Newsletter of the Jet Pilot's Organization

Contrails

Summer 2007

Volume 19, Issue 3

Patrick Frost's F-4 was caught turning in by Ben Lanterman

Bay of Quinte Mid-Atlantic Jet Rally

From the Editor

Hello everyone, I hope that you are getting your fill of flying and will enjoy this issue.

If you haven't been to our website (www.jetpilots.org) recently, when you visit you will find that a member photo album has been added and updated with new pictures...members, please keep those photos of your favorite projects coming.... send to pilot114@aol.com.

Additionally, since we are in the middle of a busy jet rally season, information about your event, or one that is near and dear to you will be happily added to the events calendar that is published each issue...but I need to know about them! So... if you'd like to get the word out about an event, please send me the information!

As an organization, we are always looking for ways to add value to the membership, whether it be sponsoring Top Gun Trophies at events, expressing your/our views to the powers-that-be in Muncie, or acting as an additional sponsor at a jet rally. Please let us know what is on your mind, jet-related.

In this issue we have several excellent articles on aircraft, the new spread-spectrum radios and the bug-a-boo of field maintenance, so I think you will find something of interest.

As a reminder, in the next issue you will find ballots for the upcoming election. This year's candidates are for the odd-numbered districts, and President. If you are interested in one of those positions, or know someone who is, please let any of the officers know so that your name can be added to the ballot!

Until next time, fly safe!

Greg

Treasurer's Report

Beginning Balance - 3/31/07		***$11,849.84***
Income		
Membership - Cash	2x$25.00	50.00
Membership - Cash	2x$18.75	37.50
Membership - Cash	1x$12.50	12.50
Membership - Paypal	1x$17.91	17.91
Membership - Paypal	4x$17.72	70.88
Bank Interest		25.10
April Expenses		
Trophies	$55.95	
Paypal Fee Adjustment	$0.84	
May Expenses		
Postage & Supplies	$9.57	
Telephone	$50.00	
June Expenses		
Spring *Contrails*	$619.85	
Trophies	$279.75	
Ending Balance - 6/30/07		***$11,047.77***
Breakdown of Accounts:		
Savings Account		$10,082.30
Checking Account		$965.47
Paypal Account		$0.00
Account Balances - 6/30/07		***$11,047.77***

Elections in December will be for Odd-Numbered Districts and President.
All Candidates are Welcome!

President's Report

Steven Ellzey

I was a bit negligent in my last article and forgot to introduce our new District 6 Representative. Patrick Frost has taken over that position. It would appear that Patrick is well known in his area, and should provide District 6 with excellent representation.

Another change that has taken place recently is we have a new District 8 Representative. Mark Osborne has temporarily gotten out of the hobby, and felt that he would not be able to provide much assistance to the guys in his district. Upon hearing of the vacancy, Sam Snyder quickly volunteered for the position, and the Board of Directors readily accepted his offer (before he had a chance to change his mind). Sam brings to us a wealth of modeling knowledge which he is hoping to convey to us all.

I would like to welcome both Patrick and Sam, and thank them for helping out.

This fall, the officer elections will be for the odd-numbered districts and for the president's position. If you would like to try and mold the future of your hobby, and help your fellow pilots, you should look into running for a position. You can make a difference, since JPO is making a difference. If you would like to run for your district's representatives position or the presidency, contact one of the officers from one of the even-numbered districts.

New Technology

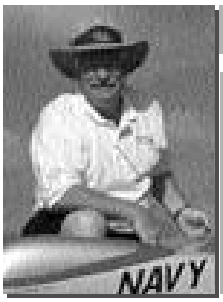
Spread Spectrum (SS) is quickly moving into our part of the modeling hobby. Interestingly, I feel that the introduction of this new technology has brought to light some old problems. A few of the early models that moved to SS had what appeared to be unexplained crashes and some jumped to the conclusion that SS was to blame. Over time, the true culprit was brought to light; power failures.

In my opinion this has been an issue for several years since I have seen several crashes that appeared as if someone reached up and switched the radio off. Most of the time everyone shrugs and calls it unexplained. However, high performance models , coupled with multiple digital-servos can place a great demand on the model's power system. If the power system, which is the batteries or the batteries and regulators, cannot continue to supply sufficient current to meet the demands of the servos, the battery voltage will start to drop. If it drops low enough, the receiver will quit working. With most of the SS receivers, it takes a few seconds to come back online after the power returns, since it must search for the correct transmitter. The older technology receivers have the same problem with low power; they can just come back up a bit faster. In either case, it is a situation that is most definitely undesirable, and with either radio type, it can lead to the loss of a model.

If you go to Spektrum's web site (www.spektrumrc.com), there is a good article called "Spektrum Air Receiver Power Requirements," dated May 31, 2007, that gives advice on what your power system should be and how to test it. Even if you are not using a Spektrum radio, it is good information that you might want to consider.

