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Finding a fix for TFRs

Just about anyone who has planned a flight in or near a major metro area has had to worry about temporary flight restrictions (TFRs) at one time or another.

Scrolling through dozens, even hundreds, of NOTAMs to identify TFRs that are relevant to your flight can be daunting. The sheer number can make it easy to miss something. But when you have access to good graphics, you can instantly see if a TFR will affect your flight.

Unfortunately, graphics aren't available for every TFR. And when graphics are unavailable or are inaccurate, the number of violations goes way up.

That's why AOPA will be helping to lead an effort to improve TFR graphics, from how the information is delivered to how it is depicted.

Back in 2015, we started asking questions about the scope and extent of problems we were seeing with TFRs that either had no graphics or, maybe worse, showed incorrect graphics. After uncovering recurring issues, we asked the FAA to provide an authoritative online source of TFR information, provide TFR information in a consistent format so that automated systems used by third-party vendors can translate it into accurate graphics, and work to make the text of TFR NOTAMs more user friendly for pilots.

This April, the FAA responded by formally tasking the RTCA Tactical Operations Committee to address the issues we raised and report back with recommendations within six months. AOPA will co-chair that effort.

In the meantime, many companies that provide graphical TFR information like Lockheed Martin and ForeFlight have found ways to identify and correct problems with TFR graphics, and we're collaborating with them to make sure the information gets back to the FAA immediately. But their efforts have been time consuming and labor intensive, and now we're on the path to finding better solutions that will work for everyone.

TFRs can have a profound effect on the way we fly. Getting it right is vitally important to our members, and the safety of everyone concerned. That's why we're committed to working with government and the aviation community to make sure pilots have access to accurate, reliable TFR graphics every time they take off.



Mark R. Baker
President & CEO, AOPA

ON THE COVER: Vicky Benzing performing a knife-edge maneuver in her 1940 Boeing Stearman at EAA AirVenture Oshkosh 2015 at Wittman Regional Airport, Oshkosh, Wisconsin. In addition to performing in the Stearman, which is equipped with a 450 hp Pratt & Whitney R985 engine, Benzing also performs in an Extra 300S. See Dialogue on page 5 for additional information.
Chris Bildilli Photo



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Vicky Benzing – Fastest Woman Racer Ever At Reno!

by Dave Weiman

Our cover photo for this issue of *Midwest Flyer Magazine* by Chris Bildilli features Vicky Benzing performing a knife-edge maneuver in her 1940 Boeing Stearman at EAA AirVenture Oshkosh 2015 at Wittman Regional Airport, Oshkosh, Wisconsin. She also performs in an Extra 300S. But performing in air shows is but one of Vicky's talents.



Born and raised in California, Vicky is also an aerobatic competitor, skydiver, air racer, and holds an Airline Transport Pilot Certificate, as well as a Commercial Pilot Certificate for helicopters, seaplanes, and gliders.

Vicky began racing in the National Championship Air Races in Reno, Nev., in 2010. Competing in the Sport Class, she won her first race ever and was chosen as the "Rookie of the Year" by her fellow racers. In 2013, Vicky qualified to race a Czech-built Aero Vodochody L-39 "Albatros" jet and was named "Rookie of the Year" for the Jet Class, finishing in the gold at 425.6 mph. Vicky

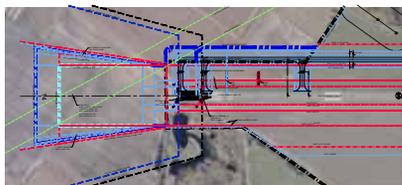
won 1st place in both the Sport Silver and Jet Bronze Races in 2014. In 2015, she made history as the fastest woman racer ever in the history of the National Championship Air Races when she qualified in an L-39 at 469.831 mph. Vicky will be back at Reno flying the L-39, September 14-18, 2016 (<http://airrace.org/>).



Vicky Benzing

In addition to her aviation pursuits, Vicky holds a PhD in Physical Chemistry from UC Berkeley, and has had a successful career in the Silicon Valley high-tech industry (www.vickybenzing.com).

The 64th annual Experimental Aircraft Association fly-in convention, EAA AirVenture Oshkosh 2016, will be held July 25-31 (www.eaa.org/airventure). □



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Ask Pete!

by Pete Schoeninger



Pete Schoeninger

Q: Why is it that I have 40-gallon fuel tanks in each wing of my Cessna 182 for a total of 80 gallons of fuel, but the manufacturer says that only 75 gallons are useable? Is it that the remaining 5 gallons are in the fuel lines and carburetor, or does altitude and pressure have anything to do with it?

A: The fuel lines and carburetor hold very little fuel. The majority of unuseable fuel in your airplane is in the bottom of the tanks, where not all fuel can flow into the engine. The reason is that sometimes the pickup point is a bit off the “floor” of the gas tank, or the location of the pickup point(s) may prohibit all fuel from flowing out of the tank, especially with a nose down or nose up attitude.

Some airplanes have peculiar fuel plumbing and it is very important when flying a new make/model to make yourself aware of them. Here are a couple of examples I have experienced: Old Bonanzas draw more fuel into the engine than they burn, and return the excess into the left main tank. So you almost always take off on the left main tank. Cherokee Sixes have four (4) fuel tanks, and take off is authorized using any of them. But the two outer tanks are only 17 gallons. At full take off power, you are burning 32 gph (in the 300 hp version), and you can run a tip tank from full to empty in just over half an hour at high power! Some old Cessna 172s required switching to the left or right single tank (from the commonly used “both” fuel selector position) when flying above 5,000 feet. In some twin-engine airplanes, not all tanks

can be accessed by either engine. So many pilots will burn fuel out of the tank that cannot be used by the opposite engine early in a flight. That leaves fuel available in the most unlikely event you end up running on one engine, and need fuel from fuel tanks on both sides of the cabin. Cessna 150s and many others have the best fuel selectors, either on, or off. More should.

Q: I have a 65 hp J-3 Cub. I see about 70 mph at cruise. A friend has an 85 hp J-3, which is only 5-10 mph faster than mine. (Yes, I know all Cubs are slow!) But his rate of climb is way, way better than mine. Why is his rate of climb so much better?

A: Aeronautical engineering very simplified. Many airplanes require at least 50% power to sustain level flight. Available power above that can be used for climb.

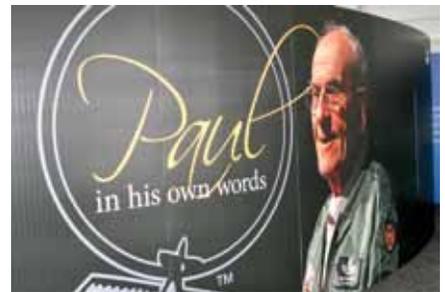
Let’s assume both of you have props that allow full power at climb airspeed. And let’s assume both Cubs thus need about 32 hp for level flight (half the 65 hp you have) at sea level. So at sea level you have 33 hp (65 - 32 = 33) available for climb. Your pal with 85 hp has 53 hp (85 - 32 = 53) available for climb, which is 60% more power to climb with than you have – a very substantial difference. If you want a real thrill, get in an old (light) 150 hp Super Cub. I owned one that could climb at over 1,000 fpm when solo on a hot summer day, and would approach 1,500 fpm in the winter.

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. □

Paulisms by Paul Poberezny

(September 14, 1921 – August 22, 2013)

Paul H. Poberezny founded the Experimental Aircraft Association (EAA) in 1953 and spent a significant part of his life promoting aviation and fighting for the freedom to fly. Paul was an aviator and aircraft designer, but more than that, he was a leader.



With the permission of EAA and the Poberezny family, we are proud to present to you one of many “Paulisms” – actual quotations from Paul that embody his beliefs, his legacy, and his impact on EAA and its members. We hope you enjoy them in remembrance of this great man, and take his comments to heart.

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The Difference Between “Wet” & “Dry” Aircraft Leasing

by Gregory J. Reigel

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Many times an aircraft owner who is not fully utilizing the owner's aircraft will lease the aircraft to maximize the use of the aircraft and to recover some of the aircraft owner's expenses. One of the areas about which aircraft owners and operators are frequently confused is the difference between a “wet” lease and a “dry” lease. I'll give you a hint: It's not about the fuel.



Greg Reigel

The “Wet” Lease

14 C.F.R. §110.2 defines a “wet lease” as “any leasing arrangement whereby a person agrees to provide an entire aircraft and at least one crewmember.” (Note no reference to fuel.)

Ordinarily, the parties entering into wet lease arrangements are certificated air carriers, such as airlines operating

under 14 C.F.R. Part 121 and charter operators conducting operations under 14 C.F.R. Part 135. This makes sense since these air carriers have the authority to use aircraft and crew to carry passengers and property for compensation or hire. Non-air carrier aircraft operators conducting operations under Part 91 are prohibited from carrying passengers and property for compensation or hire except in very limited circumstances. However, 14 C.F.R. § 91.501(c) does provide for certain timesharing and interchange arrangements in which both the aircraft and crew are provided together. And although these arrangements are considered wet leases because they include both aircraft and crew, they are Part 91 operations in which the parties to the transactions do not need to be air carriers.

The “Dry” Lease

In a dry lease arrangement, the aircraft owner is providing the aircraft to the lessee without crew. (Here again, whether the aircraft is provided with or without fuel has no bearing on the type of lease.) Neither the lessor nor the

lessee is required to hold an air carrier certificate in a dry lease arrangement, although nothing prohibits either party from being an air carrier.

Operational Control

One of the key issues that distinguish a “wet” lease from a “dry” lease is “who has operational control.”

14 C.F.R. §1.1 defines operational control as “the exercise of authority over initiating, conducting or terminating a flight.” In a “wet” lease situation, since the lessor is providing both aircraft and crew, the lessor maintains operational control of all flights. In a “dry” lease situation, the lessee provides its own crew and the lessee exercises operational control of its flights.

If the lease is for private use or commercial, non-Part 135 use, typically each party will have operational control of the aircraft when it is in that party's possession. Oftentimes in this situation, operational control will revert to the lessor during the times when the lessee is not using or possessing the aircraft.

What's The Issue?

So, why is this distinction between “wet” and “dry” leases so important? Well, in the absence of a specific exemption (such as under 14 C.F.R. § 91.501(c)), the lessor who is operating an aircraft under a wet lease will need to have an air carrier certificate and operate under the regulations that govern air carriers (e.g. Part 121 or Part 135). This means the lessor will have to comply with regulations that are more strict than Part 91 including regulations relating to the types of airports the lessor may utilize, crew qualifications, crew rest and duty times, maintenance requirements, etc. And those regulations increase the lessor's cost to operate. Additionally, the lessor under a wet lease is required to remit federal excise tax (“FET”) on the



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amount charged to the lessee.

A lessee operating under a dry lease is permitted to operate under Part 91 and is not required to comply with many of the more restrictive and costly requirements of Parts 121 or 135. And federal excise tax is not due on the amounts paid by the lessee to the lessor, although sales tax is often assessed on the lease rate. For private operators, these are significant advantages. However, they also need to be weighed against the responsibilities, and potential liability, that goes along with having operational control of a Part 91 dry lease operation.

The situation may get confusing when parties decide they want the best of both worlds. Unfortunately, these Part 134 operations, as I call them, are usually FAA enforcement actions waiting to happen. For example, if the lessor provides the lessee with the aircraft under a dry lease, and that same lessor also supplies the crew under a separate agreement, the FAA will likely view that as a wet lease arrangement since the lessor is providing both aircraft and crew. If the lessor does not hold an air carrier certificate, then the FAA will consider those flights to be illegal charter flights. Additionally, the IRS would also probably assess FET on those flights.

A similarly improper arrangement occurs if the lessor leases the aircraft to the lessee and then requires that the lessee obtain the crew for the flights, either from a specified source, usually affiliated with or controlled by the lessor. If the lessor does not hold an air carrier certificate, the FAA would also consider this a wet lease arrangement. Since the aircraft and crew are coming from closely related or affiliated sources, the FAA views them as both coming from the lessor.

It is important to keep in mind that the FAA will look

beyond the actual written agreements to determine the relationships between the parties and how the arrangement is actually being conducted. Although a lease is written as a dry lease and says “Dry Lease” at the top of the agreement, for example, that doesn’t mean that the FAA can’t take the position that the arrangement is really being conducted as a wet lease. And if the FAA takes that position when the lessor who is actually operating the aircraft for the lessee does not have an air carrier certificate, then that will be a problem for the lessor, and potentially for the lessee as well.

Conclusion: The distinction between “wet” and “dry” leases isn’t always clear to aircraft owners and operators. However, it is important to understand the difference because each situation has separate regulatory obligations and requirements. Failure to comply with the legal requirements applicable to the chosen lease structure can result in problems for both the lessor and the lessee.

Additionally, as with all written agreements, it is essential that you carefully review all of the provisions of any aircraft lease before you sign. Consultation with an experienced aviation attorney beforehand can help you protect yourself, whether lessor or lessee. By taking the time to understand the terms of the aircraft lease and the applicable regulatory requirements, both parties can ensure that their expectations are met and their interests protected.

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. □

Aviation Business Helps Hospital Provide Air Ambulance Service To Remote Victims In Four-State Region

SIoux FALLS, S.D. – Avera McKennan Hospital and University Health Center’s air ambulance service serves a widely dispersed population in parts of South Dakota, Nebraska, Iowa, and Minnesota from its Sioux Falls location and, as with any emergency response organization, timeliness and precise information are critical components to its success. That’s why Avera McKennan’s aviation operation has chosen to team with Baldwin Aviation, the world’s leader in providing individually customized safety management and operational systems for flight organizations, to ensure it meets the hospital’s patients needs. Baldwin customizes its system and tools specifically to each client’s operation.

The hospital’s air ambulance operation also supports Avera McKennan’s innovative “e-Emergency program” in which doctors in remote areas conduct video consultations with clinics in remote areas, and determine whether a patient requires transport by helicopter or airplane to the hospital, and if so, places the flight request with a dispatcher who is



located in the same room. This unique arrangement allows Avera McKennan’s fleet of one helicopter and two fixed-wing aircraft to serve a broad geographic area very quickly and efficiently (www.BaldwinAviation.com). □

Why Is “George” So Popular With Pilots?

by Michael J. “Mick” Kaufman



Michael Kaufman

In between issues, I am always thinking about topics to write in my column for the next issue of *Midwest Flyer Magazine*. Some of our best topics come from our readers who are experiencing difficulties with something or have a question.

Last month I received a call from a pilot from Wisconsin Rapids, Wisconsin, which was related to his “autopilot.” I have also included in this issue a flight experience with a student from Viroqua, Wisconsin in his G-1000-equipped Cessna 182 Skylane.

I have written many articles about autopilots in previous issues, but it seems to continue to be of great interest among our readers. Why or how the name “George” became associated with autopilots is a mystery to me, but I continue to use this name when referencing autopilots.

If you were an aircraft or avionics technician and a pilot asked you to design and build an autopilot for your airplane, you would surely laugh at them and say “there is no way we could get such an approval from the FAA.” But one of my dear friends and colleagues did just that... Bill Hale of Ft.

Collins, Colorado designed his own autopilot and received FAA approval for its installation in his Bonanza after meeting all of their requirements. Bill is now retired as an electrical engineer from Hewlett Packard, but now works as an instructor with the Bonanza Baron Pilot Training Program (BPT) and is an engineer consultant on Avidyne’s new autopilot, which I understand is one of the best new generation autopilots on the market, today. Bill is also someone who I often call upon with difficult autopilot questions.

So why did “George” do this or that is the question from many of our readers. To answer this question, we need to understand that the autopilot needs to be able to do all of our legacy approaches like the ILS, LOC and VOR approaches, as well as the newly designed and certified RNAV/GPS approaches. Having trained hundreds of pilots for their instrument ratings over the past 45 years, I have seen how simple our new avionics systems have made certain procedures, and I think this is the reason why some of the newly rated instrument pilots do not understand how some of these legacy systems work. The sad thing about this is that instructors – including myself – fail to teach the old ways of doing things, as it may be a waste of time, effort and money.

The ILS (Instrument Landing System), for example, does not send out just one localizer or glide-slope signal, but rather

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many signals. Radio transmitters and antennas cannot be programmed to send just one course line, at least with today's technology, and this is depicted in the Airman's Information Manual (AIM 1-1-9 (b) (6)) (Fig. 1-1-6). These false courses or harmonics exist, and we as pilots need to be able to recognize and avoid these courses.

Autopilots need safety features to avoid situations, which could become disastrous.

When teaching the ILS approach many years ago before the advent of LORAN (Long Range Navigation) and GPS (Global Positioning System) navigation, I would trick an instrument student into trying to follow one of these false courses. To fully understand how these false courses can confuse the pilot and the autopilot, a pilot flying a heading to intercept the localizer course to track it outbound for a procedure turn or inbound and sees his CDI (Course Deviation Indicator) come off the peg and center, will immediately turn to the depicted heading only to find that the CDI makes no sense, and the signal that created the movement, disappears. If flying the autopilot on NAV (Navigation) or APP (Approach) mode, it becomes obvious after a short time, the signal has disappeared, and there is no course to navigate. For pilots flying these legacy approaches today without GPS intercept guidance, there are some guidelines to follow.

If being vectored by Air Traffic Control (ATC) for an intercept, follow the headings given by ATC to intercept and ignore those CDI fluctuations on ILS and localizer approaches. If navigating on your own for intercept without a GPS, there needs to be a secondary indication that you are on the correct course. This could be an ADF (Automatic Direction Finder), DME (Distance Measuring Equipment) Fix or MB (Marker Beacon). Many approaches may note that ADF, DME or radar is required to execute this specific approach (FIG 1); GPS may be substituted for an ADF or DME per regulations and is not noted on the chart.

Having explored the false localizer courses, let's look at false glide-slopes.

We can see that the lowest glide-slope angle is the one that George or the pilot must fly. This is usually about a 3-degree angle, and the false glide-slopes are way too steep for a normal approach descent (AIM 1-1-9 (d) (4) *). As a safety feature to prevent autopilots from intercepting these false glide-slopes, there is a timing circuit in the autopilot. Each specific make and model of autopilot is a bit different as to the amount of time required and when the timing begins. Here is an example

for the purpose of this article.

Let's assume that the localizer needle starts to move off the stop as you are being vectored for the approach, then the timer begins and is set to 40 seconds by design. The glide-slope centers before the preset time has expired, and the autopilot will not capture the glide-slope. This would mean that we were vectored too high or too tight for the autopilot to verify that this is the correct glide-slope for the approach. In many cases when ATC vectors an aircraft in too tight, there is no glide-slope capture with the autopilot. The Air Traffic Controllers' Handbook (ATCH 5-9-1)** specifies that they must vector aircraft more than 2 miles outside the FAF (Final Approach Fix) or an approach gate (see below)**, or they must confirm with the pilot that he/she will accept the tight vector, and the final turn should be within 30 degrees of the inbound course. For conclusion on this subject, when setting up a course direct to a FAF, you can assume that the glide-slope would not capture on the autopilot due to the timing circuit on the autopilot.

There are so many new features in our modern avionics, and it is difficult, if not impossible, for a flight instructor to know all of them.

