

President's Message

*John Jenks
SJSF President*

So where is everyone? The field is cut and dry and I'll bet your batteries are charged. The sun was shining. Oh yes the sun is shining. I checked the density altitude on the 3rd of August and it was 2,300 ft. Yup, 96°, dew point 74°, and the barometer 29.74. That's pretty thin air for 35 ft. above sea level. I did brave the 92° heat at 7 PM the other day to do some hand launching and within an hour my T-shirt was soaked. Surprisingly though there weren't that many bugs. I guess the swifts and swallows have been doing their job feeding their young. We had a few

fun flies so far, the latest in July was a thermal duration where we set up the winch and five of us flew and we had some fairly decent flights. The Mantis was cruising that day.

We have had several members do pretty well in the ESL circuit this summer. Rob Cherry flew in the Delaware contest and got a First place in Sportsman and I ended up Second in Expert. We were timing each other so we were kinda in the groove that day. Alan Schwerin attended the Polecat Challenge HLG meet in Pennsylvania and picked up a First in Sportsman on Saturday.

Roger has been great at picking out good Saturday weather on Thursday nights

then blasting out an email coaxing us out to fly. Roger, Luke, Chris, Joe P., Joe B., Dave W. and others have been out. I think the August 20 fun fly should be pretty good. It's nothing special, just fly what you bring. I'm thinking we should have a picnic format very casual start around 10 AM, fly, sit, eat, fly, sit, talk, fly.

We're hosting an ESL Hand Launch Glider contest on September 16-17. I could probably use some help in the AM setting up the canopy and around noon for our run to Wawa for subs. We have a scorekeeper but any other help is appreciated.

Turn opposite the yaw,
John

Upcoming Events

Aug. 20	SJSF Fun Fly, 10 AM, SJSF field
Aug. 22	SJSF Club Meeting, 8 PM, Evesham Community Center
Sep. 15-17	NEAT Fair, Shinhopple, NY
Sep. 16-17	ESL Hand-Launch Contest, SJSF Field
Sep. 26	SJSF Club Meeting, 7 PM, Evesham Community Center
Oct. 8	SJSF Fun Fly, 10 AM, SJSF Field
Oct. 18	SJSF Indoor Fun Fly, 7 PM, Fellowship Baptist Church
Oct. 24	SJSF Club Meeting, 7 PM, Evesham Community Center
Nov. 15	SJSF Indoor Fun Fly, 7 PM, Fellowship Baptist Church
Nov. 28	SJSF Club Meeting, 7 PM, Evesham Community Center

Air Hogs Storm Launcher

compiled by Roger

The Air Hogs Aero Ace was a big hit with SJSF - a dozen or more showed up at the last 2 indoor fun flys. The Spin Master/Air Hogs Storm Launcher (SL) may turn out to be the next success story from Air Hogs.

It is a hydro-foam craft, meaning that it operates on water, ground, or flies in the air. You can see an amazing video of the Storm



Launcher at www.stormlauncher.com.

The SL is the commercial creation of Michael Connally, the hydro-foam originator. Michael posted a video on the internet demonstrating the hydro-foam concept, but a bunch of unlicensed knockoffs were quickly made available in the commercial market.

The basic concept involves a lightweight twin-sponsoon boat with an aircraft propeller and a thrust-to-weight ratio greater than 1:1. The SL uses 2 motors and differential thrust to adjust yaw (like the Aero Ace), and an elevator to adjust pitch. The SL is due to be released July 26th, but general retail store availability is more in the



October-November time frame. Retailers include Target, Toys R Us and Wal-Mart. The model appears to be RTF and costs ~\$80, but you also have to purchase the battery/charger for an additional \$30. I haven't seen one of these in person yet, but I'm wondering if it can fly within the confines of a basketball court. Oh yeah - I've got one pre-ordered because this looks like a lot of fun!

Indoor Fun Fly's

Roger

The Fall season of SJSF Indoor Fun Flys will begin in October - it's time to start preparing for the fun! We regularly squeeze 20 or more pilots into the confines of a single basketball court and then watch the carnage. The RF gets so thick that you could cook a goose. Good narrowband receivers are almost a necessity.

