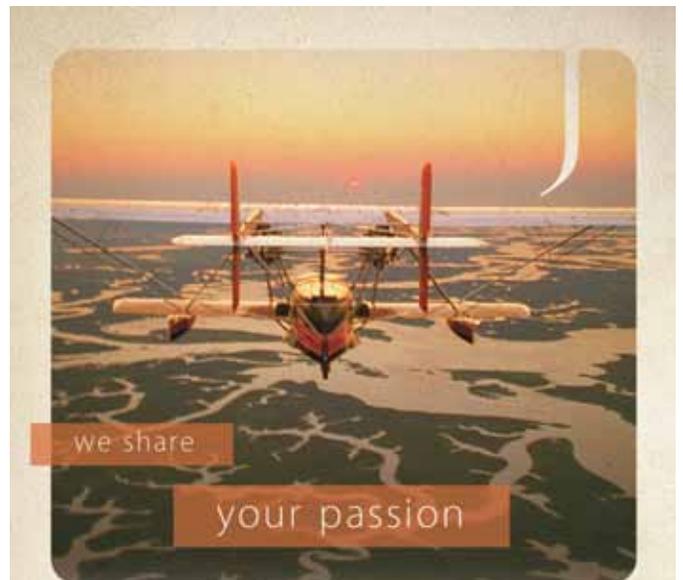
Hamburger Social
Marshfield, Wisconsin



encourage pilots at their airport to fly to the other airports, or the other pilots won't fly to theirs.

An airport only has to host one or two socials a season, while pilots have the opportunity to fly to 6 to 10 other socials during the season (work 20%, play 80%).

Some airports get it, some don't. Without personal dialogue with those airports surrounding your airport, a clear understanding of the purpose may not happen. Please call me if you have any questions: (715) 845-3400. □



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It's A Bird...It's A Plane....Nope, It's A Drone!

by James Bildilli & Matt Heyen

Hobby Flying

No doubt you have heard about, seen or even operated a drone over the past couple of years. There are many names that can be used – drones, unmanned aerial vehicles (UAV), unmanned aircraft systems (UAS) – but they are all essentially the same device. Typically, it's a small machine using at least four counter-rotating rotors that provide lift for the body and whatever is attached to it. Some drones are



DJI Quadcopter



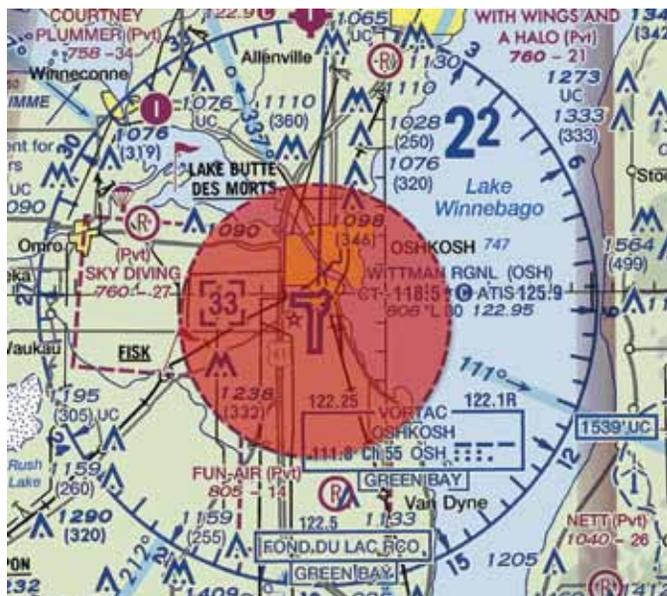
Larger areas can be covered with a Trimble UX5 fixed-wing drone. It is capable of obtaining high-resolution imagery while flying at speeds of up to 50 mph.

fixed-wing, which can be launched by hand or by automated launch devices. The drone explosion is a reality, but it's not as intimidating as it seems. You'll probably find the word "drone" more often in the hobby circles whereas UAV and UAS are usually reserved for their commercial applications.

With so much technological advancement taking place in such a short time, there's bound to be confusion, misinformation and, in some cases, fear about these devices. Like anything, good intentions can be turned toward evil ends, but the vast majority of operators are using these devices for enjoyment or business purposes. In order to help those in the general aviation community better understand the differences in operations, notifications and restrictions, it's easiest to separate usage into two categories: hobby and commercial.

The Federal Aviation Administration (FAA) defines the first category as "hobby" or "recreational flying," and as such, the drone can only be used for personal use.

For example, if one flies a personal drone to get a picture of their house, that's OK, but if someone pays you to take pictures of their house using that same drone, it is a commercial use. As a hobbyist, you must adhere to the following rules:



VFR chart depicting a 5 nautical mile, "no-fly zone" for hobbyists around Wittman Regional Airport, Oshkosh, Wis.

- Drones must be registered with the FAA (accomplished on-line for a \$5 fee).
- Drones cannot be flown within 5 nautical miles of an airport, unless the airport and control tower are contacted in advance.
 - Maximum altitude is below 400 feet AGL when operating the drone.
 - Drones must remain within sight at all times.
 - Drones must remain clear of manned aircraft operations.
 - Drones must remain clear of groups (not defined) of people or stadiums.
 - Drones must not weigh more than 55 pounds.
 - Drones cannot be operated in a reckless manner or to endanger people or aircraft.

Several of the restrictions are not objective or measurable, so it is easy to imagine how they would be hard to police. Nevertheless, the rules are on the books and, in some cases, have been enforced.

Commercial Flying

With regard to “commercial” drone operations, the FAA splits this category into two parts: one for public operations (governmental), and one for civil operations (non-governmental). The decision as to whether it is a public or civil operation is very narrowly defined. U.S. government training or non-commercial purposes used by a government of the state, such as universities, police departments and the military, is considered a public use of drones. As of June 1, 2016, there were 74 public-use holders of such certificates in the U.S.

Initially, all “civil” drones operated under an “exemption” to Section 333. However, on June 21, 2016, the FAA published new regulations under FAR Part 107 to cover civil operations for drones weighing less than 55 pounds, which will go into effect in August. Prior to its adoption, there were approximately 5,300 operators covered by the exemption.

The new rules cover three main areas: operating limitations, pilot certification, and UAS requirements.

Operating Limitations

- The UAS must weigh less than 55 lbs.
- A UAS is restricted to visual line-of-sight (VLOS) operations only. Whether or not you use a First Person view or similar technology, you must have a visual observer keep your aircraft within unaided sight (no binoculars) at all times.
 - The remote pilot can only operate one UAS at a time.
 - UAS flying is restricted to daylight or in twilight (30 minutes before sunrise to 30 minutes after sunset) with appropriate anti-collision lighting and in visibilities of 3 nautical miles or greater from the control station.
 - UAS maximum allowable altitude is 400 feet above ground level (AGL). It can be higher if the drone is within 400 feet of an existing structure.
 - The maximum speed of a UAS cannot exceed 100 mph (87 kts).
 - A UAS must yield right-of-way to other aircraft. A First Person view camera cannot be used to satisfy “see-and-avoid” requirements, but can be used as long as the requirement is satisfied in other ways, such as a Visual Observer (VO).
 - A UAS cannot be operated from a moving aircraft or vehicle unless the operation is over a sparsely populated area.
 - A UAS cannot be used to carry hazardous materials.
 - UAS operations in Class B, C, D and E airspace are allowed with ATC permission. Operations in Class G airspace are allowed without ATC permission.
 - UAS aircraft require a preflight inspection by the remote pilot in command.
 - UAS aircraft may not be operated by anyone who is compromised by any physical or mental condition that would render the operation unsafe.
 - A UAS cannot be operated over anyone who is not directly participating in the operation, not under a covered structure or inside a covered stationary vehicle.

- A UAS can carry external loads providing they don't adversely affect the flight characteristics or controllability of the aircraft.

Although somewhat comprehensive, many of the above restrictions may be waived if the applicant can demonstrate that the operation can be safely conducted under the terms of a certificate of waiver.

Remote PIC Certification & Responsibilities:

- The Remote Pilot In Command (RPIC) must possess either a Remote Pilot Airman Certificate with a small UAS rating, or be under the direct supervision of a person who does hold a remote pilot certificate.
 - The RPIC must be at least 16 years old.
 - The RPIC must be “vetted” by the Transportation Security Administration (TSA) before the FAA will issue a certificate.
 - The RPIC must pass an initial aeronautical knowledge test at an FAA-approved knowledge testing center. You can also hold a Part 61 pilot certificate other than student pilot, complete a flight review within the previous 24 months, and complete a small UAS on-line training course provided by the FAA.
 - The RPIC who possesses a Part 61 Certificate may obtain a “temporary” certificate immediately upon submission of their application for a permanent certificate.
 - All foreign certificated UAS pilots will be required to obtain an FAA issued certificate until international standards are developed.
 - The RPIC must make available to the FAA upon request the small UAS for inspection or testing, along with any and all required documents and records.
 - The RPIC must report to the FAA within 10 days of any incidents that resulted in serious injury, loss of consciousness, or property damage of at least \$500.
 - The RPIC is responsible for ensuring that the UAS complies with the existing registration requirements of Part 91.203.

UAS Requirements

- The UAS does not require an FAA airworthiness certificate. However, the RPIC must conduct a preflight check to determine that the aircraft is in a condition for safe operation.

As you can see, the FAA has replaced the former Certificate of Authorization (COA) and its associated rules with the newly adopted FAR Part 107 rules with many of the COA requirements incorporated within the new regulations. Many of the UAS aircraft have on-board GPS and “home” guidance features, which will make the PIC's workload somewhat lighter. However, as a RPIC, you are still primarily responsible for the safety of flight, just as much as if you were flying your “heavy iron.”

Drone Uses In Aviation

So, with all these limitations, why would anyone want to operate a UAS? The simple answer is the amazing speed and efficiency at which the UAS can provide information.

For example, to complete a typical 35-acre project to survey a runway approach, it would normally take a crew of three (3) people working several days to collect the information. Using a UAS to gather aerial images and ground elevation data requires approximately 15 minutes to fly. In fact, it takes significantly longer to set the survey ground control points used to calibrate the images collected by the drone to ensure the accuracy of the data.

Recently, the approach to Runway 6 at Southern Illinois Airport in Carbondale, Illinois, was flown to determine if there were any “obstructions” within the FAA’s defined Runway Protection Zone (RPZ). The flight path and the resulting images are shown below:

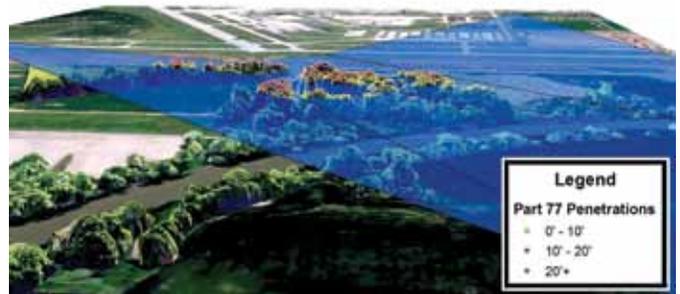


Flight path flown to evaluate obstructions in the approach to Runway 6 at Southern Illinois Airport (KMDH), Carbondale, Ill.

Accuracies obtained using a UAS are well within the parameters used for traditional ground surveys. As such, the data gathered can be used to plan and design typical engineering projects.

Recently, a UAV survey was performed at a Kentucky airport to establish the extent of a large area near the end of

a runway where the earthen fill failed. The data collected was used to develop construction plans that are being used to repair the damage.



