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FEBRUARY/MARCH 2022

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Thunder Bay, ON P7A8A8
CANADA

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Contents

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ON THE COVER: A "Bearhawk" aircraft owned by Heath Sneller of Annandale, Minnesota. For additional information, visit bearhawkaircraft.com/ *Brad Thornberg Photo*
(To read more about the Bearhawk go to page 7)

HEADLINES

COLUMNS

FEATURES

SECTIONS

19

21

32

40

Family & Friends of the Right Seat

by Dave Weiman

When I recall my flights over the past 50 years, I think of the people who have flown with me in the right seat who are no longer with us. My brother, Ken, for one. I will never forget his smile as we took off from Minneapolis Crystal Airport and flew east over the St. Croix River which borders Minnesota and Wisconsin. Ken loved to fly, whether with me in our Cessna 182, or with the airlines, where he worked for several years between serving in the military and going to college. It was Ken – 4 years my senior – who bought my ticket to fly from O'Hare to Minneapolis following his wedding. That was the first time I had ever flown, and I will never forget it, nor my brother.

My friend, Walt, joined me on a fishing trip to Canada once, "a trip of a lifetime," he said, and it was for him due to a lingering illness. I remember he sang Bobby McFerrin's song, "Don't Worry, Be Happy" as we flew home with a good tailwind, and yes, I joined Walt in singing the song.

Harold, a much beloved neighbor, farmer, and town official who was a medic with the Flying Tigers during World War II, once accompanied me on a cross-country flight from Madison, Wisconsin to Appleton, Minnesota. Unfortunately, we encountered fog en route over the Mankato, Minnesota airport and had to turn back, but Harold never forgot that flight, as the fog amazingly only covered half of the runway.

Another neighbor, Jim, owned a trucking company and loved to go flying with me, whether on a mission or just for fun! Once on a flight from Madison, Wisconsin to Muscatine, Iowa to check out some heavy equipment Jim wanted to buy, we arrived back in Madison at sunset, and seeing the city lights from the right seat of the cockpit was breathtaking for him. Another time, we flew up towards the Wisconsin Dells and I taught him how to make coordinated turns about a point which he did flawlessly! But after what seemed like a dozen 360s, I suggested we head for home, so Jim leveled off and I assumed control of the airplane. Sadly, Jim was killed in a tractor rollover accident before I had a chance to get him signed up to take flying lessons. He would have made a great pilot!

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Editor/Publisher
Dave Weiman

Production Director
Peggy Weiman

Photo Journalists
Chris Bildilli, Brad Thornberg

Contributing Editors & Photographers

Randy Arneson	Kyle Lewis
Mark Baker	Junior Lindsay
Jim Bildilli	Richard Morey
Dr. Bill Blank	Yasmina Platt
John B. Dalton	Andrew Ratchford
Hal Davis	Gregory J Reigel
Aaron Gruen	Pete Schoeninger
Debra Jeans	Julie Summers Walker
Michael Kaufman	Bob Worthington

ADVERTISING
PHONE: 608-772-1776
EMAIL:
dave@midwestflyer.com

EDITORIAL
PHONE: 608-772-1776
EMAIL:
dave@midwestflyer.com

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dave@midwestflyer.com
MIDWEST FLYER MAGAZINE
6031 Lawry Court
Oregon, WI 53575-2617 USA
www.midwestflyer.com

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Peggy's Uncle Marvin, a farmer from western Minnesota, was so excited when I invited him to go flying the first time, that from then on, every time we would fly in, he would casually hint that he was available to go flying again, which we often did. The instruments may have intrigued him, but seeing his land from the air gave Marvin the most enjoyment.

A memorable family trip was to Madeline Island, Wisconsin, with Peggy's parents in a brand-new Cessna 172RG. On the way home, we broke through the clouds and got on top, which was a beautiful experience for them, especially for my mother-in-law, Ella, who had never flown before, nor afterwards. Lloyd, my father-in-law, flew in the right seat, and was intrigued with how fast we could get from point A to point B, and never forgot seeing his farm from the air. A sergeant in the Army during World War II, the leather jacket he wore as an infantryman flying in gliders is now at the Kelch Aviation Museum in Brodhead, Wisconsin.

What inspired me to write this article was our son-in-law's grandfather, Harlan, who passed away recently at age 91. Our son-in-law came to me about 7 years ago and asked if I would take his grandpa flying so he could see his farm from the air. Harlan hadn't flown since he served in the military during the Korean War, so spending the afternoon flying, followed by lunch at a local airport restaurant, meant a great deal to him.

Other rightseaters who are no longer with us are farmers Dick and Ron. They were equally excited about flying!

Those of us fortunate to fly airplanes tend to forget what an amazing experience it is for others just to ride along in the right seat. Share the experience whenever you can! ❑

Read More About The Plane On The Cover: A "Bearhawk" aircraft owned by Heath Sneller of Annandale, Minnesota. The experimental homebuilt is powered by a Lycoming O-540-J1A5D 235 hp engine. According to Bearhawk Aircraft, the aircraft has cockpit dimensions slightly larger than a Cessna 172 and a large cargo area with a huge door for access. With a useful load that ranges from 1100-1500 lbs. depending on the engine and builder finish out, the aircraft can carry four full-sized adults, and the standard 50-gallon main fuel tank can be filled, with room leftover for 250 lbs. of cargo. There is a wide choice of engines available from 150 to 260 hp, and performance varies from 125-160 mph, with a 1000-2000 fpm climb, regardless of the engine. The aircraft's take-off and climb performance makes it an ideal airplane for all types of applications, including floats. Over 1400 sets of plans have been sold to date with over 100 aircraft now flying. It was recently announced that Bearhawk Aircraft now has an Advanced Quick Build Kit for the Model B four-place and Model 5 six-place models. For additional information, visit bearhawkaircraft.com/

My Policy Says What?!: Understanding An Aircraft Insurance Policy

by Gregory J. Reigel, Esq.

Greg Reigel

Many states require that owners and/or operators of aircraft have insurance covering their aircraft and operations. At a minimum, states usually require third-party liability coverage. This applies to injuries to third-persons that result from operation of your aircraft. Additionally, if your aircraft is pledged as collateral for financing, the lender will require that you have hull coverage and/or replacement value insurance to insure the value of the aircraft collateral.

Obtaining the Policy

So, how do you obtain aircraft insurance? Typically, you apply for aircraft insurance through an insurance agent or broker who represents an insurance company or companies that provide aircraft insurance policies. The insurance company then reviews the application and does any additional investigation necessary for it to assess its risk in providing you with insurance for your aircraft or operations. Its risk is the likelihood that it may have to pay out on a claim against your policy.

In exchange for its acceptance of risk, the insurance company charges you a premium. The amount of that premium is a direct product of the amount of risk that the insurance company is assuming by extending coverage to your aircraft or operation. The greater the risk, the more expensive the insurance coverage will be. In some cases, the insurance company may not be willing to accept a particular risk for any price.

Factors that affect the underwriting decision include type of aircraft, pilot qualifications (e.g., total time, time in type, pilot certificates/ratings), nature of the operation (e.g., pleasure, business, Part 91, or Part 135) and base of operations. General aviation policies can include non-commercial pleasure and business use under FAR Part 91 or commercial use under FAR Part 135.

Reading the Policy

When an aviation insurance policy is issued, it represents a contract between you and your insurance company. As long as you comply with all of the terms and requirements of the policy, your insurance company will provide you with coverage. If you fail to comply and a claim arises, you may find yourself without coverage.

But what does the aircraft insurance policy actually say? Well, as a practical matter, it is quite common that pilots and operators do not read their policies. Sure, they may review the declaration page to confirm that the correct parties are named and that the appropriate coverage limits are in place, but often times that is as far as it goes. Sometimes an owner or operator may even ask his or her agent to explain some of the policy's terms.

Unfortunately, the policy contains quite a bit more information of which the pilot or operator needs to be aware of to ensure that he or she complies with the terms of the policy. A thorough review of the policy is both prudent and recommended.

This review should begin with the Data Page or Declaration Page. First, confirm that the aircraft is correctly identified and that the appropriate owner and any additional insured parties are included. Also read the coverage limits to make sure that you have the limits for which you are paying.

Aircraft Damage Coverage

The typical aircraft insurance policy will include both aircraft damage coverage, as well as aircraft liability coverage. The aircraft damage coverage applies when your aircraft sustains damage (e.g., bent metal, broken windows, etc.). This coverage comes in two flavors: In-flight/In-motion and Not-in-flight/Not-in-motion.

As you may have guessed, in the first instance your aircraft will be insured for damages it sustains while it is in use: moving under the power of its own engine, whether taxiing or flying. In the latter instance, your aircraft will only be insured while it is parked on the ramp or in the hangar. This coverage is less expensive because it presents far less exposure to the insurance company. It will only have to pay a claim if something happens to your aircraft while it is standing still and not in use. An aircraft owner may want this limited coverage when the aircraft is going to be stored and unused for a period of time.

It is also possible to purchase "all risk ground and flight" coverage. This coverage protects you whether the aircraft is moving or not. However, a policy with this coverage will likely be more expensive than a policy that is either In-flight/In-motion or Not-in-flight/Not-in-motion.

The aircraft damage coverage provides for transportation of the aircraft to and from the location at which the repairs are made, any related storage charges and the actual repair of the aircraft. However, most policies will also exclude coverage for damage sustained by your aircraft as a result

of governmental seizure, resulting from repossession or enforcement of a lien against your aircraft or damage that is due to ordinary wear and tear, deterioration, or age.

Assuming the damage to your aircraft is covered, you should read your policy language to determine whether it contains any specific restrictions or requirements relating to processing of your claim, who performs the repairs, where they are performed and even how they are to be performed. Simply because you have insurance coverage, this does not mean that you have carte blanche for having your aircraft repaired.

Aircraft Liability Coverage

Aircraft liability coverage protects you from liability or responsibility to third-persons for damages they may suffer resulting from the operation of your aircraft. The coverage requires that the insurance company both indemnify and defend you against such claims. Indemnification means that if you are responsible for the damage to a third-person, the insurance company will pay the third-person directly, up to the policy limits, the amount for which you are responsible.

The duty to defend means that the insurance company will pay for your defense costs if you are sued by a third-person alleging that your operation of your aircraft caused damage. The insurance company will hire an attorney, usually experienced in aviation law, to represent you and defend against the claims. Given the complexity and cost of aviation litigation, this benefit alone can be worth a substantial amount of money and may even exceed the amount of money actually paid by the insurance company to indemnify you.

Your policy will always have a maximum limit for liability coverage that can be either "sub-limit" or "smooth" coverage. An example of sub-limit coverage is a policy that provides for $1,000,000 per occurrence and $200,000 per passenger. This does not mean that you have $1,000,000 to pay all claims. Rather, the insurance company will pay a maximum of $1,000,000 per occurrence, but will only pay each passenger up to a maximum of $200,000. Thus, for an accident in which only one passenger is injured, the insurance company's maximum exposure is $200,000, exclusive of any amounts it spends on your defense.

On the other hand, smooth limit coverage of $1,000,000 per occurrence will provide up to $1,000,000 of coverage regardless of the number of passengers. This coverage presents a greater risk to the insurance company since it could have to pay the full policy limits, even if only one person is injured. As a result, greater risk means that the premium for this coverage is going to be more expensive than the premium for a policy containing sub-limits.

Policy Definitions

When you read an aircraft insurance policy, you need to pay special attention to the definitions section. Many of the terms used in the policy have specific definitions that are different from a dictionary definition or common usage for that word.

Examples include the definition of "accident" which is often defined as a "sudden and unexpected event resulting in bodily injury, death or property damage." This is different than the definition of accident contained in NTSB's Rule 830 and is also more specific than a dictionary or common usage definition of the word.

Another example is the definition of "commercial operations" or "commercial purpose." An insurance policy's definition of this term is usually different from, and in some cases may be broader than, the FAA's or IRS's definition or a dictionary definition.

These are just two examples. However, remember that the aircraft insurance policy is a contract between you and the insurance company. Both you and the insurance company agreed to the policy definitions when you paid the premium and the insurance company issued the policy. As a result, both you and the insurance company will be bound by those definitions.

Coverage Exclusions

Your aircraft policy will also contain exclusions. Exclusions define circumstances in which the insurance company will

not provide you with coverage for operation of your aircraft. An aircraft insurance policy usually includes both specific and general exclusions.

Specific exclusions arise when you assume additional liability (e.g., you sign a contract that indemnifies or holds someone else harmless for damage they cause), damage occurs to your own property or injury occurs to members of your family. The policy may also specifically exclude coverage for your own medical expenses or for your operation of an aircraft that you do not own.

Depending upon the state in which the aircraft is based, general exclusions can result in denial of coverage regardless of whether they directly caused a particular claim. These exclusions will preclude coverage for operation of your aircraft in commercial operations (as defined by the policy, not necessarily the FAA or IRS), using your aircraft to commit unlawful acts, damage caused by war or terrorism or if your aircraft is operated by a pilot who is not named as an insured on the policy and does not meet the open pilot qualifications.

Who Is Covered?

Assuming no exclusions are applicable, the policy will provide coverage to each person named as an insured under the policy and to pilots who meet the "open pilot" requirements. As a threshold matter, each pilot operating the aircraft, whether named insured or qualifying under the open pilot provision, will need to possess the appropriate pilot and medical certificates and meet all currency requirements for operation of your aircraft.

The open pilot provision extends the coverage of your aircraft insurance policy to a pilot operating your aircraft who is not a named insured on your policy. The provision sets out total time, time in type and training requirements that the unnamed pilot must meet in order for the pilot to be covered under the policy. Generally, if those requirements are met and the pilot is operating your aircraft with your consent, your insurance coverage should extend to that pilot.

What You Can Do

The complexities of aircraft insurance can seem daunting. But what can you do to protect yourself? The first, and one of the most important things you can do, is to read your insurance policy. If you have questions regarding terms or coverage, talk to your insurance agent or contact an aviation attorney who is familiar with aviation insurance matters.

Once you understand the policy, make sure you abide by the policy and comply with its terms and requirements. It makes little sense to spend substantial amounts of money on insurance premiums and then place your coverage in jeopardy by doing or allowing something your policy prohibits.

Next, document your operations. What do I mean by that? Simple: Keep good records. Make sure your pilot logbook is up-to-date and current. If you take your pilot logbook with you when you fly, make copies of the pages containing your satisfaction of the FAR currency requirements and keep the copies in a safe place.

This way, if something happens to your pilot logbook and your insurance company or the FAA later question your currency, you will have back-up proof that you were current for your flight. Although not as critical, you may also want to keep a photocopy of your pilot certificate(s) along with your logbook records.

Finally, you should use this same procedure for your aircraft and engine logbooks. If you must take them with you in the airplane, make copies and keep them in a safe place. In this instance, you may want to make a full set of copies of the logbook entries, rather than just the pages showing the aircraft's current airworthiness. An aircraft that contains logbook entries for all of the work ever performed on the aircraft is worth more to a potential purchaser than if those records are incomplete or missing.

These simple steps can prevent potentially costly disputes down the road. It's been said that the best insurance is the insurance you never have to use. That may be, but if you take these steps, you should have greater peace of mind that your insurance will be there if you need it.

EDITOR'S NOTE: Greg Reigel is an attorney with Shackelford, Melton, McKinley & Norton, LLP, and represents clients throughout the country in aviation and business law matters. He has more than two decades of experience working with airlines, charter companies, fixed base operators, airports, repair stations, pilots, mechanics, and other aviation businesses in aircraft purchase and sales transactions, regulatory compliance including hazmat and drug and alcohol testing, contract negotiations, airport grant assurances, airport leasing, aircraft-related agreements, wet leasing, dry leasing, and FAA certificate and civil penalty actions. For assistance, call 214-780-1482, email: greigel@shackelford.law, or Twitter @ReigelLaw (www.shackelford.law). ❑

Making That Flight Safe As A Superior Pilot!

by Michael J. "Mick" Kaufman

Michael Kaufman

"A superior pilot is one who uses his superior knowledge to avoid situations that may require his superior skills!" A very true statement from an unknown author.

As a flight instructor teaching new pilots, and experienced pilots, new ratings, I use a syllabus that I have developed over the years. The FAA has provided guides for instructors on what is needed to be taught and what will be addressed on the check-ride. We see topics like CFIT (controlled flight into terrain), ADM (aeronautical decision making), human factors and others. Some pilots tend to brush these subjects off as not important; however, these may be some of the most important topics in pilot training.

As a new instrument-rated pilot, there is very little superior knowledge or superior skills to back you up after making a bad decision, so we must learn as much as we can from others.

After completing instrument training and passing the instrument check-ride, pilots should know how to fly the airplane by sole reference to instruments, get established and fly an approach, and communicate with air traffic control (ATC). New instrument-rated pilots are lacking the skills to analyze the weather, the route, and their skills in handling an in-flight emergency, if one develops. I have had to declare an emergency seven times. (Read my column entitled "Using the E Word" in the August/September 2020 issue of *Midwest Flyer Magazine*. https://midwestflyer.com/?p=13472

When an emergency arises – and they do happen -- do you, as pilot-in-command, have the knowledge to analyze what resources you have lost, and which ones you still have at your disposal to handle the situation? It is always better to have a plan for the unexpected, which in many cases can be done on the ground before departing.

To become a **Superior Pilot,** it takes many hours of flying, making many decisions (hopefully, most of them made correctly). But I must admit, I have made my share of bad decisions, but they have led to better decisions in similar situations in the future. Sometimes pilots do not get a second chance, so it is best to learn as much as you can from the mistakes of others.

In an FAA publication, it says flight instructors can teach good decision-making. This is not totally true, but flight instructors can **influence** good decision-making.

Scenario #1: I was returning home to Lone Rock, Wisconsin, on a flight from El Salvador, Central America in my Bonanza on February 18, 2000. It was a long flight and after clearing U.S. Customs in Key West, Florida, and checking the weather, I decided to continue my flight.

I had a reliable autopilot and an instrument-rated copilot onboard. The weather was forecasted to be good, and was as forecasted, until I called Flight Service passing Rockford, Illinois for an update on Lone Rock. The weather, as I recall, was 1500 overcast and 2 miles in light snow. It was after 1:00 a.m., and I wanted to sleep in my own bed. The weather at Madison, Wisconsin, just 37 miles to the east, was clear and visibility was 10. I decided on doing the VOR A approach to Lone Rock. I picked up so much ice on the approach that a missed approach was not an option. Bad decision (get-home-itis).

