

# SPORT Aerobatics

APRIL 2010  
OFFICIAL MAGAZINE of the INTERNATIONAL AEROBATIC CLUB

The 2010  
**Sportsman**  
Known Sequence  
Part II

Winter X-Country  
in a Pitts

Sightseeing:  
Rules to Fly By



*"Thirty miles outside of Billings,  
my toe warmers abruptly quit..."*

Aaron McCartan

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Julie Clark performing at the EAA AirVenture Oshkosh air show in 2009.

Photo by DeKevin Thornton.



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OFFICIAL MAGAZINE of the INTERNATIONAL AEROBATIC CLUB

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## REGGIE PAULK

COMMENTARY / EDITOR'S LOG



## Change for the Better

OVER THE LAST COUPLE months, you may have noticed changes to the layout of *Sport Aerobatics*. The EAA put a great deal of research and effort into a redesign of *Sport Aviation*, and we are the beneficiaries of that work. If you compare the January and February issues of *Sport Aerobatics*, you'll notice the new look. I'm only a sample size of one, but I sure think the magazine looks better.

We've been getting a trickle of feedback from some of you out there, and in the coming months, we'll incorporate more "How to Fly It" pieces, along with articles on building, flying, and maintaining aerobatic aircraft. This also comes as a result of the research conducted by EAA through reader surveys. As always, I'd love to hear your critiques. Don't hesitate to contact me, even if it's just to say hi.

The competition season is upon us, and this month, we have the second part of the Sportsman sequence brought to you by Steve Johnson. We printed the first half in the March issue in case you missed it.

But also Mark Mattioli and Ryan Birr share their unique insights into the legalities of sightseeing flights. If you've ever thought about what it takes to give rides, and do so within the confines of the Federal Aviation

Regulations (FAR's), and insurance requirements, this is a must read. Even if you're just a passenger, reading this piece will let you know if your pilot is operating within the law or not.

Although this issue may come too late, I want to take this opportunity to let you know I'll be looking for stories and airplanes while I'm down at Sun 'n Fun. If you'll be there, I'd love to talk to you about possibly getting your airplane on the cover of *Sport Aerobatics*. Most of the beautiful cover shots we feature come from pilots I've pestered into waking up before the sun rises so we can get the best light as the sun crests the horizon. Even if you haven't flown formation, pilot Bruce Moore and photographers Jim Koepnick or Bonnie Kratz will take care of you while they get the shots I need.

I also want you to know that many of the stories we print on these pages come from members just like you who have an idea and take the time to sit down and write about it. Every one of us was once unpublished, so don't be shy. If you have an idea, feel free to contact me.

See you at Sun 'n Fun! **IAC**

Please submit news, comments, articles, or suggestions to: [reggie.paulk@gmail.com](mailto:reggie.paulk@gmail.com)



**DOUG BARTLETT**  
COMMENTARY / PRESIDENT'S PAGE

## Heralding the New

BY THE TIME THIS magazine has been published, the IAC should have successfully launched our first e-newsletter called *In the Loop*. Late in February the membership committee met at Oshkosh to lay out the format of what will hopefully be a great addition to our ability to communicate with our members worldwide.

The Internet and e-newsletters have been around for many years, but the ability to use them in an interactive way is increasing rapidly. There are no plans to eliminate this magazine, but there are several limitations that we have in *Sport Aerobatics* that we do not have in an e-newsletter. As an example, we hope to bring you *In the Loop* at least monthly and include audio, video, and written stories about aerobatic flying activities worldwide. *In the Loop* is actually a one- or two-page table of contents that has a paragraph or two of a story combined with a link that takes you to the detailed story. The amount and format of content has no restrictions.

One of the most important abilities we will now have is to get detailed feedback on what is enjoyed by our members. With each *In the Loop* edition, headquarters will receive feedback on the number of times a story was accessed. From this information we will be able to better determine the types of articles or e-newsletter activities our members enjoy and to enhance those offerings. We will also occasionally include a "poll" and/or survey to get specific feedback.

In the beginning, *In the Loop* will be open to members and nonmembers alike. As it develops further, some aspect of it will become available to members only. Each and every member can become a contributor to the e-newsletter by providing multimedia input of several kinds to

our editor, Reggie Paulk. We hope our members will take advantage of this opportunity by forwarding video from many of our contests and member activities throughout the world.

This is an exciting new publication for the IAC because of the greater ability to get content input from our members and reliable feedback about what is enjoyed. Please take the time to go to [www.IAC.org](http://www.IAC.org) to sign up for *In the Loop* today. We hope all enjoy it. And as always, please forward any ideas on how we can improve this benefit to all of our members. This is the first of several steps to enhance our electronic member communication network; more about that next month.

I have started to receive a few comments and requests from our members. One member asked me to discuss how I get the biggest bang for my buck when practicing aerobatics. Kirby Chambliss told me the secret to success in this sport is "gas through the carburetor." I have changed this a bit to "aerobatic gas through the carburetor." There is at least one aerobatic coach who goes nuts when any of his students take too much time flying straight and level between maneuvers. He sees it as wasted training time; I agree. To avoid wasting time I suggest trying these steps.

Determine what skills you need to achieve your goals. List the skills and identify which skills are absent or are not solid, then place those skills in a reasonable order of progression. Spend the bulk of your time on improving the skills you lack. Spend smaller amounts of time reinforcing those skills you already

possess. One common error I see by many pilots is a desire to fly a competition sequence over and over. I prefer to fly the figures in groups of three or four figures and only fly the entire sequence periodically.

Prepare a training card. You should never go up to train without having a card in front of you identifying step by step what you intend to practice. Start with

warm-up drills, then move on to the core of your practice. The card should identify your safe training altitude for each figure or combination. Prepare your card in an order that does not waste practice time in the air. Good preparation should maximize the "aerobic gas through the carburetor." Further, a well-thought-out card should maximize safety.

**"This is an exciting new publication for the IAC . . ."**

Fly your training card. If something is not working well after a reasonable amount of practice, move on to the next line on your card. When you feel yourself getting tired, stop flying. If you finish all planned items, land. Do not improvise in the air.

Once on the ground, review your card and make written notes as to what worked well and what did not. The items that did not go well are added to future cards. Make notes on entry and exit altitudes for maneuvers along with entry and exit speeds. Then place your practice card in your aerobatic journal (Do you have one of those?) so you can reference it later. Review your journal and past practice cards when preparing your next training card. Now, go out well-prepared and have fun! **IAC**

# fuel futures

BY GORDON PENNER, MCFI-A, FAA GOLD SEAL CFI



**THE STORM ON THE** horizon threatening aviation fuels is gaining momentum. The lawsuit of the Friends of the Earth (FOE) before the Environmental Protection Agency (EPA) concerning leaded avgas is not going away, and 100LL is on the chopping block. In the February 2009 edition of EAA's *Sport Aviation* magazine, there is an article about the current and future state of avgas called "Fuels for the Future," as well as some follow-on articles in later *Sport Aviation* issues and elsewhere. I don't think we can ignore this issue any longer.

The above article didn't mention which engines would or would not be affected, but it did group newer anti-knock indicators and motor octane numbers (MONs) with engine compression ratios. By the way, 100LL is 104 to 106 MON, and regular unleaded of 87 octane at the gas pump for your car is 82.5 MON. The article's sidebar titled "Octane Needs vs Compression Ratio" gives the following groupings:

**Low-compression (7:1 to 7.2:1) = 80 MON.**

**Mid-compression (8:1 to 8.5:1) = 91 MON and/or 87 MON autogas.**

**High-compression (8.7:1 and up) & turbocharged = 100-plus MON.**

I did a little stooging around on the Lycoming Internet site for some comparison shopping. Here are the compression ratios I found:

<b>0-320 and 10-320</b>	<b>150 horsepower</b>	<b>7:1 compression ratio</b>
<b>0-320 and 10-320</b>	<b>160 horsepower</b>	<b>8.5:1 compression ratio</b>
<b>0-360 and 10-360</b>	<b>180 horsepower</b>	<b>8.5:1 compression ratio</b>
<b>0-360 and 10-360</b>	<b>200 horsepower</b>	<b>8.7:1 compression ratio</b>

Obviously some of you are running modified engines with 9:1, 9.5:1, and 10:1 pistons, and you see above where that puts you.

100LL contains tetraethyl lead, which boosts the octane, coats valve seats, and is poisonous. Without tetraethyl lead, 100LL is 91UL, which means basically 91 octane. But the solution is not that easy, and getting something higher than that will be even harder.

Autofuel supplemental type certificates (STCs) are not the answer either, because everyone outside of aviation is adding ethanol, which is bad for aircraft engines. We are too small a business segment to economically blend batches of autogas without ethanol. Ethanol is also bad for the fuel system, causing corrosion throughout. The autogas STCs held by EAA and others forbid the use of ethanol blends.