A 3-D view created by a computer from data obtained from a UAS depicting the failure of an earth fill off the end of a runway in Kentucky.

Besides evaluating runway approaches, the UAS can be used for several other airport purposes including the collection of promotional photographs, 3-D images and video footage. It can also be used for managing wildlife using thermal imaging, surveying perimeter fencing, and monitoring airport pavement conditions, brush control, snow plowing, drainage effectiveness and infrastructure inspection. In addition, it has been increasingly useful in the collection of information that can be used to develop or update an airport’s Master Plan. It is proving to be a very cost-effective approach to data collection that until recently was extremely expensive and time consuming.

The uses for UAS are growing every day. It’s important to remember that UAS are operating in the National Airspace System (NAS), so the FAA will continue to provide the regulations to make manned aircraft operations as safe as possible while encouraging the use of this technology. Some believe that UAS may provide the “spark” to our younger generation so they take up an interest in general aviation and someday become pilots themselves.

Hanson Professional Services Inc. provided the images used to illustrate this article. For more information, contact Matt Heyen P.E. at mheyen@hanson-inc.com or by phone at 217-747-9260.

Hanson uses a DJI Inspire to obtain high-resolution aerial photography, generate ground contours and complete inspections using the onboard video and still camera. □



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WWII MIA Hunter, Artist, NWA VP, Bryan Moon

Jan. 13, 1928 - Nov. 25, 2015



Sue and Bill Knight with their 1941 Waco UPF-7.
Scott Bruns Photo

William S. “Bill” Knight

November 20, 1947 - March 17, 2016

BRODHEAD, WIS. – Pilot, vintage aircraft and antique car collector, and former owner of Knight Manufacturing, William S. “Bill” Knight, 68, of Brodhead, Wis., died March 17, 2016.

Knight married Susan F. “Sue” Wendler in 1976, and the two spent their honeymoon at EAA AirVenture Oshkosh. They celebrated their wedding anniversary at EAA until Susan’s death in 2009.

The Knights were strong supporters of the Experimental Aircraft Association, Antique Airplane Association and Midwest Antique Airplane Club, and in the 1980s, lobbied for state tax relief for private airports open to the public.

Knight is a graduate of the Milwaukee School of Engineering. He became president of Knight Manufacturing in 1985 when his father retired. The company was sold to Kuhn North America in 2002, at which time it was renamed Kuhn Knight. The company manufactures manure spreaders and feed mixers for the agricultural industry.

Knight is survived by his partner, Linda Kernen of Brodhead; children, Sarah Knight of Boise, Idaho, and Eric Knight of Brodhead; and brothers, Doug (Janice) Knight of Brodhead, and Ted Knight of Iowa. □



SARASOTA, FLA. – As vice president of Aloha Airlines (1966-68) and Northwest Airlines (1968-87), Bryan Moon, 87, was used to making powerful decisions, but none as important as his quest to recover the bodies of American pilots and crews missing in action during World War II. When he was 11 years old growing up in England, Moon was sent to live in rural England with a million other children to avoid Nazi bombing raids. He never forgot those times and the pilots who fought to defend England, and upon retirement, began searching for missing-in-action pilots and their crews.

Moon first searched for lost World War II bombers in Romania where he found the remains of a missing B-24 bomber from the famous low-level air raid on the Ploesti oil refineries. He then made three missions into the mountains of China, and found and retrieved sections of the lost Doolittle B-25 bombers from the first U.S. attack on Japan. These missions led Moon to founding MIA Hunters, Inc., a registered Minnesota non-profit charity, which remains the only civilian MIA search organization in the United States. Under Moon’s leadership, MIA Hunters completed 34 missions worldwide.

Moon was a general aviation pilot and flew aerobatics in a GROB G115D out of Red Wing, Minn. for years. He and his wife, Cicely, lived in Cannon Falls, Minn. in the summer, and Sarasota, Fla. in the winter. He died at his home in Sarasota, Fla., on Nov. 25, 2015 (www.miaHunters.com). □

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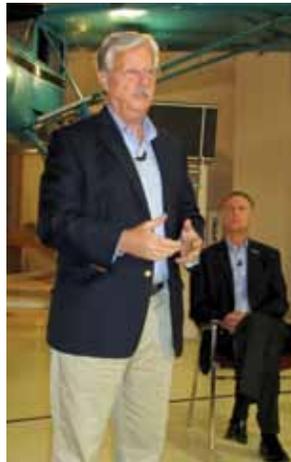
Bolen & Pelton Featured At Wisconsin Business Aviation Association Town Hall Meeting

RACINE, WIS. – Members of the Wisconsin Business Aviation Association attended a town hall meeting, June 23, 2016, featuring National Business Aviation Association President and CEO Ed Bolen, and EAA President & CEO Jack Pelton. Bolen and Pelton talked specifically about the “FAA Reauthorization” debate, and why it matters to general aviation.

BOLEN: “The aviation community is a close knit group with common concerns.

“Business aviation equals economic development. You don’t find general aviation in any other part of the world, as we do in the U.S.

“Fortunately, we have elected officials who understand



EAA President & CEO Jack Pelton
Dave Weiman Photo



(L/R) NBAA President & CEO Ed Bolen with EAA President & CEO Jack Pelton at a town hall meeting, June 23, 2016, in Racine, Wis., to discuss the “FAA Reauthorization” debate with members of the Wisconsin Business Aviation Association (WBAA).
Dave Weiman Photo



(L/R) Corporate pilot, Verne Jobst, speaks with NBAA President & CEO Ed Bolen.
Dave Weiman Photo

and appreciate general aviation, but there’s been a big push by the airlines to privatize and control the air traffic control (ATC) system. If ATC becomes a monopoly, it would mean economic power and domination by the airlines. A private board of directors controlled by the airlines and not represented by Congress, would transfer costs on to general aviation.

“The House bill introduced in February included privatization of ATC, but it hadn’t yet

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gone to the full floor for a vote. Privatization is a poison pill. Congress will either help us grow or kill us.”

PELTON: “The House told general aviation it would give it what it needs, but wants control and privatization of ATC. If ATC privatizes, it would be a true monopoly. (General aviation would be outnumbered on the board of directors.)

“There’s talk of selling off assets and ignoring rural communities. Rural community airports would be underfunded if ATC is privatized. The deck is purely stacked in favor of the airlines. Without oversight by elected officials, we have problems.

“Current funding is adequate to fund air traffic control. The Aviation Trust Fund is well funded.”

Both NBAA and EAA have “call to action” pages on their websites in which members can easily contact their elected officials on issues, such as privatization of the ATC system.

During a question and answer session at the conclusion of the presentations, Pelton was asked if the FAA is still charging EAA for ATC services during EAA AirVenture Oshkosh, and the answer is, yes it is.

The elimination of the air traffic control (ATC) fee for EAA AirVenture Oshkosh was in the FAA Reauthorization Bill passed by the Senate, but it stalled in the House. Other avenues are being explored. In 2015, EAA paid the FAA \$500,000 for ATC services. For 2016, the fee is \$600,000.

When asked if NBAA supports “NextGen,” Bolen said that his organization does, but wants ADS-B to be affordable, and has concerns with privacy.

When asked about Unmanned Aircraft Systems (UAS), Bolen said that they are a reality, but wants to know how we can shape it to be safe. □

WASHINGTON

NATA Applauds Authorized Extension of FAA... GAMA Does Not!

WASHINGTON, DC. – National Air Transportation Association (NATA) President and CEO Thomas L.

Hendricks praised House and Senate negotiators July 6, 2016 on their agreement extending the Federal Aviation Administration’s authorization until September 30, 2017. “Based on the summary released today by the House Transportation Committee, while not a perfect solution, this authorized extension provides stability to the agency and takes action on a number of high priority safety and security issues.”



Thomas Hendricks

“Most important,” stated Hendricks, “the legislation does not act on a proposal to corporatize our nation’s air traffic control system. While it was a debate worth having, radical change to the FAA’s management structure and funding poses risks to the safe and stable nature of the world’s best air traffic control system. We are pleased that lawmakers ultimately recognized that such a proposal will place general aviation in constant peril, starve rural America of access to cutting-edge technology, and saddle the traveling public with ever-increasing fees.”

“More remains to be done,” concluded Hendricks. “Both the House and Senate FAA bills contain other important provisions to help the FAA operate more efficiently, including streamlining the aircraft certification process and improving its regulatory consistency. We look forward to working with Congress to enact that legislation early in 2017.”

NATA represents the interests of fixed base operators, charter companies and flight schools.

Meanwhile, the General Aviation Manufacturers

Association (GAMA) says that the extension is a “missed opportunity to support U.S. manufacturing jobs.”

General Aviation Manufacturers Association (GAMA) President and CEO Pete Bunce issued the following statement about the introduction of legislation to extend FAA programs through September 30, 2017:



Peter Bunce

“The decision to introduce a short-term extension of FAA programs into 2017, while necessary to keep the agency operating, is a missed opportunity for significant certification and regulatory reform. The extension does contain a provision to reform the third-class medical system, but it fails to address the broader certification and regulatory changes needed to improve safety, provide more consistency in regulatory interpretation, and keep the U.S. aviation industry competitive in the global economy. There

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is no excuse for this inaction, particularly when parties in both chambers agree on the importance of these reforms. The result will be the continued inefficient use of industry and FAA resources, and ensure that general aviation manufacturers continue to face unnecessary obstacles to creating jobs and selling their products.

“The certification reforms in both the original House Transportation and Infrastructure Committee-passed bill and Senate-passed bill are very similar and could be implemented quickly to address market and regulatory challenges the industry faces. They would have an immediate, positive impact and contribute to industry growth and employment in

a difficult economic environment.

“Unfortunately, with the U.S. Congress choosing not to act on these critical reforms, general aviation manufacturers, maintenance, repair, and overhaul facilities, their respective employees, and their supplier networks are the ones who will lose. While it’s easy to talk the talk about the importance of manufacturing and related jobs in the United States, Congress has missed an important chance to match its words with actions. We hope that members of Congress will recommit themselves to passing these reforms as quickly as possible and well before the September 30, 2017 deadline established in this extension.” □

AOPA & EAA Statement On Third Class Medical Reform & The Proposed FAA Extension

The Aircraft Owners and Pilots Association (AOPA) and the Experimental Aircraft Association (EAA) released the following statements after the announcement that Congress will include Third Class Medical Reform in proposed FAA extension legislation.

“Including Third Class Medical Reform in this package is great news for general aviation and we’re very pleased to see it moving forward as part of the FAA extension,” said AOPA President Mark Baker. “We appreciate the efforts of general aviation advocates in both the House and Senate. This is a vital issue for the general aviation community, and AOPA has worked with lawmakers day in and day out to build bipartisan support for these commonsense changes. Medical reform is long overdue and we look forward to seeing the House and Senate pass this legislation in the coming days.”

“This has been slow, painstaking work, but important work, as EAA members have told us this is the top legislative priority,” said EAA CEO/Chairman Jack J. Pelton, who has



Mark Baker



Jack Pelton

been part of the EAA team working the issue with congressional leaders. “As we mentioned often since the beginning of this effort, bringing change through legislation is not quick or easy. EAA and AOPA have fought every day to overcome significant hurdles in Congress and will continue to

do so until aeromedical reform is signed into law. The medical reform proposed in the Pilots Bill of Rights 2 is a major step forward in changing the landscape of medical certification for recreational and personal flying. It provides relief for pilots while maintaining safety – and in some cases, enhancing it.”

