

Newsletter of the Jet Pilot's Organization

# *Contrails*

Winter 2019

Volume 31, Issue 1



David Reynolds captured the Flex Innovations *FlexJet* on short final at the AZ Jet Rally.

## President's Report

Bob Klenke



As that old saying goes, "It's always something!" This time it is registration markings. As you probably know, originally, the FAA said that UAS (including model aircraft) had to have their FAA registration number marked on them, but that it could be on the inside of a hatch or compartment that could be opened without the use of tools. Apparently, security folks and first responders didn't like having to open up a drone to see the registration number – citing concerns of the drone being "booby-trapped."

While I do wonder how many times this actually occurred or was a concern, I do respect first responders and security people and can easily see where it would be better to be able to see the number without having to disassemble or extensively handle the drone.

In addition to the FAA marking requirements, the "General Safety Practices" of the AMA "Safety Handbook" (as its now called) says that all models should be marked with the owner's name and address or AMA number.

I'm very familiar with and agree with most of the arguments that this FAA registration and marking requirement is an unnecessary step. Things like, "the bad guys won't even register their drones, let alone mark them," or "if my aircraft goes down, I'm always going to go find it and retrieve it myself." These are all true, but we have to keep in mind that this is not about us. This is not about AMA members flying at AMA flying sites or AMA-sanctioned events in accordance with the AMA safety code. We are not the problem. We know that, and I'm convinced that the FAA knows that. However, at this point in time, EVERYTHING that is unmanned and flying in the NAS is a UAS, and UAS are only divided into two categories, recreational and commercial. AMA members are recreational, and while we still enjoy a few exceptions to our operations from other recreational UAS operators (i.e., the "drone guys"), the registration requirement and displaying registration numbers are not among those.

Given all of this, how should we comply? Well, for sport models, it's not as much of an issue, usually you can print it out on a label maker or vinyl cutter and place it somewhere where it's inconspicuous or blends in with the color scheme. Scale models are a bit more of an issue. I read on the AMA blog that there is, or will be, an effort to apply for an exemption for scale models. However, unless you're headed for Top Gun or the Jet World Masters competition, it can be done in such a way as it complies with the rule(s) and yet does not detract from the aesthetics of the model.

Here's what I did. I've gone and looked at both of the marking rules (AMA and FAA) and neither of them specified a location or size for the markings. The spirit of the rule would seem to be that the number(s) should be on a readily visible part of the model and in a readable format and size. The rule actually says that the numbers must be "readily accessible and maintained in a condition that is readable and legible

upon close visual inspection."

I did some experimenting and found the smallest size and font that I could read without my glasses or (much) squinting. Using that font, I made a "placard" style marking that contains both my AMA and FAA numbers. I printed those markings on a laser printer decal sheet in both a black-on-white and white-on-black format.

On a base white aircraft, like my TopRCModel *Cougar*, I used the black-on-white placard. Here is a picture of my *Cougar* with the marking added. Can you see it? Does it detract from the "scale" effect of the model?



Upon "close visual inspection" of the aft end of the fuselage, you will see this.



It's in plain sight and readable without a magnifying glass and with (around) 20/40 uncorrected near vision. It's placed on both sides of the tail. I would argue that this complies with both the letter and the spirit of the requirement.



For an aircraft that is not base white, I use the black-on-white version, which on the decal paper is actually black-on-clear. I put that decal on a piece of silver aluminum duct tape and then affix that to the model in a similar location. Here's the example on my *Euro Sport*. Again, it really doesn't detract from the scale look of the model.

Continued on Page 5

## Vice President's Report

Jim McEwen



Greetings! 2018 was a year of change for me as I relocated from Phoenix to Connecticut to take a new job and to be closer to my family. I will certainly miss the many wonderful and talented jet pilots that it was my pleasure to know during my time out west, and will miss the snowless Phoenix "winters." I look forward to this new chapter of my life and adventures it will bring and I am particularly excited about attending several jet events in this part of the US and nearby Canada.

During the US Thanksgiving holiday, I travelled to Ottawa, Canada and visited the National Aviation Museum. It had been about 20 years since I'd visited, and I was particularly impressed with the Canadair *Tutor* in Snowbirds livery that is hanging inverted in the lobby. This unique presentation combined with the nearby staircase and mezzanine offers an unrestricted view of the jet and its many details not normally visible when sitting on the ground. For anyone doing a detailed scale model of the *Tutor*, a trip to this museum would be time well spent.

View of the *Tutor* from floor level.*Tutor* underside seen from the mezzanine.

Details of the tail are easily visible.

I also had the opportunity to break bread and share an adult beverage with several Ottawa-area jet pilots and enjoyed myself tremendously. Many thanks to all that attended (it was great to see you again) and especially to Dave and Noline Penchuk for hosting me.