I recently bought a Spektrum SS module and a few 9-channel receivers to start putting in some of the jets. The first receiver got a weekend of shaking in a pattern bird and then went into a jet. I also added the Spectrum Flight Log, which is a fairly inexpensive addition that allows you to see how well the receiver is performing after a flight. The 9-channel Spectrum receiver is actually three linked-receivers (and you can add more), and the flight log allows you to see how many times in a flight each receiver lost some data, if it ever lost an entire frame (all the receivers losing the signal at the same time), and if the receiver ever went into hold. This gives you some idea as to which of the antennas are in a better location, which can help guide you to a better installation... which is a pretty good advance in our technology. At the DFW Jet Rodeo several of us were using SS radios without a problem, I am hoping that this continues to be the trend.

Steven



Vice President's Report — Keith Sievers

The Mathematics of Test Flying an Aircraft

One thing that sets turbine pilots apart from most others in the Radio Control world is the financial risk that accompanies every flight. Most of us deal with this by managing the risks more aggressively to reduce the frequency of accidents. Turbine pilots tend to pay serious attention to construction materials and techniques, model maintenance and electronics. This would appear to yield benefits, as data collected by the Jet Pilots Organization over a two-year period showed only one serious accident in approximately 140 flights. Most of these accidents did not even result in a total loss of the aircraft, so the average jet pilot could go years without losing a plane. The one exception to this general data would be the maiden flight of a new aircraft, when the risk of loss increases significantly.

As a young actuary working for a major insurance company many years ago, I discovered that most risk could be expressed in mathematical terms. With this in mind, I offer three simple formulas that summarize the wisdom needed to reduce test-flight risk and insure your newly-completed project makes the trip home.

Formula One: Defects = Zero

I believe that most, if not all, problems that might manifest themselves on a test flight can be identified and resolved before the wheels ever break pavement. This sounds like an obvious statement, but the pressures of getting a test flight out of the way often leads pilots to take to the air with known problems. These can often become real issues once airborne.

There are a number of common problems to look for in the workshop:
- The air systems must not leak, even minimally, so check the gear in both the extended and retracted positions.
- Brakes must be fully functional, symmetrical in brake force and release completely and smoothly. Range checks are critical, and any marginal result should lead to experimentation with antenna positioning, and be done with the engine running as well.
- There should be no evidence of air in the fuel system.
-Check and recheck the factory throws and center of gravity.

If you frequent the internet, post a query in the jet forums on these items to obtain practical feedback, and check with the manufacturer if there is any doubt. Often times early instruction manuals may have been updated with changes as the model matures.
- Operate digital servos gently by hand to check for smoothness in the gear train and any evidence of binding in the linkage.
- Don't forget to lubricate any metal-to-metal surfaces, including axles and linkages.
- Control surfaces should be checked for symmetrical movements in throw and rate.
- Fully charge the batteries and measure the voltage under load.
- Connect the GSU and verify that the engine achieves full RPMs during run-up, and that temperatures and idle settings conform to specifications.
- Inspect all critical fasteners and bolts one last time.

In addition to the physical exam, there are environmental risk factors to consider before powering up:
- Avoid a first flight in adverse weather conditions, particularly strong crosswinds that follow the aircraft on base leg.
- Pick a good site. Don't hesitate to travel a bit farther to use a flying field with a longer runway or more options for landing in the event of a problem.
- While not always practical, it helps to fly with a minimal number of onlookers.

Formula Two: Takeoffs = Landings

The primary goal of a test flight is to get the plane on the ground safely in one piece. That means that most of the first test flight should be allocated to the approach and landing regime. We have all seen pilots take to the air and spend most of the first flight on loops, rolls and high-speed flight only to run low on fuel, force a landing out of bad approach and damage the airplane. Resist this urge and focus on setting up a successful arrival.

Vice President's Report (cont'd) — Keith Sievers

Quickly assess basic flight parameters such as throws, CG and trims soon after takeoff. Once this is complete, drop the gear and flaps and spend time practicing slow flight, then from a safe altitude approach a stall and become familiar with the telltale signs, such as wing waggle. Now shoot a few approaches. The most important part of this phase is to find the throttle setting that allows a plane to "groove" in a gradual but stable descent to the flare. With some airplanes, such as a lightly-loaded Bobcat, this setting is idle. With larger, heavier planes the setting can be as much as five or six notches of throttle, depending on engine and aircraft weight. It is an important setting to find quickly, as it is the key to repetitive, confident landings. Don't push the fuel or time on the first flight … land with plenty of reserve.

Formula Three: Two > One

An important ingredient in a test flight is the spotter and a truly great spotter adds value in several key respects. First, they keep track of time. There are a fair number of activities that need to be compressed into a short period of time to insure adequate fuel, and the spotter will provide guidance on how the checklist is progressing relative to the clock. Second, a spotter should keep notes of the various post-flight throw, dual rate and trim adjustments that the pilot verbalizes throughout the flight. Third, if the plane is grossly out of trim, don't hesitate to ask the spotter to make trim adjustments. Lastly, a good spotter will provide positive feedback and support that help settle a pilot's nerves during the flight.

If possible, find another pilot to serve as spotter who has experience with the aircraft. In addition to familiarity with throws and set up, they can provide advice on speeds and the approach profile during the flight.

