

SPORT *Aerobatics*

DECEMBER 2011

OFFICIAL MAGAZINE INTERNATIONAL AEROBATIC CLUB



Your 2011 Unlimited Champion:

Rob Holland

- CD's Perspective of Nationals
- Inverted Flat Spins: A record attempt



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*A Southwest Airlines jet was heard to say, "A Pitts up here?
What the hell is that guy thinking?"*

—Spencer Suderman

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THE COVER

Unlimited National Champion Rob Holland with his new MXS-RH.

Photo by Scott Slocum

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The International Aerobic Club is a division of the EAA.



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POSTMASTER: Send address changes to *Sport Aerobatics*, P.O. Box 3086, Oshkosh, WI 54903-3086. PM 40063731 Return undeliverable Canadian addresses to Pitney Bowes IMS, Station A, P.O. Box 54, Windsor, ON N9A 6J5.



REGGIE PAULK
 COMMENTARY / EDITOR'S LOG

Holidays and Aerobatics

IT'S THAT TIME OF year again. As I write this, Thanksgiving is bearing down like a freight train and that means the rush of the holiday season is turning into a flood. Hopefully you'll find a spare moment to sit down and read this issue of *Sport Aerobatics*; I hope you like it.

At the World Aerobatic Championships this year, Rob Holland took the gold medal in the Four Minute Free—no small feat on the international stage. Soon after, he returned

The maneuvers he makes look effortless require literally months of thought before he even tries them in the airplane.

home to claim the title of Unlimited National Champion at Nationals in Texas. I had the privilege of speaking with Rob for the story in this month's issue, and it was enlightening. Many people don't realize the amount of effort Rob puts into his flying. The maneuvers he makes look effortless

require literally months of thought before he even tries them in the airplane. He'll take up to a year before he'll add a maneuver to his routine.

The contest director at Nationals this year was Vicky Benzing. In addition to good weather, she headed a contest that went off with very few hitches. The IAC is a 99.9 percent volunteer organization, and the only way an event like Nationals could occur with so few hiccups is because of them. If you are one of the people who've showed up at an IAC contest somewhere in the country in order to help out, you deserve the deepest gratitude of the organization. Thank you for your contribution. This sport wouldn't exist without you!

A couple of months ago, Spencer Suderman sent a video of his attempt to break the world record for inverted flat spins in his Pitts biplane. I asked if he would write an account of the attempt for our members, and he readily obliged. In addition to overcoming the requisite regulatory hurdles, Spencer faced the limits of aerodynamics. He's not going to give up, but he has his work cut out for him.

To all of our members, I would like to wish you a happy and healthy Christmas and New Year. May food, family, and friends surround you, and may health keep you constant company into the year 2012! **IAC**

Please submit news, comments, articles, or suggestions to: reggie.paulk@gmail.com



DOUG BARTLETT
COMMENTARY / PRESIDENT'S PAGE

Rumors of a Reality Show

AT THE END OF October your officers and directors gathered in Oshkosh for the fall board meeting. Officers, directors, and committee chairs forwarded reports that created an agenda packet of more than 240 pages. You will find the complete report along with the minutes of the meeting on our website under the "members only" section. For those individuals who want to know the direction the IAC is taking and the work that is being done, please read the document in its entirety. It is a long read, but one worthwhile.

Here are some of the highlights. The IAC is in sound financial shape. There are sufficient cash positions that equal about one year of operating expenses. This means we have strong cash reserves to support us in the event of worsening economic downturns. This year we are on budget and look to have a break-even year. Your treasurer, Bob Hart, has developed an activity-based costing report that shows the competition activities of the club continue to be self-supporting.

The membership committee chairman, Doug McConnell, has been working hard to encourage activities that support the growth of membership. He reported that the efforts are starting to work and indicated the membership numbers for the IAC are no longer dropping and appear to be stable at this time. However, for the IAC to grow its membership again, Doug McConnell, regional directors, and I will be working directly with the chapter presidents to enhance media, social, and competition activities for 2012.

Wayne Roberts, the Midwest regional director, has taken on the task of developing a working group to upgrade our website. This has been a long time coming. This task has been placed high on the to-do list due to the rapid movement of information and print to the Internet. Wayne is looking for IAC members with desire or skills in this area to join his working group. Further, we are looking to provide links to all local chapters and their activities.

I have received many calls and e-mails over the last month asking if the rumors of a reality TV show based on IAC competition are true. Yes, those rumors are true; however, we are in the very early stages of discussion. The board has directed that a committee be formed to investigate this and other promotion activities. Although based on competition, any such activity would cover the whole range of the IAC activities, showing the support of aerobatic enthusiasts and competitors alike. This column will be used from time to time to update the membership on our progress. Stay tuned!

On the competition side, the Unlimited Four-Minute Free event has been changed to allow advanced pilots with a 250-foot competency waiver to compete in the event for 2012. This is the first of several small

steps to open up this competition to a greater number of competitors. We will, however, move slowly on this, allowing for input and feedback regarding safety and operational issues. The event has also been raised to the level of a national championship title.

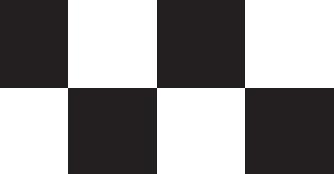
Decisions were made to more closely align the IAC with CIVA rules when practical. This action will be done slowly to account for concerns our members have

with the advancement of more complex and powerful aircraft. As an example, the IAC will adopt the "Free Unknown" concept for the second Unknown flight at the U.S. National Aerobatic Championships for 2012. Although too complex to describe in detail here, this process will allow the

**This process will
allow the pilots
to design their
own sequence from
the selected group
of figures.**

pilots to design their own sequence from the selected group of figures similar to what is done at the World Aerobatic Championships. This allows the pilots to design a sequence that works best for their airplane and takes away some of the advantages of more powerful platforms.

These items and many more are covered in the agenda packet and minutes of the fall board meeting. So again, all members are encouraged to go to the website and read them to discover the many topics of change underway in the IAC. **IAC**



Rob Holland

BY REGGIE PAULK WITH ROB HOLLAND





YOUR 2011 UNLIMITED NATIONAL CHAMPION



Rob Holland

Rob Holland's aviation story begins like so many other pilots we've read about over the years. His parents took him to the Quonset air show in Rhode Island as a young boy, and from that point on, all of his model airplanes hung upside down from the ceiling of his bedroom. "That just kind of changed everything," he says.