January and February brought a couple of my favorite events, Winter Warbirds (Phoenix, AZ) and the Coachella Jet Jam (near Palm Springs, CA). While I was unable to attend this year, I did want to share some photos and to suggest to any modelers in snowbound parts of the country that either event would make a fine winter break next year. Winter Warbirds was attended by 90 pilots who flew a wide variety of scale models including about 20 jets. Coachella had 31 pilots with more than 50 jets. Both events offer excellent facilities with covered pits, plenty of paved runway, and wide open overfly areas under blue skies.



David Shoffner's Trond-built AW F-100 at Winter Warbirds.



Brian O'Meara's F-86 on approach.

Vice President's Report (cont'd)

Jim McEwen



Coachella pilots pose for a group picture.



Neal Smiley (JPO Top Gun trophy winner) with his F-18.



Tiago de Carvalho's JetCat-powered scratch-built CH-53 was nicely detailed and weathered.

Len McIntosh (JPO District II) and I attended the AMA East Expo in Secaucus, NY (just a short drive across the Hudson from "The Big Apple") and I was pleased to see a variety of jets on display and awaiting judging. I was very much impressed with the quality of the models, especially those that were scratch-built, and the ARFs were nicely "tarted-up" with added details such as lighting systems, vortex generators, and 3D printed parts.



Sal Apice's BAE Hawk 100 took 2nd place.



Sal Cavagna's scratch-built Me163.

The AMA East show provided the opportunity to meet with Daren Hudson (AMA District I AVP) who, along with a committee of members from the northeast turbine community, have been working on proposed improvements to the turbine training and waiver process. This effort grew out of situations where jets had crashed while being flown on buddy boxes by instructors. The group's goal is to evaluate the existing and past programs to extract and develop better guidance and "best practices" for turbine instruction and the evaluation of new turbine waiver applicants. The group intends to "beta test" their program at the Plum Island Airport RC Flyers Club during the upcoming season.

The JPO, as the AMA SIG for jets, welcomes input and suggestions from all members of the turbine community and will look forward to the seeing the beta test results.

Although we had snow last night, I'm told that spring is just around the corner and that we will be flying soon...Please take this opportunity to inspect your jet: checking the fuel system, air system, batteries, linkages, tailpipe/heat shields, struts, wheels and brakes to make sure that all is ready for the upcoming flying season.

Regards,

Jim

## District III Report



Ohio  
Pennsylvania  
West Virginia

A few years ago, a new club was formed in Kutztown, PA. President Kerry Sterner and a group of members turned an old farmers field into a well groomed flying field. The Township was well aware of who we were and the types of aircraft that were to be flown.

After long months of hard work, the Berks County Aero Modelers were able to go "wheels up" - but with one important limitation set upon the club: no turbine jets for two years. Membership started off strong, but not being able to fly turbine jets, we saw membership drop.

On August 5, 2018, a few of us were invited to the BCAM field to demonstrate/test fly jets. Ed Martino, Dean Roth and I went. As a very gentle flyer, I flew my *Boomerang XL*. Ed flew his *Avanti*, and Dean flew his *Reaction*.

This was one of the hottest days of the summer with temperatures in the mid-to-upper 90s. Tents were up, generators were powering the fans, and spectators were coming in from the corn fields. Amish families are the club's neighbors, and on the day of the test fly, several Amish families were having their monthly get together.

Ed flew his *Avanti* first, I flew the *Boomer*' next and before long we had 25 or so Amish family members in our pit area asking many questions that we were more than glad to answer. The Elders were wide-eyed as we explained the technology that we have inside the turbine jets as they had never seen anything like this before.

The first few flights we kept the jets in close and then we were asked by the club officers to let them fly, meaning the officers were interested in seeing how far out towards the neighbors property lines the jets will be. All went well, and between the three of us we flew about 10 flights.

After review by the BCAM club officers and the township, jet flying got the green light ... and starts April 1st 2019.

Mark

## Mark McCracken



## President's Report (cont'd)

## Bob Klenke



Again, "close visual inspection" reveals this.

I believe that is this sufficient for compliance with the rule.

Anyway, that's what I did. I highly doubt that it will ever be necessary for identifying my jets, or be questioned, but I'm satisfied that I've complied with the rule and can move on to

work on more pressing issues. BTW, I also have identifying information inside the aircraft, as was sufficient before this recent change.

The flying season is fast approaching. The *Cougar* and the *Euro* were up in the shop getting their yearly maintenance and repairs in preparation. I also have a new *Turbinator 2*, a really nice kit available from Larry Roper at Boomerang RC Jets, ready to go, and hopefully will have my Xtreme Jets 1/9th scale F-4 back in the air. I'm planning on attending First in Flight, Kentucky Jets, Super Jet South, and the Tiger Meet again this year.