One other side benefit from the time invested in risk management is the feeling of confidence that results from knowing you are prepared. It is the one factor that is hard to quantify, but a confident and relaxed approach to that first flight is another key to achieving success. It also makes it possible to relax and enjoy the flight a little more, which, after all, is why we fly jets in the first place. Oh, and by the way, good luck!

On another topic:

The JPO has decided to lend sponsorship to popular jet events in the US. The sponsorship will rotate around the country from year-to-year so each district has an opportunity to participate. Our inaugural event will be the Florida International Jet Rally in Lake Wales, FL from November 1-4. JPO will provide:

-A JPO member discount for those that pre-register of $20.
-A pizza party on Saturday night
-A hospitality area and JPO support throughout the event
-The JPO Top Gun Trophy

If you are not a member, join today at www.jetpilots.org. Membership is only $25 a year ($12.50 for the remainder of 2007), and includes the quarterly publication *Contrails*. Support your AMA SIG!

Keith

14th Annual Florida International Jet Rally

November 1 - 4, 2007 * Lake Wales Municipal Airport * Lake Wales, Florida

The Second Decade Continues!!

District I Report

Ray Davis

Connecticut
Maine
Massaschusetts
New Hampshire
Rhode Island
Vermont

"Greetings from District I where our flying season is in full swing! Already behind us are two of the three Gardner Airport events for this year that are available for jet flying...'Bottom Gun' and the District I Master Scale Qualifier.

Coming the third weekend in August is the second annual **New England Jet Rally** (gonna be terrific ... see the poster below), hosted by the Wachusett's Barnstormers and CDed by Jeff Lynds and myself. Then on the weekend after Labor Day, we have the **Maine Jet Rally** in Sanford, ME. Still plenty of time to plan and get ready for both these great District 1 jet-only events.

Jeff has a brand new trailer, and with Karen's new SUV ... went from hauling his stuff in a 'good-ole-boy' '72 GMC pick-up to going absolutely first class! It's a perfect rig, and the maiden trip was to a June Warbirds meet in Albany.

Photo shows he cleaned up with his Avonds' 16 and Eurosport.

Jets always impress at prop venues, and Jeff will also have piloted the RC jet demo at Portland, ME's Open House, by the time this is read. That's one of the largest full-scale airshows in all New England, and he'll do our end of the hobby credit!

My 1200HP Facet somewhat A-6 'Intruderized', is shown below...from Kerry Sterner's semi-kit...has been lowered, narrowed and fitted with the 'Screaming Eagle' fin and markings. I got the weight down to under ten-pounds dry.

Powered by a Wren 44-Gold...it scoots and has all the vertical you could ask for.

I built it straight to less than a half-degree on all surfaces, but it has taken some time to trim out and get used to, with a needed six-degrees of down thrust, more sensitive elevator and aileron settings, and moving the CG 5/16" aft. I also had to couple some down elevator to flaps...and I'm still learning that practically any flap requires a low-throttle setting! It handles nicely now...and fitted with the new Robart Trailing link nose strut, absorbs the roughest of grass conditions superbly. It drops in on a dime with full flaps...so even 300-foot fields will accommodate this one nicely; and if you are capable,...it's capable of any maneuver in the book, I'd guess, as it's more a pattern-type than anything else.

Other than Jeff, I haven't run into any other District I jet folks out there yet...I now have an SM ARF-Plus *Gripen* in the works, the *Euro Sport* is as strong as ever...and our 'MiG-lets' are a blast (Alfa MiG w/ 4S and Jet Screamer power), so I hope to see many of you this summer...and find out what's new with you. Or, let me hear from you...we need some fresh info and pictures here!

Ray

District II Report

Art Arro

New Jersey
New York
Europe

Greetings District Deuces & Fellow Jet Pilots

Jet flying has begun here in the northeast with many flying sessions held at Floyd Bennett Field, Brooklyn, NY. Vinnyjet is posting a photo chronicle on the RC Jets segment of RC Universe (RCU).

Vinny and Mike Casey hosted the **15th Annual Big Apple Jet Rally** (BAJR) at that location on June 9-10th with good weather and a great turnout. On day 1, they had 47 pilots with 53 jets, mostly of the turbine variety. Lots of Jet-A/Kero was consumed and numerous awards were distributed. The coveted JPO Top Gun trophy went to Andy Kane, Best EDF went to Angel Perez, Best Sport Jet to Andy Finizo, Best Turbine Flight to Brian DiCinti, Best Finish to Tom Vassillio, Best Military Finish to Alan Delena, Best Military Jet to Bob Levine, Best Military Flight to Mark Giummule, CD's Choice to Adil Nasim and the Sportsman Award to Len McIntosh. As always at the Big Apple, a large number of event sponsors donated merchandise to be distributed to the pilots. The 2007 sponsors were: BVM, FTE, Tam Jets, Horizon Hobbies, Continental Airlines, JPO, Jo Jo Racing, Model Airplane News and the Pennsylvania Avenue Radio Control Society (PARCS), which also hosted the event. A full report with photos will appear in a future issue of RCJI magazine. I'd like to personally thank Vinny Caratozzolo and Mike Casey for putting on another successful BAJR.

