

# EL TORBELLINO

NEWSLETTER OF SAN DIEGO ORBITEERS FREE FLIGHT CLUB

JULY 2017



## ***The Prez's Corner – Don Bartick***

The Board met June 14<sup>th</sup>. Look for minutes in this ET.

Gus del Castillo's FF collection was displayed at the Board meeting and the 6 Board Members were giving first opportunity to purchase the material. No prices were applied to the items, but left to the individuals to pay what they felt an individual item was worth. The 5 F1G planes were excluded. They were offered to the membership under the conditions of a drawing. Howard Haupt sent out an email to the membership with the details of the drawing. Eight members entered. Only 1 chance was available per entry at \$20 each. The drawing was held at the last indoor contest. Five happy members are now the proud owners of 1 of Gus's F1G's. Overall, as of this writing, we have raised \$674 from the sale of Gus's FF collection. There are still a few items remaining. Once cataloged, I'll have Howard send out another email to the membership to offer these items.

At the June Indoor contest, we had several visitors looking us over. One was the STEM teacher (Shane Helmich) from Ramona who was co-responsible for the school wide Wright Stuff competition that I've been writing about. Another was Walter Ainslie and wife Marsha from Ramona who was looking to get into FF. Well, he was back at the July Indoor contest with an A-6 and an Embryo. He, with support of his wife and the group was having a great time. He will be joining the Orbiteers. The third visitor turned out to be special in his own right. A giant of a man came in and sat down on one of the benches that line the wall behind us. Seeing that no one was paying him any attention, I went over to greet him

and welcome him to our venue. He introduced himself as Greg Deering. Then proceeded to tell me that his dad introduced him to model airplanes 50+ years ago. His dad was head of the Convair/General Dynamics wind tunnel program. As an engineer, he was also a master model craftsman. His dad taught him the skills to build and fly model airplanes. Something he has done off and on for years. He and his dad were members of the Scale Staffels back when Walt Mooney was heavily involved. He owes a great deal to his dad and the hobby for his success over the last 40 years. It turns out that Greg is the owner of Deering Banjo Manufacturing Company in Spring Valley. They are the premier American banjo maker with distribution throughout the world. Well Greg is getting prepared to retire and turn over the reins to his daughter. As such, he wants to accelerate his model airplane building hobby. Appears his interest is scale free flight. But indoors interest him also. So if you see a giant of a man come in the gym, go greet him. Arline and I have since toured the banjo factory with Greg. Amazing stuff.

Keep in mind the US FF Champs at Lost Hill in September. See flyer in the ET.

That's a wrap for now.

*Remember: "People will generally accept facts as truth, only if the facts agree with what they already know"*

-Author Andy Rooney





## ORBITEERS MEMBERSHIP DUES

Annual Membership - \$20

Lifetime Membership - \$250

Non-Member Newsletter Subscription - \$15

Junior Members 16 years old or younger - Free

Submit Dues to Club Treasurer:

Howard Haupt

3860 Ecochee Avenue

San Diego, CA 92117-4622

## THE FINE PRINT THE FINE PRINT

El Torbellino is the official newsletter of the San Diego Orbiteers, an Academy of Model Aeronautics (AMA) Charter Club (#1113) and a California not for Profit Corporation. This newsletter is sent monthly to all paid members, selected exchange and magazine editors. Non-Members may subscribe at \$15.00 per year within the U.S.A., offshore price will be adjusted to reflect the postage required. Materials from El Torbellino may be reproduced on an unlimited basis by other publications, but proper credit is requested.

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## **San Diego Orbiteers**

Board of Trustees Meeting, June 14, 2017

Held at President Don Bartick's home. Nine in attendance. After a wonderful meal provided by our gracious hosts, the meeting was called to order at 7:12 p.m.

The minutes of the last meeting were approved as published.

Treasurer's report: approved as provided to the trustees.

Membership report: we may have a few new prospects for members. No names provided.

### Old Business:

Membership campaign: moving slowly. Changes have been made to the website to make it easier to join the club. Thanks to all that assisted in those efforts.

Outdoor flying site in San Diego area: much discussion – no answers. Please let a board member know if you know of a suitable flying field.

### New Business:

Perris Field condition for Cat III contest: very poor condition for Cat III currently. Next contest to be Coupe. Decision made to cancel June 25<sup>th</sup> Coupe contest. This will be old news by the time this is published.

Distribution of Gus del Castillo model estate: by now the word has already spread about his coupes being up for a drawing. Other items yet to be determined.

### New Business:

Open for other new business: none brought forth.

Schedule next Board Meeting: to be held Sept. 13<sup>th</sup> at John and Ann Merrill's home.

### Contest Reports:

Dual-Club Bonanza was a great contest, but had low participation. Very few Orbiteers made it there.

Scale Staffel FAC two-day contest: John Hutchison reported that the turnout was okay, but the weather didn't cooperate. Strong, gusty winds, and several models were lost to

the tall weeds. Next contest will be September 9<sup>th</sup> and 10<sup>th</sup>.

Other: Mike Pykelny reported that the FAI contest held the weekend after the Dual-Club was a good one.

### Open Discussion:

Mention of the annual swap meet held at Discount Hobbies in Kearney Mesa on Father's Day.