I hope to see many of you on the event trail this season! As always, if you have anything jet-related you'd like to discuss, send me an email at [rhklenke@gmail.com](mailto:rhklenke@gmail.com)

Bob

District V Report

Rex Briant



Alabama  
Florida  
Georgia  
Mississippi  
Puerto Rico  
South Carolina  
Tennessee  
US Virgin Islands

Greetings! For this issue, we have a report from Jamie Snipes on the Tiger Meeting event, held last October 24-28 in Scranton, SC. We sponsored to Top Gun Trophy for the first time for this event. It looks like the event is growing too, and they have a very nice field for sure. Also, Craig Gottschang has a How-to article on installing light in our jets.

ENJOY!

Rex

**TIGER MEET 2018**  
By: Jamie Snipes (CD)

The fourth annual Tiger Meet, R/C jet meeting was held at Flying Tigers RC Club in Scranton, SC from October 24th – 28th. Pilots actually began arriving on Tuesday October 23rd to take advantage of this outstanding R/C jet flying venue. This event is focused on providing a relaxed, flyer friendly environment along with good food and great Southern hospitality. There were 38 pilots from 8 different states who enjoyed flying in the cooler temperatures that fall brings to the area, with hundreds of flights logged during the event. Our longest distance travelers to the event were from India, and we appreciate their efforts to join in the fun!



The Flying Tigers RC Club venue features parallel runways with ample parking in between. The main flight line was used for the jet meet due to its 75' x 2700' smooth, level and very jet-friendly surface. The event staff painted safety, taxi, and runway center lines on the grass to assist the pilots' visual orientation and to coordinate ground traffic. The main flight line also boasts 31 parking spots with 30A-power plugs so guests are able to run their RVs or trailers' systems without the need for generator usage. The satellite radio sound system all down the main flight line is a popular amenity and was enjoyed throughout the week.

The secondary flight line was used for smaller foamy-type jets as well as prop aircraft. This flight line is equipped with 14 additional 30A-powered parking spots and is 100' x 1000' in size. Several RVs made use of these parking spots while dropping their trailers on the main flight line. The fire pit proved to be both entertaining and needed on the cool nights that we experienced.



Pilots were able to perform maintenance and overnight aircraft storage in the large onsite hangar, which also served as our Saturday night pilots' dinner and awards location. Dinner was prepared by club members on a large grill and in the clubhouse; which has a full kitchen, free WiFi for all attendees, air conditioning, weather monitoring station, live cameras, and several PCs with a large LED TV display which are used for flight simulators, viewing the day's GoPro videos, and surfing our sponsors' websites for the next big purchase!



The event's AMA sanction was for Friday and Saturday, leaving the remaining days available for maiden flights, LTMA1/2 certifications, turbine-waiver certification flights, etc. Many pilots took advantage of this opportunity, as we had properly credentialed people on-site for sign-offs and the size of the runway/flyover area is ideal for maiden flights.

The pilots' dinner on Saturday night was a feast ... BBQ chicken slow-cooked on the grill, green beans, "real" southern-style macaroni and cheese, corn, rolls, and desserts!, and no one left hungry! Many thanks to Boomerang RC for sponsoring the pilots' dinner this year! There was a free "pilots only" raffle that featured a generous prize selection .... At Flying Tigers you get to pick your prize from what's available! Following the raffle, there was an auction of several higher-valued items to benefit the club.



## District V Report (cont'd)

Rex Briant

Last on the agenda was the awards presentation:

-Christian Luginger from Greenville, SC won the Best Sport Performance Award (sponsored by BVM Jets) for his efforts in flying his beautiful and impressive Elite Aerosports *Havoc*.



-Bob Neal from Chester, VA won the Best Scale Performance Award (sponsored by BVM Jets) for the outstanding scale flight presentations on his 1/3.75 scale C-ARF/Skygate BAE *Hawk*.



-Jason Jordan from Easley, SC won the Pilots' Choice Award (sponsored by BVM Jets) for his many flights on his Ripmax *Excaliber Plus* and Feibao MB-339, along with his willingness to help others throughout the week and his fun-loving personality. This award is voted on and awarded by the registered pilots which makes it quite an honor to win.



It is with the utmost of sadness and bereavement to report that in the weeks following the event Jason passed away suddenly and unexpectedly. It is a fitting tribute that his peers awarded him the Pilots' Choice Award at the event.

Along with being an accomplished R/C jet pilot, Jason was also a USAF veteran, golf instructor/pro, and above all a loving, caring husband and father. He will be greatly missed by the SC Jet Squadron and all who were fortunate enough to know him.