The provisions of the FAA extension package have been negotiated over the past several weeks, and it is expected that the House and Senate will pass the legislation and send it to the president to be signed into law before Congress adjourns next week.

After the president signs the bill into law, the FAA will have up to one year to develop and issue regulations before the Third Class Medical provisions become effective. □

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HondaJet Headlines Great Planes Air Expo



Des Moines Flying Service and HondaJet Midwest representatives with the 2016 Piper M500 and Honda Aircraft HA-420 HondaJet at the "Great Planes Air Expo," Dane County Regional Airport, Madison, Wis. (KMSN). (L/R): John Textor, John G. Lowe, and Chris Siberz.
Dave Weiman Photo



(ABOVE RIGHT) Chris Siberz of HondaJet Midwest in the cockpit of a Honda Aircraft HA-420 HondaJet.
Dave Weiman Photo



Jane Seeber of Wisconsin Aviation, Inc., was on hand to answer questions about air charter services at the "Great Planes Air Expo," Dane County Regional Airport, Madison, Wis. (KMSN).
Dave Weiman Photo

On a three Midwestern city tour, including Minneapolis, Minnesota on June 7, and Appleton and Madison, Wisconsin on June 8, 2016, the HA-420 HondaJet drew a lot of attention. The aircraft received certification on December 8, 2015, following more than 3,000 hours of flight testing.

The HondaJet's innovative over-the-wing engine mount configuration, natural-laminar flow wing and composite fuselage makes it a higher performance, more fuel-efficient and more spacious light jet than any other aircraft in its class. The HondaJet is the fastest jet in its class at 420 knots (483 mph).

With type certification achieved, Honda Aircraft has ramped up production with 25 aircraft on the final assembly line with a total workforce nearing 1,700 people. The sticker price for the HondaJet is \$4.9 million, plus options.

The Midwest distributor for Honda Aircraft Company – HondaJet Midwest – displayed the aircraft on the tour. HondaJet Midwest has offices in Des Moines and Chicago. For additional information call 800-622-8311 (www.hondajetmidwest.com).

Also on display was the 2016 Piper M500. Representatives from Des Moines Flying Service were on hand to answer questions and take orders. For additional information call 800-622-8311 (www.dmfs.com).

Also featured on the expo flightline were the aircraft owned and manufactured by Textron Aviation – Cessna, Beechcraft and Hawker. □

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A Final Salute To Joshua Sanford Field, Hillsboro, Wisconsin



Friends, pilots, and local residents of Hillsboro, Wis., gathered one last time at Joshua Sanford Field (KHBW) before the airport was closed.

by Phil Peterson

HILLSBORO, WIS. – Round barns and long runways used to symbolize the quaint community of Hillsboro, Wis., located in the hills of southwest Wisconsin, but no more. The municipal airport – Joshua Sanford

which refused to allow the runway to be shortened and create a displaced threshold. FAA officials apparently made this decision without ever visiting the airport, or exploring options with local officials and pilots.

On Saturday, June 18, 2016, the Wisconsin Flying Farmers flew into

Born in a wigwam near Friendship, Wis., on January 19, 1919, Sanford's mother was the former Maude Decorah of the Winnebago Nation; his father, Herbert Sanford, was a Seneca from Cayuga County, New York, and a graduate of Cornell University.

In early 1942, while attending the



The manager of Joshua Sanford Field, Henry Peterson, and his wife, Sandi.



Sanford's grandson, Joshua Sanford, and his family, were on hand at the last Wisconsin Flying Farmer Fly-In at Joshua Sanford Field (KHBW), Hillsboro, Wis., June 18, 2016.



(L/R) The first secretary of the Wisconsin Flying Farmers, Marquerite Herbeck of Hillsboro, Wis., with Wisconsin Flying Farmer Carol Peterson of Oregon, Wis.

Field (KHBW) – will close soon to make room for expansion of a cheese factory recently purchased by Land O Lakes.

According to local officials, the airport is being closed with the full backing of the City of Hillsboro and Federal Aviation Administration (FAA),

Joshua Sanford Field one last time, as they had done countless times to have lunch at "Barbie's Kitchen," and to pay tribute to the airport and its namesake – Capt. Joshua Decorah Sanford. Sanford was the only native American to fly with the famed Flying Tigers during World War II.

University of Wisconsin in Madison, Sanford enlisted in the U.S. Army Air Corps. After his pilot training, he became a member of the Flying Tiger Sharks, 75th Fighter Squadron, 23rd Fighter Group, 14th Air Force, stationed in Heng Yeng, China. Honors he received flying 102 combat

missions between 1942-45 included two Distinguished Flying Crosses, two Air Medals, the Purple Heart, five campaign ribbons, and Presidential and unit citations.

After the war, Sanford completed his education in electronics and was employed by Hallicrafters Corporation before returning to Hillsboro, where he established his own business.

In 1956, Sanford moved to Reedsburg, Wis. and managed the airport. In 1961, he was appointed the Civil Defense Director for an 11-county

area and held that position until his untimely death on October 21, 1962 at the age of 43, due to complications from injuries he sustained in the service. He and his wife, Rosemary, are buried in the Mt. Vernon Cemetery in Hillsboro.

Local Hillsboro resident, Richard Sweeney, was instrumental in getting the airport named in Sanford's honor in 1993.

Sanford's grandson, also named Joshua Sanford, lives in Green Bay, and was the featured speaker at the fly-in.

Henry Peterson, the airport manager, and a local businessman, was the master of ceremonies.

On July 31, 2016, a brick was commemorated in memory of Joshua Sanford at the Memorial Wall next to the EAA AirVenture Museum in Oshkosh, Wis.

Hillsboro is named for the rolling hills of Wisconsin's Driftless Area – an ancient landscape spared by the glaciers on the eastern edge of Vernon County, between La Crosse and Madison. □

Runway Safety Improvements Soar To Heights In Engineering Excellence

MILWAUKEE, WIS. – The airfield safety improvement projects at General Mitchell International Airport (GMIA) earned an Engineering Excellence Award from the American Council of Engineering Companies (ACEC) Wisconsin. Mead & Hunt provided design and project management and served as the owner's representative during construction.

This was a complex, multi-phased project that included a feasibility study, an environmental assessment, and the design of multiple bid packages and construction administration services. Phasing the project over multiple years

for construction resulted in minimal disruptions to air and ground traffic and made the best use of incremental Federal Aviation Administration funding, all resulting in enhanced safety at the airport.

Following a national directive to have runway safety areas meet federal standards by 2015, the FAA identified non-compliant safety areas for three of GMIA's runways because roads and a railroad encroached into them.

Ground transportation projects included the realignment of 6th Street, the College Avenue bypass road, the College Avenue tunnel construction,

and completion of the airport perimeter road system that included bridge structures over both Howell and College Avenue. The improvements altered all four ends of GMIA's two longest runways. Challenges included reducing environmental impacts and construction effects to the airport users and local roadway users. Another significant challenge dealt with designing various project alternatives to allow for the greatest flexibility and most economical use of funding within schedule limitations. □

Airport Lounge Pays Homage To Rolling Stones 1972 "Tequila Sunrise Tour"

QUEENS, N.Y. – A one-of-a-kind, 1,500-square-foot airplane replica, with real steel and other parts from actual aircraft, was recently installed in

the world-class retail lounge of John F. Kennedy International Airport's Terminal 4. Designed and constructed as part of a Jose Cuervo marketing

campaign, the plane relives the Rolling Stones iconic 1972 North American tour, known as the "Tequila Sunrise Tour." □

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(L/R) Wes and Bob Converse, founders and owners of Red Wing Aeroplane, Red Wing Regional Airport, Red Wing, Minn.



One of 11 Citations operated by Red Wing Aeroplane.

A Citation departs the Mississippi River town of Red Wing, Minnesota, flying a heading in any one of the cardinal points of the compass, not necessarily carrying passengers, but having completed a maintenance check and is now enroute to some distant city ready to begin its duty cycle. The Part 135 private jet operator, Red Wing Aeroplane operates a fleet of 11 Citations that fly within all areas of the western hemisphere including the Continental United States, Alaska, Canada, Caribbean, Bermuda, Bahamas, Mexico, and Central and South America.

The company uses a floating fleet concept, which simply means that the aircraft are either enroute flying passengers, or lying in wait to seize upon customer requirements for last-minute flight opportunities. The flexibility in having a floating fleet allows Red Wing Aeroplane to be available to fly its aircraft where and when a requirement exists in addition to its scheduled operation. This flexibility has allowed the company to grow steadily from the beginning of its charter operations in 2005 to the 15th largest jet charter operator in the U.S. Expert flight schedulers who are well versed in pilot scheduling rules, aircraft capability, maintenance requirements, and customers' desires are the key to its rapid growth.

"There are not many operators who have invested in the systems and infrastructure required to have a floating fleet of aircraft and pilots living in one of 22 domiciles," says Wes Converse, President of Red Wing Aeroplane.

Red Wing Aeroplane provides all maintenance services

to its fleet at its' headquarters at Red Wing Regional Airport (KRGK). The company has deep roots in the aircraft maintenance business having operated an FAA Part 145 maintenance repair facility for 25 years. Founded by Bob Converse, a retired master mechanic at Delta Airlines, the company's maintenance facility is an expert maintenance depot for both general aviation and Citation 500 series aircraft.

"The commonality of an all-Citation fleet allows us to not only stock the parts and tooling required to service the fleet, but also our mechanics are well versed in all mechanical operations of the aircraft," notes Bob Converse.

In addition, a "common fleet provides for ease of pilot standardization, procedures, and flight crew resource management which allows us to operate much like the airlines do," according to Wes Converse. "We have an unblemished safety record due in large part to our flight operations department insistence on meaningful training, strict adherence to policy and procedures, and frequent checks to ensure compliance."

The jet charter industry maintains its safety record by utilizing two primary certifying organizations, Aviation Research Group (ARG/US) or Wyvern. ARG/US and Wyvern compile several databases, including Federal Aviation Administration (FAA), U.S. Department of Transportation (DOT) and aircraft transactions, to determine the safety records of the operator, their pilots and their aircraft. In addition, these companies will perform onsite audits on safety



The maintenance facility at Red Wing Aeroplane.



The Charter/Operations/Scheduling/Dispatch area at Red Wing Aeroplane.

procedures, aircraft log books and additional documentation. Red Wing Aeroplane has been certified by both of these organizations for several years.

Red Wing Aeroplane is fully committed to ensuring its pilots are trained to the highest level required by the FAA, but also goes above and beyond those requirements in several areas.

Their extensive training program for flying in mountainous terrain, and providing service to challenging

airports throughout the popular ski areas of the Rocky Mountains, allows them to provide customers with the confidence that they can arrive and depart in all weather conditions safely and reliably.

Utilizing the latest training tools and technologies, including full-motion flight simulators, Red Wing Aeroplane is building pilot skills and confidence in order to operate in challenging conditions that require not only expert flying, but also crew interaction in all phases of flight. Investing in the

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future, the company soon will have its own full-motion simulator located at the headquarters facility to complete all flight and maintenance training. The simulator will be tailored to the exact configuration of the Citation aircraft and contain numerous training capabilities that will continue to enhance pilot training.