What I have covered here is only a taste to get you all aware of the problem and to whet your appetite for the above-mentioned articles. There is a lot more of this iceberg under the water! **IAC**

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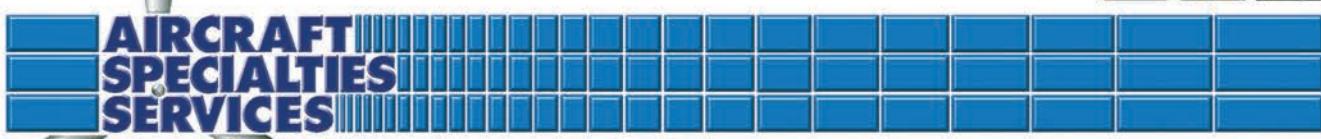
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# Freezing in a Pitts



PHOTOGRAPHY BY AARON MCCARTAN

BY AARON MCCARTAN

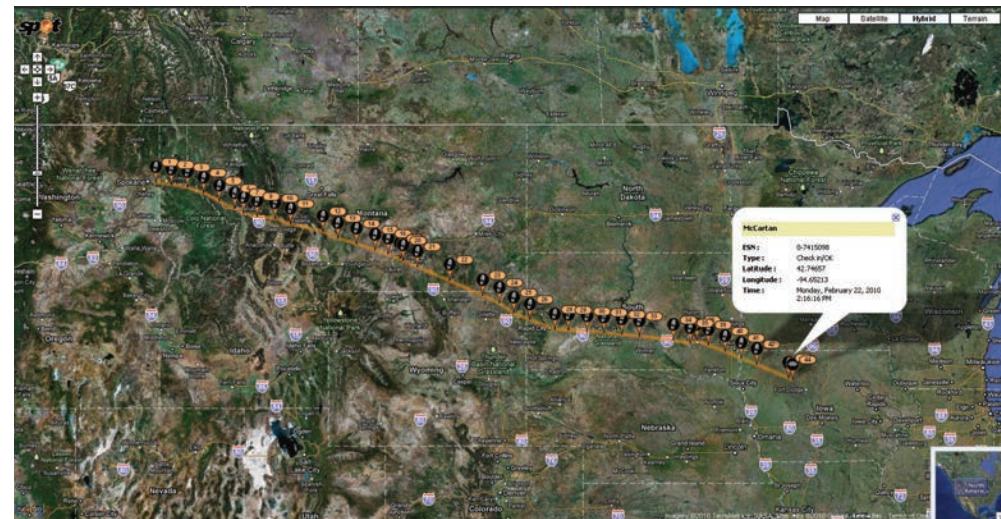
**A**erobatic flight is an adventure to the fullest extent. Be it taking on a new category, upgrading an aircraft, or just traveling halfway across the country, every aspect of our sport involves a leap of faith or personal challenge. Of the three examples listed in the previous statement, I decided to do all three at once.

In 2009 I launched a campaign in the Sportsman category with hopes of good showings at the regional level and at Nationals. The season went well up until the end when I experienced some engine trouble prior to Nationals. Thanks to the generosity of my friend and fellow competitor John Ostmeyer, he allowed me to share his airplane for the U.S. National Aerobatic Championships. As the dust settled from Nationals, I decided to overhaul instead of repair the engine on my Pitts S-1S as I intended to move into Intermediate for 2010 and wanted improved reliability and longevity for seasons to come.

One day midway through November as the overhaul project was coming to a close, I happened to be browsing advertisements on Barnstormers.com when I located a beautiful factory-built Pitts S-2S in Spokane, Washington. The airplane was owned by Mike Scalera, an air show pilot with many years of experience in various Pitts biplanes. A few phone calls and e-mails later, I decided that I couldn't pass on this opportunity and started researching the aircraft. I called on coach and friend John Morrissey about the S-2S to figure out what I needed to pay attention to. He gave me several tips and

called in a favor to some fellow IAC members in Spokane. Most of the information on the airplane came from Doug Sowder, who not only knew the owner, but also had flown the S-2S that I was pursuing. Doug was able to give some insight into the background and recommend a mechanic for a pre-purchase inspection. A couple weeks later, I arranged finances and called Mike to make a deal. If you want something badly enough, no matter what the cost, you will find a way to justify the expense.

On December 1, arrangements were made, money was in place, and I began waiting on weather conditions to favor a trip from Washington to Iowa. It would only figure that this would become one of the most severe and long-lasting winters in recorded history in the Midwest. In Iowa we received near-record snow accumulation in conjunction with record-low temperatures. When the temperatures increased the slightest bit, we would get more snow or ice storms. My attention turned back to my S-1S and completion of the overhaul, and I was also able to get the S-1S sold during this time. I ended up waiting until late February for weather conditions that would allow the trip to occur.



Family and friends could track Aaron's progress in real-time using the SPOT satellite tracking service.

## The Trip to Washington

On Friday, February 19, I departed on a commercial flight for Spokane, Washington, armed with a toothbrush, comb, parachute, winter expedition gear, two days' worth of clothing, headsets, maps, a SPOT tracker, a GPS, and an assortment of hand and foot warmers. Again, I'm packing for a Pitts and baggage capacity is at a premium. Homeland Security had some fun with me considering I had booked a one-way ticket the day before. This combined with the parachute didn't look good. I also soon learned that Grabber brand warmer packets glow under X-ray machines—which gave the impression of hazardous materials. The security people understood, but it took some explanation and a thorough search of my property.

Mike Scalera and his wife, Suzie, picked me up at the airport that evening and helped get me settled. The next morning I had my hands on the airplane before breakfast. It looked better in person than in the pictures. Following a big breakfast with Mike and Suzie, we arranged paperwork and payment, and then I took the Pitts out for a local flight. It took only a matter of minutes during the flight before it allegedly rolled inverted. This may have happened a few times. Judge me if you will, dear reader, but it is a Pitts and the shortest route home was a bit more than 1,100 nautical miles (nm). A little fun was required during the test flight.

After a successful test flight, Mike helped me load the S-2S and modify a lighter-plug outlet to provide aircraft power for my handheld GPS. Suzie insisted that I not leave on an empty stomach and set me up with a sandwich and some snacks for the trip. They're both too kind and accommodating for words.

## Eastbound

Prior to my departure for Spokane, I notified several friends via e-mail, text, and phone. Several decided to follow my journey online using the webpage of my SPOT tracker. I received many last-minute tips from more experienced aviators such as: "Godspeed to you. Remember the five mandatory conditions for survival in winter mountain conditions: ceiling, visibility, wind, runway conditions, and temperature. They all have to be better than minima...." For all my friends who offered support and concern for my safety, I thank you. Even the smallest morsels of knowledge were pertinent and helpful.

Proper layering is paramount to survival at these temperatures. Yes, I said survival. When you get up to altitude with surface temps at or below freezing and you happen to be flying a non-heated non-insulated aircraft, the environment gets nasty. I used a set of Under Armour cold-conditions gear as a base layer. The second layer was jeans, a T-shirt, and a sweatshirt. I then topped it all off with a North Face heavy-duty snowsuit. Yes, all this layering did fit in the Pitts cockpit, but it required much loosening of the seat belts. I wore the same shoes that I wear in the summer for flying aerobatics but cheated a bit to keep warm. I started with basic socks with adhesive toe warmers and a large wool sock pulled over the top. I inserted a set of the heated foot-warmer insoles into the shoes. This combination keeps feet between 90 and 100 degrees for up to seven hours. For my fingers,



Aaron's yellow S-2S sits in its hangar waiting for warmer weather.

I used a base layer of runner's gloves (microfiber/fleece) with a set of archery mittens over the top. Archery mittens allow you to flip open the pouch that covers the fingers, making radio tuning possible. They also allow insertion of a hand-warmer packet in each pouch that keeps fingers a comfortable 100 degrees. Call it cheating if you want, but I stayed comfortably warm at altitude.

*"All this layering did fit in the Pitts cockpit, but it required loosening of the seat belts."*

Shortly before noon on Saturday, February 20, I departed Spokane for home. The original plan called for an overnight in Billings, Montana, and two stops the second day on my route home. For a pilot from the Midwest, mountain flying was a real eye-opener. Call it naivete, but I have never had opportunity or reason to navigate mountainous terrain in a general aviation aircraft. Approximately 10 miles into my journey from Felts Field to the east, the mountains loomed. This is a far cry from northwestern Iowa, where entire counties have less than 100-foot altitude deviation.

The first leg of the trip went through Mullan Pass (Idaho) to Missoula, Montana. This was the shortest leg of the trip as I felt it necessary to verify fuel burn. Everything was running exactly as planned. The weather along most of the route was forecast for scattered cloud cover with few snow flurries. The cloud bases allowed visual flight rules (VFR) operation at 9,500 feet, an altitude that offered more than adequate terrain clearance for most of the trip through the mountains. After a short period of time I started to find some snow flurries. It reminded me of the scattered thundershowers that we experience mid-summer in the central states where the sky may be clear for miles yet you find one isolated cloud dropping precipitation. These required only small modifications to circumnavigate.

crested the peaks, the cloud cover cleared, and I was able to see the entire eastern face of the mountains, which were quite beautiful despite the windward side being obscured by clouds and precipitation. The snow-producing clouds were completely trapped on the other side of the ridge. I quickly grabbed my camera to capture the moment, but it wouldn't power on. The low temperatures had slowed the chemical reaction in the batteries, and the voltage had faded. My attention then turned to my handheld GPS that had suffered the same fate. Thankfully the modified lighter plug was able to keep the device running on aircraft power.