-Mike Gregory from Sumter, SC won the Top Gun Trophy (sponsored by JPO) for his positive attitude and helpfulness throughout the week, pyrotechnics talent, and laughable antics. In addition was his possible "record setting" 1-hour 17-minute continuous flying (with hot refueling) on his TBM *ShokJet*. What a hoot and quite the accomplishment!



Tiger Meet 2018 was a fun, safe event! This is a large venue with many amenities, so it takes a lot of effort to keep it running and in top shape. The event would not have been possible without the efforts of too many people to list individually and weeks of preparation. Let it simply be stated that the Flying Tigers RC Club pulled out all the stops to ensure that fun, fellowship, food ... and FLYING! ... were enjoyed by all in attendance! A huge thanks to everyone that contributed to event preparations!

In addition to simply having fun, this event is a key part of keeping Flying Tigers RC Club funded in order to continue improving the facility, expanding the scope of R/C flying at the club, and attracting new prospective R/C pilots to the hobby. It would be impossible to host an event such as Tiger Meet 2018 without sponsors and so it is with sincere thanks and gratitude that Flying Tigers RC Club would like to thank this year's sponsors:

- |                   |                     |
|-------------------|---------------------|
| - Aeropanda       | - Boomerang RC      |
| - BVM             | - CJ Hobbies        |
| - Dreamworks      | - Horizon Hobby     |
| - Jersey Modeler  | - Jet Central USA   |
| - JPO             | - Kingtech Turbines |
| - Motion RC       | - Nirlybuilt        |
| - Pacific RC Jets | - RTL Fasteners     |

These sponsors went above and beyond expectations to ensure the event was a success and so we ask that everyone support these businesses that invested themselves directly into making Tiger Meet 2018 a huge success.

The 2019 jet event schedule at Flying Tigers RC Club includes the third annual Carolina Jet Fest targeted for April 11-14, 2019 and the fifth annual Tiger Meet 2019 targeted for October 16-20, 2019. These dates are tentative until AMA sanctions are received ... keep an eye out for date confirmations. Please mark your calendars and plan to join us for these events!

For any questions regarding this or future jet meets at Flying Tigers RC Club, please feel free to contact me.

Sincerely,  
 Jamie Snipes, Tiger Meet 2018 CD  
 jamiesnipes@shtc.net  
 864-684-9921 (cell)

## District V Report (cont'd)

Rex Briant

### Sport Jet Lighting Install

by Craig Gottschang

Aircraft lighting on jets has gotten very popular recently and even comes standard with some models, such as the BVM PNP series. With nothing else on my building bench this winter, I decided to try a lighting install on my big *Havoc* sport jet. German company uniLight seems to be one of the most popular light manufacturers these days and Dreamworks is the retailer here in the U.S. They list 209 different uniLight products, over half of which are lights of some sort and variously labeled as strobes, navigation lights, beacons, position lights, spotlights and flashlights. They come in a variety of wattages, sizes, shapes and configurations but with little explanation of applicability to different types of models. Likewise, there is little information on the controller, wiring, connectors and other accessories needed for a complete install. I decided to take the easy route and ordered a complete kit designed for a "Large Jet."

The kit came with one red beacon, one white position light, two landing lights and two combination position/strobe units for the wing tips. Each unit included a clear plastic cover, and all were clearly intended for external surface installation. Also included was a 4-channel controller and 5- or 6-feet of loose two-strand wire. Since most full-scale jets have two red beacons with one on the top and one on the bottom of the fuselage, I attempted to order a second beacon from Dreamworks. Oddly, the tear-dropped shaped unit that came with the kit is not available separately, so I ended up buying a round beacon with the same wattage rating.

Despite the different shapes and configurations of the lights, none really came with provisions for mounting. The best option, it seemed was to simply open a hole in the wing or fuselage sized just large enough to allow the wiring and heat sink portion of the unit to fit inside. I planned to use silicon glue to hold the units in place, figuring I could cut and pull them loose if I ever need to remove them. This methodology proved to work well (see photos), and the only real challenge was fishing the wing tip light wiring through the wing and to the root opening.



**Fuselage red beacon strobe. Cutout just large enough for heat sink and wires.**



**Wingtip nav/strobe unit. Glued in place with black silicone.**



**Installed wingtip unit.**



**Finished wingtip unit. Clear lens held in place with a thin application of clear silicone.**

The landing lights were a different story. I could not figure out a location on the main gear where they would fit and attach conveniently. I eventually decided to put a single unit in the nose gear and attach it with two cable ties as shown in the next photo. (See Photo on top of next page).

Each light unit came with about 1 meter of wiring and a unique connector that attached to the controller. The instructions indicated that same type lights (i.e. landing lights, strobes, position lights, etc.), were to be wired in parallel. I connected the two beacons with a separately purchased uniLight "Y" harness and simply plugged in the nose gear landing light directly to the controller.