Mike Jester reported that he and Mark Chomyn flew the High Start G-30 glider one day, and seem to be making progress.

### Good of the Order:

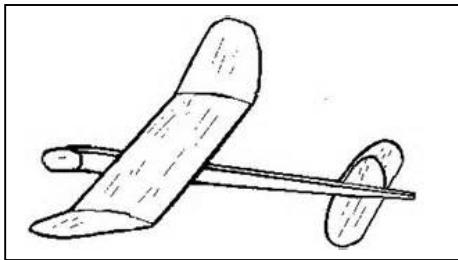
Kathy has artwork now being displayed in several states. She has some great photographs.

At a contest held in Ramona, the Bartick's won awards with two of their wines. There were 73 entries from wineries all over San Diego County.

Call for adjournment came at 9:12 p.m.

Respectfully submitted by John R. Merrill,  
Secretary





## 2017 COMBINED FLYING SCHEDULE

July Rotation Skipped: (P-30)

Aug Rotation Skipped: (Old Time Nostalgia Rubber)

Sept 9/10 **Scale Staffel FAC Scale Contest\***  
(2 of 2)

Sept 17 - **Coupe**  
Power & Glider  
(No rain date)

Sept 22/23/24 **US FF Champs, Lost Hills\***

Oct 15 - **P-30**  
Power & Glider  
(Oct 29<sup>TH</sup> rain date)

Nov 12 - **Old Time Nostalgia Rubber**  
Power & Glider  
(Nov 19<sup>TH</sup> rain date)

Dec 10 - **Coupe**  
Power & Glider  
(Dec 17<sup>TH</sup> rain date)

\* Non-Club Points Event  
Otay Field Weather (619) 661-8297



## 2017 INDOOR FLYING SCHEDULE

July 2 - A-6, Phantom Flash\*

Aug 6 - Penny Plane, No-Cal\*

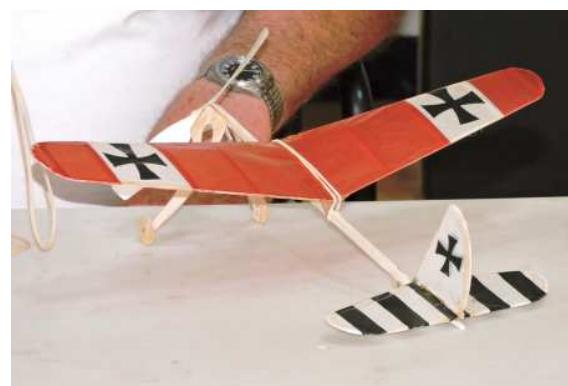
Sept 3 - Catapult Glider, Embryo\*

Oct 1 - A-6, Phantom Flash\*

Nov 5 - Penny Plane, No-Cal\* and  
Canard One-Design\* (Wrisley Zephyr)

Dec 3 - Catapult Glider, Embryo\*

**\*Non-ORBITEER Points Event**



## Phantom Flash Gallery – A.Bartick



## Testing Rubber

By Mike Jester



The quality of the rubber used to make up your rubber motors can make a significant difference in the flight performance of your rubber powered model airplane. The quality of the rubber determines the amount of energy that can be stored and returned to drive the prop per unit length of rubber. The better the rubber, the longer the flight, with a fully wound rubber motor, at least in theory. The total amount of energy that can be stored in a rubber motor from a given batch of rubber is determined by its length and weight, which indirectly determine the cross-section of the rubber motor. It stands to reason that a flier might want to test a sample from a given batch of rubber to determine if it is any good before flying with the same. Optimum sizing of a rubber motor for a given model and prop is an entirely different discipline which has been discussed in numerous published articles. There are many ways to test the quality of rubber, from crude to very sophisticated.

First, a brief history of rubber used in free flight is in order. In the 1960's free flight model airplanes were flown with Pirelli rubber. Thereafter, supposedly a dedicated free flight modeler worked with a rubber manufacturer and developed TAN rubber. Somehow TAN rubber was related to the rubber used to wind the cores of golf balls. An improved formula was developed and sold for many years known as TAN II rubber but the quality of this rubber varied significantly from batch to batch. Eventually golf balls converted to a solid core and the key ingredient used to make TAN II rubber was no longer available. An ever diminishing amount of TAN II rubber still exists and can sometimes be purchased on eBay or acquired from estates. The May 1999 batch of TAN II rubber is legendary for its quality and many indoor world records have been set using this rubber. I have observed that our club's own Kang Lee, a two time world F1D champion, flies exclusively with May 1999 TAN II rubber. Shortly after the manufacture of TAN II rubber was discontinued, Tan Sport rubber was introduced. Then an improved rubber known as Tan Super Sport ("TSS") was introduced. By 2005 its batches were reasonably good, but not as good as the best batches of TAN II rubber. I understand that TSS rubber is a hybrid of natural rubber and synthetic rubber. It is commercially available from FAI Model Supply. To the best of my knowledge TSS is the only rubber that is currently manufactured and sold that is suitable for free flight.

