

Flight Lines

The Monthly Newsletter of the Spirits of St. Louis R/C Flying Club

"Celebrating 50+ Years - Established in 1965"

January, 2017

FROM THE PRESIDENT:

Happy New Year! I hope everyone had a wonderfully safe Holiday Season filled with blessings from family and friends. Hopefully Santa Claus delivered you something to build this winter as well!

Although the flying season is considered dormant, there were some pretty amazing flying days throughout December. I was able to put about 30 flights on my new Extreme Flight MXS-EXP and I have reviewed it this month, so check it out! Unfortunately a prior engagement involving some Cub Scouts and hiking in the mud didn't allow me to join in on the Thrill of the Chill event on New Years day but I understand it was a huge success! Club friend and blogger, Carmelo Turdo was there and posted an article on his blog so check that link out in this edition.

Make sure you put the indoor events on your calendar and remember to invite some kiddos to bring that new drone to fly. AMA memberships are free for all kids through the age of 19 and information can be found at the AMA website [HERE](#):

We are still having some flyers at the field being a little lax at putting their membership cards on the frequency board. Remember to post your card before you fly and remove it when done! Flight Safety continues to be our priority. Remember, communication allows us to be flexible. Talk to your fellow flyers in the pits and on the flight-line and we will always be safe. Be observant and help your fellow flyers when mishaps occur. You might find that they will return the favor when you need it! I'll

NEXT MEETING:

Join us Wednesday, January 11th, 2017 at the Merriweather Clubhouse (238 Pond Hollow Drive, St. Charles MO) See Attached Map!

Tentative Agenda:

- December Meeting Minutes Review
- Flight Safety Moment
- Treasurers Report
- Field Committee Report
- Membership Chair Update
- Voice of Membership Survey Results
- **Membership Survey Drawing!**
- 2017 Event Proposals
- Technical Presentations: A "Glove Free" method of keeping those fingers warm at the field this winter! The new "Batt Safe" will be there for review.
- Adjourn to go build!

also be bringing one of the new "Batt Safe" Lipo charging boxes (mentioned in last months edition) to the meeting so if thats something your interested in, you can see the full scale version there!

Remember to renew your Spirits and AMA membership today.



Happy Flying!
Ralph Grant (2017 Spirits President)

2017 MEMBERSHIP SURVEY:

By Ralph Grant, President

One of my goals as president for 2017 was to better understand the membership. I have a sincere interest in your opinions, preferences, and recommendations because I believe that my role is to help coax the club into the organization that “YOU” want. My opinion only counts as 0.6% just like your. However, I want to make sure that my role on the board of directors is to serve you.

The Results are in:

As of my typing, there are currently 158 members on the roster and 31 of you (roughly 20%) chose to provide your opinion via a survey! I hoped for a larger sample of the population but I’ll take what I can get!

Here are the average results for each question on a scale of 1-10 with 10 being awesome!

Question:	Average (Low/Hi)
Overall Club Member Satisfaction?	9 (4/10)
Are you getting your moneys worth?	9 (4/10)
Ranking of Field Quality/Maintenance?	9 (7/10)
Ranking of Flight Safety?	8 (2/10)
Number of Events? (1:Too Many/10:More!)	6 (1/10)
Quality of the current club events?	7 (1/10)
Quality of the monthly meetings?	7 (2/10)
Average of all scores:	7.7

The portion of the survey I was most interested in was the type of events that you preferred. Voters could vote for as many of 20 Activities

they were interested in.

Here are the results from that:

Activity	Votes	Activity	Votes
Fun-Fly	20	Heli Fly-In	8
Warbird Fly-In	16	Pylon Racing	8
Build Techniques	13	Sailplane Fly-In	7
BBQ/Bonfire	12	Jet Fly-In	6
In-Door Fly-In	12	Night Fly	6
Pattern Aerobatics	9	Scale Comp	6
Flight Training	8	Youth Activities	6

The Analysis:

As you can see, the overall satisfaction of 20% of the membership is pretty good at 7.7 but

some of the spread (Low/Hi) shows a large pretty wide range. I think everyone would agree that if we have people that think safety is a 2 we have work to do.

Events:

The top 2 events didn't surprise me in that everyone loves a good fun-fly and Warbirds

are always a hit. The surprising event for me was the "Build Techniques" interest at #3. That is the one that I want to explore at one of the next meetings to see how we can have fun there.