## District V Report (cont'd)

Rex Briant



**Nose gear landing light. Secured to strut with cable ties around heat sink.**

The position/strobe units were a little trickier. Sharing a common positive lead, there are three wires to each unit that connect to two, 2-wire outputs on the controller, one for strobes and one for navigation lights. I made up a simple wiring diagram and then soldered up "Y" leads to create two, 3-wire leads to the wings and one, 2-wire lead to the single white position light in the tail. I snipped the uniLight connectors from the ends of the position/strobe units and soldered them to the controller end of the "Y" harness wiring. I used Deans plugs on the other ends to connect with the respective tail and wing lights.

The controller itself is a compact unit with individual outputs for strobe, navigation, beacon and landing lights. It can accept power from 3.6v to 9.6v but each individual light includes a resistor that must be used if the supply voltage is over 8v. The best battery to power the unit is a 7.4v, 2S LiPo battery, which is what I used. With all the lights on, the system used almost 300mah in 10 minutes. I went with a 1300mah battery, figuring I could get a day's worth of flying out of it.

The controller provides a multitude of options for lighting patterns and combinations ranging from all lights OFF to all lights ON. One of 3 menu "schemes" is selected by pressing the SET button on the controller during power up. Each scheme has 16 possible lighting configurations which are selected by adjusting "servo" travel and/or sub-trim for the channel designated to control the lights. A 3-position switch is ideal. I set mine up on the "classic" scheme whereby all lights are OFF with the switch down; strobe, beacon and nav lights ON at mid-position; and all lights ON in the switch up position. The nav and landing lights are steady when on and the beacon and strobe operate with a double flash. Charts in the controller manual provide an indication of the various flash patterns available in the 3 schemes and the approximate travel value associated with each.



**Controller installed on equipment tray. Identification tags placed on unit and attaching plugs for easy reference.**

Everything on my install worked as advertised on the first power up. I did, however, encounter a problem the first time I left the lights on for more than a few minutes. The right wingtip unit abruptly cycled off and stayed off for a couple of minutes before coming back on and then repeating the sequence. It appeared the unit's over-temperature protection feature was activating, and I had no choice but to remove it to investigate the problem. It turned out the large heat-sink attached to the base had become dislodged during the install and was no longer making good contact. I re-glued it in place with CA and tested it before reinstalling. The heat-sink became very warm to the touch, but the unit stayed on without cycling. The lesson learned is that these lights do generate a lot of heat and the heat-sinks supplied with them are definitely functional.



**Left (red) wingtip position light illuminated.**

Overall, I'm very impressed with these lights. They are incredibly bright and clearly visible, even in bright day light. Mounting them internally and fabricating lens covers would have made a cleaner and more scale install but would have required a whole lot more work. And hey, it's a sport jet. I think they look just fine and certainly serve their purpose, even if I have no intention of flying after dark.

Craig

District VI Report

Tim Toutant



Kentucky  
Illinois  
Indiana  
Missouri

Well it has been a long, cold winter here in the Midwest, however I am sure that building your new winter project is coming along nicely. I am happy to report our very own Larry Peterson and Jordan Hall got married. Jordan built this beautiful F-86 and Larry flies it with the greatest of ease. Both of these folks are a pleasure to be around and talk to. Congratulations to this fine couple and many years of enjoyment together. Sad to report that Larry's father passed away and was an avid jet flier and member of the Flying Pilgrims. He will be missed.

On another note, spring is around the corner and I to have a new project on the board. Thanks to Larry Roper of Boomerang Jets, I am in the process of completing the Boomerang *Sprint V2*. I will be installing the KingTech 120 that I received from Dirk at Pacific RC Jets. I'm also installing a smoke system and have added very bright nav lights and strobes from Chris Tucker at Electro-Dynamics here in Michigan. This will be before I get the F-4 going since I need to get stick time with a turbine first. Then I need to get my waiver signed off with the help of Larry Peterson and get to some turbine jet meets. There are a few here in Michigan and I will post them in the next quarterly issue of *Contrails*. Fellas, if you have anything you want submitted, please pass along the information so I may get it in the next issue of *Contrails*. For now, stay warm and hurry up spring!