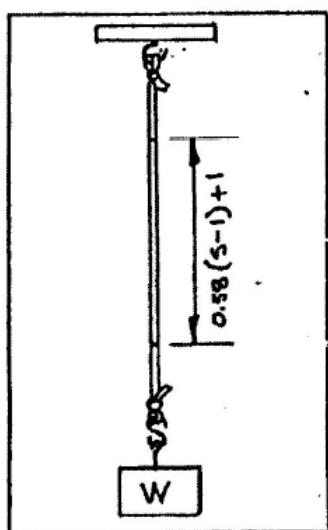
According to experts, including Don DeLoach, since 2009 all batches of TSS rubber are "good." So why bother testing your rubber? The answer is that you may have old rubber in your inventory that needs testing to see if it is still worth flying with. Rubber deteriorates over time, especially if it has not been properly stored. Moreover, just like wine, all batches of rubber are not equal. What follows is a short summary of methods for testing rubber used to power free flight model airplanes.

A crude test for rubber quality is the hand stretch test. Pull a short segment of the rubber between your two hands. Based on your experience, if it does not feel "real stretchy" it is probably no good. In other words, if it feels like a Staples® office rubber band, consider pitching this batch of rubber into the trash. As a general rule of thumb, the rubber used in free flight should be capable of stretching at least 6 - 8 times its relaxed length. I have read that some rubber can be stretched up to 10 times its relaxed length. Make up a single loop of the rubber that you want to test that is one foot long. Secure one end of the loop to a winding stooge. Lay an extended tape measure out in front of the stooge. If the loop won't stretch to at least 6 - 8 feet in length, the quality of the rubber is suspect.

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A more scientific approach to testing rubber involves winding a rubber motor made from a given batch of rubber that is the size you intend to fly with, e.g. a P-30 motor. My preferred P-30 rubber motor is a 6 x 1/8 inch 9.8 gram rubber motor that is 19 inches long. Lube the rubber motor and wind it on a stooge until you feel that it is about to break. Compare the number of turns to the data set forth in the graphs made by Don DeLoach and George Mansfield that are re-produced at the end of this article. If you want to conserver rubber, you can make up dummy partial motors and extrapolate your test results for comparison to the data in the graphs.

Serious fliers determine the energy storage capability of rubber in terms of foot pounds per pound of rubber. Here is an excerpt from an article entitled "A Quick Rubber Test" by Hank Cole published in a July/August 2003 edition of The Southern Louisiana Indoor Modeling Journal:



5) a. Weigh the sample (wt.)  
b. Weigh the weight (W)

6) Energy =  $\frac{W(s-1)}{wt.}$  s = the stretch length of the sample

Note: E is expressed in ft.lbs / lb.

Note: W & wt. must be in same units; grms. or oz.

Typical numbers:  
wt. = 1.04 gr.  
s = 10  
W = 537 gr.

$$E = \frac{(537)(10-1)}{1.04} = 4647 \text{ ft. lb./lb.}$$

How well a model flies also depends on the manner in which a given rubber motor returns the stored energy. The shape of the torque-versus-turns curve as a given rubber motor unwinds can have a significant effect on the flight performance of your model. One attribute of good rubber motor for outdoor flying is that it produces a good torque burst at the beginning of the motor run and thereafter a gradually declining torque for a long sustained duration. Various methods are used by serious free flight enthusiasts to measure the torque on the rubber motor at different stages of its un-stretching or unwinding, including the use of a fishing weight scale or an in-line torque meter. Super serious F1B and F1G fliers stretch rubber on a motorized jig, and plot the forces on a computer display both as the sample is stretched and as it is relaxed.

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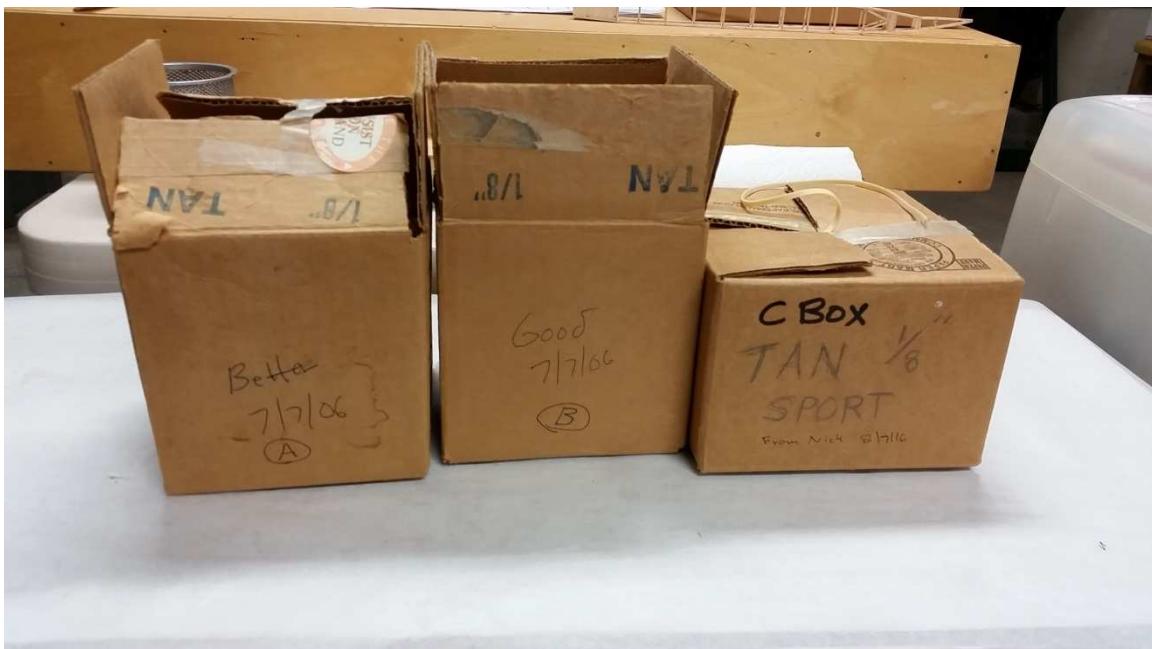
#### **Computerized Rubber Motor Testing Machine built by Peter Brown (pictured) and Leo Ibdonar**