Several years ago, I went to school at Flight Safety for the G1000 system in the new Beechcraft Bonanza and Baron. The training curve is quite steep as they covered every function of the system. A lot of this goes back to a term that I have used previously called "buttonology," (which button do I push and when). From an instructor's point of view, I do not teach every conceivable function of these complex devices from the start. Rather, I teach and review them numerous times before going on to the next function.

In a recent flight with a student in his gorgeous new Cessna 182 with a G-1000/GFC-700 autopilot, I decided to teach him profile descents on the autopilot. When a flight plan is programmed in the G1000 and you load and activate



FIG 1

an approach, the G-1000 box figures out where you need to begin your descent to arrive at the altitudes shown on the approach or transition. A dot appears on the Multi-Function Display (MFD) that is labeled TOD (Top of Descent). One minute before reaching the TOD, a synthesized voice from the autopilot announces "vertical track." The pilot must now verify that he/she wants this to happen by pressing the "V-NAV" button on the autopilot. After pressing this button, the pilot must set in the lowest altitude that the aircraft can descend to before making a decision to land or go missed.

We tried this several times in the Cessna 182, and I got

egg all over my face. It required a call to a colleague to find out what we did wrong. What we had forgotten was setting the minimum descent altitude (MDA).

Another great feature incorporated into the G1000 system is that each profile and level off altitude is displayed on the MFD and can be edited should ATC give you a different altitude on a specific segment. These new nav systems are really great, but require a lot of training to get current and stay proficient and for that reason, I do not recommend installing one in your aircraft if you only fly 20 hours a year. For my student who flies regularly for business almost exclusively, this is a great aircraft and avionics package.

I am confident we will find some more interesting subjects to cover on instrument flying in the next issue of *Midwest Flyer Magazine*, so keep your emails and phone calls coming!

***AIM1-1-9 (d)(4)**

4. Pilots must be alert when approaching the glidepath interception. False courses and reverse sensing will occur at angles considerably greater than the published path.

****ATCH 5-9-1. VECTORS TO FINAL APPROACH COURSE**

Except as provided in para 7_4_2, Vectors for Visual Approach, vector arriving aircraft to intercept the final approach course:

a. At least 2 miles outside the approach gate unless one of the following exists:

1. When the reported ceiling is at least 500 feet above the MVA/MIA and the visibility is at least 3 miles (report may

be a PIREP if no weather is reported for the airport), aircraft may be vectored to intercept the final approach course closer than 2 miles outside the approach gate, but no closer than the approach gate.

2. If specifically requested by the pilot, aircraft may be vectored to intercept the final approach course inside the approach gate, but no closer than the final approach fix. EXCEPTION. Conditions 1 and 2 above do not apply to RNAV aircraft being vectored for a GPS or RNAV approach.

b. Provide a minimum of 1,000 feet vertical separation between aircraft on opposite base legs unless another form of approved separation is established during turn-on to final approach.

c. For a precision approach, at an altitude not above the glideslope/glidepath or below the minimum glideslope intercept altitude specified on the approach procedure chart.

d. For a non-precision approach, at an altitude which will allow descent in accordance with the published procedure.

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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The Well-Grounded Pilot

by Harold Green

Virtually every student pilot has asked, “Why do I have to learn ground reference maneuvers?” The other day, while staring out the window as my student attempted to turn a lopsided ellipse into a circle with a properly located center, I had an opportunity to consider how extensively ground reference maneuvers affect our flying. The answer is “quite a lot.”

First of all, on a general basis, all flying is a ground reference maneuver. After all, we don't go from one place in the sky to another. Flight always begins and ends on the ground; frequently at two different places on the ground. Hopefully where, and approximately when, we intended to arrive. In order to do this it is necessary to be able to correct the flight path to track the course even in windy conditions. While this is obvious, we often don't think of it as a ground reference maneuver, but it is, whether we are flying VFR or IFR. Remember rectangular patterns?

When it is time to land, hopefully where, and kind of close to when we intended, it is again required to contend with ground reference maneuvers and wind correction. The goal is to put the airplane on the runway at a pre-determined point. That means awareness of our position on the ground and our path over it. The wind makes it necessary to adjust the ground path to land where we want. If there is a headwind on the base leg, our turn to final must be adjusted to arrive at the planned touchdown point. Generally, this means delaying the turn onto final more than if there was no crosswind. If there is a tailwind on base, it is necessary to turn on to final earlier than if there isn't a tailwind, so as to avoid overshooting the final path.

Failure to do this, coupled with failure to recognize the need to go around, can result in a very tight turn close to the ground. If this happens and the pilot kicks in inappropriate rudder, the result can be a spin or snap roll without room to recover that close to the ground. Several people are killed this way every year.

Remember S-Turns? Therefore, when given a choice of landing direction, as with a 90-degree crosswind, it would be wise to select the path, which offers a headwind on base leg.

Then comes the need to descend on final. Again, the issue here is groundspeed. Proper procedure calls for holding a specific airspeed on final to avoid the possibility of stalling while enhancing pilot judgment. (A stall is NOT a ground reference maneuver.) Now since there is most likely a headwind component, groundspeed is slowed by the amount of headwind. This means that the stronger the headwind, the



Harold Green

longer it takes to get to the runway. Since descent rate is a function of airspeed, the longer it takes, the more altitude that will be lost before the runway is reached.

Like a VFR landing, an ILS approach is another ground reference maneuver. Of course we set up an approach speed and then attempt to keep that elusive horizontal needle in the center of the dial. The issue here is that the glide slope defines a slope relative to the ground. Unlike a VFR landing, both the beginning and end of the glide slope are specified. Therefore, performance is based on feet per mile, not feet per minute.

A quick look at the descent table on the back cover of the government approach plates shows some interesting statistics. For example, a 3.00-degree glide slope requires a descent gradient of 318 feet per minute (fpm). At 90 knots, this requires a descent rate of 478 fpm to remain on the glide slope. Now factor in a 15-knot headwind and a groundspeed of 75 knots, the descent rate must be only 398 fpm. If there is a tailwind, the rate becomes 557 fpm. (This could happen when the only approach with low enough minimums is an ILS from which a circle to land is planned.) It is wise to remember that this table can also be used to determine the rate of ascent required to meet the obstacle clearance requirements stated under obstacle departure procedures. Thus, if the departure procedure calls for maintaining a climb gradient of 475 feet per nautical mile and your groundspeed is increased by a tailwind, then the rate of climb must also increase.

For example, if the climb speed is 90 knots and a 15-knot tailwind is encountered while climbing, the rate of climb must go from 715 to 835 fpm. Depending on density altitude, aircraft weight and aircraft basic performance, this could present a challenge.

Holding patterns are also ground reference maneuvers. If the pattern is GPS based, then it is obvious since GPS holds are mileage defined. Holds which require a specific time on the inbound leg are also ground reference maneuvers since they require a specific path along a radial or bearing. Furthermore, the time on the outbound path must be adjusted to produce a specified time on the inbound leg -- usually one minute. The track of the pattern varies with the direction and extent of the crosswind encountered. This is emphasized by the fact that turns when in IMC (Instrument Meteorological Conditions) are standard rate regardless of wind direction or velocity. Thus, unlike our turns around a point, the rate of turn does not change to compensate for the wind.

When turning away from the wind, the radius of the turn increases, and when turning into the wind, the radius decreases, resulting in a lopsided racetrack pattern.

As an example, using a calculation provided by CSGNetwork with an airspeed of 90 knots, and assuming the wind is a direct 20-knot crosswind, the radius of turn varies from 3389 to 5064 feet. Note: This is an approximation only

because it does not take into account that the crosswind direction varies as the aircraft turns. However, as a first approximation, it will serve to illustrate the point. Because of this variation in radius, the rule of thumb for wind correction is that "Outbound wind correction should be approximately three times the inbound correction." This is a good starting point. This does illustrate what happens when wind compensation is not employed as it is in those infamous turns around a point or S-turns across a road.

The conclusion of all this is that ground reference maneuvers are fundamental to most aspects of flying. Those pilots who have developed a good understanding of the whys and wherefores of ground reference maneuvers seem to have an enhanced spatial awareness, and a better understanding of the operations discussed herein. They understand landing pattern operations and wind compensation, whether they are operating in a non-towered or towered environment.

Today's curriculum for private pilots has reduced ground reference maneuvers compared to earlier times. The S-turns, turns around a point and rectangular patterns are a good start, but for example, pylon eights are no longer required. That is not necessarily bad, but I do believe that some element of training has been lost.

Back in pre-historic days, we had to do pylon eights around points and across roads. Even lazy eights with the need to see the nose at maximum pitch at 45 degrees and the nose coming level at the 90-degree point, were informative, if not frustrating. These were good exercises and I still teach some of them to students who need a new challenge to maintain motivation. There is also a reason that the commercial ticket contains more advanced ground reference maneuvers, such as turns on a point and pylon eights. Perhaps it would be advantageous to include some ground reference maneuvers in a biennial flight review (BFR). Occasionally one finds a

student who enjoys such maneuvers.

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 hargren@aol.com, or by telephone at 608-836-1711 (www.MoreyAirport.com). □

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La Crosse Regional AIRPORT

The U.S. Senate's FAA Reauthorization Bill: Drones & Beyond – What's In It For The GA Community?

by Russell A. Klingaman, Esq.

On April 19, 2016, the U.S. Senate approved its FAA Reauthorization Bill. The U.S. House of Representatives has its own Reauthorization Bill pending. The current FAA short-term reauthorization expires on July 15, 2016, giving Congress just a couple months to reauthorize FAA programs. If a comprehensive bill does not pass through Congress before the 7/15 deadline, another short-term reauthorization through the end of the year, or through early next year, is likely.

It has been several years since Congress has worked on such a vast array of substantial aviation legislation. And, it will probably be several years before any similar legislative work is done with the potential for such a broad impact on so many different members of the aviation community. In fact, it took seven years and 23 short-term extensions before the FAA reauthorization bill passed in 2012. That bill extended the FAA's operations for just three years, and Congress is now working on this new reauthorization.

It is important to realize that the Senate Bill is just proposed legislation. Nothing in the Senate Bill will become a federal public statute unless it is approved by the House of Representatives, and signed into law by the President.

The benefit of making you aware of the new Senate aviation bill now – before it becomes law – is to give you the opportunity to address any concerns you might have about this proposed legislation with your elected officials, the FAA, and/or the leaders of aviation organizations you may belong to, such as AOPA, EAA, NBAA, AAAE, GAMA, as well as your state trade, business, airport associations, such as WATA, WBAA and WAMA.

Another reason why you should educate yourself about the proposed legislation now, is to take advantage of the opportunity to consider how, if it becomes the law, it might have an impact on your flying activities and/or your aviation-related business. As the Boy Scouts always say: "Be prepared."

So, what is in the Senate FAA Reauthorization Bill that may be of interest to *Midwest Flyer Magazine* readers? Given that the bill is almost 400 pages long, this is a difficult question to answer properly. In fact, it is impossible to provide a complete summary and analysis of all of the different sections of the bill in this short article. (The full text of the bill can be found here: <https://www.gpo.gov/fdsys/pkg/BILLS-114hr636eas/pdf/BILLS-114hr636eas.pdf>.) I will



Russell Klingaman

try, nevertheless, to mention what I believe are some of the highlights.

First, readers should be interested to know that the bill provides \$16.4 billion in total funding for the FAA for the 2017 fiscal year. This is slightly up from the \$16.28 billion available for 2016. The bill provides funding for FAA/ATC operations (about \$10 billion); increases spending on Airport Improvement Program (AIP) grants (from \$3.35 billion in 2016 to \$3.75 billion in 2017); provides \$1 billion for NextGen; and provides \$159 million for contract control towers.

The Senate Bill has a large number of sections dealing with unmanned aircraft systems (UAS)/drone safety and/or innovation. For instance, it will:

- Require all drone operators to pass an FAA-approved online aeronautical safety test before flying.
- Authorize an FAA pilot program and funding for the development of technology to intercept drones near airports and other critical infrastructure.
- Direct federal agencies to convene industry stakeholders to develop consensus standards for safety features to be built into drones to protect the public and users of the national airspace.
- Approve several established UAS test sites and direct research priorities, improved coordination with the FAA, and enhanced protections for proprietary information.
- Require the Department of Transportation to establish a UAS delivery air carrier certificate that would allow for package deliveries by drones.
- Direct the FAA to establish operating levels specific to "micro drones," which weigh 4.4 lbs or less.

In addition to the large number of UAS/drone provisions, the Senate Bill includes many other items important to members of the general aviation community including:

- The "Pilots Bill of Rights 2" with reforms to the 3rd class medical certificate process for non-commercial pilots and an enhanced appeals process, including de novo review for pilots facing FAA enforcement.
- Ensuring the FAA makes progress on the transition to unleaded aviation fuel by requiring the agency to clearly identify alternatives to traditional aviation gasoline and adopt a process to ensure the safety of modifications to existing aircraft prior to the transition, including \$7 million for ongoing research on an unleaded replacement for avgas.
- Requiring the FAA to assess each NextGen program and to provide a report to Congress on how the program can improve safety and efficiency, and to provide an estimated date that each program will have a positive return on investment for aviation users and the government.

- Requiring the FAA to follow up on recommendations made by the Department of Transportation's Inspector General to improve NextGen transition management, mitigating risks, dealing with NextGen inoperability with foreign countries, and assessing NextGen acquisition practices.

- Requiring marking of certain small towers to enhance safety for low-altitude general aviation flying, like agricultural applicators.

- Providing a \$400 million increase in funding for airport improvements (a 12% increase over the current funding level). As mentioned in the first paragraph, the Senate Bill – or some modified version of it – will not become law until subsequent action by the House of Representatives, and a signature by the President. At this time, it remains unclear how the House will proceed on its own FAA reauthorization legislation, which continues to be stalled due to objections to the contentious proposal that would move air traffic control operations out of the FAA to a private non-profit operation.

Bill Shuster (R-PA) has declared that he will continue pushing for the ATC privatization reforms. However, the proposal has faced significant opposition from elected officials in both the House and the Senate, as well as many interest groups.

The House has several options. One option is to simply pass the Senate Bill and send it to the President to be signed. Another option is to amend the Senate Bill and send it back to the Senate for further consideration. Another option is for the House to pass its own FAA bill (with or without the ATC privatization provision) and go to a conference committee with the Senate to resolve their differences.

It should be noted that the length of reauthorization is quite different between the House and Senate bills. The Senate Bill reauthorizes FAA programs only through September 2017, while the House Bill would reauthorize programs through 2022.

In the arena of aviation law making and spending, these are important times. As members of the aviation community, we owe it to ourselves, and our fellow members, to pay attention to what is going on, what new laws are proposed, and what might happen if they are passed. If you don't like what you see (or if you do like what you see and you don't want to let it slip away), stay informed, speak up, and take action.

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 klingaman@hinshawlaw.com. □

Michigan Aeronautics Names Budds Advisor & Manager

LANSING, MICH. – AOPA Great Lakes Regional Manager, Bryan Budds, has accepted a position as Advisor to the Michigan Aeronautics Commission and Manager of the Transport and Safety Section of the Michigan Department of Transportation Office of Aeronautics.

Budds was AOPA Regional Manager for more than 4 years, covering the states of Michigan, Ohio, Indiana, Illinois, Wisconsin, Minnesota, North Dakota and South Dakota. □



Bryan Budds

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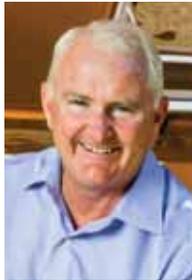
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Start A Club, Win An Airplane!

by Mark R. Baker
President & CEO

Aircraft Owners & Pilots Association

At the risk of repeating myself, let me say I'm a big fan of flying clubs. In my mind there's just no better way to fly affordably and enjoy a community of like-minded aviators.



Mark Baker

At AOPA we want to help new clubs get on their feet. That's why this year we'll be giving away a Reimagined C150 to one lucky startup club.

If you've been to an AOPA Fly-In or visited with us at an airshow recently,

you've probably seen the bright yellow C150s and C152s flown by AOPA Ambassadors. These Reimagined Aircraft are older airplanes that have been updated from tip to tail. They're fun to fly, easy to own, and affordable to operate—a perfect starter airplane for a new club.

Entering the giveaway is easy. Your club must meet some eligibility requirements and then fill out the online application. To be eligible your club must have at least four members, a named set of club officers, a set of bylaws, and be listed as a "club in formation" on AOPA's Flying Club Finder, along with a couple of other requirements. All the details and the application form are available at www.aopa.org/flyingclubgiveaway.

If you're ready to start a club, or

join one, AOPA is ready to help—in fact our AOPA Ambassadors helped launch 10 new clubs in 2015 and connected nearly 700 clubs through the AOPA Flying Club Network. The network is free to join and it comes with great benefits, whether you're just getting started or your club is a going concern.

For startup clubs, joining the network gives you access to a resource library that will take you through the steps and decisions you'll need to make to get your club off the ground, along with all the other benefits of network membership like free scheduling and invoicing software, the help and support of AOPA's flying club experts, and a premium entry in AOPA's Flying Club Finder. AOPA's Ambassadors are also available to offer direct, in-person support to clubs at all stages of development.

For pilots, club membership offers the very best elements of aircraft ownership at a much lower cost. As part of a club, you'll have access to airplanes in a way that renters don't. At many clubs scheduling an airplane for a weekend trip is no problem. And as a club member you'll become familiar with the airplanes and comfortable with the way they're maintained and used.

Many clubs also offer the kind of social experiences that get the whole family involved, whether or not they're pilots. Fly-outs, hangar parties, and more can be part of the experience for socially-minded clubs, giving members reasons to come out to the airport and go for a flight.

Some of my very best aviation experiences have been with flying clubs, and I'd like you to have the same opportunity. Give a club a try or start your own—and who knows, you might win an airplane to get your club off to a great start. □

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CENTRAL REGIONAL REPORT

Missouri Legislators, Pilots Ponder Tax Strategies

News & Information You'll Want To Know In Kansas, Missouri, Nebraska & Iowa

by the AOPA ePublishing Staff
Aircraft Owners & Pilots Association (AOPA)

As a bill to make more aircraft eligible for a lower property tax rate makes its way through the Missouri legislature, a lesser-known provision of state tax law is helping owners of some aircraft that weigh more than 3,000 pounds lower their tax bills by classifying their aircraft as “commercial.”

House Bill 2784 would increase the number of hours an “antique aircraft” can fly a year from “less than 50 hours” to “less than 250 hours.” Aircraft classified as antiques and those considered homebuilt face a lower tax liability than other aircraft, currently at five percent of assessed value.

Yasmina Platt, AOPA’s Central Southwest Regional Manager, testified in favor of the measure before the House Ways and Means Committee at an April 12, 2016 hearing, as did three other pilots. The bill cleared the committee on April 19 and has since passed the House Select Committee on Financial Institutions and Taxation as well. It is now awaiting consideration and a vote by the House floor before heading over to the Senate.