Gear Down and Locked

Tim



Treasurer's Report

Marty Gurewitz

	Beginning Checking Account Balance 1/1/2019		\$4,130.84
	Beginning PayPal Account Balance 1/1/2019		\$143.82
Income			
	Member Dues for 2019	\$1,927.08	
	Member Dues for 2020	\$100.00	
		Total Income	\$2,027.08
Expenses			
	Web Site Hosting 12 months	\$168.00	
		Total Expenses Paid	\$168.00
	Ending Checking Account Balance		\$5,868.22
	Current Pay Pal Account Balance		\$265.52
	Total Cash On Hand 1/31/2019		\$6,133.74



## District VIII Report

Ron Schwarzkopf

Arkansas  
Louisiana  
New Mexico  
Oklahoma  
Texas

Howdy from District VIII. Building season is now, and flying weather will soon be upon us! I hope you're having a chance to start getting your models ready for the upcoming season, or perhaps you are finishing your latest project! Don't forget the latest ruling from the FAA, whereby we now need to add our FAA SUAS ID number somewhere on the exterior of the model, and not just inside. I don't know about you, but I already feel safer....

### Upcoming events in District VIII

May 9-12: Texas Jets, Northeast TX RC Club, Mt Pleasant TX, Gus Hudson CD

### My Current Build Project – Sukhoi Su-17 *Fitter*

In 2017, I had been trying to decide what direction I wanted to take with my next build. I definitely wanted to do another scratch-build project. There are lots of airplanes out there that need to be modeled! In the end, I decided on building a latter M3/M4 variant of the Su-17 *Fitter* – a Soviet attack aircraft which started appearing in the late 60s. The airplane has numerous color schemes, from bare metal to camouflage. Export versions (known as Su-22) have also flown for other countries, and several still fly for Poland, Libya, and Vietnam. It seems every airplane type has a challenge or two, and this one is no exception, possessing an F-14-like swing wing, a head scratching main landing gear, and lots of control surfaces ... Oh boy!



Full scale *Fitter* on a fly-by.

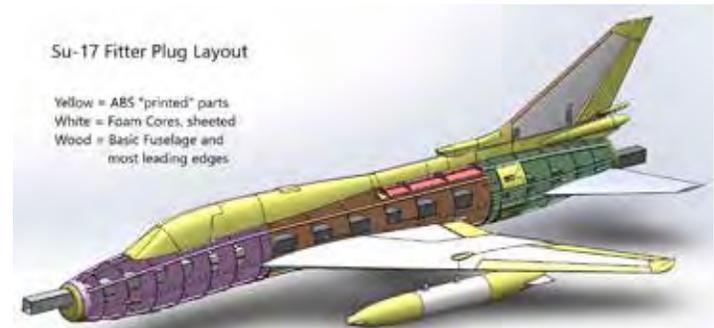
The best place to start is to dig into what is out there on the Internet, as far as documentation. Over the following months I had collected a few nice books, several reasonable looking 3-views, and lots of pics. I normally do a search every couple weeks, and it seems one finds a path to more information that was previously missed. One place to get hardcopy 3-views is from [www.airdoc.biz](http://www.airdoc.biz), which I believe was originally started by Bob Banka. I can't think of an airplane that these folks do not have a drawing of. Plastic models can also be a good source of information. The best documentation is having a sample aircraft accessible to the modeler. The good news is the US Air Force Museum in Dayton, Ohio has one in its collection (Su-22)! The bad news is, the aircraft is considered to be in storage, and I have not been able to get permission to look it over. So the chase for documentation continues....

Next was decision on scale. I usually make a list of the

basic aircraft dimensions into an Excel spreadsheet, and make a table of these dimensions versus scales - 1/5, 1/6, 1/7 - vary them from too small, to ludicrous big! I then compare this to other similar models that are already out there, and that can help steer you into realistic weights and engine sizes. If you want to go big, you need to decide if you want to deal with the hassle of the AMA 55+ pound rules or not (and I did not). In the end, I settled on 1/6 scale.

Next was to lay out the design, either electronically (with design software) or on paper. I have been a Solidworks user for a few years now, and this was the tool I was intending on using. When I did my North American F-107A project (long ago!), I used a program called Turbocad and back then it was closer to being a "2-1/2D" modeling program, but it served its purpose. CAD packages have improved markedly since then, and there are several lower cost packages that appear very capable. My plan was to go the route of building a master shape or plugs, then fabricating "female" molds off of the plugs, then use the female molds to lay up fiberglass parts.

I started building the plug hardware in November 2017. It took about 7 months of building the plug hardware, concurrent with adding details (and changes) to the design (and scouring for more documentation). I have been using a small 3D printer at home for a few years now, so it was drafted into heavy service. These machines are ideal if you have the ability to model the shape you need, then just "grow" it. I'm sure I have several hundreds of hours of build time growing portions of the plug hardware. If I ever do this again, I'm gonna need a bigger 3D printer!



Screen shot of the Computer layout of plug.