Most fliers fly for fun, so they don't need to test their rubber. In my own experience, many other factors determine the winner of a casual outdoor contest besides the quality of the rubber, including trim, winding, and whether your model catches good air. The relative quality of the rubber isn't such a big factor for me in outdoor flying, so long as the rubber is "reasonably good." The crude test for the latter is as follows - is it TSS rubber from a 2009 or later batch that has been properly stored, i.e. away from heat and sunlight? I am pickier about rubber quality when flying indoor duration models such as a Limited Penny Plane or an A-6.

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You may not want to fly with the “best rubber.” Last year I purchased some June 2016 TSS rubber. It was rumored by serious outdoor fliers to be the best rubber ever made, even better than May 99 TAN II rubber. I had a hard time getting more than 380 turns into a 9.8 gram 12 x 1/8 inch coupe motor made from this rubber, even though I normally can get 400 turns into this size of rubber motor. Apparently this rubber is prized by outdoor expert fliers because of its tremendous torque burst at launch. But too much torque from a June 2016 TSS rubber motor caused my “locked down” coupe to veer hard right on launch before recovering. This initial torque burst is apparently very beneficial to high-tech F1B and F1G models with moveable surfaces, including a variable incidence tail (VIT), that climb straight up.

I was prompted to write this article by my own recent experience with a couple of one pound boxes of very old TAN rubber that I purchased at a swap meet eleven years ago and another one pound box of old Tan Sport rubber gifted to me last year. I needed to move my inventory of rubber so I decided to test this old rubber. The TAN rubber from two different boxes felt like a Staples rubber band when I hand stretched it. A sample of the Tan Sport rubber took a lot of turns in my test winding. Scientific stretch tests of samples of rubber from all three batches were conducted for me by Stan Buddenbohm. He confirmed that they were terrible and I threw all three boxes into my trash can. If I had flown my outdoor models with any of this bad rubber, I would have been lucky to get flights that were 1/3 as long as flights with good rubber. In conclusion, hopefully I have provided readers with some insights into rubber testing.



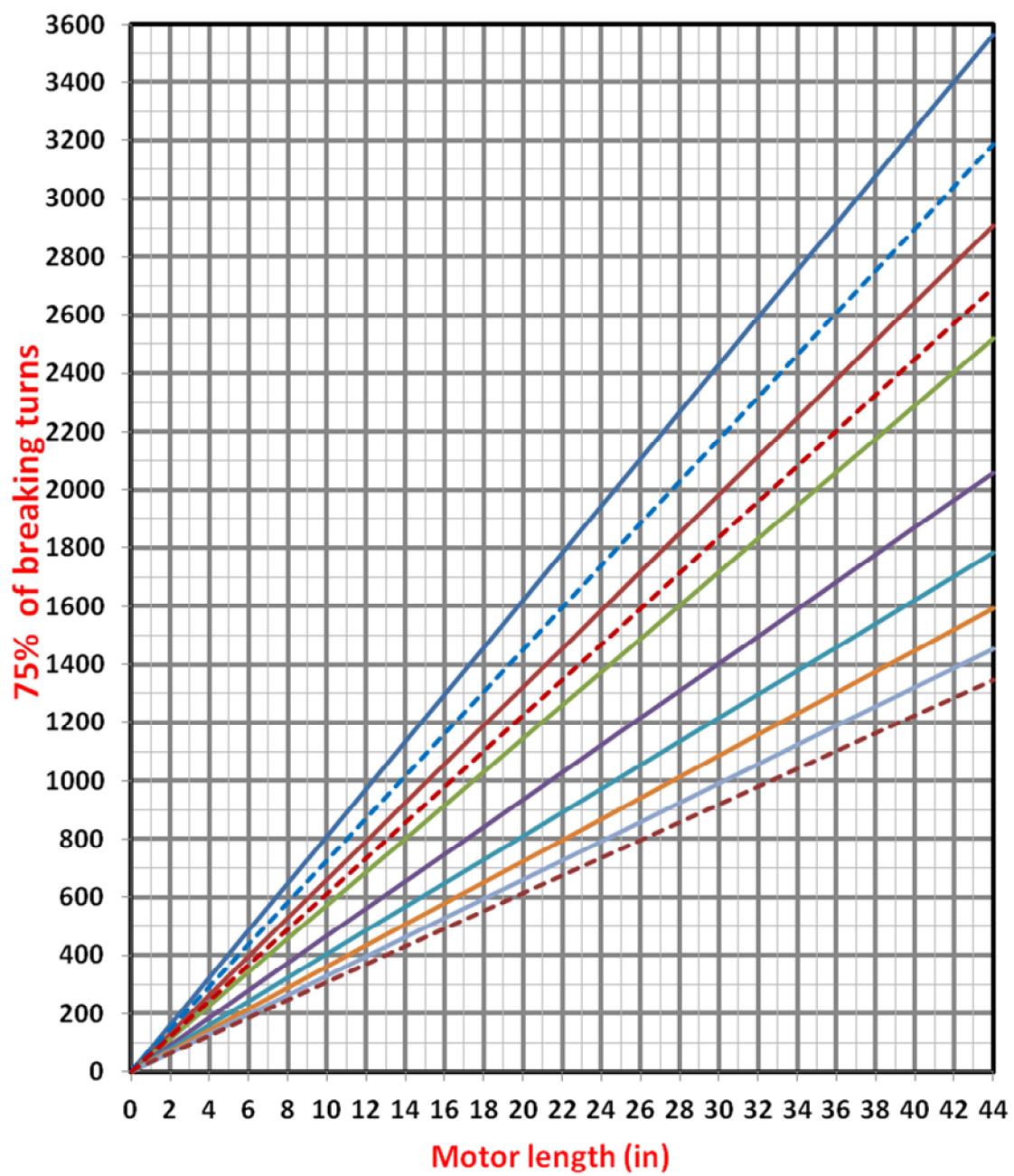
**Three Boxes of Poor Quality Old Rubber That Were Later Discarded**

