

Newsletter of the Jet Pilot's Organization

# *Contrails*

Spring 2015

Volume 27, Issue 2



Bob Pannell's huge DC10 does a fly-by at the EDF Jet Jam.



## President's Report

**Bob Klenke**

It's been a little windy here in Virginia, but the sun is out more often than not these days and the rains are subsiding. That means it is flying season again, for most of us, and along with that comes event season - which means both Florida Jets and Mississippi Afterburner are already in the books. Most of us east-coasters, including Louie and I, are preparing for First in Flight (WILSONNNNNN!). We'll also be doing Virginia Jets, Kentucky Jets, and possibly Super Jets South for the first time.

It seems trite, but as we prepare for these fantastic events put on by really hard-working people, we should spend a little time thinking about safety, since I'm sure most of you have heard about the incident at Florida Jets. While those of us not directly involved don't know the facts and shouldn't speculate on the causes, it does serve to remind us that dangerous situations can arise in what we do - as they can in any activity. A few minutes of thought, pondering some of the lessons that can be learned could be valuable in avoiding, or mitigating, damage and/or injury in our hobby/sport.

Here are a few points that come to mind as I think about participating in jet events:

- The spotter's primary job is to watch other planes, not yours. As a pilot, obviously your job is to maintain situational awareness of where your plane is, and what you are planning on doing with it. Your spotter can, of course, assist you with that, and certainly wants to see your aircraft fly. However, what the pilot cannot do, is maintain awareness of where other planes are and what they are doing. The spotter must maintain this awareness at all times and communicate that to the pilot, as necessary. The physical safety of the pilot/spotter team is the primary concern of the spotter.

- Fire extinguishers are a vital tool in jet modeling and should be readily available wherever jet engines are being operated - this includes on the flight line itself. Having a fire extinguisher available is an AMA requirement, but there aren't specific rules about how readily at hand they should be. Clearly the flight line is full of running jet engines, so there should be at least some fire extinguishers close at hand there.

Most guys are good about having them in the startup area, but even then, most of the time they are sitting off to

the side and not "at the ready" during the startup procedure. There is always somebody around when you are starting your jet, at least your spotter. One of those folks should actually have the fire extinguisher in hand and be ready to pull the pin and use it. Having been the unfortunate victim of a startup fire - while not following this advice - I can tell you that having someone else be ready was the only thing that allowed our *EuroSport* to fly again and not be a pile of ashes (thanks yet again Rich Miller!).

Spectators should never be allowed in the pits or on the flight line, in fact, they should ideally be behind a physical barrier some distance behind the flight line. As AMA members, jet pilots, and participants in the event, we know the hazards involved and are aware of the situation around us. If an unfortunate event does happen, we know that the rewards are more than worth the risks and that our hobby should not be curtailed because of it. This is not true of spectators, and while we need to allow them to experience the exhilaration and enjoyment of our hobby, we need to shield them, as best we can, from the risks. We owe that to them, and to our fellow modelers.

I firmly believe that we need to always be thinking about how to keep our aircraft away from people. This means things like don't direct the energy of your plane towards the flight line or pits - ie: no high-speed turns towards the inside close in.

Also, keep your high-speed passes out away from the flight line - this is a courtesy to your fellow pilots and spotters on the flight line as well as a safety concern (which is why many/most events require passes to be made outside the runway and not over it). If you want to go high, keep your aircraft out well away from the flight line - this keeps your aircraft from being "overhead" which makes it hard for other spotters to keep an eye on, as well as lessening the chance that your plane will find its way behind the flight line should something happen. Finally, control your airplane when you are taxiing. I have witnessed two incidents where taxiing aircraft became uncontrolled and resulted in hitting a pilot or spotter on the flight line. One caused a painful leg injury and the other caused the pilot to lose his footing ... and shortly thereafter, the jet he was flying.

I'm not one for lots of rules, and I'm not proposing more for our activities, I just think that there is always something we can think about and work on to make our events safer and be more courteous to our fellow jet flyers on the flight line.

Have a great summer and I'll see you out there!

Bob.



## Vice President's Report

Jim McEwen



I'm writing this in early May having just returned from my Top Gun vacation. It was a quite a bit of work getting the plane ready for the event, and then *finally* finishing up the plane at the event, so I very much enjoyed taking a few days off after the event as sort of a vacation from my vacation.

