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AUGUST/SEPTEMBER 2015

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Finding the right fit for ADS-B Out

If you're confused by the ADS-B Out mandate, you're not alone. Most aircraft owners know that the FAA has set a 2020 deadline to equip for ADS-B Out in order to fly anywhere a Mode C transponder is required today. But beyond that, it can be hard to figure out exactly where to go from here.

AOPA members ask us all the time if they need to equip, exactly what equipment is required, what options are available to them, and what different products cost.

To make finding the answers easier, AOPA has created an online ADS-B Out Selector Tool to help you determine whether or not you need to equip and what type of equipment will work for the way you fly.

Answering a series of simple questions like, "Do you fly in airspace where a transponder currently is required?" and "Will you fly outside the United States, including Canada?" will lead you through a decision matrix to the right type of system for you. The tool will tell you whether you need to install UAT, Mode S, or combined UAT and WAAS equipment in order to comply with the FAA's mandate.

Once you know what type of system meets your needs, a simple click will take you to a table of available options, including manufacturer suggested retail prices, anticipated availability, and helpful notes like "dual band" or "optional Wi-Fi." Another click will take you straight to the manufacturer's product page so you can learn more about each option directly from the source.

With the deadline to equip now less than five years away, and prices for ADS-B Out equipment down as much as 60 percent in recent months, it's time to start making a plan for when and how you'll comply with the ADS-B mandate. Visit AOPA.org and search for "ADS-B Out Selector" to use our free tools and start getting ready for 2020.

Mark R. Baker
President & CEO, AOPA

*For more information on the Aircraft Owners and Pilots Association and the issues that affect your flying go to **www.aopa.org** today.

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ON THE COVER: Max Schoening of Wildwood, Missouri, in the cockpit of his grandfather's 1960 Piper PA18 Super Cub during the Price County Fly-In & Airshow in Phillips, Wisconsin. Since this photo was taken in 2012, Max is now 13 and taking flying lessons, including some stick time in the Super Cub. Max is the son of Paul and Sherryl Schoening, and the grandson of Dee and Pat Welch of Phillips, Wis. *Dave Weiman Photo*

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It's Heads Up For Drones & Their Owner/Operators

by Dave Weiman

In this issue of Midwest Flyer Magazine, there are several articles intended to keep us out of trouble when it comes to potential violations to Federal Aviation Regulations, and make us aware of our rights when it comes to Federal Aviation Administration enforcement actions.

First, attorney Greg Reigel discusses changes in the way FAA enforcement actions can be settled. Things are more formal now, says Reigel, and must be documented with a written "settlement agreement" that is executed by both parties. As you will read, Mr. Reigel feels that formalizing such agreements is a good thing, so long as we do not unknowingly give up our right to file a claim against an aviation safety inspector who may have acted improperly or contrary to law during an investigation upon which the legal enforcement action was based (see article on page 10).

Next, attorney Russ Klingaman brings to our attention FAA's definition of an "aircraft" as it pertains to unmanned aerial or aircraft systems (UAS), often referred to as "drones." According to Mr. Klingaman, if a pilot operates a drone in a careless or reckless manner, his/her pilot certificate could be in jeopardy (see article on page 12).

The Minnesota Department of Transportation Office of Aeronautics also addresses the operation of unmanned aircraft systems, and is requiring their owners to pay the state's aircraft registration fee. In addition, if the UAS is used for commercial purposes, the owner/operator will be expected to obtain a commercial operator's license from the State, the same as any other aviation business (see article on page 46).

Regardless of whether or not we intend to go out and buy a UAS for recreation or commercial purposes, it is important to fly our manned aircraft with caution, especially at low altitudes. ❑

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Ask Pete!

by Pete Schoeninger


Pete Schoeninger

Q: I am looking to buy my first airplane, probably a Cherokee Six, as I have a big family and not a lot of money. I asked my mechanic about them and he said they're good airplanes, but watch out for corrosion on the belly behind the exhaust stack. So what can an owner due about possible corrosion there?

My mechanic also said the 260 hp version has a bigger useful load than the 300 hp version. Wouldn't a more powerful engine on the same airframe carry more, not less?

A: Lots of corrosive, bad stuff comes out of the exhaust pipe of all airplanes. It is important (but not much fun) to clean that stuff from the belly, occasionally. If not done, the belly skins can eventually rot out and have to be replaced.

The airplane manufacturer and the FAA set the gross weight of an airplane when built. In the case of the Cherokee Six, that is 3400 pounds, and you can't go over that with 260 or 300 hp. The empty weight of every airplane is different because of different equipment installed, but in general a 260 hp airplane will weigh about 35 pounds less than the 300 hp airplane and thus legally carry a little more weight. Cherokee Six aircraft are some of Piper's best products (IMHO), but be very careful about fuel tank selection (there are four of them), as you have to switch tanks frequently.

Q: I am looking to buy my friend's hangar, which is built on land he leases from the city. The lease ends in 9 years, and language in the lease says the ownership of the land reverts to the city at lease expiration. I talked to the public works director and he said not to worry as they usually just renew the lease. Would you worry?

A: STOP! Don't sign it…unless you can get that statement in writing. Nine years from now, there probably will be a new public works director, newly elected people at city hall, etc. I strongly suggest you consult an attorney before signing a long-term lease and putting big bucks into a hangar. Email me for more stories and ideas.

Q: My 1975 Piper Warrior has a gross weight of 2325 pounds. The engine is about due for overhaul. I am considering going to a 180 hp conversion as it will in effect become a 180 hp Archer and go faster and carry more. What do you think about that idea?

A: The Archer has a gross weight of 2550 pounds. If you do the conversion, you have a 180 hp Warrior, still with the gross weight of 2325 pounds. Since the engine baffling, exhaust system, prop, etc. are all a little heavier, your useful load will be less than it is today. Do your homework, as there are some STCs pertaining to increasing the gross weight in Warriors , but make sure they would apply to your serial number. It would be more economical and a better return on your dollar to sell your Warrior and buy an Archer, or better still at overhaul, pay a small amount of money to get your present 150 hp engine converted to 160 hp.

Q: I am looking to buy an older two-seat airplane like a Cessna 150 or 152 and put down $2500 and finance the rest. I'm having a little trouble finding a lender for this purchase. Ideas?

A: I would NOT suggest financing the purchase of an old, low-cost airplane. You'll need some money to maintain the airplane, not make payments.

Q: I own a 1981 Cessna 414A Chancellor. I love it, but would like something newer. There isn't much out there that is a lot newer that will fit my needs that I have been able to find?

A: The 414A series of airplanes are popular and do a good job of carrying up to 7 people in pressurized comfort. For good reason, they outsold competitors by a big margin. But production ended on them in the mid 1980s.

If you're looking to buy a much newer airplane with similar carrying capability, you'll probably be looking at a Piper Meridian, TBM, or Pilatus. All are turbo prop singles, with excellent reliability, pressurization, and good performance. Of course they cost a heck of a lot more money than your 414A does, but who said lunch is free?

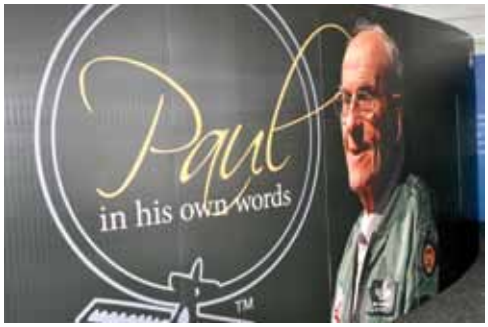
Q: I am trying to get a job as a corporate pilot. My flying history is spotless, I have all ratings except ATP, a BS degree and I have gotten several interviews, but no job offer. I have no criminal history nor DUI, nor medical problems.

A: When companies hire a corporate pilot, they are usually looking for an employee who not only can fly well, but projects a good corporate image. Here are tough questions, but someone has to ask you, and it may as well be me: Is your personal grooming impeccable? Are your clothes, fingernails, and teeth (and breath) and shoes spotlessly clean? Remember that the people on board a corporate airplane are likely to be middle aged or older conservative-looking people. If you do not look/act somewhat like they do, or if you have poor grooming, or poor English, or bad breath, you may not be hired even though you might be the best pilot in town.

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 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 an 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.

CAMARADERIE: ***"Airplanes bring us together, but friendship keeps us together."*** ❑

Settling With The FAA In Legal Enforcement Actions

by Gregory J. Reigel
Attorney At Law


Greg Reigel

In past articles, I have discussed FAA legal enforcement actions in which the FAA has suspended or revoked a mechanic's certificate or the certificate of an air carrier or repair station, or has assessed a civil penalty against a certificate holder. In those situations, the FAA believed the regulatory violations committed by the certificate holders justified legal enforcement action to suspend or revoke the offending party's certificate(s) or to assess a civil penalty, rather than simply resolving the violation through an administrative action.

Fortunately, once initiated, many legal enforcement cases settle. Some cases settle without a formal hearing before an administrative law judge and others may settle at some point during or even after the hearing. The settlement is an agreement between the FAA and the certificate holder to resolve the case on terms that both sides are willing to accept.

In the past, when an alleged violator settled with the FAA, the settlement was typically documented either by letter or e-mail in which both the FAA attorney and the alleged violator acknowledged the terms upon which the parties were agreeing. Based upon that documentation, the FAA attorney would then either issue an order incorporating those terms, or he or she would take any other agreed upon action (e.g. outright dismissal, or downgrading from legal enforcement action to administrative action).

However, the FAA recently updated its Order 3250.3B, FAA Compliance and Enforcement Program, to now require a more formal process for settling a legal enforcement case. Now such settlements, including settlements reached at or after hearing, must be documented with a written settlement agreement that is executed by the parties. The update states the settlement agreement should include, as applicable and appropriate, the following items:

1. The specific terms and conditions of the settlement, including the obligations of each party;
2. The "material terms and phrases that are used in the settlement that are not otherwise commonly understood or are not defined in FAA regulations or policies;"
3. The sanction proposed in the Notice of Proposed Certificate Action/ Civil Penalty or ordered if an Order of Suspension, Revocation or Civil Penalty was actually issued and the sanction agreed to in settlement. In the case of a certificate action, the agreement should identify "the period of suspension or, in the case of a revocation, the number of months after which the person may apply for new certificate(s) and/or rating(s)." For civil penalty actions, the agreement should state "the amount of the assessed civil penalty, whether the assessed civil penalty will be paid in a lump sum or in installments, the date(s) when the payment(s) must be made, and if the penalty is to be paid in installments, a statement that the person will sign a promissory note."
4. If applicable, a statement that the sanction is waived under the Aviation Safety Reporting Program;
5. A statement that the person or entity charged with violating the regulations is waiving the right to a hearing before an administrative law judge;
6. A statement regarding the costs to be paid by each party, whether each pays their own or some other allocation;
7. If applicable and appropriate, a statement that the person charged with violating the regulations agrees not to initiate any litigation under the Equal Access to Justice Act or any other statutory provision or rule to collect legal fees or costs;
8. If appropriate, a waiver of all potential causes of action against the FAA and its employees and agents, both past and present, in their personal or official capacity;
9. A statement that the agreement accurately reflects the terms to which the parties have agreed and that it is a binding agreement; and
10. Signatures by the FAA legal counsel and the individual person or entity charged with violating the regulations or the alleged violator's authorized representative.

For the most part, I think this is a good update. By formalizing the settlement process, the updated policy hopefully ensures that both sides understand and agree with the terms upon which the case is being settled and minimizes the opportunity for later confusion or disagreement. However, the update does raise two concerns:

First, item eight (8) states that the settlement agreement should contain a waiver of "all potential causes of action" the alleged violator may have against the FAA or its employees. These claims could be related to the legal enforcement action (e.g. the alleged violator may believe that an aviation safety inspector acted improperly or contrary to law during the investigation upon which the legal enforcement action was based). Or the claims could arise from a situation unrelated to the legal enforcement action. In either event, if the settlement agreement includes the waiver, then the legal enforcement action will be settled and the alleged violator will lose all other claims.

Interestingly, the update indicates that this waiver language should be included "if applicable." So, if the FAA attorney handling the legal enforcement action is aware of potential claims, then presumably this language will be

included in a settlement agreement. For example, if an alleged violator tries to use the threat of other litigation as a bargaining chip in trying to resolve the legal enforcement action, it would be reasonable to expect that a settlement of the legal enforcement action would include the waiver language. Thus, although it may be tempting to use such a threat as leverage to settle the legal enforcement action, if an alleged violator wants to pursue claims against the FAA or individual FAA employees separate from the legal enforcement action, it may be best to either not disclose that fact or, alternatively, reject inclusion of the waiver language in the settlement agreement.

The second concern with the update is that it does not appear to allow for, or at least it does not address, inclusion of a statement by the alleged violator denying liability. In the past, the parties could agree to include this type of disclaimer in the final order issued by the FAA. For example, the issued order would include a statement that "this matter has been settled by mutual agreement of the parties. The certificate holder does not admit or stipulate to any of the allegations, determination, findings of fact or conclusions of law found herein."

Since the update requires the inclusion of some fairly specific terms in the settlement agreement, presumably such a disclaimer would need to be in the agreement if it were going to also appear in the final order. Unfortunately, the update does not provide for or address the inclusion of this type of disclaimer. As a result, it is unclear whether the FAA will continue to allow this practice. However, it would certainly be reasonable to request that this language be included both in the settlement agreement as well as any final order that may be issued in the case. After all, a settlement is still a negotiated agreement between the parties and the added language doesn't in any way limit the other terms of such an agreement.

In the end, although this update appears to formalize the settlement process, settling a legal enforcement action will still require the agreement of the parties. As such, the FAA and an alleged violator will still need to negotiate the terms of that agreement. Hopefully this more formal process won't make it more difficult for either side to settle a legal enforcement action.

EDITOR'S NOTE: Greg Reigel is an attorney with Reigel Law Firm, Ltd., a law firm located in Hopkins, Minnesota, which represents clients in aviation and business law matters.

For assistance, call (952) 238-1060 or Twitter: @ReigelLaw (www.aerolegalservices.com). ❑

Drone Law: Why All FAA Certificate Holders Should Be Aware of the NTSB Pirker Decision

by Russell A. Klingaman

Russell Klingaman

On November 18, 2014, in a unanimous decision, the National Transportation Safety Board (NTSB) concluded that an unmanned aerial system (UAS) is an "aircraft" within the Federal Aviation Administration's (FAA) jurisdiction. ***Huerta v. Pirker,*** NTSB Order No. EA-5730 (Nov. 18, 2014). In other words, NTSB concluded that all UAS operators are subject to the FAA regulations — including 14 C.F.R. § 91.13, which prohibits operations of aircraft in a careless or reckless manner.

The Pirker decision represents a significant victory for the FAA in its efforts to regulate UAS operations. If you are (1) an FAA certificate holder, and (2) a UAS operator (or intend to operate a UAS in the future), you should be aware of the Pirker decision and how the FAA may use it to suspend or revoke your certificate.

The Pirker decision firmly establishes the FAA's legal authority to regulate both manned and unmanned aircraft operations. The decision empowers the FAA to pursue enforcement actions — including civil penalties, suspensions and/or revocations — against any and all UAS operators for violations of FAA regulations. The Pirker decision puts all UAS operators — both private and commercial — on notice that their aircraft and their flights are clearly under the FAA's jurisdiction.

The Phantom 3 Hammond Unmanned Aerial or Aircraft System or drone. *David Gonzales, MnDOT Photographer*

History of the Pirker Case - The ALJ Decision

The case began in June 2013, when the FAA commenced a civil penalty action against Raphael Pirker, a professional photographer, for operating his UAS in a careless or reckless manner in violation of 14 C.F.R. § 91.13. The FAA sought a penalty of $10,000. In its complaint, the FAA asserted a long list of maneuvers made by Pirker's UAS deemed unlawful including:

- [O]perated the . . . aircraft at extremely low altitudes over vehicles, buildings, people, streets, and structures.
- [O]perated the . . . aircraft at altitudes of approximately 10 feet to approximately 400 feet over the University of Virginia [UVA] . . . .
- [O]perated the aircraft directly towards an individual standing on a UVA sidewalk causing the individual to take immediate evasive maneuvers so as to avoid being struck by your aircraft.
- [O]perated the aircraft through a UVA tunnel containing moving vehicles.
- [O]perated the aircraft under a crane.
- [O]perated the aircraft below tree top level over a tree lined walkway.
- [O]perated the aircraft within approximately 15 feet of a UVA statue.
- [O]perated the aircraft within approximately 50 feet of railway tracks.
- [O]perated the aircraft within approximately 50 feet of numerous individuals.
- [O]perated the aircraft within approximately 20 feet of a UVA active street containing numerous pedestrians and cars.
- [O]perated the aircraft within approximately 25 feet of numerous UVA buildings.
- [O]perated the aircraft on at least three occasions under an

elevated pedestrian walkway and above an active street.

- [O]perated the aircraft directly towards a two story UVA building below rooftop level and made an abrupt climb in order to avoid hitting the building.
- [O]perated the aircraft within approximately 100 feet of an active heliport at UVA.

Pirker refused to pay the penalty, and requested a hearing before an NTSB Administrative Law Judge (ALJ). The case was assigned to Judge Patrick G. Geraghty, who dismissed the FAA's complaint against Pirker. Judge Geraghty reasoned that the FAA could not penalize Pirker because his UAS, being a "model aircraft" under FAA policy, is not considered an "aircraft" governed by any federal statutes or FAA regulations. Judge Geraghty held that "model aircraft" — including the UAS operated by Pirker — are not governed by FAA regulations.