A wide variety of aircraft participate: IFO's, 3D, micro-planes, Aero Aces, and helicopters are commonly present along with various other aircraft. On calm evenings some pilots will go out in the parking lot behind the church and fly.

Usually the pilots are split into two groups based upon channel assignment and each group gets to fly for 20-minutes per hour. The third 20-minute segment is usually dedicated to sub-2-ounce models.

If you have never been to one of our Indoor Fun Fly's then you should stop by and check it out. I still remember the first one I attended: I felt like an 8-year-old boy on Christmas morning - giddy I tell ya, I felt giddy!

If you're wondering how to get started in the world of indoor flight, then I have a few models that you may

want to investigate.

The IFO's from www.wildrc.com are very popular. They are crash-resistant, very maneuverable, and can fly slow or not-so-slow. The Mini-IFO is a great choice for flying within the confines of a basketball court.

Air Hogs Aero Aces are popular (especially with the younger kids) and inexpensive. They can easily be flown within half a basketball court. There are only 3 27 MHz frequencies available so you may find yourself waiting for a frequency pin.

If your interests are more into the realm of micro-flight, you can check out what's available on the following web sites:

- www.slowfly.com
- www.bsdmicrorc.com
- www.plantraco.com/hobbies/
- www.bphobbies.com

Directions to the gym are available on the sjsf.org web site.



Plantraco Butterfly



Mini-Sport



Cobweb II



Mini-IFO

2006 SJSF Indoor Fun Fly Schedule

Oct. 18, Nov. 15
 7-10 PM at Fellowship Baptist Church gymnasium
 1520 Hainesport-Mt. Laurel Rd., Mt. Laurel, NJ
 SJSF Club Members - \$2 Guests - \$4
 Proof of AMA membership is required →

New Micro- Receivers

compiled by Roger

The FMA M5 and Berg MS4L receivers have been used successfully by SJSF pilots in our crowded indoor RF environment (which is a testament to their ability to filter out adjacent channels).

A couple of new mini-sized receivers are or will be soon made available for our use - the FMA Encore and the Castle Creations Berg 7.

FMA Encore Re- ceiver

The new Encore Sub-Micro Receiver is available now and is built on the popular M5v2 technology with improved resolution to support digital and other super-sensitive servos. Proven failsafe techniques as well as improved digital filtering add to already unbeatable performance. The Encore provides full range and glitch-free performance reception in aircraft ranging from indoor flyers to park flyers to IMAA-legal aircraft to helicopters. Its dual conversion and narrow band design can be used with any FM PPM transmitter in the 72MHz band.

The Encore is available with either negative shift (for Futaba, Hitec transmitters) or positive shift (for JR, Air-

tronics transmitters). The horizontal channel pins allow for use in small, thin fuselages. The 5th channel output is user-selectable between channel 5 and channel 6 through a simple programming jumper cable that is supplied with the receiver.

\$55 MSRP

Size: 1.66"x0.80"x0.58"

Weight: 0.40 ounces (11 grams)

Outputs: Channels 1-4, 5 or 6

Applications: Any R/C aircraft requiring 5 channels or fewer.

www.fmadirect.com



Castle Creations Berg 7

The Berg 7 is in final production testing and should be available soon.

Full 7-channel operation, full range, and the full set of Berg by Castle Creations features make this a must have receiver for virtually ANY aircraft. Heli pilots will appreciate the compact size, light weight, and the no-nonsense solid performance demanded in critical rotary wing applications - both large and small. Large aerobatic

planes with multiple servo setups will have a "feel" like no other with TDSP and TSR, as well as having protection from other transmitter signals coming on. Small and light enough for your parkflyer/3D airplane and fully capable of precisely whipping around your latest giant scale aerobatic project, the time is now to make Berg by Castle Creations 7 channel receivers the workhorse of your aerial fleet!

MSRP: \$59.95

Sensitivity: better than 1.2V

Dimensions: 0.85" x 1.25" x 0.5"

Weight: 8 grams

[Ed. note: the vertical-pin version will be released before the horizontal-pin version]

www.castlecreations.com



Contact SJSF

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Flying Wing Tips

Roger

Here's some advice to people that are interested in building a "Zagi" type plane.

48" wingspan planes are a good choice for a first wing. They can fly fairly docile and can usually slow down pretty well for landings. Smaller wings tend to be more aerobatic.