Unfortunately, I was unable to attend the BAJR due to a direct conflict with the **Bay of Quinte Jet Rally** (BoQJR) held on the same dates in Belleville, Ontario, Canada. The 21st edition drew about 43 pilots from 5 US states and 3 Canadian provinces. The US entries were low due to the conflict with the **Big Apple** in Brooklyn and the **Bottom Gun Scale Contest** in Gardner, MA. As reported previously, the BoQJR site was scheduled for extensive runway construction beginning the following week, so the host club had no choice but to move the date forward by one week, resulting in the triple conflict. The weather and flying were the best ever with clear blue skies, light breezes down the runway and mid-70-degree temperatures.

As in previous rallies, the excellent facilities at CFB Mountainview were made available for the event and we enjoyed 150' x 5000' paved-runways with virtually unrestricted overfly areas. The pilot participants brought 54 jet models with most of them being turbine-powered, though there was a single EDF entered in the mix. The model types consisted of both scale and sport jets with several fine specimens of each.

Graeme Mears brought his BVM F-86 finished as a Canadair *CL-1A*, scheduled next for the **Jet World Masters** (JWM). This superb model was realistically flown by none other than David Shulman. It should be mentioned that there were two other JWM pilots at the event - Martin Lefebve of Canada and Hans Van Dongen of the Netherlands. Martin flew his F-22 *Raptor* which is the prototype for the Yellow Aircraft kit. He added vectored thrust and the resulting maneuverability could not be believed. The model performed flip loops pivoting about the span axis of the wing, along with flat spins. Hans flew his Avonds F-104 *Starfighter* several times, David Ravenelle, from Quebec, flew his CT-114 *Tutor,* which will also become a Yellow Aircraft offering, most likely in ARF form.

Kitted aircraft included models from BVM, Byron, Comp-ARF, D.L. Aero, Jet Hangar and Yellow Aircraft. The turbines were a mixed bag of AMT, FTE, Jet Cat, Moore's, Sim Jets and Wrens.

The Saturday evening BBQ was well attended and this year's dessert assortment was over the top. Door prizes, donated by Great Northern Models, were distributed on a random draw to the pilots, and everyone had lots of fun sharing the camaraderie.

On a closing note, this may be the final jet rally held at CFB Mountainview due to increased military usage, though the host club is looking at other nearby venues to continue this fine jet event. A full report, with photo coverage will appear in a future RCJI magazine.

Fellow JPO member, Frank Alvarez and I have been busy planning and organizing the **Third Annual Capitol Jets Rally** in mid-July. This event is sponsored by JPO and a number of hobby vendors. The event will be held at the South Albany Airport in

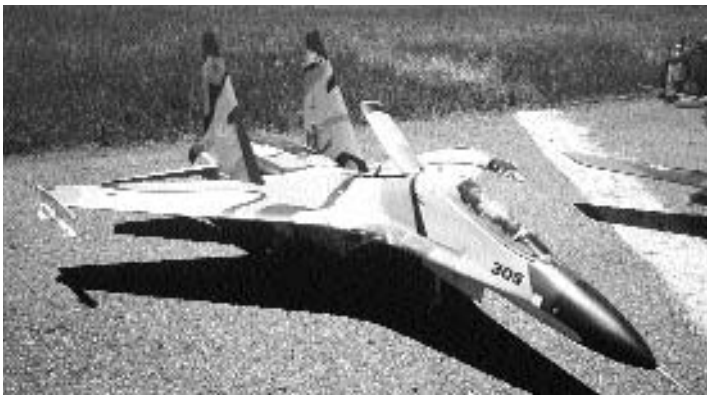
District II Report (cont'd) — Art Arro

Selkirk, NY, which has a newly paved 3500' x 65' runway with plenty of open airspace. We hosted a warbirds event at this location in early June and it was very well received.

We are planning a late start at 10 AM, to permit full-scale activities in the early morning and our model jets to be flown from 10 AM until dusk. Frank is the CD and has done all the local coordination, and I handled the remaining functions to host the event. We are hoping (praying) for fair weather and a good turnout for this District II jet event. See you there.

Fly safe and have fun.

Art



This SU-27 Flanker jet was totally scratch built in Canada, including the molds. This version was turbine powered and derived from a smaller one that was powered by a ducted fan. Outstanding craftsmanship was evident on both models.

Greame Mears' superb example of a Canadair 13L Sabre 6 which started life as a BVM F-86 (80" version). This model won First in the Jet Plane category at the Toledo R/C Expo and will be flown at the Jet World Masters (JWM) by David Shulman.

A very nice BVM Rafale, built and flown by a Canadian participant.

Dominic Cognata, aka Major Woody, demonstrated his Skymaster F/A-18 Chippy Ho numerous times at the Quinte Jet Rally. His fast and low passes were something to behold.

A trio of Albatross's flew very well at the Quinte Rally. All were turbine powered by the diminutive Wren 44 in standard and Gold versions.