The FAA's Appeal To The Full NTSB

The FAA appealed Judge Geraghty's decision to the full NTSB. The appeal forced the board to decide whether a UAS is an "aircraft," and whether UAS operations are subject to the FAA's regulation prohibiting careless or reckless operations. 14 C.F.R. § 91.13(a).

The board concluded that the statutory and regulatory definitions of "aircraft" are broad enough to include UAS operations. See 14 U.S.C. § 40102(a)(6) and 14 C.F.R. § 1.1. In so doing, NTSB rejected Pirker's argument that the statutory/regulatory definitions of "aircraft" only apply to *manned* aircraft.

The board also determined that Congress' original definition of "aircraft" demonstrated "prescience." In fact, NTSB lauded the U.S. Congress for defining "aircraft" in the Federal Aviation Act of 1958 to include, "any airborne contrivance now known or ***hereafter*** invented, used, or designed for navigation or for flight in the air." Federal Aviation Act of 1958, Pub.L. No. 85-726, § 101(5), 72 Stat. 731, 737 (1958). In the end, NTSB found no distinction between manned or unmanned aircraft in the statutory or regulatory definitions.

Pirker argued that the FAA's policy for "model aircraft" applied to his UAS, and protected him from prosecution for an alleged violation of § 91.13. The board reasoned that the FAA's separate policy for "model aircraft," did not provide Pirker grounds to escape liability. The board explained that the FAA may exclude certain aircraft from its regulations, but

further recognized that the FAA had not done so for UAS operations.

NTSB further held that § 91.13(a) — prohibiting careless or reckless operation of aircraft — applied to Pirker's operation of his UAS. NTSB pointed out that neither the plain language of § 91.13(a), nor any other applicable definitions of "aircraft," excluded unmanned aircraft from the scope of 91.13. NTSB specifically rejected Pirker's argument that the FAA's Advisory Circular dealing with "model aircraft" (AC-91-57) demonstrated the FAA's intent to exclude UAS from its regulatory scheme.

The board also reaffirmed its prior rulings, which allow the FAA to use § 91.13(a) as an independent violation where no other FAA regulation explicitly prohibits or deals with the alleged misconduct.

Notably, NTSB refused to address whether Pirker's actual operation (i.e., directing his UAS toward an individual standing on a sidewalk, "causing the individual to take immediate evasive maneuvers so as to avoid being struck"), was careless or reckless. The board remanded the case to the ALJ for such a determination. The board instructed the ALJ to "convene a full factual hearing to determine whether [Pirker] operated the aircraft in a careless or reckless manner. . . ." The case was subsequently settled out of court in January 2015, when Pirker agreed to pay a fine totaling $1,100.00. NTSB's Pirker decision firmly establishes that all UAS operators — whether recreational or business — are governed by the FAA regulations and must abide by § 91.13(a).

What Does The Pirker Decision Mean For FAA Certificate Holders?

As an active instrument-rated private pilot, and an attorney who practices and teaches aviation law, I have been following UAS developments — both technological and legal — very closely. I know several people — some of them FAA certificate holders — who are owners and operators of Unmanned Aerial Systems. In fact, I was at a legal seminar earlier this year where an attorney-speaker was talking about his UAS. The equipment was sitting on the conference table in a hotel ballroom occupied by approximately 100 attendees. While listening to the presentation, I thought to myself: "What if the speaker decides to demonstrate his UAS by having it fly around the ballroom?" I also wondered whether or not the presenter was an FAA certificate holder, and whether any of the attendees worked for the FAA.

If the speaker did fly his UAS around the ballroom in the presence of an FAA attorney or inspector, such conduct could be deemed a careless operation of an aircraft in violation of § 91.13. If the speaker was a pilot, such conduct could lead to the suspension or revocation of his pilot certificate.

We are assuming FAA's authority covers indoor UAS operations, but it is unclear at this time if the FAA will or will not try to exercise its jurisdiction over such operations. However, I am convinced that the FAA would be very satisfied with the opportunity to start an enforcement action against any FAA certificate holder for conduct similar to Pirker's.

This discussion forces us to consider what type of UAS flying might qualify as "careless or reckless." So far, my research has not resulted in a clear set of guidelines, but it should be recognized that many of the UAS commercial-use exceptions issued by the FAA prohibit UAS operators within 500 feet of "nonparticipants." *See, i.e.,* FAA Exemption No. 11062 issued to Astraeus Aerial, Regulatory Docket No. FAA-2014-0352, dated September 25, 2014. (Other guidance might be found in the Safety Code published by the Academy of Model Aeronautics, but most UAS operations will probably fail to qualify as "model aircraft" flights. See FAA Docket No. FAA-2014-0396, "Interpretation of the Special Rule for Model Aircraft." *See also* FAA Notice, N8900, 292, "Aviation-Related Videos or Other Electronic Media on the Internet.")

In conclusion, if you are an FAA certificate holder and the owner/operator of an unmanned aerial system, you should be careful to make sure that you do not operate your UAS in a way that could be deemed by the FAA to be in violation of § 91.13, or any similar FAA regulation.

EDITOR'S NOTE: Russell A. Klingaman is an active pilot, aircraft owner, and a partner in the law firm of Hinshaw & Culbertson LLP in Milwaukee, Wisconsin. He is a panel attorney for the AOPA legal services plan, and is currently serving as the president of the Lawyer-Pilots Bar Association. Additionally, Klingaman is a member of EAA, NBAA, WATA and many other aviation organizations. He also teaches aviation law at Marquette University and UW-Oshkosh. ❑

High Flight & Tanning Booths

by Dr. Bill Blank, M.D.


Dr. Bill Blank

A recent report in a dermatology journal noted a study that revealed that an airline pilot is exposed to as much Ultraviolet A (UVA) radiation during a 56-minute flight at 30,000 feet as he would receive in a 20-minute session in a tanning booth. That is interesting, but why would anyone care? For our airline and corporate pilot readers, I thought I would look into it. What I have discovered will be of use to all of us.

UV radiation is harmful to the skin. The exposure is cumulative. The longer we are exposed and the higher the dosage, the more likely there will be damage.

I suspect that many of our readers are of northern European origin and have fair complexions. This type of skin is much more susceptible to UV damage. Darker skin is, to some extent, protective. By the time we are older, the damage has accumulated, and problems start to appear.

What type of damage am I talking about? Skin cancer; basal cell carcinoma, squamous cell carcinoma, and malignant melanomas, along with wrinkling and actinic keratosis, are the result.

Basal cells are not invasive. Squamous cells are invasive and can spread. Malignant melanomas are, by far, the most serious. They are sometimes fatal in spite of treatment.

There are two types of UV radiation we are concerned with, UVA and UVB. UVA has a longer wavelength. It penetrates more deeply into the skin. It causes cellular mutations, which lead to the various cancers I have talked about. It is present throughout daylight hours. UVB is stronger between 10 A.M. and 4 P.M. during summer months. It causes sunburn.

The study was done because airline pilots seem to be at a higher risk for developing malignant melanomas, about twice the risk of the general population. The atmosphere filters out a lot of the UV radiation by the time it gets to the earth's surface. The exposure at 30,000 feet is about twice that at the surface.

Aircraft windshields are designed to filter out some of the radiation. Airline and corporate aircraft windshields are made of either polycarbonate or multi-layer composite glass. Both do a good job of preventing the transmission of UVB, about 99% of which gets blocked. They don't do such a good job on UVA, up to 50% is, in some cases, transmitted. Remember, UVA causes most of the damage.

During the study, the authors measured the UVA and B radiation transmission in aircraft, such as the TBM 850, MD88, A-320, Boeing 727 and 737 at the surface and at altitude in two different locations. They made the same measurements in a tanning booth, which produces UVA. This permitted them to conclude that 20 minutes in a tanning booth was equivalent to 56 minutes at 30,000 feet.

What do we do with all of this? The most important thing is awareness. The longer the exposure, the more likely there will be problems. Dermatologists are quite concerned about the sun culture and the proliferation of tanning booths. They are seeing an increase in problems, especially of melanomas, even in young people.

Now we get to the key question, prevention. Should high altitude pilots wear sunscreen when they fly? I don't

know for sure. Will it help enough? I don't think anyone knows.

Be aware that sunscreens are rated by SPF, Sun Protection Factor. An SPF of 15 means that if you would get a sunburn in 20 minutes without the sunscreen, it would take 300 minutes with it.

SPF only considers UVB, the sunburn producer, and doesn't rate UVA protection.

If you use sunscreen, be sure to pick one, which is wide spectrum and tries to protect against both.

Don't forget, almost all of us should be wearing sunscreen at fly-ins and air shows. In fact, sun protection clothing and hats are also a good idea.

See you at
EAA AirVenture Oshkosh 2015!

EDITOR'S NOTE: William A. Blank is a physician in La Crosse, Wisconsin, and has been an Aviation Medical Examiner (AME) since 1978, and a Senior AME since 1985. Blank is a retired Ophthalmologist, but still gives some of the ophthalmology lectures at AME renewal seminars. Flying-wise, Blank holds an Airline Transport Pilot Certificate and has 5300 hours. He is a Certified Instrument Flight Instructor (CFII), and has given over 1200 hours of aerobatic instruction. In addition, Blank was an airshow performer through the 2014 season, and held a Statement of Aerobatic Competency (SAC) since 1987. ❑

NATA Elects New Board of Directors

WASHINGTON, DC – Members of the National Air Transportation Association (NATA) elected its officers at its annual membership meeting, June, 22, 2015, in Washington, D.C. Andy Priester, President and Chief Executive Officer, Priester Aviation in Wheeling, Illinois, was elected chair of the NATA Board of Directors. The association also named Marty Hiller, owner and partner, Marathon Jet Center, Marathon, Fla., board vice-chair. Also elected to the board of directors was Scott Owens, Senior Vice President, McClellan Jet Services in McClellan, Calif., and Jeff Ross, President and Chief Executive Officer, Ross Aviation in Denver, Colo. Thomas L. Hendricks is NATA President and CEO (www.nata.aero). ❑

Andy Priester

22 Years of Service

JUNEAU, WIS. – Alvin Vogel, 88, of Beaver Dam, Wisconsin, was recognized June 30, 2015, for 22 years of service to Wisconsin Aviation, Inc. and Dodge County Airport (KUNU) at the airport. Performing ground and equipment maintenance was a second career for Vogel. Wisconsin Aviation held a luncheon in appreciation for his service.

Alvin Vogel
Dave Weiman Photo ❑

Come Fly With Us

by Mark R. Baker, President & CEO
Aircraft Owners & Pilots Association


Mark Baker

The peak of summer is here, and so is the peak of the flying season. There are always a lot of great aviation events in the warmer months, and as a pilot, I like to get to as many as possible, from pancake breakfasts to major shows like AirVenture. But it should come as no surprise that AOPA's Fly-Ins are some of my very favorite events.

If you haven't yet joined us for an AOPA Fly-In, there's still time to make it to one of our fun, friendly GA gatherings this year.

As I write, we've just wrapped up the Homecoming Fly-In here at our Frederick, Maryland, headquarters, and it was another big success. More than 3,300 people and 375 airplanes turned out for the fly-in.

With a huge and varied aircraft display, exciting fly-bys by the Breitling Jet Team, and an aerial demonstration by aerobatic pilot and Red Bull Air Race competitor, Mike Goulian, there was plenty of action on and above Frederick Municipal Airport.

Seminars on topics ranging from risk management to flying with an iPad and night flying helped hundreds of pilots brush up on forgotten skills and learn some new ones. More than 150 people registered to take part in a Rusty Pilots seminar—a free event designed to help lapsed pilots get back into the air. Pilots who complete the free event earn a logbook endorsement for the ground portion of the flight review and take the first step to getting back into the cockpit. Since the program was launched just over a year ago, more than 3,600 people have participated, with 18 percent of those reporting that they're back to active flying status.

And what would a fly-in be without food? A traditional pancake breakfast started the day off right, and lunch provided by a variety of gourmet food trucks ensured there was something for every taste. A free ice cream social in the afternoon rounded out the day's treats. If you ask me, it was just about the perfect way to spend a Saturday.

If you'd like to come spend a Saturday with me and your fellow aviation enthusiasts and AOPA members, join us August 22 at Anoka County-Blaine Airport in Minneapolis, Minnesota; September 26 at Colorado Springs Municipal Airport in Colorado Springs, Colorado; or October 10 at Tullahoma Regional Airport in Tullahoma, Tennessee. Hope to see you there. ❑

2015

August 22	Blaine, Minn. - AOPA Fly-In at Minneapolis Anoka County-Blaine Airport (KANE).
September 26	Colorado Springs, Colo. - AOPA Fly-In at Colorado Springs Municipal Airport (KCOS).
October 10	Tullahoma, Tenn. - AOPA Fly-In at Tullahoma Regional Airport (KTHA).

To read more about the AOPA Fly-In, go to www.midwestflyer.com/?p=8264.

When Attending - RSVP By Going To
www.aopa.org/Community-and-Events/AOPA-Fly-In/2015/About

AOPA Great Lakes Regional Report

Going To Bat For Airports Across The Region

News & Information You'll Want To Know In Ohio, Michigan, Indiana, Illinois, Wisconsin, Minnesota, North Dakota & South Dakota

by Bryan Budds
Manager, AOPA Great Lakes Region


Bryan Budds

From many of AOPA's publications, you have undoubtedly read quite a bit about AOPA's efforts to protect pilots from onerous government regulations and restrictions and that is certainly our core mission on your behalf. However, AOPA also has an incredible staff that digs deeply into federal, state, and local government attempts to restrict, limit, or hinder the general aviation airports that pilots and community members rely so heavily on. I wanted to share with you briefly just some of the things we have been working on over the year to protect our general aviation airports across the region.

In Ohio, the state that is incredibly proud of its motto of "birthplace of aviation," we have been working closely with allied associations, airport managers, and state officials to increase funds available for the State Airport Grant Program. For the last several years, the legislature has approved less than $1 million annually for airport construction programs and for state shares of federal airport grants. AOPA strongly believes the industry can only remain strong if general aviation airports are made a priority in the state.

Over the course of the last six months, a number of proposals have been circulated in Columbus, which would have addressed this issue. Changes to the tax structure, dedication of existing revenue streams, and budget appropriations were all on the table. As lawmakers pushed the topic forward, the leading proposal was a $6 million budget appropriation, which would increase airport funds six-fold. However, as you can imagine, there was a catch – a catch AOPA strongly opposed. The budget appropriation would have allowed a committee of legislators and aerospace industry professionals to oversee the disbursement of airport grants traditionally administered by the Ohio Department of Transportation.

While this committee is an important tool in growing the awareness of Ohio's aerospace and aviation communities, AOPA strongly objected to the insertion of partisan politics into an established and efficient airport grant program.

After countless visits to Columbus, AOPA members contacting their legislators, and a 2:30 am conference committee hearing, I am pleased to share with you that an additional $6 million will be made available to the State Airport Grant Program with none of the caveats mentioned above.

A similar debate is occurring in Lansing, Michigan where the Michigan Department of Transportation's airport grant program is dwindling. To address this issue, a number of friendly legislators have stepped forward to take a stand for the state's GA airports. Proposals to increase the support of Michigan's Airport Fund include a $10 million annual appropriation, dedicating a portion of existing aviation fuel sales tax revenue to the fund, and overhauling the tax rates for aviation fuel, are all on the table.

Since Michigan is a full-time legislature, many bills are introduced early in the year and are not acted upon until the fall, and this is the case again this year. Rest assured, AOPA will be hard at work in Lansing to make sure our general aviation airports are appropriately funded.

I also want to make mention of a few of our airport issues that are not legislatively oriented.

In Michigan, AOPA has been working closely with a group of airport users, both tenant and transient, that have fallen victim to an airport authority that is determined to restrict access to Mason Jewett Airport and set the stage for eventual closure. Fortunately, the airport community, AOPA, the Federal Aviation Administration and the Michigan Department of Transportation does not take restrictions at a federally funded public airport kindly. In columns to come, you will hear much more about this issue as it ripens.

Returning again to Ohio, just this week AOPA has been alerted to a rather troublesome development at Alexander Salamon Airport near West Union, Ohio. Several recent reports indicate the local municipality has undertaken a project to remodel the airport terminal as a housing unit for low risk county prisoners. AOPA is actively pursuing several avenues to prevent such a misuse of an aeronautical asset.

I hope this quick glance into AOPA's efforts to protect airports in the region gives you a deeper understanding of AOPA's dedication to a stronger pilot community, a robust airport network, and to you as a member.

If you have any questions on these issues or issues in your area, please let me know! **bryan.budds@aopa.org** ❑

Contact **Bryan Budds @ bryan.budds@aopa.org**

AOPA Central Regional Report

Good Wins For General Aviation

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

by Yasmina Platt

Manager, AOPA Central Southwest Region

Yasmina Platt

All four of the legislatures in the Central Region have adjourned for the year (phew!), and we are pleased with the pro-general aviation legislation passed. At the time of this writing, some of the legislation was still pending each governor's final signature, but we do not expect any surprises. We are working with their offices to ensure understanding and approval.

In Nebraska, Governor Ricketts signed two laws of interest to GA pilots and aircraft owners: 1) LB 469 modifies the existing Meteorological Evaluation Tower (MET) legislation to mirror the marking recommendations published by the Federal Aviation Administration (FAA), and includes an enforcement provision to ensure that wind power companies comply with the law, and 2) LB 259, the Personal Property Tax Relief Act, reduces the tangible personal property tax burden on virtually any activity that produces income. This includes aircraft used for business by creating a $10,000 exemption on the assessed value of business aircraft subject to property taxation based on their net book value. Aircraft not used to generate income and agricultural aircraft were already fully exempt. We also thanked Gov. Ricketts for declaring May 2015 as "General Aviation Appreciation Month."