WHEN HE WAS A KID, Rob's parents bought him a couple of rides in a Cessna at the local airport. After he turned 18, he attended Daniel Webster College in New Hampshire to work toward a degree in aviation and obtain his certificates and ratings. A chance meeting at the airport would give him his first real taste of aerobatics.

"My first experience in an aerobatic airplane was at Nashua Airport, where Daniel Webster is," he says. "That's actually where I live now. I was just walking to the airport, and this hangar was open, and there was this beautiful Steen Skybolt inside. The guy was washing his airplane, and I asked if he'd mind if I took a picture of his airplane. He said, 'I don't mind, but would you rather go fly it?' I said, 'Well, yeah!' So he took me flying, and that was the first time I actually went upside down in an airplane. That flight just confirmed everything I already knew anyway—that's what I had to do."

Rob and the plane's owner, Ned Crowley, became fast friends and remain so to this day.

"I've flown his airplane a whole lot," Rob says. "I was 18 at that time, learning to fly at the college, and happened to be at the airport when I saw that beautiful Skybolt. From that point on, I would take advantage of every chance I could get to go upside down in an airplane."

Rob's main goal as an aviator was to fly air shows. Everything else was secondary to that goal.

"I wanted to do that kind of flying," he says. "It was really exciting and thrilled me. I didn't even know about competition at the time, and I didn't know how to get there and afford it. I figured I would pursue a normal career in aviation like the airlines so I could hopefully make some money to afford an aerobatic airplane."

He began his career flight instructing and towing banners and eventually got a job flying for a commuter airline.

"I flew a Jetstream 31, the most horrible airplane ever built," he says of the twin-engine turboprop. "It was underpowered; unstable; no autopilot; no yaw damper; no anything. It was a miserable airplane."

His fortune changed when he was offered a corporate flying job at the controls of a Pilatus PC-12.

"I loved that airplane," he says. "It was fun. It's not the fastest airplane, but it had good legs and good speed. You can go in and out of anywhere."

You could fly out of 2,000-foot grass strips and not think twice about it. It was easy to fly and was just a great airplane."

Rob says his was the typical corporate story. The guy's money went away, so the airplane went away as did his job. Jobless and wondering what to do next, Rob got to know Mike Goulian of Executive Flyers, "Just down the road from me," Rob says.

"He offered me a job teaching aerobatics at his flight school because I had a bunch of aerobic experience by then. This was something to do while I figured out how to move on. That's when I realized, 'Hey, I could do this for a living and fly upside down and have other people pay for it.' It really opened my eyes, and that's when I started competing."

THE COMPETITOR

Rob's first contest was in 2001, at the New England Chapter 35 contest. "They don't have it

anymore," he says. "When working for Mike, I'd known about competition, but air shows were my focus. That was my mission. Plan A was to be an air show pilot, and I didn't have a plan B. It was through Mike I learned about competition. I wasn't super excited about it in the beginning,

Hey, I could fly upside down and have other people pay for it.

but then I did a few competitions and realized it was pretty cool. To this day, people come up and ask me whether I like competition or air shows better, and I say neither. They both encompass different disciplines, and I enjoy flying both of them equally—which is why I do both."

On April Fools' Day 2002, Rob opened his own flight school. Named Aerial Advantage



PHOTOGRAPHY BY SPENCER THORNTON



Rob Holland



**It's the most
unbelievable
airplane I've
ever flown.**

Aviation, he leased a Decathlon and a Pitts S-2C to give aerobatic flight instruction. It was the Pitts that would give him his first taste of air shows.

"I worked a deal with the gentleman who owned the Pitts so I could start doing air shows in it," he says. My first air show was in 2002. I practiced real hard and ended up getting a low-level waiver. My first show was actually at a Budweiser plant. They had a festival going on, and we got waivered airspace in order to fly the show."

Rob flew six air shows his first year, eight the next, and 10 the year after that. For the past six years, he's averaged about 25 shows per year. Rob is mostly known for his monoplane MX2, but biplanes were his first love.

"I just love biplanes," he says. "Nothing, to me, looks better than a biplane. I flew the Pitts for three years, and then a buddy of mine bought an Ultimate Biplane. With 300-plus hp, it was a fantastic airplane. In 2005, I worked a deal with him to fly shows in that. It was while I was flying the Ultimate I met Chris Meyer, owner of MX Aircraft. He likes biplanes, too, and thought the Ultimate was really cool. While we were talking, he mentioned a new airplane he was coming out

with and invited me to Florida to do an evaluation of the MX2. I kind of blew it off for a bit, and then I happened to be down in that area and decided to take him up on it."

With experience in Extras and Sukhois, Rob was "totally not excited about monoplanes at all." He loved biplanes.

ONE WING

"I get into the MX2," he says. "I take off, move the controls around a little bit, and my first thought was, 'Wow, this is kind of nice!' I couldn't believe what I could do with the airplane. That was it. I had to have one. Eight months later, I'd worked a deal with Chris, signed financing, and I had an MX2."

Today, Rob Holland and his MX airplane are almost synonymous, so it's no surprise his new single-seat MXS is the Rob Holland Special. Dubbed the MXS-RH, his new mount is even better.

"The MXS is amazing," Rob says. "It's the most unbelievable airplane I've ever flown. We changed a lot of stuff on mine—it's not a standard MXS. It's got a different vertical stabilizer, rudder, elevator, canopy, cowling, and seat. I had a lot of input and worked with the factory on the modifications.

They gave it the -RH designation because it's quite a bit different than the standard MXS."

Contrary to popular belief, the MXS was not designed for air racing.

"When Chris designed this airplane, he designed it for aerobatics," says Rob. "It just happened to be fast, so they modified it for air racing—and it wasn't even all that modified. They bolt on wingtips, change the canopy, and put on a racing cowl. You could literally unbolt all that stuff and put on the original parts, and you'd have an aerobatic airplane again. In reality, the MXR was nothing but an MXS."

Rob has two airplanes but still needs to give media rides at his 25 air shows, so he has to ferry both aircraft around the country with him.