While many jet charter operators rely on jet cards and prepaid hourly buy-in fees, Red Wing Aeroplane relies on the standard book and pay model. It is much simpler for the customers and there are no upfront fees. The customer books the flight and pays in advance for the service. In order to ensure the customers' needs are met, the company employs a concierge staff that takes care of such items as limos, food and beverage service, rental cars, and airport of choice for the trip. They also maintain a backup aircraft and crew that can react quickly to unforeseen circumstances, such as aircraft

mechanical problems or weather issues so that, transparent to the customer, the flight goes as planned.

The future is bright for Red Wing Aeroplane. The company is currently planning to add "lift" to their fleet, which will include larger aircraft that will allow them to provide coast-to-coast service.

"We see the need for private jet charter service to continue to increase as commercial air carriers continue to book their flights completely full through their sophisticated revenue management systems. This means more people traveling in a less-than-ideal flight experience," adds Wes Converse. "Our niche is to provide a new first class experience in all areas of personal and business transportation - and we deliver every day!"

Red Wing Aeroplane Receives Authorized Mooney Service Center Certification

Recently, Red Wing Aeroplane received notification that after months

of collaboration, they have received certification as an Authorized Mooney Service Center.

"This recent addition to the capabilities of our FAA Part 145 Repair Station allows us to service the more than 1,000 Mooney aircraft within a 300-mile radius of our facility," says Director of Maintenance, Todd Newton.

"As part of the Mooney Service Center network, we have access to a full supply of Mooney parts and accessories, special tooling, and Mooney trained technicians to ensure we have the capability to complete all necessary inspections and repairs quickly, and professionally.

"Bottom line is, Red Wing Aeroplane and The Mooney Aircraft Company are committed to achieving one goal - to provide each Mooney owner exceptional service that exceeds expectations."

For more information on Red Wing Aeroplane, visit www.redwingaero.com. □

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Bolduc Aviation Under New Ownership

BLAINE, MINN. – Bolduc Aviation Specialized Services at Anoka County – Blaine Airport in the Twin Cities metropolitan area, is under new ownership. Longtime technicians, Kevin Dunrud and Tim Hied, have purchased the aircraft engine overhaul business from Darrell Bolduc, who started the company in 1979 at Minneapolis Crystal Airport. The company moved to Anoka County – Blaine Airport in 1983.

In a 1993 interview with *Midwest Flyer Magazine*, Bolduc said that he attributes much of his success to retaining skilled technicians. Those same skilled technicians now own the company.

Specialized services include, but are not limited to engine rebuilding

and repair to factory zero-time specifications; precision electronic crankshaft balancing; cylinder overhaul and repair; Continental starter adapter overhaul; cleaning of all engine parts; engine balancing; cylinder grinding (.010, .015); rebush and line boring of counterweight bushing; rebush and boring of connecting rods and rocker arms; overhaul of magnetos, starters, float-type carburetors and turbo controllers; magnaflux and zygl inspection of parts; and ultrasonic inspection of Continental crankshafts.

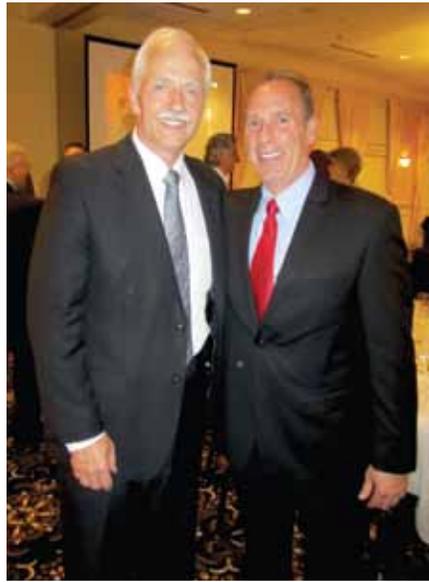
For additional information, contact Kevin Dunrud, Tim Hied or Cindy Kuch at 763-780-1185, or email kevin@bolducaviation.com (www.bolducaviation.com). □

Head of 16th Largest Airport Retires... Minnesota Native Appointed New Executive Director

by Dave Weiman

MINNEAPOLIS-ST. PAUL, MINN. – The executive director of the Metropolitan Airports Commission (MAC), Jeff Hamiel, bid his friends, staff and business associates a fond farewell at a retirement gala held May 25, 2016 at the Golden Valley Country Club, Golden Valley, Minn. Hamiel retired effective May 16, 2016 after 39 years of service. The commission confirmed Minnesota native, Brian Ryks, 52, Hamiel’s successor on March 21.

“Through nearly 40 years of service to the Metropolitan Airports Commission, Jeff Hamiel has made an indelible impact on air travel in Minnesota and has provided a strong voice for airports nationally,” said MAC



(L/R) Jeff Hamiel congratulates his successor, Brian Ryks, as the new executive director of the Metropolitan Airports Commission (MAC). Hamiel retired effective May 16, 2016 after 39 years of service to the Twin Cities metropolitan area. *Dave Weiman Photo*

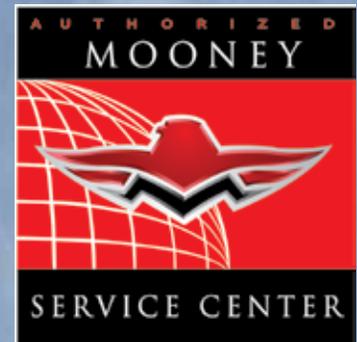
Chairman Dan Boivin, who emceed Hamiel’s retirement party.

“Under his leadership Minneapolis-St. Paul International has earned a reputation as one of the nation’s best managed airports. The number of passengers served annually has more than quadrupled during Jeff’s tenure. He has provided a steady hand to keep air service strong in Minnesota not only in good times, but also when airlines one after another were filing for bankruptcy, merging and discontinuing hub operations at other airports.” Boivin thanked Hamiel for helping him realize the role and importance of reliever airports. Among the other speakers included Delta Airlines CEO Richard Anderson, who praised Hamiel for his professionalism and cooperation over the years.



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The executive director and CEO of MAC oversees day-to-day operations of one of the nation's largest airport systems, including Minneapolis-St. Paul International (MSP) and six general aviation airports in the Twin Cities metropolitan area: Airlake (in Lakeville), Anoka County-Blaine, Crystal, Flying Cloud (in Eden Prairie), Lake Elmo and St. Paul Downtown.

A U.S. Air Force pilot, Hamiel joined the Metropolitan Airports Commission on May 16, 1977 as its first noise program manager. Hamiel quickly rose through the ranks, becoming assistant operations director in 1980 and director of operations in 1983. Hamiel served as deputy executive director in 1984 before becoming MAC's executive director and CEO in 1985. At the same time, Hamiel continued to serve in the U.S. Air Force Reserve as its chief pilot and commander of the 96th Airlift Squadron until he retired from military duty in 1998.

More than 35 million people traveled through MSP in 2014 compared to 8.4 million passengers in 1977, when Hamiel joined MAC. The number of flights also has increased from 263,709 in 1977 to 412,695 in 2014. MSP is the 16th busiest airport in the United States in terms of

passenger traffic and the 13th busiest for aircraft operations. A 2012 economic impact study, conducted by InterVISTAS Consulting LLC, estimates that MSP International Airport generates more than \$10 billion in annual economic activity for the Minneapolis-St. Paul metropolitan area and supports more than 76,000 area jobs.

Hamiel's successor, Brian Ryks, was born in Lakeville, Minnesota, and received a Bachelor of Arts Degree in Criminal Justice Studies at St. Cloud State University in 1990. He first worked at MAC as a noise and operations technician, and went on to become a noise abatement manager at Stapleton and Denver International Airports in Denver, Colo. (1990-95). He became airport manager at Aberdeen Regional Airport in Aberdeen, S.D (1995-97); and St. Cloud Regional Airport, St. Cloud, Minn. (1997-2002). In 2002, Ryks was named executive director of the Duluth Airport Authority, Duluth, Minn. (2002-12); then executive director and chief executive officer at Gerald R. Ford International Airport in Grand Rapids, Mich. (2012 to present). Like Hamiel, Ryks is a general aviation pilot (www.metroairports.org). □

Julie Clark Inducted Into Minnesota Aviation Hall of Fame



(L/R) Kimberly Strohfus, Julie Clark and Amy Strohfus at the Minnesota Aviation Hall of Fame banquet, April 30, 2016, Hyatt Regency Bloomington. Kimberly and Amy Strohfus were representing their grandmother, Elizabeth Wall Strohfus (2000 MAHF inductee), who passed away March 6, 2016. Airshow performer, Julie Clark, was inducted into the Minnesota Aviation Hall of Fame this year.

Midwest Flyer In China



Phil Peterson of Oregon, Wis., presents a copy of *Midwest Flyer Magazine* to Bryant Li of Victoria Cruises, while on a trip to Shanghai, China in June 2016. Peterson participates in the annual Canada Fishing Fly-Out to Miminiska Lodge, Ontario, which is promoted in *Midwest Flyer Magazine*.

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Piper M600 Receives Type Certification

VERO BEACH, FLA. – Piper Aircraft announced June 17, 2016 that the company’s newest flagship, the Piper M600, has now received type certification from the Federal Aviation Administration (FAA).

On behalf of the FAA, the type certificate was presented to Piper Aircraft President and CEO, Simon Caldecott at Piper Aircraft headquarters in Vero Beach, Fla., by Piper’s FAA ODA Administrator Eric Wright in front of more than 700 guests, including community leaders, Piper Aircraft dealers, suppliers, and Piper Aircraft employees.

“We are delighted to announce the certification of the M600 by the FAA,” said Caldecott. With unique and innovative safety features for the single-engine turbo prop segment, the competitiveness of the M600 is further enhanced by the aircraft’s performance.

Piper Aircraft validated the M600’s performance, safety, function and reliability through extensive ground and flight tests with the FAA. The total flight hours accumulated during development and certification were in excess of 1850 hours using three flight test aircraft.

The M600’s maximum range, originally expected to be 1,200 nautical miles (2,222 kilometers) with NBAA IFR reserves, has been increased to 1,484 nm (2,748 kilometers) at intermediate cruise settings with NBAA IFR reserves. Additionally, the planned maximum cruise speed objective of 260 ktas (481 km/h) has been extended to 274 ktas (507 km/h). The M600 also boasts a Vmo speed of 250 kcas (463 km/h) and a max payload of 1,120 lbs. (508 kg).

The M600, the most advanced and capable aircraft in Piper’s M-class lineup, seats six and is powered by a Pratt & Whitney PT6A-42A turbo prop engine flat rated at 600 SHP. The M600 features the Garmin G3000 – the most sophisticated general aviation avionics suite available from Garmin, along with dual Garmin GTC 570 touchscreen controllers. The M600 has enhanced safety features including Emergency Descent Mode, Electronic Stability Protection, Level Mode and Underspeed/Overspeed Protection.

The aesthetics, ergonomics and technologies of the new Piper M600 features newly styled seats which have been optimized for comfort, as well as enhanced side panels with improved passenger interface. Additionally, three new color palettes have thoughtfully been created with the customer in mind. A comprehensive survey process helped identify the features and attributes that would be most appreciated by both pilots and customers including USB charging ports, executive folding tables, and folding seats.

The 2016 M600 is listed at a competitive price of \$2.853 million.

