Newsletter of the Jet Pilot's Organization

Contrails

Winter 2011

Volume 23, Issue 1

Ed Waldrep's scratch built, e-Turbax-powered F22 *Raptor* was caught playing at the AZ Jet Rally by Greg Moore.

President's Report

Keith Sievers

My column will be abbreviated this month.

As some of you may know, my wife has been battling cancer for the past three years, which accounted for my absence at many jet events. Sadly, she passed away on January 3rd, here at home.

A passion for turbine-powered models can be difficult for many wives to support. There are very few women that derive the same enjoyment we do from jets, the hobby can consume significant discretionary income, and we spend many hours away from the family. While Marilyn occasionally took a passing jab in jest regarding my "collection," she never made me feel guilty for pursuing my interests, and I probably should have said "thanks" more often than I did. If you are as lucky as I was, you might just take this to heart and do something to show your appreciation some time soon.

I wanted to thank those of you who were aware of her passing and wrote me notes ... they were greatly appreciated.

Keith

Vice President's Report — Al Watson

It is time to write another column for *Contrails*, though not much has happened in the jet community this past couple of months. The weather in the Pacific Northwest has been horrible with no opportunity to do any flying. I am fortunate to have a heated shop, so I am able to work on my airplanes and get prepared for the year ahead. One of the things that I always do is inspect my current models, and fix any issues that I find, so that when the weather *does* cooperate I can head to the flying field with the confidence that everything will be good to go. Also, the ground support equipment needs to be checked.

Batteries are an item that I pay particular attention to. I switched to A123s two years ago, so they now have two full seasons of use. All of my A123 packs were cycled in the last few weeks and all showed that the capacity had not degraded from the time they were purchased in February of 2009. Needless to say, that makes me very happy!

I had always used good quality NICADs in the past, but after a season or two, the capacity would always begin to degrade. I wrote a fairly lengthy article in the Spring 2009 issue of *Contrails* about A123s when I was researching this battery's chemistry. Nothing has really changed in the last two years, though I should point out that there are a number of "Chinese knock-off" batteries on the market that call themselves A123s.

A123 Systems produce only two cell sizes that are applicable to the R/C hobby - part number 18650, which is 1100 mAh, and part number 26650, which is 2300 mAh, and each cell is a nominal 3.3 volts. Beware of any LiFe Nanophosphate pack, which quotes cell capacities different than 1100 MAH or 2300 MAH!

I have been asked about balancing A123 packs and also about the frequency of cycling. I am using CellPro chargers, and all my packs are charged through a compatible charge/balance connector.

During the charge cycle, the charger is also balancing the cells. However, balancing may not be complete when 100% capacity is reached! At that point, the charger switches to *balance mode only* and completes the balance. Normally, I will shut the charger off when the pack reaches 100% capacity. However, if it is convenient, I will allow the charger to complete the balance cycle - that is probably every fourth or fifth charge cycle.

Another nice feature of the CellPro charger is that you can look at cell voltage during the charge and balance cycle. I have yet to see any significant difference in cell voltages. As far as cycling goes, I try to cycle each pack every three or four months.

Have you visited the JPO website recently? There is a lot of information there, including a recording of the webinar, which was held December 15, 2010 regarding the FAA proposed rulemaking, which could affect the modeling community in the U.S.A. You can find this recording on the home page. In addition, take a look at the Knowledge Bank in the members' section - there is a lot of technical information there pertaining to the world of turbine-modeling. Also, you will see an item called "Weight and Balance," which provides information on how to find the Center of Gravity of large models - the ones that are too large and heavy to use the "finger under the wing" method that most of us have been using all these years.

Until next time - happy landings!

Al

Treasurer's Report

Beginning Balance as of October 31, 2010		**$6,410.41**
	Income	
	Dues - Cash/Check	$946.80
	Dues - PayPal	$3,467.85
	Total Income	$4,420.65
	Expenses	$2,579.22
Ending Balance as of January 31, 2011		**$8,251.84**
	Checking Account	$6,850.72
	PayPal Account	$1,351.12
		$6,410.41

Respectfully submitted, Carol Brusa

District I Report

Bob Radford

Connecticut
Maine
Massachusetts
New Hampshire
Rhode Island
Vermont

Greetings, and Happy New Year! 2011 promises to be exciting, to say the least. We started the year off on New Year's Day by flying jets in 50 degree weather with no wind!

Next, the FAA is going to put out their notice of proposed rulemaking for SUAS sometime around June with a public comment period to follow. The February, 2011 issue of *Model Aviation* includes the minutes from discussions between the AMA and FAA on the process, beginning on page 9. Please look at the article and be prepared to make comments later this year, as appropriate.

A few folks in District I are planning to head south to the First in Flight Jet Rally, in Wilson, NC over the Memorial Day weekend - as well as to Florida Jets in March. We are looking at a Plum Island event - either the weekend of June 17th or June 24th - as well as a September or October date. The Airport Commission will give us the dates for Plum Island after their late January meeting. We are also looking forward to the traditional northeast jet rallies: Capitol Jets, New England Jet Rally (in Gardner) as well as the Maine Jet Rally. New England Jets will also attempt to secure some flying dates this year.