"Now that I have two airplanes going to each air show, I'll ferry one airplane, and the other guy will fly the other one. I just got the MXS that I flew at the World's and at Nationals, but I have

my MX2 for my sponsors so I can give media rides in the second seat."

And Rob goes everywhere to fly air shows. Next year, he'll be performing in El Salvador and the British Virgin Islands. He's performed at shows in the Caribbean, where he says the flight there and back is worth the trip. And what of his airplane's range?

"I can go 650 statute miles on 50 gallons in the MX2," he says. "My airplane is about as basic visual flight rules as you can get. The new airplane has a Dynon SkyView with synthetic vision. It actually has an autopilot on it. Even with that, I'd use it to get out of a pinch, but I wouldn't go instrument flight rules with it."

As for maintenance, he pulls the engine every 500-600 hours for an overhaul and has the factory inspect the airframe. "Every year, I bring it back to MX, and they look through it, but there's never anything wrong with it."

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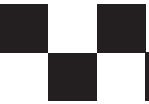
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...I had to dead stick my Pitts in and an old timer said "Nice save. Someone taught you well." Yes they did! Thanks, Budd. -Craig H.

My insurance company covered me, a low-time, low-tailwheel-time pilot in a single-hole Pitts largely because I went to Budd for my training. -Tom P

... the engine failed at low altitude and the accident investigators said that my fundamentals saved me. Thanks my friend. -Maynard H.

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Rob Holland

Certified airplanes are required to be designed to 150 percent of their limit load to obtain FAA certification. The experimental MX has no such requirement, but is designed to 200 percent of limit load.

"It's way overbuilt," he says. "It's a 20g airframe, and I routinely pull 11g's. I've had it to 13, but I wouldn't call that routine. During an air show, I'll pull 10-11 positive and minus 7g's. For competition, I'll do a little more negative, but it's about the same. Everyone's always asking how much you have to push...I say the same as you pull. I tell people negative g's always suck. After a while, they just suck a little less."

Although he can withstand the positive g's after being out of the cockpit for a while, he says you have to get acclimated to negative g's even after only one week out of the cockpit. "It goes fast," he says. For a workout routine, he just flies as often as he can.

Negative g's always suck. After a while, they just suck a little less.

INSPIRATION

This May, Rob married his sweetheart, Jessica. "Five and a half years ago, she walked into my office for an aerobatic ride," says Rob. "We hit it off and became really good friends. Nine months later, we started dating. She's a CFI. She's an aeronautical engineer for a living, and she's all about flying."

Even after getting married, competing at the World Aerobatic Championships (WAC), and winning the National Championship, Rob's managed to fly 23 air shows this year.

"I got married in May, and we went on a honeymoon for a week. I left the honeymoon for an air show, then wasn't home again until the week before Oshkosh. I was home for that week, then left for Oshkosh. I went straight from Oshkosh to Milwaukee for the show in Abbotsford; went from there to Chicago. I left from Chicago to go to Italy. When Italy was all said and done, my wife came out to have a little bit of a second honeymoon over there. She came the last couple days of the competition, and we spent another few days in Italy. I came



back here and was home for 12 hours before I was off to my next air show. This second week of October is the first week I've actually really been home since before Oshkosh. I've already done two air shows since Nationals."

TEAM PLAYER

And what of the WAC, where he won the gold medal in the Four-Minute Free program and the U.S. team took the bronze?

"I think I can speak for everyone on the U.S. world aerobatic team when I say we're really proud of our team this year," he says. "Because we were really that: a team. For the first time in a long time, the entire team was in one place practicing together, as a team, at a camp. We had three camps this year. The first two were



split between the East and West Coast so everyone didn't have to travel as far. We had Sergey Rakhmanin as team coach, and he was absolutely outstanding. The last training camp we had was in Texas at Denison. The whole team was training together. We had a lot of pride going into the World's as a team. Everyone was there for each other, and I think we were pretty well prepared. The contest itself was very well organized. Italy was beautiful, and a great venue for a contest. I think our team as a whole did pretty good. We had a good showing and will do better next time. The Four-Minute Free obviously worked out for me."

For Rob, competition aerobatics is a competition against the self.

"I can't affect anyone else who's not in that airplane. As long as I hit it, it's the best I can do,

and it's better than the last time I did it; I'm pretty happy with it. Obviously people want to win, and I won't deny that. I figure I'm going to show them what I know how to do. If they happen to like it, great, and if they don't, it is what it is. I was in a brand new airplane I didn't have all that much time in. But it was pretty amazing and let me do some pretty spectacular things, so I just put together a routine I thought was going to wow them, and I guess it did."

When Rob flew at the Advanced World Aerobic Championship, he lent his airplane to the pilots of the South African team. His generosity would prove to be fortuitous.

"The South African team used my airplane at the WAC. They also used my airplane at the AWAC, so I've gotten to know them, and they're really good guys. They have MX2s of their own



Rob Holland



down in South Africa. I had the airplane taken apart at MX. They trucked it up to JFK and sent it out on a cargo plane to Luxembourg. The South African guys met it in Luxembourg, assembled it, and flew it down to Italy. I was able to leave directly from my air show in Chicago and take a flight to Italy, where the airplane was waiting for me. If I'd had to go over and put it together myself, I wouldn't have been able to afford it and actually make it all work. When the competition was over, they flew it back to Luxembourg, took it apart, packed it up, and shipped it back over here. It arrived the Friday before Nationals. I picked it up, went to Nationals, and flew Nationals. Those guys were awesome. To me, that's a lot of the fun of competition. It's the people you get to know and the friends you make. International competition is an opportunity you wouldn't normally have to meet these people."

With the World's finishing so close to Nationals, he felt he was as prepared as he could be for his flights at North Texas Regional Airport.

"I felt good coming into Nationals. Goody, Rossy, and I were there for the team and kept our team spirit going into Nationals. We sat down with each other, went through the routines and sequences. We approached it as a team effort, and it paid off. If you look at the standings, it was me, Goody, and Mike. Goody had some exceptional flights. If there's any person I wouldn't mind coming in second place to, it's Goody. And he feels the same way about me. He was flying exceptionally well, and he's a teammate. If we can keep it going and get the IAC behind us the way we'd like them to, we'll do really well."

Rob didn't become National Champion by chance. He set his sights on the goal long ago.