The plug was assembled using plywood parts I had Bob Leserve from [www.laser-design-services.com](http://www.laser-design-services.com) cut for me, by supplying him 2D files of bulkhead shapes, etc. The parts that were grown with my printer tended to be parts that had a lot of contour, or where it was necessary to maintain symmetry. Other materials used for the plug include foam cores for some of the flying surfaces ([www.flyingfoam.com](http://www.flyingfoam.com) and [www.eurekaaircraft.com](http://www.eurekaaircraft.com)), a square tube "spine" to build the fuselage around (handy to be able to clock the fuselage every 90-degrees while working on the surface), smaller foam blocks for more fuselage contour, and a bunch of fiberglass cloth and epoxy resin. Regarding surface detail on the plug, a large amount of panel lines have been put into the surface (using 1/32" panel line tape, applying primer over the surface, then removing the tape), but I did not add fastener detail. It is possible I can make these changes after I get myself next to the full-scale aircraft with camera and measuring stick, but I did not want to put too much detail into the surface with the chance it may be incorrect. This is where having access to the USAF Museum would have been beneficial.

The plug parts were completed in July 2018. There may likely be more little parts to make, but we'll leave this for now, and continue with the build in the next *Contrails* issue.



Final plug parts as of February, 2019.

**And now, ANOTHER Build Project – Paul Bloxham’s Blackburn *Buccaneer*.**

If you're not burned out yet reading about long builds, Paul Bloxham just lives a few miles down the highway from me, and has decided to scratch-build an English Blackburn *Buccaneer*! Little did I know at the time, but we started our projects around the same time frame. The *Buccaneer* was designed as a carrier-based attack aircraft, which flew from the early 60s up to 1994. And of course this aircraft has its challenges too, with a very prominent clamshell speedbrake in the back, and, yes, the landing gear.... But it also has a neat array of color schemes, from camo to pink (or maybe we should call that a shade of desert tan?). Beat that!

Paul picked this subject mostly because it is not currently available as a kit. He settled on a scale of 1/7, and began experimenting first with fiberglass resins, cloths, coatings, and coming up with a process to build a close-to-ready horizontal tail - from the plug stage to the end product. This was to build confidence that he could complete the full airframe. Having success with the horizontal tail, he eventually acquired a laser cutter, a Prusa printer, learned how to use Rhino cad, and got busy building plug parts.

Paul has learned some neat techniques along the way to add surface detail to the plug parts, and is doing a great job. I'll add a few pics here for *Contrails*, with permission from Paul. If you are more interested in his build, he has a quite extensive thread in the Jets section of [www.RCUniverse.com](http://www.RCUniverse.com). There is no way I could cover 10% of it in this column!



That's all I got for now. Back to model airplane building!... Happy Building and Flying!

Ron



*Buccaneer* Horizontal Tail plug parts.



*Buccaneer* plug getting some sun.



Detailed plug parts ready for molding.

## District X Report

David Reynolds



Arizona  
California  
Guam  
Hawaii  
Nevada  
Utah

For your visual enjoyment I have some photos of the Arizona Jet Rally. This is where I would usually talk about the event, however, I will not be doing that.

Instead, I will be writing about a comment I overheard that I found rather bothersome. As a pilot was packing up early at the event I heard him say, "I'm outa here. I can't stand all this foam."

This comment perfectly illustrates what I see as a potentially segment killing, yet sadly growing, attitude in the model jet community. That attitude can be summed up with one word – elitism.

For the record, there is nothing wrong with being elite. To be elite is to be the best, something that is worked for and hard to do. To be elitist is to bag on everyone around you for the incredible sin of not being you. Being elitist is what has the potential to destroy a hobby. Elitist in the jet community is manifested mostly in the EDF vs. turbine arguments. Even more focused is the banning of EDFs at jet rallies.

Where is the cut off?

Some will tell you foam is the problem. OK, but there are some foam turbine-powered jets on the market and in fact, I have seen some foam EDFs that have been converted to turbine-power. Do we ban them also?

Size! They are too small. Again, I have seen some small turbines and EDFs out there that keep up with "real" jets just fine.

Well, the speed differential is too great some say. I have seen people that run this line fly with slower-scale turbines without a complaint. An even more extreme example of this speed differential is warbird rallies. Also, lots of turbine pilots like to show off how slow their jets can go with long, slow, dirty passes. Show up with a trainer turbine that tops out at 110mph and lands at 20 and nobody bats an eye. Bring a foam EDF with the same flight envelope and some will treat you like you have the plague. To further illustrate how selective the speed argument is, at the AZ Jet Rally an old Byron-powered *Regal Eagle* was flown to the cheers of all. It was one of the slowest jets there. Even if it was a huge issue, at most events pilots will self-regulate and not fly with the NASCAR of the sky types.

Those foam guys clog up the pits with too damn many airplanes. Fine. Limit pilots to how many airplanes they can have in the pits at any one time. Problem solved.