Missouri's House Bill 517, creating a fly-away exemption among other things, passed the legislature and is in Governor Nixon's hands. The new law would exempt out-of-state residents from paying the state's sales tax when purchasing an aircraft in the state, thus keeping more aircraft sales, aircraft maintenance, and aircraft upgrade work in the state. Missouri's Governor, and the mayors of Jefferson City and Columbia, also recognized GA as an important economic generator earlier in the year.

After five weeks of "overtime," the Iowa Legislature finally adjourned on June 5th. This year's session will be remembered for its large number of important airport and GA-related issues and initiatives. I had mentioned the need to exempt flight training providers from provisions of an anti-fraud law that requires most educational entities (to include flight schools and independent CFIs) to obtain a $50,000 bond and submit documentation to the Iowa College Student Aid Commission. I had also mentioned the need to protect (rather than abolish) the Iowa Airport Zoning Act. The first one is awaiting Gov. Branstad's signature and the second was already approved by him on June 22nd.

The one, very concerning Iowa bill, I had not mentioned because it snuck up on us at the 11th hour, was an initiative to change the existing process for considering the closure of Iowa airports, removing the existing state grant obligations and allowing airport sponsors to arbitrarily decide to close their airports if the cost of operating them "far exceeds the benefits." It is not fair or responsible for taxpayer-generated airport funding (aviation specific or not) to be lost because an airport decides to close and does not want to pay the obligated improvement grants back. Instead, that needed funding can be reinvested in other airports with significant grant needs. AOPA (along with the Iowa Public Airports Association) respectfully urged the legislature to remove that hurtful language and it was, in fact, successfully removed.

In the midst of all of this (and, oh yes, work in five other states), I also had an opportunity to get together with the entire AOPA Regional Manager Team to discuss this year's efforts and start preparing for next year; attended the Kansas Association of Airports (KAA) conference in Wichita, June 18-19; and participated at the 2015 Nebraska State Fly-in in Hebron by hosting an AOPA booth and speaking to a group of pilots along with Nebraska's own Ronnie Mitchell and Congressman Sam Graves (R-MO). In addition, I also traveled to Missouri to represent AOPA at the Cameron airshow, speak at the 2015 National Piper Short Wing Conference in Branson on June 30th, and accompany our president, Mark Baker, at the 12th Annual Wing Nuts Flying Circus Airshow and Fly-in in Tarkio.

I look forward to hearing from you!

@AOPACentralSW,
yasmina.platt@aopa.org ❑

Stay up-to-date with Yasmina www.twitter.com/@AOPACentralSW

A Perspective On Checklists

by Harold Green

Harold Green

Over the years our safety record in general aviation has improved dramatically. I submit that one reason for this is the development and use of written checklists. There are checklists for pre-flight, starting engines, pre-taxi, taxi, pre-takeoff, landing, etc., etc. Then there are the emergency checklists, including engine failure, cabin fire, and engine fire. We have laminated copies in our aircraft and they are kept handy to reach when needed. Checklists have been a tremendous boon to aviation safety. However, like all good things, checklists can be abused, nor are they perfect.

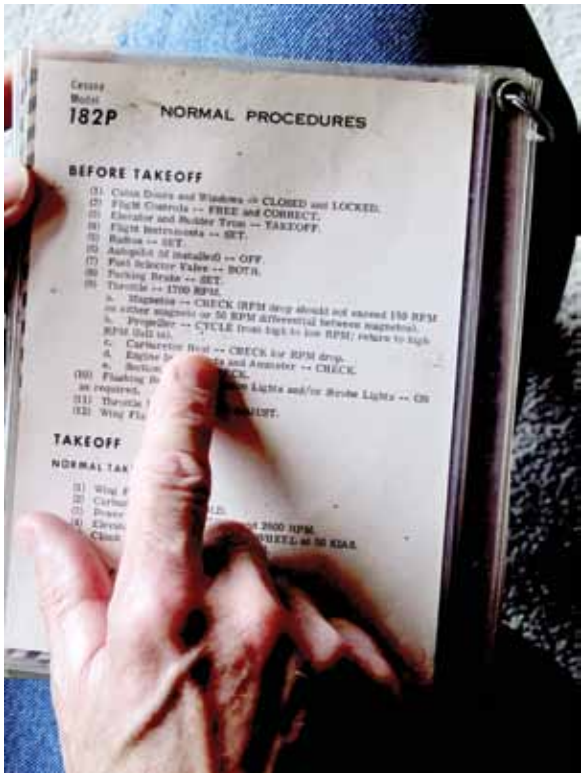
There are two principal methods of checklist use: The "flow list" and the "do list."

A flow list is a checklist, which in its completion, the pilot acts from memory and generally flows from one item to the next in a logical path, often simply because of proximity in the cockpit.

The instrument panel offers a logical path to scan or flow from one instrument to the other, including both flight and engine gauges. The pilot then uses the written checklist to confirm and verify his or her actions. This aids focus and provides a double check on actions.

A do list is one in which the pilot does each item in sequence, step by step, as listed on the written checklist, checking off each item as completed. Do lists must be completed in functional sequence, such as priming and starting the engines(s), and the pilot can often combine these tasks. For example, the engine start sequence may be presented as a do list item, but usually the pilot does the actions in sequence after reading the checklist and then confirming by a second reference to the checklist. It is not unusual to complete all steps in a do list prior to actually starting it, and then reviewing the actions leading up to that point as if using a flow list.

The real point here is that whichever type of checklist is used – flow or do – attention to what is going on and a double check are good things.



When dealing with a complex airplane with extensive systems, checklists are an absolute necessity!

Aircraft using advanced cockpit equipment and a factory installed multi-function display (MFD) generally contain built-in checklists for both normal and emergency operation of the aircraft and its systems. In these aircraft, the use of checklists is mandatory, if for no other reason than for the operation of the advanced equipment. Each item needs to be checked off before the pilot can move to the next item.

When using any checklist in single-pilot operations, the pilot must be aware of some key elements. Unlike the airlines and other two-pilot operations, you are the only pilot. Where those other folks have one person reading a checklist and the second pilot responding with the correct status response, you have nobody but yourself, and – if you are lucky – an able helper in the right seat. Thus, it is very easy to skip an item on a checklist. Even when putting your finger on the last item read, it is very easy to skip one line. If that line happens to relate to a critical item, this can cause issues.

It is amazing how many times I have seen a pilot reach for a switch or control lever and then not set it in accordance with the checklist. None of us are immune from this. Knowing this, I double-check everything. This just makes the error rate less, but is no gaurantee of error elimination.

A second issue with checklists relates to the fact that passengers, particularly those not used to flying, are filled with questions. They have the disturbing habit of asking a question at critical moments of the flight (i.e. takeoff and landing), since that is when an action attracts their attention. The concept of a sterile cockpit is very hard to enforce under these conditions. The result is a very high probability that a critical item will be missed unless a checklist is used.

If your passenger happens to be of an age to read, consider asking for their help and have them read the checklist and compare your response with that item on the checklist.

This brings to mind an incident a few years ago involving a student on a private pilot checkride and an examiner.

The student, not a shy person, was told by the examiner that it was the student's responsibility to maintain cockpit discipline and that he should just treat him, the examiner, as his uncle. During pre-takeoff procedures, with the student using the appropriate checklist, the examiner started asking questions and chattering on. After awhile, the student looked over and said in a loud voice: *"Uncle Norm, just shut the h--- up."* The instructor was proud of his student's response and was pleased the examiner passed the student with much merriment by all.

One of the more prevalent issues with checklists, in my opinion, is when they are used as a substitute for being a competent/knowledgeable pilot. For example, when a pilot is walking up to the aircraft, it should be inspected to see if it is level on the ramp. An aircraft tilting one way or another might suggest a bent landing gear strut. At the minimum, the oil dipstick might give an inaccurate reading. The point being, a conscientious pilot can add any number of items to an unwritten checklist.

Flight emergencies are a time when checklist items must be accessed from memory. Once the emergency is manageable, if time permits, we can use the emergency checklist to ensure that everything has been completed. We need to practice and drill emergency procedures in our minds as part of our regular proficiency training.

Then, too, there are the tried and true old standbys, CIGARS and GUMPS checklists, which we all know by heart. The following list gives examples. Adjust for your own airplane. In this form they represent more a mantra than a checklist. However, the function is the same.

Before Takeoff: **CIGARS**

C: *Controls & Cowl Flaps*
I: *Instruments:* Flight & Engine
G: *Gas:* Selector Valve, Quantity, Set Fuel Flow Monitor, if installed.
A: *Attitude:* Flaps, Trim, Auto Pilot Off.
R: *Run-up:* Carb Heat, Mag Check, Cycle Prop, if variable pitch.
Radios: Nav/Com/Transponder.
S: *Safety:* Doors & Windows Closed & Latched, Seat Belts Buckled, Passengers Briefed.

Before Landing: **GUMPS**

G: *Gas:* On Both or Fullest Tank, Boost Pump, if required.
U: *Undercarriage:* Down & Locked.
M: *Mixture:* Full Rich or As Per Pilot's Operating Handbook.
P: *Prop:* In, if variable pitch.
S: *Switches:* Including Lights.

When getting checked out in a new type of airplane, it is almost mandatory that checklists be used as "do lists," particularly if we haven't had time to study the list in advance. It might also be a good idea to use a checklist in studying the airplane before a checkride.

A quick search of the Internet will generally result in a source for checklists. Aircraft type clubs can be a great source for such information. There are times when a checklist is not available.

The first checklist, which might not exist, is the *"Arrival-At-The-Airport Checklist."* That one might run something like this:

Airport Arrival Checklist

Car: Parked & Locked.
Ego & Worries: Left behind and out of mind.
Mental Focus: On upcoming flight.
Situation To Cause Flight To Be Cancelled: Defined & Reviewed.
Flight Plan: Filed
Approach Airplane
No Visible Damage
Airplane sits parallel with parking surface.
Control Lock: Removed.

There could be an additional checklist before leaving the aircraft after a flight:

Before Leaving Aircraft

Radio & Other Electrical: Off
Mixture, Master & Magnetos: Off
Rotating Beacon: Left On
Control Lock: Installed
Paperwork: Completed
Doors & Windows: Locked
Aircraft: Secured.
Flight Plan: Closed

In summary, checklists have become invaluable and indispensable to safe flying. We need them, and should use them and remain watchful in their use. Checklists are obviously not the total answer, but they are significant in maintaining our flight safety.

EDITOR'S NOTE: Harold Green is a Certificated Instrument Flight Instructor (CFII) at Morey Airplane Company in Middleton, Wisconsin (C29). Readers can email questions and comments to: **harlgren@aol.com or call 608-836-1711 (www.MoreyAirplane.com).** ❑

Why ADS-B Needs To Be Revisited By FAA

by Michael J. "Mick" Kaufman


Michael Kaufman

It has been more than five years since we first started hearing about Automatic Dependent Surveillance – Broadcast (ADS–B) and I published my first article on the topic for *Midwest Flyer Magazine.* Since then I have had the opportunity to look at many of the new innovations and products that have entered the market and write numerous articles on the subject, and ADS-B remains a concern of aircraft owners expected to comply with FAA's 2020 mandate.

As aircraft owners, we need to decide what the most cost-effective system is best for us, and while we hold out for a less expensive option than is presently available and approved by the FAA, the clock is ticking! A clock destined to become FAA's greatest fiasco since the agency's founding in 1958. Our hope is the FAA will consider some reasonable/less expensive means of compliance, which I will describe here.

At the Wisconsin Aviation Conference in La Crosse in May, FAA and state aeronautics officials addressed the ADS-B 2020 mandate, which is not going as well as the FAA had hoped. A recent FAA survey on ADS-B, conducted by Emery Riddle University, intended to sample our thoughts, revealed that if everyone who is not yet equipped decided to schedule an installation today, it would not be physically possible given the number of aircraft and the limited number of avionics facilities and technicians. *(This brings up another topic: what is the FAA doing to attract talented people to our industry? Answer: Not much! Promoting the industry is no longer an FAA mandate, but implementing unrealistic policy is.)*

So what is the FAA going to do to speed things up?

It is necessary for some history lessons to better understand how this whole program came into being, but first, a bit of information about myself for those who are new to my column.

I have been a bit of an electronics geek all of my life, owned and operated a public safety radio sales and repair service for a number of years, and I am an avid amateur radio operator, as well as an airline transport pilot, flight instructor, lecturer and author.

Shortly after the implementation of the GPS navigation system, an amateur radio operator (Bob Bruninga, WB4APR) conceived the concept of taking GPS coordinates received from satellites and retransmitting these position reports and supporting data on amateur radio frequencies. This marked the birth of the "Automatic Position Reporting System" (APRS) some 21 years ago. The APRS concept has been used in all of the tracking devices in use today and the forerunner of the CAPSTONE PROJECT ADS-B, ON-STAR and many others. So why has such a simple equipment costing $100.00 or less to purchase for cars, trucks, boats and portables, end up costing as much as $7,000.00 or more to implement in aviation? The only answer lies in the hands of the bureaucrats running the FAA – not the avionics shops or the equipment manufacturers.


FIG 1

For two decades, I have been using APRS in my truck, car, boat, airplane, and even in a bicycle handheld, as have many other pilots/amateur radio operators. I am currently using a handheld, self-contained APRS tracking device (FIG 1) in my airplane costing $100.00 on amateur radio frequencies

Spot Landing Contest In Honor of Veterans

Wausau Downtown Airport
Wausau, Wisconsin (KAUW)

Participate Any Day, August 1-9, 2015
Weekends 10:00 a.m. - 1:00 p.m.
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All arrivals for "Hamburger Night," Thursday, August 5th, will automatically be entered!

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and under amateur radio rules, as are many other pilots flying worldwide. This APRS movement has been going on in aircraft for two decades and seems to have started with a Van's Aircraft homebuilt group. The Civil Air Patrol was also an early adapter of APRS in their search and rescue missions.

Today, aircraft APRS stations can be seen live on the web by searching http://www.mail2600.com/cgi-bin/everyone.cgi for aircraft only or http://aprs.fi/moving/ for ships, autos, trucks and other APRS stations. Using my tablet connected to my APRS tracker via Bluetooth, I can display all other APRS stations on a map or filter for any specific type of station I want to see. I can receive weather broadcasts from other amateur radio weather stations and bulletins from the National Weather Service. How about sending a short message (SMS) to another amateur radio operator on the ground or in his/her aircraft half way around the world by typing it on my tablet, and all for $100.00.

So why did the FAA want ADS-B and how did the CAPSTONE PROJECT come into existence?

The cost of implementing and maintaining radar sites for air traffic control is a number with so many zeros I could not even give a wild guess. ADS-B costs a fraction of what radar costs, but has far greater accuracy and future potential.

For example, ADS-B enables air traffic controllers to see aircraft taxiing on the ground during foggy conditions with an accuracy of 10 feet. Also with ADS-B, ATC will be able to send us our IFR clearance digitally, allowing us to transfer the clearance to our navigator with no errors, once we accept it.

The CAPSTONE PROJECT began in Alaska almost two decades ago trying to find a solution to cover this vast state with some sort of traffic and weather information. The project was deemed a success, and FAA's promise to provide Alaska pilots equipment free of charge to use this system, never materialized.

The rest of the world, except the U.S., developed its own version of ADS-B based entirely on a system called 1090 Extended Squitter Technology (1090 ES).* The U.S. needed to be in sync with the rest of the world, so we decided to offer a two-frequency system, using the international format and a derivative of the CAPSTONE PROJECT called Universal Access Transceiver (UAT).

With the idea that the FAA wanted to get all U.S. pilots and aircraft owners on board with this new technology, the agency decided to offer free in-flight weather to those equipping their aircraft with ADS-B, and free traffic as well. When we hear the word "free" – especially from the government, we take note. This backfired as many pilots decided to purchase a Stratus WX receiver, receive the free weather, and go no farther. This receiver could be purchased at a reasonable price from Sporty's Pilot Shop. The free weather, in my opinion, is lacking a lot compared with satellite XM, which has a pricey subscription cost, but worth it to pilots who fly in weather a lot. The other carrot the FAA offered was free traffic, but set up the system so that it is not available unless you have ADS-B out. When pilots had a chance to see how this all worked, most of them decided it was not worth an additional 7 AMUs (Aviation Monetary Units/ $7K) for traffic information. Remember, the only sure way of collision avoidance is to look outside the cockpit windows.

I would like to present some basic theory to help everyone understand the reasoning behind the two-frequency system and how all of this magic works.

Let us present an example using water and frequency to show this point. Let's say you have a 100-gallon tank of water, and you want to empty it with gravity feed and you have a block of data, say 100K that needs to be moved. The bigger the hose, the less time it takes to move the water, and the larger the radio frequency allocation, the less time it takes to move the data. With all of the weather and traffic data that needed to be moved, the hose/frequency range was not big enough to move all of that data. If the available frequency allocation at 1090 Mhz had been available, this whole ADS-B situation would have been a lot simpler. The way the system is conceived to work at this time is to use the ADS-B ground station and collect traffic data from both frequencies, combine it, and resend it on both frequencies.

Let's concentrate on traffic only and forget the weather to simplify our understanding.

When the FAA compliance plan told pilots that to be ADS-B "out" compliant, we had a choice of two options: 1) Update or replace our 1090 Mode C transponder to 1090ES (Extended Squitter) equipment (required if you fly above 18,000 feet MSL or internationally), or 2) Install a UAT ADS-B transceiver, which operates on 978 Mhz – the same frequency that provides ADS-B weather and traffic. One note on option #2 is that you must keep your old Mode C transponder and keep it on to make your position known to aircraft using Traffic Collision Avoidance System (TCAS) advisory equipment used by the airlines and some GA aircraft. Having both UAT and the mode C transponder operating at the same time, creates a problem with all of the portable UATs on the market today by creating a ghost image on the traffic display. I hope this can be solved as I think this could open the market for low-cost portable ADS-B transceivers.