"One of the neat things about Nationals this year is that I started competing 10 years ago. At my first Sportsman, I said in 10 years, I want to be National Champion. Not just to be National Champion, but to set the goal to just keep getting better and not stop learning. Ten years later, almost to the month, I won the Nationals. That was a pretty neat accomplishment." **IAC**



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BY VICKY BENZING, NATIONALS CONTEST DIRECTOR

wrapping up

A Successful Nationals

The weather couldn't have been better. It was a glorious week for a Nationals contest in the heart of Texas, and competitors flocked from all corners of the United States to compete for the title of national champion in their respective categories.



IN ALL, 97 COMPETITORS attended the 2011 U.S. National Aerobatic Championships held at the North Texas Regional Airport September 25 through September 30. Nineteen of those were students from the U.S. Air Force Academy and from Embry-Riddle Aeronautical University in Florida. The Air Force Academy cadets out of Colorado Springs, along with a single civilian pilot, Lukas von Atzigen, flew in the Intermediate and Sportsman Glider categories. The Embry-Riddle students shared a Pitts S-2B, N260AB, and flew in the Sportsman Power category. The other 78 pilots made up the rest of the Primary through Unlimited categories.

If you have ever thought about going to a Nationals contest, the survey responses to the question "What did you like the best about this year's Nationals contest?" should give you all the reasons you need. "People—renewing old friendships and making new ones," wrote one competitor, "Great people; fair, friendly environment," wrote another, and "Unbreakable lifelong bonds," wrote yet another.

Besides the fun and friendly environment, there is the incredible opportunity to watch the best of the best fly, and to learn a tremendous



amount from fellow competitors. Everyone there is willing to share his or her know-how. "Talking to the experienced pilots and judges and being able to learn from them," wrote one of the survey respondents in answer to the question of what he or she liked best about the contest.

For all of those who love aerobatic airplanes, Nationals is the place to go to see an enormous variety of colorful and capable machines that can climb to the heavens, roll at dizzying rates, and stop on point. And they sound really great, too!

If all of this isn't enough to entice you to attend next year's Nationals contest, then consider the Texas hospitality. There is no hospitality like the hospitality that can be found in the state of Texas. Everyone, from the control tower to the hotels, welcomed the competitors to town with open arms. The Sherman Chamber of Commerce hosted an opening night barbecue on-site for all of the competitors. Other events were a barbecue by the Lemmon Bros. hosted on-site Tuesday evening by ASL Camguard/Bearfeat Aerobatics, and hamburgers and beer hosted by the Lake

Texoma Jet Center at The Library, a nearby local restaurant, on Thursday evening.

With the splendid weather all week, all power and glider categories were able to complete all three flights to determine the national champions in each category.

Our reigning 2010 National Champion, Jeff Boerboon, was in China during Nationals to fly an air show following the World Aerobatic Championships, so everyone knew there would be a new 2011 U.S. National Champion. But who would it be? Four members of the successful third-place-finishing U.S. Unlimited Aerobatic Team returned from the World Aerobatic Championships in Italy to vie for this title: Rob Holland, Goody Thomas, Michael Racy, and Michael Vaknin, as well as Debby Rihn-Harvey, our former three-time National Champion, and 10 other capable Unlimited pilots.

A new 2011 Unlimited National Champion was crowned following a grueling Unknown flight. Congratulations go to Rob Holland, our new U.S. National Champion, who finished his three flights with a smoking 84.18 percent. He was followed closely by

teammates Goody Thomas in second place and Michael Racy in third place.

Because this is a team selection year for the Advanced category, all of the nation's best Advanced pilots turned up at the contest to compete for a spot on the team, 24 Advanced category contestants in all. Our new Advanced category National Champion, determined from the cumulative total after the first three flights, is Nick Timofeev with 81.62 percent. Ben Freelove and Kelly Adams took second place and third place, respectively.

There is always fierce competition in the Intermediate category. The Intermediate Power category National Champion is IAC Director Tom Adams with a cumulative total after three flights of an amazing 86.07 percent, followed by Bill Denton and Dave Scott in second and third places. Mike Plyler, who graciously empties his hangar every year so that competitors have a place to put their airplanes at night, flew his Super T-Craft to a remarkable sixth-place finish in an Intermediate category filled with Extras, Pitts, and Staudachers.



Intermediate Glider category National Champion is U.S. Air Force cadet Charlie Meier with 72.97 percent, with cadets Anthony Demma and Timothy Miller in second and third places, respectively. Lukas von Atzigen, our only civilian glider pilot, topped the category with 75.03 percent, but he was unable to receive the title of National Champion because he is not a U.S. citizen. Charlie Meier graciously gave Lukas his trophy at the conclusion of the banquet, but under IAC rules, he could not give away his title of National Champion. Thank you, Charlie.

In the hotly contested Sportsman Power category, local pilot Chet Kuhn flew to a first-place finish with 85.81 percent, with Paul Thomson and Rick Nutt close on his heels in second and third places. Terry Middaugh once again flew his Stearman on a long journey across the country from Spokane, Washington, to compete in the Sportsman category. He finished in a respectable 15th place out of 24 of the nation's best Sportsman category pilots.

In the Sportsman Glider category, U.S. Air Force cadet Nicholas Dona took the top honors as National Champion with 79.36 percent. Christopher Villaneuva and Anthony Pipe finished in second and third places, respectively.

There was only one competitor signed up for the Primary Power category, so after some arm-twisting, former Nationals contest director Chris Rudd stepped up to the plate and flew to a first-place finish in

Marty Flournoy's Giles 202. Irad Kidron won the second-place trophy.

A second punishing Unknown flight was flown by the Advanced category to decide the team to represent the United States at the Advanced World Aerobatic Championship in the summer of 2012. The new U.S. Advanced Aerobatic team is determined from the cumulative total of all four flights. They are (in order of finishing) Nick Timofeev, Mark Nowosielski, Ben Freelove, Reinaldo Beyer, Kelly Adams, Craig Gifford, Marty Flournoy, Jessy Panzer, with Luke Lombard and Bruce Ballew as first and second alternates. Many feel that this team has the potential to win the gold at the AWAC next summer. We will all be rooting for you.

The Four-Minute Free showcased our local talent in a free-form program in which smoke and music are allowed. The competitor is expected to use the aircraft's complete flight envelope, including high and low airspeeds, positive and negative g flight segments, and controlled flight beyond the stall boundary (i.e., spins, tumbles, micro loops, hovering, etc.). Points are given for technical merit, artistic impression, and positioning.