Top Gun was phenomenal! Organizer, Frank Tiano does an incredible job putting together this event and it is quite an honor to attend. A walk down the row of tents reveals one incredible airplane after another including types from WWI, Golden Age, WWII, post-war, and modern day. Props and jets, Top Gun has it all.

This year the weather cooperated with not only sunny days but reasonably favorable winds. In past years I'd seen heavy 90 degree crosswinds but this year the crosswinds were limited in direction and strength. Thank you, Mother Nature!

Putting together a plane worthy of Top Gun is quite a monumental effort, and once you do it, you'll want to compete with it for many seasons. As such, I'd seen many of the jets before but there were some notable additions. Gustavo Campana competed in Pro Jet with a large *Pampa* IA-63 that was just gorgeous and got a lot of attention.



Gabriel Pellegrini flew a Flite Metal'd F-100 in Sportsman.



Dean Copeland entered a unique Sonex Jet in Masters.



Randy Clark's big YAK-130 competed in Unlimited.



and I had the *Gripen* in Expert.



There were, of course, a wide variety of incredible jets such as Peter Goldsmith's SkyMaster F-104 (2nd in Expert), Jack Diaz's Fouga (1st in Expert and Mr Top Gun), and Graeme Mears' T-33 (1st in Team with Ali Machinchy at the sticks). Ali also brought "for fun" his



Vice President's Report (cont'd)

Jim McEwen

Airworld F-104 which I believe he said was built by Trond Hammerstad of Norway.



Jet Team USA did very well at Top Gun with David Ribbe taking First in Masters with his MiG-15.



Rod Snyder finished 1st in Unlimited with his MiG-15, Jason Bauer was 3rd in Pro-Am Sport with his F-16.



Andy Andrews was 6th in Pro-Am Sport with his Sabre. The Gripen finished 5th in static judging but didn't fly in competition as it suffered some damage in a practice flight.

Scott Harris unfortunately had a schedule conflict and couldn't attend Top Gun this year

Additionally, Top Gun is very much a social event. This was my third time at the event and I very much enjoyed the comradery of my fellow modelers. Many thanks to PJ Ash, Curtis Switzer, Dino DiGiorgio, Marky, and the whole Warbird Alley crew for the great food, great conversation, and the many laughs.

This was "the year of switch fumbling". At least four competitors (including yours truly) experienced switch fumbling that had results varying from loss of points to total destruction of the aircraft. Wow! While it might not have been an issue before, flying in a competition or a jet rally in front of a bunch of spectators adds another layer of stress and things can go wrong.

We've probably all seen examples over the years of bombs/tanks getting dropped rather than flaps being raised, or the gear being raised during the landing roll out when the pilot meant to flip a different switch, or deploying speed brakes and full flaps for a slow/dirty fly past and leaving them out for the next maneuver. A lot of radios have switches that can be changed by the user (or a service center if you're not comfortable doing it yourself). Today's modern computer radios have huge capabilities in terms of programming, mixes, and logical switches that can be used to reduce pilot workload (and the possibility of screwing up). The speed brake issue I mentioned above was eliminated by using mix to deploy the speed brakes whenever the landing gear was lowered and the flaps were fully extended.

If you are using a switch that is hard to reach, or can be confused with something else in the heat of the moment, or you have a high pilot workload at a critical time, you might want to make a change. Feel free to consult with other modelers or team members from Horizon, Futaba, or Jeti for possible solutions.

Another thing I wanted to mention was the importance of having a contingency plan in case something goes wrong. For instance, what are you going to do if your engine quits when you are climbing out after take-off? Do you go straight and belly it in, or will you turn and try to land downwind? Do you go for the runway or the grass? Depending on the plane (e.g. a low drag "floater" or a heavy metal brute) and/or the flying site (e.g. one with a long overshoot versus one with a ditch off the end of the runway), the answer might be different. It's far better to think about this before you take off, particularly if you are flying at an unfamiliar field, than have to make an uninformed split-second decision in the air.

That's it for this issue. Have a great summer and fly safe. This is an awesome hobby full of awesome people, like you!

Regards,

Jim

P.S.: Many thanks to David Hart, and Gerry Yarrish for the photos.



District III Report

Mark McCracken



Ohio  
Pennsylvania  
West Virginia

Finally the warm weather has arrived, fuel jugs are being filled and trailers loaded with hopes of heading to our local fields for a fun-filled day of flying.