To better understand the entire concept of ADS-B and

how it works, we need to explain some of the problems that needed to be overcome.

For us to understand radio, we need to note that if two radios are transmitting at the same time on the same frequency, the receiving station gets a corrupted, unusable signal. The one exception to this rule is called "simulcasting," which does not apply or used in ADS-B.

There is a system called "smart beaconing," which is used in both APRS and ADS-B. In amateur radio (APRS), a beacon is sent if there is a change in speed, direction or altitude or a specific time. If by chance two conflicting beacons are sent at the same time, an error correction protocol requests a resend of the information. Smart beaconing in ADS-B is a bit more complicated as we are not only handling an aircraft's position, but a large amount of weather data as well.

I would like to add one more radio theory to the ADS-B concept – the characteristic of the frequency used is "line of site."

Setting the limit of 18,000 feet MSL to UAT subscribers, a frequency can be reused several hundred miles away. Using the atomic clock as a standard of time, the transmit time used by ground stations and aircraft can be assigned so no two stations send data at the same time.

Each ground station is given a precise time to broadcast the weather data to aircraft within receiving range. I was told that each ground station broadcasts the weather for airports within about 150 miles of the transmitter, thus as we travel, we are constantly picking up the weather ahead of us as the ground stations within range of our aircraft continue to change. A segment of time is given to aircraft, as well using position and altitude to calculate the precise time of transmission. As I understand. there is no error correction on ADS-B should something not work properly and there is corrupt data.

Should I equip now for ADS-B out, wait, or forget it entirely?

If we are fortunate to have a Garmin 330 transponder or an upgradable unit, we should add the ADS-B equipment now, as costs have been in the two AMU average price range. If, however, we have any of the non-upgradable transponders, I would wait or forget it entirely. Remember, the 2020 ADS-B out mandate only applies to aircraft flying within Class A, B or C airspace or above 10,000 feet MSL. Many pilots never fly in those airspaces by habit or choice.

Remember, once you choose ADS-B out, your anonymity in the airspace system is gone forever, as big brother will always know who you are. If you currently have a Mode S transponder, don't worry, as they already know.

AOPA and many pilot groups are working on alternate

solutions to the ridiculous high price for many owners to equip their aircraft with ADS-B out to meet the 2020 deadline.

Many years ago, the FAA implemented a similar requirement for Mode C (altitude reporting on transponders), and encoding altimeters were in the $900 to $1,200 range. As the deadline for compliance was approaching, blind encoders hit the market for around $200.00, at which time I bought in. Many manufacturers and avionics shops took a big hit when this happened, as the price of the encoding altimeters dropped.

I can only speculate the FAA relaxing requirements for ADS-B out and will allow low-cost portable transceivers. The ***SkyGuard TWX*** (http://ADS-B.skyguardtwx.com/uat-transceivers/) that I tested and evaluated in the June/July 2013 issue of *Midwest Flyer Magazine* (http://midwestflyer.com/?p=6177) would be my choice if it would meet the 2020 compliance mandate. It provided weather, traffic and ADS-B out as a portable unit, and did a good job once the antennas were properly positioned.

I give much credit to the Aircraft Owners & Pilots Association (AOPA) as our voice in making our thoughts as pilots known to the FAA (see Mark Baker's column in the June/July 2015 issue of *Midwest Flyer Magazine*).

There are a few downsides to the ADS-B program beside the high cost of compliance as the program stands as per regulation. Keep in mind as previously noted that once you chose ADS-B out, you would loose your anonymity when you fly. Also, an important, but apparently overlooked consideration on behalf of FAA planning personnel, is the venerability of putting so much dependence on the GPS satellite system with no viable back-up system. Many scientists and engineers agree that a solar flare (SOLAR MAX) equivalent to the one recorded in 1958 could render the entire GPS satellite network out of business. Pilots, on the other hand, may become so complacent that they fail to make visual scans for traffic out of the window.

We will revisit the topic of ADS-B if some major change occurs, and as we get closer to the compliance date. There is no doubt this system can work and lives will be saved by avoiding collisions and having more usable data to move our aircraft safer through the skies.

Until the next issue, fly safe and stay vigilant for that traffic that can only be seen out the window.

** If you've ever flown with a Mode S transponder, you've already done your fair share of "squittering." By definition, the word "squitter" refers to a periodic burst or broadcast of aircraft-tracking data that is transmitted periodically by a Mode S transponder without interrogation from controller's radar. Mode S (which stands for mode "select") technology was first developed in the mid-1970s as a way of using existing ground-based secondary surveillance radar (or SSR) to track onboard transponders more precisely and more efficiently — while reducing the number of interrogations required to identify and follow aircraft on the controller's radar scope.*

To greatly oversimplify the terminology, a "squawk" is a response a transponder makes to an ATC interrogation, while a "squit" is a transmission format that routinely sends aircraft ID and positional information without being interrogated. By reducing the need for back-and-forth interrogation/response over the air, the Mode S squitter works to minimize transmitted "chatter" in the system – and, thus, increase its target-handling capacity. GARMIN

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. ❑

AIRCRAFT

Priester Adds Six Jets To Fleet

WHEELING, ILL. – With the addition of six new aircraft, Priester Aviation's fleet now totals 48 aircraft. The new jets extend Priester Aviation's broad geographic reach as it continues the strategic growth of its managed fleet.

The new charter aircraft include an 8-passenger Learjet 45, based in Chicago; 8-passenger Learjet 45XR, based in Chicago; 8-passenger Citation Excel, based in Chattanooga; and an 8-passenger Hawker 4000, based in Kansas City.

New Part 91 managed aircraft include a Gulfstream G650, based in New York; and a Learjet 60, based in South Florida.

Priester Aviation is celebrating its 70th anniversary in 2015 (www.priesterav.com). ❑

Spot Landing Contest To Be Held At Milwaukee-Timmerman Airport

by Harold Mester

MILWAUKEE, WIS. – During training flights, instructors encourage pilots to pick a spot on the runway to use as an aiming point. This spot is generally at least a few hundred feet down the runway. When this task is performed successfully, the aircraft will stall just above the runway and settle on the pavement exactly where the pilot had intended.

Milwaukee Timmerman Spot Landing Contest

Timothy J. Martin Photo

As with many objectives in life, achieving this is part skill and part luck. There are many variables that can affect a landing. Conditions don't always allow the plane to land exactly where we had planned. Gusty winds, a shift in wind direction, or excess airspeed can all lead pilots to land before or after the spots they choose on approach.

A great way to brush up on this skill is to participate in a spot landing contest. Although these contests are not as common as they were years ago, they can still be found. Pilots of all experience levels can participate.

Two years ago, Timmerman Airport in Milwaukee started hosting an annual contest, and I have had the pleasure of serving as one of the judges.

A white line is temporarily applied across the width of the runway pavement, about 200 feet from the approach end. Cones are placed every 10 feet along the edges of the runway to help judges determine the actual landing distance from the line.

The objective is to safely land as close to – but not short of – the target line. Think of the runway as being built perpendicular to a steep cliff. Landing short of the target line is certain failure.

Here comes the first contestant, on final approach in a Bonanza. Throughout the contest, there are several contestants in the traffic pattern, as each pilot gets three tries. Too long! This first landing was at least 100 feet past the line. (In case you're wondering, tail numbers are being withheld from this article to avoid any embarrassment among the participants.)

Other than landing as close to the line as possible, there are very few rules. Go-arounds are encouraged if a safe landing cannot be assured, and it doesn't count as a landing attempt for scoring. Judges can tell if a pilot tries to cheat by going around.

It has to be a smooth, normal landing – no slamming the aircraft down or porpoising. If the aircraft bounces, the "final landing" or contact with the runway is the one that counts.

The next contestant is just about to turn final. He's flying a Skyhawk, and…ouch! Landed way too short, right on the numbers. Glad that wasn't a real cliff!

In order to hold this event at a towered airport like Timmerman, the contest is conducted on a closed runway, and ATC does not clear pilots to land. Instead, the instruction to the pilot is, "Runway 22R, land at your own risk."

Here comes the next pilot on 22R. Beautiful! Greased the landing no more than 10 feet beyond the line! In the end, judges gave this landing a score of 14 feet, a small adjustment for style. It wasn't a perfectly smooth landing, but this pilot ended up being the best of the pack!

Continued On Page 31

60th Annual Wisconsin Aviation Conference Addressed Pressing Issues & Recognized Accomplishments

LA CROSSE, WIS. – The Wisconsin Aviation Conference celebrated its 60th anniversary at the La Crosse Center in La Crosse, Wis., May 11-13, 2015, along the beautiful Mississippi River. The event attracted airport managers, airport commission members, aviation business owners and operators, and corporate flight department managers and professional pilots. The Wisconsin Airport Management Association, Wisconsin Aviation Trades Association, Wisconsin Business Aviation Association, and vendors and consultants, sponsored the event.

Don Winkler and his wife, Carol.

Krys Brown (left) and Jeff Baum (right) of Wisconsin Aviation, Inc., congratulated Don Winkler (center) of Madison, Wisconsin, on receiving the "Lifetime Service Award" at the Wisconsin Aviation Conference.

Topics started out with updates from the Federal Aviation Administration (FAA) and Wisconsin DOT Bureau of Aeronautics.

Wisconsin Aeronautics Director David Greene and staff members Mark Arnold, Scott Brummond and Keith Gerard reviewed accomplishments over the past year and current activities in airport development, engineering, technical services, and finance. FAA Great Lakes Regional Administrator Barry Cooper discussed budget issues, progress and challenges of the NextGen air traffic control system, and unmanned aerial systems (UAS), which seemed to get the most questions from attendees.

A breakout session on the "non-aeronautical use of hangars" concerned many who strongly object to FAA's limitations. Another breakout session that attracted much smaller numbers, was on the strategic redesign of Volk Field's special activity airspace. Volk Field officials say they want to make the airspace more efficient to

Steve Opatik (left), project manager at Becher-Hoppe, Wausau, Wisconsin, was named "Engineer of the Year." Tony Yaron (right) of Central Wisconsin Airport, presented Opatik with the award.

the benefit of all airspace stakeholders.

Other topics included maintaining airports of every size; executive over-flight issues and resources for airport operators and commissioners; decline and retention of airline service; pending changes to airmen medical requirements; a proposal to establish and enforce mechanic liens; limited and unlimited opportunities for airport revenues by small airports; managing, storing and pricing of aviation fuel, considered to be the lifeblood of airports and aviation businesses; and the pilot shortage and how this is affecting the entire aviation community.

The significant accomplishments and contributions by aviation professionals over the past year and over a lifetime were celebrated.

Among those persons recognized were Don Winkler of Madison, Wisconsin, who received the "Lifetime Service Award." Winkler was a pilot in the U.S. Air Force, an air traffic controller, and most recently, the media relations representative and photojournalist at Wisconsin Aviation, Inc. in Madison.

John Reed, formerly of Austin Straubel International Airport in Green Bay, Wis., received the "Distinguished Service Award."

Steve Opatik, project manager at Becher-Hoppe, Wausau, Wisconsin, was named "Engineer of the Year."

Ben DeLeon, Deputy Associate Administrator of Airports with the Federal Aviation Administration in Washington, D.C., was named "Person of the the Year."

John Reed, who recently left Austin Straubel International Airport in Green Bay, Wis. to accept the director's position at Rochester International Airport, Rochester, Minn., received the "Distinguished Service Award."

Chris Hubbuch of the La Crosse Tribune, La Crosse, Wis., received the "Blue Light Award For Excellence In Journalism."

The Wisconsin Airport Management Association (WAMA) awarded two scholarships to students currently enrolled in an aviation degree field at a Wisconsin college or university, or who are residents of Wisconsin attending a college or university outside the state. Gretchen Eichstadt of Hales Corners, Wis., and Michael Peer of Oshkosh, Wis., were this year's recipients. Eichstadt is in her third year at Minnesota State University - Mankato. Peer is taking online courses through the University of Wisconsin - Oshkosh working toward a Bachelor of Science Degree in Aviation Management.

John McKinney and Chris Misiak of Best Oil Company, spoke on the availability, storage and pricing of aviation fuel as the lifeblood of airports. Best Oil Company is a distributor for Phillips 66 and is located at Cloquet-Carlton County Airport, Cloquet, Minnesota. Best Oil Company serves the states of Minnesota, Wisconsin, Michigan, South Dakota, and Iowa (www.bestoilcompany.com).

The 2016 Wisconsin Aviation Conference will be held in Oshkosh, Wisconsin, May 2-4 (www.wiama.org). ❑

Illinois DOT Names Airports of the Year At Illinois Aviation Conference

CHICAGO, ILL. – Seven Illinois airports are winners of the "2015 Airport of the Year" awards sponsored by the Illinois Department of Transportation (IDOT). For a wide variety of categories, Decatur Airport, DuPage Airport, Marshall County Airport, Mount Vernon Airport, Northwest Community Airport, Poplar Grove Airport, and Quincy Regional Airport, were all recognized on May 14, 2015 at the Illinois Aviation Conference, held in Rockford. These airports were acknowledged for their accomplishments over the past year, including an outstanding partnership with the State of Illinois and a commitment to customer safety and satisfaction.

"Safety is always the first priority, and these airports have upheld this value while also staying firmly committed to ensuring the comfort for and approval of Illinois travelers," said Acting Illinois Transportation Secretary Randy Blankenhorn. "We are pleased to work closely with these airport operators and facilities, which strive to advance the aviation industry and transportation efficiency, locally within Illinois, as well as across the country and internationally."

The annual awards are based on criteria established by senior staff at IDOT's Division of Aeronautics. Among the award considerations are cooperation and coordination with the Division of Aeronautics by airport management and staff, the facility's safety record, promotion of seminars and aviation events, and maintenance of the facility.

"It is our way of recognizing the tremendous dedication to the aviation community exhibited by airports and heliports throughout Illinois," said IDOT Interim Aeronautics Director Steven M. Young. "We wish sincere congratulations to all of this year's recipients."

The airports were recognized in the following seven categories:

• Primary Airports – Airports with annual enplanements of 10,000 or more passengers. Quincy Regional Airport, recipient. Jarred Hester, Airport Manager.

• Reliever Airports – Airports primarily designed to serve general and corporate aviation in large metropolitan areas. DuPage Airport, recipient. David Bird, Executive Director, DuPage Airport Authority.

• General Aviation Airports – Airports with a runway greater than 5,000 feet. Mount Vernon Airport, recipient. Chris Collins, Airport Director.

• General Aviation Airports – Airports with a runway 5,000 feet or less. Marshall County Airport, recipient. Charles L. Allen, President, Marshall County Airport Board. ❑

• Private – Open to the Public Airports. Poplar Grove Airport, recipient. Steve Thomas, Owner.

• Heliports – All categories including public and private-use heliports, hospital heliports, and restricted landing area heliports. Northwest Community Hospital, recipient. Holly Rasche, Security Operations Coordinator, Northwest Community Hospital, Arlington Heights, Illinois.

In addition, an airport restaurant was named "Restaurant of the Year," and received the division's "Five Prop Award" for fine dining. The Main Hangar Restaurant at the Decatur Airport, recipient. Francesca LaMonica, manager.

The Illinois Aviation System is one of the largest in the nation, comprised of more than 830 individual landing facilities. Illinois is home to everything from O'Hare International Airport to general aviation airports and private grass airstrips.

According to a 2012 Statewide Aviation Economic Impact Study, aviation contributes nearly $41 billion annually to the Illinois economy.

For more information about the IDOT Division of Aeronautics, visit www.idot.illinois.gov. ❑

Illinois Aviation Halls of Fame Land In Springfield

by Jim Bildilli

SPRINGFIELD, ILL. – On May 7, 2015, the Illinois Aviation Hall of Fame and the Illinois Military Aviation Hall of Fame were finally combined and put on display in Springfield's A. Lincoln Capital Airport terminal. The commemorative wall is the result of nearly a three-year effort by the Aviation History and Educational Center (AHEC) to develop a permanent home for both halls of fame where the public can view the names of the inductees.

The current display only represents phase one of a two-phase effort dedicated to the bringing honor to those Illinois residents who have made significant contributions to aviation and service to their country. The second phase will include an interactive touch screen where the public can bring up pictures, additional information about individual inductees, their Illinois hometowns, and their accomplishments.

The current effort was funded through donations and membership in AHEC. The second phase of the project will require a significant amount of additional funding to secure not only the computer hardware, but to construct the data base that will be used for the informational searches.

Besides maintaining the displays, plans for the future include an effort to bring a futuristic spacecraft flight simulator to central Illinois that is designed to teach math and science to youth, become a repository for precious historical aviation artifacts, models, books, periodicals, documents and interviews on digital media, which will include thousands of photographs. Ultimately, the center's long-range plan is to construct a hangar and reference area that will be open to the public for teaching, research and various aviation-related social events. The center has been working closely with the Springfield Airport Authority to coordinate its current and future plans.

For additional information on becoming a supporting member, visit

www.ilaviationhistorymuseum.org,
email president@ilaviationhistorymuseum.org
or call 217-698-3990. ❑

Spot Landing Contest Continued From Page 27

In last year's contest, 16 pilots performed a total of 38 landings, and the winner was a Cessna 152 pilot who had just gotten his private pilot certificate less than a year earlier! Just goes to show that anyone can compete in this spot landing contest and win!

This year, the grand prize is a $200 gift card to Gran-Aire, the FBO at Timmerman Airport. Prizes will also be awarded for 2nd and 3rd place. Every pilot is a winner, because each contestant receives a $20 Gran-Aire gift card just for participating. It can be used for instruction, fuel, pilot gear, or shop time.