As luck would have it, I broke out at about 1500 feet, and landed fast without flaps. Fortunately, the runway was long. Lesson learned!

Scenario #2: Several years ago, I did an instrument rating for a gentleman in Watertown, Wisconsin. The pilot had a Piper Arrow and owned a small business but was financially strapped as the instrument rating cost about 10K. He received his rating and did a reasonably good job during his training. A year or more later, he took his girlfriend, his son, and his son's girlfriend, to Florida in the Arrow for a vacation. His son proposed to his girlfriend at Disney World…a happy time for all. On the flight back to Wisconsin, the weather was low IFR, but the pilot had gained some good IFR experience since his training, so that was not a factor. En route, the pilot shot an approach to an airport in southern Illinois and that went well. He needed fuel, but didn't like the price, so he filed an IFR flight plan to a nearby airport with lower fuel prices. On the approach to that airport, the airplane ran out of gas. Bad decision. No lesson learned here…four fatalities.

Scenario #3: My wife and I have a lake home in Eagle River, Wisconsin and often fly our Bonanza there for weekend getaways. I always look at the long-range weather forecast as we prefer to fly roundtrip – a one-hour flight each way versa a five-hour car ride. We were planning a late Sunday afternoon flight home, as the ride is usually smoother later in the day. I checked weather Sunday morning and again just before the 10-minute drive to the airport. After the pre-flight, we taxied to the fuel pumps from the hangar and filled the main tanks. This was to be a perfect VFR flight home, however, after the runup and completing the checklist, I decided to do a last-minute weather check.

I have Sirius XM weather, so I can get the weather on the ground. I did not believe my eyes as I saw a line of weather starting to form an east/west line along our route going through Wausau, Wisconsin. We decided to takeoff but watched the weather as we headed south. About 20 miles into the flight near Rhinelander, the line of weather had developed in intensity. We made a 180-degree turn back to Eagle River and put the Bonanza back in the hangar. We spent another night at the lake and flew home the next morning with no incident or weather. Good decision, learned from previous experiences. Have reliable weather available in the cockpit, and remember to check it even if you don't expect to see any problems.

Scenario #4: During the summer of 2021, I did an instrument rating for a pilot from Madison, Wisconsin in Eagle River. During a drive to the airport one morning, we spotted a sports car with a for sale sign in the window. We stopped to check it out, and my student bought it (before I could). After his training, I offered to fly him back to Eagle River to pick it up. As in all my preflight planning, I checked the weather and there was a chance of thunderstorms that day. I departed from my home airport to pick up my passenger at Middleton Municipal Airport - Morey Field. All went as planned, as we headed to Eagle River.

Along the route, we started to see weather developing on my Sirius XM weather display. At this point, it looked as if a deviation to the west would solve the problem, and that is what we did. As we approached the point where we planned to fly direct to Eagle River, weather had developed along our route. I thought of flying northwest and approach our destination from the north, only to see that the weather had closed in all around us. By looking at the intensity of the weather, I suspected hail. There was only one option…get on the ground, and by luck, the Merrill, Wisconsin airport was less than 5 miles away. We landed and got the airplane in a hangar just in the nick of time, thanks to the quick efforts of the airport manager and his staff. As storms continued, we ended up driving the courtesy car the rest of the way to Eagle River and came back the next day to get the Bonanza. Another good decision!

As a recap of this article, I hope you can relate to some of your own experiences on your way to becoming a **Superior Pilot**. We can never say we know it all. **Superior Pilots** continue to learn as well. Hopefully, we can see that aeronautical decision making, along with human factors, has an important role in our flight planning, whether flying VFR or IFR.

It is sad to see bad decisions as in Scenario #2. That decision cost lives, just to try and save a few dollars. I have seen that situation happen time and time again. It might be over fuel prices, the cost and inconvenience of having to stay in a hotel room for one or maybe two additional nights, or the expense of getting a good airplane checkout or recurrent training.

Keep learning, analyze your preflight planning well, get good recurrent training, and continue to read *Midwest Flyer Magazine*. Only then will you become a **Superior Pilot**.

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. He conducts pilot clinics and specialized instruction throughout the U.S. in many makes and models of aircraft, which are equipped with a variety of avionics. Mick is based in Richland Center (93C) and Eagle River, Wisconsin (KEGV). He was named "FAA's Safety Team Representative of the Year" for Wisconsin in 2008. Readers are encouraged to email questions to **captmick@me.com** or call **817-988-0174**.

Crosswind Landings, Theory & Practice

by Richard Morey

Richard Morey

You never forget your first solo. Mine happened nearly 48 years ago, March 24, 1974. I remember the day quite clearly. It was my 16th birthday, it was below zero, and the wind was howling from the north. In those days, decades prior to the City of Middleton acquiring the airport and improving it, Morey Airport's one paved runway, 13-31, was just under 3,000 feet long and about 38 feet wide. In the spring, the runway was generally surrounded by mud. As you can imagine holding centerline on landing or takeoff was very important.

I remember driving out to the airport with my father, Field Morey, who was my instructor. We had started lessons in February with the goal of me soloing on my 16th birthday. The strong winds had me apprehensive. I don't remember pre-flighting our old C-150 Aerobat, N8340M. I do remember going around the patch three times with dad. As I recall, my landings were not good. After three landings, dad told me to taxi into the ramp. I was devastated, as I was sure I was not going to solo that day. Instead of telling me to shut it down, dad exited the aircraft. "Do three full-stop landings, then tie it down," he said. I could not believe it! I went from making poor landings with dad onboard, to wonderful landings on my own, despite a 70-degree crosswind and gusts up to 20 knots. Dad had faith in my abilities, more so than I did.

In reviewing my logbook, I can understand why my father had confidence. I soloed on my 10th lesson and had all of 7 hours and 25 minutes of dual. This was not all that unusual for the time. Before the FAA sensibly added the current requirements, solos generally happened around 10 hours. Of those 10 lessons, five had been focused on slips and crosswind landings. Dad knew I could hold centerline on landings during strong crosswinds.

I do not wish to be controversial, but it is my experience that pilots who learn at airports with multiple paved runways seldom truly have a grasp of crosswind technique. Pilots who learn at airports with only one paved runway learn crosswind landings simply because they must. Another observation is that the narrower the runway pilots train on, the better they are at crosswind landings as well.

Aviation skills are perishable to a greater extent than most skills. We tend not to practice what we have difficulty with. This often results in pilots losing proficiency in the very skills they need to be safe; crosswind landings are no exception!

Many pilots look at the windsock and opt not to fly that day. Knowing our limits is essential for safe flying, however increasing skill level and expanding our limits is something every pilot should be striving for.

How can we gain proficiency on crosswind landings? If you are like most pilots, you learned to initiate a "slip" once the aircraft is aligned with the runway on final, slip the aircraft throughout the glide, round off, flare, and into the landing. This is a basic technique that has the advantage of giving the student more time to be in a slip, and to practice offsetting drift through varying wind strength. Wind strength tends to diminish as altitude is reduced requiring less bank angle at lower altitudes.

The downside to this technique is also its strength; you spend a long time in a slip, which is uncoordinated flight. Uncoordinated flight is uncomfortable, both for the pilot and very much so for non-pilot passengers. There are options that make crosswind landings both more comfortable, and in my estimation, easier.

First, let us define a slip, or more accurately a "side slip," a "crab," and the reason they are used in crosswind landings.

A side slip is an uncoordinated state of flight where the pilot banks the aircraft and keeps the nose straight with opposite rudder. This results in the aircraft slipping through the air sideways in the direction of the bank. In a crosswind landing, the pilot sets the bank angle to the extent necessary to offset the wind drift. We use a slip to keep the nose aligned with the aircraft's track. This is essential on touchdown, but not necessary at any other time during the pattern or landing.

A crab is simply flying with the nose slightly into the crosswind in order for the aircraft to track a certain path.

We all remember flying ground reference maneuvers as a private pilot or figuring out wind drift angles for our solo cross-countries using the trusty E6B for our dead reckoning navigation. We can use a crab on final to track the centerline of the runway on which we are landing.

Slips can be uncomfortable to fly, but necessary for a crosswind landing. How do we get comfortable flying slips? We practice them! I use "Dutch Rolls" as a means to practice slips. To do a Dutch Roll as I teach them, you pick a reference spot in the sky near the horizon. Distinctive clouds, smokestacks or a tall radio antenna are options for reference points. Fly directly at the reference and slowly bank the aircraft while adding opposite rudder to keep the reference spot in the same place on the windscreen as you started. This is harder than it sounds. Start out by slowly banking to no more than 15 degrees one way, then slowly level the wings, and then try a bank in the opposite direction, all the while keeping the nose straight with rudder. Do not be discouraged if your first attempts have you all over the sky laterally. Dutch Rolls teach that in uncoordinated flight, the rudder is there to keep the nose where you want it to be, and that the ailerons are there to bank the aircraft. We are used to coordinated flight where rudder and aileron act in harmony. Uncoordinated flight has rudder and aileron working in opposition to one another to achieve the result you wish. You will be surprised at the amount of rudder pressure needed to keep the nose straight, even with small to moderate bank. Eventually you will be able to keep the nose straight while slowly varying the bank angle. Being comfortable with Dutch Rolls translates into comfort in slips and their variable nature during gusty crosswind landings.

Dragging the runway is another practice that will help pilots get comfortable with slips. This is not a practice I recommend doing alone, but rather it is best done with a flight instructor onboard. Dragging the runway means flying the length of the runway in a slip, ideally just above the runway. The flight instructor handles the throttle to make sure the aircraft stays airborne which allows the student to focus on the slip. Looking long through the horizon is required to allow the pilot to see the lateral drift caused by the crosswind. Looking short, as in focusing on the centerline, minimizes the ability to perceive drift and sink.

Crabbing the aircraft on final and setting up a slip on short final, round off or flare is a much more comfortable way to make a crosswind landing. I also feel that it allows crosswind landings in stronger winds. The technique requires being competent in going from crab to slip. This is easily practiced.

Set up on a longer-than-normal final approach and crab the aircraft into the wind. With rudder, pull the aircraft nose in alignment with the runway extended centerline. Bank the aircraft into the wind to the extent required to hold centerline, while adding enough opposite rudder to keep the nose in alignment. Once the slip is established, release rudder and go back to a crab. You can often get three or four crab-to-slip practices in prior to landing or going around.

The "crab-to-slip" transition can also be practiced at altitude much as Dutch Rolls are. Start with the aircraft nose offset from your reference point. Pull the aircraft nose to the reference point with rudder, then start banking the aircraft as you would for a Dutch Roll. I suggest that my students transition from crab-to-slip on short final. As they get more comfortable with the transition, I suggest they delay until round-off or even flare.

The landing is not over until you tie the aircraft down. This is often said of tailwheel aircraft but applies equally to tricycle gear aircraft, especially in a crosswind. The goal is to touch down in a slip. This means that the upwind main wheel should touch down first, followed by the downwind main wheel and then the nose wheel. Follow through is imperative. The pilot must, upon touch down, smoothly and steadily continue to apply upwind aileron. This keeps weight on the upwind wheel, allowing the pilot to continue to hold centerline. It only takes one gust that blows or almost blows the aircraft off the runway to make a pilot a believer in follow through! If the downwind wheel lifts off the pavement during follow through, it simply means that aileron was applied more vigorously than required.

In summary, crosswind landing skills are very perishable. Due to a number of factors, crosswind technique may not have been fully established in a pilot's training, and by their nature, tend not to be practiced to the extent necessary to maintain proficiency. By practicing both at altitude and in the pattern, it is fairly straightforward to develop competence in slips, and in crab-to-slip transitions. By practicing crosswind landing techniques, a pilot can both increase their skill set and become safer and more proficient with crosswind conditions that would otherwise have kept them on the ground.

EDITOR'S NOTE: Richard Morey was born into an aviation family. He is the third generation to operate the family FBO and flight school, Morey Airplane Company at Middleton Municipal Airport – Morey Field (C29). Among Richard's diverse roles include charter pilot, flight instructor, and airport manager. He holds an ATP, CFII, MEII, and is an Airframe and Powerplant Mechanic (A&P) with Inspection Authorization (IA). Richard has been an active flight instructor since 1991 with over 15,000 hours instructing, and almost 19,000 hours total time. Of his many roles, flight instruction is by far his favorite! Comments are welcomed via email at **Rich@moreyairport.com** or by telephone at **608-836-1711**. **(www.MoreyAirport.com).**

DISCLAIMER: The information contained in this column is the expressed opinion of the author only, and readers are advised to seek the advice of their personal flight instructor and others, and refer to the Federal Aviation Regulations, FAA Aeronautical Information Manual, and instructional materials before attempting any procedures discussed herein. ❑

Can you carry a gun in your airplane?

by Bob Worthington

Bob Worthington

Can one carry a gun in a private aircraft? The correct answer is maybe, sometimes, it depends. This confusing response is because of the multiple jurisdictions that control the possession and usage of firearms in the U.S. For the purpose of this article, my focus will be on "handguns…" pistols and revolvers. But first a caveat about my viewpoint on this question.

As a general aviation pilot, I often had a pistol with me in my airplane during flights. Why? Two reasons. First, I live in the southwest and wherever I flew, I would have to cross expansive wild terrain, deserts, mountains, and forests. So, I carried for survival reasons. Secondly, for self-protection when at my destination, primarily where I was staying. Let me explain.

I have owned and used firearms for around 75 years. I have carried as a combat Marine, a police officer, and an Army infantry officer. Additionally, I once was a full-time professional competitive Bullseye pistol shooter (with the competition certification of Master), as well as a National Rifle Association (NRA) pistol, rifle, and shotgun coach. My point being, I am an expert with handguns, as a surgeon is an expert with a scalpel, a dentist with a drill, and a carpenter with a saw and hammer.

If you are not experienced using a handgun, don't fly with one. Now, assuming you are experienced with a handgun and safety is a primary concern, let me continue with the question: can you carry a pistol in your general aviation aircraft?

Suppose you plan a flight from Minneapolis to Kansas City, Missouri and you have a handgun in your airplane. What laws apply to allow you to depart one airport, fly over three states, and land in another airport? First, the Bureau of Alcohol, Tobacco, Firearms, and Explosives (ATF) defines which weapons are legal to possess. Each state you fly over has its own firearms laws. Each airport also has laws regarding the possession of firearms (and some airports come under the Transportation Security Administration (TSA), Department of Homeland Security. So, you depart in Minnesota, with a filed destination in Missouri. But what happens if you run into bad weather, run low on fuel, or encounter another situation requiring you to land in Iowa, enroute? More state, local, and airport gun laws to comply with. Now you can understand why flying (legally) with a handgun can be quite complicated.

Also, not everyone may possess a firearm. Federal law prohibits convicted felons from possessing a firearm (see the Gun Control Act of 1968 for more information on who cannot have firearms). State and local laws may also have restrictions as to who may possess firearms (such as age restrictions) and which weapons are legal and illegal. One should contact their state agency that controls firearms possession in their state for details on the laws.

Federal Aviation Regulations (FARs) regarding firearms in aircraft are not clear (at least not in my mind). For example, FAR 135.119 (Prohibition against carriage of weapons, referring to commuter and on-demand operations) states no person may carry on or in an aircraft operated by a certificate holder a deadly or dangerous weapon (which I presume includes pistols) with some exceptions, such as local, state, or federal employees authorized to carry firearms. Then the regulation states the certificate holder may authorize others to possess a weapon onboard.

FAR Part 91 implies regulations for general aviation operations. Nowhere in this section of regulations can I locate any rule prohibiting a person in a private aircraft from possessing a weapon in flight. But there are other laws that may impact on this privilege. The type of weapon (a fully automatic rifle) or the purpose of transporting a weapon for sale in your plane (inter-state commerce laws on selling a firearm) are subject to other federal laws.

Assuming your handgun is legal by federal law and the purpose is for use in self-protection, survival, sports, or hunting, what other regulations may regulate what you do? Now we look at where you depart, where you will fly, and where you will land. Each state has its own rules and regulations concerning the possession and usage of firearms.

Suppose you plan to fly from Madison, Wisconsin to Owensboro, Kentucky. Assume you have a concealed carry permit valid in both Wisconsin and Kentucky. You must fly over Illinois, but since you don't intend to stop there, you know you are legally safe upon departing and landing. But what happens if you encounter engine trouble or harsh weather over Rockford or Bloomington, Illinois? If you must land, are you legal to carry in Illinois?

Who controls the possession of handguns at an airport? That depends on the airport. Small airports (without commercial carriers) may come under the authority of the municipality or county which operates the airport, or perhaps only the state. For example, in my state of New Mexico, municipalities and counties cannot have firearms restrictions exceeding state law. New Mexico law allows residents to carry weapons in their personal vehicles (motorcycles, cars, trucks, and airplanes). So, without any special firearm license or certificate, I can take my pistol from my home to my airplane (parked at the Las Cruces International Airport, KLRU) and fly to Lordsburg Municipal Airport (KLSB) within the state of

New Mexico and not violate any firearms laws.

But if I fly from Las Cruces International Airport to Albuquerque International Sunport (KABQ), I must be careful. Airports with commercial air carriers have both sterile areas and non-sterile areas. Sterile areas are that portion of an airport with commercial traffic that provides access to people boarding or exiting commercial aircraft. In most cases enforcement of sterile areas is done by personnel of the Transportation Security Administration. TSA is responsible for the security of our traveling public. Some airports have private contractors for security, but they must be approved by TSA. Firearms are prohibited in sterile areas (except by authorized personnel).

The non-sterile areas, such as FBOs and GA parking areas, though, are governed by municipality and state firearms laws. One word of caution… If a business posts a sign prohibiting weapons inside their building, if you enter the business, armed, and you are asked to leave but don't, you can be arrested for trespassing. However, I have never seen this sign at an FBO. So, if you land your private aircraft at an airport with commercial air service, avoid sterile areas!

State firearms laws can be extensive and at times confusing. In New Mexico, one can carry a loaded, concealed weapon in their car. While New Mexico is an open carry state (one, over 19, may possess a weapon on their person if it is visible), there are places where a firearm is prohibited such as state parks, public schools, or liquor bars. Yet a person may have a gun in a car on school property, which is not the case in many states.

Essentially, to be completely law-abiding regarding carrying a pistol in your airplane, you must understand and comply with all federal, state, and local firearms laws applying to where you depart, fly over, and land. How you transport your weapon may be immaterial. Having your unloaded handgun in a locked box, or in your pocket, loaded, may or may not be legal. What is legal depends on where you are (state, county, or city).