What it really boils down to is a flight-line rant that I witnessed recently. The opening salvo on why a person shouldn't fly was not speed. It wasn't material, nor was it propulsion. The objection voiced first was flying something "cheap" with the expensive jets.

This leads directly to the problem with this elitism. It will destroy the hobby.

Take a look around at the next jet rally you attend and ask yourself a question – How old are these people? I tend to be on the younger end of the spectrum and I am too old to trust.

A "well established" pilot has more disposable income for his or her hobby. Case in point: at the last Tucson Jet Rally a pilot mentioned he lost over \$20,000 that weekend. He crashed two airplanes.

How many younger people can afford that? They can't. That is why they show up at a jet rally with a lower cost, less sexy option.

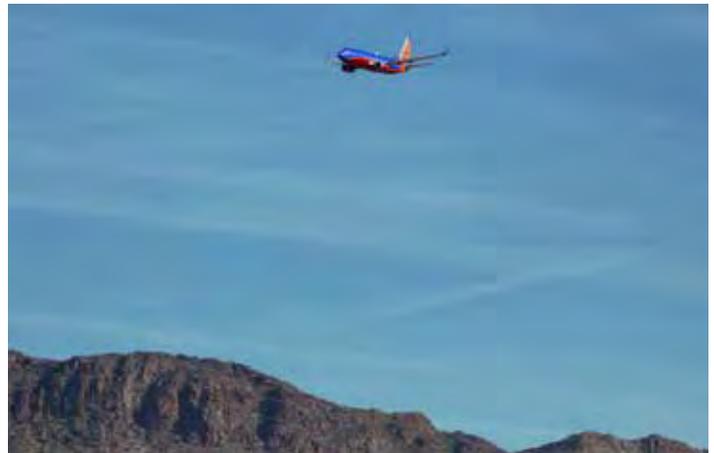
How many of those people are going to come back when they are ignored in the pits and yelled at on the flight line?

Years ago, someone commented to me that they went to jet rallies because, unlike the segment of the hobby they were in previously, everybody at jet rallies was welcoming. We are in danger of losing that vibe. If we allow this elitism to continue, we will go the way of Harley Davidson: Overpriced and unable to attract anybody other than a dying demographic.

Until next time, keep the low passes where they belong. And welcome someone new no matter what they are flying.

Dave





## Officers and District Representatives

### PRESIDENT

Bob Klenke  
11620 Parsons Walk Ct.  
Glen Allen, VA 23059  
804-901-2666 (C)  
rhklenke@gmail.com

### VICE PRESIDENT

Jim McEwen  
201 Main St. Apt: D2  
Farmington, CT 06032  
602-790-1695  
ubereng1@gmail.com

### SECRETARY/TREASURER

Marty Gurewitz  
40 Cragmere Oval  
New City, NY, 10956  
(845) 638-0239  
onshelbygt500@verizon.net

### CONTRAILS EDITOR

Greg Moore  
790 Royal Crown Lane  
Colorado Springs, CO 80906  
719-576-3781  
jetflyer@comcast.net.

### DISTRICT I

Vacant

### DISTRICT II

Len McIntosh  
51 Jesse Street  
Freeport, NY 11520  
516-623-1780 (H)  
516-551-1819 (C)  
mcintoshl@verizon.net

### DISTRICT III

Mark McCracken  
180 Blackman Street  
Wilkes-Barre, PA 18702  
570-825-0713 (H)  
jpnepa@hotmail.com

### DISTRICT IV

Scott Strimple  
12417 Summer Creek Ct  
Glen Allen VA 23059-711  
(804) 641-7278 (C)  
gadjetman@earthlink.net

### DISTRICT V

Rex Briant  
225 Chadwyck Lane  
Canton, GA 30115  
678-327-3530 (C)  
bxbear44@gmail.com

### DISTRICT VI

Vacant

### District VII

Tim Toutant  
22000 Avalon St  
Saint Clair Shores, MI 48080  
520-873-7709  
tcoltpilot56@yahoo.com

### District VIII

Ron Schwarzkopf  
10436 Rancho Viejo Way  
Crowley, TX 76036  
682-208-6455 (C)  
ronschwarzkopf@sbcglobal.net

### DISTRICT IX.

Vacant

### DISTRICT X

David Reynolds  
6234 E. 31st St.  
Tucson, AZ 85711  
520-790-1086  
dsr100@dakotacom.net

### DISTRICT XI

Vacant

### CANADA

Jeff Daly  
457 Landswood Way  
Stittsville, Ont.  
K2SOA4  
Canada  
613-836-7330  
dalyfamily4@bell.net

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A view from the covered pit area at The Arizona Jet Rally in Mesa.