District I JPO membership has grown from 10 members to 18 members over the past couple of years, and as of January 25th, nine members have renewed for 2011 and I'm sure more renewals are on the way. Thank you to all who have already renewed, and I look forward to additional renewals as well as new members.

Now onto a quick report from the New Year's Day Fremont Flyers Annual Fly-in, in Fremont, NH. What a day to fly! As I mentioned earlier (bragged?) it was 50 degrees, we had grass on the field, bright sunshine and no wind. Add in the fact that I had a brand new *Meteor* electric ducted-fan foam jet to fly. Three of us brought electric ducted-fans to the field: Jason Kalgren had a Blitzworks F-18, Erik Kirste had his *Habu* and I had the *Meteor*. The little F-18 was very impressive - all of the Alpha Migs had better "check six this year!" The *Habu* was a little faster than the stock setup *Meteor,* but not by much. Both fly very well and I'm pleased with my first venture into edf.

In the following photos you can see the jet aircraft in attendance, but hidden from view is a grill which supplied us with superb bratwurst and Italian sausages. What a day! Let's have a great year!

Bob

***Habu* on final approach.**

Which is bigger - the *Habu* or the *Meteor?*

District II Report

Len McIntosh

New Jersey
New York
Europe

Happy New Year!

In January we have gotten over 35 inches of snow and we still have 5 weeks of winter left. So what did you expect it's WINTER!

The photos of Floyd Bennett Field were contributed by Vinny Caratozzolo.

Len

Upcoming Events

California Jets: April 14-17, 2011
Bakersfield, CA
www.ca-jets.com

Mississippi Afterburner Jet Rally: April 28-April 30, 2011
John Bell Williams Airport
Raymond, MI (suburb of Jackson, MI)
www.mississippijets.com

Top Gun: April 27-May 1, 2011
Lakeland-Linder Airport, Lakeland, FL
CD: Frank Tiano 863-607-6611
www.franktiano.com

Central Texas Jet Rally: May 19-21, 2011
ARCA Club Field, Austin, TX
CD: Dan Massey
www.austinrc.org

Jets over Colorado: May 20-22, 2011
Drake Field, Loveland, CO
CD: Dan St. John (970-231-01252)
www.loveairrc.org

"First in Flight" Jet Rally: May 26-29, 2011
Wilson Industrial Air Park in Wilson, NC
CD Larry Lewis 919-231-4983
rclarry@aol.com

Mount Pleasant, TX Jet Rally: June 2-4, 2011
Mt. Pleasant, TX
www.mtpleasantrc.com

Princeton Spring Warm-up: June 3-5, 2011
Princeton Airport
Princeton, BC, Canada

Gateway Jet Rally: July 10-12, 2011
St. Louis, MO
www.SLRCFA.com
CD: Phil Westrich
pwestrc@sbcglobal.net.

OC-Turbo Fest-Early Summer Edition: June 17-19, 2011
Titusville Airport; Titusville, PA
jacknbets@aol.com

District V Report

Craig Gottschang

Alabama
Florida
Georgia
Mississippi
Puerto Rico
South Carolina
Tennessee

The weather has been particularly nasty in District V this winter with colder than normal temperatures and unusual amounts of snow. As a result, most of the jet activity has been indoors, as modelers work on their winter projects and stay in touch with each other mostly through e-mails and threads on RCU. The exception is the state of Florida, where local jet events have continued throughout the winter. Jets Over the Cape was held in Cape Coral in October, the Mako R/C Jet Club in south Florida hosted an event in November, and an E-Jet event was held in Ocala in mid-December. It must be nice to live in a climate where you can fly all year long!

Although not specifically a jet event, Frank Tiano's Monster Planes was held in October in Lakeland, Florida and a number of jets were in attendance. This event was watched closely as it was the first one at the new all-grass flying site dubbed "Paradise Field." The 800' X 70' runway will also be the location for Florida Jets and Top Gun this year, and although the field offers much larger 'over flight areas,' there was concern about operating jets off of grass. Apparently, many of the jets did just fine with takeoffs and landings, but a few had gear problems with the newly laid sod. It is anticipated that with continued watering and rolling the field will be in even better shape by the time of Florida Jets.

Pedro Sanchez caught this Mig-15 landing on the grass at Paradise Field during the Monster Planes event.

Florida Jets will be held March 3-6, about the same time this issue of *Contrails* is being mailed. I will definitely be in attendance and offer my first hand report and photographs in the Spring issue of *Contrails*.

I also plan on attending Mississippi Afterburner in April, Kentucky Jets in July, Super South Jets in September and hopefully one or two others. Look for me at these fly-ins and for JPO reps at all the events you attend this year. Each of the District Reps has a large JPO banner with his name on it that we will display at events we attend. Please stop by to say hello, join or rejoin if you have not already done so and let us hear your comments or questions. We all know that these are times we need to be engaged and informed!