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***75% of Breaking Turns for 1/8" Tan Super Sport per Don***

***DeLoach***

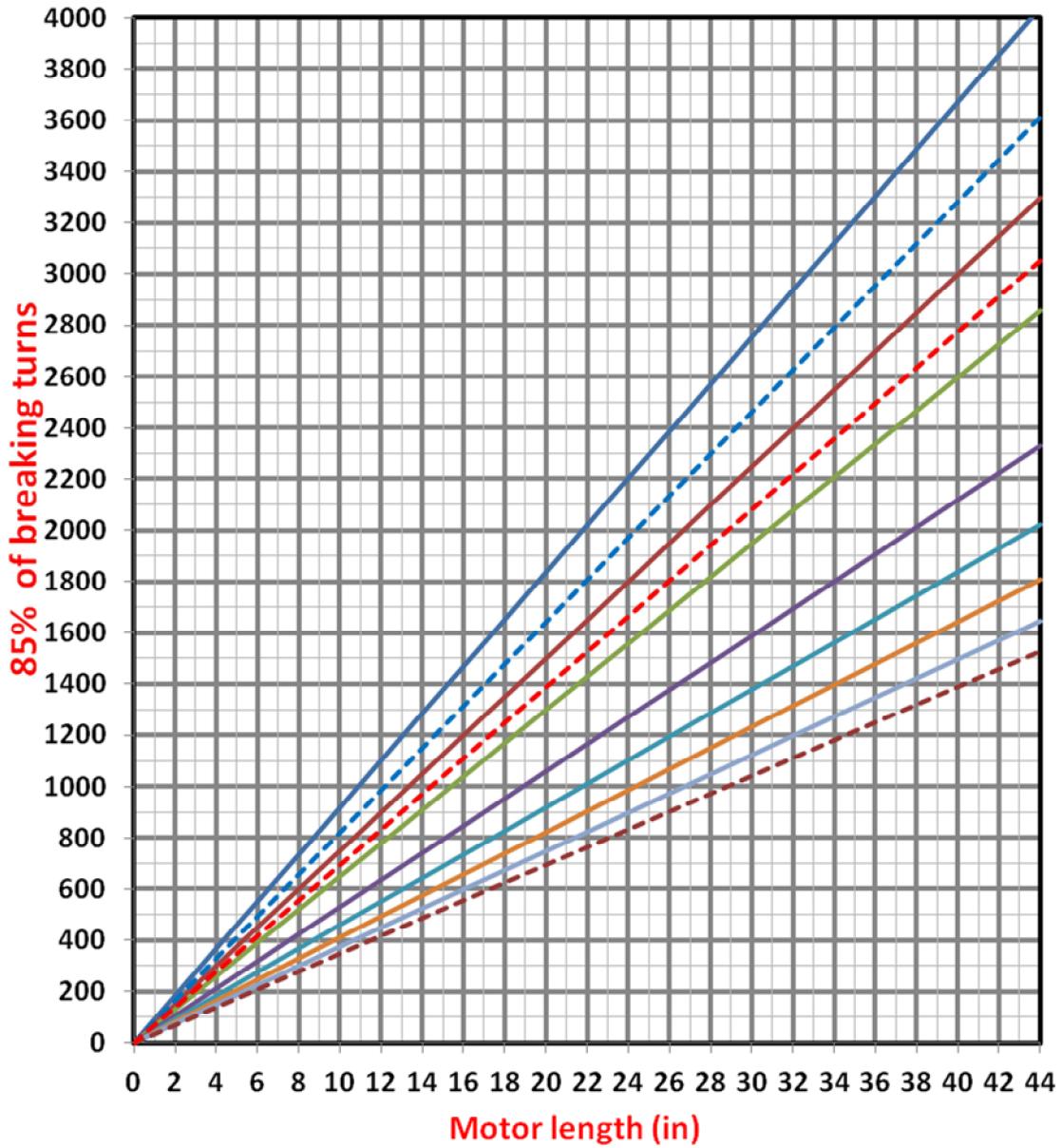
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***85% of Breaking Turns for 1/8" Tan Super Sport per Don***

No. of 1/8" Strands:



## Piper J-3 Build - D.Scigliano

Once again I decided to build one of my old kits that I had sitting in storage. I am looking around at all my model kits thinking, when will I ever have time to build all of these?