Always a highlight of the week, a large crowd of local spectators gathered to watch the flights. Rob Holland, the reigning 2011 World Champion in the Four-Minute Free program, took first place to no one's surprise. He was followed by Debby Rihn-Harvey, in second place, and Dennis

Thompson, in third place. Also flying in this category were Tony Wood and Mike (Spanky) Gallaway. As one of our survey respondents put it, "Watching the Unlimited pilots fly" is one of the best things about the Nationals contest.

Such a smooth-running contest couldn't be accomplished without the help of many volunteers, both flying and non-flying. Category judges came from all over the United States: Lynne Stoltenberg, Hector Ramirez, Jim Wells, and Brian Howard were from the South Central, South East, North East, and South West regions, respectively. All were superb, keeping briefings brief and on point, and working with starters Chris Rudd, John Smutny, and Gary DeBaun to keep the contest moving at a good pace.

Jim Ward, a longtime IAC member and competitor who currently hails from the North West Region, capably chaired the jury. Many readers may remember Jim from his recent article in *Sport Aerobatics* on the judges' seminars he has been holding throughout the West.

**Such a smooth-
running contest
couldn't be
accomplished
without the help of
many volunteers.**

Ann Salcedo was back in force with her helpers this year, organizing all the volunteers, moving the judges' lines between the east side in the mornings and the west side in the afternoon, and keeping everyone happy and hydrated with snacks and water.

Other key contest staffers to whom many thanks are due are contest registrar Kathleen Moore, scorekeeper Doug Lovell, and assistant contest director Aaron

McCartan. IAC Manager Trish Deimer was invaluable in her assistance with the pre-planning and coordination of hotels, on-site catering, banquet, ice, etc.

A special thanks is due to the local Texas Chapter 24 folks who set up and took down the box and corner devices, and helped out in immeasurable ways (including using a rented chainsaw to prune the ever-growing trees on the west side!). Tony and Julia Wood hosted an on-site cocktail lounge, which provided a good place for the competitors to mingle and unwind at the end of the long, hot days.

We are greatly indebted to our sponsors, without whom we could not hold a Nationals contest. They are at the heart of our aerobatic community, companies that support us with equipment and services. Please thank them by patronizing their

businesses and choosing their products and services whenever your needs arise.

Our top level sponsors included Southeast Aero/Extra Aircraft, Aviat Aircraft, MX Aircraft, MT-Propeller, Hartzell Propeller, and Falcon Insurance. We were also supported by Kimball Enterprises, Grove Aircraft, ASL Camguard/Bearfeat Aerobatics, Sky-Tec/Plane Power, Lightspeed Aviation, Sportair USA, Para-Phernalia/Softie Parachutes, Rhodes Real Estate, CP Aviation, and Enterprise Rent-A-Car.

Nflightcam donated cameras for all of the category winners plus a couple extra for our silent auction—a total of nine cameras altogether! Other sponsors included local businesses: the Sherman and Denison Chambers of Commerce, the Lake Texoma Jet Center, the North Texas Regional Airport, and the Hampton Inn

and Comfort Inn & Suites in both Sherman and Denison.

A survey given to all competitors at the banquet showed that there was a high level of satisfaction with all aspects of the contest, food, hotels, website, etc. Many good suggestions for the improvement of future Nationals contests were received, and it will be up to next year's contest director, the energetic and capable Aaron McCartan, to incorporate as many as possible.

So make your plans now and add Nationals to the list of contests that you will attend next year, whether you are flying or just volunteering. Gather your friends together, saddle up your aerobatic mount, and fly out to join us next September 23-29th for a weeklong event of fun, flying, and meeting old friends and new in the warm Texas sun. **IAC**

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Recognizing



Kathy Jaffe Volunteer Award This award recognizes an outstanding volunteer during the previous year. The award was donated in memory of Kathleen Jaffe. Her spirit and enthusiasm for aerobatics and the aerobatic community were truly remarkable. She was president of IAC Chapter 52, contest director, newsletter editor, and contributor to *Sport Aerobatics* magazine. Kathy also gave lectures to everyone from aviation-related groups to schoolchildren on the joy of flying and especially aerobatics. She was also a competition pilot. She died in 1999.

WINNER: *Liza Weaver*

Robert L. Heuer Award for Judging Excellence Member Sam Burgess of San Antonio, Texas, conceived a trophy for the outstanding aerobatic judge each year. He provided the permanent award to recognize the outstanding achievements made to competition aerobatics by the judges. It is given annually for outstanding performance as an aerobatic judge during the contest year. General guidelines, though not requirements, for the award include National Judgeship and having judged a minimum of three contests, one of which should have been the IAC Championships or the U.S. Nationals.

WINNER: *Tom Adams*



Harold E. Neumann Award for Outstanding Contribution as a Chief Judge

The family of Harold E. Neumann has provided the permanent trophy in 1998 to recognize the outstanding chief judge and to honor the name of Harold E. Neumann, Collier Aviation Trophy recipient, Thompson Trophy Race winner, active IAC competitor and judge until well into his 70s. The award is given annually for outstanding contribution as a chief judge during the prior contest year. General guidelines, though not requirements, for the award include a person known for leadership qualities and fairness on the judges' line.

WINNER: *Fred Weaver*

IAC AWARDS OF MERIT:

Excellence



Curtis Pitts Memorial Trophy This award was donated by the Pitts family in the memory of Curtis Pitts. From the first design called the "Little Stinker" in 1946 to the Model 14 designed just before his death in 2005, Curtis Pitts was one of the most prolific aircraft designers in aviation history. His designs, and their descendants, forever changed the world of aerobatics.

WINNER: Gerd Muehlbauer

Frank Price Cup Purpose of the award is to recognize the person who has contributed the most to the sport of aerobatics in the previous year. The award is presented annually and will be selected by a secret ballot of the IAC board of directors. Nominations can be submitted by any IAC member. The award was conceived and donated by R.J. Rouse of Texas. It was created to recognize outstanding individuals in aerobatics and in honor of aerobatic pioneer Frank Price, the first American to compete in the World Aerobic Championships.