District IV Report

Lee Reightler

Delaware
District of Columbia
Maryland
North Carolina
Virginia

May brings District IV's big event of the season, the **Mid-Atlantic Jet Rally**. This annual event was held at the Naval Auxilary Landing Field (NALF), Fentress, VA, where a relaxing and fun affair provided the flyers an opportunity to "shake the cobwebs off" after the winter doldrums. The rally was sponsored by the Tidewater Radio Control Club and the amiable Frank Rega as the CD. There is a possibility that we will have a fall rally, if we can get permission from the Navy. I'll let the pictures tell the rest of the story:

Andy Kane with his Lightning and Flash aircraft

Joe Lupton taking it easy between flights

A view of the flight line

Doc Jeffries' Bobcat

Easy-to-carry is Andy Hilman's Sport Jet 70

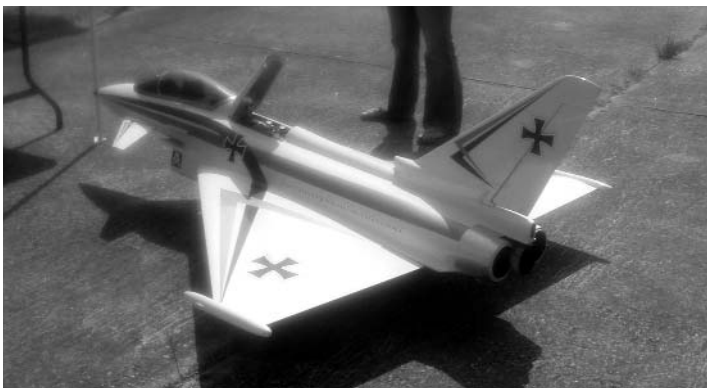
"Blue Angels" rendition by Doc Jeffries.

District IV Report (cont'd) — Lee Reightler

One of the few DF models at the rally.

Robert Hayes and son, Ben, with their Eurosport

A unique-colored Eurosport by George Delmora



An old timer at the rally by Jack Smith

Dave Malchione explaining how to convert to electric

Still flying - Dave Malchione's F-4

David Plaine inspecting his F-86

Unfortunately, one of the dedicated flyers of the rally, Pete Malchione, was unable to attend this year's event due to a heart attack. All of the members of District IV wish him a speedy recovery and hope to see him back on the flight line very soon.

Lee

District VII Report

Tom Ryan

Iowa
Michigan
Minnesota
Wisconsin

I'm Happy to Report

This year so far, I've seen more jets flying at fields that never had jets or thought they ever would. The new designs and cost-friendly trainers have helped accomplish that change. This is good to see. When jets fly, people notice, and when jets are at fly-ins, spectators show up in larger numbers. Jets are now everywhere and that is making a difference in the market and bringing new life and new people into RC aviation...

Break The Chain, Break The Plane

Some pilots won't admit to it, but near accidents have been caught at the last second when they pre-flight their jet just before take-off and find that something wasn't connected or was, but was connected wrong.

A good friend of mine (name withheld so that I may blackmail him later) broke the chain and lost the plane. In a rush to fly, he put it all together, fired it up and started to taxi without pre-flighting the systems. In his mind, he's done this so many times that he'd never miss anything and if he did, he'd catch it, right? Wrong.

Once in position, he called the take-off, poured on the power, and rolled to speed quickly. When he went to lift the nose, nothing was there. Why? The reason was he forgot to connect the elevator servo leads. Later, after the crash (rolled off and over at the end of the field, a bunch of dollars in damages) he said I know what I did wrong… I broke the chain. I broke the plane. Well put.

Licensed pilots are required to follow a printed pre-flight routine for their planes, it's driven into them by their instructors, but when we fly our RC jets, many of us don't have a check list - we rely on memory, as my friend did.

I know this may sound corny to some but...I made a written checklist for my jet, I have it in my flight box and I review it before every first flight...item by item - just makes sense to me. I do that because I have people coming up and talking to me or asking questions and sometimes I forget where I was. By using the checklist I can doublecheck myself, make sure that all is right and not worry about "did I forget something?" and believe me, I have!

My friend who crashed, well, he has a checklist now, uses it and hasn't had another problem, other than worrying about me telling the world how he screwed up! I figured my silence should keep me in free Cokes for a while.

Bottom line...a check list works

JETS, A Fast Buck?

Some may see it that way. The one down side of the popularity of jets is the "fast buck artist," i.e.: those looking to cash in on anything new or where growth is producing profits.

Most jet buyers are experienced modelers, know the market and have an idea of what things should cost. Those new to jets (and their higher cost), are sometimes swept up in the excitement of buying their first jet and buy on impulse, often the wrong jet or things they don't need.

One new-to-jets buyer complained that he bought a jet over the net thinking it was a turbine, and when it

District VII Report (cont'd) Tom Ryan

showed up it was a ducted fan. The ad was cleverly-worded and used the word turbine several times, only to find that turbine was a reference, not what he was buying. In the last few months I've had "new-to-jet guys" show up with exotic jets that were far beyond their ability to fly, or old ducted-fans that seen better days. When I asked them "why did you buy that?" they said "the seller convinced them that this was the way to go."

Not everyone is trying to make a fast buck by passing the buck, but maybe these guys who are new-to-jets should seek out advice from experienced "jet" flyers and owners before they jump into that first buy. The question is: how do we let them know that?