An existing provision offers other pilots of some aircraft a different way to cut their taxes. Rather than pay property tax based on an assessed value of 33.3 percent of the true value of an aircraft that weighs more than 3,000 pounds maximum gross takeoff weight, an owner may request that the state’s tax commission classify the aircraft as commercial (in tax terms),

and set the valuation and assessment of the aircraft. The panel sets those figures by June 15 each year.

“The property tax is then based upon a percentage of the miles the aircraft is flown in or over Missouri, versus the total miles the aircraft is flown,” Platt said.

A tax official explained that the percentage of an aircraft’s total yearly flight time spent flying in or over Missouri produces an “allocated market value.” The tax assessment rate of 33.3 percent is applied to the aircraft as personal property. The local tax rate is applied per \$100 of the aircraft’s assessed value. The local tax rate varies by county. The determination of tax situs is based using the county of residence for individual owners, and for corporations it is the county location of the hangar where the aircraft is kept. The tax lien date is January 1.

In one hypothetical example, 70 percent of the aircraft’s market value was not subject to tax liability because the commercial aircraft formula resulted in an allocated market value of 30 percent of its true market value for tax purposes.

Because such tax strategies often only become known by word of mouth, Platt said she wants pilots to understand their options for paying state taxes on their aircraft.

“While going through this process, I learned that part of the problem is that pilots and aircraft owners and their county assessors just don’t know or understand the existing ‘commercial aircraft’ deduction, and providing this information is meant to help raise their awareness,” she said. Platt will also address the issue at the Missouri Pilots



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Association's 63rd annual convention starting June 10 in Osage Beach.

The current tax rules arose from an unlikely beginning: a natural disaster in 1993. A flood in St. Louis that year forced the relocation of aircraft to other states, where owners realized that their tax bills were higher in Missouri.

To get them back, Missouri at first defined "Commercial Aircraft" for taxation purposes as weighing more than 12,500 pounds, and they would only pay the tax based on a pro rata share of time flown over Missouri.

"The plan worked and Missouri saw the return of aircraft," Platt said. The last revision of the rules reduced the minimum eligible weight to 3,000 pounds.

Recently Platt has discussed the tax picture with the owner of a Cirrus aircraft (maximum gross takeoff

weight approximately 3,400 pounds) who obtained the commercial aircraft designation recently for the first time, and has begun to employ other strategies to complement his effort to minimize his aircraft property taxes.

"He says he plans flights outside the state as much as possible," said Platt. "He will even refuse direct clearances from ATC sometimes, to spend as much time outside Missouri airspace as possible."

The aircraft owner was not initially aware of the commercial aircraft tax benefit "because his county assessor did not make him aware, because he or she, in turn, did not know about it," Platt said.

Now, however, the Cirrus owner expects to pay only "10 to 15 percent of the original tax," he said in an email.

Aircraft owners can research the

process of having an aircraft classified as commercial, and learn how to apply to have an aircraft assessed as such for tax purposes at this Missouri State Tax Commission website (<http://stc.mo.gov/120company/>). Instructions and explanations are provided for forms that must be submitted to the appropriate county assessor by March 1, and to the Tax Commission by May 1. An email address is required to facilitate the processing of some documentation.

When the Tax Commission receives the appropriate documentation, it will send a simultaneous email to the taxpayer and the county acknowledging receipt.

For more information, contact Rosella Schad, PE, CPA, Original Assessment Section, Missouri State Tax Commission by email rosella.schad@stc.mo.gov or call (573) 751-1729. □

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"I think he wants to say something."

Kansas State Polytechnic Campus Offers UAS Training To Hobbyists

SALINA, KAN. – As the number of unmanned aircraft systems (UAS) owners continues to increase, the UAS program at Kansas State University Polytechnic Campus is now offering training specifically for hobbyists to ensure proper use and safety. The school held its first training session on January 23, 2016. For additional information on both the hobbyist and commercial UAS programs at KSU, contact Travis Balthazor at 785-826-8557 or travisb@k-state.edu (www.k-state.edu). □

Schweiss Sells Doors To Owner of Multiple Hangars

HECTOR, MINN. – Schweiss Doors has supplied 13 bifold doors already with 22 more on the way to hangar owners of the growing Pegasus Airpark project in Arizona.

“We went with top quality executive box hangars with plumbing on deeded ground that can be passed down for generations,” says Daniel Coury Sr., one of the hangar owners at Pegasus Airpark. “Because we went with top quality 61 x 50-foot hangars with 18-foot clearance inside and 60-foot doors, we chose to go with Schweiss Doors.”

The hangars at Pegasus Airpark sell for \$350,000 each, so it was important to have quality doors, says Coury.

Coury was introduced to Schweiss Doors when he bought a couple of hangars that already had Schweiss Doors. He then went to EAA AirVenture Oshkosh to personally meet Schweiss President Mike Schweiss and learn more about how the door is constructed.

Coury was sold on bifold doors over hydraulic doors, and since Schweiss was the only manufacturer that offers bifold doors with straps, the choice was easy.

“We have winds here called haboob,” said Coury. “We had one haboob recently where the wind got up to 49 mph. If that wind hits, look out.” With added reinforcement designed by Schweiss, Coury is not concerned with opening his bifold doors in the big wind.



The inside of Dan Coury’s hangar has elegance right down to the floor color scheme that matches his aircraft. In the foreground is his Lancair Evolution, and in the background is a Lancair IV-P and Aviat Husky.

Coury prefers the bifold liftstrap/autolatch door because it allows him the ability to park aircraft or vehicles closer to the doors.

Pegasus Airpark (5AZ3) is an airport located in Queen Creek, Ariz., near Williams Gateway airport. The Pegasus Airpark is a gated residential aviation community built around the 5,000 x 80-foot runway (www.pegasus-airpark.com).

For more information on Schweiss Bifold Doors, visit www.bifold.com. □

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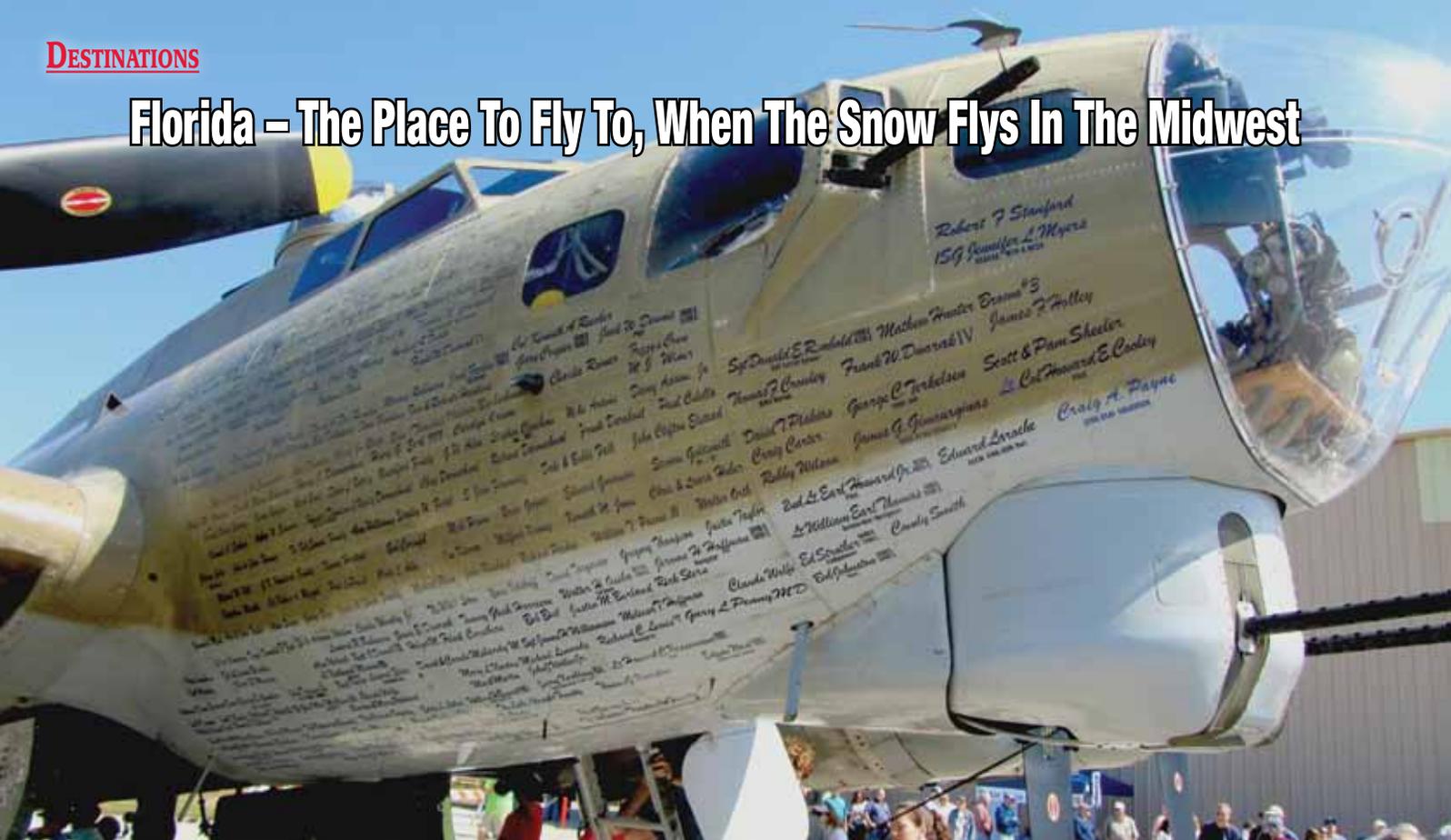


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Florida – The Place To Fly To, When The Snow Flies In The Midwest



by Dave Weiman

The Collings Foundation Boeing B-17G Flying Fortress flies as “Nine-O-Nine,” an 8th Air Force, 91st Bomb Group heavy bomber.

Depending on where you live in the Midwest and your final destination, Florida is between 1,000 and 1,500 nautical miles southeast, and the course is mountain free if you fly west of the Appalachian Mountains. One or two fuel stops for most small GA aircraft, and a day’s travel, and you, too, can be soaking up the sun in the middle of winter, but you will likely not be alone. Florida appeals to a lot of people, and it is best to book your hotel or condo well in advance.

If your local airport is lacking activity, especially in the wintertime, you will be delighted with the activity level at most Florida airports. As someone said to me while on the ramp at Venice Municipal Airport (KVNC), as planes were taking off and landing, one after the other, “this reminds me of the hay day of aviation in the ‘60s and ‘70s. Venice



Jamie Mitchell, flight coordinator with the Collings Foundation, with the foundation’s 1944 Consolidated B-24J Liberator painted as “Witchcraft,” an 8th Air Force bomber that flew a record 130 missions over Europe as part of the 467th Bomb Group.

Municipal Airport is located two miles south of the central business district of Venice, a city in Sarasota County, Florida.

While in Florida, we toured the National Naval Aviation Museum in Pensacola; participated in a monthly meeting of the Florida Aero Club in Hollywood, Fla., where we put on a power point presentation on our annual Canada fishing trip to Miminiska Lodge, Ontario; attended the club’s monthly fly-out to Venice, Fla., at the restaurant, Sharky’s on the Pier; flew to Vero Beach and toured the Piper Aircraft factory; attended a pilot safety seminar and fly-in breakfast and lunch at Wipaire’s Service Center in Leesburg; and attended the Collings Foundation “Wings of Freedom Tour” at Venice Municipal Airport, Venice, Fla., Feb 12-14, 2016.

The Collings Foundation is a non-profit, educational

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A tour of the Piper Aircraft factory, Vero Beach, Florida.



C.J. Cannon's Restaurant at Vero Beach Regional Airport.



AOPA Past President Phil Boyer, and his wife, Lois, flew their Beechcraft A36 Bonanza to Venice, Fla., to join members of the Florida Aero Club for lunch at Sharky's on the Pier.



(L/R) Dave Weiman of *Midwest Flyer Magazine* accepted a Certificate of Appreciation from the president of the Florida Aero Club, Tony Restaino, for his presentation on flying to Canada.

foundation (501(c)3), founded in 1979, headquartered in Stow, Massachusetts. The purpose of the foundation is to organize and support "living history" events and the preservation, exhibition and interaction of historical artifacts that enable Americans to learn more about their heritage through direct participation.

Since 1989, a major focus of the foundation has been the "Wings of Freedom Tour" of World War II aircraft. This tour showcases two fully restored bomber aircraft: a B-24 Liberator and B-17 Flying Fortress. The newest addition to the Wings of Freedom Tour is the World War II dual-

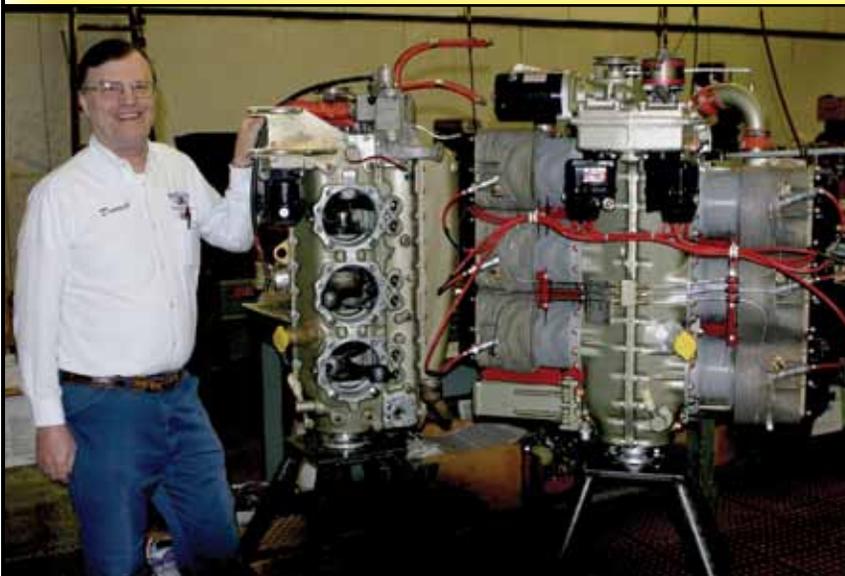
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Rick Garcia, President of Gulf Coast Avionics, Lakeland, Fla.



Outside Sun 'n Fun headquarters at Lakeland Linder Regional Airport, Lakeland, Fla.

control P-51C Mustang "Betty Jane."

The foundation's 1944 vintage Consolidated B-24J Liberator is painted as "Witchcraft," an 8th Air Force bomber that flew a record of 130 missions over Europe as part of the 467th Bomb Group. The Boeing B-17G Flying Fortress flies as "Nine-O-Nine," an 8th Air Force, 91st Bomb Group heavy bomber. The B-17 was the companion of the B-24 in thousands of wartime bombing and reconnaissance missions. Together, they were the backbone of the daylight strategic bombing campaign of World War II.

In honor of America's Vietnam Veterans, the Collings Foundation has also developed the "Vietnam Memorial Flight" of the McDonnell F-4D Phantom II, Douglas TA-4J Skyhawk, Bell UH-1E Huey and F-100F Super Sabre. The F-4D Phantom II is the only civilian operated example of the type and has appeared at major U.S. air shows since 1999 in the markings of the aircraft flown by Gen. Robin Olds in Vietnam. In 2005, the F-4 was joined by the Douglas TA-4J Skyhawk that has been painted to represent the markings of H&MS-11 "The Playboys," a distinguished all-volunteer fast forward air control group operated out of DaNang by USMC MAG-11.

For additional information on the Collings Foundation and their tours, call (978) 562-9182 or (978) 568-8924, or email flights@collingsfoundation.org (www.collingsfoundation.org). Memberships are also available.

Fly & Dine At Florida Airports

Airport restaurants are plentiful in Florida. Venice has the Suncoast Café in the terminal building (www.suncoastcafe.com), plus Sharky's on the Pier within walking distance (www.sharkysonthepier.com).

The restaurant at Vero Beach Regional Airport, C.J. Cannon's, is definitely worth a cross-country flight (www.cjcannonsrestaurant.com).

Lakeland Linder Regional Airport

We took a day to visit Lakeland Linder Regional Airport (KLAL) before the mad rush to Sun 'n Fun in April, where we met with Rick Garcia, President of Gulf Coast Avionics; Neil Glazer, owner of the Pilot Mall (www.pilotmall.com); and John "Lites" Leenhouts, President and CEO of Sun 'n Fun. The dates for the 2017 Sun 'n Fun International Fly-In Expo is April 4-9 (www.sun-n-fun.org).

Lakeland Linder Regional Airport has a lot going for it, and is managed by former Midwesterner, Eugene B. Conrad III, whose father, Blair Conrad, once managed Wittman Regional Airport in Oshkosh, Wis. Speaking of Wittman Regional Airport, former operations manager, Christopher Hallstrand, has recently joined Conrad at Lakeland, so we know the airport is in good hands!

Besides tenants Gulf Coast Avionics and The Pilot Mall, the airport is an educational mecca and home to four flight schools, the Aerospace Center for Excellence, Travis Career Center's A&P Program, Polk State College Aerospace, and Central Florida Aerospace Academy (CFAA).

Central Florida Aerospace Academy

The Central Florida Aerospace Academy of Kathleen High School is where those of us in aviation careers today should have gone to high school had we been given the choice.

The idea to build an aviation technology high school was Rick Garcia's, who started his career in the U.S. Air Force, where he found his niche in avionics. He proposed the idea of building a high school that specializes in aircraft maintenance and technology to World War II veteran and businessman, James C. Ray, who donated the \$7.5 million to build the facility.

On December 7, 1941, at the age of 18, James Ray witnessed firsthand the Japanese attack at Pearl Harbor. He had traveled to Hawaii to work on a construction project for the Navy that was situated just a few hundred yards from the USS Arizona battleship as the attack unfolded.

Shortly thereafter, Ray enlisted in the U.S. Army Air Corps and served as a B-17 command pilot in the 8th

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Rick Garcia, President of Gulf Coast Avionics, with a group of students at Central Florida Aerospace Academy, Lakeland Linder Regional Airport, Lakeland, Fla.

Air Force, 447th Bomb Group, which was stationed at Rattlesden, England. He flew a total of 30 missions, including raids on the Schweinfurt ball-bearing plants in Germany. He was also lead pilot on a D-Day attack on German headquarters in Normandy, France.

After the war, Ray flew his Cessna 170B on business and personal trips to 58 countries and to every Caribbean island with a landing strip. He has also flown extensively in North America as a rancher, oil and gas explorer and real estate developer, logging more than 3,500 hours in single-pilot Citations over a 29-year period. James Ray believes that the disciplines he obtained during flight training truly helped him become the successful individual he is today, and wanted to do something to encourage youth to follow in his footsteps.

Through a combination of relevant academic experiences,



Central Florida Aerospace Academy students in a flight simulator lab.

collaboration with the local aerospace community, and an aviation focus, all students at Central Florida Aerospace Academy engage in a rigorous college preparatory program that maximizes their potential for successful careers. Students are challenged with a rigorous curriculum and tailored hands-on experiences with special focus on science, technology, engineering, and math (STEM). The academy responds to the needs of industry by placing emphasis on teamwork, individual achievement, skill development, creativity, and innovation, as well as critical thinking. Major courses of study include Engineering, Aerospace Technologies, Avionics, Airframe and Powerplant Mechanics, and Air Force JROTC.