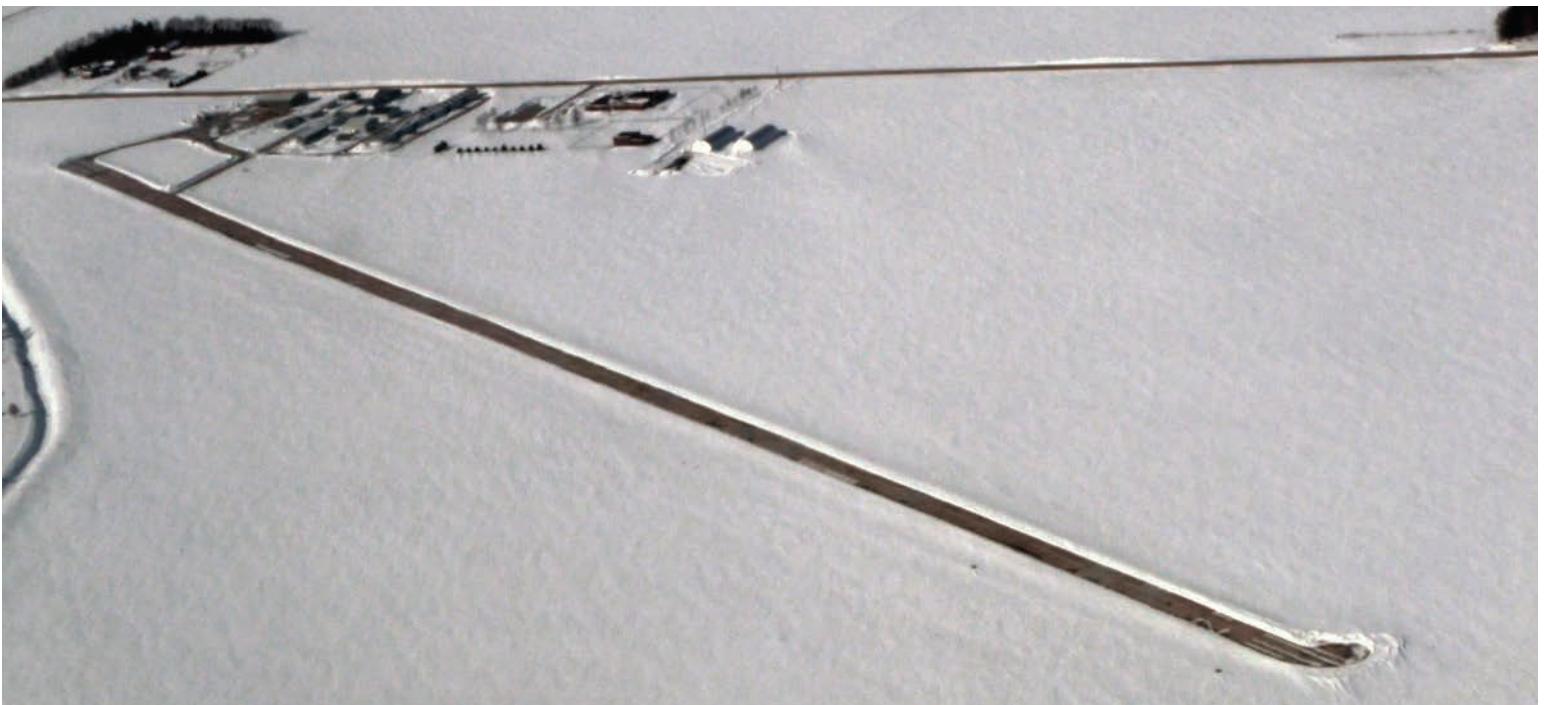
Approximately 30 miles outside of Billings, my toe warmers abruptly quit producing heat, and I began to feel the cold set in on my lower extremities. The insoles were fading as well. The packaging stated five-plus hours



After a quick stop at Missoula and a renewed confidence in my fuel range, I departed for Billings via Helena. I started to relax a bit and even pulled out my camera and snapped a few pictures of the scenery. As I progressed toward Billings, I had to cross one more mountain ridge called Crazy Mountain. According to the sectional chart, 11,600 mean sea level (MSL) will clear the highest peak. The cloud cover was scattered in the vicinity of the range, giving the opportunity to climb on top of the clouds to 13,500 to ensure clearance. At this time the wind was from the west and pushing the clouds up against the mountain range. Some clouds were dropping snow, which obscured the view of the jagged peaks below. After I

of heat, and between the test flight, fueling, and the two legs thus far, I had been using them for just more than six hours. Fuel was plentiful, so I added some pitch to the prop in an attempt to expedite the last leg and seek warmth. During radio communications, Billings' tower controller commented that my radio had solid carrier, but modulation was weak. I had started to shiver a bit and realized that the radio was probably fine, but my voice was trembling. After getting on the ground I started to realize that I had pushed my limit for the day.

Sunday morning brought low clouds and scattered flurries. I spent half of the day sitting in the terminal behind a computer checking weather conditions. I'm sure most



No room for error: Only 30–40 feet of the 65 foot width of the runway was available when Aaron returned.

readers have been in this position several times in their flying career. Around noon Mountain time, Billings had lifted to VFR and Rapid City, South Dakota, had improved beautifully. I geared up, opened a new set of warmers, and launched. Most of the route was uneventful until I got into the Black Hills. Even with all the flight planning I had done over the past three months, I had missed one little blue square on the top edge of the Cheyenne sectional chart regarding a national monument. I was headed for a direct flight over the top of Devils Tower, which had a recommendation to avoid by 3 nm. Somehow in all the poring over my charts, I missed it. Outside of my little course correction, the flight to Rapid City went well. Unfortunately I didn't have adequate daylight to continue home, prompting another overnight. This seems like a perfect time to quote the old saw: "Time to spare, go by air."

#### Calling in Sick

I'm fortunate to have a career that affords some schedule flexibility. I work in technology for a family business started by my father, so calling my boss and faking sick wouldn't work. Thankfully, I come from a family where both Mom and Dad are pilots and aviation isn't a hobby; it's an obsession. This affords much leniency when aviation causes absence from work. I spent several hours on the phone Sunday evening updating all my friends and family about my trip and what I had seen so far. Additionally, I hadn't packed adequate clothes for the trip, but the hotel did have laundry facilities. Much of my evening was spent waiting on laundry and trying to formulate a plan. Everyone that was following my trip found my situation a bit amusing. So much for a two-day trip...

Monday morning weather was gorgeous in Rapid City. The temperatures were in the low 20s at sunrise with no clouds and unlimited visibility. It looked like some areas of marginal VFR existed in eastern South Dakota, but the final destination looked clear. The total length of this final

leg was 376 nm. According to the aircraft handbook, this distance approaches the limit of fuel range. Again, I decided to lean on caution and make a stop. I planned to stop in Tea, South Dakota, as I have some friends there who wanted to see the new Pitts in person. As I proceeded along at 7,500 MSL across South Dakota, I was watching a scattered cloud

*"Thirty miles outside of Billings, my toe warmers abruptly quit producing heat, and I began to feel the cold set in on my lower extremities."*

layer below that appeared to become a solid cloud layer. A little tuning between various automated weather observing systems (AWOS), and I started to get the picture that the bases were between 1,700 and 2,000 feet above ground level (AGL) and quickly diminishing to 700 feet AGL with snow and strong surface winds at my intended stop just south of Sioux Falls. Time for the backup plan: Mitchell, South Dakota, has a full-service fixed base operator and was less than 10 miles away. I found a sizable gap in the cloud cover and descended below. Mitchell AWOS may have been reporting broken at 1,700, but that was pretty generous; my observation had the bases around 1,500. At least the terrain in central South Dakota is devoid of mountains so "scud running" isn't as treacherous.



Aaron readies his new steed for flight in wintry conditions.

Following a quick top of the tanks and some research on the local weather station, the forecast was holding true. I called my dad, who was near our home airport, and asked him to verify the conditions. This would put approximately 60 miles of VFR on top in my resume. It's not my favorite thing to do in a one-engine airplane that sinks like a rock with the power off. So, following departure I picked a gap between clouds and went on top. The scattered to broken layer gradually turned into a fairly solid layer of clouds, limiting my options. I just kept tuning different surface reporting stations across the region and pressed on. Shortly after clearing the state line back into Iowa, the end was in sight! The clouds ended in a line that went from north to south as far as the eye could see; skies were clear and visibility was unrestricted! Now I was in my own backyard and assumed I'd passed the worst of everything. Not quite...

Due to a little wind and snow that had occurred on the day of my departure, the runway at my final destination had drifted to approximately half of its width. Pocahontas Municipal (KPOH) is 4,100 feet by 65 feet on our main runway, and it looked as though a 35- to 40-foot width was available as many "fingers" of snow were reaching out from the northern side of the runway. I later found that estimate to be correct. The "crumb rolls" of snow where the trucks had bladed it back were more than 3 feet high, and the loose snow had begun to drift across without being pushed back. Our airport snow

removal people had failed to come through over the weekend. My biggest concern was clipping the snow with the lower wingtips of the Pitts, causing loss of control. I was able to get the S-2S landed safely, but the proverbial pucker factor had definitely set in during rollout. Had there been any crosswind or other adverse condition at the destination, I was prepared to relocate to an alternate airport. And I thought mountain flying was going to be the big adventure.

#### What Can We Learn?

I picked up a huge amount of knowledge from experienced sources prior to departing for my journey. This new knowledge helped me assess personal minimums. Due to what the FAA refers to as "get-there-it's," I pushed those minimums a bit on my last leg in an attempt to get home. I also overestimated my tolerance for cold conditions and ended up relying quite heavily on my toe, insole, hand, and body warmers to sustain heat. This reliance and sense of security was challenged on arrival to Billings. When I picked up this fantastic Pitts from Spokane, Mike Scalera shared a story about ferrying a Pitts from British Columbia to Washington in early January some years back. He didn't have the warmers that I was using and mentioned his feet going numb. Obviously, landing becomes challenging with that handicap in place. Extreme cold and frostbite are no laughing matter.

Would I do it again? In the summer, absolutely! Winter, not so much. **IAC**



Drive one.

# Drive Smart.

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The image features a large, white, stylized silhouette of a person wearing a flight helmet and goggles, standing next to a small, light-colored airplane. The person is facing right, with one hand on their hip and the other pointing towards the plane. The plane has a single propeller and a simple tail. To the left of the silhouette, there is a circular graphic divided into four quadrants by a crosshair. The top-left quadrant contains the word 'Sightseeing'. The bottom-left quadrant contains the word 'Flights'. The top-right quadrant contains the word 'Commercial'. The bottom-right quadrant contains the word 'Incidental'. The background is a solid, light blue color.