If a pilot was to depart an airport in Ohio (an open carry state) with the destination in Maine (no permit required for concealed carry) and was forced to land in New Jersey or New York, the pilot could be in violation of serious firearms laws.

Here is an example of what a pilot could do before a flight with a firearm, that I did one day. I planned a flight departing Las Cruces (KLRU) for a short flight to Dona Ana County International Jetport Airport (KDNA) in Santa Teresa, New Mexico. Firearms laws in New Mexico come under the authority of the New Mexico Department of Public Safety, which is divided into two divisions, law enforcement (State Police) and technical and administrative.

First, I called the local State Police office and inquired if there were any state laws regarding firearms at New Mexico airports. I was told an expert on the subject would call me back (which she did). I learned there were no specific regulations regarding firearms on New Mexico airports, but airports would come under state laws and the municipality or county owning or operating the airport.

Next, I called the manager of KLRU and asked what firearms laws were in effect at the airport. He replied only the state firearms laws. So, I could drive on the airport (not having any commercial passenger service, there are no sterile areas) with a gun in my car, load it into my plane and depart. Then I called the manager at KDNA and asked if there were any restrictions on me landing there with a pistol in my plane. I was told compliance with state firearms laws was the only requirement.

Echoing this procedure allows you to understand any firearms restrictions when departing and landing. This does not cover unplanned landings along the way, however. To be 100 percent in compliance with gun laws anywhere you fly over, obtain a concealed carry permit for every state. If there is a state you cannot obtain a concealed carry permit, either stay away or leave your pistol at home.

One additional suggestion…check what you were told by reviewing a book on state gun laws to ensure you are not violating any of them.

When I carried a pistol in my plane, it was in a small weapons pouch, unloaded, and in my duffle bag. I was never searched by any law enforcement types. I also had a concealed carry permit, valid in most states I flew over or in. In some states, illegal possession of a firearm can lead to jail time. So, understand what laws apply to your flights and act accordingly.

While this article specifically addresses carrying and

transporting handguns in general aviation aircraft, we should note that unloaded handguns may be transported by commercial air carriers in checked baggage. Each airline has specific requirements for the container used to transport a handgun. See Title 49 CFR Part 1540.111 for details.

References:

Bureau of Alcohol, Tobacco, Firearms, and Explosives Regulations

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Federal Aviation Regulations

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State Firearms Laws: Wikipedia or any books on the subject.

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EDITOR'S NOTE: Pilot, Viet Nam veteran and former university professor, Bob Worthington of Las Cruces, New Mexico, is the author of "Under Fire with ARVN Infantry" (**https://mcfarlandbooks.com/product/Under-Fire-with-ARVN-Infantry/**), and producer of the 2019 film "Combat Advisor in Vietnam" (www.borderlandsmedia.com). Facebook: Bob Worthington Writer. Website: **www.BobWorthingtonWriter.com**. Bob Worthington has placed excerpts about combat flying in Vietnam (from his books) on his website. Here is a direct link to those excerpts: www.BobWorthingtonWriter.com/combat-flying-in-vietnam/. Every couple of months, he adds another excerpt.

DISCLAIMER: The information contained in this column is the expressed opinion of the author and is not intended to be legal advice. Readers are urged to seek the advice of others, and refer to publications and resources available from local, state, and federal government, including the Federal Aviation Administration, as well as the Aircraft Owners & Pilots Association. Neither the author, *Midwest Flyer Magazine*, Flyer Publications, Inc., or their staffs, employees or advertisers assume any liability for the accuracy or content of this column or any other column or article in this publication. ❑

Second Book of Vietnam Trilogy

Published By U.S. Army Veteran, Bob Worthington

Writer and Army veteran, Dr. Bob Worthington of Las Cruces, N.M., has published the second book of a planned Vietnam trilogy titled "Fighting Viet Cong in the Rung Sat." The book was released by McFarland Publishers on October 29, 2021, and is available at Amazon, Barnes & Noble, and many other bookstores.

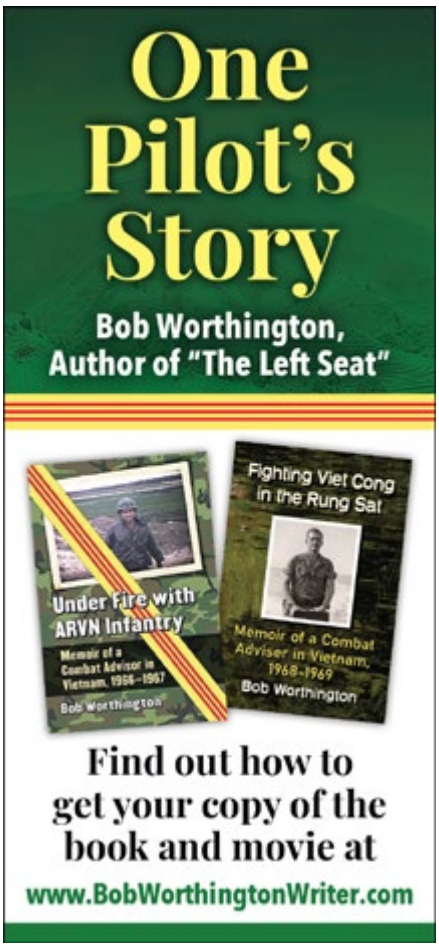
"This book is about my second tour of duty in Vietnam," said Worthington. "I needed money to complete graduate school and had already served as a combat advisor. I went back to make my education happen." However, Worthington describes the second tour as some of the fiercest fighting of the war and tells of his experiences training South Vietnamese commandos to conduct raids in the swamps south of Saigon.

"Fighting Viet Cong in the Rung Sat" is the follow up to Worthington's previous book, "Under Fire with the ARVN Infantry," which was awarded a national award for Excellence in Literature by the Military Writers Society of America. The author plans to follow up this book with the conclusion of his trilogy, "The Making of an Army Psychologist," in late 2022.

Worthington is a multiple award-winning writer with over 2,500 publications having featured his work, including *Midwest Flyer Magazine* of which he is a regular contributing editor. He is a member of the Las Cruces Writers Group and has another anthology of military tales titled "Untold Stories" available on Amazon.

As a retired U.S. Army officer with 15 years in the infantry, and a decade as an Army clinical psychologist, Worthington was awarded the Combat Infantryman Badge, seven decorations for valor, the Purple Heart, the Air Medal, and several awards for meritorious service. He later went on to become a professor at the New Mexico State University Department of Journalism and Mass Communications.

For more information about Dr. Bob Worthington and his writing, please visit his website at **www.BobWorthingtonWriter.com**. ❑



MONOVISION

by Dr. Bill Blank, MD

Dr. Bill Blank

Our eyes are usually about the same: both nearsighted, far sighted or neither. Having one near sighted and the other far sighted is quite uncommon. Both eyes being similar simplifies fitting glasses when needed. Both eyes being focused simultaneously on the same object permits us to have depth perception or stereopsis and binocular vision.

Because our eyes are about 2 inches apart, each eye sees the same thing from a different angle. To see things from very close to about 20 feet requires each eye to look in. This is called "convergence." The closer the object we are looking at, the more convergence required. Closer objects require more focusing effort to be seen clearly. Our brain automatically and quickly processes the amount of focusing effort and convergence used to give us a very accurate estimate of how far away something is. This is the basis of our depth perception and 3D vision.

Our brain automatically merges the two slightly different images into one in-depth 3D image. Binocular depth perception functions up to about 60 feet but is much more accurate closer. Beyond that we judge depth based on visual clues such as relative size and our knowledge of the size of common objects such as people, trees, cars, etc. People with excellent depth perception can tell the difference in the distance of objects a few inches apart out to about 20 feet.

As we age, our ability to see near decreases. People who never needed glasses for anything start needing reading glasses. Nearsighted people discover they need to take their distance glasses off to read. Previously, that was unnecessary. This is a nuisance. Contact lens wearers looked for an alternative. Fitting one eye with a contact lens for distance and the other with a contact lens for near is sometimes done. This means that the eye with the distant contact lens cannot see up close and the other eye cannot focus things clearly far away.

Some people only need a near contact lens in one eye and nothing in the other eye. This is what is called "monovision." Some people tolerate this well. People who have occupational needs for excellent vision usually don't. I would have never been able to do eye surgery that way. One tradeoff is that depth perception is greatly diminished because both eyes are focused on different distances. So far, I have only covered monovision from contact lenses. The same thing is frequently accomplished with refractive surgery and cataract surgery.

A Delta Airlines MD-88 landing mishap at LaGuardia Airport in New York in October 1996 (NTSB Accident Report AAR 97-03) caused the FAA to become interested in monovision. The captain was wearing one contact lens for distance and the other for near vision. U.S. Air Force (USAF) studies demonstrated poorer landing performance when pilots were wearing monovision contact lenses. As a result, the FAA banned monovision for all classes of medical certification and added question 17b to the 8500-8 form which all applicants for an FAA medical certificate are required to answer. It is poorly worded but is asking if an airman wears a contact lens in one eye which is only for near vision while flying. If the airman answers yes, the Aviation Medical Examiner (AME) is supposed to tell the applicant he may not do that while flying. Pilots requiring correction for distance vision must wear prescription glasses or non-mono vision contact lenses while flying.

I decided to write about this topic after completing a flight physical on an airman who wears monovision contact lenses and was not aware of this limitation. This limitation does not apply to people flying under "Basic Med."

People drive their cars all the time with monovision, although depending on your state, they may need a waiver to do so.

They can generally meet the minimum vison standards for vision in the poorer eye (the eye corrected for near vision). However, federally licensed commercial drivers are prohibited from using monovision correction. Some studies indicate that it is harder to drive at night using monovision.

Does the FAA ever approve flying with monovision? They do certify someone who has lost one eye. That gives us a clue. A 6-month period to adapt is required in both cases. Then a Medical Flight Test (MFT) must be passed. If successful, a Statement of Demonstrated Ability (SODA) will be issued. A SODA has an unlimited duration unless the condition changes. So, you can fly with monovision under certain circumstances. There is a procedure to get approval.

Happy flying!

EDITOR'S NOTE: Columnist 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. Dr. Blank is a retired Ophthalmologist, but still gives some of the ophthalmology lectures at AME renewal seminars. Flying-wise, Dr. Blank holds an Airline Transport Pilot Certificate and has 5600 hours. He is a Certified Instrument Flight Instructor (CFII) and has given over 1200 hours of aerobatic instruction. In addition, Dr. Blank was an airshow performer through the 2014 season and has held a Statement of Aerobatic Competency (SAC) since 1987.

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Here One Day, Gone The Next!

by Pete Schoeninger

Q) A friend told me you did some unusual marketing when you were the longtime manager of a fixed base operation. What was your most successful marketing idea?

A) The hands-down-answer was re-painting a rental Skyhawk green and gold during the year the Green Bay Packers won the Super Bowl about 25 years ago. For months thereafter, that airplane was by far the most requested of the 3 or 4 Skyhawks we had for rent. (If you happen to be so unlucky as to be a fan of "Da Bears," the Packers' colors are green and gold.)

Q) Someone told me that a guy recently crunched a Cessna 150 when he had 40 degrees of flaps extended, and for some reason could not retract them, and thus could not climb. Is that a possible scenario?

A) Under some conditions of density altitude and load, climb is not possible with 40 degrees of flaps extended in a Cessna 150, and others. Most single-engine Cessnas through the mid 1970s had flaps that could extend as far as 40 degrees. 40 degrees of flaps produces a massive amount of drag, allowing a steep descent without a lot of speed increase and then a short landing. In later years most models had flap travel limited to 30 degrees, which in my experience was always plenty. With the average lightplane in this country now 45 – 50 years old, it is possible that a flap motor could burn out, wiring or connections or switches could fail, making flap retraction impossible. Lots of people, including me, suggest application of 40 degrees of flaps only when landing is assured.

If you have 40 degrees of flaps extended and then had to make a go-around, most owner's manuals recommend immediate flap retraction to 20 degrees to allow some climb capability.

Q) You (and my instructor) have recommended carb heat be applied before power reduction. Why can't I wait until after I pull power back to apply carb heat (as in landing)?

A) The air induction system on carburetor-equipped aircraft engines, to meet certification requirements, should be able to raise incoming air 90 degrees Fahrenheit when the engine is operating at 75% power. If you wait until power reduction to add carb heat, there may not be enough heat to melt any accumulated ice. Remember that hot air is thinner, so applying carb heat in effect richens the mixture a little. In some airplanes I have flown (old C-182s), you may need to lean fuel mixture a bit after carb heat application.

Q) The styling and looks of the Cessna 177 Cardinal have always appealed to me. Some people have told me the aircraft was intended to replace the C-172 but failed miserably. Is that true? Have you ever flown one, owned one, or had one in a rental fleet, and if so, how did they fare?

A) Yes, to all your questions. The folks at Cessna intended that the Cardinal would replace the stodgy model C-172, but that didn't happen. Cessna made 1150-plus Cardinals – the first production year of 1968 beating the C-172 production number for 1968 of 650. But thereafter, Cardinal sales took a nosedive and never recovered. 1969 production numbers of Cardinals dropped from 1150 to 200, while C-172 production numbers doubled from 650 to about 1300.

The Cessna 177 Cardinal remains a favorite of many pilots.
Chris Bildilli Photo

Problems on the initial (1968) airplanes included a powerful tail that in the hands of a ham-fisted pilot could produce pilot induced oscillations, resulting in a hard landing, sometimes so hard firewall damage occurred. At some combinations of weight, speed, C.G., and flap setting, the tail could stall during landing flare, resulting in a nose-first thump on touchdown, again with the possibility of firewall damage. The stabilizer problems were corrected under warranty, but the bad reputation was not corrected. With only 150 hp, the airplane was somewhat of a weakling on takeoff and climb. (1969 models had 180 hp, a major improvement.) These early problems negated some wonderful characteristics of the airplane which included great visibility, a roomy cockpit with easy entry through wide doors onto a low floor, and crisp control responses.

I enjoyed flying the Cardinal (1968 model) I owned personally, and many others we rented and sold. The C-177 was not as tolerable as the C-172 to ham-fisted renters, and in my opinion were best suited to individual ownership. With more room, and more fuel, and more room than C-172s (but 100 lbs. less useful load), Cardinals were better cross-country airplanes than C-172s for mom and pop and bags or kids but lacked the versatility and safety the C-172 offered and offers today.

Q) Friends are suggesting that I install a larger diameter prop with a smaller pitch on my 1975 Cessna 172M, like a seaplane prop for better takeoff and initial climb performance, even though I'm on wheels. What do you think?

A) Your friends are correct in that a larger diameter prop with smaller pitch allows the engine to turn up about 125 more RPMS, giving more thrust for takeoff and climb, which seaplanes need, ***but you cannot put that prop on your landplane!*** You won't have enough ground clearance from prop tip to the ground to be legal, or even safe. Your airplane, in land configuration, came with a 75-inch prop model 1C160 CTM 7553. The approved prop for seaplane operations is the 80-inch diameter 1A175 ATM 8042.

Any prop change from standard must be legal, either via manufacturer's optional equipment list, Supplemental Type Certificate (STC) or Field Approval from a local FAA maintenance inspector. The approved seaplane prop (in this case approved by Cessna) for the C-172M cannot be used on landplanes because the increased diameter (5 inches in your case) would put the prop tip closer to the ground than the certification requirement of 7-inch clearance when loaded to gross weight and leveled require. (For tailwheel airplanes, the clearance requirement is 9 inches.) In some instances, for some airplanes, a larger prop installation will require bigger tires and maybe even different landing gear legs/location to get the required prop clearance. The dollars on a project like this can add up very quickly. For only a few hundred dollars, you can get a little more thrust out of your current prop by getting it repatched to a finer pitch, but you will lose a little cruise speed.

Q) I am a new private pilot; I do not have an instrument rating yet. A couple of times flying alone this winter, I have been tempted to fly through a snow shower. Is this dangerous? Will snow stick to my airplane?

A) NEVER fly through a snow shower unless you can see through it to the other side! Otherwise, you could be flying into a whiteout, where you will need instrument capability to survive. IF you are instrument rated, flight in or under clouds with snow may be done safely, but you must be aware of perils that are beyond the scope of this column. I have never had snow stick to my airplane when flying through snow showers in cold temperatures. But as temperatures warm, snow showers could contain freezing rain, sleet, and other bad stuff besides snow. Avoid those perils at all costs as they could be fatal.

Q) My friends think I am nuts, but I keep my airplane tied down inside a hangar. Who's the wacko in our group?

A) If your hangar has one open side, then it's not a bad idea. But if your hangar is sealed, I think it is overkill.

Q) I recently got my private pilot certificate with all my flight-time in a Piper Warrior. Now, I want to rent the flight school's Archer. The flight school requires a minimum one-hour checkout to rent their Archer. Isn't that ridiculous? I mean, after all, I just spent $12,000 with them! Aren't they virtually the same airplane except the Archer has a little more power? Why the hour minimum requirement?

A) Archers and Warriors share many components and have very similar flight characteristics. Many pilots have stepped into an Archer from a Warrior with no problems. But there are weight differences, fuel burn differences, different speeds on climb that a pilot should be aware of. An hour of dual instruction never hurt anybody, so go along with their requirement, which might be from their insurance carrier, or their management. Afterall, it's their airplane, not yours!

Flight instructors are usually paid by time with the customer/renter. If you were a flight instructor, and you were scheduled to give a checkout to a pilot, and it was obvious he was completely competent after 15 minutes of flying, if you let him go, you only earn a quarter of an hour of pay, but you probably have the whole hour blocked off. So, some flight schools have gone to a minimum dual instruction time of one hour, if for no other reason than to protect their CFIs from tight-fisted renters beratement.

EDITOR'S NOTE: Pete Schoeninger is a 40-year general aviation veteran, starting out as a line technician as a teenager, advancing through the ranks to become the co-owner and manager of a fixed base operation, and manager of an airport in a major metropolitan community. He welcomes questions and comments via email at **PeterSchoeningerLLC@gmail.com**.

The French Quarter is very lively all year round, but especially so during Mardi Gras.

The Crescent City - New Orleans, LA

by Yasmina Platt

The Crescent City, The Big Easy, The Jazz City… New Orleans, Louisiana (NOLA) has many names. It's because the heart of the city was built in a sharp curve formed by the Mississippi River, resembling a crescent moon. It's because it's a place of lively music, good food, friends, and strong community. It's because it is universally considered to be the birthplace of jazz. It's no surprise, then, that NOLA is one of my favorite cities to visit in the U.S.