For additional information, contact Keith Smith, assistant principal, or Kim Sprouse, academy counselor, at 863-413-3620 or email zin.smith@polk-fl.net (www.flycfaa.com). □

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GA Pilot Lands GA Aircraft At Cape Canaveral

by Jim Hanson

I recently had the opportunity to do something REALLY different—and REALLY fun in aviation! A national association of pilots (*the name cannot be revealed because by their codebook; they seek no publicity*) is made up of “aviators of note.” Suffice to say that these aviators are “people who *know people*.” These people have been able to provide me access to many experiences that most people would find impossible, and to otherwise off-limits places.

Like most people growing up in the 1950s and '60s, we followed the progress of the “Space Race.” Since I flew corporate jets, I was especially interested in the Space Shuttle—a rocket that returned from orbit to land like an airplane. In 1981, I had moved to Houston from Minnesota. While in Minnesota, I taught a friend how to fly balloons and seaplanes, and he taught me to fly helicopters. After moving to Houston, he suggested I look up his brother, who was in charge of the Reality Systems Integration Division of NASA for the Space Shuttle.

Reality Systems Integration developed a simulator to teach astronauts what they THOUGHT the unpowered shuttle *Enterprise* would fly like when released from the Boeing 747 carrier aircraft to glide to a landing at Edwards Air Force Base. When the flight was successfully made, they took the telemetry data from those flights to correct the simulator for what the Shuttle REALLY flew like (thus, Reality Systems Integration). When *Columbia* made the first orbital flight, they again took real-time information to correct and perfect the simulator. Only two weeks after that first flight, I was invited to fly the simulator. I flew the actual Shuttle simulator in orbit and did two landings. It was an unforgettable experience! (See sidebar)

The local chapter of that national pilot group, located at Vero Beach, Florida, is located very close to the Kennedy

Space Center (*Cape Canaveral, for those of us of a certain age*). This group **knows** people, and when I saw in the organization’s national magazine that they were putting together a chance to actually land at the restricted Shuttle Landing Facility (SLF), I jumped at the chance. This would be “closure” for me, starting out when the Shuttle was new, landing at Edwards in the sim, and now landing at the Shuttle facility at the Cape 35 years later, after all of the Shuttles had been retired. My brother, Bob, had joined me on that earlier Houston experience; he would join me for this last chapter of the Shuttle experience.

I had been to the Cape several times before to visit the historic launch sites and to see what was going on today. I immediately committed to fly to the Cape to land on the Shuttle runway, but I put in a request with the local pilot’s group asking if they could they assist me in arranging a simulated Shuttle approach and landing on the famed runway. They agreed to help. They put me in contact with Jimmy Moffitt, Shuttle Landing Facility (SLF) manager.

Moffitt explained that since the strip is no longer required for Shuttle use, it is leased to Space Florida—a private firm that operates the facility. The SLF is still government property and is on a government facility, but Space Florida is a private firm that is developing business use for the facility, as NASA is now partnering with industry to develop commercial spacecraft. I explained that I would like to replicate the glidepath and deadstick landing of the Space Shuttle. We immediately found common ground in discussing the problems in doing so.

The Shuttle had an “over-the-fence” speed of about 215 knots (depending on weight) on landing. It has a glide ratio of only about 3.7 to 1 at subsonic speeds (*or, as I describe it, “Like a loaded Tri-Pacer on a hot day”—about the same “glide” as a helicopter in autorotation*). This would require a glideslope approximately seven (7) times steeper than a normal airline approach, and at Shuttle landing speeds, about 6,000 feet per minute in the descent, or 100 feet per second. Most piston airplanes can’t descend that fast, and most jets can’t get down that fast, either. (*NASA modified Gulfstream II jets as Shuttle trainers by leaving the nose gear retracted while extending the main gear, installing “reflex” drag flaps, and taking the unusual step of allowing the engines to be reversed in flight in order to meet the mission profile of a returning Shuttle*).

From experience with the King Air 200 that I fly, I knew that I could match that rate of descent with gear and approach flaps out, and props in flat pitch without hurting the engines. An added benefit was that since the King Air uses PT-6 free turbines, the little jet power section would continue to run if the props were feathered—an important safety feature.

To actually touch down at the SLF, you have to have prior permission. You must submit the landing request form, and you must name NASA, Space Florida, and everyone else as

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A pilot's view from the cockpit (note the headset on the left). Three thousand (3,000) feet above the Shuttle Landing runway, and 30 seconds from touchdown, we are coming down at over 6000 fpm – FAST! Believe it or not, we touched down on the black squares on the runway, the Shuttle's aiming point.



1500 feet AGL and still descending fast. The end of the 15,000 ft. runway disappears out the top of the windshield at this angle. The Terrain Advisory Warning System (TAWS) was advising "Sink Rate... Sink Rate!"



The closer we got to the ground, the more pronounced the upcoming "ground rush" at a 100 feet per second closure rate. The Terrain Advisory Warning System takes on a more urgent tone – "Terrain! Terrain-Terrain"



The upcoming runway fills the windshield as we start the transition from the 20-degree glideslope to the 1 1/2 degree flare. The Terrain Advisory Warning System advises us "Pull Up!–Pull Up!–Pull Up!...."



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Notice the black touchdown markers on the runway – our desired aiming point.



About to touch down. Note the flight director command bars still indicating the nose-low attitude of the descent – engine torque meters at zero – touching down on the mark. From the tower: “WELCOME BACK TO THE CAPE!”

a named insured on your insurance policy. These are only minor inconveniences... *WE WERE GOING TO LAND AT THE CAPE, NO MATTER WHAT!*

Moffitt put me in touch with the SLF tower, and we briefed my request. There would be 20 other aircraft also landing on the strip, but ours would be the only Shuttle approaches. I filed for the Shuttle Landing Facility (identifier KTTS) on January 29, 2016. Our estimated time enroute for the 1090 nm flight was 3 hours 41 minutes, so we departed at 9:30 a.m. CST to arrive at our landing “window” at the Cape. Along our route, controllers asked, “Are you really landing at the SLF, or going to Titusville?” I assured them that we were indeed going to the Cape.

The first problem occurred when Orlando Approach wouldn’t give us the 10,000 ft. initial altitude for a landing at the Cape. Even though I cancelled IFR, they took us down to 5500 feet. When I contacted the SLF tower, they recognized our landing authority, and I told them we wanted to do a Shuttle Profile. They were unable due to four inbound aircraft, some of which were still on an IFR flight plan. I told them that we had plenty of fuel, and would hold. We could have done a 360-degree Jet Penetration, and over-

fly the runway, then break onto a curved downwind/base/ final approach. It would have been far easier to “play” the approach. If we found ourselves a little low, we could have simply cut the inside of the turn radius. HOWEVER, the Shuttles didn’t make the overhead approaches (unless landing at Edwards AFB), so neither would we. I waited until all traffic was clear, then was cleared for the approach.

Though the Shuttles had five redundant onboard computers to compute glide path and energy state, we had none. I had done calculations for several “key positions” during the approach—distance from the threshold vs. altitude—but they were all for naught as our initial altitude didn’t match any of them. We would be shooting this approach using the TLAR method (*That Looks About Right*).

“HERE WE GO!” I told my brother, as I extended gear and flaps and closed the throttles, silencing the gear warning horns in the process. Though I was used to steep approaches in the King Air (pilots new to turboprops aren’t used to the tremendous amount of drag in a “full dirty” configuration), spot landings in this configuration are not normal. The touchdown aim point was a black mark on the runway, about 2,500 feet down the 15,000 ft. runway. (*Shuttle pilots do NOT want to be short!*)

The Ground Proximity Warning System was shouting “Sink Rate! Sink Rate!” in my ear, quickly changing to “Terrain!, Terrain!, Terrain!” warnings, then to an even more urgent “Pull UP!, Pull UP!, Pull UP!” as we neared the ground. We touched down right on the black target. I had no time to ask if brother Bob, my cameraman, had captured the landing from his position behind and between the pilot seats. Even though we had briefed the procedure, he was alarmed at the steep approach, and actually had bruises on his arm from steadying himself against the cockpit doorway while filming. He initially was not able to film the runway due to it being out of sight on the top of the cockpit windshield, but was able to get low enough to find and center the shot.

I had asked the tower for the “option” (stop and go, touch



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and go, or full stop landing) and now asked for another approach. We were cleared to a right downwind and the initial point 6.5 miles north of the runway. I asked tower if they could coordinate with Orlando Approach for a 10,000 ft. altitude... "Negative; we have traffic in the area," but they did give us 7,500 feet for this approach. Again, there was traffic in the area when we switched to tower, but they eventually cleared us for a visual approach, and asked if we had the Baron traffic on a 2-mile final. We did, but said we would hold off on the approach, as we would quickly overtake him on a high-speed approach. This time, I elected to go with flaps approach and gear at the 182 knot limiting speed. Our true airspeed at altitude was 200 knots in this configuration, but the tailwind component gave us the same 215 knots as the Shuttle experienced on final approach. At this high speed, the rate of descent would have to be even steeper than the last approach, and we wouldn't have the drag of full flaps. I countered this by pushing the props full forward for additional drag. We were cleared for the approach, and again, used a "TLAR" method of when to pull the power. With the steep approach, the runway filled the windshield (the approach is SO steep that Shuttles wouldn't land in winds over 35 mph, as they couldn't see the entire runway). We again put it on the mark, and told tower that this would be full stop.

Upon landing, we taxied the remaining 2 miles to the turnoff. Once parked, we were met by Jimmy Moffitt – the person who helped make it all possible!

Our intentions was to have the aircraft stay overnight at the SLF, but since there is no fuel available, the organizers had us relocate to Titusville (KTIX), only 8 miles away. We secured the aircraft and boarded shuttle busses provided by our hosts to go to our hotel. Our hosts at Vero Beach had a busy weekend planned for us! At dinner Friday evening, we met our Vero Beach hosts in person. We were introduced to Apollo 15 astronaut Al Worden (flew the lunar orbiter) and six-time Shuttle pilot Jon McBride. They not only



Minnesota Bob Cabana is the Administrator of the Space Center at the Cape. Though many people view NASA space flight as being "on hold," Cabana provided details on a surprising amount of activity involving both NASA and private launches at the Cape, as well as development of new rockets and space systems.

related NASA stories about their missions, but answered unceasing questions for two days. Bob Cabana –Cape Administrator – also addressed us. While many have lamented the wind-down of the Lunar and Shuttle programs, Cabana stressed that NASA was as busy as ever, partnering with industry on new projects.

On Saturday, we had a full day ahead, touring the Space Center, initially on foot. We then adjourned for lunch at a dining room marked "crew only"—a true insider's view—where we were again addressed by NASA heads. We were entertained with NASA

films, and even a simulated Shuttle ride, all the while being ushered along through back entrances. We boarded busses to tour the compound, as our astronauts not only provided narration, but answered unending questions. We finished the day visiting the NASA space flight museum, where we viewed the magnificent lunar rocket, the Saturn V, then adjourned for a private catered dinner under the Space Shuttle Atlantis on display in its new building. What a MACHINE! What PEOPLE! And what an EDUCATIONAL WEEKEND!

This was a trip for the record books, all made possible by people who share our passion for flight. You won't be able to do ALL of the things we did, but you can do MANY of them. It's a wonderful vacation destination, and you, your friends, and your kids/grandkids will be inspired. Consider taking a trip to the Cape for an adventure on your own.



EDITOR'S 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 jimhanson@deskmedia.com



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National Naval Aviation Museum – Pensacola... Selecting, Collecting, Preserving & Displaying Naval Aviation History

by Dave Weiman

Since the 20th century, “Naval Aviation” has played a crucial role in combat. Eclipsing the battleship as the decisive weapon in war at sea, “aircraft carriers” have projected their powerful air wings, striking with surprise at enemy fleets and land bases, then disappearing into the vastness of the oceans with equal swiftness.

“Where are the carriers?” is the first question asked by American presidents whenever American interests are at risk, and at the start of every national security crisis, brought to light with our response to the attack on Pearl Harbor. Naval Aviation has also been at the cutting edge of aerospace expeditions, from the first successful crossing of the Atlantic by an aircraft, exploration of the Arctic and Antarctic, and journeys to outer space.

The *National Naval Aviation Museum*, located at Naval Air Station Pensacola, Florida, is responsible for selecting, collecting, preserving and displaying historic artifacts, which are related to the history of Naval Aviation. At the core of the museum’s collections are more than 700 aircraft — most of which are on display at other museums, with approximately 150 aircraft on display in Pensacola, representing Navy, Marine Corps, and Coast Guard Aviation. Included in the collection are record-setting aircraft like the Curtiss NC-4 flying boat, the first plane to fly across the Atlantic, as well as combat veterans, such as an SBD Dauntless that flew at the Battle of Midway, two Vietnam F-4J Phantom “MiG-killers,” an A-7 Corsair II that logged missions over Iraq during Operation Desert Storm, and the last F-14 Tomcat to fly a combat mission.

The museum’s West Wing is devoted almost exclusively to World War II carrier aviation and showcases a full-size flight deck replica of the aircraft carrier USS Cabot. Famous World War II aircraft, such as the Corsair, Dauntless and Hellcat,



The U.S. Navy Flight Demonstration Squadron, “The Blue Angels,” display four of their A-4F Skyhawks in the four-ship diamond formation in the museum’s atrium. The Blue Angels flew the A-4F between 1974-86. The Skyhawk was the backbone of the Navy and Marine Corps’ light jet attack forces from the late 1950s into the 1980s. Total Skyhawk production exceeded 3,000 by 1975. *Dave Weiman Photo*

stand nearby ready for take-off, while other magnificent birds fly overhead.

These historic and one-of-a-kind aircraft are displayed both inside the museum’s 350,000 square feet of exhibit space and outside on its 37-acre grounds.

While the aircraft are a major feature of the museum’s collection, there are more than 4,000 artifacts including uniforms, flight gear, weaponry, medals and decorations, also on display. In addition, the “Emil Buehler Naval Aviation Library,” which houses personal and official papers of prominent Naval Aviators, squadron records and a photograph collection numbering more than 350,000 images, is a significant repository of Naval history and draws researchers from around the world.



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The McDonnell Aircraft Company took naval aviation into the jet age in 1946 with the first shipboard operations of the F2H Banshee, which flew strikes over Korea, followed and furthered the positive reputation that McDonnell hoped to advance with a new design, built in response to a 1949 Navy request for a short-range jet interceptor. The result was the XF3H-1 Demon, which first flew in 1951 (a long-range interceptor version, the XF3H-IN, made its first flight in 1953). The Westinghouse J-40 engine wreaked havoc on the F3H program, and between August 1952 and October 1955, 11 Demons crashed, killing four pilots. The Navy changed to the Allison J-71 engine and eventually procured 519 more Demons, including the F3H-2M, which was specifically designed to carry the AIM-7 Sparrow Missile. Between 1956-64, 23 Navy fighter squadrons flew the Demon. Though it never fired a shot in anger, the F3H helped spawn McDonnell's next fighter, the famed F4H/F-4 Phantom II, which was in part derived from a proposal for an advanced version of the Demon. The Naval Museum's aircraft pictured here is one of only three surviving Demons. *Dave Weiman Photo*

NAS Pensacola

Established in 1914, NAS Pensacola is the oldest naval air station, and all Navy, Marine Corps and Coast Guard aviators and Naval Flight Officers pass through her gates at least during their initial flight training.

NAS Pensacola also serves as the home base for the "Blue Angels." When not performing at air shows, the team can be seen practicing over the museum most Tuesday and Wednesday mornings from March to November. Practices typically begin at 11:30 a.m. (Central Time), and last about 55 minutes. Admission to practice sessions is FREE and open to the public. Earlier each year, the team practices in the desert near El Centro, Calif.

The 2016 Blue Angels show schedule kicked off on March 12 at the Naval Air Facility El Centro Annual Air Show, and concludes November 12 at the Blue Angels Homecoming Show in Pensacola.

Blue Angels X4D® Experience

You can fly with the Blue Angels in the museum's new attraction, the Blue Angels X4D® Experience.

Located in Hangar Bay One, visitors can enjoy exciting, action-packed aerial maneuvers with the team on screen. With 3D images and surprising special effects, guests feel like they are flying in a Blue Angels air show. For a sampling of what to expect with the Blue Angels X4D® Experience, go to <https://www.blueangels.navy.mil/inside/> Admission

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The Navy Curtiss NC-4 long-range patrol flying boat was designed during World War I as an antisubmarine aircraft. On May 8, 1919, the U.S. Navy launched the aircraft on display and two sister ships in an attempt to be the first aircraft to cross the Atlantic Ocean by air. The NC-4 was under the command of LCDR A.C. Read, and completed the historic 3,000-mile trip from NAS Rockway Beach, N.Y., to Lisbon, Portugal, in 19 days. The other two aircraft failed enroute. The maximum speed of the NC-4 is 85 mph. Range is 1470 miles. Ceiling is 4500 feet. Empty weight is 15,900 lbs. Gross weight is 27,500 lbs. *Dave Weiman Photo*



The "Tommy" S-4C is nicknamed after its manufacturer, the Thomas-Morse Aircraft Company. Lt. David S. Ingalls, who later became the Navy's first fighter ace with six kills over the Western Front, trained in the S-4C. The S-4C Scout was initially built as a trainer for the U.S. Army. The Navy procured 14 of the aircraft. Later after World War I, the S-4C flew in the Howard Hughes motion picture "Hell's Angels" in 1930 starring Ben Lyon, James Hall and Jean Harlow. The aircraft were used again in the 1938 motion picture "The Dawn Patrol" starring Errol Flynn, Basil Rathbone and David Niven. *Dave Weiman Photo*



SP-5B Marlin
Dave Weiman Photo



The Nieuport 28 was used after the end of World War I to test the feasibility of operating wheeled-aircraft from ships. In this capacity, the aircraft flew from wooden platforms built on the turrets of battleships. *Dave Weiman Photo*

to the Blue Angels X4D® Experience is \$7.00 per person.

The Blues have been flying the Boeing F/A-18 Hornet since 1986, and one of the team's aircraft is proudly displayed outside and between exhibit buildings. An F-14 Tomcat is positioned on a pedestal at the entrance to the museum.

My favorite Naval aircraft is the Douglas A-4F "Skyhawk," which was a premier light attack aircraft of the Cold War era. A-4s flew for Navy and Marine squadrons for 51 years, from prototype to retirement, and logged more Vietnam combat missions than any other naval attack aircraft. The A-4 also served for over a decade with the Blue Angels, their diamond formation depicted in the museum's Blue Angels Atrium, where the aircraft are suspended in midair.

Of the four aircraft in the atrium, three were actually flown by the Blue Angels, and all four of the aircraft flew combat missions during the Vietnam War.

Nearly 3,000 A-4s were built between 1956 and 1979, and the Navy retired its last Skyhawk in 2003. The Blue Angels flew the Skyhawk from 1974-85, and I was fortunate to go for a flight in #7 with Lt. Commander Kurt Watson in 1985 before the team transitioned to the F-18 Hornet in 1986.