The rest of my report this quarter consists of an article on my recent experiences with thrust vectoring. I hope you find it interesting.

Vectored Thrust Jets

As a long time R/C enthusiast, I have always enjoyed the variety of aircraft, different propulsion systems and various technologies available to us. It seems that I have tried just about everything over the years - and it's one of the reasons I originally got into jets; ducted fans, turbines, multi-turbines and most recently electrics. In line with those experiences, I decided to give turbine thrust vectoring a try. Although I still consider a vertically-hovering jet to be "un-scale" and some sort of violation of the natural order of aviation, I can't deny the technology and skill required, or that thrust vectoring is very much a part of modern full-scale aviation. So why not give it a try?

I chose the CompArf *Eurosport* since it is a proven airframe and can be ordered with one of the few commercially available thrust vectoring systems. I decided to go with the more robust *Evolution* versus the lighter, but more "fragile" (CompArf's word), *3-D Universe*. I reasoned the *Universe* was built lighter primarily to enhance hovering, something I was less interested in than tumbling and spinning, and I would rather have a sport jet that can stand up to some abuse and the occasional rough landing. As it turned out, my completed *Eurosport-Evolution* weighs 29½ pounds dry and at mid-fuel load has close to 1:1 thrust with my AMT Netherlands *Pegasus -HP* installed.

District V Report (cont'd) — Craig Gottschang

Orientation is important, the white top and red bottom of the Swiss Air Force color scheme helps to identify the *Eurosport's* attitude during and after maneuvers.

The *Eurosport* was not designed for the thrust vectoring "tumble tube," and therefore had to be modified slightly to accommodate it. This consisted mostly of enlarging the opening in the aft bulkhead and locating the two control servos. The two thrust vector inputs are in the "rudder" (yaw) axis and "elevator" (pitch) axis with the servos installed in the rear fuselage, as close to the actuators as possible. I used heat blankets and BVM Heat Shield generously to protect the servos.

"Rudder" and "elevator" vector control servos installed near the tail pipe. A baffle and lots of heat shielding (added later) protect the servos and leads.

Using my JR 12X transmitter, I set the *Eurosport* up with "flight modes," such that with the 3-position flap switch in the forward position, thrust vectoring is OFF and dual-rates are individually controlled with their respective switches. When the flap switch is moved to the mid-position, the dual rates switches deactivate and all flight controls go to high rate. This includes the elevator and aileron input to the elevons, the canards and the rudder. Thrust vectoring is still OFF in the mid-flap position, but kicks in when the switch is moved full aft. Mixes are used to connect the two vector rings to rudder and elevator input, and move proportional to the elevator and rudder. Maximum deflection on the vectors is about 30 degrees in both axis.

Since the Eurosport has no flaps, the flap/mix switch (arrow) is a convenient location to select "flight modes" (same as "flight conditions" for Futaba users).

Thrust vector control setup in "neutral."

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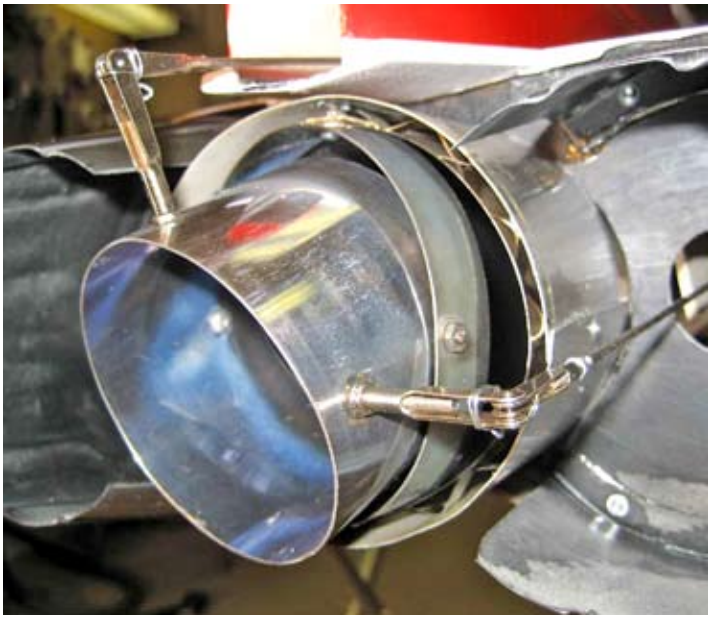
District V Report (cont'd) — Craig Gottschang



Close up of thrust vector ring deflected full "down."

Having had only a few flights so far, I am by no means an expert on thrust-vectored flight, but I have learned a few things. Thrust is obviously required to get the vectoring force, but you first have to throttle back and slow down. The "trick," so to speak, is correctly anticipating when to add thrust back in just as the "maneuver" is started. If done just right, a flat spin, for example, is entered from a slow, nose high attitude - and immediately begins a level spin as full rudder and UP elevator thrust are applied. More often than not, my speed or attitude is off a little and the *Eurosport* flips and flops a few times before settling into a very slowing descending, high rate of rotation spin. Once established, I can reverse the rudder thrust while still holding full up and the spin will slow, then begin rotating in the opposite direction. VERY cool and with no tendency to "fall out" of the spin at any time.