So what are we going to do about it?:

Lets focus on the top Five. We already have some in-door events scheduled so:

We are going to focus on having one heck of a Fun-Fly event this summer, Warbird Event, and we are going to figure out how to do some kind of build event.

SURVEY DRAWING!
 For those of you who turned in a survey, we will draw names from a hat on 1/11/2017 for a \$100 gift certificate. **If you are present, Bill Lindewirth has a added a special prize that he says you DO NOT WANT TO MISS! I'll see you at the meeting!**

2017 MEMBERSHIP RENEWAL:

By Ralph Doyle, Membership Chairman

Don't forget that as of December 31st, if you have not rejoined the AMA and the Spirits you may not fly at the field.



Check your membership card. If the card is not white you are no longer a member of the Spirits and you can throw away your old 2016 card.

Therefore, it behooves you to quit procrastinating and write a check to the club for your dues and send it along with a copy of your 2017 AMA card and club application.

So please, check your AMA cards to verify the expiration date. As of my typing this, we currently have 158 members and 81 of you have renewed. If you are one of the 81, Thank you! If you are one of the 77 procrastinators, please return your completed membership applications as quickly as possible! You don't want to miss out on a great flying opportunity if we have a warm winter day!

SAFETY COMMITTEE REMINDER:

By Ralph Grant, President

If you were present for the last couple of meetings, attended a board meeting, or even been part of a few conversations at the field, the subject of club insurance has come up. Recent vandalism damage to the field, talk about LiPo fires, Director and Officer liability, and a litany of other “What if” scenarios have caused us to investigate our insurance coverages and risk management at the club. Long time Spirits Member, Past Officer / Board Member, Safety Committee member, and retired CFO, Steve Cross has years of risk management experience and has graciously volunteered his time to take point on putting together recommendations for our insurance

needs. Our hope is to get this resolved quickly and inexpensively so that the club is protected beyond what the AMA covers. Be on the lookout for more information and an agenda item at a future meeting. If you have any questions, feel free to direct them to me or Steve and we'll update you on the subject. Once

we get the insurance issue cleared up we will re-engage in the update /modernization of the current Spirits Safety Manual which will be complete prior to the flying season!

SAFETY RULE REFRESH:

Did you know?

Guest Pilots are encouraged with a Club Member present but need an AMA membership and must join the club after four(4) visits. It is the responsibility of the host member to make them aware of our safety rules.



GRINER AND SCHMITZ (GUESTS):

By Ralph Grant, President

Last month I was contacted by Mr. Austin Welch of [Griner and Schmitz](#), a Kansas City based surveying equipment and engineering service provider, requesting the use of our field to do a test flight of their Aerial Mapping / Surveying System for a prospective St. Louis client.



On the 21st of December I met Austin, some of his colleagues, and his customers at the field to allow him the use of the field. Austin presented me with a check for \$100 dollars made out to the Spirits as a thank you for our hospitality. The Griner and Schmitz team proceeded to conduct a traditional survey of the site using modern ground based equipment, which took approximately an hour. They followed with the exact same survey using modern aerial drone technology during a flight that lasted less than 5 minutes. The 60megapixel images that the drone captured will then be uploaded into their [Pix4D Software](#) and a complete topographical map and survey will be generated. An

awesome display of what our "Hobby" can do when commercialized. I commended Austin and his team for their responsible use of

drone technology by conducting their demonstration at an AMA field, having an AMA membership, and obtaining all of the required certifications and training for commercial use of a drone. An added side benefit to partnering with Austin and Griner and Schmitz is that he will present us with an electronic full aerial map and survey of the field in the near future.

SPIRITS EVENTS:

The following Spirits events are confirmed so mark your calendars!