The single-engine M-Class series – the M600, M500, M350 and Matrix – offers businesses and individuals elegant performance and value. The Twin Class Seneca V and Seminole balance proven performance, efficiency and



Piper M600

simplicity in twin-engine aircraft. The Trainer Class Warrior, Archer TX, Archer DX, Arrow, Seminole and Seneca V form the most complete technically-advanced line of pilot training aircraft in the world. □

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FAA Publishes Final Hangar Storage Rule

by Hal Davis

Airport Compliance Manager
WisDOT Bureau of Aeronautics



Hal Davis

What you can and can't keep in a hangar tends to be a contentious topic on many airports. Adding to the frustration of hangar owners and airport managers alike, is the amount of misinformation out there. Much of the misinformation stems from evolving and varying interpretations of Federal Aviation Administration (FAA) policy and grant assurances.

Recognizing that additional clarification was needed, the FAA published a new policy on June 15, 2016, which clarifies and amends previous hangar storage rules. You can read the policy at: http://www.faa.gov/airports/airport_compliance/hangar_use.

The FAA compliance office also has assembled a list of frequently asked questions and answers regarding the policy, which can be found on the same web page.

Before we get to the rules themselves, it's important to note why FAA has a hangar storage policy to begin with.

Airports that accept federal airport improvement grants must agree to comply with numerous grant assurances. The purpose of these assurances is to protect the public's investment in the facility from misuse, disrepair, etc. Included in these assurances is the obligation to use hangars and other designated aeronautical facilities on the airport exclusively for aeronautical purposes. Without this requirement, non-aeronautical activities may block potential aeronautical users from having access to the airport.

The FAA's hangar storage policy applies to any airport that has received federal airport improvement grants or

has acquired property under the Surplus Property Act. Furthermore, whether or not a hangar is airport-owned or privately-owned does not affect the airport sponsor's agreement with the FAA and the requirement to use aeronautically obligated airport property for aeronautical purposes.

When compared to the previous policy, the new hangar storage rules include two significant changes. First, it is now acceptable to store non-aeronautical items in hangars provided they do not interfere with the hangar's primary aeronautical purpose. Second, non-commercial construction of amateur-built or kit-built aircraft is now recognized as an aeronautical use.

The rules themselves are fairly straight-forward and can be summarized as follows:

- All hangars must be used for an aeronautical purpose.

FAA considers the following uses aeronautical:

- Storage of active aircraft;
- Shelter for maintenance, repair, or refurbishment of aircraft, but not the indefinite storage of non-operational aircraft;
- Non-commercial construction of amateur-built or kit-built aircraft;
- Storage of aircraft

handling equipment, (e.g. tow bar, glider tow equipment, work benches, tools and materials used to service aircraft); and

- Storage of materials related to an aeronautical activity (e.g. balloon and skydiving equipment, office equipment, teaching tools).
- Provided the hangar is used primarily for an aeronautical purpose, an airport may permit non-aeronautical items to be stored in hangars provided they do not interfere with the aeronautical use of the hangar.
- While airports may develop more restrictive rules, FAA would not consider non-aeronautical storage to interfere with



What's being stored behind these hangar doors could affect airport funding eligibility if it's inconsistent with FAA rules. Fortunately, the new hangar storage policy is less restrictive, making compliance easier.

the aeronautical use of the hangar unless the items:

- Impede the movement of the aircraft in and out of the hangar;
- Displace the aeronautical contents of the hangar. A vehicle parked at the hangar while the vehicle owner is using the aircraft would not be considered as displacing the aircraft;
- Impede access to other aeronautical contents of the hangar;
- Are used for a non-aeronautical business or municipal agency function (including storage of inventory); and
- Are stored in violation of airport rules and regulations, lease provisions, building codes or local ordinances.
- Hangars cannot be used as a residence. The FAA differentiates between crew rest areas and a hangar residence in that the former are designed to be used for overnight/ resting periods for crewmembers and not as a permanent or even temporary residence.

- If the airport has empty hangars with no demand for aeronautical use, the airport can rent hangar space for temporary, non-aeronautical storage provided:
 - The non-aeronautical storage is pre-approved by FAA;
 - A fair market value commercial rental rate is charged;
- and
- The hangar reverts to aeronautical use as soon as there is demand.

The policy goes into effect July 1, 2017. Until then, airports are encouraged to begin taking any necessary steps toward compliance such as updating airport rules and regulations to reflect the new FAA policy.

While no one expects the new policy to put an end to all hangar storage problems, it is clearly a step in the right direction. By taking a common-sense approach to hangar storage, it should now be easier for airport managers and tenants to resolve the majority of hangar storage disputes. □

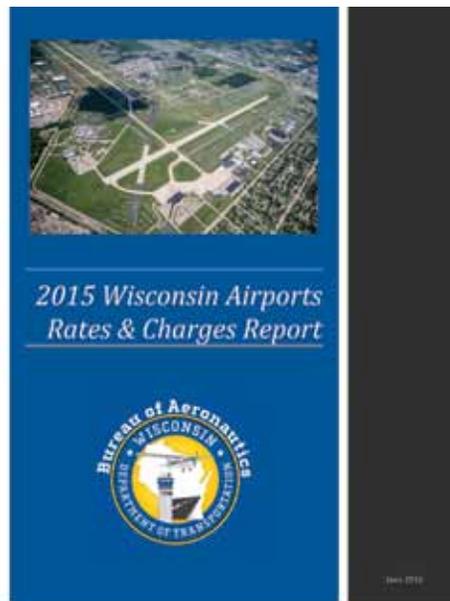
2015 Wisconsin Airport Rates & Charges Report

The Airport Rates & Charges Report for calendar year 2015 is now available.

Each year, the Wisconsin Department of Transportation Bureau of Aeronautics surveys those airports within the State Airport System Plan for information relating to airport rates and charges, budgets and related activities. Information, such as fuel prices, hangar rental rates and lease rates, can be found in the report. The survey results serve as a comparative tool to help airports gauge financial practices and needs. Pilots, consultants and other users of Wisconsin airports may also benefit from the data collected.

The report and raw data are available for download on the BOA website at: <http://wisconsindot.gov/Pages/travel/air/airport-info/rates-charges.aspx>.

Questions regarding the survey and report should be directed to the Wisconsin Department of Transportation Bureau of Aeronautics by calling (608) 266-3351.



Register For The WisDOT Airport Operations & Land Use Seminar

Each fall, the Wisconsin Department of Transportation (WisDOT) Bureau of Aeronautics (BOA) holds a two-day Airport Operations & Land Use Seminar for the people responsible for managing our state's airports. The 2016 Airport Operations & Land Use Seminar will take place Tuesday, September 20th and Wednesday, September 21st at the Holiday Inn and Convention Center in Stevens Point, Wis. This seminar provides airport managers with the information and tools they need to take on the day's challenges.

The 2016 seminar will include sessions on unmanned aircraft, airport insurance, real estate project management, airport financial self-sustainability, wildlife hazard mitigation,

and more!

We invite all airport managers, airport owners, airport committee members and anyone else who have a hand in managing an airport to attend. There's no better platform for interacting with FAA officials, BOA staff, airport consultants and other airport managers all in one place.

For more information about the seminar or to register, visit <http://wisconsindot.gov/Pages/doing-bus/aeronautics/trng-evnts/opslu-sem.aspx>.

For any questions regarding the seminar, contact Hal Davis at (608) 267-2142 or email howard.davis@dot.wi.gov.

Hope to see you there! □



THE STATE OF MINNESOTA PROVIDES THIS TECHNICAL BULLETIN IN THE INTEREST OF AVIATION SAFETY AND TO PROMOTE AERONAUTICAL PROGRESS IN THE STATE AND THE NATION

Cassandra Isackson, Director

Dan McDowell, Editor

Minnesota DOT Office of Aeronautics

Mail Stop 410 • 222 East Plato Boulevard • St. Paul, MN 55107-1618
651-234-7200 or 1-800-657-3922

Solar Power Your Airport Safely Through Planning

by *Cassandra Isackson*

Director, Minnesota DOT Office of Aeronautics

We are fortunate to have many long sunny days throughout the spring-summer-early fall seasons. And that abundance of sunshine can turn thoughts to using that solar power at Minnesota airports. While that might be advantageous in the not too-distant future, there is much that needs to be considered and planned for well before the commitment to solar is made.



Cassandra Isackson

Solar power systems are rapidly growing in many areas and industries of our nation and the world. Airports across the U.S. are beginning to build and install solar power generation

systems to help, in time, power their airport in an environmentally clean and cost effective method. But solar panels on a plot, in a field, or on top of a building, for instance, can seriously impact aviation safety through excessive glare.

A solar infographic can be downloaded from our webpage at: www.dot.state.mn.us/aero/. When an analysis of a proposed project is needed, please contact our Aviation Planning group and ask for Rylan.juran@state.mn.us, 651-234-7190.

I also want to share with you information about your paved airport. We have a statewide contract with Applied Research Associates (ARA) to monitor pavement conditions at your airport. ARA collects the pavement field distress data annually on one-third of Minnesota's airports. The ARA reports provide a great deal of information. You can view the report for your airport at:

<http://www.dot.state.mn.us/aero/>, then click on "airport development" and finally click on "pavement management."

If you have any questions about the report or the Pavement Management System, you may contact Dan Boerner at dan.boerner@state.mn.us or 651-234-7244.

As we head toward fall and the winding down of the flying season for many pilots, it is also the perfect time to start planning for next year's activities. Remember to send us information about your favorite aviation event. We'll post it on our "Events Page" so others can attend. Please check the events page at: www.dot.state.mn.us/aero/events/flyins-and-events.html for a list of aviation activities across the state. Send event information to: janet.dirtzu@state.mn.us. Although we can't attend every fly-in or event, we do go to several each year, so please invite us! □

Safety Is Your Choice!

Have you ever watched the start of a summer rain shower? First there are one or two drops, then one or two more, and so on. As they hit the pavement, they make clearly defined, individual spots. And as the drops continue to fall, the individual spots on the ground begin to disappear as the tiny drops add up to a saturated wet area. The point is that lots of little drops can add up to a significant flood. We'll come back to this paragraph in a few minutes.

Everyone has heard the phrase "don't sweat the small stuff!" But shouldn't

it be phrased "sweat the small stuff"? Think about it. If you are learning to fly, drive, ski, cook, or any worthwhile endeavor, sweating the small stuff can be the determining factor in whether or not you excel at that effort, or you become a hazard to yourself and others.

If a cook, for example, doesn't pay attention to the right amount of specific spices for a special dish, too much or too little could literally ruin that dish.

If a driver doesn't learn at the outset, the proper use of turn signals for instance, he or she will quickly become a danger to other drivers. They may actually cause accidents they aren't even aware of during the course of their

lives. But would you want to be in fast moving traffic when some individual simply turns in front of you without even attempting to use their signal? Sweat the small stuff!

Now imagine the same "don't sweat the small stuff" attitude in a doctor or a pilot. Would you want that doctor operating on you? Think about this... When finished with an operation, the doctor and his surgical team count up the forceps and other medical tools they used on you, but they come up short, and the doctor says casually, "Don't sweat the small stuff...you probably just miscounted. The patient is fine. Let's go home now. It has been a long day." Do

you still want that doctor working on you? Sweat the small stuff!

If a pilot in his/her earliest training begins to make some consistent but small errors, an instructor might be inclined to say little or nothing...after all, they are small things and the pilot is a student. Also flying is a complex activity. But what if these small things continue and the student pilot goes on to earn a private pilot certificate? One day, the small things that were overlooked or disregarded, could add up to be a significant part of a serious event that might be tragic in its result. Do you remember the opening paragraph example about the raindrops? Sweat the small stuff.