Since the season of jet events have started, here in the northeast, there is one venue that has had no choice but to hold off on setting dates for its two events in August and October.

As most of us in the Northeast already know, the Farview r/c Flyers have had their hands full over the past few months with zoning issues and their neighbors. Club members are dealing with a lot of uncertainty over the future of their field - and with when, (or if) they will be able to fly.

On April 13th their township moved to stop flying of all kinds. Needless to say, all were taken a little aback with this decision. The Farview Board of Directors, are moving forward with hopes that all will work out and while not getting into too many of the details, with their appeals, minimal and restricted flying of prop planes has resumed - with hopes of getting things back to normal.

As time moves on and the legal proceedings are heard, and the strong leadership of the Farview r/c Flyers pushes forward, don't erase these great jets events from your calender just yet - there is more to come.....

That being said, let's all hope this field is not empty too long, looking like the shot below, but returns to looking like the shots to the right.

Mark



District IX Report

Mike Warren



Colorado  
 Kansas  
 Nebraska  
 North Dakota  
 South Dakota  
 Wyoming

Given that we are coming out of winter, and our Rocky Mountain spring weather is pretty unpredictable, I have no reports of substance for this quarter that have to do with actually flying a model.

The S-UAS/UAV/drone issue is, to me, a bothersome one. We all hear or read of continued airspace incursions that not only are dangerous to persons on the ground, but are a distinct threat to full-scale aviation, be it fixed or rotary wing. This is in addition to the more common stunt of flying a GoPro-equipped quad copter close-in over a public venue.

As a professional pilot, I am a natural skeptic when it comes to the Federal level bureaucracy using anything but a blunt instrument when it comes to regulation of the airspace and anything in it. I'm not just talking about the FAA here either; the Homeland Security people have the power to restrict our hobby right out of existence. Witness the "TFR no fly zones" thrown up around anywhere that Air Force 1 happens to be; it would not be a stretch to imagine "temporary" becoming "permanent" if a major incident occurred between an airliner and an unregulated hobby type UAV/"drone". How many of our flying sites are within a 25-mile radius of something the DHS might consider to be in need of a complete security blanket "no fly" zone?

Our JPO and AMA efforts are all we currently have that can moderate and educate the governmental bureaucrats in this regard. The unfortunate thing that I see is the sheer numbers of "non-JPO, non-AMA, non-model airplane enthusiast" thrill seekers that are operating the ever larger and more capable "drones" as sold by various hobby outlets, toy stores, cellular phone stores and Internet sales. These "unaffiliated" operators mostly have no idea of airspace, safety, prudent use, or any regulations that govern safe operating practice of "flying things." This, to me, is the crux of the matter.... How does one put the "toy store/internet buyer/amateur operator" Genie back in the bottle in order not to ruin our hobby?

Now, on to less worrisome issues: I have begun fooling around with electric retracts. My experience with air retracts (Robart, SpringAir, Airpower) has, over the years, been generally very positive and I've had no critical issues with air in lots of models. What caused me to switch? I have an Airworld Me-262 that is limited in its space for install of pneumatic retracts that would have big enough cylinders to overcome the weight and air loads generated by the scale size main gear wheels and doors that I chose to replicate.

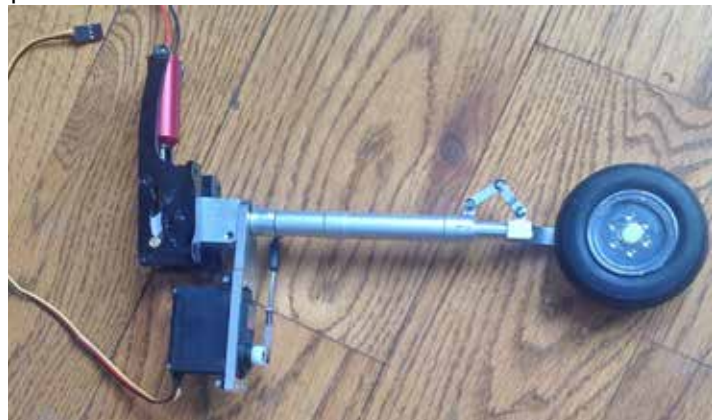
As well, the particular geometry of the ME-262 main gear



required an 80° retract which is not typically available.