Lakefront Airport (KNEW) is also a cool destination in itself, and it's only a 10-minute drive from the "French Quarter."

The airport is built on a man-made peninsula jutting into Lake Pontchartrain. To make land available, the Orleans Levee Board constructed a 10,000-foot retaining wall into the lake and pumped in six million cubic yards of hydraulic fill to barely raise the field above the water (field elevation is 7.3 feet).

The local cuisine in all of Louisiana is fantastic and unique. You can't go wrong with (spicy) crawfish, boudin balls or sausage, any type of gumbo or etouffee, jambalaya, or shrimp n' grits, for example. Messina's Runway Café is a great spot to stop for food and (airport) views at KNEW. The restaurant is located inside the historic terminal building, restored to its original art-deco style. Traditional creole cuisine is served in a classic aviation setting. Note that they serve breakfast and lunch only because the beautiful, old terminal is also often used for weddings and other large events in the evenings.

When visiting NOLA, a walk around the famous French Quarter is a must! If you have additional time, I highly recommend the "Garden District" as well. It has many historic mansions. Side trips to plantations, swamp and bayou tours, and river cruises are also good options. Cemetery tours (especially at night, associated with ghost stories) are also popular in NOLA.

You can't leave the city without enjoying some authentic jazz at the historic "Preservation Hall" and trying a beignet (or two), a square piece of dough, fried and covered with powdered sugar. "Café du Monde" is the most popular location to get them from, but not the only place.

The French Quarter is very lively all year round, but

When visiting NOLA, a walk around the famous French Quarter is a must! If you have additional time, I highly recommend the Garden District as well. It has many historic mansions. Side trips to plantations, swamp and bayou tours, and river cruises are also good options. Cemetery tours (especially at night, associated with ghost stories) are also popular in NOLA.

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especially so during "Mardi Gras." Celebrations happen for about two weeks before and through Shrove Tuesday, the day before Ash Wednesday (the start of Lent in the Western Christian tradition). Usually there is, at least, one major parade each day. The largest and most elaborate parades take place the last five days of the Mardi Gras season. The parades are organized by social clubs known as krewes and, funny enough, the "Amelia EarHawts & Cabin Krewe" claim themselves as New Orleans' most turbulent marching group. I wonder what Ms. Earhart would think about that…

No matter when you go, NOLA is always a fun place to visit!

For more information about Air Trails and other flying destinations, visit **www.airtrails.weebly.com**.

Vole san danje! ("Fly safe" in creole.)

ABOUT THE AUTHOR: Yasmina Platt's full-time job has her planning the future of aviation infrastructure for Joby's electric Vertical Takeoff and Landing (VTOL) aircraft. She also writes an aviation travel blog called "Air Trails" (www.airtrails.weebly.com), in addition to articles on pilot destinations for *Midwest Flyer Magazine*. Pilots can locate articles Yasmina has written by going to www.MidwestFlyer.com and typing "Yasmina" in the search box, or by going to the "Archives" section, then "Columns," then "Destinations." ❑


America's first patented helicopter is on display at the "High Plains Museum" in Goodland, Kansas.

A Good Place To Stretch Your Legs

by Jim Bildilli

Whether you fly or drive, Goodland, Kansas is a good place to stop for the night, grab a bite or just get out and stretch your legs. Located just east of the Kansas-Colorado border, the airport is equipped with two hard surfaced runways. Runway 12-30 is just shy of 5500' long by 100' wide and runway 5-23 is just over 3500' long by 75' wide. With an ILS on Runway 30 and RNAV (GPS) approaches to Runways 12, 23 and 30, it's well equipped for IFR weather. For those flying taildraggers, there's even a 1754' x 40' north-south sod runway. Built in 1934, the runways were constructed using a mixture of salt, clay and sand to a thickness of approximately 12 inches, which was a significant improvement over the "Buffalo Grass" landing field of the first airport constructed in 1929. During World War II, the airport served as a Waco glider training base for about a year. In those days, its location about half-way between Kansas City and Denver, was an ideal place to stop for fuel, food and sometimes rest.

Today, Goodland, Kansas still provides those same amenities. Reasonably priced fuel, a good on-airport restaurant called the "King Air Café," and overnight facilities are about 2 miles away. There's even a courtesy car available for that short trip into town.

If you have the time, the town offers a place called the "High Plains Museum" that not only will provide you an idea of early life on the prairie, but something so unique for aviation aficionados, that it grabs your attention.

There's a sign on the outside of the museum that says, "America's First Patented Helicopter." At that point, most of us are probably wondering why Igor Sikorsky chose Goodland as the location for developing the helicopter as we know it today. There should probably be some "fine print" involved because the first "patented" helicopter was not successfully flown, nor was the patent filed by Igor. Although it lifted off the ground, it still remained uncontrollable. However, the concept of rotary flight was patented on June 4, 1912 (#1,028,781) by Messrs. William (Bill) J. Purvis and Charles A. (Art) Wilson. Actually, it was 38-year-old Purvis who had the vision and later convinced his friend, 20-year-old Wilson to join him in his project. You might think that both were highly educated, but the truth was that Purvis had only completed the third grade before leaving school in the fourth grade. However, the fact was that both were machinists working for the Rock Island Railroad in the Goodland railyard.

Apparently, Bill was enthralled over the idea that the Wright brothers had successfully flown about 6 years earlier, and the thought of flying was constantly in his thoughts. Today, psychiatrists would probably attribute it to an escape mechanism to cope with the many hours in the hot sun, wind, dust, and isolation of western Kansas. However, one day when he passed the local candy store, he noticed a kid playing with a stick that had candy on one end and a propeller on the other, known at that time as a "Whirligig." I seem to recall something similar from my childhood that was just a stick with a propeller on one end that could be launched by pulling a string. Candy or not, it became Purvis' "ah ha" moment. The only thing that he had to do was to make it large enough to carry a person. He rushed back to the railroad shop to show his friend "Art" Wilson that he had found the key to successful flight and asked him to join him in his endeavor. At first Wilson was reluctant, but after seeing the propeller fly, he decided to help.

I guess some credit should be given to the Rock Island Railroad because it was in their shop, and their scrap materials, that were used to build the aircraft, which was assembled at the Purvis farm. Both men even switched to the night shift so they could have the daylight hours to work on

the "flying machine."

Purvis and Wilson successfully overcame the problem of "torque" of the spinning bamboo and canvas propeller by constructing a second propeller that was counter-rotating. They didn't know what was causing the torque problem but were ingenious enough to successfully figure out how to overcome it by constructing one drive shaft inside of the other with a separate propeller attached to each. Something that today we'd probably recall from our elementary physics course as Newton's Third Law of Motion. If you recall, Sikorsky overcame torque by installing a tail rotor to counter the "reactionary" force. Some of today's drones also use the concept of counter-rotating propellers to control torque in the same manner that Purvis designed.

With the machine taking shape and growing larger, they needed a place to complete the construction, so they constructed a shop and square hangar near today's intersection of Cattle Trail and Highway 24 which was near the water tower. With "lift" somewhat established, they still didn't know how to provide directional control. Rather than wing warping, they decided that tilting the entire machine would work, and they decided that "weight shifting" forward and back and from side to side would work. They also added a small rudder but decided that it wouldn't be functionable. Power was provided by a 7 hp Curtiss aircraft engine, and eventually, the 400 lb. machine was ready for its first flight.

The first demonstration flight took place on Thanksgiving Day with the aircraft's platform weighted down with huge boulders. Before a large crowd, Bill started the engine and the aircraft started to jump up and down until he shut it down. To the crowd, it appeared that Bill and Art had successfully demonstrated that it would get off the ground. He told the crowd that the boulders were there simply to keep it from flying away.

Running short of money, they decided to form the Goodland Aviation Company and sold $30,000 worth of shares at $10 per share. Considering that the average annual wage in 1909 was between $200-$400, that was a considerable sum. With their newfound wealth, both men quit their jobs with the railroad and spent full time trying to figure out how to control their aircraft. They even considered a version of our modern-day rotor head, but they just couldn't figure out how to build one. They had purchased two lighter weight aluminum 7 hp engines to provide additional power, but even with the two new engines, it wouldn't fly with a human onboard. Since they were running out of money and the possibility of attracting additional stockholders was slim, they decided that to really prove their project, they would need additional power. However, Purvis decided that the most powerful engine that could be easily obtained and was relatively inexpensive was a "steam engine" that powered the threshing machines of the day. Forging ahead, he talked a local farm implement dealer into loaning him the use of one, and a 100 ft. drive belt.

The second flight was attended by a smaller crowd of townspeople. When the steam engine was finally ready to go, Purvis gave the signal and the rotors began to turn, slowly at first, but then gaining speed. With the additional power, the machine lifted about 20 feet in the air and shook enough that Bill gave the signal to a person on the ground to pull the machine down using an attached rope. When pulled, the rope failed to reduce the machine's altitude, but it shifted the on-board weights enough for the helicopter to launch backwards and then forwards striking the water tower. Bursting open, it poured its contents on Purvis and the crowd, along with many parts of the helicopter. No one was reported injured in the incident. In a 1999 interview with Purvis' son, who was 77 years of age at the time, he stated that the story of crashing into the water tower was untrue, but it did end his quest to fly because he was unable to convince the townspeople and local farmers to invest more money in pursuing his dream of creating a flying machine.

In July 1910, Art Wilson left Goodland to work in the rail yards at Armourdale near Kansas City. He passed away in 1965 at the age of 76. In December 1910, Purvis and his family moved to Missouri and then to Wisconsin and passed away in 1944. His son said that his father seldom talked about his flying machine which he sometimes called a "gyrocopter" and he never did see or talk with Art after the two parted. In March of 2011, the Goodland Aviation Company filed for bankruptcy and all of the remaining assets were sold.

It wasn't until 1938 when Igor Sikorsky was successful in solving the control problems that had plagued both Purvis and Wilson.

The aircraft in the High Plains Museum in Goodland is a replica constructed by Harold Norton of Brewster, Kansas. The only remaining piece of the original helicopter is the rotor shaft. The museum is located at the corner of 18th and Cherry Streets. If you are driving, it's a short distance north of I-70 and U.S. 24. You can't miss Cherry Street because it passes just west of the 80 ft. high "World's Largest Easel" upon which sits a copy of a famous Picasso painting that prominently features a Sunflower.

Author's Note: There are several accounts of Purvis and Wilson's efforts to construct and test their flying machine. Like many historical documents, the accounts of the events sometimes differ, but generally agree on some of the major aspects.

Material for this article was obtained from a booklet entitled "The Short Happy Life of the Kansas Flying Machine" by Mary Collett Farris, which is sold by the High Plains Museum; a newspaper article written by Carl Manning in November 1999 that appeared in the Salina Journal; and an on-line tourism guide entitled "Goodland Explorations," published by Rural Kansas Tourism.

EDITOR'S NOTE: Jim Bildilli is a retired official with the Illinois Division of Aeronautics, and currently operates an airport inspection and consulting business. In addition, Jim and his wife, Donna, and son, Chris, are involved with the Aviation Explorers Post at EAA AirVenture Oshkosh. ❑

Giving of our time. . .

Wishing a happy birthday to the Airport Support Network

by Mark Baker
AOPA President and CEO


Mark Baker

MOST OF US were introduced to this wonderful thing called flying by someone who went out of their way to take us on an airplane ride, share their wonderful passion, and ignite a spark in us. It was someone who wasn't forced to do so, wasn't paid to do so, and asked for nothing in return. All in the spirit of paying it forward in the hope that, someday, we would do the same. Which many of us have.

This is the true definition of a volunteer—someone who on their own time and dime goes out of their way to brighten the day of someone else and make a positive impact on a community.

Americans are very giving of their time. According to a 2018 study by the Corporation for National and Community Service, nearly 80 million of us volunteered some of our time in the preceding year (totaling about 6 billion hours). Let me put that number into another context: The annual workplace value of Americans' volunteer time was more than $167 billion.

This spirit of sharing is evident in general aviation. Countless men and women give of their time every day to bring more people into our fold, spread the gospel of aviation, and protect our freedom to fly.

This is a special year for AOPA when it comes to volunteers. 2022 marks the twenty-fifth anniversary of our AOPA Airport Support Network. Under the leadership of Vice President for Airports and State Advocacy Mike Ginter and his talented group of regional managers, the ASN program and its web of volunteers serve as our early warning system for airport issues in all regions and states.

We entered 2022 with more than 2,000 volunteers and I cannot thank them enough. They are truly our first-line defense against those who do not understand or appreciate the value of our more than 5,000 public-use local airports—they engage locally to promote and protect their airports. Our ASN volunteers know very well that GA in this nation supports our economy to the tune of $247 billion per year and provides for more than 1.2 million jobs.

The GA world is facing unprecedented threats across the country. Local airports in California, Florida, and New York—just to name a few—are in the crosshairs of those who would wish to do GA harm. If you fly there, or in many other places across America, you probably have felt the evil eye of these naysayers.

But our ASN volunteers do what they do not in the name of battle, but in the spirit of engagement. They reach out to educate decision makers and embrace the local community. Yes, things can get a bit testy on the local level, but our ASN volunteers put forward a face of cooperation and camaraderie. We know that, quite often, someone who doesn't appreciate general aviation simply doesn't know what we're all about, and the contributions we make. Education is key and job number one.

Our ASN program has a rich history, and we have volunteers who have been with us since day one. I'd like to give a shout-out to one of our very first volunteers appointed, who is still serving today. For 25 years, Jim Gates has engaged locally to educate city council members and protect Zamperini Field in Torrance, California. Thank you, Jim, and the rest of our ASN volunteers who truly pay it forward.

If you're intrigued about our Airport Support Network, let me further break down what our volunteers do on a daily basis:

Attend airport meetings, report any potential problems, and help open communications channels.

Serve as an early warning for questionable operational restrictions.

Promote AOPA events and seminars to the local pilot community.

Help enhance and promote the local airport to local officials and the community.

Since the Airport Support Network was founded in 1997, volunteers have helped AOPA save numerous airports. With your help, we can log many more ASN success stories and help prevent airport closures in the United States. If you combine a spirit of volunteerism and a passion for general aviation, we would love to hear from you. Become part of the AOPA Airport Support Network in your local community. Go to **aopa.org** and find the Airport Support Network under "Advocacy," or call **800-USA-AOPA**.

Blue skies! ❑

AOPA's Airport Support Network Program Celebrates 25 Years of Advocacy

by Kyle Lewis
Regional Manager
Airports & State Advocacy • Great Lakes Region
Aircraft Owners & Pilots Association


Kyle Lewis

2022 marks the 25th anniversary for the AOPA Airport Support Network (ASN) program. I've mentioned the importance of the ASN program throughout these columns, noting the connection these members make between their airport, community, and when situations arise, the AOPA airport advocacy team.

The ASN program was born out of AOPA's airport advocacy efforts in 1997 by then President of AOPA, Phil Boyer, and his Vice President of Airports and State Advocacy, Bill Dunn. AOPA staff would take calls of airport closure threats on the day of a city council vote to close an airport (or other nefarious actions) – not much time to make any real impact. The program was announced at the AOPA Expo in the fall of 1997 and volunteers began to immediately sign up. Over the course of the next few years, ASN Volunteers became a force of over 2,500 engaged members at their local airports. "Promote, Protect, and Defend Community Airports" became the motto. The program was a direct link to AOPA staff to help resolve the threat of airport closure, among other pressing issues that put general aviation at risk. There are still over 70 volunteers that have been in the program since 1997, and there are countless stories of positive engagement by volunteers with their communities.

In the 1970s, over 7,500 public-use airports operated in the United States. Today 5,080 exist and of those airports, 3,304 are federally funded by the FAA Airport Improvement Program (AIP). These airports are also known as NPIAS (National Plan of Integrated Airport System) airports and have FAA grant assurances or "grant obligations" in place to protect their vitality. For a NPIAS airport to close, there is a dramatic and often very bureaucratic process to closure, and generally is an unattainable feat by the airport sponsor (city, county, township, or authority) to make it a reality – although it does and can happen. Just because an airport has grant assurances, it does not mean it is immune to threat.

ASN Volunteers are a key resource because they are connected to the local airport governance system. Knowing what is at play in local politics is information that can return 100-fold for advocacy efforts. AOPA equips ASN Volunteers with information that has literally been a lifetime in the making, airport governance, media outreach, event planning, community planning, airport operations and funding, airport support groups, and the list goes on. This information is readily available online to our volunteers, but the AOPA staff of regional managers are always engaging at the local level to deliver strategy and insight on specific issues.

A few years ago, under the direction of Mark Baker, AOPA's current President, the ASN program was revitalized with support to actively recruit new ASN Volunteers. AOPA's airport and state advocacy team began a refresh of the ASN program. The ASN "Board of Advisors" were reinstated, and Euel Kinsey, a volunteer for Detroit City Airport, now chairs that body. The website was streamlined to make information easily accessible, the process of nominating and appointing volunteers became more efficient, newsletters have increased communications, and a web-based training course is now required for all new ASN Volunteers. Recruiting efforts have now raised the volunteer force to nearly 2,000 active members across the country engaged at their local airports. These airports are primarily public-owned/public-use airports, but AOPA will appoint volunteers at private airports too.

AOPA ASN Volunteers have made credible, positive impacts at airports large and small over the last 25 years, halting closure threats, maintaining GA facilities on an airport, or being the driving force behind the establishment of an airport support group.

What does it take to become an ASN Volunteer? AOPA requires that you be a current AOPA member, be willing to communicate with AOPA staff via email or phone, agree to the conditions of appointment (which is a written agreement), and complete a short online training course. To nominate someone, or even yourself, visit **aopa.org/asn**.

Now more about the 25th anniversary. AOPA regional managers across all seven (7) regions are planning ASN specific events. For the Great Lakes Region, a townhall-style gathering is being planned at Clermont County Airport in Batavia, Ohio in May of 2022. Other events are being planned across the country including Sun 'n Fun in Lakeland, Fla., EAA AirVenture Oshkosh in Wisconsin, and the National Championship Air Races in Reno, Nevada. If this gets you thinking about airport advocacy and what you can do for your community in a meaningful way, please visit **aopa.org/asn** for more insights and to access the nomination form (kyle.lewis@aopa.org). ❑

Letters To The Editor

Dear Dave:

Please pass on to Dan Bass who wrote the article *"Miracle Over Minnesota… Survival After Carbon Monoxide Poisoning"* in the October/November 2020 issue that I truly enjoyed his writing style and the content of his article (https://midwestflyer.com/?p=13674). In addition, I ordered my carbon monoxide detector right after I read the article.