Getting The Big Picture

Take a minute to think about the U.S. military precision flight demo teams like the Air Force Thunderbirds, or the Navy Blue Angels. They are awesome in everything they do. They are the quintessential pilot role models who can excite people to learn to fly simply by their presence.

We watch these aviators with great respect and awe, but rarely do we ever think about the many small, seemingly insignificant details they had to master to get to be where they are today! With that in mind, ask yourself these questions: Aren't these pilots just inherently great aviators? Aren't they the best of the best? Isn't flying all they do? They don't have to sweat the small stuff, do they?

The quick answers are, no; yes; no; and yes. These pilots are certainly chosen from a group of highly skilled and very competitive candidates who are screened, tested, and challenged until the group can be narrowed down to the best of the best. That doesn't mean the selected pilots are inherently the best, but in all fairness, a few may well be inherently natural flyers.

As every military pilot is trained, they constantly work to fine tune and hone their flying skills. They look for the little things they might forget, or in a rush, might overlook, and then correct that potential situation. They practice, practice, and practice. They challenge themselves, and are constantly challenged on the ground before they fly, and in the air by the type of flying they do. There is essentially no room for error.

All of the precision team pilots have one or more additional jobs when on the ground, thus flying is not all they do. Their responsibilities are wide-ranging, as are their skills and talents. But keep in mind they started out in the same type of aircraft flown by nearly every GA pilot. They

learned to be the best of the best and they do sweat the small stuff.

They "sweat the small stuff" because like raindrops, what may seem to be something small and insignificant one moment, may turn out to be the very thing that becomes a serious problem the next moment. Bear in mind, most accidents are rarely caused by one single mistake or event, but rather by a series of mistakes or events (a chain of causation) that leads up to an incident or accident that could change your flying career forever.

If you don't pay attention to details now; if you don't make it a part of your flying life to consistently learn, practice, and fine-tune your flying skills, will you be ready for a problem in flight that may come about because of several small things that were forgotten, overlooked, or ignored?

Are you getting the big picture now? You are responsible for the decisions you make. When you are flying you need to be consistently alert, aware, and attentive to details. So sweating the small stuff is quite simply good flight discipline, as well as good judgement when in the air, or on the ground. If you truly have a passion for some activity, then mastering the details of that activity, or of anything you plan to do, will help ensure that you will be safe, successful, and prepared. But, making that decision to master the details – to sweat the small stuff – is up to you! □

Facts about Aviation in Minnesota

The Minnesota Department of Transportation, [office of Aeronautics](#) collects taxes, safeguards the long-term viability of the state airports fund, plans and promotes a statewide system of airports, distributes state and federal aviation funding, provides navigational systems, enforces state and federal safety standards, offers technical resources, fosters aeronautics and aviation safety, and provides air transportation to state employees.

How many public airports are in Minnesota?

135 land based airports 19 sea-plane bases

Who owns Minnesota's airports?

| City with a population: | City / County w/population | County | Authority | State-owned | |
|-------------------------|----------------------------|--------|-----------|-------------|---|
| < 1000 | 1,000-5,000 | >5000 | | | |
| 26 | 48 | 31 | 7 | 14 | 1 |

Aircraft in Minnesota:

There are **6,306** registered aircraft in the state of Minnesota as of April 15, 2016.

The value of General Aviation in Minnesota:

- * General Aviation has a \$12.2 billion impact on the State of Minnesota through its network of 135 public airports.
- * General Aviation has created 164,900 jobs in Minnesota, and provides more than \$6.5 billion in labor income annually.
- * General Aviation contributes more than \$150 billion to the U.S. economy annually and employs more than 1,265,000 people, nationally.
- * In the U.S., General Aviation aircraft fly almost 24 million hours and carry 166 million passengers annually.
- * There are nearly 4,000 paved General Aviation airports open to the public in the U.S. while scheduled airlines serve fewer than 500 airports nationwide. Minnesota has 8 air service airports.

Over two-thirds of all the hours flown by General Aviation aircraft are for business purposes and General Aviation is the primary training ground for most commercial airline and military pilots.

And finally, did you know that...

Our Minnesota aviation system is funded by aviation user fees generated from aviation fuel tax, aircraft registration, aircraft sales tax, and airline flight property tax. These funds are dedicated solely for use by and for aviation in Minnesota.

Note: This information was gathered from the Minnesota Airports Survey 2015, the Minnesota Council of Airports website, and GA Serving America website.



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Minnesota Education Section

Minnesota Transportation Center of Excellence

UAS Pathway To Success

by Jonathan Beck

A page has turned and a new chapter has begun as the Federal Aviation Administration (FAA) announced the long-awaited small Unmanned Aircraft Systems (sUAS) Final Rule, known as Part 107. With the sUAS Final Rule set to take effect in August, diverse industries will rapidly adopt UAS technology and expand the limits of what we see as possible today. Many industries have already seen potential and some are exploring UAS, but there has been caution due to the uncertainty of the technology and the rules. The main questions we continue to hear is, "What does this mean to me?"

With clear rules established for what a sUAS operator should and should not do, as well as defined credentials to operate sUAS, many businesses are in a better place to incorporate UAS technology into their daily operations. Though the new regulations do not address all considerations for uses for UAS technology, this is a large step in the right direction. It will alleviate the large workload created by the exemption process that went from the first UAS commercial operator approval in late 2014, to more than 5,500 today. The sUAS Final Rule lays out a framework of safety and accountability as UAS continue to grow in use. Traditional aviation enthusiasts now have a better understanding of how this will affect their flight operations, and UAS users now have a clearer picture of how to legally implement them into their business models, and how to share our airspace safely.

Some key points from the sUAS Final Rule include:

- UAS weighing less than 55 lbs.
- Visual line of sight operations.
- Yield right of way to other aircraft.
- Maximum flight altitude of 400 feet or remaining within 400 feet of a structure.
- Ensure aircraft is in a safe condition and conduct preflight inspection.

Operator/Certification requirements are:

- 16 years of age.
- Demonstrate aeronautical knowledge through testing or completion of online training.



Students from Northland's Geospatial Intelligence Analysis AAS Degree program learn about the Phoenix UAS manufactured by a Minnesota based company, Sentera LLC. (L/R): Nicholas Shaske, Grant Fischer, Austin Merkins, Adam Mahne, Josiah Clark (at computer), Kevin Lanning and Jon Beck.

- Pilot In Command (PIC) is physically and mentally fit.
- Hold a Remote Pilot Airman Certificate or be under the direct supervision of a person who does.

- Complete re-occurring training every 24 months.

In addition, operators must register their aircraft and comply with all state and local requirements.

To address these changes, education is required which must include an understanding about:

- The rapid expanse of UAS technology.
- Autopilot features.
- Sensor capabilities.
- Varied control methods.
- Performance characteristics.
- Price points.

Educated consumers should be able to find the right tools for the job and understand how to effectively use them. Without the knowledge on what to consider when looking for the proper UAS for your needs, a consumer or business can quickly find themselves dissatisfied with the systems not meeting their expectations or empty their pockets with features that are not needed. To address the need for educated technicians in UAS technology, Northland has continued to grow its program offerings to meet the need.

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Rex Hammarback

Executive Director, Northland Aerospace Foundation
rex.hammarback@northlandaerospace.com
218.399.3939



Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

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As part of an AgCentric (MnSCU Center of Excellence in Agriculture) training activity, faculty from Central Lakes and Ridgewater College conduct sUAS training with Northland at the University of Minnesota Magnusson Research Farm in Roseau, Minnesota in preparation for integrating UAS content into agriculture programs across the state. (L/R BACK ROW) Mike Mastey, Hannah Barrett, Tony Lapatka, Jon Beck. (FRONT & CENTER) Curt Yoose.



Jon Beck (Middle) and Tarun Shivhare (Far Right) provide instruction to NVCTC students on multirotor kits the students build as part of the summer camp.

New sUAS Field Service Technician Certificate Program

This fall, Northland will launch a program to train future UAS technicians to meet the needs of industry and requirements of the new regulations. The 30-credit sUAS Field Service Technician Program will incorporate the required education to meet the credentialing requirements to operate sUAS for business and public purposes. The certificate program will be a stackable credential for students and the current workforce as they plan for careers to meet the need for skilled UAS technicians.

In the sUAS Field Service Technician Program students will develop a broad knowledge and understanding of sUAS at the functional and operational level as they build their own multirotor UAS from a kit. They will learn how to customize their systems with the integration of sensors and components tailored to their interests. Students will have a chance to explore some of the industry-leading UAS technology and its power to impact various industries.

Students will advance their aeronautical knowledge to ensure they are prepared to successfully complete the new aeronautical knowledge exam to become a certified UAS Remote Pilot Operator. It will be a great opportunity

to generate interest in the aviation community and the experience the environment creates.

UAS Summer Camps & STEM Activities

Northland has already begun cultivating the future generation of UAS technicians that will meet the growing demand for an educated workforce in UAS technology. In June, Northland partnered with the North Valley Career and Technology Center in Grafton, North Dakota to offer students in grades 7-12 a chance to experience UAS technology through hands-on activities. Some of these activities included building a multirotor drone from a kit, performing simulated flight training, flying the UAS they built, as well as many mainstream products, and then transforming the digital data collected by UAS into usable industry products. **Additional**

Opportunity: August 11-12, Northland will offer another **UAS Summer Camp** at its aerospace campus in Thief River Falls, Minnesota, with many of the same activities.

UAS Educator Workshops

There are also many educators interested in UAS technology today, who are seeking ways to integrate this



Hannah Barrett of Central Lakes College performs pre-mission planning for UAS operations.



Tony LaPatka, Customized Training Instructor for Ridgewater College, prepares a Sentera Phoenix UAS for launch.

knowledge into the classroom. **August 8-10**, Northland will offer a **DroneTECH Educators Workshop**. This workshop will provide secondary and post-secondary educators with an introduction to UAS and geospatial technology and the tools to incorporate into existing STEM education. Participants will have access to continued resources, and curriculum and faculty expertise following the workshop. Course curriculum modules will align to existing Common Core Standards to assist in streamlined integration to secondary STEM education.

UAS is a technology that will continue to grow in the aviation community and provide a great opportunity to inspire the next generation of aviation enthusiasts. Northland is home to a long-standing history of aviation education and is always looking for more ideas to build the Minnesota aviation community. We

welcome the feedback we have received from the Minnesota Education Section in *Midwest Flyer Magazine*, and the great ideas to grow new opportunities for engagement. Feel free to continue reaching out to us and sending your thoughts!

EDITOR'S NOTE: Jonathan Beck is the UAS Instructor/Program Manager at Northland Community and Technical College, Thief River Falls, Minnesota.



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Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation. □

SCHOLARSHIPS

Flying Musicians Association Awards Solo Scholarships

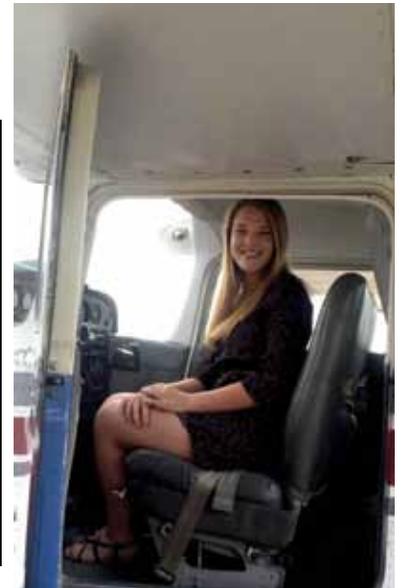
The Flying Musicians Association (FMA) has selected its recipients for their 2016 solo scholarships. Five finalists, from Tennessee (2), California, Michigan, and Wisconsin were selected from nominations received from band directors across the country.