A variation on the spin is to enter the maneuver with the nose vertical, and apply full thrust/rudder just as speed reaches zero. The result is several "pinwheel" revolutions in the vertical plane before the jet transitions into a regular flat spin. Similar, but pitching "flip-flops" can be achieved by using full thrust/elevator in the same situation.

I accidentally discovered another interesting maneuver while trying to accomplish a "Cobra," the famous Sukhoi jet pitch-over stunt. I had gone vertical and applied full down elevator/thrust, but somehow ended up nose high, inverted and out of airspeed. So, I just held full down and full throttle, while waiting for the *Eurosport* to fall out of the maneuver. To my surprise, the jet held its attitude and simply began a very slow inverted descent, much to the delight and encouragement from my fellow jet pilots. Impressed, they all wanted to know how I did it. Knowing I could probably never do it again I replied, "It's too difficult and complicated to explain!" I later found I could get into the inverted descent by transitioning from an inverted spin with opposite direction rudder/thrust until the rotation stopped, and then just holding full down elevator/thrust.

Eurosport climbs for altitude for another thrust vector maneuver.

As a word of caution, other than the flat spins and descents, most of this "3-D" maneuvering eats up a lot of altitude! I have been allowing plenty of room for mistakes since the Eurosport sometimes recovers quickly from these maneuvers and other times makes several revolutions after I neutralize the controls. Airspeed is usually slow starting the recovery and I like to have enough altitude available for a smooth pull out, avoiding the possibility of a "secondary" stall and/or snap. So far, I have been switching off the thrust vectoring during these recoveries since I don't want to risk over controlling. I intend to experiment further with the sensitivity of the thrust vectoring at various speeds and flight conditions on future flights.

Mostly what I have learned from these few flights is that with two axis thrust vectoring, there is an almost endless variety of possibilities. Lots of the action is fast, difficult to follow, describe or even come up with a name for, but always fun to watch! I'm looking forward to "expanding the envelope" and experimenting with different combinations of control setups and inputs. I'll let you know here if I discover any new tricks!

Craig

District VI Report — Lance Campbell

Illinois
Indiana
Kentucky
Missouri

Avoiding Turbine Troubles

We've all had different experiences and results from using turbine engines, and I'd wager for most of us they have been pretty positive. I've not had every brand out there, but have had 4 jet engines from two brands, and been flying them for the last 12 years.

I also know that not everyone gets into the nuts and bolts as much as I do, but there are some basic pieces of info that you can keep an eye on, and hopefully keep your bird running as you'd like. For both brands, I've gotten the laptop software that lets you get deeper into what the engine is doing, and how it performed in the air. After a while, you get a feel for how it should look on the graph, for rpm, temperature, voltage and throttle settings. If you've never paid attention to how your engine looks, or its numbers when it's working correctly, you won't know what it's supposed to look like when it's acting weird.

You are using a logbook, right? I just write down an entry at the end of the day, for “X” number of flights, and any notes about the day, which is usually just a few words. It takes all of one minute, or less, and the historical info is very handy. I know there are whiz-bang computer programs and spreadsheets you could keep this in, but it's hard to replace the convenience of a paper logbook in the flight box, that you use on the spot. A simple note of “engine sent in for routine bearing change,” or “landed off field, got some dust and grass in the intake,” can really help out when you're scratching your head at the next jet meet a month or more later, and something odd is going on.

One item that is easy to keep an eye on is your maximum pump voltage. After you shut down, at least once ever 3-5 flights, plug in the ground-based data terminal, and look up what your maximum pump voltage was for the flight. Jot it down in your logbook. Now, over time, you'll see this number will stay pretty much the same, but eventually, it will get a bit more, then a bit more, then a lot more.

What's going on? Your fuel system is getting harder and harder to suck fuel through, most probably due to a fuel filter in the plane starting to fill up and get to the end of its life. I filter my fuel eight-ways-to-Sunday; but even so, find that every 150 flights or so, it's time to change filters because the pump voltage is climbing by .5 Volt or so, to be able to deliver maximum rpm. Remember, you've got a computerized ECU, which will pull whatever voltage it needs to deliver what is programmed for max rpm. Pull too much, and the voltage of the pack will drop, and now the whole thing shuts down. Once I see the voltage starting to creep up, in my experience you've got 10-12 flights or so to catch it, before it really starts going up. That's why if I check it every 5 flights or so, I'll see it before it causes trouble.

While we're on the topic of pump voltage, I'll direct you to how useful the laptop stuff can be. See the picture of a flight of mine from this last season at the top of the next page. On the top, you'll see the RPM commanded by the radio, and the actual RPM delivered by the engine, and how throttle lag looks. On the bottom of the chart, you'll see pump voltage, and how it correlates to engine power.