Keep up the good work. I enjoy your magazine!

Mark Wrasse
Rosholt, Wisconsin
Wisconsin Field Representative & Lifetime Member
Seaplane Pilots Association

Dave:

Just got this email from you with the PDF of the current magazine. If you are sending these out regularly, there's absolutely no need to keep sending me the print edition. This will be just fine, and I hope it saves you trouble and postage.

BTW, I read the "hypoxia" article when I got the print edition a few weeks back and bought the TOCSIN monitor based on that excellent article (https://midwestflyer.com/?p=13674).

Phil Boyer
President of AOPA (1991 to 2009)
Naples, Florida

Hi Dave:

Nice job adapting the *Midwest Flyer* to the new pdf format. Hadn't seen an issue for quite some time, so when I received the PDF of the magazine, it made me ask myself, "Do I still have an active subscription?" Either way, sign me up!

Midwest Flyer has become a longstanding institution in our part of the aviation world, and we need you around for many years to come, as I intend to keep flying for at least that long!

Jim Conn
Rice Lake, Wisconsin

Hi Dave:

I read two articles in your online copy about Coleman A. Young Municipal Airport in Detroit, Michigan, and Sugar Ridge Airport in Verona, Wis. This seems to be an interesting magazine that is applicable to us in the Midwest. Please add me to your online subscription list.

Thanks!
Russell Valin
Lake Villa, Illinois

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Wisconsin Airport Changes

Sullivan Airport

by Hal Davis
WisDOT – Bureau of Aeronautics

Hal Davis

The holidays may be over, but it's not too late for one last gift to Wisconsin aviators. It's a new public-use airport! Sullivan Airport (W11) is located about 15 miles west of Waukesha near the Village of Sullivan. Formerly known as McDermott Airpark, the airport came under new ownership in 2019 and transitioned to public-use in late 2021. Runway 06/24 is a 4,558' by 50' paved runway and the airport has plans to add a turf runway in 2022. The airport offers 100LL, aircraft maintenance, flight instruction, and aircraft rental. Hangars are also available to rent. As a public-use airport, Sullivan Airport is now part of the *"Fly Wisconsin Airport Passport Program,"* so stop by and get your stamp today! Find out more and get in contact with the airport at **www.sullivanairport.com**.

Conversely, two formerly public-use airports changed to private-use in 2021. Fox River Airport in Rochester and Brennand Airport in Neenah are no longer open to the public. However, the airports are not closing. Anyone who

Fox River Airport

wishes to land at either airport should contact the airport owner for prior permission. Similarly, Sweetwater Bay Seaplane Base near Oconto has also changed from public to private-use. Unfortunately, flooding has rendered the seaplane base unusable for the foreseeable future.

Finally, Jana Airport (58C), a public-use airport near Edgerton, was sold in 2021. The new owners have decreased the width of the runway to 70' and the overall future of the airport is uncertain. As always, check NOTAMs prior to all flights to help avoid unwelcomed surprises.

Brennand Airport ❑

MINNESOTA AERONAUTICS BULLETIN
www.dot.state.mn.us/aero
The State of Minnesota provides this Technical Bulletin in the interest of Aviation Safety and to Promote Aeronautical Progress in the State and Nation.
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Minnesota DOT Office of Aeronautics
395 John Ireland Blvd, MS 410 • St. Paul, MN 55155
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Phase Two of the Minnesota State Aviation System Plan Update Is Underway

Junior Lindsay
Planning Program Coordinator
MnDOT Aeronautics

The Minnesota Department of Transportation is updating the Minnesota State Aviation System Plan. The MnSASP documents the performance of the current aviation system and provides guidance for the future development of aviation in Minnesota.

The MnSASP is the aviation part of MnDOT's Family of Plans. It will help achieve the Minnesota GO 50-year Vision that outlines what Minnesotans desire from the state's transportation system and identifies key guiding principles MnDOT strives to achieve.

The MnSASP is being updated in two phases. Phase One was completed in 2019, and included an extensive Public Involvement Plan, an assessment of the 2012 SASP, identifying and analyzing trends that will impact aviation, identifying airport/system performance metrics, defining objectives, documenting inventory needs and other elements.

Phase One's Public Involvement Plan resulted in several recommendations that will carry into the Phase Two effort, including reviewing trends, white papers and recommendations received from the aviation community through public outreach.

The **Statewide Airport Economic Impact Study** was also part of the Phase One update. The study analyzed the annual economic impacts generated by 126 of Minnesota's 133 public airports. Data from the study was then used to develop an **airport economic impact calculator** to estimate how airport businesses and projects benefit local economies.

Phase Two of the MnSASP is underway now. It involves reviewing the results from Phase One, analyzing policy issues facing the state aviation system, acquiring and managing data to develop a MnSASP database and display dashboard, publishing a report of the MnSASP and developing a continuous implementation plan.

Throughout Phase Two, MnDOT will continue to solicit input and feedback through several focus area working group meetings that concentrate on specific areas of Minnesota aviation. During these working group meetings, MnDOT, FAA, airports, municipalities, and other stakeholders across Minnesota will work to identify opportunities for improvement and concerns with Minnesota's aviation system.

Policy issues that are currently being analyzed include hangar availability and funding, airport entry/closures and crosswind runways. Results from these reviews, as well as feedback from the working groups, will be used to inform MnDOT Aeronautics guidance documents being developed now.

Additionally, the data produced by the MnSASP will assist airport managers, operators, owners, local and state businesses, aircraft owners, and the public by allowing for better planning and policy that continues to support a high performing aviation system that benefits all Minnesotans.

The MnSASP update is expected to be completed in spring 2022. To stay up to date about the State Aviation System Plan Update, visit the State Aviation Plan **website**.

To learn more about MnDOT's activities, you can contact MnDOT at **aviationplanning.dot@state.mn.us**. ❑

AWOS: THE WIND OF CHANGE

Could pilots just use grass to gauge the direction and the force of the winds?

by John B. Dalton
MnDOT Statewide Navigation Systems Engineer

It's 5 AM, and you're beginning to hear the birds calling in the beautiful day as you sit outdoors sipping your morning cup of joe. You're looking ahead to the 7:15 AM tee time with your other flying friends at the City of Buffalo – Wild Marsh Golf Club.

The evening before, after cleaning your clubs and making sure you have enough balls and tees for the day's outing, you watch the weather news and it's going to be a perfect 75-degree day, and no wind predicted…Sweet…
After a few holes, the wind starts to pick up, and you worry that your near-perfect game will be compromised. The only way to check wind on the course is to grab a clump of grass, drop it and watch the direction and force of the winds.

Or is it?

The Minnesota Department of Transportation's Office of Aeronautics has entered into an agreement with AnyAWOS Inc., to provide METAR information for the local airport and for all of the nearly 90 AWOS systems that the state owns and operates. These systems in turn feed nationally into the National Weather Service. You put in the city name or zip code and the weather for the area is presented as KCFE. And you can access this information via a Handheld Weather Meter or on your smart phone by connecting to AnyAWOS - https://www.anyawos.com/KCFE.

Chris Fredrick, the airport manager from the City of Buffalo, Minnesota. Airport, happens to be part of your golf foursome. Chris mentions the Buffalo Airport's recently commissioned, state-of-the-art AWOS System with the latest sensing features. He points out a unique feature on the new AWOS Tower that is unlike the old AWOS systems throughout Minnesota: a weathervane minus a prop that provides wind speed and direction.

These new AWOS systems with the latest generation of sensors use sound waves to measure wind speed and direction. The measurement is based on the time it takes for an ultrasonic pulse to travel from one transducer to another, which varies depending on the wind speed, among other factors. The transit time is measured in both directions for several (usually two or three) pairs of the transducer heads. Based on those results, the sensor computes wind speed and direction. Compared to mechanical sensors, the ultrasonic sensors offer several advantages, such as no moving parts, advanced self-diagnostic capabilities and reduced maintenance requirements.

This technology has come a long way since the days when airports had a person daily physically go out to the Weather Data Collection Devices and write down the data to be posted and broadcast at the airport. In the mid-1980s, Remote Electronic AWOS Sensing Reporting was deployed. By 1990, the first AWOS Systems were commissioned in Minnesota, many of which are still in operation. The original systems are no longer supported by the manufacturer, requiring the MnDOT Navigation System Team to find parts from other states that no longer have a need for the older equipment.

To the City of Buffalo, Minnesota, and all of our other partners, MnDOT Aeronautics would like to express our gratitude for ensuring those arriving or departing the Buffalo Airport have every tool necessary to provide for a safe and informative flight.

Even though you can't bring a portable AWOS Tower out on the golf course – know as a pilot, flying in and out of the Buffalo Airport, the weather is reported much more accurately than with a lump of grass. ❑

New Fixed-Base Operator At Anoka County-Blaine Airport

BLAINE, MINN – Atlantic Aviation is the newest fixed-base operator at Anoka County-Blaine Airport (ANE). Atlantic announced its acquisition of Lynx FBO Network, the former service provider at ANE. Atlantic is a leading network of FBOs with operations in 30 states.

"We're excited to have Atlantic Aviation at ANE, and we look forward to working with their team to continue providing top-level service to our customers," said Joe Harris, Director of Reliever Airports for the Metropolitan Airports Commission, which operates ANE. ❑

Great Minnesota Aviation Gathering 2022

The Minnesota Pilots Association (MPA) will be holding its annual "Great Minnesota Aviation Gathering" (GMAG) at the Buffalo, Minnesota airport, Friday, May 20, 2022, and Saturday, May 21, 2022. As part of the gathering, the association will be awarding three aviation scholarships, each worth $2,000. Two scholarships are for pilot training and one for mechanic training. More information about applying for the scholarships can be found on the Minnesota Pilots Association website: **www.mnpilots.org**. For additional information, email Patrick Halligan at **flyinghooligan@gmail.com**. ❑

Economic Impact Analysis For Airports: A Primer On Measuring The Economic Contributions of Airports


Aaron Gruen


Debra Jeans


Andrew Ratchford

by Aaron Gruen, Debra Jeans, and Andrew Ratchford

PURPOSE OF ECONOMIC IMPACT ANALYSIS

The common purpose of any economic impact analysis is to quantify the total impact of a change in economic activity, or one source of economic activity, on a broader economy. Economic impact analysis of airports and aviation activities can be used to measure and describe the linkages and importance of air travel connections to local and regional economies.

OVERVIEW: THE ECONOMIC EFFECTS OF AIRPORTS

Regions with airports can attract and retain growing businesses that value accessibility to airports and high levels of air connections for passenger travel and cargo delivery. The transportation access provided by proximity to airports with air service capacity affects the structure, size, and growth of the economic base of regions. Regions with high-quality and sufficient capacity of airport infrastructure are more successful in attracting, retaining, and fostering growth of businesses that value airport accessibility, particularly the primary drivers of economic growth or transition from old-line manufacturing to high-order service industries.

Air passenger facilities are essential to many service-type facilities and industries, while certain goods-producing industries depend upon air-cargo facilities. Advertising, computer and data processing, accounting and auditing, management/public relations and legal services, for example, are concentrated in metropolitan areas which have excellent air connections. The greater concentration of service sector and finance, insurance and real estate sector industries in metropolitan areas with high-quality airports suggest that excellent air travel connections are a critical location factor for businesses which export their services (i.e. send out personnel or bring in customers by air travel, because they provide their services to customers outside of their region of domicile). Similarly, jobs related to the convention/tourism industry are clearly linked to wide-ranging, frequent, and low-priced air travel connections.

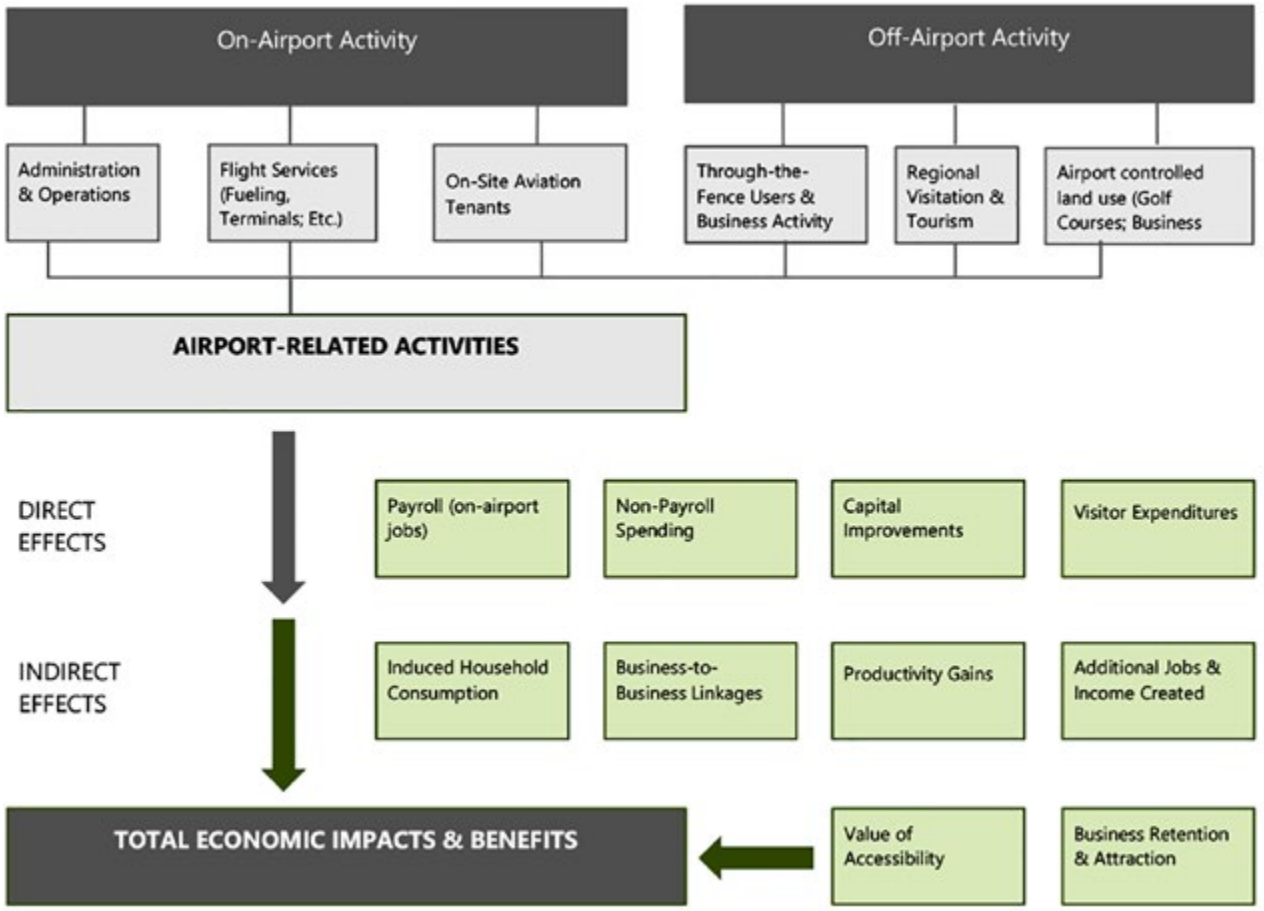
Paradoxically, the digital communications revolution that has diminished the importance of physical proximity in location decisions, has increased the importance of airports for social and economic development opportunities because of the expansion of the size of networks of firms and individuals. Consultants and many other types of businesses are not confined to serving local areas, but to maintain and grow business relationships over extensive geographic markets post Covid 19, will need to move beyond "Zoom" or "Teams" video-conferences and meet and dine in person with clients and customers.

The growth of aviation has served as an economic development catalyst.[1] Just as the growth of the railroad industry facilitated connections and encouraged interdependencies between urban and rural markets, the aviation industry has been a key factor behind globalization and shifts to just-in-time manufacturing and inventory techniques. The ability to quickly vary or customize goods and services to the specifications of the customer base is one of the principal requirements for business success today.

Flexibility and speed are key comparative advantages which superior air connections permit firms to exploit. Proximity of an airport is frequently an important factor in site location decisions.[2] Communities with access to adequate airport capacity have stronger economic growth and rising incomes than communities without such access.

CONTRIBUTIONS OF AIRPORTS TO REGIONAL ECONOMIES

The following chart illustrates the contributions outlined above airports make to regional economies.



MEASURES OF ECONOMIC IMPACTS

The economic impacts generated by airports are typically measured and quantified in terms of *employment* (the number of full- or part-time jobs created), *labor income* (the sum of wages, salaries, benefits, and proprietor income); and *output* (the economic value of all goods and services produced in the region). For capital projects that may have only a limited duration or "one-time" impact on an economy (such as reconstructing a taxiway or developing a terminal building), the measure of employment impact is commonly expressed as the number of "job-years" created from that capital expenditure.

TYPES OF ECONOMIC IMPACTS

The total economic impact of an airport represents the sum of three different economic effects. These include Direct Effects, Indirect Effects, and Induced Effects.

Direct Effects are typically defined as the initial round of expenditures related to all airport operations including labor purchases (i.e., payrolls) and non-payroll expenditures. These direct expenditures or "inputs" encompass both the airport operations itself, as well as the economic activities associated with on-airport tenants (hangar occupants, air carriers, on-airport hotels or rental car facilities, retailers and restaurants inside a passenger terminal, etc.).

The spending associated with non-local air passengers and other airport-dependent tourism activities are also considered a direct effect, even if such activities occur "off-site." Without one of the world's busiest airports, O'Hare International Airport in Chicago, Illinois for example, the amount of convention-related business would be far less in Chicago.

Many non-aviation businesses make their site/facility location decisions based on proximity to an airport. While more difficult to quantify, off-airport jobs and activities that depend highly upon proximate accessibility to an airport (activities which otherwise would not exist in the region) would also be appropriate to consider as direct effects.

Indirect Effects can be described as the changes in economic activity that result from supply chain inputs required by the airport and directly related activities. Businesses buy products from each other creating indirect impacts on other industries. Therefore, a change in one industry will "ripple" through other industries. Consider the example of a small MRO firm occupying a hangar at a General Aviation airport. Assume final demand for MRO service has increased with traffic at the airport; now a greater volume of fabricated metal fasteners, aviation upholstery supplies – and so forth – are required. However, the impacts will not stop here; the upholstery supplier will purchase more textiles, the textiles manufacturer will buy more equipment, and so on. These sector-to-sector linkages are referred to as the Indirect Effects. The magnitude of these indirect or "ripple" effects largely depend upon the size of the local and regional economy and whether inputs can be supplied locally (or must be imported).