Such flight experiences are not reserved solely for Naval Aviators and journalists. In addition to the Blue Angels X4D® Experience, the museum offers guests the opportunity to fly in a full-motion simulator. And after your flight, you can enjoy a delicious lunch at the authentic Cubi Bar Café,



LtGen Duane D. Thiessen
President & CEO, National Naval Aviation Museum
NAS Pensacola, Florida

decorated with more than 1,000 squadron and unit plaques reassembled from the historic Officers' Club at Cubi Point in the Philippines.

Call it frosting on the cake if you will, but as Peggy and I walked out of the Viet Nam War Pavilion, we ran into some dear aviation friends from Wisconsin, and the president and chief executive officer of the Naval Aviation Museum Foundation, LtGen Duane D. Thiessen, USMC (Ret.), call sign "Drano," who took us to his office and introduced us to members of his staff.

LtGen Thiessen was commissioned a Second Lieutenant in May 1974. His initial operational assignment was as an AV-8A Harrier pilot in which he completed numerous deployments to both the Mediterranean Sea and Okinawa. In 1982, he was assigned to Marine Aviation Weapons and Tactics Squadron One in Yuma, Arizona, where he served as an AV-8 tactics instructor. Lieutenant General Thiessen held several operational billets, completed Naval Command and Staff College in Newport, Rhode Island, and served as assistant to the AV-8B program manager in Naval Air Systems Command, Washington, DC. In June 1991, he reported to MCAS Cherry Point, North Carolina, where he assumed command of Marine Attack Training Squadron 203. His assignments took him back to Washington, DC, to attend the National War College and then to various commands throughout the U.S. and abroad. He retired as Commanding General, U.S. Marine Corps Forces Pacific.

Today, LtGen Thiessen is an active general aviation pilot, owns a 1967 Piper Cherokee PA-28, and is rebuilding a 1997 RV6. He was raised in Buhler, Kansas, so he qualifies as a "Midwest Flyer," and enjoys attending EAA AirVenture Oshkosh each year. In fact, LtGen Thiessen was a Harrier demo pilot at air shows during the late 1970s and performed at Oshkosh.

"I was honored to serve, I had a riot of a time doing so, and I was privileged to have made the Marine Corps a career," said Thiessen. *"Today, my mission as president and CEO of the Naval Aviation Museum Foundation is to ensure that you, and all our guests, enjoy the experience of Naval Aviation history."*

"Dave, please tell your readers about our museum and how we strive to offer them a personal and highly enjoyable experience.

"Tell them why people like yourself come back multiple times. THAT is the success of it all."

LtGen Thiessen is married and is the father of two grown children, and a grand parent of three grandchildren. His son followed in his footsteps and also became a Marine Corps aviator, and is now flying commercially in the firefighting business, while his daughter followed in his wife's footsteps, and married someone in the military.

For those of us who marvel with the vertical takeoff capability, maneuverability and overall performance of the AV-8A Harrier at EAA AirVenture Oshkosh most years, we can get a close-up look at the aircraft on display at the National Naval Aviation Museum and sit in a trainer.

Educational Opportunities For Youth

LtGen Thiessen is proud of the museum's outreach to young people, whether it is hosting school tours, or promoting the museum's one-week "National Flight Academy" for students in grades 7 thru 12. In the National Flight Academy, students enter a totally immersive, STEM (Science,

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R4D-5L Skytrain (Navy version of the C-47) was the first aircraft to land at the South Pole, accomplishing the feat on October 31, 1956.

Dave Weiman Photo



The VH-3 Sea King helicopter was used by U.S. President Richard Milhous Nixon, who served from 1969 until 1974 when he became the only U.S. president to resign the office.

Dave Weiman Photo

Technology, Engineering, and Mathematics) focused activity in a facility that looks, sounds, and feels like an actual Navy aircraft carrier. They sleep in ship's berthing, they eat in a mess hall. The Joint Intelligence Center is the classroom. They brief in ready rooms and conduct operations based on what they have learned from Command Centers and in 30 integrated aircraft simulators. College credit is available through the University of West Florida upon course completion.

For children grades K thru 6, the museum offers "STEM Saturdays," one-day learning experiences on a variety of topics (<http://www.nationalflightacademy.com/>).

The National Naval Aviation Museum in Pensacola is part of the Navy's museum system, the largest of 12 official Navy museums located throughout the United States. Information about the Navy museum system can be found at the Naval History and Heritage Command website:

<http://www.navalaviationmuseum.org/>



"Skylab," America's first experimental space station, was launched from NASA's Kennedy Space Center on May 14, 1973. Three three-man crews occupied Skylab for a total of 171 days and 13 hours, in which nearly 300 scientific technical and medical experiments took place. Skylab returned to earth on July 11, 1979, scattering debris over the Indian Ocean and the sparsely settled region of western Australia.

Dave Weiman Photo



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Air Force One (SAM 26000) & VC-54C Sacred Cow Move To New Fourth Building At National Museum of the USAF



The VC-137C Air Force One (SAM 26000) at the National Museum of the United States Air Force on April 9, 2016. *USAF Photo by Ken LaRock*



Douglas VC-54C "Sacred Cow" at the National Museum of the United States Air Force. *USAF Photo*

DAYTON, OHIO – Restoration crews at the National Museum of the U.S. Air Force have moved VC-137C Air Force One (SAM 26000), which was used by eight presidents - Kennedy, Johnson, Nixon, Ford, Carter, Reagan, George H.W. Bush and Clinton, to the museum's new fourth building on April 9. The VC-54C Sacred Cow, which was first used by President Franklin D. Roosevelt, was also moved into the fourth building.

The new \$40.8 million fourth building was privately financed by the Air Force Museum Foundation, and is scheduled to open to the public on June 8, 2016. Special weekend activities and demonstrations are being planned to continue celebrating the building's opening, June 11-12.

The 224,000 square foot building will house four galleries – Presidential, Research & Development, Space and Global Reach, along with three science, technology, engineering and mathematics (STEM) learning nodes. For more information, visit www.nationalmuseum.af.mil. □

Two Blues From KSU

SALINA, KAN. – Andrew Talbott, 32, of Sedan, Kan., and Lance Benson, 32, of McPherson, Kan., are graduates of Kansas State University Polytechnic Campus, Salina, and both are members of the elite military flight demonstration squadron, the U.S. Navy Blue Angels.

Talbott graduated from Kansas State Polytechnic in December 2005 with a bachelor's degree in airway science.

Benson graduated in May 2006 and earned a bachelor's degree in airway science and a minor in business.

After graduating, Talbott reported to Pensacola Naval Air Station in Florida for Officer Candidate School and was commissioned an ensign.

Benson reported to Pensacola NAS, Fla. for officer candidate school and was also commissioned an ensign.

Both Talbott and Benson served aboard aircraft carriers before joining the Blue Angels in 2015. □

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Annual Airport Construction Update

by Hal Davis

*Airport Compliance Manager
WisDOT Bureau of Aeronautics*

Last year marked another successfully year of improvement projects at Wisconsin airports. In total in 2015, we funded more than 90 different projects at over 50 airports. Projects ranged from automated weather observing system (AWOS) installations, upgraded airfield lighting, fencing, fuel farms, runway reconstructions and rehabilitations, new terminal buildings and more. We hope many of you have already benefited from these projects.



Hal Davis



The new terminal at Reedsburg Municipal Airport
Reedsburg, Wisconsin

2016 Outlook

With summer upon us, the 2016 construction season is already underway. Most airport construction projects have the potential to impact normal airport activity, so always check NOTAMs before you go flying. Although various factors

could delay certain projects until next year, expect airport construction to cause runway closures this summer at the following Wisconsin airports:

- Black River Falls Airport
- Dane County Regional Airport
- Door County Cherryland Airport
- General Mitchell International Airport
- Manitowoc County Airport



Paving Runway 18-36
Lancaster Municipal Airport
Lancaster, Wisconsin



New Runway Surface
Richard I. Bong Airport
Superior, Wisconsin

- Manitowish Waters Airport
- Menomonie Municipal Airport – Score Field
- Price County Airport
- Portage Municipal Airport
- Rice Lake Regional Airport – Carl’s Field
- Rusk County Airport
- Solon Springs Municipal Airport
- West Bend Municipal Airport

In addition, there are a number of other airport improvement projects occurring, which may affect some airport users. For example, airports with planned taxiway and/or apron projects include:

- Austin Straubel International Airport
- Cumberland Municipal Airport
- Dane County Regional Airport
- General Mitchell International Airport
- John F. Kennedy Memorial Airport

- Lawrence J. Timmerman Field
- Rhinelander/Oneida County Airport
- Sheboygan County Memorial Airport
- Taylor County Airport
- Waupaca Municipal Airport
- Wittman Regional Airport

Space doesn’t allow us to list every single project planned for this year, so be sure to contact your local airport managers to find out if any projects are scheduled at the airports you frequent.

For more information on past and future airport development projects, including the Bureau of Aeronautics’ Five-Year Airport Improvement Program, visit the Wisconsin Bureau of Aeronautics’ web site at

<http://wisconsin.dot.gov/Documents/doing-bus/local-gov/astnce-pgms/aid/airport/air-5yr-plan.pdf>
or call (608) 266-3351. □

Meet Zach Schabla

Chief Pilot

WisDOT Bureau of Aeronautics

Zach Schabla joined the Wisconsin Department of Transportation’s Bureau of Aeronautics (BOA) as chief pilot and aviation safety/pilot training program manager in February. On a daily basis Zach works with the FAA, airport managers, designated pilot examiners, as well as general aviation, State Patrol and BOA pilots.



Zach Schabla

Zach is responsible for the planning and coordination of flight instructor renewal courses, the annual Wisconsin IA mechanic seminar, and a variety of statewide general aviation safety seminars. He is a lead FAA safety team representative and conducts check flights and quarterly pilot meetings with Wisconsin State Patrol and BOA pilots. Zach is a regular pilot for the state’s photogrammetry program, performing aerial survey and photo missions. He is also responsible for flying bureau program and project managers to airports throughout the

state for the purpose of conducting inspections and addressing airport needs.

Serving as an internal resource to BOA staff on aviation safety, he works alongside other pilots in the bureau to create flight standardization materials, presentations and other aids to flying safety.

In 2014, Zach earned a Bachelor’s Degree in Criminology and Law Studies from Marquette University in Milwaukee. He also possesses an Associate Degree in Aeronautical Science, which he obtain from Fox Valley Technical College. Prior to joining WisDOT, he flew for GoJet Airlines and was based out of Chicago’s O’Hare Airport, flying the CRJ-700/900 for United Express and Delta Connection. During his college years, Zach worked as a flight instructor at Milwaukee Timmerman Airport. Zach holds an airline transport pilot certificate and is a CFI/CFII/MEI.

Zach is originally from Milwaukee and enjoys sports, outdoor activities and especially likes playing ice hockey. He enjoys writing and recording music and spending time with friends and family.

For any questions concerning flight safety at the Bureau of Aeronautics, please feel free to contact Zach at zach.schabla@dot.wi.gov or (608) 266-7347. □



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

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Summers In Minnesota ARE Spectacular!

by Cassandra Isackson

Director, Minnesota DOT Office of Aeronautics

Summers in Minnesota ARE spectacular! It is a great time for flying as the days are long and sunshine abounds. With that in mind, I want to let you know we can help your community planner and/or zoning administrator with technical glare analysis of solar power installations that may be proposed at or near your airport.



Cassandra Isackson

Many communities are looking for new ways to be more energy self-reliant, and solar power is an often-considered alternative.

Before putting solar panels in place, there are a number of points to consider with an emphasis on aviation safety.

Solar panels can produce excessive glare, which can temporarily blind a pilot. Coming in for a landing with glare spots in your eyes can impact the safety of the pilot, passengers, and even people on the ground near the airport.

Good News! The airport has a tool to use: the Airport Safety Zoning Ordinance!

An 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 at 651-234-7190 (Rylan.juran@state.mn.us).

Have you seen the 2016 Minnesota Airport Directory? Should your plane – or other aviation photo – be on the cover next year? We are pleased to congratulate Emmanuel Canaan on his winning contest photo of Mike Donatelle's restored Stearman chosen to grace the cover of our 2016 Minnesota Airport Directory!

We are already looking for photos this summer for the cover of the 2017

Are Airports and Solar Power Compatible?

SOLAR GLARE

Minnesota Statutes 2015
216B.1691 Renewable Energy Objectives
Subd. 2a. Eligible energy technology standard.
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CONTACT MnDOT, OFFICE OF AERONAUTICS EARLY
In the decision making / permitting process to assist you in determining if the proposed facility is compatible with your airport.

315 PUBLIC AIRPORTS
Did you know solar energy facilities can impact airport operations?

31 PILOTS
The FAA has developed a software tool to determine the impact caused by solar glare on pilots using the airport.

ZONING CONTROL
The Solar Glare Hazard Analysis Tool allows MnDOT to complete the analysis, using information like size, location, and angle of the solar panels to determine the likelihood of an impact occurring throughout the seasons of the year.

YOUR COMMUNITY
Is your community considering installing a solar electric generating facility near your airport?

We can help you determine whether a proposed facility is compatible with your airport.
For more information please contact Rylan Juran, Aviation Planner and Zoning Coordinator.
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directory. When you have a great photo to share, be sure to enter our contest. Photos need to be high resolution: 6 megapixels *portrait* or 12 megapixels *landscape*, and feature aviation in Minnesota. Keep in mind that the photographer must be the one to submit the photo, and must provide us with the rights to use the photo in the airport directory, other publications, website/social media, and other uses. The deadline is September 30, 2016. If you have questions or need an entry form, contact Aviation Representative Rachel

Obermoller at rachel.obermoller@state.mn.us.

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 this summer. Also, remember to send us information about your favorite aviation event. We'll post it on our "Events Page," so others can attend. Send event information to: janet.dirtzu@state.mn.us. Although we cannot attend every fly-in or event, we do go to several each year, so please invite us! Thank you! □

Think About Your General Aviation Airport!

The value that General Aviation (GA) brings to your community, state and this nation is tremendous. Every community with a GA airport has an asset that brings significant value to the community and every citizen in that community. This is in part because, in the United States, over two-thirds of all the hours flown by General Aviation aircraft are for business purposes. That involves aircraft from a Cessna 150 to some of the largest business aircraft. GA-type aircraft and GA in general, are the primary training ground for most military, commercial airline, and corporate pilots.

In an article titled *Business Aviation: A Survival Guide for the Next Four Years*, by Jeremy Cox, published December 3, 2012, he said, "There is no one who works within this (aviation) industry that is not 100% sold on the distinct advantage that the use of a business aircraft provides". . . . Corporate aircraft (sic) are business tools with varied uses. About 74 percent of corporate aircraft (sic) carry sales, technical and middle-management employees to more airports domestically, none of which have airline service."

Cox added, "It is a fact that corporations that use business aircraft earn annual revenues equal to one-half of the \$14.7 trillion economy of the United States while they employ more than 19 million people *worldwide*, thus making Business Aviation users the single largest economic driving force within this country."

In a November 7, 2015 news article by Dustin Walsh, writing for crainsdetroit.com, he writes, "John Hatfield,

aviation director for Midland (Michigan)-based Dow Corning Corp, said, "how executives spend their time is critical, and corporate aviation is one way to maximize those hours." He continued, "Time is not a renewable resource; we're all bound by the same 24 hours a day. What we do in that 24 hours makes a difference on how effectively we run our businesses, and corporate aircraft (sic) leverage and multiply that ability to be effective."

Ed Bolen, President and CEO of the National Business Aviation Association (NBAA), says that GA, "provides an economic and transportation lifeline for small and rural communities, helps companies be more efficient and productive, and serves as a key component in humanitarian efforts."

Now you can see that when a pilot departs your airport in a Cessna 150 or a 172, or a light twin for instance, they may well be headed to another city where they will be conducting business. This meeting may not have been as easy or even possible without a GA aircraft. They use their aircraft to add to their efficiency and ultimately to their bottom line. That translates to more jobs (in your community) perhaps, but certainly means more dollar value brought to your community because of GA used for business.

Think about the value your airport brings to your town, because it provides opportunity for local businesses to use aviation to grow and prosper. Now go spread the message about the value of GA and your GA airport, to your community. □

Wipaire To Expand Manufacturing Facilities

At South St. Paul Municipal Airport

SOUTH ST. PAUL, MINN. - Wipaire, Inc. will be expanding its manufacturing facilities at South St. Paul Municipal Airport. In a purchase deal closed in late February, Wipaire became the sole owner of the 65,000 square foot building it has leased a portion of since late 2012. Renovations will begin as soon as previous leaseholders move out of their leased spaces.

"International demand is driving our expansion," commented Chuck Wiplinger, President and COO of Wipaire, Inc. "As we look to meet that demand and structure

our manufacturing for efficiency, we are continuing to invest in our home area. This facility provides us with the ability to streamline aluminum float manufacturing, while allowing for future composites manufacturing."

This purchase expands Wipaire's manufacturing footprint by 78% and consolidates all manufacturing operations under one roof. Facility upgrades will take place over a 12-month phased plan to avoid impact on current and planned production (www.wipaire.com). □



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Cirrus NOW: Racine, Wisconsin



A Cirrus SR22T on display in the EAA Chapter 838 museum in Racine, Wisconsin.



(L/R) Dr. Rob Zimmanck of Kenosha, Wis., was interviewed by Gary Black of Cirrus Aircraft, about his interest in aviation at the Cirrus NOW event in Racine, Wis.

RACINE, WIS. – Cirrus executives set aside the evening of May 12, 2016 in Racine, Wis., to showcase its lineup of aircraft. A special program was held at EAA Chapter 838’s headquarters at Batten International Airport, Racine, Wis. Also on display was a 2016 Model S by Tesla, a 2017 Lotus from Mancuso Motorsports, 2016 Harley Davidson motorcycles, and the new all-electric run-about by Symphony Boats, designed and manufactured in Duluth, Minn., which is home for Cirrus Aircraft.

In addition to the Cirrus NOW event on the 12th, Cirrus set up guided tours of the SC Johnson headquarters and Frank Lloyd Wright home on Friday, May 13. Participants stayed at the Harbourwalk Hotel Racine.

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EAA AirVenture Museum Made For Best Conference Banquet Venue Ever!



EAA President Jack Pelton

EAA's "Spirit of St. Louis" replica greeted conference attendees as they arrived for the banquet.

OSHKOSH, WIS. – While the 61st annual Wisconsin Aviation Conference was held at the Best Western Premier Waterfront Hotel & Convention Center in downtown Oshkosh, May 2-4, 2016, the banquet was held May 3 in the EAA AirVenture Museum, next to Wittman Regional Airport, the site of the world's greatest aviation event, EAA AirVenture Oshkosh.

EAA President Jack Pelton welcomed conference participants to the museum that included airport, state and federal aviation officials, consultants and business leaders.

The conference itself featured a panel of state and federal officials who encouraged attendees to ask questions concerning everything from NextGen, ADS-B out and controversy over mixing Unmanned Aircraft Systems (i.e. drones) with manned aircraft at airports.