WINNER: Mike Steveson



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Recognizing



Mike Murphy Cup This trophy is awarded to the winner of the powered Unlimited category at the U.S. National Aerobatic Championships who then becomes the reigning U.S. National Aerobic Champion. The Mike Murphy Cup was conceived and donated by Mike Murphy of Ohio. Mr. Murphy was an aerobatic pioneer and a leader in international aerobatics for many years. The trophy is given each year to the U.S. National Aerobic Champion as he wished to honor that pilot.

WINNER: *Rob Holland*

Betty Skelton Trophy Presented to the top-placing woman in the powered Unlimited category at the U.S. National Aerobatic Championships. The trophy was conceived and donated by Mrs. Betty Skelton Frankman, Former Feminine International Aerobatic Champion and pilot of the famous Pitts "Little Stinker." Her aircraft is in the collection of the National Air and Space Museum in Washington, DC. Betty helped popularize this superb aerobatic aircraft

WINNER: *Debby Rihn-Harvey*



Bob Schnuerle Trophy Presented to the winner of the Four-Minute Free Program at the U.S. National Aerobatic Championships annually. The trophy was conceived and donated by Mrs. Florence Schnuerle, Bob's mother. Bob was a pilot on the 1970 U.S. Aerobatic team, coached the Team in 1972, and lost his life in an accident in a Pitts Special in September 1973, practicing for the U.S. Nationals. He was extremely popular with his fellow pilots. One of his favorite programs was the Four-Minute Free.

WINNER: *Rob Holland*



IAC AWARDS OF MERIT:

Excellence



Fred Leidig Trophy Presented to the winner of the Intermediate category at the U.S. National Aerobatic Championships. Conceived and donated by Robert H. Wagstaff of Anchorage, Alaska, and presented on behalf of the Southern Arizona Aerobatic Club, IAC Chapter 62.

WINNER: *Tom Adams*

MT Propeller Trophy Presented to the winner of the Advanced category at the U.S. National Aerobatic Championships. MT Propeller Entwicklung GmbH conceived and donated the trophy in 2006.

WINNER: *Nick Timofeev*



Old Buzzard Award The Old Buzzard Award is awarded with honor and distinction to the top-scoring competitor who is 65 years or older and completed all flights in any category at the U.S. Nationals. This award honors Charles "Chuck" Alley's accomplishments as an active competitor at age 84 and was created to encourage the senior members of the IAC who aspire to fly like eagles.

WINNER: *Bill Gordon*

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Recognizing



The Goodrich Trophy The trophy was conceived and donated by B.F. Goodrich Aerospace in 1996. The trophy was first awarded in 1997. The trophy is presented to the highest-scoring Unlimited non-U.S. citizen at the U.S. National Aerobatic Championships.

WINNER: *Sergey Prolagayev*

John Serafin Trophy The trophy is presented to the winner of the Free program (of any category in terms of percentage of possible points achieved) at the U.S. National Glider Aerobatic Championships. The trophy was conceived and donated by members John Serafin and George Kulesza in 1992. The award was first presented in 1997.

WINNER: *Nick Doma*



Chapter Team Trophy The trophy is presented in accordance with IAC Official Contest Rules. Currently, those rules call for the trophy to be awarded to the chapter whose top three (3) members, regardless of category, achieve the highest average score, in terms of percentage of points possible. That percentage is based on all flight programs in that category. In the event of a tie, those chapters' next highest-placing competitor's scores will be used.

WINNER: *Chapter 24*

IAC AWARDS OF MERIT

Excellence



L. Paul Soucy Award The purpose of the award is to recognize the IAC competition pilot who achieves the highest percentage of points possible during a contest season and who also competes in a minimum number of contests. One of these contests must include the IAC Championships and the total must be three or greater. The award was conceived and donated by L. Paul Soucy of Louisville, Kentucky. Mr. Soucy was one of the first members of IAC and the board of directors. His purpose was to recognize not only skilled pilots, but also those who supported a minimum number of contests as well as the IAC Championships in Fond du Lac, Wisconsin. He died in 1971.

WINNER: *Klaus Mueller*

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INVERTED FLAT SPINS

Going for the record



IF YOU ARE a pilot, the following paragraphs should leave pulled muscles in your brain trying to wrap your mind around the numerous questions that the situation I describe brings up.

The current inverted flat spin world record is 78 turns from an altitude of 16,000 feet and has been held by Wayne Handley since 1999, when he broke his own previous record of 67 turns from an altitude of 12,000 feet in his Pitts S-1 set 10 years prior. Wayne said that he did it for the publicity¹, and frankly, I pursued this record for the same reason.

BY SPENCER SUDERMAN



Inverted at 21,000 feet, over El Centro, California.

Since I started performing aerobatics I have been captivated by the inverted flat spin, but it wasn't until I became an air show pilot in 2006 that I thought of going after the record. My opening maneuver in every air show is the spin—albeit a short one—of about 10-15 turns begun from a relatively low altitude. After procrastinating for years, I decided that 2011 was the year I would finally do it.

At 10:15 a.m. on Thursday, March 10, 2011, I took off from Naval Air Facility (NAF) El Centro in the Meteor Pitts S-2B biplane. I headed northwest into Restricted Area 2510A, climbed through the 15,000-foot ceiling of the restricted area, and headed for Class A airspace, having been cleared initially to flight level 250 (FL250). I was subsequently up to FL270. While repeating the clearance to ATC I said, "LA Center, Pitts 260GR is cleared to flight level 270 and hoping to actually make it that high." A Southwest Airlines jet was heard to say, "A Pitts up here? What the hell is that guy thinking?"

At 10:44 a.m., I reached 21,000 feet, and that was as high as the plane would climb. So, I rolled over and initiated the inverted flat spin.

After spinning through 18,000 feet in three minutes, I started the recovery at 3,000 feet—ending the maneuver with a gentle pull to level off at 1,800 feet and called El Centro tower to request a landing clearance. After issuing the clearance to land, tower congratulated me on a new world record, having heard from someone on the ground in the restricted area that I did 93 turns. I had no idea how many turns I actually did because it's impossible to count them in such a long spin while paying attention to so many other things related to managing the aircraft systems. I was descending 6,000 feet per minute while trying to maintain the requisite level of situational awareness to recover the maneuver safely. In the end, the onboard cameras clearly showed that I was able to complete only 64 turns and not set a new world record.