This year's contest will be held September 12, 2015 at 10:00 am at Milwaukee Timmerman Airport, Milwaukee, Wis. (KMWC). If VFR conditions are not present, the rain date is September 26.

See you there! ❑

Southern Illinois University-Carbondale Students Win 39th Annual Air Race Classic

Air Race Classic competitors at the terminus banquet in Fairhope, Alabama.
Shayne Johnson Fleming Photo

Fifty-four (54) race teams competed in the 39th Annual Air Race Classic (ARC), an all-women's air race, June 22-25, 2015.

Stephanie Armstrong and Jessica Reed of Southern Illinois University placed first flying a 2011 Cessna Skyhawk 172R; Jennifer Pinkowski, Carly Namihira, and Christina Druskins of the University of North Dakota placed second flying a 2015 Cessna Skyhawk 172S; and Lin Caywood of Frederick, Md. and Robin Hadfield of Canada placed third flying a 2007 Cessna Skylane 182T.

The first-place win means a lot to Southern Illinois University in Carbondale, Illinois.

Jessica Reed, a senior in aviation management from Schaumburg, and Stephanie Armstrong, a May 2013 aviation management graduate from Seneca, won both the collegiate and overall title in the 39th annual event. The title is the first in program history. SIU also entered teams in 2010 and 2011.

Reed and Armstrong have been flying together for two years. Reed flew 85 percent of the event; Armstrong handled navigation and communications and took over flying for the timing flybys and landings. The flybys mark the official start and stop times for each leg of the trip's departure and arrival. Scores are based on a plane's projected versus actual timed performance.

The most challenging part, in addition to heat in the cockpit, was performing the flybys at each stop. Reed said that staying on altitude "when you are so low and it is bumpy is very stressful and definitely not the situation we are used to."

Armstrong said the win is "indescribable." Winning the title as first-time racers is almost unheard of, she said. Armstrong is an assistant instructor and assistant coach with the Flying Salukis.

Of the 54 teams that competed, 17 were collegiate teams. A second SIU team made up of Sarah Demkovich, a graduate assistant from Algonquin, and Emily Frasca, a May 2015 graduate in aviation management from Champaign, was 24th overall and seventh in the collegiate division.

The Air Race Classic is an annual VFR cross-country event flown by airplanes with at least 100 hp, and not more than 600 hp. All aircraft are normally aspirated and piston powered, rated for continuous operation at maximum engine speed. All aircraft are flown for handicap speed before the start. Teams then race their handicap speed, trying to best their own top speed from the first timing line leg to the next timing line. Once the first plane launches, they have four days to fly all nine legs and to arrive and cross the terminus finish line. Pilots this year ranged in age from 18 to 88.

This year's 2,199 nm race began in Fredericksburg, Va., with stops in Hickory, N.C.; Connellsville, Pa.; Jeffersonville, Ind.; Kalamazoo, Mich.; Lawrenceville, Ill.; Kirksville, Mo.; Union City, Tenn.; and Gadsden, Ala., with the terminus in Fairhope, Ala.

The first Air Race Classic took place in 1929, from Santa Monica, Calif. to the Cleveland Air Races in Ohio. The race was originally called the Women's Air Derby. Twenty women flew in that first race, including Amelia Earhart. Louise Thaden won the race.

Lara and Tony Gaerte with their Waco biplane on the ramp at Century Aviation, DeKalb County Airport (KGWB), Auburn, Indiana. Lara Gaerte is president of Air Race Class, Inc.

The All Women's Transcontinental Air Race (Power Puff Derby) started in 1948 and ended in 1977. ARC ran its first race in 1977 with a 2,400-mile race from Santa Rosa, Calif. to Toledo, Ohio, and is the longest running air race in the United States.

Lara Gaerte of Fort Wayne, Indiana, is president of Air Race Classic, Inc. Gaerte and her husband, Tony, own Century Aviation at DeKalb County Airport (KGWB) in Auburn, Indiana, where she is a full-time master flight instructor (www.airraceclassic.org). ❑

Flying Rotarians Celebrate 50th Anniversary With Visits To Wisconsin & North Dakota, & Grand Tour of Minnesota

Flying Rotarians and their families gather at the Camarillo Airport (KCMA) in Camarillo, Calif. for lunch and fellowship.

If you are a good person and fly, you are probably eligible for membership in the International Fellowship of Flying Rotarians (IFFR) – an organization made up of pilots who are dedicated to building understanding among all people by donating time, funds, and the use of their aircraft to supply the needy in outlying areas of the world with medical, dental, optical and surgical aid.

The Flying Rotarians celebrated their 50th anniversary at EAA AirVenture Oshkosh, July 21-24, followed by a "10,000 Lakes Fly-Out," July 25 to August 1.

The group's base of operations during AirVenture was Boarders Inn & Suites in Wautoma, Wis. Following AirVenture, members flew to Lake Elmo, Minn. to tour Stillwater, Minnesota on July 25th with a stop at Tri-County Regional Airport in Lone Rock, Wis. for breakfast. They flew to Detroit Lakes, Minn. on July 26; Grand Forks, North Dakota on July 27; Granite Falls, Minn. to visit the Fagen Fighter Museum on July 28; Madden's Resort in Brainerd, Minn. to golf, fish, and hike on July 29; Duluth, Minn. to tour the Cirrus Aircraft factory and cruise the Duluth harbor on July 30, and along the North Shore on July 31; then departed for home on August 1.

Hundreds of events like this have been held over the years in nearly all of the 60 countries in which Flying Rotarians reside.

Formally established in 1965 through the efforts of a dedicated Rotarian, E. Edison Kennell, of Seattle, Washington, IFFR operates in accordance with Rotary International policy, but is not an agency of, or controlled by Rotary International (http://iffr.org/). ❑

Price County Airport Fly-In & Air Show

Bonny and Duane Grube of Harbor View Pub & Eatery welcomed floatplane pilots to their establishment on Long Lake, Phillips, Wis., for the annual Harbor View Float-In. The float-in is held in conjunction with the Price County Fly-In & Airshow held across the highway from the pub and eatery at Price County Airport (KPBH). Harbor View provided a "free brunch" for all arriving pilots in command. Lunch was served following the airshow.

Jim and Diane Schilling of Hayward, Wis., flew to Phillips, Wis. in their 2007 RANS S7 amphibian, "Puddle Duck."

(Standing, L/R) Grant Nielsen of New Richmond, Wis. performed in the airshow with his CAP 232. Nielsen flys for the airlines. Larry Schlasinger of Chetek, Wis., performed in his Yak 52. Schlasinger owns Flight Resource LLC, MT Propeller's largest distributor. Duane Grube owns Harbor View Pub & Eatery, the sponsor of the annual Price County Airshow and Harbor View Float-In on Long Lake; and Brian Ernst, manager of Price County Airport. (Kneeling, L/R) Cheryl Dooley, who flew to the show from Hutchinson, Minnesota, to assist airshow performer, Darrel Massman (not pictured), with air boss duties; and Bonny Grube of Harbor View Pub & Eatery.

PHILLIPS, WIS. – Price County Airport and Harbor View Pub & Eatery held a fly-in and airshow, Friday evening, July 3, 2015, beginning at 7:00 p.m., and Saturday morning, July 4, 2015, beginning at 8:00 a.m. The Saturday airshow started at 11:00 a.m.

Harbor View Pub & Eatery is located across the highway from the airport on Long Lake. Floatplanes were encouraged to fly in to the Harbor View Float-In, which was held in conjunction with the airshow.

Harbor View hosted "Lake, Rattle & Roll" featuring a live band from 8:00 p.m. until midnight on Saturday.

Price County Airport activities were free to the public. ❑

Pilot Hosts Breakfast On His Farm

1940 Fairchild 24R (left) and 1930 Waco Taperwing (right).

MONROE, WIS. – Pilot/farmer, Dan Wegmueller, and his wife, Ashley, hosted the 2015 "Green County Breakfast On The Farm," May 30, 2015, on their 500-acre dairy farm located 3 miles southeast of Monroe Municipal Airport (KEFT), Monroe, Wis.

The Wegmuellers operate a grass-based/registered Brown Swiss dairy farm with 60 cows. During the summer, the cows are rotated to a different pasture each day, much like the grazing operations of New Zealand and Australia. The culmination of the breakfast included the act of turning the cows out to pasture, a delightful performance for even seasoned dairy herdsmen.

In addition to cows and airplanes, the breakfast featured classic cars and antique farm machinery, and educational booths highlighting the diversity and importance of agriculture. Wegmueller also added a special focus on "grassroots flying."

Josh Brownell of Madison, Wis., assisted by his wife, Kerryann, hopped rides in their 1930 Waco Taperwing biplane from Wegmueller's small grass airstrip. Brownell said they welcomed the opportunity to connect with families and the public, and see the reaction of kids to his biplane.

"It's pretty unique," says Brownell, who flys Boeing 747 cargo planes out of Anchorage, Alaska for a living. Kerryann is a sociologist at the University of Wisconsin – Madison. In just 5 years since purchasing the aircraft, the Brownells have given over 4,000 rides.

Also on display was Wegmueller's 1940 Fairchild 24R, which he completely restored himself with the help of friends at EAA Chapter 431 in nearby Brodhead, Wis.

The rolling conditions of the runway and limited space for parking, prohibited Wegmueller from opening his airstrip up to visiting pilots, so he offered to shuttle pilots and their passengers from Monroe Municipal Airport that day.

To read more about Wegmueller's 1940 Fairchild 24R restoration project, go to: http://www.midwestflyer.com/?p=6068. ❑

Sun ‘n Fun 2015 Contributes $64 Million To Local Economy

Sun ‘n Fun 2015 marked the first U.S. appearance of The Breitling Jet Team featuring seven L-39C Albatros jet fighters.
Matthew Olafsen Photo

Volunteers escort one of 174 warbirds onto the grounds at Sun ‘n Fun 2015.
Matthew Olafsen Photo

LAKELAND, FLA. – The 41st Annual Sun 'n Fun International Fly-In & Expo, April 21-26, 2015, at Lakeland Linder Regional Airport, was the second largest revenue producing year in the event’s history. The indirect economic impact on the I-4 corridor in and around Lakeland, Fla., was $64 million.

Nearly 200,000 people from all 50 states, the District of Columbia, and two U.S. territories, participated. International guests arrived from 77 countries. There were 506 exhibitors, and 25,000 room nights booked in Central Florida that week, not to mention the hundreds of campers on the grounds.

The daily airshows featured the U.S. Air Force Thunderbirds in their F-16 Fighting Falcons, the first U.S. appearance of The Breitling Jet Team featuring seven L-39C Albatros jet fighters, and 40

The creative juices were flowing when someone came up with the idea of building this vehicle to support EAA Young Eagles.
Matthew Olafsen Photo

A hot air balloon glow provides a striking contrast with the roar of jet fighters and warbirds that performed in the daily airshows. *Matthew Olafsen Photo*

other top civilian performers. Additionally, EAA Warbirds of America reported 174 planes registered, an increase from 152 in 2014.

Sun 'n Fun President/CEO John R. "Lites" Leenhouts was thrilled be able to recognize the men and women in service around the world by sending vintage military aircraft from the show to nearby MacDill Air Force Base in a special flyby salute to veterans. Leenhouts is himself a veteran having flown F-14 Tomcats in the U.S. Navy.

Unmanned Aircraft Systems (UAS) were the topic of conversation during Sun 'n Fun. Presentations by government representatives, vendors and colleges at the FAA National Safety Center, the Aerospace Pavilion and Aerospace Discovery at the Florida Air Museum at the airport, introduced the rules, regulations and potential UAS hold for the future. Workshops on UAS are in the works for 2016.

Sun 'n Fun is presented each year by Visit Florida and the Florida Restaurant & Lodging Association (www.sun-n-fun.org).

Hey, Where's The Tower?

by Jim Bildilli

The concept of "remote control" has been around for years. We've used it for communications, flying hobby aircraft and for changing our TV channels. More recently, remote control has been used for piloting drones in missions as diverse as search and rescue to military applications. Operators have been relatively close or thousands of miles away utilizing satellite communications for the relay of commands.

Someday, it might be possible to land at a tower-controlled airport and not see the air traffic control tower itself. In fact, the controller could be hundreds of miles away sitting in a room with nothing more than an array of monitors, communication equipment and a full complement of switches and controls that are standard in many of today's modern air traffic control facilities. Canada has been controlling the airspace at many of its major remote airports for years from Flight Service Stations located hundreds of miles away using only radio communications with pilots, and it has worked amazingly well. Aircraft within 5 nm of an airport and below a specified altitude are required to contact the controlling Flight Service Station for airport advisories.

But what has been lacking in Canada has been the remote "audio and visual" control of traffic.

Both audio and visual air traffic control testing for U.S. airports will begin in the summer of 2015 at Leesburg, Virginia's Executive Airport (KJYO). Leesburg was chosen due to its close proximity (5 nm) to Washington Dulles International Airport and its mix of aircraft operations within complex terminal airspace. Currently, pilots utilizing Leesburg must rely on its Common Traffic Advisory Frequency (CTAF) to announce their intentions and position within the airport area.

We've all heard of Saab, most likely in connection with the now defunct automotive company. But few people are aware of Saab's activities in the defense and security

A controller can direct air traffic from a Remote Tower Center located hundreds of miles away from an airport using as many as 14 pan-tilt-zoom cameras.

business. Saab will be partnering with Virginia's Small Aircraft Transportation System (VSATS) laboratory in a demonstration project to evaluate the use of a remote tower system at a non-towered airport.

VSATS is a State of Virginia, non-profit/public-private corporation established to examine ways to utilize smaller airports to become a more vibrant component of the overall aviation system. The Virginia Department of Aviation is also an advisory partner for the project.

High definition video and 14 pan-tilt-zoom (PTZ) cameras will provide an uninterrupted 360-degree view of the airport environs, providing data directly to a Remote Tower Center (RTC) at the airport. The RTC will have multiple high-definition displays and two working air traffic control tower positions with command of voice communications, the cameras and signal light guns (SLG). Because this is a demonstration/evaluation project, a mobile air traffic control tower will be deployed at the same time. Both the remote and mobile units will be staffed with FAA-certified control tower operators.

The imagery and information garnered by the tower and its systems will then be fed to one central location or Remote

Tower Center where it will be displayed live on Liquid Crystal Displays (LCD). Flight information, like that which is currently displayed on controller's radar screens, can be added to the LCDs for easier identification. Using the data from the various sources, the controllers can direct both air and ground traffic at the airport with both radio and visual instructions.

Saab delivered its first RTC to the Swedish Air Navigation Service Provider (ANSP) – Luftfartsverket – to provide air traffic control at two airports in northern Sweden. Two systems are under evaluation at heliports and an airport in Norway. Several other countries including Ireland, Switzerland, Germany, Thailand and New Zealand have shown an interest in the concept and installation.

The remote systems reduce construction costs of a conventional tower, and do not require controllers to live near any of the locations. Remote locations that have low volume commercial traffic can benefit greatly from a remote tower, but with much lower initial and continuing expense.

A pan-tilt-zoom camera is mounted on a tower to provide high and low visibility observation in the air and on the ground.

Per Ahl, Saab's head of Commercial, Civil Security and Traffic Management for Western Europe, stated that there was some initial opposition to the concept of remote traffic management because of its potential to eliminate controller positions at outlying airports. But over time, controller acceptance in Europe has grown, along with the enthusiasm for employing new technologies to efficiently manage air traffic at airports that might otherwise lose their towered service. Ahl states that "It's not a technology issue any more; it's a change of mindset, to have all of the actors on board."

Both the Federal Aviation Administration and the National Air Traffic Controllers Association have been to Sweden to observe the system. Hopefully, the installation at Leesburg should provide everyone with the information they need to make an intelligent decision to expand the service to other remote locations in the U.S.

Many of us remember when you could walk into a weather station or Flight Service Station to obtain a briefing or file a flight plan. For better or worse, technology has replaced our visits to those facilities with a phone call or the Internet. Hummm….shades of things to come??? ❑

Canada Flight Service Stations & Services

Canada has a network of 55 Flight Service Stations (FSS) and eight (8) Flight Information Centres providing invaluable assistance to pilots, weather information and remote air traffic advisories at select locations where there is no control tower.

There are 23 Flight Service Stations in Canada that – in addition to providing flight information services on site – provide ***Remote Aerodrome Advisory Services*** (RAAS) to a total of 38 sites.

Thunder Bay International Airport in Ontario, for instance, has both an air traffic control tower and a Flight Service Station. The Flight Service Station provides Remote Aerodrome Advisory Services to Pickle Lake, Ontario (CYPL) and Island Lake, Manitoba (CYIV), in addition to providing weather observations at Thunder Bay, and flight information services locally overnight when the tower is closed.

In terms of straight Remote Communications Outlets (RCOs), there are 206 "domestic" RCOs and nine (9) "international" RCOs (used by Gander IFSS). ❑

WATA Difference

WISCONSIN AVIATION TRADES ASSOCIATION

Jet Air Group, Serving Pilots & The Green Bay Packers

Story & Photos by Dave Weiman

Jet Air Group at Austin Straubel International Airport in Green Bay, Wisconsin (KGRB), aims to please its corporate high rollers on game days for the Green Bay Packers, but provides services to pilots and aircraft owners year around.

Jet Air Group is a full-service Signature Select™ fixed base operator, offering first-class service and Signature network benefits. Services include fuel sales, aircraft maintenance, avionics, air charter, flight training and testing, aircraft rental, an instrument calibration lab, and even pilot medical exams. "It is not uncommon for pilots to fly in for a flight physical," says former Green Bay police chief, Alan Timmerman, who is a pilot and a partner and the CEO of Jet Air Group. Joe Megna, Sr. is Director of Maintenance; and Dr. Pep Anderas is Vice President and one of Timmerman's business partners.