Charity Zich, manager of the Chippewa Valley Regional Airport in Eau Claire, Wis., asked FAA Regional Administrator Barry Cooper, if NextGen will improve radar coverage in the airspace in north central Wisconsin. While Cooper recognized that the gap in radar coverage exists, he noted that NextGen was never intended to improve radar coverage, but rather replace it. Cooper said: "Congress wants NextGen to go faster

and faster, but we have limited funds." Keith Gerard of the Wisconsin DOT Bureau of Aeronautics stated that the state is working to fix the gap with the FAA, and hopes to add two more stations, but doesn't know if the federal government will pay for it and is waiting for a response.

Further questions dealt with ADS-B out equipment, and whether the 2020 deadline the FAA has imposed will hold true. Cooper said that there are no plans to extend the deadline, despite the hardship it poses on the aviation community, but recognizes the frustration the requirement



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A panel discussion led by top state and federal aviation officials discussed everything from NextGen and ADS-B out, to Unmanned Aircraft Systems and what's being done to counteract the decrease in the pilot population.

is causing aircraft owners, who must either comply or avoid controlled airspace and airports. Gerard stated that a federal loan program may be forthcoming.

One aircraft owner noted that many aircraft owners are choosing to wait to see if ADS-B equipment costs will come down, but warned that avionics shops may not be able to handle last-minute installations.

Also on the panel from the FAA Great Lakes Region were Susan Mowery-Schalk and Jim Keefer.

Other panelists included Wisconsin DOT Bureau of Aeronautics officials David Greene, Keith Gerard, Scott Brummond, Mark Arnold and Tom DeWinter. Green thanked attendees for all they do to keep airports going. "Our challenges coincide with those of the FAA," said Greene.

Concerning mixing drones with manned aircraft at airports, airport officials asked the panel how they are to handle the situation, and what exactly are their responsibilities and obligations.

Attorney Russ Klingaman of Milwaukee noted that Unmanned Aircraft Systems hobbyists are required under current regulations to give airports notice if they intend to be flying within 5 nm of an airport – public or private – and asked what are airport officials expected to do when notified.

David Greene of the Wisconsin DOT Bureau of Aeronautics noted: "The airport manager is put in a very tough spot. The question is then what? What we don't want to see are 72 different county policies coming out" regulating drones.

Brad Livingston of Dane County Regional Airport in Madison, said that he doesn't want the liability, so as a towered airport, he is putting the responsibility "back onto the backs of the FAA."

Another participant said that they are looking at an ordinance for Milwaukee County, and commented: "It is getting out of hand."

Cooper responded: "You are dealing with federal airspace when you are talking about creating local ordinances."

John Chmiel of Wausau Downtown Airport suggested: "We need to look at UAS as an opportunity to get more people into aviation. We need more education, not more regulations. Wausau Flying Service has gotten more flight students since the introduction of UAS."

Cooper: "This might be how we get more people into

aviation."

Jeff Baum, president of Wisconsin Aviation, Inc., asked: "What is the national and state plan to counteract the decrease in pilots?"

Scott Brummond from the Wisconsin DOT Bureau of Aeronautics responded by stating that the state has a program that focuses on youth and working with high schools, referring to Wisconsin's Aviation Careers & Education (ACE) Program.

Greene added: "We are seeing a decline in interest in aviation careers in general, not only pilots."

Cooper added: "We realize the need to grow the aviation workforce."

Abe Weber, manager of Appleton International Airport, and outgoing president of the Wisconsin Airport Management Association, emceed the panel.

The conference format was designed this year to produce a more productive, interactive and informative program. Both the FAA and Wisconsin Bureau of Aeronautics scheduled private, one-on-one meetings with airport officials to discuss matters specific to those airports during the conference.

Among special guest speakers included AOPA President Mark Baker and the president of the National Air Transportation Association (NATA), Tom Hendricks. Baker briefed conference attendees on AOPA's initiatives to increase the pilot population through the promotion of flying clubs. Baker went on to describe AOPA's strong stance against user fees and its opposition to privatizing the air traffic control system, and its support for the Pilot Bill of Rights II legislation, which will reform the Third Class Medical.

NATA President Tom Hendricks noted that regardless of the aviation organization, "the general aviation community speaks together."

"If we want to lose battles in DC, we go to war. It is our policy at NATA to listen, be respectful, and help people succeed. If this requires giving others credit for our efforts, so be it. At NATA, we believe in being humble, respectful and solution oriented. The challenges bureaucrats face are huge.

"If Unmanned Aircraft Systems is what it takes to light the fire to get people involved in GA, let's work to integrate them into the system."

Concerning the proposal to privatize the air traffic control system, Hendricks said: "It would increase costs when we already have a very safe system, and privatization would turn that upside down. We are not only concerned about fees... We are concerned with safety and access by GA. Rural America will suffer if air traffic control is privatized."

In closing, Hendricks urged fixed base operators and airport officials to talk to their elected officials and let them know why they are against the privatization of the air traffic control system and support the Pilots Bill of Rights II.

In a separate session, Adam Williams, manager of airport policy with AOPA, emphasized AOPA's support of Third Class Medical Reform and the Pilots Bill of Rights II. He noted that FAA reauthorization has been extended to September 30, 2017.

Concerning FAA's "Hangar Use Policy," AOPA has asked

for a common sense approach that would allow for aircraft construction at federally funded airports.

There are seven AOPA regions in the country with the goal of a GA Caucus in every state, and an aviation day at every state capitol every year.

AOPA's Airport Support Network involves over 2300 volunteers, and is an early warning system of possible airport closers or detainments, working in liaison with airport officials to protect and promote airports.

At the closing banquet, EAA President Jack Pelton reiterated the importance of Third Class Medical Reform, the Pilots Bill of Rights II, and changes in hangar use language to permit aircraft homebuilding, restoration and maintenance.

Pelton was pleased with the FAA's decision not to charge EAA air traffic control fees for AirVenture, as the agency has been doing the last several years, and pleased with federal initiatives on the low-lead fuel replacement program.

Pelton announced that among the big attractions planned for EAA AirVenture Oshkosh 2016, July 25-31, will be the Canadian Snowbirds Jet Team; the likelihood that there will be two B-29 Superfortress bombers flying – "FiFi" and "Doc;" the first appearance of the four-engine Martin Mars Flying Boat, originally designed and built for the U.S. Navy during the World War II era, and currently used as a water bomber to fight forest fires in Canada, western United States, and Mexico; the 25th anniversary of "Desert Storm," which will include an appearance by U.S. Air Force General Chuck Horner who led the air attack on Iraq; the 75th anniversary of Pearl Harbor featuring the Interstate Cadet in an aerial reenactment of the battle; the 100th anniversary of Boeing Aircraft to include the Boeing 747 and 767 on display; and an outdoor concert with the entertainment to be announced.

Awards presented included the "Wisconsin Airport Engineer of the Year Award" to Marcus Kuhn of Mead & Hunt, Inc.; "Distinguished Service Awards" to Allan Seirstad, Airport Manager at Cumberland Municipal Airport, Cumberland, Wis. (retired in 2014 after 15 years service), and Dave Elder of Dane County Regional Airport; the "Lifetime Service Award" went to Tony Yaron of Central Wisconsin Airport, Mosinee, Wis.; and the Wisconsin Airport Management Association Presidential Award to Abe Weber of Appleton International Airport, Appleton, Wis. The Professional Development Scholarship of \$500.00 went



(L/R) Kurt Stanich of the Wisconsin Airport Management Association (WAMA) congratulates Dane County Regional Airport Resident Engineer, Dave Elder, on receiving the "Distinguished Service Award" for his leadership on the Instrument Landing System upgrade project at Dane County Regional Airport, Madison, Wis.



The "Wisconsin Airport Engineer of the Year Award" went to Marcus Kuhn of Mead & Hunt, Inc. Congratulating Kuhn are fellow staff members of Mead & Hunt.

to Don Rowlett, Air Traffic Manager at Central Wisconsin Airport, Mosinee, Wis.

The Wisconsin Airport Management Association, Wisconsin Aviation Exhibitors and Consultants Association, Wisconsin Aviation Trades Association, and Wisconsin Business Aviation Association sponsor the Wisconsin Aviation Conference.

Waukesha County Airport Manager Kurt Stanich was elected president of the Wisconsin Airport Management Association. The 2017 Wisconsin Aviation Conference will be held April 24-26 in Waukesha, Wis. For additional information on participating or exhibiting, contact Bob O'Brien at bob@thewisconsinriver.com. □

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Pilots, Flight Department Managers, Aviation Businesses, Airport Management & Commission Members Meet For 5th Annual Minnesota Aviation Day At The Capitol

ST. PAUL, MINN. – Members of the Minnesota Aviation Trades Association (MATA), Minnesota Business Aviation Association (MBAA), Minnesota Council of Airports (MCOA) and the aviation community at large converged March 16, 2016 in the new Minnesota Senate Office Building of the State Capitol for the “5th Annual Minnesota Aviation Day at the Capitol.” Jared Esselman, Aircraft Owners and Pilots Association (AOPA) Director of State Government Affairs, and Bob Quinn, National Business Aviation Association (NBAA) Central Region Representative, also attended.

This year there were no major aviation legislative initiatives in which attendees needed to address. However, it was still important that elected officials heard directly from those who work in the Minnesota aviation industry, and who fly for business and recreation, so they are aware of the issues facing general aviation. Meeting and getting acquainted with elected officials when there are no burning statewide issues, paves the way to present concerns at a later date.

This year attendees attended a House Transportation



(Front Row L/R): Doug Nelson, Gordon Hoff, Nancy Grazzini-Olson, Jessica Belcher, Jared Esselman, Latricia Kryzer, William Towle, and Dave Konshok. (Back Row L/R): Mike Wilson, Ronald Roetzel, Kurt Claussen, John Reed, Charlotte Swanson, Bob Quinn, and Tim Howard.

Policy and Finance Committee Hearing. During the hearing Lynn Boyd of MSP Aero; Tim Howard of the Polaris Flight Department; Cassandra Isackson, Director, MnDOT Office of Aeronautics; and Gordon Hoff, Executive Director of MBAA testified on the impact of the changes to the aviation statutes enacted in 2013. Tracie Walter, Director of Operations and Vice President of Bemidji Aviation, and Michael Lawrence, General Manager, Key Air

Twin Cities, submitted written testimony. Based on these testimonies it appears the changes to Minnesota’s aviation statutes have been positive.

Next year, the State Capitol will be open and MATA, MBAA and MCOA will be hosting the 6th Minnesota Aviation Day At The Capitol. The annual event is a great opportunity for pilots, airport businesses, and airport managers and commission members to meet with their state representatives and senators to update them on the impact aviation has on their businesses, airports and communities.

For additional information, contact Gordon Hoff at gordon.hoff@comcast.net. □

Academy College Announces \$40,000 Scholarship In Honor of World of Aviation Founder, Sherm Booen

BLOOMINGTON, MINN. – Academy College, serving the Twin Cities since 1936, hosted an open house, April 20, 2016 to celebrate its 80th anniversary and to announce the creation of a \$40,000 scholarship named in memory of “*The World of Aviation*” radio and television program founder, Sherm Booen.

Academy College, located at 1600 W. 82nd Street, Suite 100, Bloomington, Minnesota, offers certificates, and two and four-year degree programs in Aviation, Information Technology, Medical, and Business. The Academy has partnered with its sister company, Thunderbird Aviation, for the flight training with locations at Crystal and Flying Cloud Airports.



Academy College President, Nancy Grazzini-Olson, and her husband, Jay Olson.

Academy College has been in the Grazzini family for 58 of these 80 years between Albert Grazzini, and his daughter, Nancy Grazzini-Olson, president and CEO.

“I am fortunate to have the opportunity to continue my father’s legacy and dream of providing educational opportunities to students and their future employers,” said Grazzini-Olson in opening comments at the open house.

Scholarship applicants are required to write an essay on the legacy of Sherm Booen, who was a close friend of the Grazzini family. The aviation career scholarship, up to \$40,000, is designed to continue the growth of aviation in Minnesota.

Academy College sets itself apart from other colleges and

universities in that it provides technical courses in the student's chosen profession. This frequently allows students to start their careers earlier, then go on to obtain their Bachelor Degree. In addition to classroom courses, Academy College offers online courses.

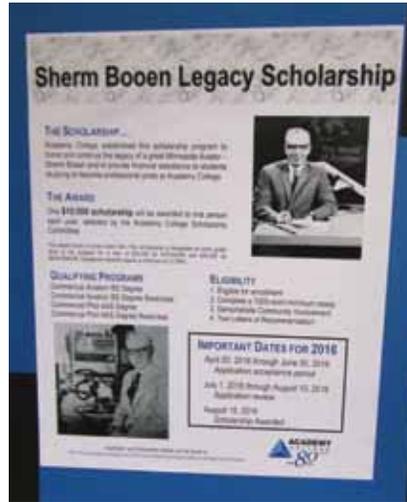
Faculty members include those currently working in their chosen field, so the curriculum is up to date and relevant. Job placement after graduation is important to the school.

"We are results driven," said Olson. "Our goal is for our students to meet their career objectives and for our school to meet the needs of employers."

Pilot and radio personality, Al Malmberg, the current host and producer of "The World of Aviation" on Minneapolis NewsRadio 830 WCCO AM, was on hand at the open house to pre-record an upcoming program with special guests who knew Sherm Booen, and grew up watching his program on



(L/R) D'Ette Roberts, granddaughter of the late Sherm Booen, was on hand to announce the "Sherm Booen Legacy Scholarship" with Academy College President, Nancy Grazzini-Olson.



WCCO television in the Twin Cities. The program now airs Friday evenings from 11:00 pm to 12:00 midnight, and is sponsored by Academy College and Thunderbird Aviation. Podcasts of all programs can be heard at <http://minnesota.cbslocal.com/audio/world-of-aviation/>. The program is part of Malmberg's weekday show from 11:00 pm to 2:00 am.

Special guests on the Friday, April 22, 2016 broadcast included Academy College President Nancy Grazzini-Olson; Jeff Hamiel, Executive Director, Metropolitan Airports Commission; Fred Nauer, Chief Flight Instructor with Academy College and Thunderbird Aviation, who was National Flight Instructor in 2015; and Dave Weiman, Editor/Publisher, *Midwest Flyer Magazine*.

For additional information and scholarship applications, contact Julie Falk at 952-851-0066 (www.academycollege.edu). □

MATA – Investing In The Future!

One goal of the Minnesota Aviation Trades Association (MATA) is to invest in future aviation professionals through "MATA's Scholarship Program."

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Greg Reigel
 President
 MATA

Caitlyn Brady
 MN State Univ-Mankato
 2015 MATA Scholarship
 Recipient

MATA – The Choice & Voice of Aviation Businesses Since 1945

What Defines A General Aviation Airport? History, Longevity, Community, Business, Family!

This year's recipient of the FAA/Minnesota Governor's Award – Crookston Municipal Airport - Kirkwood Field (KCKN) -- has all of these attributes: history, longevity, community, business, and family. This award, and many others, were presented during the Minnesota Airports Conference, April 22, 2016, at Madden's On Gull Lake, Brainerd, Minn.

The first airport in Crookston was a round turf runway used to train glider pilots during World War II. In 1943, the city purchased 644 acres of land and established what is now Crookston Municipal Airport - Kirkwood Field. The airport is named in honor of the mayor at the time, an early proponent of the airport.

Throughout the 1940s the airport operated three turf runways, each 3000 feet in length. In 1964, Runway 13/31 was paved and extended to 3500 feet. Throughout the '70s, '80s and '90s, the airport continued to grow, pave and extend runways, added taxiways, built a terminal, improved parking facilities, and added navigational aids and hangar space. Additional land was purchased providing the city needed right of way and ensuring an airport safety zoning. Today, the airport encompasses approximately 700 acres, and has three runways and one parallel taxiway. The fixed base operation operates two conventional hangars. There are four T-hangars, an airport manager's house and one storage building. Crookston Aviation Service provides management for the airport. The airport manager, Lowell Miller, and his family provide the airport with everyday operations and maintenance, and have been associated with the airport since the early 1980s. The Crookston Airport Commission governs the airport.

The airport provides the necessary amenities so transient pilots can access the local community via a courtesy car and obtain fuel from a self-service fuel station 24 hours a day. Both 100LL and Jet fuel is available.

The airport is well maintained. Not only is the grass cut and the snow plowed, but the areas around the runways are groomed and the approaches are kept clear of obstructions. The pavements are being regularly maintained and the building is clean and welcoming, especially on cold winter mornings.

Located in the farmlands of the Red River Valley, the airport supports three aerial applicator businesses. There are two farm lease tenants utilizing over 300 acres of land. One of the farm lease tenants is part of University of Minnesota Crookston through the College of Food, Agriculture & Natural Resource Sciences for the Northwest Research and Outreach Center. The University of North Dakota bases aircraft at Crookston and the airport is active with flight instruction year around.

Crookston has a vibrant aviation community that supports more than 40 based aircraft. The efforts of the operators and airport management, combined with local community support, make Crookston a model airport and well deserving of the FAA/Minnesota Governor's Award for 2016.

The FAA/Governor's Award was presented by the Federal Aviation Administration Great Lakes Regional Office in cooperation with the Minnesota DOT Office of Aeronautics and Governor's Office.

Other awards presented included "*Projects(s) of the Year*" for airport projects completed in the previous year, which have made a significant improvement to airport operations. The project(s) could be singular, multiple, or a combination of projects that resulted in improved airport efficiency, safety, or facility enhancement.

Winona Municipal Airport, Max Conrad Field, received the "Key GA Airport Award" for the extension/reconstruction of Runway 12-30, which included new NAVAIDs.

The construction phase of the project was completed over two years at a combined project cost of approximately \$12 million. This project required a complex phasing schedule, a bidding process to allow sponsor flexibility, constant coordination with users, utility relocations, land acquisition, obstruction removal and project funding coordination. Other issues included coordination with federal and state agencies, payment coordination with contractors, and variables that required adjustments over a multi-year project. The multi-year airport improvement project was substantially completed in November 2015 with the commissioning and dedication of a brand new 5,680 x 100-ft. bituminous runway with new approach lighting (MALSR), PAPI, REIL and MITL. The new runway is also equipped with a new glide slope on Runway 30 and PAPI approach lights on both runways, 12 and 30. Mead & Hunt was the consultant. JB Holland Construction of Decorah, Iowa, was the contractor.

Hutchinson Municipal Airport, Butler Field, received the "Intermediate GA Airport Award" for its Runway 15/33, Taxiway A and Apron Reclamation project. Full reconstruction of the runway, taxiway, and apron, which were originally constructed in 1994, was initially discussed. However, due to the limitations of available state apportionment and federal non-primary entitlement funds, full reconstruction of all pavements as part of one project was not possible.

Full Depth Reclamation (FDR) is the process of pulverizing the entire thickness of bituminous pavement and blending it with the underlying aggregate base to form a recycled base suitable for paving with new bituminous. By utilizing the FDR process, the city was able to save a substantial amount of money by recycling the existing



Key GA Airport Award (L/R): Joe Harris (presenter) with Dr. George Bolon (Win Air Aviation Services), Michelle Baird (Mead & Hunt), Keith Nelson of Winona Municipal Airport (recipient), Bill Holland (JB Holland Construction), and Tom Werner (presenter).