# Sightseeing Flights

**Make sure you're covered  
from a regulatory and  
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BY MARK MATTIOLI, POST & SCHELL P.C.

ILLUSTRATION BY PHIL NORTON

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**I**t is the same old story. Every Saturday you park your pristine Pitts Model 12 in front of the airport restaurant. As the restaurant is popular in the resort town where you are based, its clientele includes the local pilots as well as tourists and non-flying “locals” who enjoy the great food and hospitality. By the look in one patron’s eyes, you know what is coming, as you have this conversation at least once every Saturday. It starts out when the patron comes up and asks, “Is that your airplane?”

“Yes it is,” you respond.

A moment of awkward silence follows, and the fellow remarks, “It sure is beautiful...what kind is it?” You explain the origins of the airplane and talk a little about Curtis Pitts—a conversation you never tire of—and then you talk a little about aerobatics. The typical person usually has some flight time but had to stop taking lessons because of business, family, or some combination thereof. Then comes the real question: “Do you ever give rides?”

This is one you have thought about but never quite resolved. Part of you thinks, “I’m a commercial pilot, why can’t I give rides?” In fact, you have often thought that to defray costs, it would be great to provide rides to the public. In determining whether you can engage in this type of commercial activity, there are three considerations: the pilot, the airplane, and the operator. All three need to be qualified for you to hold yourself out to provide commercial air tour operations.

Let’s start with the pilot. If you hold only a private pilot certificate, then your ability to provide “rides” to the public is limited. FAR 61.113 states, “No person who holds a private pilot certificate may act as pilot in command of an aircraft that is carrying passengers or property for compensation or hire.” There are exceptions for pilots who are compensated for flights that are “incidental” to that person’s business or employment, provided that the business or employment does not involve payment for transporting passengers or cargo. Otherwise, the private pilot may only accept a pro-rata share of operating expenses. This raises an interesting point: Can a private pilot

accept fuel from an airport for participating in a static display? The answer is a close one and likely revolves around the purpose of the display. If it is of a purely commercial nature, i.e., an air show where the airport is charging admission, the answer is likely no.

A second exception is for charitable flights. This is a tricky one for aerobatic pilots, as the rules are narrow. If we took a poll, probably every aerobatic pilot has thought about donating an aerobatic ride to be auctioned off for charity. The rules are set forth in FAR 91.146. In summary, the requirements include the following:

- The flight must be nonstop and begin and end at the same airport. Furthermore, the flight must be conducted within a 25-statute-mile radius of that airport;
- The flight is not an aerobatic or a formation flight;
- The aircraft must have a standard airworthiness certificate;

- Reimbursement is limited to that portion of the passenger payment for the flight that does not exceed the pro-rata cost of owning, operating, and maintaining the aircraft for that flight, which may include fuel, oil, airport expenditures, and rental fees;
- The flight must be in visual flight rules conditions. The need for this requirement is rather dubious, as one would not conduct a sightseeing flight in instrument meteorological conditions;
- The private pilot acting as pilot in command must have at least 500 hours of flight time; and
- The flights are not conducted over a national park; there are special rules for this.

Moreover, there is a limit to the number of charitable events that may be flown. This number depends on the particular charity. Where the sponsor is an IRS exempt 501(c)(3) corporation or a not-for-profit corporation whose purpose is to promote aviation safety, the pilot may conduct four charitable events per year. For any other community event, the pilot is limited to one such event per year. There are additional requirements for the organizations sponsoring such events, including information that must be provided to the FAA seven days prior to the flights. Additionally, the

pilot must sign a certification indicating how many charitable flights he or she has flown that year. Of course, there may be insurance considerations if you plan to give charity rides, the most important of which is whether you are sufficiently insured if there is a problem.

Back to our pilot seeking to give paid rides in his Pitts. The question is whether his operation must be certified as a commercial operation under Part 119 of the FARs. An air tour operation is excluded under Part 119 if it meets the following definition:

*"... probably every aerobatic pilot has thought about donating an aerobatic ride to be auctioned off for charity."*

"Nonstop Commercial Air Tours conducted after September 11, 2007, in an airplane or helicopter having a standard airworthiness certificate and passenger-seat configuration of 30 seats or fewer and a maximum payload capacity of 7,500 pounds or less that begin and end at the same airport, and are conducted within a 25-statute mile radius of that airport, in compliance with the Letter of Authorization issued under §91.147 of this chapter."

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FAR 119.1(e). In determining whether the operator is acting as a commercial sightseeing operation, the FAA looks at the following factors:

- (1) Whether there was a holding out to the public of willingness to conduct a sightseeing flight for compensation or hire;
- (2) Whether the person offering the flight provided a narrative that referred to areas or points of interest on the surface below the route of the flight;
- (3) The area of operation;
- (4) How often the person offering the flight conducts such flights;
- (5) The route of flight;
- (6) The inclusion of sightseeing flights as part of any travel arrangement package;
- (7) Whether the flight in question would have been canceled based on poor visibility of the surface below the route of the flight; and
- (8) Any other factors that the FAA considers appropriate.

***"Always check your insurance policy before engaging in any commercial operation."***

FAR 119.3. As discussed above, for flights over national parks, special rules apply, and the operator must be certified under Part 119 unless excepted by FAR 136(g)(2) (governing the number of flights and providing that such flights are conducted pursuant to a letter of authorization).

Assuming that the operator does not need to be certified as a commercial operator, the new regulations, which went into effect in September 2007, require that pilots conducting commercial sightseeing flights obtain a letter of authorization from the applicable flight standards district office (FSDO). The operator must comply with Subpart A of Part 136, which covers the following:

- Use of life preservers for certain overwater flights;
- Use of floats for some helicopter tour operators; and

- Passenger briefings including (1) Procedures for fastening and unfastening seat belts; (2) Prohibition on smoking; (3) Procedures for opening exits and exiting the aircraft; (4) Where applicable procedures for water ditching; (5) Use of required life preservers; and (6) Procedures for emergency exit from the aircraft in the event of a water landing.

In addition, the operator must register for, and adopt, a drug-testing policy that meets the requirements of FAR Part 120, including drug and alcohol testing for certain "safety sensitive" personnel. Finally, the operator must comply fully with the letter of authorization issued by the FSDO. Again, you should talk to your agent to make sure you have sufficient insurance.

Now that we have determined the rules for the pilot and the operation, we must turn to the aircraft. As described, we are dealing with a Pitts Model 12. This airplane likely holds an experimental airworthiness certificate as either an amateur-built aircraft or an exhibition aircraft. If amateur-built, the operating limitations likely prohibit its use in any commercial operations. Exhibition aircraft may be prohibited from carrying passengers for compensation per FAR 91.319(a)(2). An exception may be if the operator has obtained a letter of deviation authority permitting the operator to conduct flight training. See FAR 91.319(h). However, the rules are relatively strict, and commercial sightseeing would be outside the flight-training letter. Always check your insurance policy before engaging in any commercial operation. **IAC**

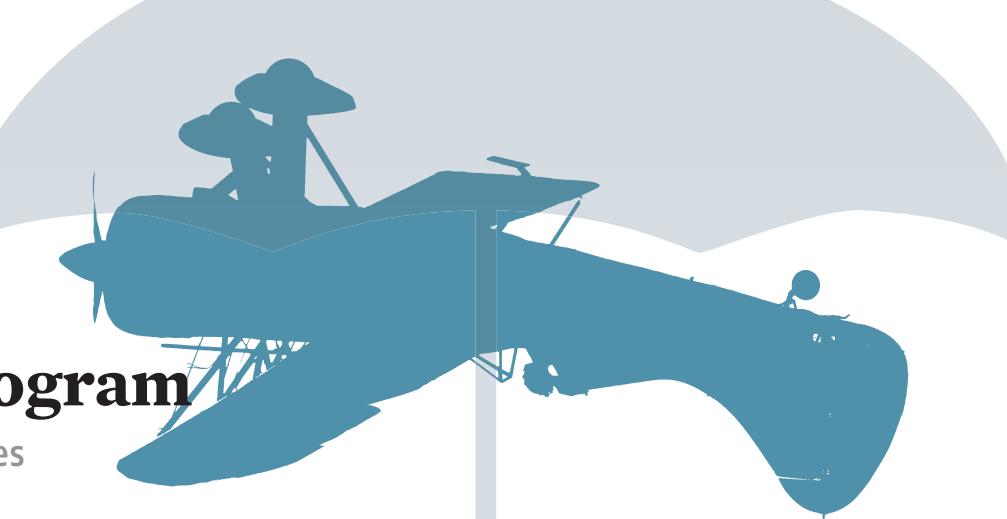
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The opinions contained in this article are those of the author who does not purport to speak on behalf of EAA, IAC, or any entity referenced in this article.

Mark Mattioli is a business and commercial litigation attorney with Post & Schell P.C. in Philadelphia, Pennsylvania. When not practicing law, he flies a Christen Eagle II based in Lumberton, New Jersey. He is a member of IAC Chapters 52 and 58. He can be reached at 215-587-1087 or at [mmattioli@postschell.com](mailto:mmattioli@postschell.com).

# IAC Aircraft Insurance Program

Sightseeing and thrill rides



BY RYAN BIRR, PRESIDENT, NORTHWEST INSURANCE GROUP

**I** love the Pitts Model 12. It is big, it has ramp presence, it has a radial engine, and it's unique. But it is not legal or insurable to give sightseeing or thrill rides in it.