The recipient of the 2015 FMA Solo Program Scholarship is Sarah Coffelt of Tullahoma, Tennessee. Coffelt will be entering her senior year of high school as a member of the Tullahoma Band, under the direction of Martin D. McFarlane.

To learn how you can support this program, please email us at Education@FlyingMusicians.org (www.FlyingMusicians.org).



Sarah Coffelt



□

Hi Dave:

I want to thank you for the wonderful article in the February/March 2016 issue by Tom Biller (Northland Community & Technical College) on "model building." I also grew up building plastic models of airplanes, cars and motorcycles and then was fortunate to enjoy hundreds of hours assembling model airplanes with my two sons when they were younger. Unlike Tom, however, we still have all the models we put together and they are prominently on display in several cabinets in our home. I believe our interest in model building contributed to our love of aviation and led us to pursue careers in the field. In our downstairs "model building room," there is an unopened 1/48 scale model of a B-29 Superfortress. I'm thinking it's time to dust off the old Paasche airbrush.

Dale Klevgard
Black River Falls, Wisconsin (KBCK)

Dave:

I finished reading the magazines you sent me. Looking forward to getting more!

In the February/March 2016 issue, I really liked the "Operation LZ" article by Jim Hanson. It is interesting how so many Vietnam vets feel they were cheated out of a proper homecoming.

Hanson is correct when he describes Vietnam as a war of individuals. Today, units depart the states for combat service, as a single unit. When their time is up (be it a few months or longer), the entire unit departs, to return home where there are ceremonies for the entire unit (back at their home station,

be it an active duty unit or Reserves or the National Guard). Units did deploy to Vietnam as single units from companies to divisions. But they did not return after a year, but remained assigned to Vietnam. When a total unit was assigned to Vietnam, initially, after its first six months in country, it began transferring men out of the unit to other places in Vietnam. They were replaced by individuals who (mostly) just arrived in Vietnam and would be in-country for 9 to 12 months later. Doing this rotation over six months, it insured that the units would have command continuity in that everyone would not leave at the same time. But most soldiers were sent to Vietnam as individual replacements.

I never saw a homecoming ceremony as something I deserved. In fact, in the 1950s when I first engaged in combat as an enlisted Marine in the Middle East, I deployed as a member of a unit (a reinforced infantry combat amphibious landing battalion), where we left the states as a large, single unit and returned as such. But when we returned to the states and our home base (Camp Lejeune, NC), there were no parades or any ceremonies. We were all glad to just get back. Parades or ceremonies were not expected by any of us. We were all volunteers (no draftees in the Marines, then), and combat was what we were trained to do. So I never thought that I was entitled to some kind of "homecoming" ceremony after each of my Vietnam combat tours.

Upon my return, I was not spit on or treated in any hostile manner. After my last tour, I came home to enter graduate school (I left active duty, but remained in the active Reserves...like the recently crowned Miss USA). I had the GI Bill for school and thought that was a great benefit. (I used the GI Bill for two Master degrees, a PhD and most of my instrument rating, so I can't complain...all of that was better than a homecoming parade). But a lot of Vietnam vets believe that they should have had some type of "homecoming" ceremony. Most of these vets were not career military.

But at this airshow, what Hanson did (and all the others) is amazing. It was quite an airshow and the article was very good. I especially liked the parts on the Hueys. My life was saved by a Huey medevac flight once and another time while conducting a night special ops mission I got shot in a Huey. So I have a lot of time in Hueys.

Anyway, the article by Hanson was great and very interesting. By the way, the article mentions the turbo, twin-engine Grumman Mohawk, counter-insurgency recon plane. Did you know that the USAF brought two similar planes, the VN era OV-10 Bronco, counter-insurgency attack/recon plane out of mothballs and sent them to Afghanistan? Senator John McCain (chair of the Armed Forces Committee) was against this, but it is better for close air-ground combat support and much cheaper than the fighter jets. They have returned to the states for evaluation and to decide what to do with them (probably not use them, again).

Bob Worthington
Lt. Col. U.S. Army (retired)
Las Cruces, NM



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Hi Dave:

In your June/July 2016 issue, page 36, lower right photo, it appears to me as though that photo is of an Apollo Command Module, and not the Skylab. Astronauts used the Command Modules, however, to travel to/from the Skylab.

For what it's worth, in my prior life, I was an aerospace engineer who worked on Skylab.

Larry E. Nazimek
Chicago, Illinois

Larry:

Thanks for the catch. I would agree. Possibly an error in the placement of signage, but certainly an error on our part.

Dave Weiman
Midwest Flyer Magazine

Hi Dave!

We are having the same issue with our "mags" that you had last year while on your trip to Churchill, Manitoba – one of the most remote destinations in North America. Fortunately for you, you experienced your bad magneto before leaving the United States. And fortunately for me, we just returned from a long cross-country to Florida when our mechanic detected a similar problem during a routine oil change.

Our mechanic, Gary Bavuso of Gran-Aire, Inc. (Milwaukee Timmerman Airport) ran up the engine to warm the oil prior to draining it when the left mag failed completely. I had been having occasional trouble with it, but it always cleared with leaning. I also had trouble starting the engine at times, but never gave it a second thought once the engine started.

We just returned from Florida and I am certainly glad we were not stuck somewhere down south at some small airport without a good aircraft technician.

The mags had 450 hours on them and were due for overhaul this fall during the annual. After hearing that you were also under the recommended hours between overhaul, I am thinking that maybe the recommended overhaul time should be 400 hours instead of 500 hours!

Happy and safe flying!

Herbert Zimmers
Milwaukee, Wisconsin

Herb:

Sorry you experienced problems with your magnetos prior to their time between overhaul, but good to hear I am not alone. Interesting is that while one brand of magnetos have had a reputation of being "better" than other brands, we've proven that failure can happen with all brands. I hope the "new and improved" mags we had installed on our Cessna 182 Skylane prove to be just that.

Fortunately, aircraft have two magnetos in the event one poops out, but none of us want to find ourselves in that position.

Dave Weiman
Midwest Flyer Magazine



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NOTAM: Pilots, be sure to call events in advance to confirm dates and for traffic advisories and NOTAMs.

Also, use only current aeronautical charts, etc., for navigation and not calendar listing information.

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* INDICATES ANY NEW OR UPDATED CALENDAR LISTINGS SINCE THE PREVIOUS ISSUE.

AUGUST 2016

- 1-6 INDIANOLA, IOWA - National Balloon Classic at the Indianola National Balloon Classic Field. 515-961-8415. www.nationalballoonclassic.com
- 4 EAGLE RIVER (EGV), Wis. - Northwoods Wisconsin Flying Hamburger Social 5-7pm.
- 4 NEW LISBON (82C), Wis. - Slipstream Branch of the Wisconsin Flying Hamburger Social 5-7pm at the Mauston-New Lisbon Union Airport.
- 4-7 SOUTH BEND, IND. - Great Lakes Aviation Conference at the Hilton Garden Inn and Saint Marys Inn. Contact person - Mike Daigle 574-233-2185 glcaaae.org
- 6 NORTHPORT (5D5), MICH. - Pancake Breakfast at the Woolsey Airport 8am-Noon. Antique Car Display. Pilots Are Welcomed To Pitch A Tent By Plane. Contact Don Ramsdell at 231-386-7351 (home) or 616-460-8965 (cell) *Rain date August 7, 2016.*
- 7 LONGVILLE (XVG), MINN. - Pancake Breakfast 8am-Noon. Event also features classic cars, model trains, emergency vehicles. Steve Shallbetter, pilot contact, 218-821-0779.
- 8 MONTICELLO (KMXO), IOWA - Breakfast 7am-12:30pm. 319-465-5488.
- 8-10 THIEF RIVER FALLS (TVF), MINN. - DroneTECH Educators Workshop. **At the Northland Aerospace Campus. Will provide great opportunities to learn about UAS technology and how to integrate it into the classroom. In the planning phases for our project, we've found great depth and broad interest in UAS technology that will be fun to explore as we collectively help each other build it into our STEM education programs. Please think about attending these workshops and pass them on to colleagues who may be interested. Registration can be completed at <https://northlandcollege.augusoft.net/>. For any questions please email jonathan.beck@northlandcollege.edu or call 218-683-8831.**
- 9 INDEPENDENCE (KIIB), IOWA - Tuesday Night Grill-Out at the Airport 5-8pm. 319-334-4000.
- 10 PLATTEVILLE (KPVV), Wis. - The Lunch Bus (SW Wisconsin's famous food truck as featured on Wisconsin Public Television, menu: www.thelunchbus.net), 5:00-7:00 pm: 608-348-3582.
- 11 LAND O' LAKES (KLNL), Wis. - Northwoods Wisconsin Flying Hamburger Social 5-7pm.
- 11-12* THIEF RIVER FALLS (TVF), MINN. - UAS Summer Camp at Northland Aerospace Campus. For any questions please email jonathan.beck@northlandcollege.edu or call 218-683-8831.
- 8-11 MIMINISKA LODGE, ONTARIO - 2016 Canadian Fishing Fly-Out. 3-Night/2-Day Trip.
- 8-13 MIMINISKA LODGE, ONTARIO - 2016 Canadian Fishing Fly-Out. 5-Night/4-Day Trip.
FOR MORE INFO ON CANADIAN FISHING FLY-OUT
EMAIL: info@midwestflyer.com
- 12 Two HARBORS, MINN. - Fly-In/Drive-In Outdoor Movie "Top Gun" starting at sunset at Richard B. Helgeson Municipal Airport. (Rain Date Aug. 13). 218-834-2162.
- 13 RICE LAKE, Wis. - Rice Lake Regional Airport Fly-In Pancake Breakfast: 7 AM to 10 AM. Lunch: 11 AM- 2 PM (free for pilots flying in). Military, Model Aircraft, Car and Motorcycle displays. Helicopter Rides. Kids Candy Drop. Parachute Jumpers. For further information, email mike@ricelakeair.com
- 14 LINO LAKES, MINN. - Minnesota Seaplane Pilots Association Pig Roast, Surfside Seaplane Base. www.mnseaplanes.com
- 14 JUNEAU (KUNU), Wis. - Breakfast 8am-Noon.
- 16 WILD ROSE (W23), Wis. - Lakeview Branch of the Wisconsin Flying Hamburger Social 5-7pm.
- 17 BROOKFIELD (02C), Wis. - Capital Branch of the Wisconsin Flying Hamburger Social 5-7pm at the Capitol Airport.
- 18 PHILLIPS (KPBH), Wis. - Northwoods Wisconsin Flying Hamburger Social 5-7pm.
- 18 WATERTOWN (KRYV), Wis. - Flying Hamburger Social 5-7pm.
- 20 BREMERTON (PWT), WASH. - Regional AOPA Fly-In at Bremerton National Airport. www.aopa.org/Community-and-Events/AOPA-Fly-In/2016
- 20 GLENCOE (KGYL), MINN. - Sweet Corn & Bratwurst Fly-In. 10am – 2pm. www.eaaul92.weebly.com
- 20 BEMIDJI, MINN. - Pancake Breakfast 8am-1pm.
- 21 BOYCEVILLE (3T3), Wis. - Pancake, Sausage & Eggs Breakfast 7-11am. com 122.8. 715-205-9104. Joe.Timblin@Flyer411.com

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- 23 **NEENAH (79C), Wis.** - Lakeview Branch of the Wisconsin Flying Hamburger Social 5-7pm at the Brennand Airport.
- 24 **RACINE (RAC), Wis.** - Capital Branch of the Wisconsin Flying Hamburger Social 5-7pm - Racine Sport Flyers at John H Batten Airport.
- 25 **TOMAHAWK (TKV), Wis.** - Northwoods Wisconsin Flying Hamburger Social 5-7pm.
- 28 **FREMONT, NEBR.** - Breakfast 7am-Noon. 765-894-6845.
- 28* **OWATONNA (OWA), MINN.** - Breakfast at the Owatonna Degner Regional Airport 507-444-2448.
- 29-31* **KANSAS CITY, Mo.** - 4 States Airport Conference at the Kansas City Marriott Downtown Muehlebach Tower. www.4statesairportconference.com/conference-schedule
- 30 **IOLA (68C), Wis.** - Lakeview Branch of the Wisconsin Flying Hamburger Social 5-7pm at Central County Airport.
- 31 **MADISON (MSN), Wis.** - Capital Branch of the Wisconsin Flying Hamburger Social 5-7pm at Wisconsin Aviation, Dane County Regional Airport-Truax Field.

