

# EL TORBELLINO

NEWSLETTER OF SAN DIEGO ORBITEERS FREE FLIGHT CLUB

SEPTEMBER 2017



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

September 13, the Board of Directors met at John Merrill's house. Ann put on a great spread for the directors and spouses to enjoy. Afterwards, the meeting got underway. Look for the Minutes somewhere in this ET.

At last the weather has made a turn for the good. The fall outdoors contests got underway Sunday, September 17<sup>th</sup> at Perris. A great turn out by Orbiteers and other club members. The main event was F1G-Coupe. Well participated. Unfortunately, Kim saw his newly acquired Coupe he won in the Gus del Castillo raffle fly away. For some reason the DT didn't work. When last seen, it was a country mile high flying in the clouds. It's a real loss for Kim, but a real tribute to Gus. Look for results in the ET.

We will be missing the US FF Champs this year. Harvest time for the wine grapes moved up one month as result of the extreme hot weather we had here in Ramona. We picked the lower vineyard September 6<sup>th</sup> and processed the fruit into wine. We'll be picking the upper vineyard September 20<sup>th</sup> and will need to be here to start the wine making process on the day we planned to go to Lost Hills for the Champs. Such as life and such is wine.

Arline's recovery from hip replacement surgery is going extremely well. She's almost back to her ole self.

I'm late getting this column to Howard. I've run out of stuff to discuss. So it's a wrap for now. *Remember:*

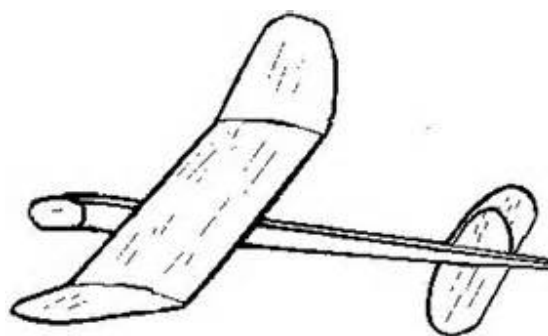
*"When nobody around you seems to measure up, it's time to check your yardstick."*

*-Author Bill Lemley*

## **2017 COMBINED FLYING SCHEDULE**

- 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**

- 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**



## BOARD OF TRUSTEES

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## 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

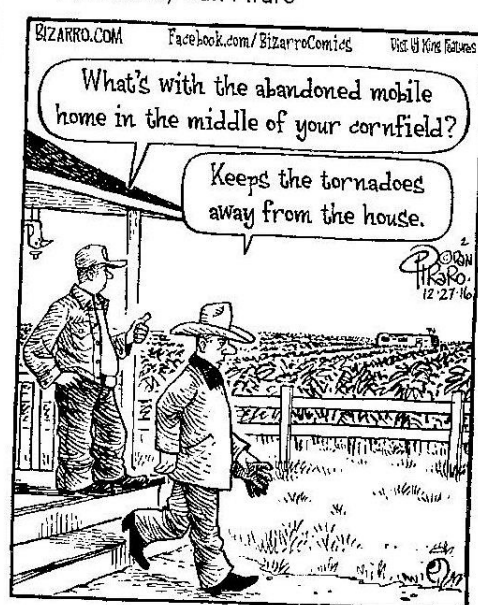
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## ORBITEER WEB SITE

[www.SanDiegoOrbiteers.com](http://www.SanDiegoOrbiteers.com)

Webmaster: Kathy McLaughlin

### **Bizarro** by Dan Piraro



SEPTEMBER INDOOR MONTHLY 2017  
 (September 3, 2017)  
 CD: William Scott



### Catpult Glider:

(Best two of nine flights)

1) Mike Jester	24.8	26.5	-	51.3
2) Richard Wood	19.3	20.0	-	39.3



Richard Wood / March 2017



Mike Jester / December 2017

Photos by Arline Bartick

### Embryo:

(Best of three flights)

1) Richard Wood	70	75	23	-	168
2) John Hutchison	48	58	59	-	165
3) Greg Hutchison	38	38	34	-	110
4) Nick Panousis	38	36	30	-	104
5) C.M. Kim	24			-	24
6) Mike Jester	dnf			-	
* ) John Hutchison	43	23	38	-	104
(2 <sup>ND</sup> airplane)					