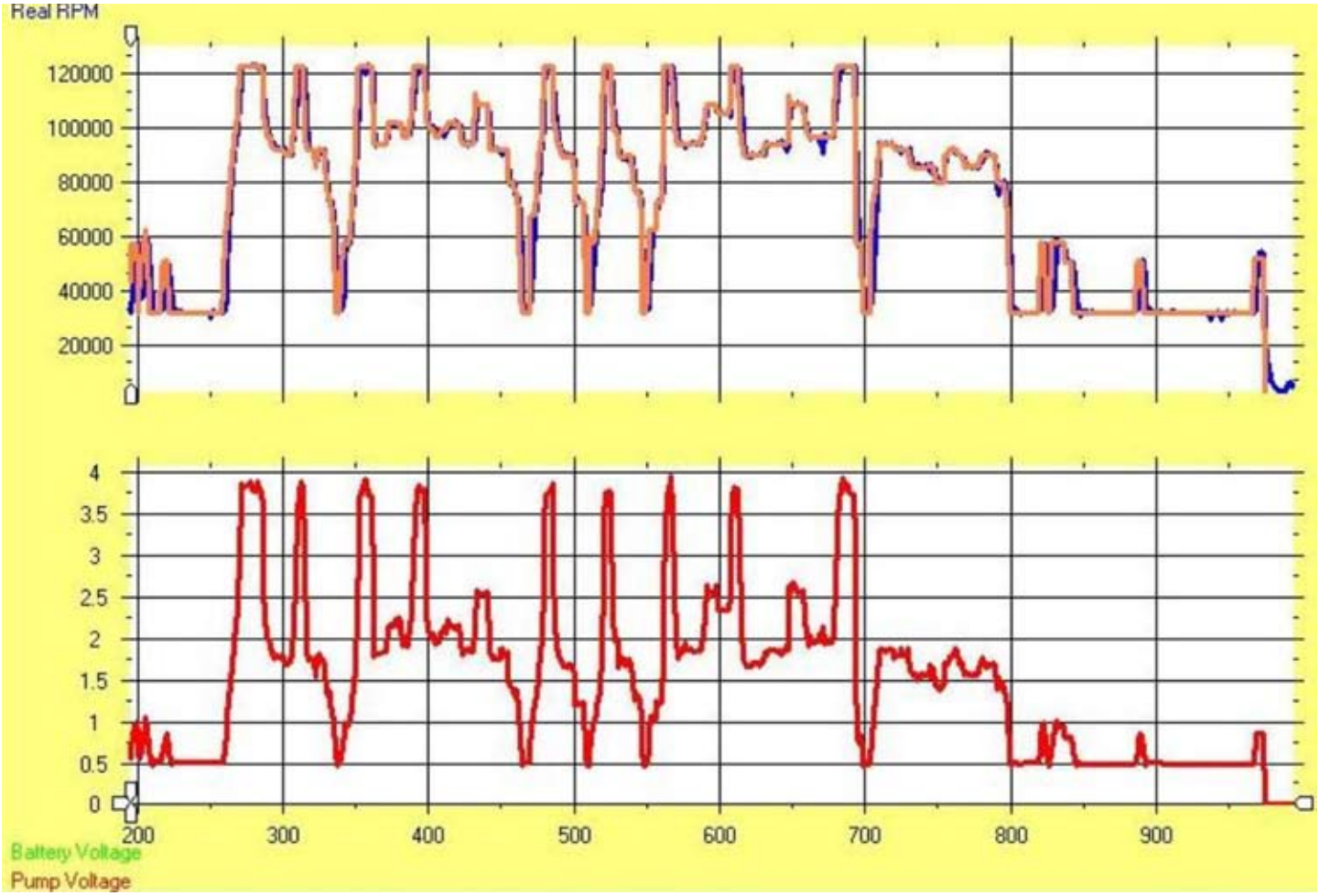
Now, let’s think about a hypothetical problem, such as a new plane that does not have a large enough venting system, or overly complex plumbing going between six fuel tanks. What you would see is that as you stay at full throttle, the pump voltage could start creeping up as the pump is working harder to keep the RPM up against a harder and harder draw on the fuel. Maybe it's getting so hard that you start pulling air out of solution of the fuel itself, and start filling up your bubble trap, but can't spot a fuel leak on the ground. Regardless of the example, you can see that it would be handy to at least once in a while take a look at those numbers that your ECU is trying to tell you after a flight.

Another area that can cause trouble is if the ECU and the radio are not playing nice with each other. This can be made overly complicated, but it really isn't. The bottom line is that your turbine ECU is looking for a specific range of a “pulse width” from your transmitter on your throttle channel. Some turbines use another channel for additional functions, which I'll leave out of the conversation for now. This is why you much teach your ECU about your radio. Some engines remember this flight after flight, but some older ones don't. The center on a given channel, is 1.5 mS. Further, 100% travel to one end is 1.0 mS, and 100% travel to the other end is 2.0 mS.