You can't go wrong with a wing made from EPP foam - there's no other type of foam that can withstand the beating that EPP can. A properly built wing can walk away from serious crashes that would destroy any other model.

"Amazing Goop" is an excellent adhesive for gluing EPP foam. It doesn't expand like PU glues, and doesn't weaken in 100-degree temperatures like epoxy.

Zagi - or non-Zagi?:

As I understand things, the Zagi series from www.trickrc.com introduced the EPP foam flying wing to the R/C world. R/C flying wings have been referred to as "Zagi's" ever since.

A unique characteristic about Zagi-brand models is their use of vacuum-molded plastic components for their winglets, motor mounts, and electronic compartments. The problem with these plastic parts is that they are rather brittle - a crash will likely result in you needing to

repair or replace a winglet or a battery component housing.

I own a 48" Zagi XS and have flown it for a couple of seasons. It is a good first-time wing, but I have had to replace the winglets several times and the battery compartment once. I suggest that you consider models that embed the electronics in the foam and that don't use brittle plastic winglets.

One such model is the eZipper from Wing Warrior. This is a 36" wing that has embedded electronics, Coroplast winglets, and an aluminum motor mounting plate.

I have personally abused this model on a couple of dozen aborted launches without any damage.

Construction:

The first step is to glue the 2 wing halves together using Goop. Make sure that they are perfectly aligned,

otherwise the wing won't track straight.

The battery and servos typically are installed as far forward as possible to counter-balance the rear-mounted motor. Perform some preliminary CG measurements prior to determining the location for the electronics, but keep in mind that the CG will move backwards when you tape and cover. A good technique for creating the battery and servo wells is to mount a router bit in a drill press, then just slide the wing around to rout out the foam.

Spars:

EPP foam by itself isn't rigid enough for a wing, it has to be reinforced with one or more carbon fiber tubes. More spars means more rigidity and strength. Glue the spars along their entire length using Goop.

Taping:

Another important contribu-

(Zagi - Continued on page 6)



Wing Warrior eZipper

(Zagi - Continued from page 5)

tor to the wing's strength and rigidity is fiberglass filament tape. I like to use 3M Scotch Extreme Application Packaging Tape, model 8959-RD (purchased from Staples) because it has bi-directional fibers. Install at least as much tape as the instructions call for, but it won't hurt to add a little extra too.

It's tough to get adhesives to stick to EPP foam. Once the wing cores and spars have been assembled, the entire wing gets a coat of 3M Super 77 spray adhesive. Once this has dried for 30 minutes you can set the wing on a clean piece of wax paper and apply the filament tape. You will apply another coat of spray adhesive prior to covering.

Covering:

A lot of models will say to cover the wing with overlapping pieces of colored packing tape. This works, but a tape job probably won't last for more than one season.

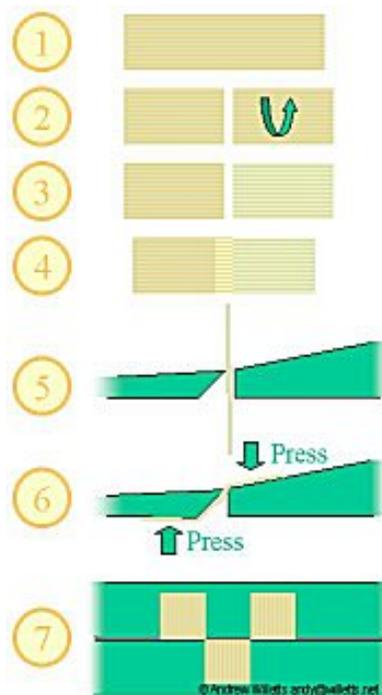
A better solution is to use shrink film, but not just any film - you want a low-temperature film. Ultracote is an excellent choice - it's adhesive activates at 220 degrees F but it doesn't begin to shrink until 300 F. You will need to purchase a thermometer so that you can check your iron's temperature - a digital infrared

thermometer is the easiest to use because it provides an instantaneous reading.

A good tutorial on covering Zagi wings is available at www.yourzagi.com/covering.htm. Don't use the same colors on the top and bottom of the wing because this will make it difficult to tell which way is up. Many people like to use a dark solid color on the bottom and a bright pattern on the top.