Induced Effects refer to the economic activities that result from the spending by workers whose wages or earnings are affected by airport activity – either directly or indirectly. These Induced Effects may be thought of as the "second round" of effects resulting from the first-round Direct and Indirect Effects. While an MRO business located on-site at an airport may not itself purchase food or medical services, its direct employees and indirectly supported workers (at suppliers) consume these goods and services.

The employment, income, and output multipliers are key variables in any economic impact analysis. They quantify the relationships between the direct, indirect and induced effects described above. The magnitude of the multipliers depend upon the extent to which businesses purchase their inputs from other businesses located in the same region or geographic area such as a county, as contrasted with the purchase of inputs from businesses located outside the region or relevant geographic area such as a county. Multipliers vary among industries and among geographic areas. For example, larger and more diverse regions will tend on average to have larger industry multiplier effects because of a greater likelihood of tighter linkages within the region. That is, an industry's inputs will be more likely to be provided by other businesses within the region.

The multiplier is the coefficient that relates the magnitude of a Direct Effect to the total economic impact (which includes the Indirect and Induced Effects).

HOW TO INTERPRET MULTIPLIERS

Consider an employment multiplier of 1.5; the interpretation is as follows, for every direct job, an additional 0.5 jobs are generated through a combination of the indirect and induced impacts. For income multipliers, it is the change in personal income (the sum of wages and salaries and proprietor income) within the region for every dollar change in demand induced by the airport and associated activities. An output multiplier is defined in the change in the regional output for every dollar of final demand induced by the airport and its associated activities. For example, if the value of the output multiplier is 1.8, this means that for every dollar increase in production as the result of the presence of the airport and its associated activities, total production in the region increases by $1.80. Of that $1.80, $1.00 is the direct result of the increase in final demand as the result of the airport and related activities direct expenditures, and $0.80 is the indirect increase in production within the region as the result of related industries increasing their output of goods and services to meet the demand requirements of the airport and its associated activities.

A COMMON METHOD OF ESTIMATING ECONOMIC IMPACTS

A common method of estimating the economic impacts of airports is through the use of input-output models. Input-output models are based on an extensive table or snapshot of the region's market transactions between industry sectors, between industry and household sectors and between regional sectors and sectors outside the region. An initial demand stimulus, such as airport activity, yields a set of multipliers from the transactions table based on distribution of the impacts of the airport activity distributed by the affected industry and household sectors to produce final employment, income, and output impacts.

Studies in the United States utilizing input-output models tend to employ one of two models. One type is the RIMS II input-output model produced by the United States Bureau of Economic Analysis. This model has been "regionalized" for each of the states and for major metropolitan areas. Earnings-by-industry and personal consumption expenditure data are used to include households as both suppliers of labor and purchasers of final goods and services.

IMPLAN[3] organizes the local economy into 432 separate industries based on the North American Industry Classification System ("NAICS") and is an accounting system of transactions that occur through forward and backward linkage in the economy. IMPLAN contains three primary components: the flow-table, direct coefficients, and direct, indirect, and induced coefficients. The input-output accounting traces the flow of dollars between businesses and between businesses and final consumers. The multipliers produced by the model are customized for the economic activity in any set of contiguous U.S. counties. These multipliers represent ratios of total to partial changes in economic activity. When these ratios are multiplied by a change in final demand that is specific to a local economic stimulus such as the expansion of an airport, the result is an estimate of a total change in the local economy. RIMS II provides both Type I and Type II multipliers. Type I multipliers account for the direct and indirect impacts based on how goods and services are supplied within a region. Type II multipliers not only account for these direct and indirect

impacts, but they also account for induced impacts based on the purchases made by employees. RIMS II is a "backward-linkage" model such that if an economic sector or industry increases production, increased demand occurs in those sectors or industries that produce the intermediate inputs.

CASE STUDY EXAMPLES OF ECONOMIC IMPACTS OF AIRPORTS

The **DuPage Airport**, located about 30 miles west of Chicago, serves the largest concentration of corporate aircraft in Illinois. The airport property consists of approximately 2,800 acres of land and features the DuPage Flight Center, four active runways, two ILS approaches, a 24-hour FAA Air Traffic Control Tower, and an onsite U.S. Customs office. The airport property also includes the revenue-generating Prairie Landing Golf Club designed by Robert Trent Jones, Jr. that also serves as a buffer and drainage area. The Prairie Landing Golf Club includes a pro-shop, restaurant, and banquet facility. Another part of the airport, the DuPage Business Center, contains a total of 331 acres of developable land. Approximately 64 percent or 213 acres of the business park has been developed and absorbed with 2,938,000 square feet of industrial building space relatively recently completed or currently under construction. Approximately 118 acres of land have been sold (or optioned) for industrial uses.

DuPage Business Center

The following section summarizes the estimated economic impacts associated with the **DuPage Airport**.

Table 1 summarizes the total annual economic impact of the DuPage Airport Authority, including the DuPage Airport, Flight Center, and on-site businesses, Prairie Landing Golf Course, and DuPage Business Center on the DuPage and Kane Counties economy.

TABLE 1

Total Economic Impact of the DuPage Airport Authority and Related Activities on the DuPage and Kane Counties Economy in 2018[1]

	Employment # Jobs	Labor Income $	Output $
Direct	1,691	119,816,226	458,192,467
Indirect/Induced	2,046	123,410,712	297,825,103
Total	3,737	243,226,938	756,017,570
Multiplier	2.21	2.03	1.65

[1] Economic impacts for DuPage Business Center are for 2020. DuPage Airport and Flight Center and other activities reflect 2018 impacts.

Sources: DuPage Airport Authority; IMPLAN Group LLC; Gruen Gruen + Associates.

The total direct and indirect employment impact of the airport and related activities on the DuPage and Kane Counties economy is estimated at 3,737 jobs. The total direct and indirect annual labor income impact is estimated at $243.2 million, or approximately $65,000 per job. The total output impact – that is, the total volume of economic activity supported – is estimated at $756 million annually within DuPage and Kane Counties.

Expenditures made by the DuPage Airport Authority, Prairie Landing Golf Course, on-site businesses, the existing tenants of the DuPage Business Center, and airport visitors, directly support 1,691 jobs within DuPage and Kane Counties. These expenditures directly generate $119.8 million of additional income within the two counties, or approximately $71,000 of income per job. Total direct annual output associated with the airport and related activities is estimated at $458.2 million.

Indirectly, airport-related spending supports an additional 2,046 jobs within DuPage and Kane Counties and $123.4 million of labor income (approximately $60,000 of labor income per indirect job supported). The employment and income multipliers are 2.21 and 2.03 respectively, indicating that for every 10 directly-supported jobs, an additional 12 jobs are supported indirectly within the two counties; and for every $10.00 in direct income, an additional $10.30 is created indirectly.

Chicago Executive Airport

Chicago Executive Airport, formerly Palwaukee Airport, is located about 18 miles northwest of Chicago in the Village of Wheeling in Cook County, Illinois. The airport is jointly owned by the City of Prospect Heights and the Village of Wheeling. The airport has more than 181 based aircraft and is the busiest reliever in the Chicago metropolitan area. The airport has three runways and a U.S. Customs office, and hosts three fixed base operations and multiple aircraft charter operations and aircraft maintenance facilities.

Table 2 summarizes the total annual economic impact of Chicago Executive Airport including the airport and on-site businesses on the Cook County economy in 2019.

TABLE 2

On-going Annual Economic Impact of Chicago Executive Airport, On-site Businesses and Visitor Spending on the Cook County Economy in 2019[1]

	Output $	Labor Income $	Employment # Jobs
Direct	104,142,900	28,206,900	348.6
Indirect/Induced	94,992,700	30,791,000	622.5
Total	199,135,500	58,997,900	971.1
Multiplier	1.91	2.09	2.79

[1] Figures area rounded.

Sources: Chicago Executive Airport; RIMSII, Regional Production Division, Bureau of Economic Analysis; Gruen Gruen + Associates.

The total direct and indirect employment impact of the airport and related activities on the Cook County economy is estimated at 971 jobs. The total direct and indirect annual labor income impact is estimated at $59 million, or approximately $60,800 per job. The total output impact – that is, the total volume of economic activity supported – is estimated at $199.1 million annually within Cook County.

Expenditures made by the airport, on-site businesses, and airport visitors directly support 349 jobs within Cook County. These expenditures directly generate $28.2 million of additional income within Cook County, or approximately $80,900 of income per job. Total direct annual output associated with the airport and related activities is estimated at $104.1 million.

Indirectly, airport-related spending supports an additional 623 jobs within Cook County and $30.8 million of labor income (approximately $49,500 of labor income per indirect job supported). The employment and income multipliers are 2.79 and 2.09 respectively, indicating that for every 10 directly-supported jobs, an additional 18 jobs are supported indirectly within the county; and for every $10.00 in direct income, an additional $10.90 is created indirectly.

Table 3 summarizes the total one-time economic impact of construction activities of Chicago Executive Airport, including the airport and on-site businesses on the Cook County economy in 2019.

For the one-time construction impacts of the construction activities of the airport and on-site tenants, the total (direct and indirect) annual employment impact on the Cook County economy, is estimated at nearly 81 jobs. This is full- and part-time jobs, not "full-time equivalent" estimates. The

TABLE 3

One-Time Annual Economic Impact of Construction Activities of Chicago Executive Airport and On-site Businesses on the Cook County Economy in 2019

	Output $	Labor Income $	Employment # Jobs
Direct	9,281,900	3,020,900	47.9
Indirect/Induced	7,053,900	1,475,100	32.8
Total	16,335,800	4,496,000	80.7
Multiplier	1.76	1.49	1.68

Sources: Chicago Executive Airport; RIMSII, Regional Production Division, Bureau of Economic Analysis; Gruen Gruen + Associates.

total (direct and indirect) income impact on the county is estimated at approximately $4.5 million, or approximately $55,700 per job. The total output impact – or the total volume of economic activity supported – is estimated at $16.3 million.

Studies like those sponsored by DuPage International Airport and Chicago Executive Airport can be used to inform the public and civic leaders of the economic and fiscal contributions generated by local airports so that support for airport activities, expansions, and enhancements can be garnered.

The authors are members of Gruen Gruen + Associates (**www.ggassoc.com**), a research-based real estate and economics consulting firm that have extensive experience studying the economic and fiscal impacts of airports and planning and assisting in the implementation of development of aviation and non-aviation uses on lands controlled by airports.

[1] Air travel, for example, transformed Phoenix. "Airline travel is a force of concentration on urban form . . . . So air travel had the effect of concentrating business activity in fewer, larger cities with substantial airports. Those cities became dominant centers of regional areas, with the big airport being the hub of other transportation modes." Grady Gammage Jr., Phoenix in Perspective, 1999, pg. 33.

[2] Boeing and Caterpillar relocated to the Chicago metro region (Boeing to Downtown Chicago and Caterpillar to Deerfield) in part because of superior aviation infrastructure. See, for example, https://hbr.org/2001/10/inside-boeings-big-move; https://www.chicagotribune.com/business/ct-caterpillar-headquarters-deerfield-0420-biz-20170419-story.html.

[3] IMPLAN was initially developed in 1976 by the U.S. Forest Service to evaluate the socioeconomic impacts on local communities of alternative forest land management strategies. In 1985, the responsibility for developing "IMPLAN" data sets and models was transferred to the University of Minnesota which formed an independent entity to serve organizations other than the U.S. Forest Service. A national dataset and regional models have been developed, maintained and enhanced over time. ❑

Latest IDOT Study Reveals St. Louis Downtown Airport Contributes $422 Million In Economic Impact To The Bi-State St. Louis Region

CAHOKIA HEIGHTS/SAUGET, ILL. – St. Louis Downtown Airport (KCPS), an FAA-designated reliever airport in St. Clair County, Illinois, shared the results of a newly released study which found that the airport continues to be a major contributor to the local and state economies. According to the study, which was conducted by the Illinois Department of Transportation (IDOT), St. Louis Downtown Airport contributed more than $422 million in economic impact for the region in 2019, including factors, such as on-airport activity and visitor spending.

Located in Cahokia Heights and Sauget, Illinois, just a few minutes east of downtown St. Louis, the report notes that St. Louis Downtown Airport acts as a Gateway to the St. Louis metropolitan area. Due to its strategic location, St. Louis Downtown Airport is one of the busiest general aviation airports in Illinois. The airport supports significant activity from recreational and business flying, as well as flight training at St. Louis University Parks College, the nation's oldest flight school. The study highlights that, in addition to several aircraft and helicopter maintenance operations at the airport, one of the largest maintenance, repair, and overhaul facilities, Gulfstream Aerospace, is located at the airport. Additional activities supported by the airport include government operations, military training, real estate tours, medical transport, aerospace technology research, and glider flying.

"The diversity of operations occurring here at St. Louis Downtown Airport contributes to our continued role as an economic engine for the bi-state St. Louis region and makes us a key contributor to the tremendous strength of the aviation sector in the State of Illinois," said Taulby Roach, President and CEO of Bi-State Development, which owns and operates the airport as one of its enterprises.

The study also shows that St. Louis Downtown Airport remains a major employer in the St. Louis area, contributing to 1,522 full-time and part-time jobs in the region. The airport's sizeable workforce generated $105.8 million in labor income – or total employment compensation – in 2019, including wages and other benefits, according to the results of the study. Revenue generated from visitors from out of state traveling through St. Louis Downtown Airport for business or personal reasons in 2019 totaled $13.6 million spent on things like accommodations, local ground transportation, retail, and entertainment. The report also revealed the "value added" economic productivity of each aviation-related business establishment connected to the airport was $177.7 million in 2019.

"While we've faced some challenges in recent years, not the least of which is the global pandemic that temporarily stalled the aviation industry, our potential for continued growth is evident in the strong rebound in flights taking advantage of the airport's unmatched location to downtown St. Louis and the surrounding region," said Roach.

Between January 1 and October 31, 2021, KCPS hosted more than 85,600 flight operations, an increase of more than 3,500 operations compared to the same period in 2019. That's a clear sign the airport is emerging stronger than ever following the pandemic-related challenges the past two years. Additional growth is expected to stem from the $5 million state grant recently awarded to the airport from the $45 billion Rebuild Illinois capital infrastructure plan Governor Pritzker signed into law in 2019. The funding will cover the cost of building a Ground Engine Run-Up facility, which is a critical improvement that will benefit four aircraft maintenance providers operating at the airport. The project will support more than 450 high-tech aerospace manufacturing jobs by improving production safety, reliability, and efficiency, improving airport businesses and increasing global competitiveness for southwestern Illinois and the State of Illinois. It is also part of the airport's overall

infrastructure implementation plan which supports 25 airport tenant manufacturing and aviation operations, ensures tenant leasehold longevity, and supports future airport business growth.

The $422 million figure for St. Louis Downtown Airport represents the sum of on-airport activity generated by the airport management and administration and airport tenants, as well as on-airport construction. St. Louis Downtown Airport is one of two commercial service airports and 14 general aviation airports welcoming business travelers and visitors to Region 5 of Illinois, the state's southernmost region. In 2019, airports in Region 5 generated 28,595 jobs, $2.1 billion in labor income and $2.6 billion in value added for a total regional economic impact of $6.1 billion. The study determined that, combined, Illinois' five regions are home to a network of more than 80 airports that generated 492,186 jobs and contributed $95.4 billion to the state's economy in 2019. To learn more about St. Louis Downtown Airport, visit **www.stlouisdowntownairport.com**. To learn more about aviation in Illinois and the Illinois Aviation System Plan, visit **www.ilaviation.com**.

Bi-State Development (BSD) owns and operates St. Louis Downtown Airport and the Gateway Arch Riverboats, and operates the Gateway Arch Revenue Collections Center and Gateway Arch trams. BSD is the operator of the metro public transportation system for the St. Louis region, which includes the 87-vehicle, 46-mile MetroLink light rail system; a MetroBus fleet of nearly 400 clean-burning diesel and battery electric vehicles; and Metro Call-A-Ride, a paratransit fleet of 125 vans. BSD also operates the St. Louis Regional Freightway, the two-state region's freight district. ❑

Belt Announces $5 Million Investment For St. Louis Downtown Airport

CAHOKIA HEIGHTS/SAUGET, ILL. – St. Louis Downtown Airport will receive $5 million in funding to benefit aircraft maintenance providers and support more than 450 high-tech aerospace manufacturing jobs at the airport, announced Illinois State Senator Christopher Belt (D-Swansea).

"St. Louis Downtown Airport is a vital economic engine in the Metro East," Belt said. "I will continue working with Representative Latoya Greenwood to bring our tax money home from Springfield in order to maintain and create jobs in our area."

St. Louis Downtown Airport is the third busiest airport in Illinois and was recognized by the Illinois Division of Aeronautics as the 2021 Reliever Airport of the Year.

The funding will go towards a ground engine run-up project, which is a critical improvement that will benefit four aircraft maintenance providers operating at the airport. This project will support more than 450 high-tech aerospace manufacturing jobs by improving production safety, reliability, and efficiency, improving airport businesses, and increasing global competitiveness for southwestern Illinois and the state of Illinois.

The project has been in the works for several years. Construction is anticipated to begin in 2022.

"This Engine Run-Up facility will provide new opportunities to expand aerospace manufacturing opportunities at St. Louis Downtown Airport, resulting in job growth and private sector investment at this site," said Taulby Roach, President and Chief Executive Officer of Bi-State Development. "We greatly appreciate the support of Senator Belt and Representative Greenwood in advocating for this funding and are confident that it will enable us to continue to grow the annual economic impact of our airport." ❑

MidAmerica St. Louis Airport Celebrates New Milestone As Passenger Traffic For 2021 Tops 320,000 New Record High Number of Travelers Surpasses Pre-Pandemic Highs of 2019

MASCOUTAH, ILL – MidAmerica St. Louis Airport has announced that passenger traffic through the airport during 2021 increased to a total of 320,000 travelers, a new annual record high for the airport. The passenger count exceeds 2019 numbers by 3.4%, which is significant considering the coronavirus pandemic continues to impact the travel industry and particularly air travel. It represents a 46% increase over the 2020 passenger traffic count, a clear indication travelers are once again comfortable taking to the skies and choosing to take advantage of the many advantages MidAmerica St. Louis Airport offers.