One way to have mysteries, is if you're transmitting something to your ECU that is outside of the range of signal pulse width that it is expecting. If you do, weirdness may ensue, or it may be just an engine shutdown when you may not expect it. Moral of the story, read your instructions in detail, and don't just do it once when you get your engine. Feel free to do the radio to engine setup several times so you get familiar with it.

I have a friend that just got his engine back from service, with a note that it was updated to the latest firmware, and to just rerun the setup process. You'll want to be comfortable

District VI Report (cont'd) Lance Campbell



with it, as you never know when you'll have to run through it again.

One last thought I'll leave you with, is that these engines and associated electronics are very precise machines. They don't take well to something not being 100% right, and things don't get better in the air.

A couple of years ago, one of my engines had a slight sound to it, just as it would spin down, for just for the few seconds after the fuel pump was shut off. It ran fine above idle, throttled up fast, and at full power it was as smooth as ever. I thought I might be imagining things, but the sound was just was a tiny bit different. After pulling the engine and looking it over, it still looked okay, so I put it back in the plane, and flew it a couple more times. The sound was still off by a tiny bit, so just to be safe, I sent it in for service after a jet meet.

Did I cringe a bit at the $65 shipping charge and down time, over what was probably my imagination? Yup. Did I feel not quite so crazy when I learned that ¼ inch of a compressor blade was missing, on a part that was out of sight around the corner? You betcha. The minimal expense of this repair, considering that the engine could have eaten itself, if I had blown off that nagging little voice in the back of my head, was really nothing compared to what it could have been!

I hope the holidays have been good to you, and I also wanted to thank all of you who have renewed your JPO membership for this year. There is much in the works, and the larger our voice is, can only help us and our segment of the hobby, when it comes to matters of keeping our hobby moving forward smoothly.

Lance

District VIII Report

Ron Scwarzkopf

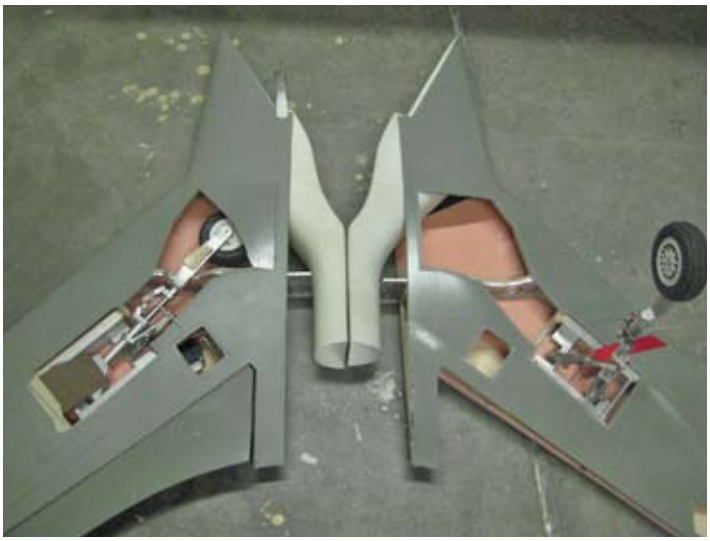
Arkansas
Louisiana
New Mexico
Oklahoma
Texas

Hello JPO Members, I hope you've been able to get a little bit of flying in, with the cooler weather. If not, then that's okay because this is the season for building! And one thing that is great about jet modeling in District VIII, is that there are always some neat projects being worked on! So here's a couple of those projects, and we hope to see these models and modelers flying during our upcoming flying season.

F-105 *Thunderchief*

Three jet modelers have pooled their talents and interests to begin work on a 1/6 scale F-105 *Thunderchief*. This will be an impressive project to see when it is completed! There have been very few kits of this aircraft produced - I suspect because of challenges associated with the lengthy main landing gear.... Bob Moore, of B-1 Bomber fame (with his infamous videos on YouTube), has put the B-1 project on hold for a bit so he can concentrate on plug finishing, mold making, and part fabrication for this prototype. Robert Sickels originally generated cad work and cut the plug shape with his own CNC router system, while Paul Stelly has machined landing gear specifically made for this model. I should point out that the work Bob is performing on the model is actually being done in Kansas, BUT when you average the locations of Bob, plus Robert and Paul's efforts in Texas, that average location lies in District VIII!

But back to the model… This beast is almost 11 feet long, with a span of about 5.5 feet. The first set of parts are at the point of assembly right now, and the pics of the model are impressive. They are shooting for about a 40-45 pound target weight, but if it goes over a bit, it should be no problem with the planned Jetcat P-200 mounted inside it. Perhaps by next issue these guys will be closing in on a first flight date. We wish them success with this project, and as always - post some videos!



Gloster *Javelin*

I don't think I've ever seen Sam Snyder show up at a model field with a kit-built model. Well, I know he tried once with a *KingCat*, but by the time he was done building it, it somehow became a scale de Havilland *Sea Vixen*! So now Sam is almost finished with a Gloster *Javelin*, at 1/7.2 scale. This delta-winged, T-tail aircraft flew for the Royal Air Force in the late 50s and 60s as an interceptor.