- Indoor Fly-In #1 - Jan 14, 2017
- Indoor Fly-In #2 - Feb 18, 2017
- Indoor Fly-In #3 - March 18,



ODE TO THE TAIL-DRAGGER:

By Author Unknown

*Tail Dragger I hate your guts
I have the license, ratings and such,
But to make you go straight is driving me nuts.
With hours of teaching and controls in my clutch
It takes a little rudder — easy, that's too much!*

*You see, I learned to fly in a tricycle gear
With one up front and two in the rear.
She was sleek and clean and easy to steer
But this miserable thing with tires and struts
Takes a little rudder — easy, that's too much!*

*It demands your attention on the takeoff roll,
Or it heads towards the boonies as you pour on
the coal
Gotta hang loose, don't over control!*



*This wicked little plane is just too much
With a lot of zigzagging and words obscene
I think I've mastered this slippery machine.
It's not too bad if you have the touch
Just a little rudder — easy, that's too much!*

*I relax for a second
And from the corner of my eye
I suddenly realize, with a gasp and a cry
That's my own tail that's going by!
You ground looping wreck, I hate your guts
Give a little rudder —
Oh no, **THAT'S TOO MUCH!***

MONTHLY MEETING MINUTES:

By Greg Bowles, Secretary

President, Ralph Grant called the meeting to order at 7:04 pm. This month's meeting was again held at the Merriweather Park Club House.

Attendance:

23 members were in attendance.

New Member(s) in Attendance:

No new members present.

Secretary's Report:

Greg Bowles, Secretary

A motion was made, seconded and voted to accept the November meeting minutes as published in the 2016 December Flight Lines.

Treasurer's Report:

Bill Lindewirth, Treasurer

November 2016 we had an income of \$3255.00 (membership renewals) and expenses of \$1907.50. A motion was made, seconded and a vote taken to accept the November Treasurer's Report as presented.

Field Committee Chairman's Report:

Paul Geders, Field Committee Chairman

Nothing to report, except an approximately 25' long part of a 4" wide heat applied repair down the centerline on the east end of the runway was peeled off by vandals earlier this fall. The exposed crack will be repaired when the weather is warmer.

Safety Committee Chairman's Report:

Bob Allen, Safety Committee Chairman

1. Membership Cards must be on the Frequency Board if you are flying. We have had instances of non-members flying at the field so it is everyone's responsibility to be aware of the pilots flying at the field and if they are club members.
2. Ralph Grant published an excellent guide to charging Li-Po batteries in the December Flight Lines newsletter, which contains some valuable information; please read. Ralph also brought in some Flite Test Li-Po charging bags that were free to those that wanted one. A discussion ensued on the safest container to charge your batteries at home and at the field. Ralph Grant, Mark Been and

Bob Allan are looking into this subject and will have more information in the following meetings.

3. Bill Lindewirth brought up the question: Does the AMA or our club insurance cover damage done to property resulting from Li-Po battery fires at the field?
4. The Safety Committee is still reviewing the club's Safety Rules, which should be available this spring.

Membership Chairman's Report:

Ralph Doyle, Membership Chairman

Our total membership for 2016 was 153 members. Presently for 2017, we have 52 members.

Reminder: Because AMA cards expire on the date you apply, and not at the end of the year, your club membership card will have the expiration date in "red", if your AMA membership does not expire on December 31st.

Contest/Event Committee Chairman's Report

(Position Open):

A "Member Survey" was emailed, attached to November's newsletter and are available at the field. Your club officers would like to know how the club is doing, and if you have any suggestions or complaints. Please fill one out and give it to a Club Officer, or place the survey back in the original box at the field. Your survey enters you for a \$100 Mark Twain Hobby gift certificate to be drawn at the January 11th meeting.

Of 19 surveys returned, preliminary results show interest in: Fun Fly, Warbird Evenings, Build Techniques, Indoor Fly-In and Pattern/Aerobatic Flying. A complete review and analysis will be presented to the club members after all the surveys are received.

Upcoming Spirits Events:

"Thrill of the Chill" – Sunday, January 1st, 2017, 9:00am till "we're too frozen to fly!"

"Winter Indoor Fly-In (#1)" - Saturday, January 14th, 11:00am-3:00pm; \$5 Pilot Fee; Hope Lutheran Church, 1975 South Old Hwy 94, St. Charles, MO. (Hwy 94 and Pralle Lane diagonal from White Castle).

"Winter Indoor Fly-In (#2)" - Saturday, February 18th, 11:00am-3:00pm; \$5 Pilot Fee; Hope Lutheran Church, 1975 South Old Hwy 94, St. Charles, MO.

"Winter Indoor Fly-In (#3)" - Saturday, March 18th,

11:00am-3:00pm; \$5 Pilot Fee; Hope Lutheran Church, 1975 South Old Hwy 94, St. Charles, MO.