Intermediate GA Airport Award (L/R): Joe Harris (presenter), Marty Bromenschenkel (Duininck, Inc.), Blaine Schoenecker (Duininck, Inc.), Silas Parmar (Bolton & Menk), John Olson of Hutchinson Municipal Airport (recipient), and Tom Werner (presenter).



Non-Aero Business Award (L/R): Joe Harris (presenter), John Ahern (TKDA), Blaine Peterson of Duluth International Airport (recipient), Andy Towner (Kraus-Anderson), and Tom Werner of Duluth International Airport (recipient).



Airport Planning Award (L/R): Joe Harris (presenter), Kaci Nowicki of (SEH), Blaine Peterson of Duluth Sky Harbor (recipient), and Tom Werner (presenter).



Outstanding Leadership In Promoting Aviation Award (L/R): Joe Harris (presenter), Kevin Baker and Jason Ceminsky of Mankato Regional Airport (recipients), Mark Knoff (airshow committee member), and Tom Werner (presenter).



Excellence Award (L/R): Joe Harris (presenter) with Tim Callister (recipient), and Gary Schmidt and Tom Werner (presenters).



James Oberstar Award (L/R): Joe Harris (presenter), Dave Konshok (recipient), and Tom Werner (presenter).

pavement section in lieu of providing virgin aggregates. Utilizing FDR greatly reduced construction time for the project allowing construction to be completed in less than two months. Construction of the project began on August 24, 2015 and was completed on October 30, 2015. The consultant for the project was Bolton & Menk, Inc. The contractor was Duininck, Inc. of Prinsburg, Minn.

Duluth International Airport received the "Non-Aeronautical Business Development Award" for making a significant contribution to the betterment of its airport through non-aeronautical business

development. The project focuses on the improved economic viability of the airport through revenue generation, unique financing and/or community engagement.

In 2015, the Duluth Airport Authority and Lake Superior College renovated a military hangar to create a new home for the Center for Advanced Aviation, a popular program at the college that trains professional pilots and maintenance technicians to work in the region's growing aviation market.

The proposed project transformed 20,000 square feet of hangar space and 20,000 square feet of office and shop areas into a specialized hands-on training facility. The hangar bay was renovated into the center's maintenance training area, and the remaining spaces were transformed into academic offices and general classrooms with simulators and shop facilities. Utilities, including water, sewer and electrical, were upgraded to accommodate the new facility usage. The 3.5-acre property has a concrete paved apron and parking, and the entire site is located on DAA property and controlled by security

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gates and fencing. The main hangar bay became the center's hands-on maintenance training area and is supplemented with a paint booth, tool cribs, and a new welding shop. Remaining spaces were reconfigured for new classrooms, a student lounge, staff offices, administrative offices and a conference room. A simulator room, flight operations offices and pilot training facilities were added to the pilot training area. The space was designed to be flexible, adapting to the needs of Duluth's growing aviation sector that includes both Cirrus Aircraft, an aircraft manufacturing company developing a new jet program, and AAR, a commercial jet maintenance facility currently serving Air Canada. The consultant was TKDA. The contractor for the project was Kraus-Anderson.

Duluth Sky Harbor Airport was recognized for "Outstanding Leadership In Airport Planning, Environment and Strategic Initiative" for its Environmental Assessment (EA) and Environmental Assessment Worksheet (EAW) in removing approach obstructions and relocating Runway 32, which included an Airport Layout Plan update.

The award is presented to the airport sponsor that has surmounted extraordinary circumstances or created unique solutions in planning, environmental compliance or developing strategic initiatives at their airport.

In 2007, the Duluth Airport Authority determined the Runway 32 approach surface had several obstructions. In 2015, the authority completed a multi-year federal Environmental Assessment/State Environmental Assessment Worksheet (EA/EAW) to evaluate solutions to the obstructed runway approach.

The EA/EAW evaluated alternatives that would safely meet the needs of airport users and provide a long-term solution that balances the sensitive natural resources in the area through shortening the runway to 2,600 feet and relocating it into Superior Bay. The project results in approximately 7.5 acres and 70,000 cubic yards of fill. The FAA issued a Finding of No Significant Impact (FONSI)/Record of Decision (ROD) in May 2015. An airport layout plan was also completed concurrently with the EA/EAW process and was approved in July 2015. The consultant for the project was Short Elliott Hendrickson, Inc (SEH).

Mankato Regional Airport, Sohler Field, was recognized for its "Outstanding Leadership in the Promotion of Aviation in Minnesota" in producing the "*Minnesota Air Spectacular 2015*" air show.

The city of Mankato hosted the Minnesota Air Spectacular 2015 air show, June 27-28, 2015, in partnership with Verizon Wireless Center. The city of Mankato was able to secure the U.S. Air Force Thunderbirds, U.S. Army Golden Knights, U.S. Navy TAC Demo Team and several national and world-caliber air show performers to participate in the show. This was the only Minnesota air show in 2015 that had a military demonstration team.

The air show was heavily marketed throughout the state and drew over 35,000 attendees. In addition, the air show committee set up several venues to further promote aviation.

The committee worked with the local EAA chapter, Sean D. Tucker of Team Oracle, and other acts to provide flights for the EAA Young Eagles program in which Tucker chairs. The Thunderbirds also met with over 200 elementary and middle school age children to motivate them to go into military and/or aviation-related career fields.

Airport engineer Tim Callister, AAE, received the "MCOA Award of Excellence" for demonstrating a quintessential devotion to all aspects of aviation over a sustained period of time (similar to a lifetime achievement award). Callister was one of the four airport professionals who founded the Minnesota Council of Airports (MCOA) in 1983. He has more than 45 years of aviation experience, and has managed airports ranging in size from small general aviation airports to one of the busiest major hub airports in the United States – Minneapolis-St. Paul International Airport (MSP). Callister helped pioneer MCOA with the premise of collaboration as an important axis for building a strong Minnesota airport community. In 2010, Callister was formally presented with the Distinguished Flying Cross, the Bronze Star, and a fistful of other medals that had been quietly slipped into his military file as pieces of paper during his service in the U.S. Army during Vietnam from 1968-71.

Callister served in the United States Army from 1968-91, was airport director with the Metropolitan Airports Commission from 1974-2004, and since 2005, he has been a senior aviation planner with Mead & Hunt.

Receiving MCOA's "James L. Oberstar Award" for 2015 was David R. Konshok of Park Rapids, Minn. This prestigious award named in honor of an elected official who did much to better aviation and air transportation in Minnesota and nationwide as a member of the U.S. Congress (1975-2011), is reserved for those special individuals who have demonstrated a strong interest and commitment to aviation and airport development in the state.

Konshok served as a radioman in the U.S. Navy and later studied business administration. He received his private pilot certificate in 1956, then began working for the improvement of the Park Rapids Airport and joined the airport commission, a position he held for 60 years to build strong relations between the airport and the city, push for zoning changes, work on tenant leases, and lobby in St. Paul for grants and funding for airport improvements.

In 1968, Konshok was instrumental in founding a local Civil Air Patrol squadron and served as its commander into the 1980s. Konshok is a charter member of the Minnesota Council of Airports (MCOA), which adopted its bylaws on April 27, 1983, at its first annual meeting. In 2013, Konshok was inducted into the Minnesota Aviation Hall of Fame, and Grand Rapids Municipal Airport was renamed Konshok Field.

The Minnesota Airports Conference is sponsored by the Minnesota Council of Airports and Minnesota Department of Transportation Office of Aeronautics, and facilitated by the Airport Technical Assistance Program (AirTAP). □

Minnesota Pilots Association Hosts Minnesota Aviation Gathering In Twin Cities

BLAINE, MINN. – The Great Minnesota Aviation Gathering, April 29-30, 2016, was a fly-in/drive-in held at Anoka County – Blaine Airport in the northern suburbs of Minneapolis. Greg Herrick, owner of Golden Wings Flying Museum, hosted the event in his museum and on his ramp, but the Minnesota Pilots Association



Randy Corfman

incorporates his love of practicing medicine with his love of aviation. A 5,000-hour commercial rated pilot, he holds instrument, multiengine and seaplane ratings. He flies a Cessna T210 for business travel, and a Piper Super Cub for fun. Corfman grew up near Wichita, Kansas. Check out his “Medical Matters” column on Supercub.org.

To join the Minnesota Pilots Association, go to www.MNPILOTS.org or email info@MNPILOTS.org.



(L/R) AOPA President Mark Baker and Anoka County – Blaine Airport Manager Glenn Burke.



(L/R) Dick and Randy Cross of Cirrus FBO, Anoka County – Blaine Airport.



(L/R) Mark Mathisen and Matt VanCura of NorthPoint Aviation, Brainerd, Minn.



(L/R) Chris Cape, General Manager, Thunderbird Aviation; Drew Hamilton, Admissions Director, Academy College; and Matt Keleher, Aircraft Technician, Thunderbird Aviation. □

(MPA) sponsored the event, led by founding member and president, Randy Corfman.

Education is an integral part of the mission of the Minnesota Pilots Association, and sessions at the gathering covered soaring, light sport aircraft, risk and resource management in the cockpit, setting up a flying club at your airport, returning your aircraft to service, a rusty pilot seminar, kit building, air traffic control, engine maintenance and overhauls, an EAA update, aircraft accessories to make winter operations easier and more enjoyable, insuring your aircraft, ADS-B, World War II bombers, a pinch hitter course, the Cirrus Vision SF50 Jet program, medical considerations in becoming an old and bold pilot, reflections on aviation, seaplane flying, and what makes an airport nice and why this matters to visitors.

Speakers included AOPA President Mark Baker, Charlie Becker, Tim Clifford, Randy Corfman, Cheryl Ann Daml, Kevin Dunrud, Doug Evink, Chris Henry, Greg Herrick, Tim Hieb, Paul Jackson, Ryan Konrath, Tom Lymburn, Alan Matson, John Melchert, Chris Meyer, Woody Minar, Rachel Obermoller, Neil Otey, Kent Peterson, Jack Shelton, Steve Thibault, Brad Thurrow, Mike Vivion, and Richard Well.

The mission of the Minnesota Pilots Association is to promote and protect aviation in Minnesota through advocacy, education, outreach and social activities. The founders of MPA firmly believe that a healthy aviation community is an invaluable asset to the state. Members act as the voice of pilots, aviation enthusiasts and supporters of aviation in Minnesota.

MPA President Randy Corfman is a reproductive endocrinologist, aviation medical examiner and pilot who



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Soaring To New Heights: Women In Aviation

by Northland Community & Technical College

When you think of aviation, what do you think about? Do you think about the Wright brothers and their contributions to modern aviation or possibly the flight of Charles Lindbergh, who spent his childhood in nearby Little Falls, Minnesota? Aviation is so many things to so many people, and a pivotal part of modern day life. A commonly overlooked fact is the huge role that women have played in all aspects of aviation. Pioneers from Amelia Earhart to Rosie the Riveter to Sally Ride have shown the world how women play a huge role in all aspects of aviation.

Rosie the Riveter is a prime example of how women have worked to bring the aviation industry to where it is today. During the time of Rosie and World War II, the aviation industry saw the greatest increase in female workers ever. More than 310,000 women worked in the U.S. aircraft industry in 1943, making up 65 percent of the industry's total workforce (compared to just 1 percent in the pre-war years). Without women in the industry, history might tell a much different story.

One of the lesser-known roles women played in aviation at the same time was the Women's Air Force Service Pilots, or WASPs. These women, each of whom had already obtained their pilot's license prior to service, became the first women to fly American military aircraft. They ferried planes from factories to bases, transporting cargo and participating in simulation strafing and target missions, accumulating more than 60 million miles in flight distances and freeing thousands of male U.S. pilots for active duty in World War II. More than 1,000 WASPs served, and 38 of them lost their

lives during the war.

On June 18, 1983, Sally Ride became the first American woman in space as a crewmember on space shuttle Challenger. With this flight, she became the youngest American to travel to space at the age of 32. If she wouldn't have challenged traditional thinking, she may have never

enabled women to strive for greatness in aviation and aerospace.

Northland Community & Technical College understands the significant role that women play in aviation. Here, women make education happen in our aviation maintenance technician (AMT), unmanned aircraft systems (UAS) maintenance, and geospatial intelligence (GeoInt) programs. They

work on the latest equipment in their industry and are introduced to companies for potential career opportunities. Some have jobs before they graduate! There also are now clubs and organizations dedicated to women in aviation and aviation maintenance. These organizations are seeing membership growing by leaps and bounds. We encourage participation in conferences designed specifically for women interested in and working in aviation.

A former female AMT and UAS student said, "My job will make a difference. People can't get where they need to go if I don't do my job right." She went on, "Women can do it (aviation maintenance) just as well, and we can actually work on a lot of things easier because we are smaller."

With current workforce shortages in the aviation maintenance industry, women are needed to fill these jobs across the country. With a degree from NCTC in one of our aviation programs, you have a ticket to basically work when and where you would like. Starting salaries are generous



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Rex Hammarback

Executive Director, Northland Aerospace Foundation
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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.

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and the ability to move up within your company can occur quickly for those that are motivated.

Historically, men have dominated the aviation workforce, but that is changing. There is no better time than now to get training and launch a new career in the high demand fields of aviation and aerospace.

One female NCTC graduate concluded, "You face challenges in any field and there's always those types of people who doubt your abilities in any field, so keep your head and keep doing what you're taught to do and do it well. You'll go far."

Interested in aviation at Northland? Northland recently

developed a virtual tour so you can check out the aviation campus from the comfort of your home, any time of the day. You can check it out from your phone at: www.tournorthland.com

EDITOR'S NOTE: This material is based in part upon work supported by the National Science Foundation (DUE 1501629). 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.



NewView Technologies Owner Receives Charles Taylor Award

OSHKOSH, WIS. – Bruce Botterman, owner of NewView Technologies at Wittman Regional Airport, Oshkosh, Wis., has received the "Charles Taylor Master Mechanic Award" for 50 years of continuous aircraft airframe and powerplant (A&P) service. Botterman is a 1966 graduate of Rock County Vocational School, Janesville, Wis., and before he and his wife, Rae, started NewView Technologies, Inc. in 1997, he worked for United Air Lines at O'Hare International Airport; Midwest Aviation in Janesville, Wis.; Basler Flight Service, Oshkosh, Wis.; Maxair, Inc.,



Bruce Botterman

Appleton, Wis.; and Midwest Realty, Oshkosh, Wis.

NewView Technologies, Inc. is a repair station specializing in aircraft window repair and polishing, pitot static altimeter testing, and piston aircraft maintenance. Botterman has been a member of the Wisconsin Aviation Trades Association since 1982, a board member since 1998, and is past president. He is also a member of the National Business Aviation Association, Experimental Aircraft Association, Wisconsin Aviation Hall of Fame, and Oshkosh Chamber of Commerce, and is a former member of the Appleton and Green Bay Chambers of Commerce. In addition, Botterman has been an advisory board member at Fox Valley Technical College since 1985.

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

Wag-Aero Launches New Digital Catalog

LYONS, WIS. - Customers can now shop Wag-Aero's entire 124-page catalog electronically using their smart phone, tablet or computer at onlinecatalog.wagaero.com and see an extensive selection of quality aircraft parts and services.

For 55 years, Wag-Aero has been a worldwide manufacturer and distributor of aircraft parts for the general aviation and light sport aircraft industries. The company's digital catalog features a full line of instruments, wheels and brakes, tires, covering materials, engine mounts, exhaust systems, seat belts and shoulder harnesses, consumables,

Emergency Locator Transmitters (ELTs), ground support equipment, lighting, fuel tanks and components, windsocks and frames, and runway lights, along with FAA/PMA replacement parts for Aeronca, Cessna, Piper and Taylorcraft. In addition, Wag-Aero supplies components for three unique homebuilt aircraft: the Sport Trainer, Wag-A-Bond and Sportsman 2+2. Aero Fabricators, a division of the Wag-Aero Group, is a certified repair station for engine mounts, seat belts and exhaust systems.

Call Wag-Aero at **1.800.558.6868** or email wagaero-sales@wagaero.com for additional information and assistance. Wag-Aero offers same day shipping on most items. □

AOPA Announces New Flying Club Benefits

FREDERICK, MD – The Aircraft Owners and Pilots Association (AOPA) announced free scheduling software and other new benefits and tools now available to flying clubs. The software, available exclusively to AOPA Flying Club Network members, allows clubs to schedule up to six "resources," such as aircraft and flight instructors. With an

unlimited number of users and the capability to process credit card payments, and create invoices, the software from Multi Service Technology Solutions, Inc., offers the capability and flexibility to serve clubs of all sizes and types. In addition to the new scheduling software, AOPA is making it easier than ever for pilots to find their ideal flying club (www.aopa.org). □

Seven Great Aviators Inducted At 27th Annual Minnesota Aviation Hall of Fame

BLOOMINGTON, MINN. – The Minnesota Aviation Hall of Fame, a nonprofit organization that honors Minnesotans for their contributions to aviation, recognized seven aviators at a banquet, April 30, 2016, at the new Hyatt Regency Bloomington. A record 420 people attended the event.



2016 Minnesota Aviation Hall of Fame inductees.

Dick Phillips Photo

Inductees include aviators and others who have made – or are making – significant contributions to aviation. Amongst this year's inductees included:

Lloyd Alsworth (1906-1992), a native of Sherborne, Minn., ran Fairmont Flying School from 1949-75 where he trained an estimated 3,500 students as private and commercial pilots with various ratings. The terminal at Fairmont airport is dedicated in Alsworth's honor.

Julie E. Clark (1948-) was the first female pilot hired by a major airline. Beginning at Hughes AirWest, Clark eventually landed a position as captain with Northwest Airlines. Her storied career from 1976-2004 includes a logbook with 66 aircraft types, 33,000 flight hours, and the restoration of a T-34 Mentor, which she has flown in airshows for more than three decades.

Edward L. Erickson (1930-2014) was a key player in the early days of the Waconia airport. Erickson's airline career began in 1956 with North Central Airlines as a DC-3 captain and ended in 1990 with Northwest Airlines. In retirement, Erickson flew a Pitts S1S with an airshow troop, and became chief pilot for AmJet.

Melvin J. Maas (1898-1964) was born in Duluth, Minn. He joined the Naval Air Reserve after World War I and rose to the rank of Lt. Col. Maas was elected to the U.S. Congress in 1928 and served on the House Naval Affairs Committee where he introduced the bill that would become the 1938 Naval Reserve Act.

Edward T. Newberg (1954-) has been airport manager and fixed base operator at the Hector airport since 1977. He has built a successful aerial spraying business, mentors youth in aviation, and as airport manager, produces one of the largest fly-in breakfasts in the state each year.

James L. Oberstar (1934-2014) built his 34-year career as a U.S. Congressman from Minnesota's 8th district on transportation issues and policy. In Washington, he pushed to enact aviation funding and safety measures. At home, he

promoted efforts to expand regional airports to foster tourism and economic development, and spearheaded light rail, bridges, and trails.