Like most of Sam's models, this has been built as a one-off model from his own drawings, and shaped with balsa and fiberglass. This model weighs about 36 pounds, but with the weight spread over the area of a 86 inch span delta wing, this should keep a pretty light wing loading, and should fly nicely with 2-Jetcat P-60s. Sam has included all the vortex generators, his usual sliding canopy features, and even neat little fenders on the nosewheel strut. If you

District VIII Report (cont'd) — Ron Schwarzkopf

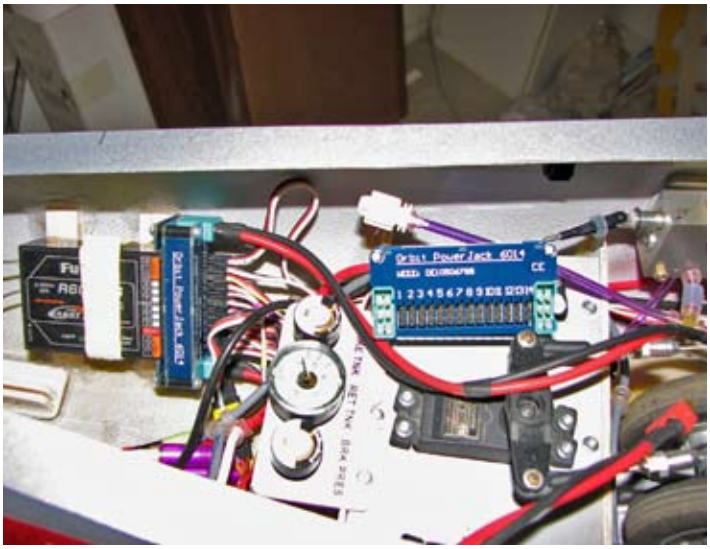
want to see more pics of this model, or his newest creation, you can visit www.uavde.com on the web, and check out his latest updates. And, we'll be anxiously waiting for his upcoming test flights in the Spring!

Orbit Power-Jack for Futaba 6014 Receivers

I have tried out various lower cost power boards for some of my Futaba receivers, and currently use a Smart-Fly Power Expander in my PST Reaction, with which I am very happy. This Smart-Fly board provides great capability in providing dual servo output slots for each channel. But not needing that particular feature, and wanting something a bit more compact, I found the Orbit Power-Jack 6014. I've been using this unit in a model for a year, and this has worked very well with no issues.

The Power-Jack plugs directly (and very snugly) into the Futaba 6014 receivers with no jumpers. It allows for 2 power inputs via 2 MPX connectors, allows for full 14 channel use, regulates power to the receiver to 5 volts, and ensures servos see a 5-volt signal level - this had been an issue on earlier 6014 receivers. The full voltage of the battery packs are delivered unregulated to the servos, so my current setup with A123-type batteries will deliver 6.6 volts to the servos, and 5.0 volts to the receiver.

I will most likely install this in my next model - it is simple and lightweight. There are a few dealers that carry these, but I purchased mine from www.sincityjets.com.



To the left of the photo, one unit is installed on the receiver, and to the right is a second unit, loose and unconnected.

Flying Season is Coming

I need to get going with some my build projects for our upcoming jet flys….Outside of our district, the Mississippi Afterburner and Tucson Jet Fly events are coming up quickly.

District VIII's first jet fly for the year will be the ARCA club hosting the Austin (TX) Jet Fly from May 19-21, and the Mt. Pleasant (TX) Jet Fly just 2 weeks later. So it's time to dig into your models; get those projects completed, or repair that one model that has been sitting in the corner - the flying season will soon be here!

Happy Landings!

Ron

District XI Report — Bob Brusa

Alaska
Idaho
Montana
Oregon
Washington

This time of the year is the building season in many parts of the country. If you have a new plane you are working on, or even an older one, perhaps you would like to see a picture of it published in *Contrails*? or maybe you would like to write an article and have it published in *Contrails*? In either case, please contact me; the e-mail address and phone numbers for all the District VPs are shown on the inside of the back cover.

New members and renewals are coming in at a fast pace for the JPO. In 2010, we had a 20% growth rate in membership from 2009. Many thanks to all those who have joined, and to all those who have helped in increasing our membership. Membership in both the AMA and JPO is important, especially now when the FAA is considering some rule changes for our national airspace. If you know someone who would like to join JPO, refer them to www.jetpilots.org, our JPO website, or there is an application on the inside back cover of *Contrails*.

A big event planned for this year at the AMA International Modeling Center in Muncie, IN, is the celebration of AMA's 75th anniversary. It will be held from Thursday, July 14th through Sunday, July 17th. AMA has asked all the SIGs to plan an event. I have scheduled site #3 for our use the whole four days to hold a jet fly-in. This will be open to all jet pilots - ducted-fan, edf, and turbines - and will be a simple, non-competitive, fly-for-fun event. There will be a commemorative 75th anniversary t-shirt and hat for all participants. The best news of all is there is NO landing fee!! I will be the CD for the event, and we would like to see a great turn-out of jet pilots. Come for as many days as you desire! I, for one, have never been to Muncie, so this will also be a great opportunity to see our national headquarters, visit the AMA museum, and have great fellowship with our fellow modelers. If there is anyone out there that would like to assist me with this event, or have some ideas they would like to share, please contact me.