One way is to announce at your club that you'd be happy to talk to anyone thinking about buying their first jet. Get the word out that before they buy, talk to a jet owner who has been where they'd like to go. Remember, some of these people may be a bit intimidated and will look, but say nothing, that's when you ask "interested in jets? Yeah, how can I help?" Who knows, you may have just met a new friend!

JETS OFF GRASS?

In Fond Du Lac , WI on June 16th, jets flew off grass like they were on the green of a new pool table. The well-groomed field was perfect for all planes, but more noticeably jets, who sometimes struggle lifting off of grass runways. The jets rolled with little effort and lifted off with ease. What a complement to the club and the field crew who made that possible.

The June fly-in had several scale Jets like Tom Anafingers' BVM F-'s and Marvin Ingerson's Skymaster F-22 *Raptor*. These jets were nicely detailed and real crowd pleasers. The *Boomerangs* like Dave Elsingers XL seem to have no problems flying off grass even when it became a bit of a struggle for other jets.

On grass, the wire struts work fine on lighter jets such as the *Baby Boomerang,* but don't seem to fit the bill when you get up into the larger size and higher weight versions.

The good news is, we're seeing more and more jets showing up on grass fields that were once reserved for prop planes only. The interest in jets is growing as more are now showing up on these small grass fields. When prop pilots see jets flying from their grass strip with no problems, the mood becomes "maybe I can get a jet" and some have.

Tom Antlfinger with his BVM F-86

Marvin Ingerson with his Skymaster F-22 *Raptor*

Two guys and their planes

District VIII Report

Sam Snyder

Arkansas
Louisiana
New Mexico
Oklahoma
Texas

Please accept my sincere appreciation for the honor of being the representative for District VIII. I will endeavor to represent you in such a manner as to disguise my antiquity.

As you are probably aware, the principal focus will be on "scratch-built" replicas of scale jets and original designs. Please do not interpret this as demeaning of other disciplines. I love flying Vernon Montgomery's *Boomerang*.

In the articles that I present, it is intended to be informative from an engineering and design point of view. In the construction process there are numerous methodologies. Outlined below, in general, is the method I utilize and has been reasonably successful for the construction of wing panels.

· Aircraft plywood root ribs 3/16": lightening holes
· Balsa ribs average 3" on centers
·Carved balsa wing tips
· Balsa sheeting 1/8"
· Leading edge 1/8" stripes at least 4 stripes
· G-10 .15 trailing edge inlaid in a slot in ribs ½"
· Tube sheath aeropoxy to shear web 15'-18"
· Shear web 1/8" balsa vertical grain
· ¼"X1/8" spar, hard balsa capped .007 carbon fiber strip between sheeting and spar
· Maple peg 5" with 4X40 to hold wing on, plank sheeting with 1/32" ply where peg connects
· Robart hinge points into 3/16" spruce back up at aileron and flap
· Fiber glass cloth 1oz. at root to 8" of span
· Fiber glass cloth ¾" over entire panel including the cloth depicted above
· I use the West Glass system, 2 coats of resin
· Two coats of K-36 primer mixed 3.5 to 1
· Painted with basecoat - 2 coats
· Apply rivets and graphics
· Clear coat thinned 100%. Wet sand with 800 wet
· Final clear coat thinned 100%

By using the above methodology, the resultant wing panels are described below:

Turbine	Aircraft	Panel	Avg Cord	Sq. Inch	Weight	Oz/sq in
P-60	Lockheed U2	38.5"	9.75"	375.4	25.2 oz	.072
P-60	Martin B-57	32.5"	11.25"	365.6	21.6 oz	.068
P-70	Yak - 40	35.5"	10.75"	381.6	26.4 oz .	. 07
P-60	UAV syzygy	32.5"	13.75"	446.87	28.4 oz.	.064
P-120	Avro Vulcan	43"	Delta	1186.5	100.3 oz	.0108
Doiner	DO17G	24"	14.5"	348	20.2 0z	.066
P-120*	Sea Vixon: (This is a kit bashing of a composite King Cat - only example available)			448	32.4 oz	.072

CONCLUSION:

Having taken you through a rather laborious evaluation, and assuming you are still awake here is the result:

Using the construction process outlined in general, one can anticipate that the finished structure weight of a wing panel will be .07 oz. per square inch (+ or - .002). Consequently, as a "rule of thumb," for every square foot of wing area on the outer panels you can assume a weight of 10 oz. So when designing or scaling an aircraft you can closely estimate what this portion of the structure will weigh.

So my wife, Ann, asks what are you going to write about for *Contrails*? I described the above article; her response, "this will be fascinating to at least 3 people in the USA and maybe 6 guys total worldwide."

There have been three events in the area recently: **Mississippi After Burner**, **Mt. Pleasant**, **Austin R/C**. They were all well-run events with no earth-shattering surprises. Congrats to those who officiated and did such a magnificent job.

No column is complete without nostalgia. In 1939, I entered my first contest, which was a pendulum-control rubber-powered racing event. The aircraft was an outdoor cabin flyer. It flew like a porpoise in shallow water.

Hope to see you at the upcoming events. If you have photos or comments, please submit them to me on a timely basis for inclusion in future columns.