My solution? Go electric! After researching several electric retract options I found that the only readily available 80° retract units were from LADO in France. Their Rs333 series fits the 262, are rated up to 10kg (22lbs), are self contained, programmable, can run on 4.8-6.0 volts, and best of all: they are plug-n-play. The US Dollar vs Euro is pretty favorable right now and payment/shipping from LADO was a breeze. So far they are working just fine with only occasional cleaning of "road grime" off the worm gear and trunnions needed.

My upcoming 1:9.6 CGRC A-10 has lots of interior room so it is being equipped with LADO's larger and more robust Rs999 series, said to be capable up to 30kg (66lbs). The picture is of the LADO Rs999 series nose retract with



integral steering servo bracket.

Brakes? Still pneumatic because that's what I happen to have and they work fine.

Jet meets? Well, except for CA, TX, and FL, the rest of us are just beginning the season. I'm heading out to the "EDF Jet Jam" in Elizabeth, Indiana (just southwest of Louisville, Ky) the end of May; then, work permitting, hope to be able to go to the June 26-28, 2015 edition of the Love-Air Jet rally in Fort Collins, CO where kero AND electrons are the order of the day.



### District X Report

David Reynolds



- Arizona
- California
- Guam
- Hawaii
- Nevada
- Utah

Mid March saw TIMPA once again hosting the Tucson Jet Rally and once again this event was a laid back family reunion. The skies of Tucson saw everything from a quarter-scale A-10 to micro hand-launched EDFs. There were even rumors of a UFO sighting during the Friday night BBQ. Fair weather kept pilots flying most of the day with few casualties. As usual, Paul Stenberg of House of Balsa and Zap not only provided goodie bags for entrants but also donated part of their sales for the weekend to the Ryan Sherrow scholarship fund.



One of the more interesting events I help with is The American Institute of Aeronautics and Astronautics Design Build Fly competition. This is a college aerospace engineering competition where teams from around the world have to create a model airplane and compete. What separates the DBF from other heavy lift competitions is that the rules change every year requiring a new design.

For this year the teams had to design an airplane that was required to fly three different missions. Mission one was pure speed: how many laps could be made in four minutes. Mission two required a five pound 10in by 5.5in by 4.5in wood block internally. Mission three called for externally carrying and dropping softball-sized wiffle balls. And if all that was not challenging enough, you had to take off in 60 feet and no Lithium batteries allowed.

The Arizona State Air Devils made the choice to use EDF power for the competition this year. In the quest for both speed and static thrust after extensive testing the Air Devils came up with a design utilizing two Schuebeler 90mm fans with custom designed shrouds. The *Honey Badger* has an 84-inch span and weighed in at 7.3 pounds on the competition scales. In order to get 12 pounds (don't forget about mission two!) off the ground in 60 feet the two fans were powered by three thirteen-cell 1500mA NiMH packs, run in parallel for a total of 39 cells, producing 15.6 volts. Total output is just under 1000 watts for the package with 5 pounds of thrust. Consider that next time you lament your low-power EDF that only puts out 2000 watts.

Everything about the design was optimized for speed. The low wing configuration was chosen so that shorter landing gear could be used for less drag. The twin boom tail allowed the wiffle balls for mission three to be carried in a manner to minimize the drag. A large wing helps with lift and allows for tighter turns. Construction consists of a mix of traditional balsa construction, foam core, CNC-milled molds for composites and 3D printing.