As a final reminder, if you have not already done so, please renew your JPO membership for 2011.

Bob

Canada District Report (cont'd) — Paul Dries

The set-up is simple and trouble free, and has absolutely no slop when the gear is engaged. I even tried operating the retracts with the airframe tilted on its side, typical of a condition of retracting the gear during the bank-out after take-off where the detent was able to hold the nosewheel in position. I have seen something similar on BVM gear but the MAP gear fit where conventional retracts mount and are really simple to set up.

MAP was able to supply me with Dreamworks trailing gear to match up with the MAP retract units. I believe that you can also order these retracts thru Dreamworks as they do carry many of MAP's products already. You can find much more information on MAP's products on the web at: www.modelaviationproducts.com/index.html

Speaking of the *Torus*, I have almost completed the assembly of this new airframe and it will be powered by the new IQ-Hammer 170+ engine. I built this plane specifically because I was looking for a short-field, grass-friendly airplane. Paved runways and large fly-over areas are over three hours drive away for me, so I needed something that will allow me more turbine flights during the year.

One of the unique features of the *Torus* are the wingtips, which are interchangeable. The *Torus* comes with both "sport" wingtips and also fairly large tip tanks that can be easily removed and replaced, even at the field. The airframe is painted composite, with the exception of the outer wing panels and stab assembly, which is a covering material that is finished with the same paint and clearcoat as the rest of the airframe.

The plane has a thinner wing and a fairly large wing chord, giving it a very wide flight envelope, even for a *Boomer*. It also came with a Sullivan package, consisting of a 128-ounce fuel tank with aluminum fittings, and 4-40 clevises and hardware - all totally usable stuff.

With no flying going on and no events to report on that's all I can think of to ramble on about for this issue. Stay tuned as I hope to be able to put in an update about the LOP (Letter of Proficiency) process that is up for review by the MAAC Jet Committee in the next issue. Until then, hope we'll see all your winter projects flying in the spring.

Paul

Canada District Report

Paul Dries

I would like to start by thanking all the JPO members in Canada that have renewed for 2011. I would also like to thank all the new members who have joined in 2011 and I hope that I can keep you informed about MAAC and JPO and those issues affecting everyone on both sides of the border. A post on RC Canada with some information on the JPO helped move things along. Canada is a tough country to cover from the left coast as I only get personal exposure to a relatively small group of jet modelers in western Canada, so I hope that some of the new JPO members in the east will be able to contribute reviews or reports.

Some upcoming events in Canada are:

Princeton Spring warm-up : June 3-5. Come and fly off of the Princeton Airport runway in Princeton, B.C. - a great, small town 3 hours east of Vancouver. Some pilots will arrive on Wednesday (June 1st) allowing for lots of relaxed flying.

Wingham Jets June 24-26. Angus McDonald has run this event for a couple of years and has some new dates planned for 2011. For information on previous events and to get a feel for the "presentation", go to: www.rccanada.ca/rccforum/showthread.php?t=106488&highlight=wingham

Welland. I'm not sure if this is an organized event or just a bunch of jet fliers having a good time at a local airstrip: www.rccanada.ca/rccforum/showthread.php?t=115300&highlight=welland

Leamington/Chatham. An event traditionally held in Leamington looks like it will move to a new facility and new date this year. The favored dates are June 3-5 at the Chatham airport, which from indications is a little easier to access for those travelling from the US.

I will post updated links and information to the actual locations of these events in the next issue.

I have been working on a new project and came across an item which I believe is a huge improvement for nosewheel steering on retractable landing gear. I'm sure almost everyone has had problems with nosewheel steering wires at some point - whether it be gear tangled in the wires or problems with the wire tension providing too much slack in the steering, and hence creating poor ground handling.

Last summer when I attended Cayley Jets, in Alberta, I met John from Model Aviation Products who was also flying a Composite Arf *Flash*. While he was setting up his jet, I noticed something unique about his front retract and commented on it. He explained that this front retract was a new series that he had just introduced and the most unique feature was the front steering linkage. Instead of using nosewheel wires, the retract has a "channel" that engages a ball joint connected to a bellcrank, which in turn is connected to a pushrod to the servo. The other feature is the ball detent that holds the gear centered when it is not engaged with the ball joint.

I agreed to try this on my next project so when I ordered the new Boomerang *Torus,* I immediately knew where I was going to get my landing gear.

The attached pictures show the gear installed in the nose gear bay on the *Torus* and the linkage to the servo.

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Please add/renew my JPO membership!

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*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:
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Or renew online at: www.jetpilots.org

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With afterburner blazing, Chris Wolfe's e-Turbax-powered JHH *Mirage* departs, at the AZ Jet Rally. Greg Moore photo.