One question you may ask is: How does a civilian aircraft—only certified for day VFR flight—depart from a military airport; fly through a restricted area into Class A airspace; and perform an aerobatic maneuver that is widely misunderstood, probably never been done to this extreme, and definitely never documented in this detail?

TERMS

Describing the inverted flat spin is actually a challenge because it is not really a spin at all but a gyroscopic maneuver driven by the precession of the turning propeller. An upright or inverted spin is an aggravated stall where one wing produces more lift than the other, resulting in autorotation², but the airplane is still flying, since the lift is reduced, not eliminated³. The inverted flat spin is an evolution of the inverted spin, since power is added to the inverted spin when right rudder is used in planes equipped with Lycoming engines turning clockwise as viewed from the cockpit. As the power is added, the

My opening maneuver in every air show is the spin.

nose rises toward the horizon and the plane turns around its vertical (yaw) axis like a top—placing the wings almost perpendicular to the airflow as the plane falls toward the ground. The plane is definitely not flying—only falling—and the flight controls are virtually useless until power is reduced and the plane returns to an inverted spin, where it can be recovered.

Preparing for my record attempt, I sought advice from many skilled

pilots, including Wayne Handley, and quickly learned that very few really understood the maneuver well enough to provide salient advice. I would have to figure much out for myself. At that point all I knew is that an oxygen system would be required due to the altitudes involved, so I contacted the usual vendors and finally selected a system from Aerox. It included a full face mask that could attach to my flight helmet and a small cylinder that could be strapped into the front seat of my Pitts and would provide 60 minutes of oxygen up to 25,000 feet.

THE VEHICLE

The Pitts biplane is highly capable of entering and recovering from spins. With its IO-540 engine and three-blade propeller it has plenty of climb performance, but I've never had a reason to climb much above 12,000 feet. The first thing I had to figure out is how high it could go, because I wanted every bit of altitude I could muster for the actual world record flight. According to published data, the service ceiling is 21,000 feet⁴, but of course it's not instrument flight rules (IFR) certified, so legally I could only fly up to—but not over—the floor of Class A airspace at 18,000 feet. No one I talked to had ever flown a Pitts that high, so there was no knowledge of how high it would really go. But since service ceiling is the altitude at which the aircraft is unable to climb at a rate greater than 100 feet per minute⁵, I figured I could eek out a bit more than 21,000 feet from the plane. That would later prove untrue.

The first test of my new oxygen system was a flight to the floor of Class A airspace to determine time to climb and fuel burn. This was the first of many educational flights where I incrementally expanded my knowledge of the Meteor Pitts. All flights were recorded on two or three HD video cameras on my helmet and inside the cockpit. The lesson of the

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INVERTED FLAT SPINS

day was 19 minutes to climb to 18,000 feet while burning 8 gallons of gas. The plane still had plenty of climb left, so I was highly encouraged.

SWEET SPOT

By the middle of 2010, I had gathered all of the equipment needed (airplane, oxygen, video cameras), so my attention turned to finding a place to perform the actual record-breaking flight while gaining maximum exposure for my effort. Of course, I'd also need lots of practice flights to increase my stamina in the spin while testing spin performance from different altitudes.

Since I was already scheduled to perform in the 2011 NAF El Centro Air Show as I have done in prior years, I approached my contacts there about doing this world record attempt as part of the show. Since 2011 is the Centennial of Naval Aviation celebration at all Navy air shows, it would be an added value to have a world record set at the same show that kicks off the Blue Angels season. I also figured that since they own the airspace, they could clear me to the altitude I would need. If only it were that simple...two days later I had a callback with an enthusiastic thumbs up, with the caveat I had to deal with any regulatory issues that might come into play—which meant my next call was to the San Diego Flight Standards District Office (FSDO).

I have always maintained great relationships with the FAA employees I have encountered at the air shows I have flown, so I called the inspector at the San Diego FSDO who usually oversees the El Centro air show and told him what I wanted to do. He told me to give him a few days to run this down and he would get back to me with some operational guidelines. A week later, I got the callback and was both disappointed and encouraged at the same time. I would not be allowed to perform this attempt at the air show in waivered airspace for a number of reasons, mainly because of a rule that you must have practiced your performance within 15 days of the air show. Since I would not be able to practice the spin from altitude before the attempt, I wouldn't meet the requirements. The FAA, however, did suggest using the restricted area adjacent to the El Centro Class D airspace. Since it is controlled by El Centro, they could authorize it. There was hope!

**Jim Nahom and
Casey Erickson
enthusiastically
agreed to do this,
although both
questioned my
sanity.**



High altitude spinning, indicated by widely-spaced rotations.

While El Centro was onboard with this plan, the restricted area 2510A only goes up to 15,000 feet. I would need a way to get above 18,000 feet. Once again my friends at the FAA had thought this through and suggested I apply for an altitude reservation (ALTRV)—which would allow ATC to clear me into Class A and protect the airspace around me in a predefined circle up to a specified altitude. The only requirements for my aircraft were a VHF radio and a Mode C transponder—CHECK!

While it still took several months to get the ALTRV approved and no less than a dozen FAA people on an ever-growing CC list in the e-mails to review it, in the end they were nothing short of supportive and encouraging for my requested activity.

When I registered my attempt with the Guinness Book of World Records website, they sent me a requirements document that stated that two IAC judges had to witness and adjudicate the attempt and fill in affidavits for the record to be accepted. I contacted judges Jim Nahom and Casey Erickson, who enthusiastically agreed to do this, although both questioned my sanity (they weren't the only ones).

I am not sure if it was a coincidence or collusion, but a few days later they each called to review in detail with me what I had asked them to witness. Casey not only runs a flight school, but also competes in her Pitts S-1, and Jim had competed for many years in a Pitts S-1 as well. They are both extremely familiar with how a Pitts flies and did some math to figure out how I was going to get 79-plus turns in the spin. Given that a Pitts can only do approximately five turns per 1,000 feet below 7,000 feet and less as altitude increases, I would need to climb to 24,000 feet to do this. I told them their estimates concurred with the practice flights I had been doing with video and the data I was gathering. I did this by spinning in 5,000-foot blocks of airspace (3K-8K, 5K-10K, 8K-13K, 10K-15K, 13K-18K), tracking results on a spreadsheet, and then extrapolating the performance up to 25,000 feet.