Years ago when I was a struggling flight instructor in Portland, we used to print cheap business cards that advertised sightseeing tours of the local area originating from our flight school. We'd head down to the parking lot adjacent to the runway at the Portland International Airport (this is where the general public would stop to watch the

airliners land and take off), and we'd pass out those cards to the spectators. Amazingly enough, this generated quite a bit of non-instructional flying for a few of us flight instructors. The FAA regulations then regarding sightseeing were pretty simple, and the fixed base operator was happy for us to help it further employ its aircraft into revenue-generating missions. We even had a few flight instructors attempting to stretch the rules by offering trips around one of our local volcanoes (25-plus miles) by dubbing the flights as "photo flights" if a passenger had a camera in his or her possession during the flight.

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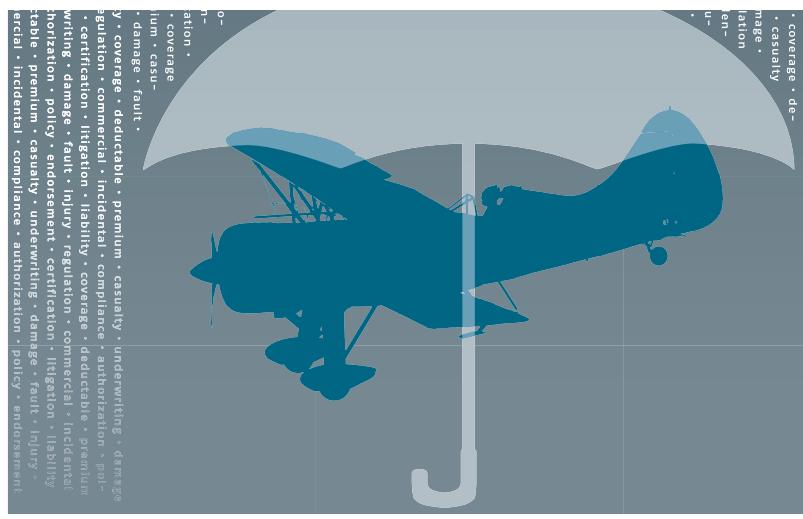
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Over the years, insurance companies have refined the definition of "sightseeing" flights in their insurance policies as well as within their underwriting criteria. In fact, we see policies with all kinds of use combinations: commercial, limited commercial, commercial to include sightseeing, commercial excluding instruction and rental, personal and business to include sightseeing, etc. I don't pretend to know all the background on what has driven this evolution, but some companies specifically cite the definition of "sightseeing" within the policy, and it nearly exactly follows the FAA definition. Some underwriters have explained to me that they feel their exposure to liability as the insurance carrier is no less for sightseeing operations than for true 135 charter operations.

Pilots with aerobatic aircraft do seem to love to give rides in their aircraft, and they should. We all want to share the aerobatic experience and hope that our passengers will share the same joy and perhaps go on to earn

*"We all want to share the aerobatic experience and hope that our passengers will share the same joy and perhaps go on to earn a certificate or eventually become involved in aerobatic aviation."*

a certificate or eventually become involved in aerobatic aviation. If you share this experience, then you must be careful how you portray yourself if there is *any* exchange of compensation for the ride. Are you offering a ride and sharing expenses, or are you offering a sightseeing or thrill ride for a fee, or are you giving dual instruction or an introductory aerobatic instructional flight to the would-be aerobatic pilot? I have heard all the variations through the years, and occasionally those

ideas or operations are in conflict with provisions in an aircraft insurance policy.

Every aircraft insurance policy specifically states that for coverage to be valid certain conditions must first be met: the aircraft is being operated in its approved territory, it's being operated by a pilot that is approved by the company either by name or within the open pilot warranty provisions in the policy, the aircraft is in airworthy condition for the flight involved, and the flight is being conducted under an approved use provided for in the policy.

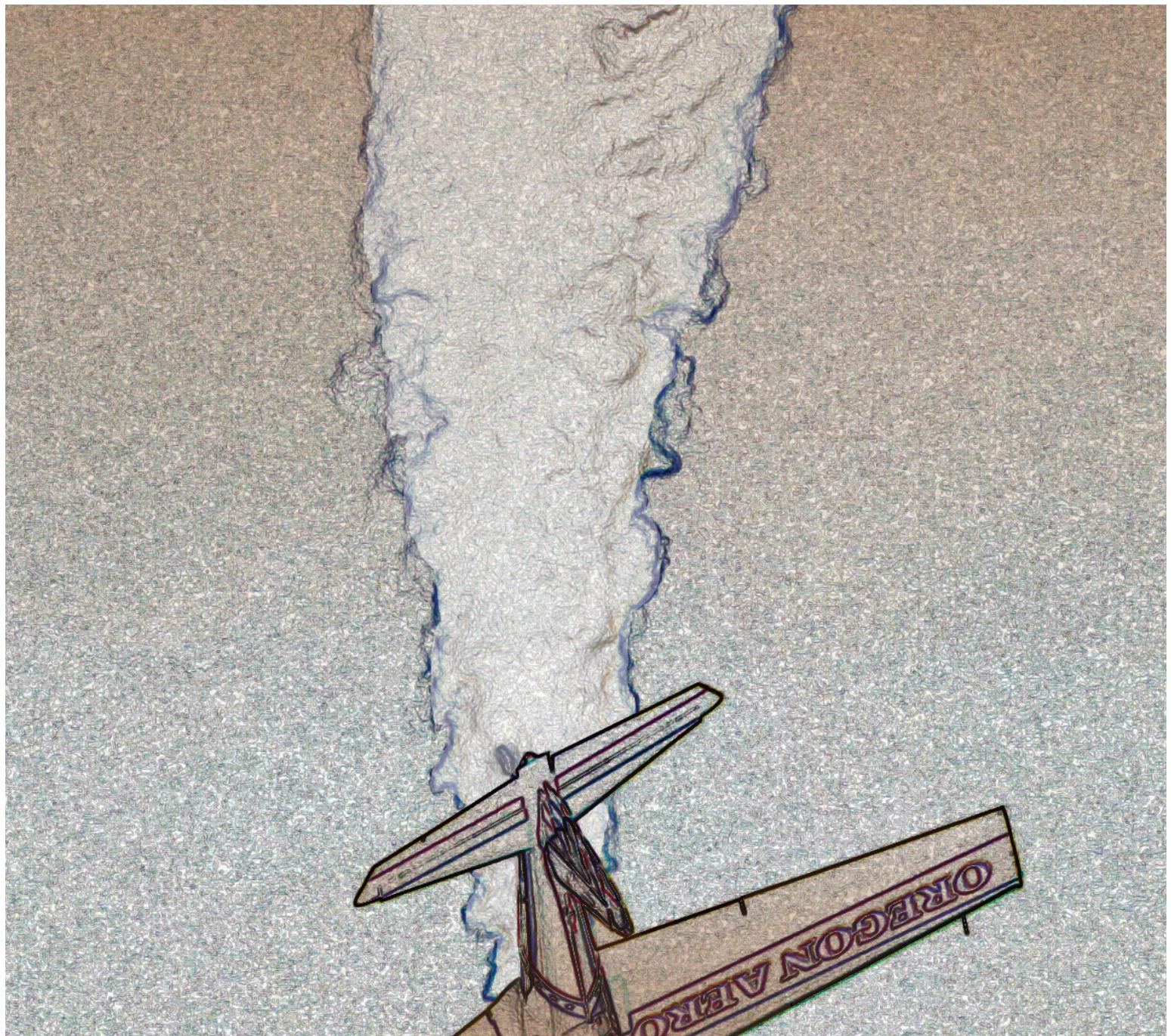
Generally, noncommercial policies provide a "use" clause where the named insured is allowed to use the aircraft for his or her own "personal or business" purposes and for which no charge is made or expected, generally except for the sharing of certain expenses of passengers for noncommercial flights. Flights for charity, Young Eagles flights, raffle flights, Wings events, etc. may present an insurance problem, depending on the insurance policy; as a result every such flight should be pre-approved by your insurance company.

Sightseeing flights are no longer as simple as they used to be. Thrill rides, as I have often heard the flights described, are not defined in the FARs and would otherwise be considered another type of flight for hire as either defined as sightseeing, charter, or dual instruction. For those folks wanting a trip around the area or looking for a thrill ride, this would generally be regarded in insurance policies as a sightseeing flight; all the rules (FAR) subsequently apply.

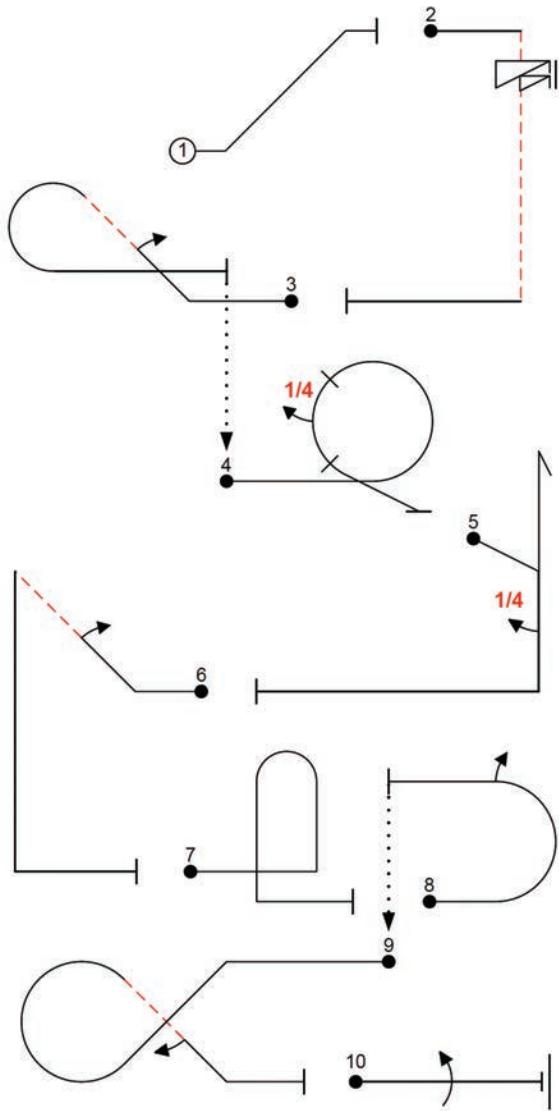
The IAC policy provides the option to buy endorsements to cover both dual instruction and sightseeing; in either case, all the federal aviation regulations regarding aircraft certification, pilot certification, aircraft maintenance, and FAA authorizations will apply before coverage is valid, even if purchased. **IAC**