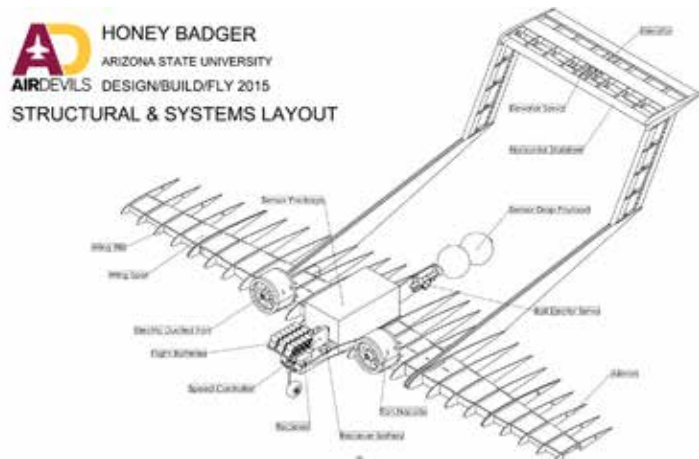
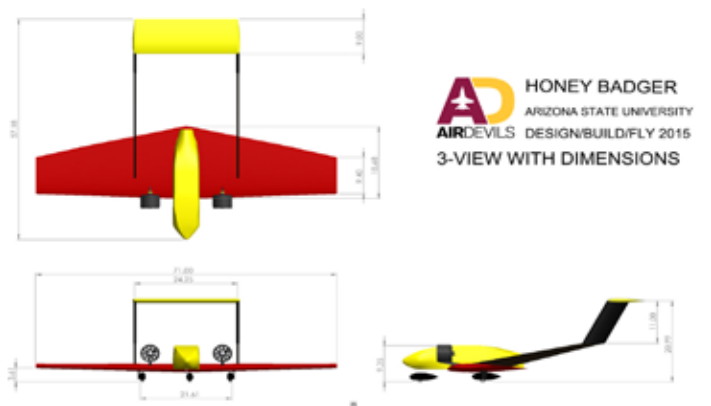
One of the interesting aspects of the fifty-one page report that the Air Devils submitted, is the testing information on intake rings and thrust tubes. It is one thing to talk about how much ductwork can affect performance, but is another entirely to see test results in black and white confirming the conventional wisdom. Smooth, rounded intakes help with static thrust. Closing down the exhaust increases airspeed. In the case of the Honey Badger, a compromise was made in order to make the most static thrust without a large drag penalty. The size of the intake ring was brought down a bit from optimal to keep frontal area down and closing down the thrust tube was rejected to maximize static thrust on take-off.

And, if it's not enough to do all that designing, testing, flying, and report writing, the Air Devils managed to find

time to travel to K-12 schools to encourage children to look into engineering as a career.

At the competition, the Air Devils performed well. The team calculated that they would make eight laps for mission one and achieved seven, and while it took a few attempts, they did make the predicted 60 feet to take-off with the five pound payload. Not bad for an unconventional power package!

The Air Devils would like to thank Ira A. Fulton Schools of Engineering at Arizona State University, Electron International, EWS Hobby, Solidworks, Industrial Metal Supply, and Efflux RC for their support. They also send a special thanks to "the brilliant Dr. Timothy Takahashi, whose years of industry experience have tremendously helped our aircraft design methods."



I would like to thank Tyler Knight and the rest of the ASU Air Devils team for sharing their efforts and results.

That's all I have for this go around so until next time keep the low passes where they belong.

Dave





## District XI Report

Bob Brusa

Alaska  
Idaho  
Montana  
Oregon  
Washington

Now that spring is here I imagine everybody is getting their planes ready for the flying season. This is a good time to cycle your batteries, check or replace your fuel lines, clean out the fuel filters, check retract and brake lines for any air leaks, and make sure everything is secure. Better to check now than find out while in flight.

I urge all those in District XI who have not yet renewed their JPO dues to do so as soon as possible. You can renew on-line at the JPO web-site via PayPal ([www.jetpilots.org](http://www.jetpilots.org)), or send a check to our treasurer Carol Brusa. Her address is on the website and on the back inside cover of *Contrails*. Dues are still just \$25. JPO thanks everyone for their continued support.

My term of the District XI VP expires at the end of this year, and I will not be seeking reelection. It's time for someone with perhaps a new perspective or outlook to replace me. I will continue to assist Carol in her role as JPO secretary/treasurer, as it can be very time consuming and it's nice to have two people working together and sharing responsibilities.

The district position does not require a lot of work - just four articles a year for *Contrails*. There are usually several conference calls each year with the entire group to keep everybody updated on the latest events and discuss any issues or concerns. Give me a call if you are interested and we can discuss it in further detail.

If you would like to submit an article to *Contrails*, please contact me. Technical articles are especially welcome. If you have expertise in a particular area, or a hot tip to share,

please let us know! Perhaps you'd like to post some pictures of your latest project, or photos of an event you attended - those would be great too.

We have some log books available if anyone needs one, or has filled up their old one; they are \$6 each. We also have some JPO Tee shirts left - size large only - and they are \$10 with shipping included in the price. Let Carol and me know and we will send them to you.

The dates for the some of the events in the Pacific Northwest this year are:

Princeton Jets in Princeton, BC: May 28-31

JOW on Whidbey Island: August 28-30

Princeton Jets (fall edition): September 17-20

There is usually a Jet event in Parma, ID (near Boise) in June every year, but the dates have not been posted yet.