There is a website that friends have put together with construction photos of aircraft. Every Wednesday morning, they come to my shop and take photographs of the progress on the current project. If you would like

District VIII Report (cont'd) — Sam Snyder

take a look, go to www.uavde.com. The photos in this column are courtesy of the Ellzeys' and James Talley.

Warmest Regards,

Sam

Sam's scratch built Yak 40 on finals, or is it a full scale?

The U2 reaches for the runway after another succesful mission.

The Yak, Syzygy and *Sea Vixen* in the sun.

Bob Covish provided the following photos from the Austin event.

District IX Report

Mike Weidner

Colorado
Kansas
Nebraska
North Dakota
South Dakota
Wyoming

These past couple of months your JPO has been working with the AMA to ease a couple of the more burdensome aspects of flying our turbine-powered jets. I expect Steven will report on these items later this year as they won't affect anybody until 2008.

Yeoww, it's the height of the flying season for us here in District IX! There are new jets and old jets to be flown; jet rallies to go to, old friends to see and the promise of new friends along the way. I trust everyone throughout the district is having a great time and doing it safely. So far, that has been the case for me.

Recently, I got to thinking about what it takes to enjoy this wonderful hobby or sport of ours since there have been so many advances during the past five years in radios, airframes, and propulsion systems. We all know how far these miniature turbines have come, but have any of you kept track of the electric ducted-fan world? Wow, who would have thought EDF would be where it is now? It's just amazing and I think it's only going to get better.

But there is another side of this hobby we usually take for granted: where we fly our jets. Most of us are very fortunate to have easy access to acceptable flying facilities for most of our "home" flying. But that access for most usually comes with a price to be paid. Pilots either drive long distances to jet rallies or use local facilities that need a lot of sweat equity to remain useful. The latter is the case for my home field (Pikes Peak RC Club (PPRC), here in southern Colorado).

PPRC's flying facility is on a nice chunk of land leased from the state of Colorado. The club paid for all the necessary access road prep, fencing (to keep the range cattle off the runways), and other improvements to include no less than two runways. As almost anybody who belongs to a flying club knows, this stuff doesn't come for free and it takes a recurring commitment to keep it all in great shape. PPRC's situation is no different.

Any paved surface here in Colorado is subject to the rigors of our weather, which includes expansion from heat in the summer months and, in particular, the freeze-thaw cycles of the winter months are even tougher. It becomes a measurable and significant effort to stay on top of maintenance issues. The biggest things which need to be dealt with include cracks and heaving due to ground freeze and thaw cycles. Over the years PPRC has spent many thousands of dollars having this work done by others.

Rather than continue to spend large sums from the club coffers, the past couple of years the PPRC membership has taken on full responsibility for the maintenance of their runways with no more large out-of-pocket expenses paid to paving contractors. This required some adaptive thinking on both (1) restoration techniques and (2) alternate approaches to avoid the capital costs to acquire the tools of the paving trade.

The balance of my report focuses on these items with the hope that the information might benefit or enable other clubs to accomplish the same.

Runway maintenance issues fall into a couple of categories: 1) pavement surface wear, 2) abrasion and 3) cracks (lots of cracks).

Highway engineers will tell you that pavement (asphalted aggregate) needs to be exercised to remain pliant. Okay, well, our model aircraft don't exactly exercise pavement the way cars or trucks would, but we do avoid the surface wear issue. That leaves us with cracks, those doggoned cracks that can become quite long over a period of time - especially after a winter of snow and ice combined with freeze and thaw...repeatedly.

PPRC's new pavement maintenance and repair experts found the key to keeping the runways in top shape is to get after the cracks right away...like first thing in the spring when daytime temperatures are consistently above 60 degrees. To get the work done, they need basic hand tools (shovels, push brooms, wheel barrows, etc.), a load of scarified asphalt aggregate, a way to preheat the pavement, and a source of tar.

District IX Report (cont'd) — Mike Weidner

Planning for the work usually begins with an assessment of how much aggregate is needed to fill cracks, and the larger paving contractors are a good source for this material. Some of you have probably seen the large pieces of equipment that literally grind up a paved road in preparation for new paving. Contractors resell this material at very inexpensive rates if you show up with a pickup truck to haul it away. The PPRC guys have a pile of this stuff on hand located out of the way at the flying site but within easy reach of a wheel barrow and shovel.

The following pictures provided by PPRC club member Rich Gugler illustrate how all this comes together.

In the first photo on the left: on the left is your *Contrails* Editor, Greg Moore, getting just the right amount of aggregate into one of the larger runway cracks. Next to Greg, a club member is pushing excess material into the crack. Some of the cracks ran almost 100 feet in length!

In the second photo, the aggregate is being tamped firmly into place with one of the specialized hand tools purchased by the club. The only thing missing now is the glue to hold it all together.