Jet Air Group has been a leader in aviation in Wisconsin for more than 40 years and continues to grow.

The company was established in 1969 in Clintonville, Wisconsin and in 1970 became an authorized Mitsubishi MU-2 Service Center, which it continues to be today.

In 1980, Jet Air relocated to Green Bay to support the new Mitsubishi MU-300, now known as the Beechjet 400, with a new maintenance facility. The company then became a full line service center for Piper aircraft, as well as a Honeywell TPE331 series engine major service center supporting the various engine models associated with MU-2, Turbo Commander, Merlin, Cessna Conquest, and Beechcraft B100 aircraft.

Jet Air also became affiliated with Honeywell engines, Dallas Airmotive and Standard Aero, supporting the Pratt & Whitney PT6 and JT15 engines for the Beechcraft King Air, Piper Cheyenne, MU-300, Beechjet, and Cessna Citation.

In 1984, Jet Air purchased an existing fixed base operator, then known as Jet Air Fuel Corp. Later that decade, Jet Air established a calibration laboratory.

Jet Air Group, Austin Straubel International Airport, Green Bay, Wisconsin

In 2003, Jet Air was purchased by Al Timmerman and a group of local businessmen and continued to expand. The Part 135 charter department was established, then known as Frontline Aviation, operating Beech King Airs and Piper twins. Jet Air Group also became a Cirrus Authorized Service Center for the SR20 and SR22.

In 2010, a new state-of-the-art facility was built to house the entire company's operations. With this consolidation of services, the company name was changed to Jet Air Group.

Jet Air Group received the "Growth Business of the Year Award" from the Green Bay Area Chamber of Commerce in 2011, and was named "Aviation Business of the Year" by the Wisconsin Aviation Trades Association (WATA) in 2012. Jet Air Group became the official preferred fixed base operator of the Green Bay Packers in 2012, and a Signature Select Fixed Base Operator to further enhance its services.

Also in 2012, Jet Air Group became a CATS computerized FAA testing center and purchased an FAA-approved flight simulator. FAA Part 141 approval was granted for the private pilot certificate and instrument rating.

In 2014, Jet Air Group became a factory-authorized Enstrom Helicopter Service Center, and built a 36,000 square foot hangar. With over 80,000 square feet of hangar space, Jet Air Group became the largest operator on the airport, with the most heated hangar space. A ramp expansion was completed, along with an additional taxiway connecting to taxiway "delta,"

Alan Timmerman, Chief Executive Officer and partner in Jet Air Group, commutes to work in his Enstrom helicopter.

allowing for more parking space and easier turn-around, which is especially important on game day when as many as 85 jet aircraft are parked on the tarmac.

Crew and passenger amenities include hotel discounts; gourmet catering services; spacious customer lounge with fireplace; private conference room with a large screen television and state-of-the-art audiovisual technology; private and comfortable pilots' lounge with large screen television and DVD; pilot sleep rooms; flight planning center with Meteorlogix weather computer; public computer station with printer and internet access; free WiFi Internet; kitchen with dishwasher; clothes washer and dryer; snack and beverage vending machines; courtesy vehicles; and for the pilot just looking for a place to visit and buy gas on a Saturday or Sunday afternoon, there is coffee and fresh-baked cookies.

Car rental is available through Avis, Enterprise, and Hertz. There's taxi and limousine service, and on game day in Green Bay, there is bus transportation to Lambeau Field.

A big selling point for any airport and fixed base operation is a U.S. Customs Office, and Austin Straubel International Airport and Jet Air Group provide this service. Another big selling point for any fixed base operation is having owners who have a passion for flight, and Al Timmerman and his partners have that.

Alan Timmerman

Alan Timmerman has lived in the Green Bay area all of his life. Timmerman enjoyed a 32-year career in law enforcement prior to becoming a partner in Jet Air Group in 2003, rising to the rank of chief of police for the City of Green Bay. Timmerman's Harley Davidson police motorcycle is displayed in the main lobby of Jet Air Group, and his many accolades are mounted on the wall of his office.

Timmerman took his first flight in a floatplane at age 14 on a family vacation to Wisconsin Dells, and thanks to the pilot who let him take over the controls, he is an accomplished pilot, aircraft owner and aviation professional today!

For fun and relaxation, Timmerman commutes to work in his Enstrom helicopter, and is checked out in a number of aircraft so he can ferry them for customers for maintenance.

Location

Jet Air Group is located on the northeast side of Austin Straubel International Airport, 1/2 mile east of the airline terminal. For additional information, call 920-494-2669 or 866-676-7835 (www.jetairgroup.com).

Robert Williams of Skyward Interiors.

Skyward Interiors

Skyward Interiors is located in the Jet Air Group complex, and is a Part 145 interior repair station. For additional information, contact Robert Williams at 918-549-5205.

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The historic C-47 transport, "That's All, Brother," led the invasion of Normandy, France, on D-Day, June 6, 1944.


General Dwight D. Eisenhower speaking to the 502nd Parachute Infantry Regiment before they boarded a C-47 transport for the D-Day invasion of Normandy, France, June 6, 1944.

Lost Airplane That Led D-Day Invasion Located At Basler 's

OSHKOSH, WIS. – The C-47 transport aircraft that led the D-Day invasion of Normandy, France, more than 70 years ago, "That's All, Brother," has been located at Basler Turbo Conversions at Wittman Regional Airport, Oshkosh, Wisconsin. Believed lost to history, the airplane was slated to be remanufactured into a modern turbo-prop, but thanks to the efforts of the Commemorative Air Force (CAF) and the cooperation of Basler Turbo Conversions, the aircraft may be saved.

Basler Turbo Conversions had purchased the airframe to convert it into a modern BT-67 turboprop and was unaware of its lineage until a researcher contacted them.

As part of an agreement with the CAF, the organization must complete its purchase of That's All, Brother by August 31, 2015. With the deadline approaching, the CAF has launched a Kickstarter campaign to raise the remaining funds to rescue this noteworthy aircraft.

Five hours before the D-Day beach landings began, That's All, Brother led a formation of more than 800 aircraft that dropped 13,000 paratroopers behind enemy lines. Historic film, shot as the airplane departed on its D-Day mission, shows it was equipped with an early form of airborne radar to guide the invasion force to the drop zone. The aircraft was named That's All, Brother as a personal message to Adolf Hitler that, with the Allied invasion of Europe, his plans were done.

After returning from the initial drop of 101st Airborne Division paratroopers on D-Day, That's All, Brother towed a glider to Normandy, carrying essential supplies and men of the 82nd Airborne Division into the heart of the battle. The aircraft remained on combat status throughout the European campaign, participating in Operation Market Garden, the relief of Bastogne during the Battle of the Bulge, and the crossing of the Rhine River. After the war it passed through 16 civilian owners and its story was forgotten.

The CAF plans to faithfully restore That's All, Brother to airworthy condition, representing its exact configuration on D-Day. The airplane will be a flying classroom, allowing school children and other visitors to board the aircraft and sit in the original paratroopers' seats. Inside the darkened plane, hidden speakers and sensors will carry people back in time to the night of June 5-6, 1944.

The aircraft will be based in Dallas as an iconic centerpiece of CAF's new national aviation museum. It will also be available to attend major national commemoration events, airshows and flyovers. The CAF also plans to fly the aircraft to Europe in the summer of 2019 to participate in the 75th anniversary of D-Day, the last opportunity for living veterans to attend a major commemoration event.

The Kickstarter fundraising page can be accessed via: www.ThatsAllBrother.org

Basler Turbo Conversions is a member of the Wisconsin Aviation Trades Association (WATA). The late Warren Basler, and his wife, Pat, founded Basler Turbo Conversions in 1988. Today, Jack Goodale of Grand Rapids, Michigan, owns the company. Tom Weigt is president (www.baslerturbo.com). ❑

Aeronautics Report

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Airport Operations & Land Use Seminar

by Hal Davis
WisDOT Bureau of Aeronautics


Hal Davis

Each fall, the Wisconsin Department of Transportation Bureau of Aeronautics holds a two-day Airport Operations & Land Use Seminar for the people responsible for managing our state's airports. This seminar provides airport managers with the information and tools they need to take on the day's challenges.

The 2015 seminar will include sessions on airport marketing, solving general aviation's most common problems, financing airport development projects, establishing new instrument approaches, unmanned aircraft systems, LiDAR mapping, pavement distress and many more. The afternoon of the second day will be dedicated to "airport project management 101" and cover topics such as funding, project planning, bidding and construction safety.

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

The 2015 Airport Operations & Land Use Seminar will take place Wednesday, September 23 and Thursday, September 24 at the Holiday Inn and Convention Center in Stevens Point, Wisconsin.

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

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

Hope to see you there! ❑

Flight Instructor Refresher Course (FIRC)

The next Wisconsin Flight Instructor Refresher Course (FIRC) is scheduled for October 31st and November 1st at the EAA AirVenture Museum in Oshkosh. The course will be updated with new topics in addition to the core course topics that include *Ethics & Professionalism; How To Give An Effective Flight Review; Pilot Deviations: Their Causes; How To Teach Effectively; and Creating A Culture of Safety.*

The course is open to Certified Flight Instructors whose certificates expire in November and December 2015 or January and February 2016. Other pilots may audit the course at a reduced fee and receive a certificate of completion. Speakers at the FIRC will include several Designated Pilot Examiners (DPEs) who always provide an insightful perspective on flight training.

For more information, visit the WisDOT website at: http://wisconsindot.gov/Pages/doing-bus/aeronautics/trng-evnts/firc.aspx. ❑

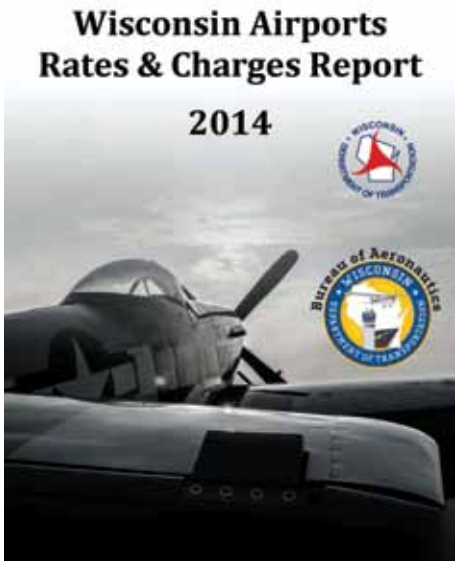
WisDOT website at:
http://wisconsindot.gov/Pages/doing-bus/aeronautics/trng-evnts/firc.aspx

2014 Airport Rates & Charges Report

The Airport Rates & Charges Report for calendar year 2014 is now available. Each year, the Wisconsin Department of Transportation Bureau of Aeronautics surveys those airports within the State Airport System Plan for information relating to airport rates and charges, budgets, and related activities. Examples include fuel prices, hangar rental rates and lease rates. The survey results serve as a comparative tool to help airports gauge financial practices and needs. Pilots, consultants and other users of Wisconsin airports may also benefit from the data collected.

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

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



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2015 Aviation Art Contest Results

WisDOT Bureau of Aeronautics

Getting young people interested in pursuing careers in aeronautics, science and engineering, while spreading the message about the importance of aviation, helps ensure the vitality of the industry for decades to come. As part of this effort, the Wisconsin Department of Transportation Bureau of Aeronautics sponsored its annual statewide poster design competition as part of the International Aviation Art Contest for youth of all ages. This year's theme was "World Air Games."

Nine young people from around the state won top honors in this year's contest. The top three entries, in three different age groups, now advance to the National Aviation Art Contest for judging in Washington, D.C.

The 2015 winners are as follows:

Junior Category (6-9)

1st Place: Destiny Gonzalez, age 9
2nd Place: Bridget Hagensick, age 9
3rd Place: Anna Allen, age 9

Intermediate Category (10-13)

1st Place: Sarah Drogseth, age 12
2nd Place: Ayris Modica, age 13
3rd Place: Jenny Li, age 13

Senior Category (14-17)

1st Place: Connor Anderson, age 17
2nd Place: Brooke Kowalski, age 16
3rd Place: Jessie Gates, age 15

First place winners had the option of selecting a $100 art supply gift certificate or an airplane ride for two as their prize. Second and third place winners received a $75 and $50 art supply gift certificate, respectively.

The Wisconsin winning works of art will be judged with entries from across the country in the three age groups. The first, second and third place national winners, in each age group, will receive a certificate, ribbon and framed reproduction of their artwork. In addition, they will advance to the international competition for worldwide judging in Switzerland.

To see all the winning posters visit WisDOT's website: http://wisconsindot.gov/Pages/doing-bus/aeronautics/education/art2015.aspx

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MINNESOTA AERONAUTICS BULLETIN www.mndot.gov

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**

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Safe Operating Practices A Must For Drone Operators

by Cassandra Isackson
Director, Minnesota DOT Office of Aeronautics


Cassandra Isackson

Drones are everywhere today! Many of you know someone who has one, or have heard of an interesting way in which an Unmanned Aerial Vehicle (UAV) is planning to be used. There were certainly plenty of different types for sale at Oshkosh this year. Where, how and when the UAV (commonly referred to as a drone) is used, and the regulations that may be required as a result of that use, are a current topic at the Federal Aviation Administration (FAA) and MnDOT Office of Aeronautics. Our focus is safety in all aeronautical activity, so we are concerned about the safety of manned aircraft and their passengers, as well as the safety of people and property on the ground, who may be unaware of UAV flights. I urge you to read the feature article by Aeronautics Aviation Representative Rick Braunig, who explains our position very clearly.

Rick says, "we (MnDOT Aeronautics) have taken the position that unmanned aircraft are aircraft and that they are required to be registered and pay registration tax the same as all other aircraft. Use of these aircraft for compensation or hire, or any services performed incidental to the operation of an aircraft for which a fee is charged or compensation received, constitutes a commercial operation and we are requiring such operators to get a commercial operator's license from us. In doing this, we are simply applying existing statutes and rules. Our main concern is the safety of persons, property, transportation, and transmission lines."

The greatest potential UAV threat to the safety of a piloted aircraft is an uninformed or irresponsible pilot of a UAV who doesn't know the current operating rules and guidelines. Anyone who wishes to fly a UAV should checkout the website: **knowbeforeyoufly.com.** It is vitally important that every UAV pilot or operator, whether for hobby or business purpose, have a good, basic understanding of safety of operation, altitude limitations, responsibilities, liabilities and much more.

The UAV industry and the FAA are working together to develop sound rules and guidelines for UAV operations by anyone. At Aeronautics, we are in frequent communication with the FAA and are working hard to help everyone be safe and enjoy flight in all its forms! ❑

Drones/Unmanned Aircraft (UAS)/Model Aircraft

by Rick Braunig, AvRep

Every pilot should know that drones are being flown in the United States. LeSueur County is flying them at 600 feet, Excel Energy has a Certificate of Authority (COA) to fly their power lines, Burlington Northern is flying the rails beyond visual line of sight (BVLOS), and the whole of North Dakota is being used by the test site program at the University of North Dakota. And these are the legal operators we are aware of. Countless others are flying illegally as evidenced by numerous U-Tube videos.


Rick Braunig

The FAA issued some proposed rules and they are in the process of evaluating the more than 4,000 comments they received. In the meantime, they are issuing COAs for operators giving almost blanket approval for operations under 200 feet AGL within visual line of sight in rural areas. Public agencies like LeSueur County can get COAs for operations more than 500 feet AGL.

I am seeing copies of applications made to the FAA for exemptions from their usual policies to include operations at

public airports and night operations. Meanwhile, their inspectors have been told that they can only take enforcement action if they catch a user in the act. A video posted online doesn't seem to be sufficient evidence.

Unmanned Aerial Vehicle or drone.
David Gonzales, MnDOT Photographer

In Minnesota, we have taken the position that unmanned aircraft are aircraft and that they are required to be registered and pay registration tax the same as all other aircraft. Use of these aircraft for compensation or hire, or any services performed incidental to the operation of an aircraft for which a fee is charged or compensation received, constitutes a commercial operation and we are requiring such operators to get a commercial operator's license from us. In doing this we are simply applying existing statutes and rules.

Our main concern is the safety of persons, property and transportation and transmission lines. Secondly, we ensure that operators insure their vehicles, and we also get to approve their operating areas. Unfortunately this doesn't apply to all operations. Public operators like LeSueur County are exempt as are operators who are not selling their services, such as Excel Energy.

Still, the greatest concern in unmanned aircraft operations is the personal users of this technology. There have been multiple reports of unmanned aerial vehicles (UAV) flying in close proximity to commercial airliners. There is video online of a UAV flying up through the clouds in close proximity to an active heliport, and I have seen video of a UAV flying around a couple of helicopters that were over 1,000 feet AGL shooting video for different TV stations. It seems many users have no idea of the danger that they pose for manned aircraft operations. The FAA and the UAV industry are trying to help educate the public on the operation of these vehicles. There is a website: **knowbeforeyoufly.com** that was designed to help people learn about both the personal and commercial requirements. There is an application now that lets you determine the airspace you are in and if it is safe to fly there, and since someone landed a UAV on the White House lawn, the manufacturers have started putting electronic fencing in their units that keeps them from being flown in some areas.

The Academy of Model Aeronautics has safety guidelines for model aircraft operators. If you know of anyone operating or considering operation of a UAV, you should advise them to check out these resources. Though they may not get in trouble with the FAA or State of Minnesota, a crash with injuries could prove to be very costly.