My original plan was to build them for electric or RC with modifications, but soon realized that thought process was keeping me from thinning out my stack. Like most model builders I have more than enough kits to build in one life time, and I hope to build most if not all of them. I have converted a couple to electric and RC but that requires quite a bit of planning and of course money, thus slowing down the build. We all built these old kits when we were younger or at least tried with some success or not. The bottom line, I know if I build the kit out of the box with no major modifications I will get the build done, so that is what I am doing. These old kits will never compete but they are sure fun to fly for a few seconds and look good hanging from the ceiling.

This old Sterling Piper Cub J3 has a 30 inch wing, over designed and not very scale. The wood is pretty bad and the kit comes with light weight silkspan for the covering. The build itself is super easy and fast once the parts are punched out and trimmed to match the parts shown on the plans. The easiest way to remove these die crunched parts is to first remove the easy parts that fall right out without damaging the part. The more difficult parts I add blue tape to the backside of the balsa sheet and cut the part out for removal. The tape on the backside keeps the part together so will not break when cutting out. Once all the parts are removed I match them up to the parts printed on the plans and sand or trim to shape.

I used Testors wood cement on this build since the glue works great with the old porous balsa wood. I would have used Ambroid but I can no longer find any, I think they stopped making it. I built the model exactly to the plan with no problems, the build went together fast. I decided to use the supplied silkspan, I

forgot how easy this stuff is to use compared to tissue. I have never used dope to attach the silkspan, I did not like the ideal of doping the structure twice, sand then apply more dope. So I use Elmers thinned to attach the silkspan, glue stick also works I tried it. I have never applied silkspan dry and did not want to try it with this build so I applied it wet. Wet silkspan conforms to most curves with no issues, much easier than tissue. Remember this silkspan is 30 or more years old.

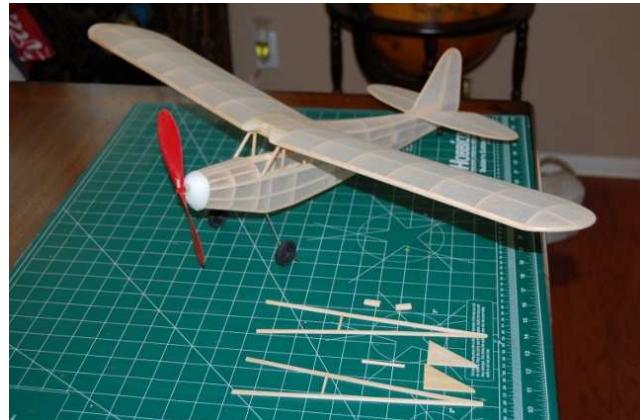
Light weight silkspan is tough to get these days, but I think Guillows still has it and so does Sig. Once the silkspan is applied and the glue is dried, I spray with water if needed for a drum tight finish. I then brushed on 2 coats of thinned Aerogloss clear dope, the last of my stock since Midwest stopped making it. I then airbrushed thinned Aerogloss Cub yellow on for the final touches. I have a good stock of Aerogloss dope but low on Aerogloss thinner, I hear Sigs thinner works great with Aerogloss products.

Before the covering she weighed 69 grams all mocked up, after covering and ready for flight with nose clay added, she weighs 83 grams. I used my old 80s Badger 250 airbrush, I love this thing for applying colored dope, easy to use and clean. This same old airbrush sells for 5 dollars on the Badger "Garage sale" page. For my plastic models I use a Testors Aztek airbrush but I don't like to spray harsh dope with it.

The decals were pretty old so I sprayed a coat of Testors Gloss Cote over them before using. After spraying with gloss cote they worked pretty good for old decals. With her all done she is ready for flight, I don't expect much but a few seconds of flight time is all I can ask for. By the way this is the same model that was used in the Brady Bunch when they were building a model airplane. That episode was called "Alices September Song".

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## Piper J-3 Build - D.Scigliano