Destinations currently served by Allegiant from MidAmerica Airport include Charleston, Daytona Beach, Destin/Ft. Walton Beach, Fort Lauderdale, Jacksonville, Las Vegas, Orlando, Phoenix/Mesa, Ft. Myers/ Punta Gorda, Sarasota/Bradenton, Savannah, and Tampa Bay/St. Pete.

In other recent positive news, a new study by the Illinois Department of Transportation revealed the regional economic impact of MidAmerica St. Louis Airport, which operates as a joint-use facility with Scott Air Force Base, topped $3.1 billion in 2019, up from $2.5 billion in 2012. While passenger traffic certainly contributes to that number, construction on the airport property and the activity of airport tenants are also key factors, and in MidAmerica's case they are factors that will contribute to additional growth in the economic impact of the airport over the next several years. The study data precedes the beginning of construction on the expansion of the terminal at MidAmerica and the new $96 million MetroLink Extension from Scott Air Force Base to MidAmerica Airport which will serve both passengers and tenants at the airport. The study

Allegiant Airline planes at MidAmerica St. Louis Airport.

also was completed before Boeing announced it would be investing $200 million in a new manufacturing facility totaling approximately 300,000 square feet at MidAmerica. Scheduled for completion in 2024, the facility will initially employ approximately 150 mechanics, engineers and support staff who will build the MQ-25 Stingray, the Navy's first operational, carrier-based unmanned aircraft. Employment could reach up to 300 with additional orders.

MidAmerica St. Louis Airport is located in Mascoutah, Illinois, in the eastern portion of the St. Louis metropolitan area (www.flymidamerica.com). ❑

Amelia Earhart Hangar Museum, Atchison, Kansas, Now Open!

The new, multi-purpose Amelia Earhart Hangar Museum in Atchison, Kan., serves as a museum, an airport terminal, and community gathering place.

When visiting the Amelia Earhart Hangar Museum and the Amelia Earhart Birthplace Museum in Atchison, Kansas, you'll go back in time when the famous aviatrix dreamt of setting world records!

The star attraction of the Amelia Earhart Hangar Museum, located at Atchison Amelia Earhart Memorial

This Lockheed Electra 10-E airplane, one of only 14 ever built, is identical to the aircraft Earhart flew on her fateful flight in an attempt to become the first woman to circumnavigate the world. The aircraft is named "Muriel" after Amelia Earhart's younger sister, Grace Muriel Earhart Morrissey.

Airport (K59), is the last surviving Lockheed Electra 10-E airplane, one of only 14 ever built. The aircraft is identical to the aircraft Earhart flew on her fateful flight in an attempt to be the first woman to circumnavigate the world. The aircraft is named *"Muriel"* after Earhart's younger sister, Grace Muriel Earhart Morrissey.

The new multi-purpose hangar not only serves as a museum, but as an airport terminal and community gathering place. The 16,800 square foot building, designed and built by Al J. Mueller Construction of St. Joseph, Missouri (**http://aljmueller.com/**), is a pre-engineered

The international organization of licensed women pilots, the Ninety-Nines of which Amelia Earhart was its first president, owns and manages the Amelia Earhart Birthplace Museum in Atchison, Kansas. In 1984, the organization began fully restoring the 1861 Victorian structure where Earhart was born. The home was designated a national historic site in 1971.

metal hangar of the 1920-30s era. It includes the museum, hangar space, viewing mezzanine, lobby, storage/prep bay, offices, pilots' lounge, and conference and community room. The hangar features a large Schweiss bifold liftstrap door with three large windows to provide natural lighting (**www.bifold.com**). The door measures 69 feet, 4 inches wide by 19 feet, 7 inches tall, so it is perfect for large deliveries and is easy to operate, according to museum officials. The door was installed by DH Pace Company of Olathe, Kansas (**www.dhpace.com**).

The Amelia Earhart Hangar Museum will educate, inspire, and empower all generations in their pursuit of flight.

After years of dreaming and planning, the Amelia Earhart Hangar Museum should be completed by spring 2022. While there are exhibits yet to be displayed, the museum is now open for tours by appointment. To schedule an appointment call **314-753-8312** during regular business hours, 9:00 a.m. to 5:00 p.m., Monday through Friday. The cost is $10 for adults and $6 for children. A gift shop is open during tours (https://ameliaearharthangarmuseum.org/).

In addition to the hangar museum, Amelia Earhart's childhood home is historic and filled with the mystery of the aviator. The house was built in 1861 in a Gothic Revival style and is on a bluff overlooking the Missouri River. Earhart was born in this house on July 24, 1897. For additional information, call the "Amelia Earhart Birthplace Museum" at **913-367-4217** (**www.ameliaearhartmuseum.org**).

Earhart's Disappearance Remains A Mystery

After completing several historic flights, including flying solo across the Atlantic Ocean, May 20-21, 1932, Amelia Earhart embarked on the most challenging flight of her career in an attempt to circumnavigate the world. On July 2, 1937 Earhart and her navigator, Fred Noonan, took off from Lae, New Guinea bound for Howland Island in the Pacific Ocean to get fuel and were never seen again. Earhart was just three weeks shy of her 40th birthday when they supposedly ran out of fuel, three-fourths of the way to Howland Island.

Three theories still abound to this day regarding Earhart and Noonan's disappearance. One theory is that Earhart crashed at sea due to technical difficulties or the inability to locate the small island. According to experts, the charts used by Earhart and Noonan placed Howland Island nearly six miles off its actual position. The second theory is that Earhart accidentally landed in the Central Pacific that was, at the time, controlled by the Japanese Navy. The third theory is that Earhart landed on an uninhabited island and may have survived, but never rescued. ❑

He Flew For Elvis & Now They Fly With You!

by Dave Weiman

If you are fortunate to own a corporate jet, airliner, or warbird, chances are you realize the economics – and sometimes the need – to "repair," rather than "replace" expensive and sometimes rare windows. Among the few companies that provide window repair is Aircraft Window Repairs (AWR) in Torrance, California.

Robert (Bob) Cupery and his wife, Kathi, own AWR, a division of Cupery Corporation, and like most husband-and-wife teams, they live and breathe the business. Bob is the technical manager of operations, and Kathi is president/CEO and general manager.

While Bob Cupery was a flight engineer for the CEO of Northrop Grumman, returning home on a flight from Guam aboard a Gulfstream II, he noticed that the windshield had cracked. So, to avoid having the aircraft grounded, he ordered a new window and replaced it the next day.

On the flight home, a light went on in Bob's head… why not repair aircraft windows and do so at a fraction of the cost of a new window? Forty (40) years later, AWR flourishes with customers throughout North America and abroad. Customers will either ship their windows to California or AWR technicians will at sometimes fly to wherever the aircraft is based or stranded.

Cupery and his team are constantly updating their methods, and have set the standard for on-quality, on-schedule, and on-budget service. The company is certified for all major aircraft manufacturers and airlines to make the necessary repairs.

"Aircraft windows and the lenses that cover aircraft landing lights will eventually succumb to the stresses of atmospheric particles, which can cause scratches, abrasions, and cracks," says Bob Cupery. "A tiny scratch over time can deepen and weaken a window, so we try to repair the scratch before it becomes a major issue and the window must be replaced."

There is an outer and inner pane on windows. Most outer panes require more refurbishing than the interior panes,

Bob and Kathi Cupery standing in front of the USAF Northrop F-5 jet fighter at the Western Museum of Flight.

because of scratches. AWR's mission is to fully understand the stress tolerances put upon the windows of today's aircraft.

From inside the aircraft, AWR measures each window with calibrated equipment, before and after a window has been repaired or overhauled. Panes that no longer meet minimum thickness are replaced.

AWR maintains a complete library of maintenance manuals containing reference to the details, characteristics, and quality standards for each type of window and landing light lens.

Since 1979, AWR has restored over 100 types of corporate jet windows and has processed acrylic and polycarbonate lens repairs with AWR8000 and AWR8000XL. That's right… AWR uses its own products it has developed to repair windows and lenses! AWR also sells AWR P-17 prisms and P/N PMA-AWR25FCR550 desiccator assembly kits for Beechcraft Hawkers. (A desiccator is an airtight container which maintains an atmosphere of low humidity using a suitable drying agent which occupies the bottom part of the desiccator.) In addition, AWR overhauls deice plates for Piper and Cessna aircraft.

"Since I lived the life of a flight engineer and mechanic, and was International Director of Quality Control at Northrop, I understand the problem of deteriorating or damaged windows and what the customer needs – service and quick turnaround," commented Cupery.

Bob Cupery is in the Who's Who among Fortune 500 companies and well-known within the National Business Aviation Association (NBAA) of which AWR is a member,

among other professional associations.

Before joining her husband in the business, Kathi Cupery owned a staffing agency which specialized in placing engineers and administrators in the aerospace industry – experience that has paid off in working at AWR. AWR has a staff of 15 employees, some of whom have been with the company for more than 25 years.

AWR is the recipient of the FAA Diamond Award for outstanding work, and Bob Cupery is the recipient of the FAA Charles E. Taylor Master Mechanic Award for providing the aviation community 50 or more years of aircraft maintenance service. (Charles E. Taylor was the first aviation mechanic of powered flight. He served as the Wright brothers' mechanic and is credited with designing and building the engine for their first successful aircraft.) Cupery is also a trustee at Western Museum of Flight, located at Zamperini Field in Torrance.

Over 1,000 fixed base operators and aircraft maintenance repair operators have avoided the replacement of their windows, lenses, and deice plates, thanks to AWR.

So where does "Elvis" fit in with this story?

Among the people who chartered aircraft that Bob flew as a flight engineer was none other than the King of Rock and Roll, "Elvis Presley." Bob also flew "Cher" and many other celebrities. "Yes, it was fun," said Cupery, "but the responsibility is the same whether you are flying entertainers as famous as Elvis or Cher for a concert, business executives for a meeting, or a family for a winter vacation. But I will admit, flying Elvis was fun, and making small talk with him over breakfast, memorable."

For additional information, contact Bob or Kathi Cupery at **310-212-7173** or email info@awrepairs.com (**www.aircraftwindowrepairs.com**).

Aircraft Window Repairs – a division of Cupery Corporation – is a recipient of the FAA Diamond Award Certificate of Excellence. FAA/CRS # XK3R974L / EASA.145.4359 ❑

Avfuel Owner Honored At Living Legends

Craig Sincock

BEVERLY HILLS, CALIF. – Craig Sincock, Avfuel Corporation's owner, president, and CEO, received the 2022 "Kenn Ricci Lifetime Aviation Entrepreneur Award" at the 19th Annual Living Legends of Aviation Awards Ceremony, January 21, 2022, at the Beverly Hilton Hotel in Beverly Hills, Calif.

When Sincock, a passionate aviator with a keen sense of business, acquired Avfuel 37 years ago, he sought to disrupt and reinvent the aviation fuel supply chain. His tenacity drove Avfuel's evolution from a regional fuel distributor into the leading global supplier of aviation fuel and comprehensive services, offering everything from refueling equipment and comprehensive training programs, to aviation insurance and sustainability solutions.

Sincock has dedicated his career to shaping and supporting the aviation industry. As such, he was instrumental in reimagining the role of fuel distributors. Competitor counterparts soon followed his business model, and the industry was forever changed.

Under Sincock's leadership and entrepreneurial vision, the Ann Arbor, Michigan-based company quickly grew on a global scale. Avfuel now conducts business in 149 countries and serves more than 5,500 flight departments with 3,000-plus global fueling locations, including 650-plus Avfuel-branded FBOs. Today, Avfuel supports all aviation sectors, including FBOs, airports, corporate operators and helicopters, airlines, cargo/freight operators and the military.

Sincock is an active general aviation pilot and holds an Airline Transport Pilot Certificate.

The Kiddie Hawk Air Academy, a 501-c-3 non-profit organization, produces the annual Living Legends of Aviation Awards event. Kiddie Hawk's mission is to give children ages 4-7 their first flight lesson (**Livinglegendsofaviation.org**). ❑

EAA Honors 2020 & 2021 Halls of Fame Inductees

OSHKOSH, WIS. – The Experimental Aircraft Association (EAA) honored 12 aviation notables for their contributions to recreational aviation by inducting them into the EAA Sport Aviation Halls of Fame at the EAA Aviation Center in Oshkosh, Wisconsin, November 11, 2021. The large group of individuals represent the Hall of Fame classes of 2020 and 2021, as the 2020 induction ceremony was canceled due to the COVID pandemic.

The 2021 EAA Homebuilders Hall of Fame inductees included Flo and Bob Irwin (posthumous); International Aerobatic Club Hall of Fame inductee, Kirby Chambliss of Chandler, Arizona; Warbirds of America Hall of Fame inductee, Carl Scholl of Chino, California, and Tony Ritzman of Ontario, California; Vintage Aircraft Association Hall of Fame inductee, Steve Nesse of Albert Lea, Minnesota; and EAA Ultralights Hall of Fame inductee, Roy Beisswenger of Greenville, Illinois.

2020 inductees included EAA Homebuilders Hall of Fame inductee, Frank Christensen of St. George, Utah; International Aerobatic Club Hall of Fame inductee, Verne Jobst of McHenry, Illinois; Warbirds of America Hall of Fame inductee, Mark Clark of Rockford, Illinois; Vintage Aircraft Association Hall of Fame inductee, Steve Dyer of Brighton, Colorado; and EAA Ultralights Hall of Fame inductee, Dan Johnson of Port Orange, Florida.

The EAA Sport Aviation Halls of Fame were established to honor the outstanding achievements of men and women in aviation who share the spirit of EAA and its community. Those inducted into the halls of fame are selected by their peers for their contributions to their respective areas of aviation. ❑

Volunteer Pilots Are A Lifeline In Times of Need

An Illinois pilot's idea 40 years ago has led to more than 8,900 flights to date to help people in need. "Pilots have a special skill and my hope is that they will use this skill outside of the limits of their life and make a difference in somebody else's life," says Wanda Whitsitt, founder of LifeLine Pilots.

LifeLine Pilots Founder Wanda Whitsitt flew most flights herself in the early years of the organization.

In 1981, Wanda had the idea to help people in times of medical need by flying them for free! Flying a Piper Archer named "Sweet Charley," Wanda, her husband, and a handful of pilots made life-saving trips in the early years of LifeLine Pilots.

The group she founded has now flown more than 5.2 million nautical miles, helping thousands of people in need of medical care far from home. What started out of Wanda's garage is now the oldest volunteer pilot organization in the country. LifeLine Pilots is headquartered in Peoria, Illinois, but serves 10 states in the Midwest.

What is the mission of LifeLine Pilots?

LifeLine Pilots facilitates free air transportation, through volunteer pilots, for people with medical or humanitarian needs. Each year, volunteer pilots complete hundreds of missions, bringing patients and their caregivers to and from life-saving medical care.

"We believe that everyone, regardless of income, should have equal access to healthcare," says Lindsey Kerr, Executive Director of LifeLine Pilots. "By removing the transportation barrier, LifeLine Pilots helps to ease the financial burden put on families during times of medical uncertainty. The best thing we can tell families is there is no cost, ever!"

LifeLine Pilots receives no government funding. Instead, the organization relies on donations from individuals, businesses, and foundations to fund the facilitation of every flight. The volunteer pilots are the biggest supporters of LifeLine Pilots, donating hundreds of thousands of dollars in flight time, fuel and aircraft costs each year.

Better Banks President, Mike Stratton, presents LifeLine Pilots Executive Director, Lindsey Kerr, with their annual donation.

"The COVID pandemic has hit our passengers especially hard," says Lindsey. "It was dangerous to fly with a compromised immune system before, but now our passengers are terrified to expose themselves to busy airports and crowded commercial airplanes."

Even though the COVID-19 pandemic has presented many obstacles, LifeLine Pilots has seen a significant increase in the need for their services. From June-December 2020, they experienced a 48% increase in flights flown over this same time period the previous year. The upside is that more pilots than ever are signing up to fly passengers, looking for a way to help people in their time of need.

Who does LifeLine Pilots help?

Inquiries about LifeLine Pilots services come from hospitals and specialty clinics; from the patients or their families; and from social workers or case managers. With every application, LifeLine Pilots carefully reviews the patient's need for a flight and contacts the medical provider to confirm the referral for necessary treatment.

There is no limit to the number of times a passenger can fly with LifeLine Pilots. Some passengers only fly once, while others have flown dozens of times for on-going treatments. These passengers usually fly with many different pilots over the course of their treatments.

Talon, age 4, is a frequent flyer with LifeLine Pilots. He was born prematurely in July 2016 and LifeLine Pilots has flown him 18 times over his short life. He has multiple severe congenital heart defects and has required numerous surgeries and procedures at Boston Children's Hospital, more than 900 miles from his home in Kentucky. Talon is thriving today because of the expert care he receives and because of the pilots who continue to fly him there.

Who are the volunteer pilots?

"Flying for LifeLine Pilots has been a gift from God. I am able to do two things that I love, helping people and flying.

Talon is a frequent flyer with LifeLine Pilots. Volunteer pilot, Gary, and his wife often fly Talon 900 miles for his life-saving medical care.

How much better can life be?" says Brad, a volunteer pilot from Indiana.

Volunteer pilots have the opportunity to use their flying skills to provide much needed transportation at no cost to medically and financially needy passengers. This is a significant humanitarian act on the part of pilots.

Volunteer pilot, Fred, has been a LifeLine Pilots member for 18 years. "I feel very fortunate to belong to a group like LifeLine Pilots," says Fred. "All pilots, whether their first year or [their] 20th, can be thankful for the opportunity to provide a safe flight between home and hope."

Volunteer pilot, Gareth, helped fly Catie from Missouri to Boston Children's Hospital for treatment for a congenital heart defect.

LifeLine Pilots has a database of more than 250 volunteer pilots, but each year only about 100 pilots actively fly missions. This group of volunteers is the real strength of the organization and is what enables LifeLine Pilots to fulfill its mission to provide free flights. The LifeLine Pilots staff work with the passengers in need and the pilots to facilitate each mission.

Pilots are located throughout the 10-state region, allowing them to carry out flights efficiently. Patients do not have to travel far to get to an airport for their flight, and pilots do not have to travel far to pick up and deliver passengers to their destination.

The pilots donate their aircraft, fuel, time, and expertise. They do this because they want to use their love of flying to help others in need. The pilots are not allowed to take any money for their flights, but each mission is tax deductible for them.