I mentioned in my last *Contrails* article that I was building



a Van's RV12 full size aircraft. I've included a picture that shows where we are at in the build process.

## From the Desk of the Secretary/Treasurer

Hello fellows - just wanted to let everybody know that we still have some JPO Tee shirts and JPO Log Books. The T shirts are in size L only, but they run a little big, so some who wear XL might also be able to wear a L.

The shirts are \$10 each and the log books are \$6. Shipping is included in the price. You can call or email me, my contact information is on the inside back cover.

Carol Brusa



**SKYMASTER F-4 Build (update)**

In the previous *Contraails*, I summarized the turbine installation inside a bypass. Proceeding through the rest of the model went fairly well. One big weakness is the quality of the Skymaster plastic hinges for the nose gear doors, which fracture with any load on them. They are not reinforced plastic, so replacing them with the BVM aluminum hinges was an absolute must.

Also time consuming was eliminating the inward cant of the main gear. I shimmed the retracts at the mount as much as possible to reduce the cant, and dealt with refitting the strut doors so they still close ... many hours there, but it looks better.

I also spent some time adding BVM guide pins to the canopy frame and to the engine hatch. This ensures the sides of the canopy and hatch line up flush with the fuselage sides.

For the fuel system, since I'm using a Jet Central *Mammoth* turbine, I used the BVM high flow fittings for the main tank that feeds the GBR Jets CAT tank.

For avionics equipment, I'm using the Powerbox Cockpit SRS and JR 8711 servos on all flight controls. I'm at the stage where I just have to mount the gear/brake air valves, CAT tank, turbine pump and Powerbox in the fuselage, then do weight and balance using scales as described in the JPO knowledge bank. Mounting the pylons and external tanks, and finishing the installation of the Details-for-Scale lighting will have to wait until later.

Only 19 days are left before I head to North Carolina! Hope to see some of you there!

Cheers,

Jeff

Spring is finally here! That means time to get the jets ready. As a friendly reminder, check the capacity of your batteries, filter your fuel that has been sitting over the winter, check the retracts for no air leaks, flight controls and servos for security, and do a run-up.

I don't have too much to report for this edition, other than updating the upcoming Canadian events and my F-4 build. Sorry, no pictures as spring has been extremely busy on all fronts. Flying for me will start at "1st in Flight" at Wilson, NC in May. Having not been there yet, I'm looking forward to the 13 hour drive and going with a group of Canadian pilots. I have been disciplined since January to completing my new Skymaster F-4 so I can maiden it at the 1st in Flight event.

Here's an updated list of what's going on in Canada for 2015:

**UPCOMING JET EVENTS in CANADA**

- 28-31 May: Princeton Jets Spring Warm-up, Princeton, B.C.
- 6-7 June: Forest Jets, Forest, ON
- 3-5 July: Jets over Iroquois, Iroquois, ON (NEW)
- 23-26 July: Jets over Cayley, Cayley, AB (**cancelled**)
- 24-26 July: Wingham Jets, Wingham, ON
- 14-16 Aug: Sky Harbour Airshow, Goderich, ON
- 17-20 Sept: Thunderthrust over Chatham-Kent, Chatham, ON
- 17-20 Sept: Gerard McHale Memorial Jet Rally, Princeton, BC

For the Canadian pilots out there, don't forget to renew your JPO membership for 2015!

**Treasurer's Report**

Beginning Balance as of Jan 1, 2015	\$2,359.09
Income:	
Dues	\$2,793.65
Expenses:	
Stamps	\$44.10
Postage	\$33.87
Contraails	\$1,013.23
Web site	\$89.55
Envelopes & labels	\$24.96
Banners	\$368.86
Total Expenses:	\$1,574.57
Ending Balance as of Mar 31, 2015	\$3,578.17



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**Membership/Renewal Application**

Please add/renew my JPO membership!

Name: \_\_\_\_\_ AMA Number\*: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Email Address: \_\_\_\_\_

Home Phone: \_\_\_\_\_ Cell Phone: \_\_\_\_\_

\*AMA membership is required for U.S. Residents. JPO Annual Membership Fee is \$25.

Send with check or money order made out to: "The Jet Pilot's Organization" to:

Carol Brusa, JPO Secretary/Treasurer, 7433 McCormick Woods Dr, SW, Port Orchard, WA 98367



**Greg Moore**  
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Colorado Springs, CO 80906

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U.S.Postage  
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Jet World Masters Team USA at Top Gun.