SPORT AEROBATICS SNAPSHOT





PART II OF A TWO-PART SERIES



The 2010  
**Sportsman**  
**Known**  
Sequence

BY  
STEVE JOHNSON

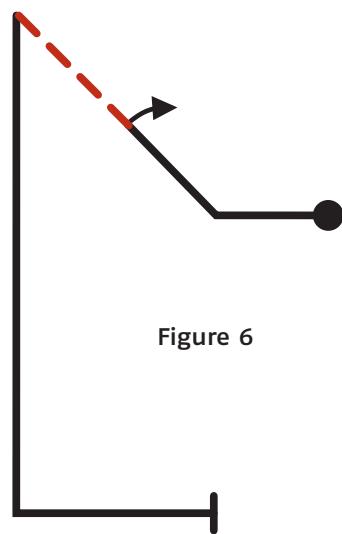
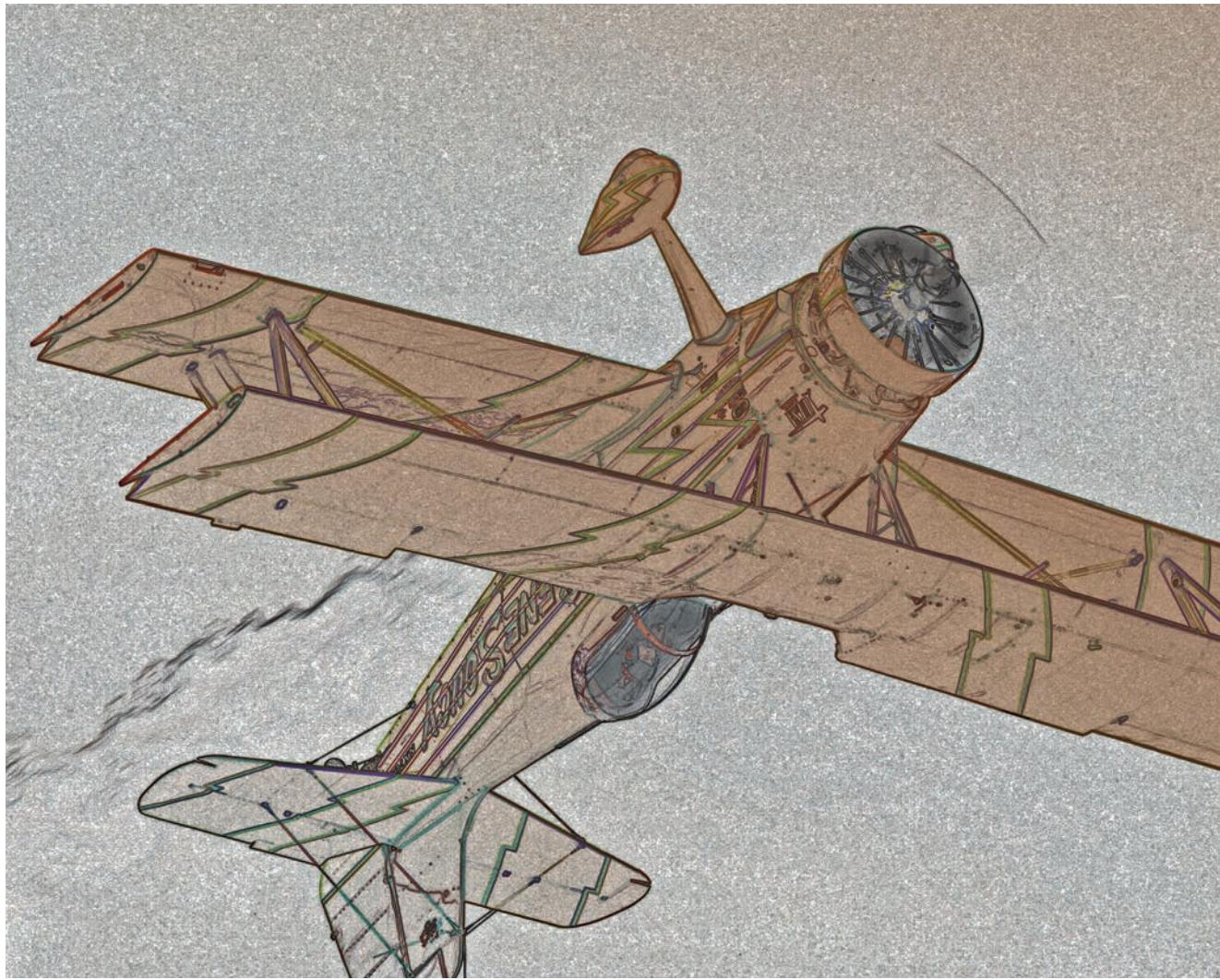


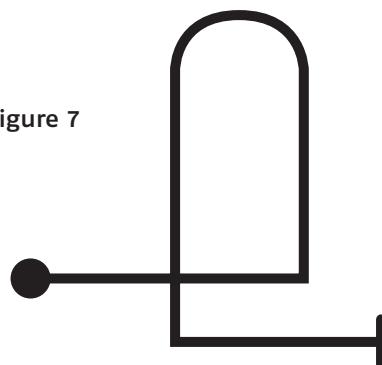
Figure 6

**FIGURE 6 is a wedge or shark's tooth.** This will be flown similarly to the reverse half-Cuban, but there are no looping portions to this figure. This figure is all lines and angles. The 45-degree line should be started near the center of the box on the X-axis, so you don't go out on the downwind side. A longer count can be used, because no energy is needed to float the top. As a good place to start, add a full count on both sides of the roll from the reverse half-Cuban. The same requirements exist for the line as in the half-Cuban. Make sure the 45-degree line is held, with the roll in the middle. At the end of the line after the roll, a good aggressive pull to vertical can be made. There must be a radius at the top, but if you have any airspeed at all, the radius will be there. Set a good vertical line of any length to get enough energy for the next figure, the humpty bump, and then pull to straight and level flight. I look at my airspeed in early flights to determine a good count to reach the airspeed I want. Once I know the count, I don't need to look at the airspeed indicator any more. I hold my line and use the count. Check your altitude here. You can gain or lose altitude in this figure as needed by shortening or lengthening the vertical line.

**FIGURE 7 is a pull, pull, pull humpty bump.** The “pull, pull, pull” describes the looping portions of this figure. Each loop portion of this humpty is a pull on the stick. There can be many variations of the humpty simply by pushing instead of pulling. If the wedge was flown near the downwind edge of the box, the humpty can be placed right in the center in front of the judges where this figure will look best. Fly just past the center of the box. In my Pitts, I would wait until I saw the judges or the center box marker come out from under the trailing edge of the bottom wing, then pull to set the vertical upline. This figure looks simple but can be hard to fly well. Pull to the vertical and set your line. In the Pitts S-2B, I could give it a quick 1-2-3 count. Then pull slightly and release the elevator; just one small pump is all it takes. This will break the line but will let the airplane continue up in an arc-like floating the top of a loop. The nose will continue to pitch, and at about the 45-degree nose-up inverted point, smoothly pull to the stall buffet, and hold enough elevator to just stay at the stall buffet, until pointed vertically down, then set the downline. The downline can be a quick 1-2-3-4, pull, or look for just below the airspeed needed for an Immelmann, the next figure. In low-wind conditions, you should still be near the center of the box while on the vertical downline, slightly on the downwind side. Check your altitude here at the recovery. You can gain or lose altitude in this figure as needed by shortening or lengthening the vertical downline.

A good humpty should have a vertical line, a half-loop, and a second vertical line. The half-loop should describe a half-circle at the top of the two vertical lines. If the loop is not flown properly, the half-circle will not be round, causing a deduction in score. To go into more detail about flying the top of a humpty, the looping portion at the top makes the pilot feel as if the plane were pitching like a fishhook, not a half-circle. The long shank of the fishhook is the first half of the loop, and the short quick hook side is at the second half. Because of gravity, if the plane is flown like a half-circle, the ending point will actually be much lower in altitude than the starting point. By flying the fishhook-feeling shape, the airplane actually makes a gravity corrected half-circle looping portion. Pulling just to the buffet typically allows enough aileron and rudder authority to overcome the yaw tendencies during the pull at low speeds. If you are running out of control authority, pull the power some or start the pull with more airspeed. If you are not pulling to the buffet, you will close the loop low, meaning the end of the loop was lower than the start of the loop.