Helping the passengers is what brings pilots back again and again. Volunteer pilot, Bob, from Tennessee, has been flying for LifeLine Pilots since 1998. His most memorable flight was flying a young boy who had an illness that caused him to go completely blind. "During this flight I felt in my heart two things. First, he was a bundle of joy that deserved all the help I could give him to live a quality life. Second, he would not live long because the illness that took his sight would one day take his life. The experience was transformative for me. I forgot all about getting flying time and only about serving others."

How does a volunteer flight work?

At LifeLine Pilots, the role of the mission coordinator is to ensure that all the details concerning a mission are handled from beginning to end. They have two experienced mission coordinators who look after the pilots and passengers.

After an individual has qualified for a flight, the potential flight is broadcast with a suggested flight route to pilots via the online database and automatic email system. Should a pilot elect to take a mission, the necessary paperwork is provided. The mission paperwork includes flight planning information, such as the number of passengers, weights, distances, recommended fixed base operators, and phone numbers so that the pilot can contact passengers.

LifeLine Pilots has a 100% safety record. This is possible because the pilot-in-command makes all go or no-go decisions. LifeLine Pilots does not make, nor override, any pilot's decision regarding weather or safety to fly.

What qualifications must volunteer pilots have?

To be a volunteer pilot for LifeLine Pilots, the following qualifications must be met:

1) Submit a completed and signed application.
2) Must be 21 years of age or older.
3) Must be current with a minimum of 250 hours of pilot-

in-command time.

4) Provide proof of insurance with a copy of the declaration or certificate page.

5) Send a copy of their most recent logbook entry for their biennial flight review or wings phase.

6) Successfully completed the AOPA Public Benefit Flying Online Course and submit a certificate of completion.

How Can I Get Involved?

If you are ready to volunteer for LifeLine Pilots, the easy-to-complete volunteer application form is available at **https://lifelinepilots.org/**. To expedite the process, have your documentation ready to upload, along with your application. The mission coordinators process new pilots, provide links for orientation/training, and offer help along the way.

Not all pilots meet the requirements to fly passengers, but there are other ways you can help. LifeLine Pilots is always looking for volunteers to help with outreach in their local communities. The organization gives volunteers the resources to help spread the word about the free service LifeLine Pilots provide. To volunteer, email **missions@lifelinepilots.org** for additional information.

LifeLine Pilots is here to help anyone with a medical need far from home. Please volunteer to help people in their time of greatest need and put your skills to good use. Thank you! ❑

Mustang Aviation: Where The Midwest Meets The Wild West

On one side of Pierre, South Dakota, you'll find vast farmland with rows of bright yellow sunflowers and golden waving wheat fields. On the other side, the buffalo roam the rolling hills, which extend to Black Hills National Forest, and further west to The Badlands.

What may seem like a scene out of a movie, for Jim Peitz, President and Founder of Mustang Aviation, and his family, it's home.

Pierre, population 15,000, has vibrant tourism and agriculture industries that draw visitors year around. Many people do not know that the area offers world-class walleye fishing, large game hunting and top-notch pheasant hunting. Other attractions include Lake Oahe to the north, which boasts 2,250 miles of shoreline and water depths of over 200 feet. There, you will find big sailboats and deep-water marinas.

Visitors who fly into Pierre Regional Airport (KPIR) are welcomed by Mustang Aviation – a full-service fixed base operation – which is owned and operated by native South Dakotans, Jim Peitz and his son, Clint. Jim Peitz established the FBO in 1990 as Capital City Air Carrier Inc., after a varied career that ranged from cattle ranching to HVAC contracting to real estate, and of course – aviation.

Jim Peitz started flying in the 1970s and has amassed over 14,000 hours in over 100 types of aircraft from Piper Super Cubs to jets. Today, you might spot him in a P51 Mustang, a T6, or perhaps even in his stock certified Aerobatic Beechcraft F33C Bonanza. Jim has been performing in airshows for more than 30 years, including EAA AirVenture Oshkosh, and is the recipient of the Sword of Excellence Award, presented by the International Council of Air Shows (ICAS).

Born into a family of aviators, it's no surprise Clint Peitz followed in his dad's aviation footsteps. Clint has served as Vice President and Operations Manager of Mustang Aviation for 20 years. He started flying at the age of 16 and earned his private pilot certificate before attending A&P school (**www.mustangaviation.aero**). ❑

EAA Surpasses 250,000 Members

Membership Grows by 25 Percent In 5 Years

EAA AVIATION CENTER, OSHKOSH, Wisconsin – The Experimental Aircraft Association (EAA), the recreational aviation organization that began in 1953 as a group of individuals dedicated to grassroots aviation, has surpassed 250,000 members for the first time – a growth of 25 percent in the past five years.

"EAA's founder, Paul Poberezny, created a culture nearly 70 years ago where anyone who wished to enjoy the freedom of flight was welcome to participate, and our mission of growing participation in aviation has thrived under that vision," said Jack J. Pelton, EAA CEO/Chairman. "The dedication of EAA's members, chapters, and staff has made it possible to grow the organization to new levels. I thank every EAA member who has contributed through the years and found value in being a member, as EAA began as a small group of builders and restorers but quickly grew into an organization that engages everyone who enjoys the world of flight."

Pelton added that EAA continues to grow its offerings to its core of builders, restorers, and pilots, while also meeting the challenges to aviation's future that range from regulatory matters to increasing the number of young people engaged in aviation. EAA's chapter network has also received increased support and resources as the home of grassroots aviation in hundreds of communities throughout the nation.

For more information on EAA and its programs, go to **www.eaa.org**. For continual news updates, connect with **www.twitter.com/EAA**. ❑

WHO'S THE BEST?

Flight Training Experience Awards Announces Regional Winners!

As reported by Julie Summers Walker
Aircraft Owners & Pilots Association

The results of the 2021 annual Flight Training Experience Awards have been tabulated and 42 schools and 100 CFIs have earned a "Distinguished" Award; and six schools and six instructors have been tapped as regional winners. The national winners of the 2021 survey will be announced at the Redbird (Flight Simulator) Migration in February.

The Flight Training Experience Survey and Awards are part of the ***"You Can Fly"*** program, powered by AOPA. You Can Fly is a comprehensive set of initiatives designed to get people flying and keep them flying. The Flight Training Experience Survey and Awards support that effort by recognizing flight schools and instructors that deliver exceptional training experiences.

AOPA conducted research to determine what makes a good flight training experience. These findings have guided the annual Flight Training Experience Survey and Awards since then:

- The sheer enjoyment of flying is an important attribute that should be emphasized in flight training.
- Recreational goals are the most common reason for learning to fly and most students learn outside the Part 141 environment.
- Students come to the process through referrals and place a premium on personal interaction with the aviation community.
- The flight instructor's performance is especially important.
- Flying and the sense of accomplishment it delivers is a powerful influence that mitigates quality issues and results in an overall positive experience.
- The notion of an "aviation community" that shares this experience is a key motivator.
- Value means far more than price. Schools should seek ways to stretch the student's dollar, offer free or low-cost learning opportunities, and demonstrate they're billing the student fairly.

For additional information and a complete list of award recipients and survey results, go to: **aopa.org/ftsurvey** ❑

NetJets, FlightSafety International Announce Major Support of Ohio Air & Space Hall of Fame & Learning Center

COLUMBUS, OHIO – Two international leaders in flight – Ohio-based companies NetJets and FlightSafety International (FSI) – jointly announced a six-figure commitment to the non-profit Ohio Air & Space Hall of Fame and Learning Center (OAS) through an investment totaling $225,000. This is the first investment of its type.

OAS is in the middle of a multi-phase, multi-million-dollar fundraising campaign to renovate the original Port Columbus airport terminal and tower into its home. The joint gift from NetJets and FSI will be used to unlock $550,000 with a state matching grant, allowing OAS to begin construction on phase one of its plan. The 12,000-square-foot, three-story structure, dedicated in 1929 and on the National Register of Historic Places, is located on the southeast corner of what is now John Glenn International Airport (CMH). For more information visit **www.OhioAirandSpace.org** ❑

Calendar

Email your calendar items to: dave@midwestflyer.com – Or Mail To – Midwest Flyer Magazine, 6031 Lawry Court, Oregon, WI 53575
Include the DATE, TIMES, LOCATION (Include City, State & Airport Name & I.D.), and CONTACT PERSON'S TELEPHONE NUMBER, as well as that person's email address for reference. First 15 words FREE $.75 for each additonal word.
NOTAM: Pilots, be sure to call events in advance to confirm dates and for traffic advisories and NOTAMs.
Also, use only current aeronautical charts, etc. for navigation and not calendar listing information.
Midwest Flyer Magazine is not responsible for accuracy of, or reliance on, any information published.
*Indicates any new or updated calendar listings since the previous issue.

FEBRUARY 2022

5* **Brodhead (C37), Wis. -** Groundhog Chili Ski Fly-In 11am-2pm. www.eaa431.org

12* **Oshkosh, Wis. -** Winter Flight Fest will bring family activities, virtual flight simulators, and the popular skiplane fly-in to the EAA Aviation Museum from 10am until 4 pm. (Pilots who are interested in flying their skiplanes to the event must pre-register by contacting Jeff Toline, EAA's director of aircraft operations, at jtoline@eaa.org.) www.eaa.org/eaa-museum/eaa-museum-events/winter-flight-fest

16-17* **East Lansing, Mich. -** 2022 Michigan Airport Conference at the Kellogg Hotel and Conference Center. www.michairports.org/conferences-seminars Co-sponsored by the Michigan Department of Transportation Office of Aeronautics and the Michigan Association of Airport Executives. Visit www.michigan.gov/aero or www.michairports.org for more information.

26 **Wisconsin Dells, Wis. -** 2022 Wisconsin Aviation Maintenance and IA Refresher Conference at the Glacier Canyon Conference Center at the Wilderness Resort, 45 Hillman Road. For more Info wisconsindot.gov/Pages/doing-bus/aeronautics/trng-evnts/mech-ia.aspx

MARCH 2022

5* **Mille Lacs Lake, Minn. -** ICEPORT 2022 Fly-In Brunch 10 am-3 pm at Mac's Twin Bay. Pilots monitor 122.9. Plowed iceway. Skis & Wheels welcomed. GPS 46.17N/93.48W. Orange safety cones depicting the landing zone. For latest event updates visit Facebook.com/CreateLift. Mac's Twin Bay www.macstwinbay.com/da-boathouse-restaurant

14* **Eden Prairie (FCM), Minn. -** Private Pilot/Instrument Ground School at Thunderbird Aviation, Inc. Call to register 952-941-1212. fly@thunderbirdaviation.com

17-19 **Nashville, Tenn. -** 2022 International Women In Aviation Conference at Gaylord Opryland Resort & Convention Center. https://www.wai.org/

28-29* **Brooklyn Center, Minn. -** The 2022 Minnesota Aviation Maintenance Technician and IA Renewal Conference will take place at the Earle Brown Heritage Center in Brooklyn Center, Minn. The conference attracts aviation maintenance professionals for continuing education, networking, and IA renewal; industry exhibits feature the latest and best in aviation products, technology, and services; career opportunities are available; and aviation awards are presented. Program questions, contact Darlene Dahlseide darlene.dahlseide@state.mn.us, 612-346-1750. To register, contact Roxann Neu at reneu@stcloudstate.edu, 320-308-4962.

APRIL 2022

5-10 **Lakeland, Fla. -** Sun n Fun Aerospace Expo. flysnf.org/

6-8* **Rochester, Minn. -** Minnesota Airports Conference at the Mayo Civic Center. For more information, please visit the conference web page or contact Katherine Stanley at sell0146@umn.edu or 612-626-1023.

23 **Minneapolis, Minn. -** 2022 Minnesota Aviation Hall of Fame at the InterContinental Minneapolis-St. Paul Airport Hotel, 5005 Glumack Dr. Minneapolis, MN 55450 at 612-725-0500. To register for the 2022 banquet or to make donations, email MAHOFBanquetReservations@gmail.com or call 952-906-2833 (www.mnaviationhalloffame.org).

MAY 2022

3-5 **San Antonio, Texas -** NBAA Maintenance Conference. nbaa.org/

15* **Brodhead (C37), Wis. -** Community Pancake Breakfast 7am-Noon. www.eaa431.org

20-21* **Buffalo (KCFE), Minn. -** Great Minnesota Aviation Gathering 2022. www.mnpilots.org

23* **Eden Prairie (FCM), Minn. -** Private Pilot/Instrument Ground School at Thunderbird Aviation, Inc. Call to register 952-941-1212. fly@thunderbirdaviation.com

JUNE 2022

4 **Milwaukee (KMWC), Wis. -** Flour Drop Contest 10am Lawrence J. Timmerman Airport. Timmermanairport.com 414-461-3222

12* **Wild Rose (W23), Wis. -** Breakfast 7-11:30 am.**24-25*** **Wausau (KAUW), Wis. -** Wings Over Wausau Airshow 4-10pm-Friday & 8am-10:pm Saturday. Featuring a professional airshow each night, with fireworks at dusk. Also featuring Chalkfest in Downtown Wausau! The event is free for those flying into the event! 715-297-9531 execdir@wausauevents.org

JULY 2022

21-24* **Brodhead (C37), Wis. -** Hatz Fly-In and Pietenpol Reunion. www.eaa431.org

25-31* **Oshkosh, Wis. -** AirVenture Oshkosh 2022 featuring the 75th Anniversary of the Air Force. Also the 50th Anniversary of Van's aircraft and the 30th Anniversary of EAA Young Eagles. **www.eaa.org/airventure**

AUGUST 2022

7* **Lino Lakes, Minn. -** Minnesota Seaplane Pilots Association Pig Roast at Surfside. www.mnseaplanes.com

8* **Eden Prairie (FCM), Minn. -** Private Pilot/Instrument Ground School at Thunderbird Aviation, Inc. Call to register 952-941-1212. fly@thunderbirdaviation.com

8-17 **Ontario, Canada -** A flying fishing adventure to Miminiska Lodge (CPS5)
TRIP #1: (3-Night/2-Day Trip): August 8 - 11, 2022 - *BOOKED!*
TRIP #2: (3-Night/2-Day Trip): August 11 - 14, 2022 - *BOOKED!*
TRIP #3: (5-Night/4-Day Trip): August 8 - 13, 2022 - *BOOKED!*
TRIP #4: (3-Night/2-Day Trip): August 14- 17, 2022 - *Space Limited, But Still Available!*
Contact Laurian Miles At Wilderness North 1-888-465-3474

SEPTEMBER 2022

10 **Milwaukee (KMWC), Wis. -** Spot Landing Contest 10am Lawrence J. Timmerman Airport. **Timmermanairport.com** 414-461-3222

16-18* **Brainerd, Minn. -** Minnesota Seaplane Pilots Association Safety Seminar at Madden's on Gull Lake. www.mnseaplanes.com

OCTOBER 2022

2-4 **Eau Claire, Wis. -** 66th Wisconsin Aviation Conference. Chippewa Valley Regional Airport, host airport.

NOVEMBER 2022

5* **Brodhead (C37), Wis. -** Chili Lunch Fly-In 11am-2pm. www.eaa431.org

Aerospace Center of Excellence Appoints New Executive Director

LAKELAND, FLA. – The Aerospace Center of Excellence (ACE) has announced the appointment of Daryl Price as its new Executive Director. An experienced business leader and aviation professional, Price will succeed Ed Young effective September 20th.

Relocating from Appleton, Wisconsin, Price will immediately begin having a direct impact on the ACE campus. After building and providing executive leadership to DJParagon, LLC for 22 years, his impact at ACE will be evident. DJ Paragon is a world-class training and technology company specializing in strategic and tactical business integration and training of technical, operational, and mission-critical business process systems. Leading the way, he developed and managed a world-class business training and technology company from inception to $18 million in annual revenue with 34 leading-edge emerging technology/data engineers and a customer presence throughout the U.S. and 17 foreign countries.

ACE President and CEO, John "Lites" Leenhouts states, "Daryl comes with a wealth of experience and knowledge, that partners exquisitely with a very engaging personality, all of which will be instrumental in leading our ACE Team as we bring the SkyLab Innovation Center to life."

The Aerospace Center of Excellence is a 14-building aerospace STEM facility located on the SUN 'n FUN Expo Campus. ACE has vibrantly created a vision of building a brighter future through aerospace and aviation. ❑

Major Attractions At EAA AirVenture Oshkosh 2022

OSHKOSH, WIS. – The 75th anniversary of the U.S. Air Force will be one of the highlights of EAA AirVenture Oshkosh 2022, the 69th edition of EAA's annual fly-in convention, July 25-31 at Wittman Regional Airport in Oshkosh, Wisconsin.

"At Oshkosh in 2022, we aim to showcase the memorable history of the Air Force, from its initial post-World War II era to the impressive personnel, aircraft, and technology of today," said Rick Larsen, EAA's vice president of communities and member programming, who coordinates AirVenture features and attractions. "The Air Force's presence at AirVenture also helps spark inspiration among today's youth toward the innovations and possibilities available to them through aviation."

Specific activities and aircraft will be announced as they are finalized, but will include fly-bys, static displays, and presentations throughout AirVenture week, including evening programs at EAA's Theater in the Woods. Some of the aircraft will also fly as part of the daily air shows that are always favorites among AirVenture attendees.

The U.S. Air Force was created on September 18, 1947, as part of the National Security Act, which established a separate military air branch and put all military branches under a new Department of Defense. It recognized the importance of military air operations and separated it from the former Army Air Forces while naval aviation operations remained separate.

U.S. military air operations date back to the Civil War when balloons were first used as reconnaissance platforms. In the early 1900s, the Army's Signal Corps was tasked with "all matters pertaining to military ballooning, air machines and all kindred subjects." The first aero squadron, as it was then known, became active in 1913 and saw its first combat duty in 1916.

Today, the Air Force has more than 325,000 personnel and more than 5,000 aircraft. The Air Force also has incorporated an increasing number of unmanned aerial systems as part of its inventory and continues development of new aerial technology to meet current operational demands. ❑

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HANGAR LAND LEASES AVAILABLE – Crane Field (WI21), located 12 miles east of Eau Claire, Wisconsin (KEAU). Established in 1969. Contact david@ddcrane.com, 715-828-7175 for complete information.

1971 CESSNA 150 AEROBAT. 4,985 hours on airframe. 989 since last overhaul. Best offer. Hangared in Stoughton, Wis. Richardvenske@att.net

GET THREE MONTHS FREE RENT ON HANGARS at Southern Wisconsin Regional Airport (JVL), Janesville, WI. Visit our website www.jvlairport.com and call 608-757-5768 for availability.

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