For pilots, the message is to be extremely vigilant. The higher you fly, the less likely you are to encounter a UAV. Of course we all have to land, so be watchful. If we know of any UAV operations going on at an airport, we will work to get the information widely disseminated. For landing away from a public airport, such as landing on the water for a seaplane or landing on a private airport, your best tool is your eye. If you spot a UAV, I recommend aborting the landing and going elsewhere. A crash with a UAV may be a financial hardship for the UAV operator, but it can be deadly for you and your passengers. ❑

The Airport Paradox

by Dan McDowell

When aviation is discussed in many communities and even on social media, it is the airlines that become the greater part of the conversations. General aviation (GA), if mentioned at all, is too often spoken about in a negative voice. Yet, GA makes up 75% of all aviation activity in the U.S., while airlines make up 20% and the military makes up only 5%, each day, across this nation. In fact, three of every four takeoffs is a GA flight.

A community that owns the airport, benefits directly, as well as indirectly because of that airport. Unfortunately, the value of a GA airport to that community, along with the value and benefits GA brings to the community and surrounding

area, is too often misunderstood, ignored, or overlooked. In fact it may be almost completely unknown to many in the local community.

The Airport

An airport is a valuable asset for the local community, as well as the state and nation. It opens a door to the community and surrounding area and brings in tourists who spend money at local hotels, restaurants, gift shops and tourist attractions. Besides enhancing local tourism, an airport is a business attractor. Businesses that want to grow and expand frequently choose locations that are on or near an airport. They do this so they can easily and efficiently move goods, parts, and personnel to their customers.

GA airports provide facilities for their communities (as well as the national airport system), to house and launch emergency preparedness and response flights and personnel. They also provide a base of operations for agricultural sprayers, oil and mineral aerial exploration, overnight packages, and much more. GA airports in areas more than 50 miles from a major airport provide a place for specialized medical personnel to fly into smaller communities that do not have medical facilities that provide those specialized services.

Many smaller cities across the country rely on their GA airports as their connection to the world. These airports provide air taxi services to the larger air service airports. These airports also provide launch points for corporate aircraft, aerial survey, search and rescue, law enforcement, fire patrols, charter, flight training, and so much more.

There are nearly 5,000 public-use GA airports across the country. These airports open the door to the world for their surrounding communities by providing a place for the safe and cost-efficient operation of business and recreational aviation. At the same time, these GA airports provide well-paying jobs for more than 500,000 people across the country, with an annual payroll of over $14 billion! For every dollar spent on aviation, $2.07 is generated in new economic activity. Clearly the value of a GA airport can now be seen, even though we've just scratched the surface!

The Paradox

Though many people may know and understand the use and some of the benefits of their community's airport, they do not seem to grasp the importance of protecting that valuable community asset.

"Border creep" can literally grow to the actual property lines of the airport. When that happens it contributes to the severe restriction of use of that airport, if not its actual demise. Simply put "border creep" is the incessant development of land around an airport for housing, and other uses, that continually grows toward airport boundaries. While well planned growth can be extremely beneficial to the airport as well as the community, unplanned growth can cause the prompt loss of revenue and benefits that airport provides to the community.

When housing developments are built near an airport, noise complaints are one of the first signs the airport is being squeezed. If inadequate or improper land-use zoning is allowed by the community on surrounding airport property, obstructions built in safety zones or near aircraft flight paths can cause that airport to significantly reduce operations. That reduces the revenue and benefits the airport brings to that community, and impacts safety at the airport and within the community.

In the words of former Aircraft Owners and Pilots Association (AOPA) President Phil Boyer, "The incompatible encroachments on airport lands and in airport safety zones, effectively reduces the value of the airport by limiting or reducing its capacity to grow and attract business." Mr. Boyer went on to say, "Developers or local officials look at airports and see what seems to them like empty space and (they) push to build houses or a shopping mall. Local governments feel pressure to use the land on publicly-owned airports to maximize their tax base." But they too often fail to remember the valuable asset the airport is to their community.

Mr. Boyer provides an example of how unplanned development can impact the community's airport. He says, "AOPA's home airport, Frederick Municipal Airport next to our headquarters in Frederick, Maryland, is a perfect example of the problems arising from a lack of zoning authority. The City of Frederick is the sponsor, yet its zoning authority ends at its border with Frederick County a half-mile from the airport.

"Frederick County approved a massive residential development less than 1.5 miles east of the airport. The county also approved homes many years ago less than a half-mile south of the approach to the airport. Also, trees growing north of the instrument landing system runway have a direct impact on the utility of the ILS system, but because the trees are located in the county, the instrument approach minimums have been raised. In these cases, the city is unable to protect the full federal investment in this million-dollar, all-weather landing system."

The paradox as can be seen with the previous examples is that when there is empty land surrounding an airport, though it is there for everyone's safety, it is far too often regarded as a potential money-maker for a city. At the same time the value of that land to the airport and any users of that airport, for safety and risk mitigation, are either not understood or quite simply disregarded.

Developing around airport property significantly impacts the utility and value of that airport and what it brings to the community. It also raises the risk and safety potentials – not just for pilots – but also for anyone living near the approach or departure lanes any of the safety zones the airport may have, or should have. That is the airport paradox. ❑

Moving Up To The Lightspeed Zulu PFX Headset For Comfort & Enhanced Functionality

by Dave Weiman

Thirty-five years ago when Peggy and I bought our first airplane – a 1946 Cessna 140 – we bought two Dave Clark 10-40 headsets, and they served us well. A few years later, we had two children, and moved up to a 1974 Cessna 172 Skyhawk, and eventually to a 1976 Cessna 182 Skylane, and bought two more Dave Clark headsets – this time 10-30s. Thirty-five years of Dave Clark headsets and only once did we have to send one back to the factory for repair, and they did so at no charge! So we cannot complain. But one day last fall, while preparing to fly to Washington Island, Wisconsin, the weight and tight fit of the Dave Clark headset aggravated a sensitive area behind Peggy's ears, resulting in a headache, so we canceled the trip.

I immediately began to explore other headsets, and considered the ultra-lightweights, but felt that Peggy needed the style that completely covered her ears to provide the best noise protection. We spoke with friends who own Boise and Lightspeed headsets, which are the top of the line and priced competitively. After trying on several headsets, Peggy chose the "Lightspeed Zulu PFX."

The Zulu PFX is Lightspeed's top of the line headset and is engineered for comfort.

Weighing only 14 ounces, it is the lightest over-the-ear headset ever manufactured by Lightspeed. The PFX features plush ear seals that provide 20% more surface area and 30% more space for your ear inside the ear cup than its closest competitor, creating a better seal and more comfortable distribution of side pressure.

All Lightspeed Aviation headsets employ active noise reduction (ANR), which works by sensing cockpit noise and generating an audio signal that is 180 degrees out-of-phase with the noise. The noise and the signal cancel each other out, creating the remarkable quiet that Lightspeed is known for and increasing the enjoyment of flying, as well as reducing dangerous noise-induced fatigue.

Lightspeed's Zulu PFX Streaming Quiet® ANR continuously adapts to your environment, extending the amount, consistency and frequency range of noise cancellation. Firmware enhancements are just a download away, giving the Zulu PFX unlimited potential to evolve with new innovations.

The Lightspeed Zulu PFX headset is lightweight, weighing only 14 ounces, and employs active noise reduction by sensing cockpit noise and generating an audio signal that is 180 degrees out-of-phase with the noise. *Lightspeed Aviation Photo*

Acoustic response mapping measures your unique auditory landscape, personalizing the audio response for maximum noise attenuation, voice clarity, and music fidelity.

Other features of Lightspeed headsets includes FlightLink – the free, proprietary app developed by Lightspeed for the iPad® and iPhone® that adds enhanced functionality to the headsets. FlightLink works seamlessly to capture and retrieve incoming and outgoing communications. A great tool for any pilot, it's especially valuable for flight training. FlightLink's enhanced capabilities also allow users to set a variety of personal audio and operational preferences.

Lightspeed's "trading up" program makes it easier for pilots to stay on the cutting edge of headset technology. Lightspeed will give you up to a $400 trade-in allowance.

For additional information, visit the Lightspeed website www.lightspeedaviation.com, or call 800.332.2421.

Lightspeed Aviation is located in Lake Oswego, Oregon. ❑

MATA To Hold Annual Meeting/BBQ

MINNEAPOLIS, MINN. - Members of the Minnesota Aviation Trades Association (MATA) and invited guests will combine their annual meeting with a barbecue on **Thursday, August 20, 2015, starting at 3:00 pm at Twin Cities Aviation, Anoka County - Blaine Airport (KANE).** This event is free to MATA members and $10 for non-members. All aviation businessmen and women and their spouses and associates are encouraged to attend.

In an effort to promote careers in aviation, and support the Minnesota aviation community, MATA will be awarding a $2,000 scholarship at the event.

MATA is the voice of the Minnesota aviation business community. Through a very active nine-member board of directors that meets every 60 days, MATA represents its members in building ethical, strong, and competitive aviation businesses; lobbies on behalf of members at the state capitol; works with the Minnesota Department of Transportation Office of Aeronautics and Federal Aviation Administration on pending issues; and supports national aviation organizations, such as the National Air Transportation Association, National Business Aviation Association, Aircraft Owners & Pilots Association, and Experimental Aircraft Association on issues that affect the entire industry.

For additional information on the barbecue, scholarship, or membership, email mnavtrades@gmail.com. ❑

Discover Aviation Days – The Doorway To Understanding General Aviation

by Dave Weiman

BLAINE, MINN. – Thanks to the efforts of Craig Schiller, the curator at Golden Wings Museum, and other tenants at Anoka-County Blaine Airport/Jane's Field (KANE), volunteers, airport management, and air traffic controllers, "Discover Aviation Days" (DAD), May 30-31, 2015, was again successful in introducing the public to general aviation.

There are 400 aircraft based at KANE, more than a dozen air charter and aircraft maintenance businesses and flight schools, a world-class museum, and a restaurant and entertainment complex on the horizon called "Flight Line Enterprise." All of this in itself is an aviation story worth sharing with the general public, and Discover Aviation Days does this each year.

Featured at Discover Aviation Days was an educational

Gary Black of Cirrus Aircraft, Duluth, Minnesota, flew to Discover Aviation Days in the 6,000th certified Cirrus aircraft built.

chalet filled with displays; modern and vintage aircraft on display; flybys to excite the crowd; airplane and helicopter rides; and good food and fellowship.

The Saturday night hangar dance was held May 30 at the Golden Wings Museum, featuring a 1940s swing band. Golden Wings Museum owner, Greg Herrick, opens the doors to his private museum each year at no charge to promote aviation, and so people can learn something about America's Golden Age of Aviation (1920s-1930s). The museum's modern 45,000 square-foot hangar houses 36 rare vintage aircraft, some of which are one of a kind.

Some of the unique aircraft on display at Golden Wings Museum is NASA's first aircraft; a stainless steel amphibian; the first airplane in which a pope ever flew; six trimotors, including a 1927 Ford Trimotor, America's oldest existing airliner. Charles Lindbergh and Amelia Earhart were among

Greg Herrick taxis his Ford Trimotor for takeoff and a few flybys for the crowd.

Darlene Dahlseide of the Minnesota DOT Office of Aeronautics distributed aviation education materials and information.

Kids enjoying making paper airplanes.

Colleges and universities with aviation programs, such as University of Minnesota – Crookston, were promoting their programs.

the many notable aviators who have flown some of these unique and rare aircraft.

Situated near the National Sports Center, Anoka County-Blaine Airport/Jane's Field (KANE) continues to make improvements to accommodate a growing demand for general aviation in the northern suburbs. KANE is one of seven (7) airports operated by the Metropolitan Airports Commission (MAC), which include Minneapolis-St. Paul International Airport (MSP), and six (6) general aviation reliever airports strategically located throughout the Twin Cities metro. All combined, MAC operates one of the largest and best airport systems in the nation!

KANE consists of 1800 acres, and features two runways: 9-27 (5,000 x 100 ft), and 18/36 (4,855 x 100 ft), a precision approach on Rwy 27, and a contract air traffic control tower. KANE supports more than 76,000 takeoffs and landings annually. KANE is managed by Glenn Burke.

There was no admission charge to Discover Aviation Days, but automobile parking donations were welcomed, and there was a raffle to help raise the revenue needed to produce the event.

For additional information on Discover Aviation Days, visit **www.DiscoverAviationDays.org.** ❑

Floatplanes lined the shores of Gull Lake at Madden's Resort near Brainerd, Minnesota, for the Minnesota Seaplane Pilots Association Safety Seminar & Fly-In.

Madden's Resort Hosts Minnesota Seaplane Seminar & Fly-In

Randy Schoephoerster

BRAINERD, MINN. – Under the leadership of Randy Schoephoerster, owner of the flight school Air Trek North at Minneapolis Airlake Airport in Lakeville, Minnesota (www.airtreknorth.com), the Minnesota Seaplane Pilots Association (MSPA) took a giant leap forward this year with its seminar and fly-in, May 15-17, 2015, at Madden's Resort on Gull Lake near Brainerd, Minnesota. Attendance was up from years past in part due to some heavy promotion, but the association's decision to move the dates from the first weekend in May to mid-May gave the ice time to melt. As a result, 20 floatplanes flew in, and aircraft on wheels landed at nearby East Gull Lake Airport (9Y2) and Brainerd Lakes Regional Airport (KBRD).

Seminar speakers included Minnesota DOT Office of Aeronautics Director Cassandra Isackson; MNDOT Aeronautics chief pilot, Jeff Flynn; Seaplane Pilots Association Executive Director Steve McCaughey (www.seaplanes.org); FAA aviation safety inspector, Kevin Morris; Minnesota Department of Natural Resources aquatic invasive species specialist, Jason Jenson; and float manufacturers Chuck Wiplinger of Wipaire, Inc., Jeff Voight of Aeroset, and Brian Huberty of Clamar. Discussing Unmanned Aerial Systems (UAS) and rules and regulations affecting their operation was Wipaire chief pilot, Brian Addis. Kevin Morris of the FAA discussed seaplane accidents, Brian Schanche of Adventure Bound Seaplanes discussed flying in the Arctic Circle and Alaska, and retired air traffic controller, Mark Schreier, also spoke.

Cassandra Isackson

Brad Hayden

An accuracy-landing contest was held on Saturday afternoon before dinner. Brian Schanche of Lino Lakes, Minnesota took first place honors in his Cessna 185. Brad Hayden of Robotic Skies was the banquet speaker who discussed how drones can affect general aviation pilots. According to Hayden, more than 500,000 UAS are now in the hands of non-aviators for the most part. Lightspeed

East Gull Lake Airport (9Y2), East Gull Lake, Minnesota

donated a Zulu headset as the grand door prize of the event. Wipaire, Inc. sponsored the band in O'Madden's Pub following the banquet.

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

For more information on the Minnesota Seaplane Pilots Association, contact Randy Schoephoerster at randy@airtreknorth.com (952-594-1184), or visit www.mnseaplanes.com.

(L/R) Steve McCaughey, executive director of the national Seaplane Pilots Association (SPA), congratulated Bruce Hanson, manager of Surfside Airport and Seaplane Base (8Y4) in Lino Lakes, Minnesota, on receiving a lifetime membership in SPA in appreciation for his contributions to the seaplane community. ❑

Drones Are Beautiful

by Rex Hammarback
Executive Director
Northland Aerospace Foundation


Rex Hammarback

Drones are beautiful. Any comments to the contrary are duly noted, however, the huge positive impact these airborne creatures will have on our future will be as broad as any technological revolution we have experienced. The initial regulatory delays appear to be moving towards a disciplined resolution with the release of the FAA's Notice of Proposed Rule Making (NPRM) for Unmanned Aircraft Systems (UAS) on February 23, 2015. The small UAS world will begin to move very rapidly from this stage going forward.

If you think about it, we have had a very sophisticated small UAS operating in our airspace for many years. Today, the radio control (RC) modelers of the world are flying jet engine propelled UAS and have been doing so for several years now. Take a walk on the "wow" side of life and go to "you tube" and search for RC jet aircraft. You will be amazed.

Today's article will explore and discuss the current legal status of drones (UAS) and a glimpse at what that future will look like. We will specifically look at commercial operations and the leadership role of Northland Aerospace as it develops programs to support these activities. We will start with a brief discussion of the legal factors involving RC models. RC models were always limited to a maximum altitude of 400 feet about ground level. In addition, RC models were always required to be within "line of sight" of the operator.

One of the key distinguishing legal limitations for the RC modeler was the restriction that all operations not be commercial in nature. In other words, you could not conduct flight operations for hire; no commercial activities were allowed.

The RC modelers have enjoyed many years of operation without major issues and/or problems. The RC modelers, by FAA's own previous conduct, were not technically identified as aircraft, therefore, the FAA had "carved out" an exception to the FARs for the RC modelers. This exception created by the FAA for modelers came back to haunt the administrative agency.


Jonathan Beck, Unmanned Aircraft Systems (UAS) Instructor and Program Manager at Northland Community & Technical College, describes how Northland Aerospace is using UAS technology in agricultural imagery research. Northland Aerospace was one of the first organizations to receive a Certificate of Authorization (COA) required for UAS operations. The UAS pictured here is a "Phoenix™," manufactured by Sentera in Minneapolis, Minnesota. *Dave Weiman Photo*

In an administrative law decision issued on March 6, 2014, Federal Administrative Law Judge Patrick G. Geraghty vacated an FAA Order of Assessment against a small UAS operator, Raphael Pirker. The fine ordered against Mr. Pirker for the alleged violation of federal aviation regulations was $10,000.00. The fine was a civil penalty based upon an alleged violation of FARs, specifically 14 CFR §91.13(a). Most of the aviators in our aviation community recognize this alleged violation as the "careless and reckless" prohibition. Careless and reckless allegations have a long and storied history in aviation administrative law cases.