Upcoming Local Events:

No upcoming local events.

Old Business:

"Open", Contest/Event Chairman

"Open", Pilot Orientation Chairman

New Business:

No new business.

Technical Presentations:

Russ Watts decided to leave the hobby after many years this summer, and stated that his flight box (with all the essential goodies), battery charger, covering tools, and a Sig Rascal C kit, to be given to a club member new to the hobby, who expressed an interest in nitro aircraft and scratch building.

Dave Bush has been learning to fly from Bob Gizzie this fall, and met all those criteria. So Dave gratefully accepted Russ' gift, plus in addition a completed Sig Rascal C (RX-R) and an extra wing kit. Good luck Dan in your flying and hope to see your completed Rascal in the spring.

Bob Schmidt also donated a TechOne Hobby Park-1100 3D EPP aircraft that was raffled at tonight's meeting. Congratulations to the raffle winner, Bob Welter. We hope to see you flying the Park-1100 at the January 14th Indoor Fly-In.

Presentation #1: Dave Brown brought in his latest project, a Motion RC Freewing F-15C in the "Gulf Spirit" scheme (high performance PnP version). The aircraft contains a HET 4068-1680kV inrunner motor connected to a 12 blade factory balanced EDF with a metal housing. Hobbywing 130 Amp ESC with 8A UBEC; 6s 5000 mAh 50c battery. Electric retracts are scale, shock absorbing with sequenced gear doors. It also includes bright LED navigation lights and metal gear servos. A 7-channel radio minimum is required. [37.9" wingspan; 57.1" length; 108.64 oz. flying weight; \$500] Dave states it was easy to assemble, with the carbon fiber wing spars. It is a beautifully built scale jet, and we look forward to see it fly at the field. It should be as fast as his F-14 Tomcat.



Presentation #2: Ralph Grant's newest aircraft is a Phoenix Model F4U Corsair, 1:8 scale ARF from Tower Hobbies. This is a balsa-constructed, Oracover covered aircraft, which can be powered by either electric or nitro. [58.5" wingspan; 44.5" length; 3000-3300 gr. flying weight; \$200 airframe only] Ralph's modifications included Cali-Graphic decals, a dummy Wasp engine from Williams Brothers and a pilot that turns his head with the rudder from Warbird Pilots.



When deciding motor size, Ralph used ECalc (see December's Flight Lines) to match the 80 size electric motor to the scale propeller, and powered it with a 6s 5000mAh battery. The Corsair turned out great and hopefully we will see it fly this spring. It is awful pretty!

The meeting adjourned at 8:16pm.

Next Spirits' Meeting is Wednesday, January 11th, 7:00-9:00pm at Merriweather Park subdivision clubhouse. A map and directions are posted on the website, and are also available at the field.

PLEASE NOTE: There are chains across the parking lot entrances. They presently have orange streamer notating where they are, but they are still hard to see. Only the first entrance chain is unlockable, so please beware!



ARTICLE & PHOTO SUBMISSIONS:

By Ralph Grant, President / Newsletter Editor

If you have an idea for an article or technical piece, please contact any of the officers and we will do our best to provide it. If you would like to submit an article, all you need to do is provide the text via email and a few pictures, we'll do the rest to make it "Pretty" for you. I know there is a ton of knowledge out there so please, share it with the club members.

Don't forget to submit your photo's to the club as well! Just email them to ralph@thegrantz.com and I'll include them in the newsletter.



THE EXTREME FLIGHT MXS

Text and Photography By Ralph Grant

INTRODUCTION:

Many of you have seen the Yellow Extreme Flight Laser-EXP that I purchased from Mark Trent earlier this year during his "Gettin' Outta' Da' Hobby Sale". That plane flies so amazing that I decided that I needed another, just in case it died a horrible death. If there is one thing I have learned in this hobby, a guy always needs a backup.



If your not familiar with Extreme Flight, it behooves you to make a trip to their website at www.extremeflightrc.com but do so only at dire risk of your American Express balance and/or potential damage to your marital relationship. Don't attack me at the field, you have been warned.