During these flights, I was trying to figure out ways to make the plane spin faster. I tried various stick positions and even just letting go, but the spin rate remains unchanged. I tried different engine rpm and power settings. But at altitude, the manifold pressure is low anyway, so that didn't matter. The



IAC judge Jim Nahom reviews cockpit footage, as Spencer and airmen based at NAF El Centro anxiously wait for the final count.

PHOTOGRAPHY BY CLARK COOK

LESSONS LEARNED

THE DESCENT rate of a spinning airplane is not linear, so the higher you go the faster it falls. That makes sense when you consider the decrease in ambient pressure as altitude increases. My spreadsheet was wrong, very wrong.

THE ROTATION rate of the airplane is consistent at any altitude, and the inverted flat spin is purely a gyroscopic maneuver that cannot be affected by the ailerons or elevator. It cannot be accelerated like a regular upright or inverted spin.

GOING HIGHER is not the solution and never will be; spinning faster is.

The questions I get asked:

Why has no one else tried this since Wayne in 1999 and before you in 2011?

I don't know because it's really not hard to do this. You just need to climb high, hold right rudder and maintain the stick forward and to the right, and wait. I think you could train a monkey to do it.

What if you turbocharge the plane or use nitrous to get more power to start higher?

That won't work. Even if I could have reached 25,000 feet, that might have only given me another eight turns, most likely, and still wouldn't come close to the 79 needed to break the record.

Will you do this again?

Yes, if I find an airplane that can climb to 20,000 feet, spins faster, and can stay inverted long enough without fuel/oil starvation. I have looked at all of the common aerobatic planes and talked to the manufacturers, and it seems that no one makes a plane that can do all of these or someone would have done it by now.

INVERTED FLAT SPINS



Pilot's point-of-view from helmet mounted camera during the spin.

rpm had a noticeable impact on spin rate, although small. I reduced rpm in the spin until the nose dropped a bit, then added 100 rpm back in and got about a half-turn per 1,000-foot higher spin rate than at 2700 rpm. Keep in mind that a 64-pound propeller can exert a lot of gyroscopic precession but also a fair amount of rigidity.

After studying the videos and building data models, I concluded that once the spin is developed the stick position has no impact. Keeping it forward and slightly to the right would keep the plane from doing uncomfortable oscillations while avoiding overstress on my arms from holding the stick against the pressure of the flight

controls for several minutes.

The flight on March 10 was the culmination of years of desire and emotional investment with a liberal helping of practice/conditioning flights and a very steep learning curve on all aspects of the flight. These included mechanical, physics/gyroscopic, physiological, regulatory, and promotional. So many people and organizations supported me in this effort, and that list includes the Navy and FAA; numerous product manufacturers who provided cameras and oxygen equipment; my air show competency evaluator, Bill Cornick; and of course my wife, Stacey, and family. **IAC**

FOOTNOTES

1. <http://www.AirSpaceMag.com/flight-today/stupid-plane-tricks.html>
2. <http://www.AOPA.org/asf/asfarticles/2003/sp0302.html>
3. http://en.wikipedia.org/wiki/Stall_%28flight%29
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COLUMNS / ASK ALLEN

Let me start by wishing everyone a happy holiday season!

Q: ARE OLD HABITS hard to break?

A: RECENTLY I RECEIVED another parachute that the owner complained was uncomfortable to wear. When I opened it the person who had previously packed it hadn't seemed to pay much attention to the packing manual. This parachute would have opened, but he had not packed it according to the manufacturer's recommendations. Packing according to the manufacturer's instructions is important. Doing so usually results in the most comfortable repack for you and can increase the life expectancy of your life preserver.

Squirming around in the cockpit trying to get more comfortable can also be dangerous. You not only need to keep an eye on what's going on inside your aircraft, but also you must be aware of the surroundings outside your cockpit. The aircraft that is about to collide with you was not seen in time because you were trying to get more comfortable.

I've mentioned this before, but you need to take control of who is packing your parachute. Every rigger I know has access to a computer, and many, like me, have large libraries of packing manuals. The older the rigger usually means the larger the library. I call this period in time BC (before computers). Gray hair can also be a sign of an old rigger or the typewriter in the office. I have to admit I have both.

But, is that enough? Make sure the rigger has the most current edition. The computer edition that each manufacturer has online should be the most current and reliable. Hopefully, your rigger knows how to open it up. Just having the correct material doesn't mean he or she uses it or knows what's inside.

Here I go dating myself again, but how many of you remember the old television commercial about Charlie Tuna? Charlie thought if he swam with first-class tuna he'd become one. The same applies to your rigger. Simply having the proper packing instructions and service manuals nearby doesn't make your rigger a first-class rigger.

Your rigger needs to actually open the book or computer version and use it to make certain your parachute has been packed correctly and to ensure your comfort.

Do your homework ahead of time when choosing your rigger. Just like preflighting your aircraft, doing it before your flight is always best. In an actual emergency you'll get to see what's inside your container, and hopefully you'll be able to take comfort that the rigger you chose to pack your expensive life preserver has done the best job he or she can. This is not the time to have any doubts and certainly not the time to hesitate making your egress. *Hesitating even for a second could cost you more than time.* You should know that delays have cost pilots their lives. On some sky-diving shirts I've seen this saying: "He who hesitates shall inherit the earth." I hope that those precious seconds are on your side. Did some of you recognize that the above quote was a takeoff on a more famous bible verse? For those of you who still think it's a bible verse, you can look up Matthew 5:5.

Please feel free to call or e-mail me with your questions before they become costly problems. I can be reached at allen@silverparachutes.com or 510-785-7070 Monday–Thursday (PST). Happy holidays and happy New Year. Fly safely and keep the questions coming. **IAC**

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happy holidays!



Left to Right: Tom Adams, Wayne Roberts, Trish Deimer-Steineke, Lynn Bowes, Doug Bartlett, Debbie Rihn-Harvey, Doug Sowder, Robert Armstrong, Bob Hart. **Not pictured:** Ellyn Robinson, Louis Andrew, Norm DeWitt, Klein Gilhouse, Doug Lovell, Darren Pleasance, and Bob Freeman

The IAC Board of Directors and Staff hope that your holiday season and the coming New Year are filled with happiness, peace, and safe flying.