What did Mr. Pirker allegedly do wrong? Mr. Pirker operated an unmanned aircraft on a photographic mission for hire over the campus of the University of Virginia.

Continued On Page 62

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

2015

AUGUST 2015

1 NORTHPORT (5D5), MICH. - The Northport Lions Club annual Fly-in Drive-in Pancake Breakfast will be held on Saturday August 1, from 8 am to noon at the Woolsey Airport (5-d-5), just north of Northport, Michigan. *Alternate rain date is August 2, 2015.* Pancakes, sausage, cherry topping, coffee etc. will be served for $8 (adult), $4 (child) under 5 free. A multi-age car show and band will also be on the grounds. Airport location is approximately 40 miles north of Traverse City. (About 1 hour east of Oshkosh, flight time). Call 1-231-386-9936 or 386-5984, and 1-616-460-8965.

4 VINTON (VTI), IOWA - Grill-Out 5-8pm. 319-334-4000.

5* BURLINGTON (BRL), IOWA - Grill Out Night at Southeast Iowa Regional Airport 5-8pm. 319- 754-1414.

8 MORAINE (I73), OHIO - Flying Heritage Festival 7am-9pm.

9 LINO LAKES (MN24), MINN. - At Surfside Airport. Minnesota Seaplane Pilots Association Pig Roast, 12:00 noon to 4:00 pm. For additional information refer to www.MnSeaplanes.com or call or email Randy Schoephoerster at randy@airtreknorth.com 952-594-1184.

9 POPLAR GROVE (C77), ILL. - Pancakes, waffles, eggs, sausage, coffee, milk & juice breakfast 7am-Noon.

9* WALKER (Y-49), MINN. - Pancake Buttermilk pancakes, sausage breakfast at Bresley Field 7:30am-12:30pm.

9* MONTICELLO (MXO), IOWA - Breakfast 7am-12:30pm. 319-465-5488.

10-13 & 13-16 – MIMINISKA LODGE, ONTARIO - 2015 Canadian Fishing Fly-Outs. 3-Night/2-Day Trips.

10-15 & 13-18 – 5-Night/4-Day Trips. For more information call 1-888-465-3474.

14-15 MUSKEGON (MKG), MICH. - Michigan Air Rally. 616-401-3637.

15 INDIANAPOLIS (7L8), IND. - Taildragger Rendezvous at Post Air Airport 10am-2pm. www.900.eaachapter.org

15 FOREST LAKE (25D), MINN. - Pancake, Lunch, Ice Cream Social & Car Show 7am-4pm at 2,700 ft. grass Daniel De Ponti Memorial Airport. 651-373-3779.

18 INDEPENDENCE (IIB), IOWA - Grill-Out 5-8pm. 319-334-4000.

18 MADISON (MSN), WIS. - 1940s Style Hangar Dance featuring Ladies Must Swing 6-10:30pm at Wisconsin Aviation.

22 BLAINE (ANE), MINN. - AOPA Fly-In at Minnesota Anoka County-Blaine Airport. To read more about the AOPA Fly-In go to www.midwestflyer.com/?p=8264. RSVP to attend by going to www.aopa.org/Community-and-Events/AOPA-Fly-In/2015/About

22 GLENCOE (GYL), MINN. - Sweet Corn & Bratwurst Feed Fly-In 10am-2pm.

22 NOBLESVILLE (I80), IND. - Pancake Breakfast 8-11am.

29 WASHINGTON ISLAND , WIS. - Death's Door Bar-B-Q (chicken, pork, pork ribs & beef brisket) starting at 10am. Kids activities, music. visit washingtonisland-wi.com

30 OWATONNA (OWA), MINN. - Fly-In French Toast Breakfast 7am-Noon at Owatonna Degner Regional Airport. 507-444-2448.

30* WINDOM (MWM), MINN. - Pancakes and French Toast Breakfast 8 a.m.-12:30 p.m. PIC's free. Brian (507) 830-0273.

30* GREENFIELD (GFZ), IOWA - Iowa Aviation Museum. PIC eat free, Free admission to museum 7:30-11am. 641-343-7184. www.flyingmuseum.com

30* IOWA CITY (IOW), IOWA - Breakfast 7am-12:30pm. PIC eat free. 319-338-9222.

SEPTEMBER 2015

1 VINTON (VTI), IOWA - Grill-Out 5-8pm. 319-334-4000.

5 NEW LISBON (82C), WIS. - Planes & Old Cars 8am-1pm. Breakfast 7-10:30am, Lunch 10:30am-2:00pm.

5* COUNCIL BLUFFS (CBF), IOWA - Breakfast 8-11am. PIC Eat Free. 402-981-4633.

5-6* PRINCETON (PNM), MINN. - Flight Expo 2015 WWII Memorial Fly-In featuring B-25 Miss Mitchell Bomber. flightexpo.org/

5-7 CLEVELAND (BKL), OHIO - Featuring U.S. Air Force Thunderbirds and Breitling Jet Team from France. Sean D. Tucker, Rob Holland, Shockwave Jet Truck, U.S. Army Golden Knights Parachute Team and military jet demonstrations.

6 MONDOVI (W69), WIS. - Hot dogs, baked beans, potato salad, & fresh sweet corn brunch at Noon at the Log Cabin Airport. 715-287-4205.

7 GAGE (GAG), OKLA. - Labor Day Breakfast Fly-In. New Runway. Come have breakfast with us!!!

12 SUPERIOR (SUW), WIS. - Blueberry pancake breakfast 8am-Noon.

12* MILWAUKEE (MWC), WIS. - Spot Landing Contest & BBQ Lunch at Timmerman Airport 10am. $200 Grand Prize, $20 Gift Card for All Pilots, Register at the Event. If IFR, Rain Date is 9/26/2015. 414-461-3222. timmermanairport.com/midwestflyer. Sponsored by Gran-Aire, Inc. & Civil Aviation, Inc.

13 JOLIET (JOT), ILL. - Airport Festival. Pancake, sausage, coffee & juice 8-11am. Warbird display & children's activities until 3pm.

13 POPLAR GROVE (C77), ILL. - Pancakes, waffles, eggs, sausage breakfast 7am-Noon.

13* NEW ULM (ULM), MINN. - Breakfast, 7am -12:30pm. B-25 Miss Mitchell to attend.

15 INDEPENDENCE (IIB), IOWA - Grill-Out 5-8pm. 319-334-4000.

16-20* RENO, NEV. - 2015 National Championship Air Races. airrace.org.

19 LEE'S SUMMIT (LXT), MO. - Pancake Breakfast 8:30am-Noon.

19 OCONTO (OCQ), WIS. - Fly-in & Car Show 9am-5pm. 920-246-5620.

19* NEW HAMPTON (1Y5), IOWA - Breakfast 7am-Noon. 319-240-5092.

20 TAYLORVILLE (TAZ), ILL. - Biscuits and gravy, sausage and eggs, hashrounds, pancakes, donuts, cereal, coffee, tea, orange juice breakfast.

20* OXFORD (IA24), IOWA - Food all day 11am-4pm by the Green Castle Aero Club. 770-833-1502.

20-22 KANSAS CITY, MO. - 4 State Airport Conference at Downtown Marriott Hotel. 816-289-7218 or 816-810-5706.

23-24 STEVENS POINT, WIS. - Wisconsin 2015 Airport Operations & Land Use Seminar at Stevens Point Holiday Inn & Convention Center (715-344-0200). For seminar information contact: Hal Davis - (608) 267-2142 or email howard.davis@dot.wi.gov

24-26 KEOKUK (EOK), IOWA - L-Bird Fly-In & Convention of the Birddog. Pancake breakfast on the 26th.

26 Colorado Springs (COS), Colo. - AOPA Fly-In at Colorado Springs Municipal Airport. To read more about the AOPA Fly-In go to www.midwestflyer.com/?p=8264. RSVP to attend by going to www.aopa.org/Community-and-Events/AOPA-Fly-In/2015/About

26* Cherryvale (PPF), Kan. - Breakfast & Lunch (8am-1pm) at the Parsons Tri-City Airport which is located 11 nautical miles west of Parsons, Kansas. Jayhawk Wing of the Commemorative Air Force Warbirds.

26* East Alton (ALN), Ill. - Wings & Wheels Fly In with activities, historic weapons display, radio controlled planes and pilots tent at the St. Louis Regional Airport.

26* Grinnell (GGI), Iowa - Breakfast 6-11am. 641-325-0261.

OCTOBER 2015

2* Dayton, Ohio - National Aviation Hall of Fame 53rd Annual Enshrinement. http://www.nationalaviation.org/2015/06/annual-enshrinement-dinner-ceremony/

3* Marshalltown (MIW), Iowa - Breakfast 7-11am. 641-752-0012.

10 Tullahoma (THA), Tenn. - AOPA Fly-In at Tullahoma Regional Airport. To read more about the AOPA Fly-In go to www.midwestflyer.com/?p=8264. RSVP to attend by going to www.aopa.org/Community-and-Events/AOPA-Fly-In/2015/About

11 Poplar Grove (C77), Ill. - Pancakes, waffles, eggs, sausage, coffee, milk & juice breakfast 7am-Noon.

NOVEMBER 2015

7 Cleveland (BKL), Ohio - Pancake Breakfast and Book Sale 8:30am-1pm.

13-14 Bloomington, Ill. - Biennial Flight Instructor Refresher Clinic at Parke Hotel & Convention Center. Contact Linda Schumm 217-785-4215. Linda.Schumm@Illinois.gov

17-19 Las Vegas, Nev. - NBAA 2015 Business Aviation Convention & Exhibition. www.nbaa.com.

2016

JANUARY 2016

20-22 Sebring, Fla. - U.S. Sport Aviation Expo. www.sportaviationexpo

MARCH 2016

10-12* Nashville, Tenn. - Annual International Women in Aviation Conference at the Gaylord Opryland Resort. www.wai.org

APRIL 2016

20-22 Brainerd, Minn. - 2016 Minnesota Airports Conference at Madden's On Gull Lake (www.mnairports.org).

MAY 2016

2-4 Oshkosh, Wis. - 2016 Wisconsin Aviation Conference. For additional info contact bob@thewisconsinriver.com.

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Airport	Airport ID	Restaurant	Website
Dane County Regional Airport, Madison, Wis.	KMSN	Pat O'Malley's "Jet Room" Restaurant	www.jetroomrestaurant.com
Price County Airport, Phillips, Wis.	KPBH	Harbor View Pub & Eatery	www.harborviewonline.com
Tri County Regional Airport, Spring Green, Wis.	KLNR	Picadilly Lilly Airport Diner	www.piccadillylillydiner.com

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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.**

HANGAR FOR SALE - South Dakota - Custer County Airport (KCUT) - 60 x 60 ft., door 50 x 16 ft., insulated, heated. $65,000. Contact **605-391-7790** or **rsburton@enetis.net.**

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Minnesota Education Section Continued From Page 56

The following allegations made up a partial list of alleged careless and reckless acts:

- The altitudes for the flight varied form 10 feet AGL to 1,500 feet AGL (one wonders how this allegation can be proven with no encoding transponder).
- The Ritewing Zephyr was flown directly at someone who was forced to move out of the way for his safety (Direct testimony would prove this allegation, and if believed, could be grounds for a violation).
- The UAS was operated below treetop level over a sidewalk. (This can be proven by direct testimony and could be grounds for a violation).
- The UAS was also alleged to have been operated within 100 feet of an active heliport. (This creates a distance allegation, which could only be proven by direct testimony of a credible witness.)
- There were other allegations, but the final most relevant allegation was that the flight was conducted "for hire."

What happened to Mr. Pirker? The Administrative law judge dismissed the case stating that the UAS, first of all, was a "model aircraft," which meant that it was not a real aircraft because the FAA in its model aircraft Advisory Circular issued in 1981 (AC 91-57, June 9, 1981), treated model aircraft as if they were not real aircraft under the FARs, and therefore, FAR 91.13(a) did not apply.

The administrative law judge went so far as to say that a paper airplane presumably launched into the airspace by anyone would subject the operator of the paper airplane to the regulatory provisions of FAR Part 91, which was not the intention of the regulatory agency.

The FAA appealed the administrative law judge's decision to the National Transportation Safety Board (NTSB). NTSB rendered its decision on November 17, 2014, and specifically found that the UAS operated by Pirker was an ***"aircraft,"*** which the FAA then could prohibit the ***"operator"*** from ***"careless and/or reckless"*** operation.

The NTSB decision goes on to explain why unmanned aircraft specifically fall under the FARs, and why specifically 91.13 (a) would apply to unmanned operations. The NTSB decision concludes by stating that an "aircraft is any device used for flight in the air." It further states, "[t]his definition includes any aircraft, manned or unmanned, large or small." "The prohibition of careless and reckless operation in 91.13(a) applies with respect to the operation of any aircraft, other than those subject to parts 101 and 103."

We now have what the legal community would call "precedent." That legal precedent clearly states that a UAS/drone is to be considered an "aircraft" under the FARs. NTSB then sent the case back to the administrative law judge to determine whether the operation of the drone by Mr. Pirker was indeed "careless and reckless" under FAR 91.13(a).

Just recently, Mr. Pirker settled his case with the FAA for a payment of $1,100.00, which was conditioned specifically upon no admission of liability or wrongdoing, but paid merely to "buy his peace" and be left alone.

During the pendency of the Pirker decisions, small UAS operations began to specifically move ahead under three legal areas:

First, the FAA designated six test sites throughout the United States, one of which is located in North Dakota. These UAS test sites can operate UAS under certain parameters and guidelines for R+D purposes. The UAS operations at a test site cannot be for hire or for commercial purposes.

Second, the FAA allows public entities (universities, colleges, etc.) to apply for the operation of UAS for R+D purposes through Certificates of Authorization (COAs). These operations must be conducted for hire or commercial purposes.

Third, the FAA has allowed for the start of commercial operations by private entities under Section 333 exemptions. The motion picture industry was the first group of businesses to apply for Sections 333 exemptions, which were granted.

Northland Aerospace applied for it first Certificate of Authorization in September of 2013. The COA was approved by the FAA as applied for in April of 2014. The airspace involved in the Northland COA was all of Roseau County in northern Minnesota. The purpose of the COA was to conduct agricultural imagery research involving various grass varieties planted and grown in northern Minnesota for the turf industry. Northland Aerospace's early application for a COA and the successful operation of that COA highlights its leadership role in small, unmanned aircraft systems development and operations throughout the small UAS industry.

Today, Northland Aerospace is working on additional COAs throughout Minnesota. Northland Aerospace has also begun work on several Section 333 exemptions with industry partners for the launch of nascent commercial operations. Northland Aerospace has shown tremendous vision and innovation in the rapidly growing industry of unmanned aircraft systems. Northland's future UAS training/education, research and airspace activities will create a great benefit for its students, stakeholders and industry partners by increasing access to cutting edge UAS learning and field operations. The knowledge gained by these early UAS leadership efforts by Northland Aerospace will benefit precision agriculture, forestry, energy, water management and other public service-related needs.

Northland Aerospace invites UAS technology businesses, developers and researchers to explore new collaborative efforts in the rapidly changing UAS regulatory environment. Northland's early successful experiences in that regulatory environment will allow it to continue to lead in all areas of UAS maintenance, imagery analysis and operations in this fascinating world of new airborne creatures. Drones are beautiful.

EDITOR'S NOTE: Northland Aerospace is a collaborative partnership between Northland Community and Technical College (NCTC) of Thief River Falls, Minnesota and the Northland Aerospace Foundation (NAF) of East Grand Forks, Minnesota. NCTC is the educator and NAF helps it operate "at the speed of business." ❑

George E. Luck – GA Flight Instructor & Former Test Pilot

November 5, 1935 - June 10, 2015

by Michael J. "Mick" Kaufman

George E. Luck
Janice Chelette Photo

General aviation flight instructor and former U.S. Air Force fighter pilot and test pilot, George E. Luck, 80, was killed June 10, 2015, when the early model Beechcraft Bonanza he was giving flight instruction in lost power on takeoff from Pane Field in Everett, Washington.

Luck was an accomplished test pilot and a renowned flight instructor known throughout the U.S. He attended West Point and Georgia Institute of Technology where he studied aeronautical engineering before entering the second ever class at the U.S. Air Force Academy in Colorado Springs, Colo. After graduation, Luck enrolled in the Air Force Test Pilot School where he flew everything from fighters capable of plus-Mach 2, to bombers and tankers.

Luck flew during the Cold War, and combat in Vietnam, where in 1969, his Skyraider was shot down during a mission in Laos. Air America rescued Luck, which started a lifelong friendship with those crewmembers.

During the Cold War, Luck flew many missions in B52s out of Sawyer Air Force Base in Michigan's Upper Peninsula.

During the remainder of his Air Force career, Luck trained pilots and served at the Pentagon twice — once with the Joint Chiefs of Staff before retiring as a colonel with 25 years of service.

Luck's career continued when he went to work as an engineer and test pilot for Boeing in 1985 in Wichita, Kansas, then later in Seattle, Washington.

George Luck was also a passionate general aviation pilot and aircraft owner. He was a stockholder and flight instructor with Bonanza Baron Pilot Training, named "Pilot of the Year" by the Washington Pilots Association in 1996, and received the FAA "Wright Brothers Award" for 50 years of safe flying.

In addition to his son, Michael, of Kansas, George Luck is survived by his wife of 49 years, Carolyn. He was buried at the Air Force Academy in Colorado Springs, Colo. on July 8, 2015.

EDITOR'S NOTE: I am truly saddened with the loss of this friend and mentor, and I know that he will be flying somewhere in the life beyond. Rusty Sachs, former administrator of the National Association of Flight Instructors (NAFI), once said: "You know you have been good, when entering heaven, the Lord gives you a Cub on floats to fly. I am sure George will enjoy flying his." ❑

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