**Orbiteers**  
SAN DIEGO

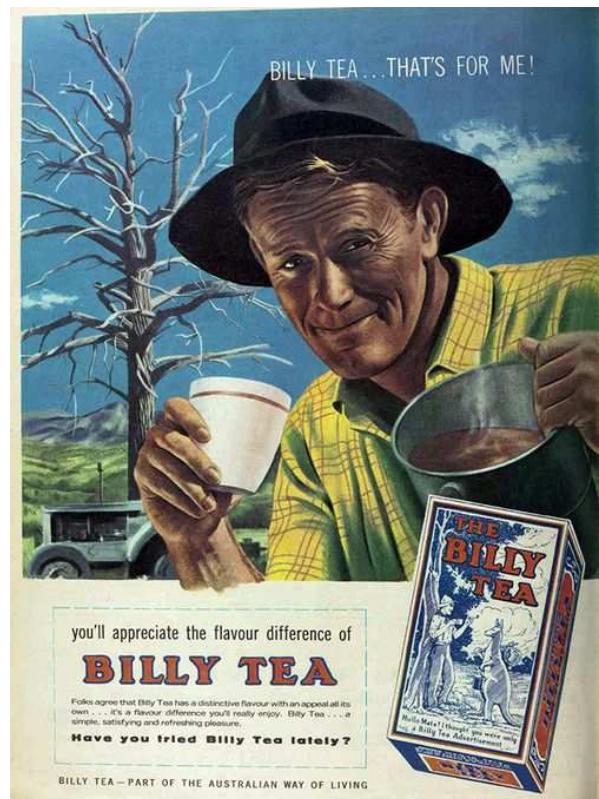
## Why The Billy Tea? - M.Chomyn

While thumbing through the Nov-Dec issue of the Flying Club Aces Club News, my eye was caught by the article on the Billy Tea model. In Australia, you sent in 22 Billy Tea packets and you got the plane kit.

Looked at page 13 and saw the old original drawing of the plane. It had real simple if somewhat ugly lines. Looking at the rudder and stabilizer outline I just thought, great bet you had to bend those outlines from bamboo. No way am I going to do that. But when I turned to pages 14- 19 which had the full size plans, I noticed that the rudder and stab were simple all sheet surfaces with the rest of the build being mostly 1/16" x 1/8" sticks for construction.

Ok, this plane is so ugly and so simple it's a must build. Most difficult part of building was cutting the ribs. So a 1/32" plywood template was made, a new sharp blade put in the Exacto and 10 ribs were cut. On the ribs, there isn't much wood left over the back 1/16" x 1/8" spar notch so that area was coated lightly by rubbing cyano around the notch. Construction went quickly and easily and the plane was covered with domestic yellow tissue from Easy Built.

In the article about the original build, the author mentions that while he was away at a camp, his friend the blacksmith coated the covered plane with "kero" instead of "metho" and it turned out an ugly mess. I was running low on butyrate dope and dope thinner. So, I used lacquer thinner and nitrate dope, thinning the nitrate by dipping my brush in the lacquer thinner with each brush application. The result was a somewhat blotchy though passable finish and seemed to fit the tone of the "kero" mistake. Being optimistic, I included a dethermalizer set up but I doubt it's necessary. We'll see.



**July INDOOR MONTHLY 2017**  
**(July 2, 2017)**  
**CD: William Scott**

**Phantom Flash:**

(Best three of six flights)

1) John Hutchison	67	64	76	-	207
2) Richard Wood	54	68	74	-	196
3) Don Bartick	67	59	61	-	187
4) Art Smith	38	27		-	65



**A-6:**

(Best two of five flights)

1) Mike Jester	186	205	-	391
2) Richard Wood	163	167	-	330
3) C.M. Kim	162	158	-	320
4) Don Bartick	133	152	-	285
5) Walter Ainslie	50	44	-	94
6) John Hutchison		dnf		



**Photos provided by Arline Bartick**

See more photos on next page



JULY 2017 INDOOR PICTURE PAGE - Photos by Arline Bartick



# 47<sup>th</sup> ANNUAL UNITED STATES FREE FLIGHT CHAMPIONSHIPS

September 22 - 24, 2017 at Lost Hills, CA - Category II - AMA Sanction - American & National Cup Events

Friday September 22 7 a.m. - 5 p.m.		Saturday September 23 7 a.m. - 5 p.m.		Sunday September 24 7 a.m. - 3 p.m.	
Modern Events		Modern Events and FAI		Modern Events and FAI	
E-36 A Electric P-30*	E-36 A Electric P-30*	Moffett and Mulvihill Catapult Glider* Pen (Jr and Open) A Gas* C/D Gas* F1A, F1B and F1C/P Vintage FAI Power	E-36 A Electric P-30*	Moffett and Mulvihill Catapult Glider* Pen (Jr and Open) A Gas* C/D Gas* F1A, F1B and F1C/P Vintage FAI Power	E-36 A Electric P-30*
<b>NOSTALGIA EVENTS</b>		<b>NOSTALGIA EVENTS</b>		<b>NOSTALGIA EVENTS</b>	
Nostalgia Electric Early 1/2 A Nostalgia Nostalgia Rubber Large & Small	Nostalgia Electric Early 1/2 A Nostalgia Nostalgia Rubber Large & Small 1/2 A Gas Nost. B Gas Nost. C Gas Nost.	Nostalgia Electric Early 1/2 A Nostalgia Nostalgia Rubber Large & Small 1/2 A Gas Nost. B Gas Nost. C Gas Nost.	Nostalgia Electric Early 1/2 A Nostalgia Nostalgia Rubber Large & Small 1/4 A Gas Nost. A Gas Nost.	Nostalgia Electric Early 1/2 A Nostalgia Nostalgia Rubber Large & Small 1/4 A Gas Nost. A Gas Nost.	Nostalgia Electric Early 1/2 A Nostalgia Nostalgia Rubber Large & Small 1/4 A Gas Nost. A Gas Nost.
<b>NOTE:</b> You may fly your first three flights of any Nostalgia or Classic event on Friday and finish Sat or Sun.		<b>CLASSIC</b>		<b>CLASSIC</b>	
Classic Towline* Jimmy Allen	Classic Towline* Classic 1/2 A Gas Jimmy Allen	Classic Towline* Classic 1/2 A Gas Jimmy Allen	Classic Towline* Classic A/B Gas Jimmy Allen	Classic Towline* Classic A/B Gas Jimmy Allen	Classic Towline* Classic A/B Gas Jimmy Allen
<b>OLD TIMER EVENTS</b>		<b>OLD TIMER EVENTS</b>		<b>OLD TIMER EVENTS</b>	
1/2 A Texaco (ROG) Texaco (ROG) A Pylon / A Fuselage B/C Pylon / B/C Fuselage .020 Replica	NOTE: Old Timer Only...ALL O/T Events can be flown any day at any time during the Contest. You do <u>not</u> have to start and finish the same day.	1/2 A Texaco (ROG) Texaco (ROG) A Pylon / A Fuselage B/C Pylon / B/C Fuselage .020 Replica	Small Rubber Stick Small Rubber Cabin Large Rubber Stick Large Rubber Cabin / 8 oz. Wakefield	Small Rubber Stick Small Rubber Cabin Large Rubber Stick Large Rubber Cabin / 8 oz. Wakefield	UNOFFICIAL EVENTS
<b>Note:</b> See reverse side for Engine Runs and flight Times Sweepstakes Award for Total Air Time 5 AMA events max.		UNOFFICIAL EVENTS		UNOFFICIAL EVENTS	
7:30 a.m. Gollywood Mass Launch 9:30 a.m. "The Mikkelson Memorial" Twin Pusher Mass Launch Night Gas		7 a.m.-7:30 a.m. Dawn Mulvihill & Big E 9 a.m. Compressed Air Mass Launch		see other side for Awards and Contest information 3/24/17	