Figure 7



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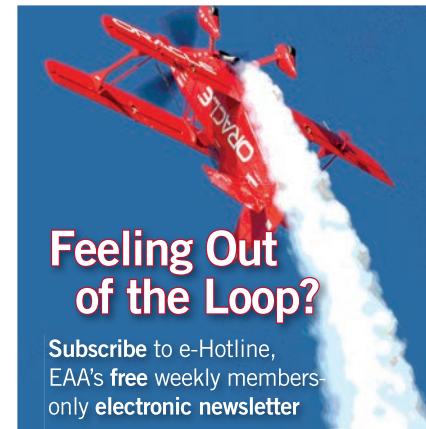
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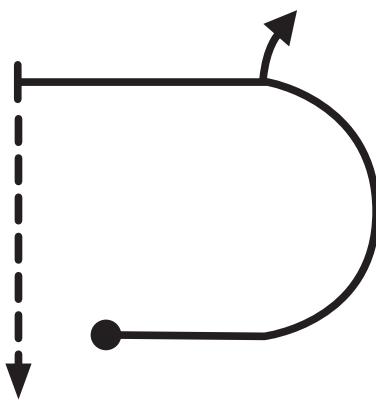


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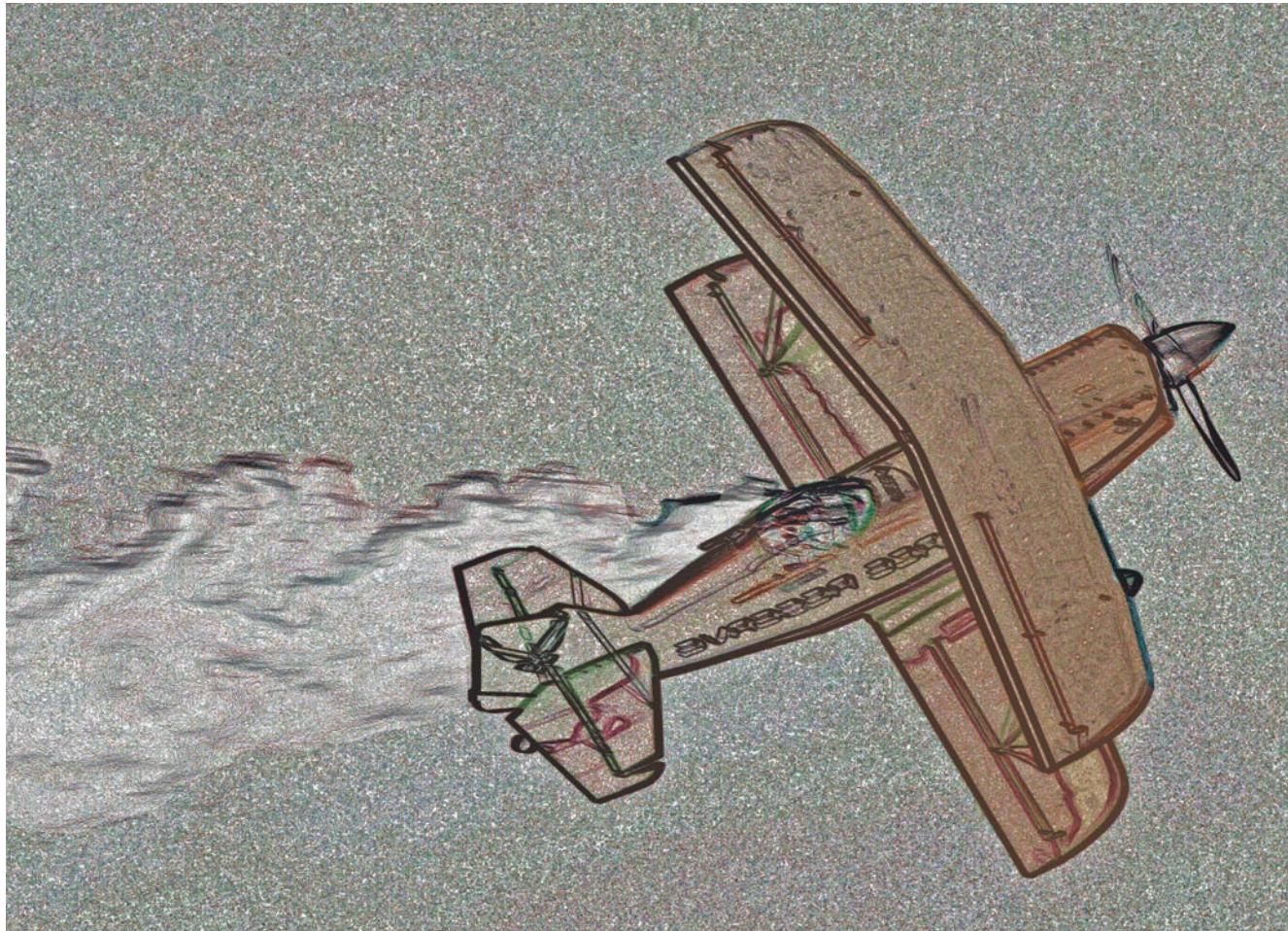


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**Figure 8**

**FIGURE 8** is an Immelmann or half-loop with a half-roll at the top. Fly this figure all the way to the upwind side of the box before pulling. When I saw the box markers disappear under the leading edge of the bottom wing of my Pitts, I was starting the pull. That usually kept me just inside the boundary judges. This needs to be done, because the next figure, the goldfish, uses a lot of box area. Per the IAC rules, rolls associated with looping figures must have no line between the looping portion and the roll. In this case, that means the first half-loop is flown just like any half-loop, including the float at the top. But when reaching an inverted level-flight attitude, the aircraft is half-rolled to upright flight. Notice that the aircraft must be leveled in an inverted level flight attitude. This is a low-speed area again, so the aircraft must be in a nose-up inverted attitude, or it will settle out the top of the loop and during the roll. Practice some low-speed 2-point rolls to determine what the inverted level flight view is from your cockpit. At the top of the half-loop set the low-speed inverted level-flight attitude, and immediately commence the half-roll. Remember, your good roll technique will be important as the aircraft will be flying slowly with lots of drag from the deflected control surfaces. As the aircraft rolls upright, keep the low-speed nose-high attitude set until airspeed starts to build up again.



**FIGURE 9** is the goldfish. This figure has three separate and distinct parts, and each must be flown well to get a good score for the whole figure. First, the push for the first 45-degree downline needs to be nearly at the center of the box so the rest of the figure does not go out downwind. There is no requirement for the length of this line, but get plenty of airspeed for the looping portion to follow. New competitors will tend to go shallow as the airplane picks up speed. Push to the 45, and hold that sight picture until the pull for the loop. As in the Immelmann, having the box markers go under the bottom wing at the bottom of the loop should keep the plane in the box. Pull for the loop as in any looping figure, with a good brisk pull and hold the Gz on until well past the vertical. At the top, float the loop just like normal, then pull to set the second 45-degree downline. The airplane is slow at the top, so a good 1-2-3-4 count, then the half-roll, and a 1-2-3 count after toll should give a good start to getting the roll in the middle of the line. Hold the 45-degree line during the roll and keep the line straight after the roll. A brisk pull to level flight will end this figure.

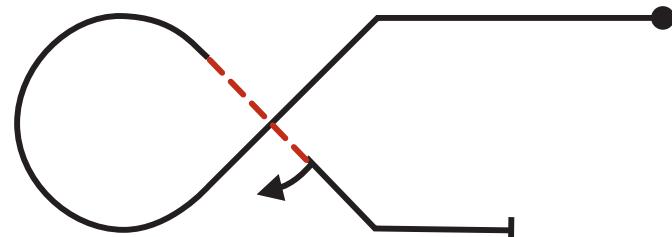


Figure 9

**FIGURE 10** is a competition slow roll. It will be hard to put this figure in the middle of the box with higher-performing aircraft, so just fly the goldfish and the roll well and let the roll come near the upwind side of the box. Try to give a 1-2 count before starting the roll to draw the straight line between figures. And make another count after the roll before your wing-wag to signal the end. Don't confuse the judges with a roll and too quick wing-wag.

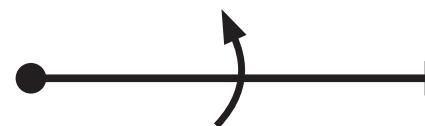


Figure 10

The 2010 Sportsman Known should give new and returning Sportsman pilots enough of a challenge, and it can be flown well regardless of the airframe used. In this sequence, there are several keys to success that we have covered here; practice Figure 1A, the box entry, as though it is a sequence figure, practice the sequence at higher altitudes until you learn where and how much altitude is lost throughout the flight, get spin training, and there is no substitute for good ground coaching during practice sessions.

Good luck and see you at the contests! **IAC**

*This wraps up the second half of the 2010 Sportsman Known sequence, continued from the March issue. -Ed.*



# The Future of IAC Begins Here

BY CHRIS RUDD

**THE DREAM OF TAKING flight entered the thoughts of sixteen-year-old Miranda Myer at an early age. Miranda would often go out to the airport and wait, hoping for someone to take off or land so she could imagine herself mastering the controls of an aircraft and taking flight. She would often attend air shows to watch the skillful pilots fly the fire-breathing biplanes and sleek, fast monoplanes. One such pilot was Patty Wagstaff. Patty saw Miranda's passion for flight was sincere and offered to take her flying in the summer of 2004. Patty took Miranda out for a ride in her Cirrus, and the joy on Miranda's face was plain for everyone to see. The following year Patty's friend Andy Irwin, who owned a Pitts S-2B, offered Miranda the opportunity to ride in the famous Pitts Special at an air show. She quickly accepted and off they went.**

I met Miranda and her father, Mike, at an air show the following year. I was amazed by her passion for aviation and impressed with her ability to remain focused on her education and additional school activities even though she dreamed constantly of flying. I remembered being a kid watching airplanes go by wondering how I could ever get the opportunity to fly one. My parents purchased models, and I flew radio-controlled aircraft but was unable to take flight lessons until I was an adult. I knew I wanted to help Miranda realize her dream and learn to fly.