Hinges:

You can use packing tape hinges on the top and bottom of the elevons, but I have had to replace this type of hinge after a crash. A more durable method is the tension hinge (shown below) made with filament tape. I used 3 sets of hinges per elevon on my 36"



Tension Hinge

wing - you may want to use 4 sets per elevon on a 48" wing. You can cover over these hinges once the elevons are installed.

Conclusion:

Zagi wings are a blast to fly, and are darn-near indestructible when built with the techniques I've described. Wing Warrior models are available at www.hobbypeople.net.

For Sale

Midwest Aero Star 40 Kit
High wing trainer
new \$125 asking \$60

Dan Krug (856) 783-7230



Submit articles for publication
in the newsletter via e-mail at
jblow131053@comcast.net

Motor Data

Those of us in the hobby for years have become familiar with the various sizes of glow motors and what size plane they could fly and what prop should be used. Of course this wasn't the case some 60 years ago, when hobbyist were trying to figure what motor to use for what size airplane

Back in the 30's a "90" size Olson and Rice engine put out what a good "40" puts out today, or maybe a little less. So there was a learning curve that took a long time to develop as the engines got better and more efficient.

We have the same situation today with electrics. We complain that the manufactures will not give us a comparison of their motor to a gas engine. This has lead to some frustration and many of us purchasing inappropriate motors and controllers. Remember that the early gassie guys went through the same thing.

The purpose of the motor data spread sheet is to make the transition from gas to electric a little easier.

When it comes to gassies we talk about horsepower, although most of us never ever tested out gas engine to see how much horse power it put out. The data from the manufacturers for horsepower showed that it varied with the size of the prop and the type of fuel used (Hi Nitro).

As you can see from the spread sheet, we basically have the same thing: power is represented by watts and the fuel is rated in volts/mAh.

To determine what size motor and prop you need for a particular plane the following rule of thumb can give you some start as to what should be used.

Sport flying - 2 watts per oz. (good for 3-12 oz. planes)

Mild flying - 3-4 watts per oz. (16-20 oz. planes)

3D flying - Min. 5 watts per oz. (16-30 oz. planes)

Of course some horse sense has to be applied when using this info.

A small Johnson motor will develop 63 watts with a 2x3 prop but it would not be appropriate to try and use this motor on a Zagi, for obvious reason. As we know, a speed 400 would be a better choice.

Well, we hope the chart has aroused some interest,

#	Type	Manufacturer Model No	Gear	Controller Model No	Battery	mAh	Prop	Amps	Watts	RPM
1	Brush	Johnson	N/A			1500	2x3	9	63	23,500
1A	Brush	Johnson	N/A		2S	1500	3x3	9	63	21,200
2	Brush	Graupner Speed 400/6V	N/A	FMA	8.4 NiCad	850	5.5x4	10	73	
2A	Brush	Graupner Speed 400/6V	N/A	FMA	3S	1500	5.5x4	15	130	Motor
3	BL	Razor 300	N/A	Castle C	2S	1200	2x3	8	54	30,300
3A	BL	Razor 300	N/A	Castle C	2S	1200	3x3	8	54	27,000
4	BL	Himax 2015	N/A	Eflight	2S	1200	3x3	6	42	20,500
4A	BL	Himax 2015		Eflight	3S	1200	3x3	6	65	30,000
5	BL	Himax 2015	6.6:1	Eflight	3S	2100	11x8	14.5	145	
5A	BL	Himax 2015	6.6:1	Eflight	3S	2100	10x4.7	9	90	
6	BL	Himax 2025	6.6:1	Eflight	3S	2100	11x8	20.2	200	
6A	BL	Himax 2025	6.6:1	Eflight	3S	2100	10x4.7	12	120	
7	BL	Maxi SK 400 XT	N/A	Jeti	3S	1500	10x4.7	10		7,000
7A	BL	Maxi SK 400 XT	N/A	Jeti	3S	1500	8x6	8		7,300
7B	BL	Maxi SK 400 XT	N/A	Jeti	3S	1500	8x3.8	7		7,300

god only knows that us old guys need to be aroused somehow, and hopefully the members will get involved in their own testing and start adding info to the chart. This info could then be used by all of us and would be a handy guide to any newcomers to the hobby.