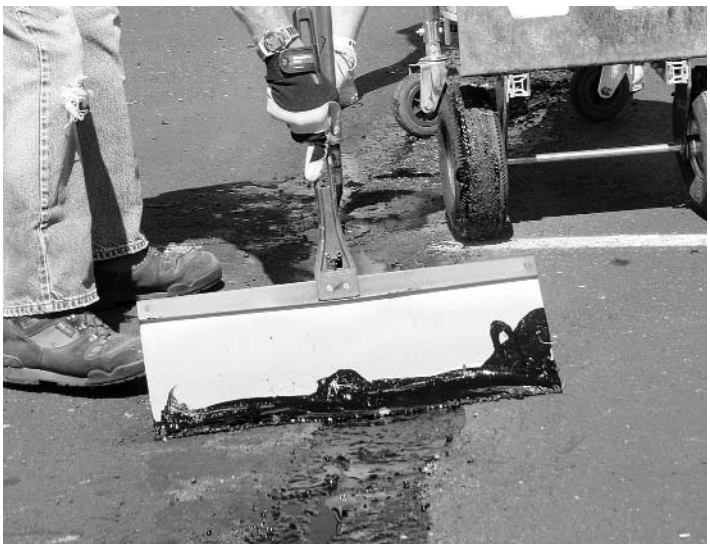
Now, this pavement glue thing is where the club's focus on necessity of invention came through. How to hold the aggregate in place and seal the pavement from future moisture-induced freeze-thaw damage? The large expenses of paying a contractor stemmed from, of course, the labor, but also the equipment and material. Devising a source for hot, liquid tar was the next challenge club members responded to.

The solution bordered on sheer genius. A old water heater, some wheels from a broken shopping cart, uni-strut steel, some galvanized pipe and valves, nuts and bolts, together with some new pneumatic tires yielded the solution shown below. Cha-ching, a source of hot, liquid tar for almost nothing!

After being preheated with a weed torch, the crack gets a liberal dose of melted tar - actually type #3 roofing asphalt which comes in 90# kegs, which is chopped up and fed to the water heater as shown on the next page

District IX Report (cont'd) — Mike Weidner

The tar pot is fed more tar. As work progresses, the applied tar and adjacent area are kept hot with the weed torch. This ensures complete adhesion of the tar to the asphalt so it won't slough off later. It also helps to get the tar wicked down into the crack which prevents moisture seepage through the pavement.



Finally, any excess aggregate and tar are scraped off so there is no lip. (The scraper is actually a painter's tool normally used to prevent over-spray from getting onto adjacent areas.)

The end result is noteworthy: No more cracks for model airplane wheels to get hung up in or have to navigate, and the runway surface is just as smooth as it was when initially rolled several years ago.

The real kicker is the cost savings. The club's runway maintenance costs plummeted from thousands of dollars a year to a few hundred. The club can now stay well ahead of the game in maintaining its runways.

That's all I have for this report. I hope the balance of your summer is filled with memorable flights and great times spent with your fellow jet jocks. Have fun, fly safe.

Mike

Upcoming Jet Events

7th Annual Liberty Bell Jet Rally:
August 2-5, 2007
Lebanon, PA
www.libertybelljetrally.com
CD: Mike Lesher

Montana Jets: August 3-5, 2007

LA Jets: August 4-5, 2007
Apollo XI Field
Encino, CA

T-38 Jet Rally: August 16-18, 2007
Abernathy Airport
(near Lubbock), TX
www.Wingsmas.org
CD: Les Morrow:
lmorrow@hubofthe.net

Minnesota Jet Rally:
August 17-19, 2007

New England Jet Rally:
August 18-19, 2007
Gardner, MA
www.wachusettbarnstormers.com
CD: Bob D'Angelo
Co-CD: Ray Davis
jlyndz@aol.com

Jets over Whidbey:
August 24-26, 2007
Whidbey Island, WA
www.jetsoverwhidbey.com

Heart of Ohio Jet Scramble:
August 23-26, 2007
TORKS Club Field
Columbus, OH
www.torks.com
CD: Terry Nitsch

Greater Southwest Jet Rally: September 6-9, 2007
HOTMAC club field
Waco, TX
www.hotmacrc.org

Route 66 Jets: September 6-9, 2007
Municipal Airport
Litchfield, IL

Maine Jet Rally:
September 7-9, 2007
Sanford Municipal Airport
Sanford, ME
www.icommercesystems.com/
mainejets
CD: Ray Labonte 207-797-5196
rplabonte@aol.com

Princeton Jets: September 13-16
Canada

12th Fresno-Madera Jet Rally:
September 21-23, 2007
www.frcm.org

Spiderman: September 27-30, 2007
Winamac, IN

Woodland/Davis Jet Rally: October 12-14, 2007

Jets Over The Cape:
October 20-21, 2007
Seahawk Park
Cape Coral, FL
www.rseahawks.org
CD: Ed Gamils
egamils@hotmail.com

14th Florida International Jet Rally
November 1-4, 2007
Lake Wales Airport
Lake Wakes, FL
info@floridajetflyers.com
www.floridajetflyers.com
CD: John Burdin
863-648-9933
jwburdin@tampabay.rr.com

19th Arizona Jet Rally:
November 16-18, 2007
Superstition Airpark
Mesa AZ.

LA Jets: November 25, 2007
Apollo XI Field
Encino, CA
www.lajets.org
www.valleyflyers.com
CD: Billy Edwards
323-595-0087

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Patrick Frosts F-4 on a low flyby

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