That being said, you can't have a hanger full of identical planes so I opted for the MXS in the Heavy Metal scheme instead of another Laser. The plane is quite confused looking with its Aces High Logo, Shark Mouth, Invasion Stripes, Side Force Generators, Ginormous Control Surfaces, etc. Its a warbird, no its an aerobat, no its a pattern plane, no its just plain freakin' awesome! You can't judge a book by its cover but in this instance I'm not going to lie, I totally selected the plane based on its looks. Sue me.

I did have a few other criteria that came into play however. I wanted 6S electric power, the fuse had to be less than 60ish" long to fit in the cab of the truck, and it had to be "not foam".

I'm starting to get to the point where I'm returning to my roots of balsa planes and their fantastic performance and finish durability.

SPECIFICATIONS:

Here are the details of the setup I configured.

Airplane: MXS-EXP Baby Metal Scheme

Wingspan: 64" with racing tips and SFG's

Length: 58.5"

Wing Area: 760in²

Weight: 5.2lbs

Motor: Torque 4016T/500kv Mk II

ESC: Airboss 80A

ESC/Motor Batteries: Pulse 6S 3700mah 45C

Propeller: XOAR 16x7 (Black)

Servos: MKS HV9767's mini-high voltage

Receiver: Futaba R7018SB (More on this later)

Gyro: Bavarian Demon Cortex Pro

Receiver Batt(s): (2) Admiral 2S - 1000mah

THE EXTREME FLIGHT MXS REVIEW (CONTINUED)

One of the things about non-foam planes that really appeals to me is that I get to actually pick components that are a little higher quality than the \$6.00 servos from China! Now that's probably not a very fair statement because the four servos here cost more than the airframe but my point is that I currently have 4 planes out of commission with roasted el-cheapo servos and no energy to repair. Now is not the time to skimp on servos!

INSTRUCTIONS, QUALITY, COVERING:

The quality of the construction of this plane really is top notch and it should be for \$309.00. These airframes are designed for high G, high energy, aerobatics and are extremely light and



strong. I recommend watching the build video's on the website because they give insight and tips that the manual misses. In addition, the manual photography is pretty dark. Extreme Flight could stand to invest in a product photography setup so that their images actually have value in the manual. However, anyone building this advanced aerobatic airplane probably doesn't need the instructions for anything other than where to put the starting CG, so it wasn't really a problem. I went over every glue joint with thin CA and cleaned any of the mess off the covering with debonder. I then went over the entire

airframe with my iron. The Ultracote covering is essentially printed with the weathering, graphics, and panel lines on it prior to installation. It looks pretty amazing. However,



be real careful with the heat settings because the print peels long before the film is impacted. I had to patch several places with Monokote where I burned off the printed graphics. I think the heat gun is probably a little easier on the surface than the iron.

HINGING/SERVO TIPS:

The control surfaces on this baby deflect by almost 90°. That means you have to CA your hinges at full deflection or they will bind. The MKS servos can pull 2.6 amps each at 8.4 volts so you don't want a lot of resistance. The 85 mph air hitting the surface at full throw is going to cause a huge amp pull on these high torque servos so you want them to not have a lot of resistance from a bad hinge joint. When I setup these planes I always use a Servo Current Meter. The one I use is Pauly's R/C Products Servo Matcher. You can get it from Amazon for about \$65 at the following [LINK](#):

As mentioned, you want great servos on this thing. The MKS Servos are crazy high speed (.070 sec), high torque (130oz/in), and work at high voltage (8.4v unregulated). They are chrome and titanium metal gear construction

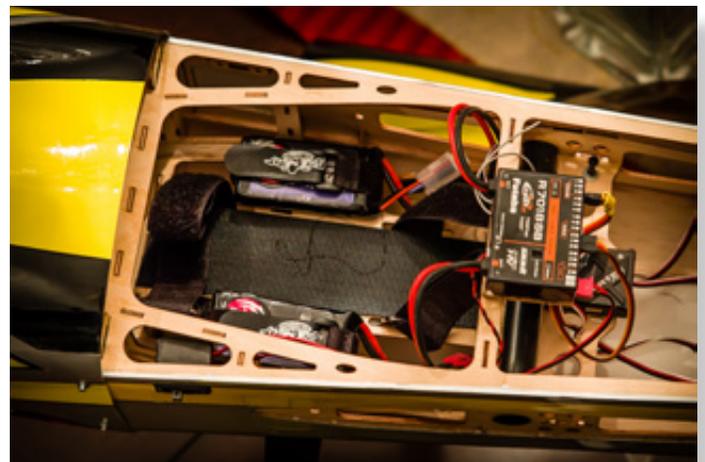
THE EXTREME FLIGHT MXS REVIEW (CONTINUED) - BY RALPH GRANT

and have brushless motors. Unfortunately they are about \$90 each but so far are worth every penny.