Boris Popov (1946-) invented the Ballistic Recovery System (BRS) – an aircraft parachute system that is standard equipment in many aircraft, including all Cirrus aircraft; Cessna 172/182s, Diamond DJET (in

development); Flight Design's Model CT (standard); light sport aircraft; and more than 300 designs of ultralights. The ballistic recovery system has saved hundreds of lives, and Popov remains an active member of the BRS board.

In addition to inductees, the Minnesota Aviation Hall of Fame named Frank Cuden "Aviation Artist of the Year;" presented Reverend Linton L. Scott with a "Special Service Award;" and named Dave Weiman, Editor/Publisher of *Midwest Flyer Magazine*, "Minnesota Aviation Writer of the Year."

Three scholarships were presented to aspiring aviators, aerospace leaders and innovators. John Chisham, Jr. received the "Don Hinz - Red Tail Project Scholarship;" Joey Schimnich received the "Ken Dahlberg Scholarship;" and Michael Wrona received the "Minnesota Aviation Hall of Fame Scholarship."

MAHF Chairman Noel Allard recognized all former inductees who have passed away since the 2015 investiture ceremonies. Among them are Elizabeth "Liz" Wall Strohfus, 96, of Faribault, Minnesota, who served her country as a Women Airforce Service Pilot (WASP) during World War II. Strohfus passed away March 6, 2016. Also recognized was Bryan Moon, 87, of Randolph, Minn., and Sarasota, Fla., who founded the organization "MIA Hunters" to locate downed aircraft and the remains of their crews that went missing in action during World War II. Moon – an aviation artist and retired Northwest Airlines executive – died on Nov. 28, 2015.

Board members include Noel Allard, chairman; Raymond Rought, vice chairman; Jim Hanson, secretary; Peter Gavin, treasurer; and directors Darrell Bolduc, Patrick Halligan, Robert Hearn, Russell Jensen, Bruce Kitt, Terry Marsh, Stan Ross, Tom Schellinger, Robert Steinbrunn, and alternates Tim Barzen, Marty Coddington, Roger Gomoll, and Thomas Lymburn. For additional information on the Minnesota Aviation Hall of Fame, refer to the organization's website: www.mnaviationhalloffame.org. □

CALENDAR

Send the **DATE, TIMES, LOCATION (INCLUDE CITY, STATE & AIRPORT NAME & I.D.),** and **CONTACT PERSON'S TELEPHONE NUMBER,** as well as that person's address & email address for reference. First 15 words **FREE.** \$.75 for each additional word.

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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.

JUNE 2016

- 1* **RACINE (RAC), Wis.** - Capital Branch of the Wisconsin Flying Hamburger Social 5-7pm - Racine Sport Flyers at John H Batten Airport.
- 2* **NEW LISBON (82C), Wis.** - Slipstream Branch of the Wisconsin Flying Hamburger Social 5-7pm at the Mauston-New Lisbon Union Airport.
- 2-5 **JUNCTION CITY (3JC), KAN.** - 7th Annual National Biplane Fly-In celebration of all things with 2 wings held at Freeman Field.
- 3* **PULASKI (92C), Wis.** - Peninsula Branch of the Wisconsin Flying Hamburger Social 5-7pm at the Carter Airport.
- 3-5* **WOODRUFF, S.C.** - Annual Recreational Aviation Foundation (RAF) Weekend at Triple Tree Aerodrome. www.TheRAF.org
- 3-5* **BOWLING GREEN (KBWG), KY.** - Kentucky Fly Out. www.bgwcairport.org
- 4* **WASHINGTON (AWG), IOWA** - Flight Supper with Bill Chrasil Performing 5pm-8pm. LIVE Concert Smoke 'N Guns & Hard Barney 8pm-Midnight. Overnight camping available on airport. 319-653-8158. miker2011@gmail.com
- 4* **SOUTH ST. PAUL, MINN.** - Spring Swing Big Band Hangar Dance hosted by Commemorative Air Force Minnesota Wing. Door open 6pm. www.cafmn.org/hangar-dances.html
- 4-5* **BLAINE (ANE), MINN.** - **Discover Aviation Days Fly-In/Drive-In At Anoka County Blaine Airport - (Janes Field) with event from 7am to 4pm each day. Pancake Breakfast from 7:30am-11:30am & Lunch from Noon-3pm. Golden Wings Museum Tours. Kids Activities for young flyers. Hangar Dance Saturday Night! Many events. www.discoveraviationdays.org: 763-568-6072.**
- 5 **WILD ROSE (W-23), Wis.** - Pancake, eggs, sausage, applesauce & more Breakfast 8-11am. Pig Roast (Pork-Beef-potato salad-Beans & more) 11:30am till gone at Wild Rose Idlewild Airport. Rain or Shine. 715-513-0911.
- 5* **DEKALB (DKB), ILL.** - Pancake Breakfast 8-11:30am.
- 5* **AUDUBON (ADU), IOWA** - Breakfast 6:30-10:30am. 712-563-3780.
- 5* **OELWEIN (OLZ), IOWA** - Breakfast 7-11am. 319-238-1313.
- 5* **WASHINGTON (AWG), IOWA** - Breakfast 7-11am. 319-461-7022,
- 5* **JUNEAU (KUNU), Wis.** - Pancake Breakfast & Airport Open House 8am-Noon.
- 7* **INDEPENDENCE (IIB), IOWA** - Tuesday Night Grill-Out at the Airport 5-8pm. 319-334-4000. www.walteraviation.com
- 8* **BROOKFIELD (02C), Wis.** - Capital Branch of the Wisconsin Flying Hamburger Social 5-7pm at the Capitol Airport.
- 9* **LAKE TOMAHAWK (WI36), Wis.** - Northwoods Wisconsin Flying Hamburger Social 5-7pm.
- 11* **PRAIRIE DU SAC (91C), Wis.** - Traditional fly-in with many special family activities, 7am - 4pm. 608-577-3754.
- 11* **HAYS, Mo.** - Great Planes on the Great Plains Fly-In starting 8am. www.flyhays.com 785-628-7380
- 12* **RUSH CITY, MINN.** - Pancake Breakfast 8am-roughly 2pm. Afternoon vendors, Warbirds, Antique tractors, Warbirds, Antique tractors, Collector Cars, Airplane rides, and much, much more. 320-358-4743.
- 12* **SPENCER (SPW), IOWA** - Breakfast 7-11am. 712-262-1000.
- 12* **DENISON (DNS), IOWA** - Breakfast 8-11am. 712-265-1608.
- 12* **OXFORD (IA24), IOWA** - Lunch & Flour Drop At Green Castle Airport from Noon-4pm. 770-833-1502. www.greencastleaeroclub.com
- 14* **INDEPENDENCE (IIB), IOWA** - Tuesday Night Grill-Out at the Airport 5-8pm. 319-334-4000. www.walteraviation.com
- 14* **NEENAH (79C), Wis.** - Lakeview Branch of the Wisconsin Flying Hamburger Social 5-7pm at the Brennand Airport.
- 15* **PLATTEVILLE (KPV), 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.

FLY-IN / FLOAT-IN BREAKFAST & LUNCH - SAT., JULY 2ND - 8:30-11:30 A.M.

AIR SHOW - FRIDAY, JULY 1ST - 7:00 P.M. & SAT., JULY 2ND - 11:00 A.M.

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- 15* **BRODHEAD (C37), Wis.** - Capital Branch of the Wisconsin Flying Hamburger Social 5-7pm at the Keich Aviation Museum.
- 16* **WATERTOWN (KRYV), Wis.** - Flying Hamburger Social 5-7pm.
- 16* **PRENTICE (5N2), Wis.** - Northwoods Wisconsin Flying Hamburger Social 5-7pm.
- 17* **BOYCEVILLE (3T3), Wis.** - Mapleview Branch of the Wisconsin Flying Hamburger Social 5-7pm.
- 18* **EAGLE RIVER (KEGV), Wis.** - Props & Piston Classic Fly-In & Car Show. Pancake Breakfast 8-11am. Burgers & Brats & Corn on The Cob 11:30am-4pm. Featuring Radar Fun Run 12:30-3:30pm.
- 18* **BEMIDJI, MINN.** - Pancake Breakfast 8am-1pm.
- 18* **KEOSAUQUA (6K9), IOWA** - Breakfast 7-10am. 319-293-7111.
- 19 **CANBY (CNB), MINN.** - Father's Day Airshow & Fly-In. Fly-In 7:30am-12:30pm Dad's Belgium Waffles. Airshow starts at 1pm. 507-828-0323.
- 19* **DODGE CENTER (TOB), MINN** - Breakfast 7am-Noon, 507-282-9682.
- 19* **MAQUOKETA (OQW), IOWA** - Breakfast 7am-Noon. 563-652-2484.

- 19* **LACON (C75), ILL.** - Father's Day Breakfast 7am-Noon at the Marshall County Airport. 309-246-2870.
- 20* **LACON (C75), ILL.** Aviation Safety Seminar 7pm at the Marshall County Airport. 309-246-2870.
- 21* **VINTON (VTI), IOWA** - Tuesday Night Fly-In at the Vinton Veterans Memorial Airpark 5-8pm. 319-560-2423. www.noeaviation.com
- 21* **WILD ROSE (W23), Wis.** - Lakeview Branch of the Wisconsin Flying Hamburger Social 5-7pm.
- 16* **SHELL LAKE (KSSQ), Wis.** - Pinecrest Branch of the Wisconsin Flying Hamburger Social 5-7pm.
- 23* **MINOCQUA-WOODRUFF (KARV), Wis.** - Northwoods Wisconsin Flying Hamburger Social 5-7pm at the Lakeland Airport/Noble F. Lee Memorial Field.
- 25-26* **QUAD CITY, IOWA** - Quad City Air Show at the Davenport Municipal Airport. 563-285-7469. www.quadcityairshow.com
- 26* **MARION (C17), IOWA** - Breakfast 6am-Noon. 844-589-2376.
- 26* **FAIRMONT (FRM), MINN.** - Breakfast 7-11am. 507-236-3604.
- 26* **RED OAK (RDK), IOWA** - Breakfast 8-11am. 712-623-6523.
- 26* **PENDER (OC4), NEBR.** - Breakfast 8am-Noon. 402-380-9882.
- 26* **EASTPORT (59M), MICH.** - Breakfast & Car Show 8am-Noon at the Torchport Airpark. 231-632-2412. www.torchport.com
- 28* **IOLA (68C), Wis.** - Lakeview Branch of the Wisconsin Flying Hamburger Social 5-7pm at Central County Airport.
- 30* **CRANDON (Y55), Wis.** - Northwoods Wisconsin Flying Hamburger Social 5-7pm.

JULY 2016

- 1-2 **PHILLIPS (PHB), Wis.** - Price County Airport Fly-In/Float-In (Airshow: Friday 7pm & Saturday 11am). Breakfast, Lunch & Dinner at Harbor View Pub & Eatery. Also band 8pm-Midnight.

- 3* **AUSTIN, MINN.** - Pancakes SPAM, Sausage, Milk, Coffee, Juice Breakfast 7am-1pm, \$6.00 per person age six and over, Pilots In Charge - Free. Contact, Steve Jensen 507-433-7115.
- 4* **ESTHERVILLE (EST), IOWA** - Breakfast 7-11am. 712-362-3541.
- 4* **IOWA FALLS (KIFA), IOWA** - Breakfast 7-11am. 641-648-3191.
- 5* **IOLA (68C), Wis.** - Lakeview Branch of the Wisconsin Flying Hamburger Social 5-7pm at Central County Airport.
- 7* **THREE LAKES (K40D), Wis.** - Northwoods Wisconsin Flying Hamburger Social 5-7pm.
- 8* **CUMBERLAND (UBE), Wis.** - Mapleview Branch of the Wisconsin Flying Hamburger Social 5-7pm.
- 10* **MIDDLETON (C29), Wis.** - Fly-In Breakfast of Pancakes, Eggs Cooked to Order, Sausage, Coffee, Juice, Milk and Donuts at the Middleton Municipal Airport/Morey Field from 7:30am-Noon.
- 10* **ISLE, MINN.** - Breakfast 7-11am. Pat - 320-676-1910.
- 10* **CHARLES CITY (KCCY), IOWA** - Breakfast 7:30am-12:30pm at Northeast Iowa Regional Airport. 641-228-3553.
- 10* **TWO HARBORS (KTWM), MINN.** - Pancake Breakfast 7am-Noon at the Richard B. Helgeson Airport. 218-834-2162.
- 12* **INDEPENDENCE (KIIB), IOWA** - Tuesday Night Grill-Out at the Airport 5-8pm. 319-334-4000.
- 12* **ASHLAND (ASX), Wis.** - Pinecrest Branch of the Wisconsin Flying Hamburger Social 5-7pm at John F. Kennedy Memorial Airport.
- 13* **RACINE (RAC), Wis.** - Capital Branch of the Wisconsin Flying Hamburger Social 5-7pm at John H Batten Airport.
- 14* **RHINDELANDER (KRHI), Wis.** - Northwoods Wisconsin Flying Hamburger Social 5-7pm.
- 15* **RED WING (RGK), MINN.** - Mapleview Branch of the Wisconsin Flying Hamburger Social 5-7pm.

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- 16 WASHINGTON ISLAND (2P2), Wis. - 63rd Annual Washington Island Fish Boil Fly-In, 11:00 am to 1:00 pm, Washington Island Airport, Wis. (2P2). No fee for tie-downs or camping. Lodging also available: 920-847-2448 or 920-847-2147 (www.WashingIsland-wi.gov and www.VisitWashingtonIsland.com). Sponsored by the Washington Island Lions Club.
- 16* BEMIDJI, MINN. - Pancake Breakfast 8am-1pm.
- 16-17* EDEN (FCM) PRAIRIE, MN - AirExpo 2016 at Flying Cloud Airport. wotn.org/node/81
- 17* FOREST CITY (KFXV), IOWA - Omelets, Muffins, Juice & Coffee Breakfast 7-11am. 641-581-2880.
- 20* MADISON (MSN), Wis. - Capital Branch of the Wisconsin Flying Hamburger Social 5-7pm at Wisconsin Aviation Dane County Regional Airport-Truax Field.
- 21* BOULDER JUNCTION (KBDJ), Wis. - Northwoods Wisconsin Flying Hamburger Social 5-7pm.
- 21* WATERTOWN (KRYV), Wis. - Flying Hamburger Social 5-7pm.
- 22* BOYCEVILLE (3T3), Wis. - Mapleview Branch of the Wisconsin Flying Hamburger Social 5-7pm.
- 22-24 JANESVILLE, Wis. - Heavy Bombers Weekend 2016 9am-5pm. heavybombersweekend.splashthat.com/
- 23* SIREN (KRZN), Wis. - Burnett County Fly-In/Drive-In Breakfast & Airshow. www.gandydancerflyindrivein.com.
- 23* COUNCIL BLUFFS AIRPORT (KCBF) - Flying With Diabetes Day / Pilots With Diabetes Fly-In. An inspirational and educational day arranged by Council Bluffs Airfield (KCBF). Organized by the Jennie Edmundson Hospital and "Flying With Diabetes," with diabetes physicians, pilots with diabetes and athletes with diabetes giving talks. "Flying With Diabetes" activities are intended to raise positive awareness of diabetes with respect to flying, raise funds for diabetes research and to engage aviation authorities to introduce more flexible policy for private and commercial pilots with diabetes. The Council Bluffs event is free! For additional information, email Douglas Cairns douglas@flyingwithdiabetes.com. www.flyingwithdiabetes.com
- 23* SIREN (KRZN), Wis. - Pancake Breakfast 7-11am, Brat, Tacos & Sandwich Lunch 10am-1pm, Aerobic Show at Noon & Remote Control Planes 2pm at the Burnett County Airport. www.gandydancerflyindrivein.com
- 23* MADISON (KMSN), Wis. - 15th Annual Hangar Dance 7-10:30pm at Wisconsin Aviation Dane County Airport.
- 23* PLATTEVILLE (KPVB), Wis. - Fly-in/Camp-in en-route to Oshkosh! Grill out, camp fire, sponsored by A&A Aviation. Pancake breakfast next morning! 608=348-3582.
- 24* PLATTEVILLE (KPVB), Wis. - Pancake Breakfast: 608-348-3582.
- 23-24 SIOUX FALLS (FSD), S.D. - "Power on the Prairie" Air Show.
- 24* CRESO (KCJJ), IOWA - Breakfast 7:30-Noon at Ellen Church Field Airport. 563-547-3434.
- 25-31 OSHKOSH, Wis. - EAA AirVenture Oshkosh, Wittman Regional Airport. www.eaa.org
- 27-29* CLINTON (KCWI), IOWA - Cessna 150-152 Fly-In. 301-275-2476. www.cessna150152flyin.org
- 29-8/6* INDIANOLA, IOWA - National Balloon Classic at the Indianola National Balloon Classic Field. 515-961-8415. www.nationalballoonclassic.com
- 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 (KPVB), 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.

Northport Lions Club Fly-In Pancake Breakfast & Car Show
Woolsey Memorial Airport (5D5), Northport, Michigan
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- 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.**

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- 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
- 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.
- 29-31* **KANSAS CITY, Mo.** - 4 States Airport Conference. www.4statesairportconference.com
- 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.
- 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 (KCIN), IOWA** - Airshow (TBD) & Flight Breakfast 6:30am-Noon at the Carroll Municipal/Arthur N Neu Airport. 712-792-4980.
- 11* **WATERTOWN (RYV), Wis.** - Pancake Breakfast & Airport Open House 8am-3pm.
- 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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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**

LOOKING TO START A J3 CUB CLUB - I have a hanger at ANE Anoka County Airport. If interested lynchj@comcast.net

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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 gilletj@lseairport.com

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

HANGAR FOR SALE – Wisconsin – Dodge County Airport (KUNU) – 40W X 32D, Door 38'9"W X 10'H. \$27,500. Contact **Mary** at **920-386-2402** or Mary.Gasper@WisconsinAviation.com. More details and photos available at WisconsinAviation.com.

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 PRICE REDUCED! Solid performing, well maintained, privately owned, and Midwest-based. Rare 203-gal. fuel, boots and hot props, Garmin 430W, HSI, color radar.



1979 Piper Navajo C/R – N56ND \$299,000/Trade
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1975 Cessna Citation 500 – N501GB \$399,995
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Hoage holds a bachelor of science degree in industrial engineering with studies in journalism, marketing, and advertising from Iowa State University. She earned a masters of business administration from Drake University. Her



Amy Hoage

experience includes industry leaders, such as Goodrich, PAS Technologies, and Smiths Group.

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Council Bluffs Airfield, Iowa (KCBF) – July 23, 2016, 10:00 a.m. - 2:00 p.m.



Please join us before Oshkosh for an inspirational and educational day with the "pilots with diabetes" community.

Talks by aviation speed record-setting pilots with diabetes, athletes with diabetes and diabetes physicians.

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www.flyingwithdiabetes.com

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For Further Details Contact

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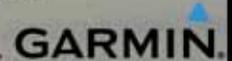
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