# 47<sup>th</sup> ANNUAL UNITED STATES FREE FLIGHT CHAMPIONSHIPS

September 22 – 24, 2017 at Lost Hills, CA. Category II – AMA Sanction – American & National

Cup



**US FF CHAMPS REGISTRATION:** Proof of current AMA Membership and current Lost Hill's Membership required. \$30 includes *first* Event. Additional events are \$10 each. Gold card \$75 includes unlimited event. Juniors \$5 per event with awards in all events.

**Awards:** Cash: Five or more flyers 1<sup>st</sup>/\$50, 2<sup>nd</sup>/\$25, 3<sup>rd</sup>/\$15. Four flyers 1<sup>st</sup>/\$25, 2<sup>nd</sup>/\$15. Three flyers 1<sup>st</sup>/\$5 JR EVENTS will be 1<sup>st</sup>/\$15, 2<sup>nd</sup>/\$10, 3<sup>rd</sup>/\$5. Sweepstakes: \$100 cash

**Lost Hills Member's Meeting**, Saturday, September 23<sup>rd</sup> at 6:30 p.m. at CD table

**Notes:**

*Timecards:* Submit timecards to CD table or event table after each official flight.  
ENTER ALL TIMES IN SECONDS, except TEXACO Events.

*Hand Launch and Catapult Glider* will be flown from a pen - submit time cards to CD table every two flights.

*All Engine Runs and Max Times* are per the AMA Rule Book and NFFS Official Competition Rules.

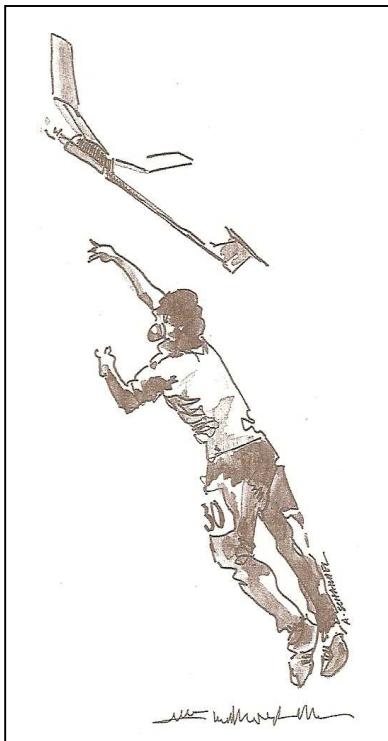
*FAI Saturday Events – (7)* one hour rounds, starting at 8 a.m. F1A first round max 210 sec. F1B, C, P first round max 240 sec  
All other rounds 180 sec. Flyoff rounds no earlier than 4 p.m. per CD.  
*FAI Sunday Events – F1G, H and Q (5)* forty-five min rounds beginning at 8 a.m. F1G, H 120 sec max F1Q 180 sec max  
Flyoff rounds no earlier than 1 p.m. per CD.

Sweepstakes Total time for a maximum of 5 AMA events as indicated by \*.

Ed Carroll, Contest Director, Cell : 818-489-5039, [ec31133@aol.com](mailto:ec31133@aol.com) Lost Hills Web Site: <http://www.lhffmaa.com>

*See other side for Schedule of Events.*

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## WHAT'S HAPPENING -

July 2017

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Aug. 6 - **Indoor Flying**, Grossmont College (Upper Gym), 7:30 am to 11:30 am.  
Feature Event: **Penny Plane**, Other Event: **No-Cal**