RECEIVER/POWER TIPS:

I decided to not use the BEC on the speed controller on this bird. Why? Simply because I wanted to have some redundancy. I lost a plane a few years back when the BEC roasted and the receiver failsafed. I lost another aerobat more recently when the battery that was powering the receiver (because I didn't want the BEC) came loose and was pulled free from its plug. That plane failsafed and burned in too. I have over \$1200 in this plane and wanted two receiver batteries, uber-mounted for 20G's, and a redundant power system so that if a battery failed, I would still have signal. I was considering a Powerbox or Smart-Fly system but those things are \$200-300 for just the power system. I wanted to protect the plane but not spend a fortune. That's where the Futaba R7018SB Receiver came in at \$220. Why

equipped with a cool remote switch to power it on. To me it is the ultimate receiver. To Futaba it was a complete failure and they discontinued it almost on the day it was released. Why? Because giant scale and jet pilots apparently failed to read the manual. Although this receiver has deans connections that look like it can support 100amps and enough channels to support 18 servos, the manual says the bus cannot support more than 6 high torque high voltage servos. So, I suspect there were some crazy expensive planes with a dozen channels that burned in and Futaba took some heat.



Literally 10 minutes after I ordered it from Tower, it was discontinued and you cannot get one. EVER! You can see my installation in the image above with the two batteries installed on each side of the fuse next to where the main battery is installed.

BAVARIAN DEMON CORTEX PRO GYRO:

I have been a big fan of flight stabilizers, specifically the [EagleTree Guardian](#) which can be had for \$64 on Amazon. These systems make your smaller planes fly like a bigger one. My first experience with the [Bavarian Demon Cortex Pro](#) was in the Laser. I installed it based on Mark Trent's recommendation. Wow is all I can say. As awesome as the Guardian is, the Bavarian Demon Cortex Pro is lights out better. However in fairness it should be because it is



the heck do you need 18 channels in a 5 channel plane (Elevator, Rudder, Aileron, Throttle, Gyro Mode) you ask? Its for its built in power redundancy

feature. This receiver has two deans power inputs as you can see in the picture above and it pulls power from two batteries with priority from the battery with the highest voltage. I burn about 7% from the two 1000mah Admiral batteries each flight so I don't have to charge them or replace them for about 10 flights before they are at 30%. It has S-Bus, S-Bus2, external voltage telemetry, FASSTest, and is

THE EXTREME FLIGHT MXS REVIEW (CONTINUED) - BY RALPH GRANT

almost 6 times the price. I'll do a separate future article on a comparison of several stabilizers that I have tried and how I approach setting them up. I have flown this plane in 15mph crosswinds with minimal concern and the only reason I am willing is because of the Cortex Pro. You set it up with a low gain (Normal Flight Mode) setting and a high gain (3D) flight mode and be done with it. It makes the plane fly like it is a 120" wingspan. Rock steady and super stable. I'm not much of a hover and harrier kind of guy so its on Normal Flight mode almost always. That being said, beware of accidentally putting it in 3D for normal flight. At high speed, it makes the plane feel like it has an expo of about 250!

TORQUE MOTOR AND AIRBOSS ESC:

This power system is the one recommended by Extreme flight and the 4016T MKII outrunner doesn't disappoint. It turns the 16x7 Xoar prop right about 12,600 rpm at liftoff and drops to about 10,500 rpm at 30% battery capacity. I know this because of the SBS-01RB rpm sensor

I put in the plane as an experiment for \$35 from Tower Hobbies. The Torque powers the MXS at about 85mph and has UNLIMITED VERTICAL. I highly recommend doing a factory reset of

the ESC upon calibration and if your not using the BEC, remember to pull the hot wire from



the center of the servo plug. Mine pulls about 64 amps at full power vertical according to the Futaba SBS-01C current sensor. I installed this telemetry sensor for the first time on a plane as a test to be able to measure the exact number of milliamps I have used from the battery to maximize my flight time. I am still experimenting with it but so far, I love the ability to set an alarm at 2600 mah consumed on the Futaba 18SZ to tell me when I have consumed 70% of my 3700mah Pulse Battery. It is also interesting to see how much current it is pulling during high power or uber-violent maneuvers. I'll do a future article on Futaba Telemetry. This bird has Receiver Voltage, Battery Voltage, mAh consumed, Real Time Amps, RPM, Speed, Altitude, Descent/Climb Rate, and Distance all from three S-Bus2 Sensors that weigh less than 38 grams!