SEPTEMBER 2016

- 1 **MANITOWISH WATERS (KD25), Wis.** - Northwoods Wisconsin Flying

- Hamburger Social 5-7pm.
- 4* **MONDOVI (W69), Wis.** - **30th Annual Log Cabin Fly-In Noon Lunch. Picnic lunch: hot dogs, baked beans, potato salad, fresh sweet corn. Refreshments: coffee, water, pop, assorted desserts. 715-287-3377 logcabinairport@tcc.coop 44-34-29.8700N 091-32-49.5600W Elevation 850' Frequency 122.90**
- 5 **HINCKLEY (02C), ILL.** - Pancake Breakfast 8-11:30am.
- 10 **SOUTH ST. PAUL, MINN.** - Fall Bombers Moon Ball hosted by Commemorative Air Force Minnesota Wing. www.cafmn.org/hangar-dances.html
- 10 **NEW HAMPTON (1Y5), IOWA** - Breakfast 7-11am. 319-240-5092.
- 10 **COUNCIL BLUFFS (CBF), IOWA** - Breakfast 8-11am. 402-981-4633.
- 11 **CARROLL (KCN), IOWA** - Airshow (TBD) & Flight Breakfast 6:30am-Noon at the Carroll Municipal/Arthur N Neu Airport. 712-792-4980. www.carrollairshow.com
- 11 **WATERTOWN (RYV), Wis.** - **Pancake Breakfast & Airport Open House 8am-3pm.**
- 11* **NEW ULM (KULM), MINN.** - **Lions Club of New Ulm Fly-In Breakfast. Pancakes, Sausages, Apple Sauce, Coffee, Milk & Juice Breakfast 7am-12:30pm. Adults \$8.00, Children 4-12 \$3.00, Free Breakfast for all fly-in pilots.**
- 11* **JACKSON (MJQ), MINN.** - Pancake Breakfast 7am-Noon. Pilots Free.
- 13 **INDEPENDENCE (KIIB), IOWA** - Tuesday Night Grill-Out at the Airport 5-8pm. 319-334-4000.
- 15 **WATERTOWN (KRYV), Wis.** - **Flying Hamburger Social 5-7pm.**
- 17 **BATTLE CREEK (BLT), MICH.** - Regional AOPA Fly-In at WK Kellogg Airport. www.aopa.org/Community-and-Events/AOPA-Fly-In/2016

- 17 **MARSHALLTOWN (MIW), IOWA** - Breakfast 7-11am. 641-752-0012.
- 17 **ROCK FALLS (KSQI), ILL.** - The Old Fogeys Lunch 11am-2pm at Whiteside County Airport-Jos H Bittorf Field. 309-441-6106.
- 24 **CLINTON (CWI), IOWA** - Fly Iowa with a Space County, USA theme to celebrate the county's history in aerospace and aviation.
- 24 **EDEN PRAIRIE (FCM), MINN.** - Chili Cook-Off/Feed & Open House at Modern Avionics 9am-1pm. Anyone interested in entering the chili contest, please call or email Gloria 952-941-2783 or gloria@modernavionics.com.
- 25 **BOSCOBEL (NOVS), Wis.** - Breakfast. 8am-noon. "Pilot in command free."
- 29-30 **KANSAS CITY, Mo.** - 4 States Airport Conference at Kansas City Downtown Marriott. www.kansasairports.org

OCTOBER 2016

- 1 **PRESCOTT (PRC), ARIZ.** - Regional AOPA Fly-In at Earnest A. Love Field. www.aopa.org/Community-and-Events/AOPA-Fly-In/2016
- 11 **INDEPENDENCE (KIIB), IOWA** - Tuesday Night Grill-Out at the Airport 5-8pm. 319-334-4000.
- 20 **WATERTOWN (KRYV), Wis.** - **Flying Hamburger Social 5-7pm.**
- 20-21 **OTTUMWA, IOWA** - Midwest Aviation Invitational Maintenance Competition at the Indian Hills Community College Airport Campus. 641-683-4252 (Terry Dunkin). www.midwestaviationinvitational.com
- 29 **ST. CHARLES COUNTY, Mo.** - Airport Open House & Pumpkin Drop 9am-5pm. 636-949-1893.

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HELP WANTED - Rhinelander/Oneida Co Airport, Rhinelander, Wisconsin, is seeking an experienced, full-time Airport Operation/Maintenance worker with Aircraft Rescue and Firefighting experience desired. Starting wage \$22.36 plus full benefits. Contact **Joe Brauer** at jbrauer@fly-rhi.org.

PILOT SUPPLIES FOR SALE - IC-A24 Transceiver with power supply: \$175. Lightspeed Zulu Headset: \$450. Three (3) David Clark H10-30 Headsets: \$130 each. All work well: **608-334-9904**.

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BEECH BARON & CESSNA 421 PILOT WANTED! Part 135. **847-808-9868**.

HANGAR FOR SALE – Wisconsin – Dodge County Airport (UNU) –38W X 31D, Door 38W X 11H, \$22,500. Contact **Mary** at **920-386-2402** or Mary.Gasper@WisconsinAviation.com. More details and photos available at WisconsinAviation.com.

HANGARS FOR RENT - Hawley Municipal Airport in Hawley, Minnesota has t-hangars available for rent. Hawley is located on Hwy 10 in West Central Minnesota. The airport is 20 minutes east of the Fargo/Moorhead area and 20 minutes west of the Detroit Lakes area. Rent is \$100-\$105/month. Renters must own an airplane with a currently registered N-Number. Hawley Municipal Airport is located at 21684 Hwy 10 Hawley, MN. The airport has a 3406 foot asphalt runway and accommodates single-engine aircraft. This is an unattended airport with an Arrival/Departure building. Self-Service 100LL Fuel is available with the use of a major Credit Card. Contact **Hawley City Hall** at **218-483-3331** for more information.

T-HANGAR FOR SALE – Dane County Regional Airport, South Ramp. 44 foot, 8 inch door, 14 foot clearance, 1450 square foot: \$40,000. Call **608-516-4100** or Email pfahey1191@aol.com.

HELP WANTED – Seeking experienced A&P/IA Shop Lead. Management experience a plus, busy shop with wide variety of aircraft and inspections at Waukesha, WI (KUES). Spring City Aviation, Inc. Contact **Josh Siehoff, 262-751-6900. Josh@springcityaviation.com**

ONLINE GROUND SCHOOL - HD Video Multi Engine Ground School Online: www.PilotProficient.com

T-HANGAR RENTALS – La Crosse Regional Airport (LSE), La Crosse, Wisconsin. To check on availability, go to <http://www.lseairport.com/hangar-rentals.php>. For additional information, including rates, call the airport manager's office at **608-789-7464** or email gillettj@lseairport.com

WANTED – Aircraft paint shop or other aviation business seeking a location in east central MN. New beautiful hangar, public-use airport, asphalt ramp/runway. Call **Brian** at Eagle Air at **320-384-6667**.

HANGAR SPACE – Hartford, WI (KHXF). Space available in cold storage community hangar. \$175/mo. for Cub-sized aircraft: **608-235-9696**.

RESTAURANT SPACE AVAILABLE (3,695 sq. ft.) at Southern Wisconsin Regional Airport (KJVL) in our newly remodeled terminal building in Janesville, Wisconsin. This airport is known for being an airfield with a restaurant for over 50 years. The space offers panoramic views of the three runways and is conveniently located between Janesville and Madison to the north, and Beloit and Rockford, Illinois to the south. For additional information contact **Ron Burdick** at **608-757-5768**.

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Wright Brothers Master Pilot Award

The Wright Brothers Master Pilot Award recognizes pilots who have demonstrated professionalism, skill and aviation expertise by maintaining safe operations for 50 or more years. Recipients are awarded a certificate and a lapel pin and are recognized in the Federal Aviation Administration's Wright Brothers Master Pilot Award - Roll of Honor located online at www.FAASafety.gov.

For information regarding eligibility, how to apply or the selection process, download the Information Guide and Application Form.

Among those who have received the award since the last issue of *Midwest Flyer Magazine* include former Wisconsin DOT Bureau of Aeronautics Aviation Safety Specialist, Duane Esse of Waunakee, Wis., on May 10, 2016; and retired Northwest Airlines pilot, Don Kiel of Manitowoc, Wis., on May 19, 2016. Paul Welke of Beaver Island, Mich., received both the Wright Brothers Master Pilot Award and Charles Taylor Master Mechanic Award on May 11, 2016. Welke is owner of Island Airways (<http://midwestflyer.com/?p=8692>). □

Charles Taylor Master Mechanic Award

The Charles Taylor Master Mechanic Award is named in honor of Charles Taylor, the first aviation mechanic of powered flight, and recognizes the lifetime accomplishments of senior mechanics. Taylor served as the Wright brothers' mechanic and is credited with designing and building the engine for their first successful aircraft.

Applicants must meet the following criteria to be eligible for the award: U.S. citizen, and worked for a period of 50 years in an aviation maintenance career, consecutively or non-consecutively.

The applicant must have been an FAA-certificated mechanic or repairman working on N-registered aircraft maintained under the Federal Aviation Regulations for a minimum of 30 of the 50 years required.

The remaining 20 years may be accepted if that individual served as an aircraft mechanic/repairman in the U.S. military; or worked as an uncertificated person in a U.S. aviation maintenance facility that maintained U.S.-registered aircraft, either domestic or overseas; or worked as an uncertificated person in the aircraft manufacturing industry in the United States, producing U.S. type-certificated or U.S. military aircraft.

Any individual who had his or her FAA Mechanic Certificate, FAA Repairman Certificate, FAA Designated Mechanic Examiner (DME) Certificate, or FAA Inspection Authorization (IA) Certificate revoked by the FAA, is ineligible for this award.

To apply, follow application procedures located at www.faa.gov/content/MasterMechanic.

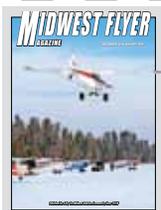
Wright Brothers Master Pilot Award and Charles Taylor Master Mechanic Award recipients wishing to be listed in a future issue of *Midwest Flyer Magazine* are encouraged to email their name, address, aviation occupation or avocation, and the date in which the award was presented to info@midwestflyer.com. □

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