I have a J-3 Cub that was itching to get back to its glory days and show one more person the ropes of flying with the steering wheel in the back. I e-mailed Miranda and asked if she would like to spend her Christmas break tooling around South Georgia in her choice of a J-3 Cub or Decathlon. Her reply of "you're

*"The next six days were all about obtaining as many of the sport pilot requirements Miranda could. . ."*

kidding" came back quickly, and we arranged for her and her dad to arrive from Kansas on Saturday, December 26. Miranda arrived ready to fly! I preflighted the Decathlon,

and we took off on what I thought would be a 30-minute flight that actually lasted an hour and a half. The following day I planned to take Miranda on a short cross-country to Albany, Georgia, to meet fellow IAC member and friend Stan Moye. I wanted her to get some seat time before certificated flight instructor (CFI) Don Greene, who generously donated his time, took over on Monday to begin training her for a sport pilot certificate.

Sunday dawned clear and cold, and our flight went well. Turns, climbs, and descents, with a little slow flight thrown in, were well within the practical test standards, so I followed along on the controls as we landed in Albany. Stan was waiting for us, anxious to show Miranda his One Design. We talked of aerobatics and the importance of spin training. We then decided Stan would fly down later in the week to check Miranda's progress and demonstrate maneuvers in the practice box.

The next six days were all about obtaining as many of the sport pilot requirements Miranda could in the short time we had. She flew two flights per day with CFI Don Greene in Quincy, Florida, and would then fly with me back to Cairo in the evening so she could impress me with her ever-improving skills in the Cub.

Miranda was approved to solo on Thursday, December 31, but the wind prevented it. We continued to fly all day, every day until the time came for Miranda and Mike to start the journey back to Kansas on Saturday, January 2. I am looking forward to the coming year when Miranda will complete her certificate and return to Cairo to start practicing in the box in preparation for her first IAC competition.

The journey to IAC membership begins with that first flight. Let's work together in 2010 to raise our membership while making friends and memories that will last forever. **IAC**



**CONTEST CALENDAR**  
**DEPARTMENTS**



**// Borrego Hammerhead Roundup (Southwest)**  
**Friday, April 9 – Saturday, April 10, 2010**  
**Location:** Borrego Valley Airport (L08): Borrego Springs, CA  
**Tel:** 714-512-2531 • **Website:** [www.iac36.org](http://www.iac36.org)  
**E-Mail:** webmaster@iac36.org

**// Los Angeles Gold Cup (Southwest)**  
**Friday, April 30 – Saturday, May 1, 2010**  
**Location:** Apple Valley Airport (KAPV): Apple Valley, CA  
**Tel:** 619-417-0839 **E-Mail:** PittsFlyGirl@gmail.com  
**Website:** <http://www.iac49.org/>

**// Carolina Boogie (Northeast)**  
**Friday, April 30 – Saturday, May 1, 2010**  
**Location:** Lumberton (KLBT): Lumberton, NC  
**E-Mail:** RandTAviation@ec.rr.com

**// Armed Forces Memorial (Southeast)**  
**Friday, May 14 – Saturday, May 15, 2010**  
**Location:** Grenada Municipal (KGNF): Grenada, MS  
**Tel:** 662-417-5698 • **E-Mail:** wroberts@waco-eng.com  
**Website:** [www.iac27.org](http://www.iac27.org) (under construction)

**// Jersey Skylands Aerobic Championships (Northeast)**  
**Friday, May 14 – Sunday, May 16, 2010**  
**Location:** Greenwood Lake Airport (4N1): West Milford, NJ  
**Tel:** 1-908-635-2815 • **Website:** [www.iac52.org](http://www.iac52.org)  
**E-Mail:** stephenseidel@embarqmail.com

**// Southeast Aerobic Open (Southeast)**  
**Friday, June 4 – Saturday, June 5, 2010**  
**Location:** Tara (4A7): Hampton (Atlanta), GA  
**Tel:** 706-326-4877 • **E-Mail:** marty.flournoy@fcrealtors.com

**// U.S. -Canada Aerobic Challenge (Northeast)**  
**Saturday, June 5 – Sunday, June 6, 2010**  
**Location:** Olean Airport (OLE): Olean, NY  
**E-Mail:** penn.lorr@yahoo.com

**// Lone Star Aerobic Contest (South Central)**  
**Friday, June 11 – Saturday, June 12, 2010**  
**Location:** Grayson County (GYI): Sherman/Denison, TX  
**Tel:** 469-713-4505 • **E-Mail:** Loop4fun@aol.com  
**Website:** [www.IAC24.org](http://www.IAC24.org)

**MARK YOUR CALENDARS**  
for these upcoming contests.  
A complete list, and the latest  
calendar, is at [www.IAC.org](http://www.IAC.org).  
And, if you're hosting a con-  
test, let the world know by  
posting it there!

**// Ohio Aerobic Open (Mid-America)**  
**Friday, June 18 – Saturday, June 19, 2010**  
**Location:** Union County (MRT): Marysville, OH  
**Tel:** 614-505-6555 • **Website:** [www.iac34.com](http://www.iac34.com)  
**E-Mail:** jgranger@columbus.rr.com

**// Apple Cup 25th Anniversary (Northwest)**  
**Friday, June 18 – Saturday, June 19, 2010**  
**Location:** Ephrata Municipal Airport (KEPH): Ephrata, WA  
**Tel:** 603-860-4456 **Website:** [www.iac67.org](http://www.iac67.org)  
**E-Mail:** AppleCupCD@gmail.com

**// Wildwoods AcroBlast (Northeast)**  
**Friday, June 25 – Sunday, June 27, 2010**  
**Location:** Cape May County (KWWD): Lower Township, NJ  
**Tel:** 717-756-6781 • **E-Mail:** cwisman@comcast.net  
**Website:** [www.iac52.org](http://www.iac52.org)

**// Midwest Aerobic Club Challenge (South Central)**  
**Saturday, June 26 – Sunday, June 27, 2010**  
**Location:** Seward Municipal Airport (SWT): Seward, NB  
**Tel:** 402-785-1060 • **E-Mail:** lynn.bowes@hotmail.com  
**Website:** [www.2connect.us/mac80](http://www.2connect.us/mac80)

**// Michigan Aerobic Open (Mid-America)**  
**Saturday, July 10 – Sunday, July 11, 2010**  
**Location:** Jackson County – Reynolds Field (KJXN): Jackson, MI  
**Tel:** 734-255-2263 • **E-Mail:** rtbutts@live.com

**// Salem Regional Aerobic Contest (Mid-America)**  
**Saturday, July 17 – Sunday, July 18, 2010**  
**Location:** Salem/Leckrone Airport (KSLO): Salem, IL  
**Phone:** 314.369.3723 • **E-Mail:** bruceballew@earthlink.net

**// Hoosier Hoedown (Mid-America)**  
**Saturday, August 7 – Sunday, August 8, 2010**  
**Location:** Kokomo Municipal Airport (OKK): Kokomo, IA  
**Tel:** 765-864-0096 • **E-Mail:** mike.wild@comcast.net  
**Website:** [www.hoosierhammerheads.org](http://www.hoosierhammerheads.org)

**// Beaver State Regional Championship (Northwest)**  
**Friday, August 13 – Saturday, August 14, 2010**  
**Location:** Eastern Oregon Regional At Pendleton (PDT):  
Pendleton, OR **Tel:** 503-472-8017 • **E-Mail:** flyhran@aol.com

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## All About Risers

**Q: WHY DO I** see the risers (main lift webbing) tacked in place on some parachutes?

**A: THE MAIN LIFT** webbing is that webbing that runs from your waist up to and over your shoulder into the parachute container. The lines of your parachute are attached to the end of the webbing that goes into the container and are referred to as the risers.

Many parachutes come to me for servicing, and they are so far out of adjustment that the person wearing it could have very easily fallen out of her expensive cushion, especially during deployment. If your parachute rigger is doing his job properly, your parachute should leave his shop properly adjusted for your height and weight. If your parachute is adjustable (some are not), the three-bar slide should be in the small of your shoulder just below the clavicle. Constantly putting your parachute on and taking it off can cause the webbing to slip through the adjusters. If your parachute seems to be always falling off

If your parachute rigger is not nearby and you think the advice your peers have given you is questionable, take pictures of the problem area and e-mail them, as well as your height and weight, to your rigger. You can also e-mail me the pictures along with a current photo of you (to help determine how your parachute should be adjusted) and your contact number. I'm more than happy to look at the problem and get right back to you with fitting advice.

This is the reason I often tack the risers in place, especially if you're the only one wearing the chute (see Photo 1). Photo 1 shows me pointing to the tacking just above the rectangular piece called a three-bar slide. This will eliminate the problem. If you have multiple users of the same parachute, I strongly urge you to become familiar with the various adjustments on that parachute. This is especially helpful if you operate a flight school where customers of all shapes and sizes wear your parachutes. I often tack the risers in place for a flight school that has

multiple users of a parachute, *but I show them how to size it down for smaller users* (see Photo 2). Photo 2 shows how I shorten the harness from the waist to the shoulder area and leave a loop just above the three-bar slide. After the flight, the parachute can easily be returned to where it was before by sliding the excess webbing back through the three-bar slide.

When a flight school receives its parachute(s) back from me with the risers tacked (hand sewn) in place, they'll generally fit someone who is about 5 feet 5 inches to 6 feet 1 inch without a problem. I'd rather see someone wearing a parachute that's a little tight on her rather than too loose. Falling out of an improperly adjusted harness is a real possibility that should be addressed before you put the parachute on. Lengthening the main lift webbing for a tall person is more difficult and, once lengthened, can be difficult, if not impossible, to return to the original adjustment without the help of your rigger. **IAC**



one or both shoulders, consider giving your rigger a call. You might also try asking your fellow International Aerobatic Club pilots, the owner of the fixed-base operation you fly out of, or even your Ouija board for advice, but please do something. Falling out of your harness during a bailout is not an option. Once you've bailed out of your aircraft, there is no turning back.

**Remember,  
things don't always go  
according to plan!**



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