FLYING THE MXS-EXP:

This beast flies very similar to the Laser-EXP but its much edgier. One of the discussion boards describes the various Extreme Flight planes in relation to the types of women in your life. The Laser is considered your beautiful and demure spouse that you could spend the rest of your life with while the MXS in contrast is more like some crazy chick you met in college that when coaxed will scare the living hell out of you! This description is much more accurate than you think! I setup the plane with 20%, 60%, and 120% throws at 40, 50, and 60 exponential to start. You can do all basic aerobatics at 20% and literally do everything possible at 60%. Crazy snaps, knife edge spins, flat spins, blenders, and anything you can dream up are almost easy with this bird. One of my favorite maneuvers is to fly coast to coast knife edge, knife edge loop to knife edge, fly coast to coast knife edge, repeat. The growling



noise it makes when snapping at full throttle is worth the purchase of the plane by itself! I have only had two planes that roll and knife edge with zero coupling and both of them are from Extreme Flight. Recovery is simple with the Cortex Pro Gyro. Just release the sticks and it stops whatever it is doing. Toss it into tumble rate (120%) and it is ripe for insane pop-tops and the most destructive KE spins you have ever seen/heard.

little "Rate Switch" in the upper left corner of the radio. On this plane I refer to that as the "Fun Switch".



The MXS EXP's more demure sister, the LASER-EXP

CONCLUSION / SUMMARY:

Both of the Extreme Flight birds that I have the pleasure of owning are amazing flyers. All things considered, I think I like the MXS-EXP just a little more than the Laser. I am having such a blast just learning what this plane will do and I suspect I have only scratched about 15% of the surface. Given the fact that the wings haven't been torn off yet is a testimonial to the superior design of Extreme Flight. If your thinking, "I don't do 3D, I don't do high energy aerobatics, I don't need a plane like this", think again. I have such a great time flying these that often I find myself just sport flying around the field doing lazy loops, stall turns, and high speed inverted passes and long sleek touch and goes. However, when you really want to kick it up a notch and challenge/scare the daylights out of yourself there is always that



THE AERO EXPERIENCE:

By Carmelo Turdo

Blogger / Author / Photographer, Carmelo Turdo, was present during the Thrill of the Chill Event on New Years Day and captured numerous photos for us to share. If you would like to read Carmelo’s full post on his Blog, The Aero Experience, it can be found [HERE](#):



AT THE FIELD:

Images Courtesy Greg Bowles



AT THE FIELD (CONTINUED):

Images Courtesy Greg Bowles



Spirits of St. Louis R/C Flying Club
Presents

2017 INDOOR FLY-IN

Saturday, January 14th

Saturday, February 18th

Saturday, March 18th

11:00am - 3:00pm

\$5.00 entry fee & current AMA required

All aircraft must be safe for indoor flight & approved by the event staff

Public spectators are free and welcome

Hope Lutheran Church

1975 South Old Hwy. 94, St. Charles, MO

(In the Gym)

For more information visit our website: spiritsofstl.com



Next Spirits’ Meeting is Wednesday, January 11th, 2017 at 7:00-9:00pm at Merryweather Park subdivision clubhouse. An email will be sent to all members with the following map and directions.

Merryweather Club House

To Hwy 94

To Spirit's field

From the intersection of Upper Bottoms Rd and Jungs Station Road Rd.
 Take Jungs Station 'north' towards Hwy. 94.
 At the third street on the left, turn LEFT onto Willow Bend Drive.
 At Willow Wood Ct there is a STOP sign.
 Proceed around the Merryweather Park Monument.
 At the Pond Hollow Drive, STOP, turn RIGHT.
 The Club House is on your left at the intersection of Clarkson Park Drive.

238 Pond Hollow Drive, Saint Charles, MO