<- Nick Panousis  
 Dec / 2016

Photos by Arline Bartick

C.M. Kim ->  
 April / 2017



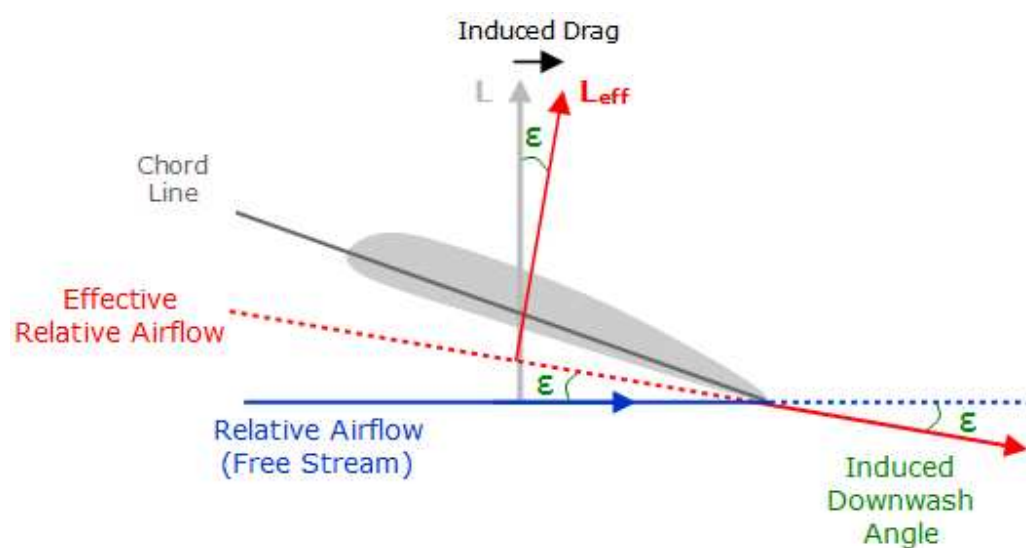
## Aerodynamic Drag

By Mike Jester



I bet you are thinking to yourself “Oh please, not another boring technical description full of equations!” Nope, this article just covers the basics, without any math.

As a model airplane moves through the air, various aerodynamic forces are generated, some helpful and others not helpful. **Induced drag** results from the lift force that must be generated so that the model can maintain level flight. **Form drag** results from the size and shape of the model. **Skin friction drag** results from the interaction of the air with the surfaces of the model. At the risk of over-simplifying, it can be said that in the free flight hobby, the best flight performance is achieved by minimizing drag.



*From the Wikipedia article “Lift-induced drag”*

It should be intuitive that in general, the heavier the model, the more lift will be required to keep it aloft. This results in more induced drag. If the same design is built twice so that the finished examples come out at two significantly different weights, the heavier example will need to fly faster to generate enough lift to stay aloft. This is not a good thing because more induced drag will be generated by the heavier model.

When the oncoming air flows around the wing, it creates turbulence and this also increases drag. High performance sport models, like modern F1Gs (coupes), use high aspect ratio wings with under-cambered airfoils to minimize induced drag. Some modelers use so-called “turbulators” just forward of the high point of the airfoil of the wing to reduce drag. They can take the form of several closely spaced spars that provide tiny ridges, or one or more lengths of thread glued to the top surface of the wing.

Models that present a smaller cross-sectional area to the oncoming flow of air have smaller form drag. Thus, a P-30 with a 7/8-inch diameter tubular fuselage and a thin wing will have less form drag than a P-30 with a 2-inch x 2-inch cross-section box fuselage and a thick wing. The overall shape of the fuselage of a model can reduce drag. Think of streamlining in the form of a tear-drop shaped fuselage.

Skin friction drag can be reduced by coating the covering of your model with dope, or clear Krylon spray, for example, which also waterproofs the same. Stan Buddenbohm sands the surfaces of the solid balsa wood wings of his outdoor catapult launched gliders with very fine grit sand paper, applies floor wax, and buffs the surfaces to a high polish. This significantly reduces skin friction drag on an outdoor catapult launched glider which can travel over 100 mph when launched by an experienced flyer.

So, what does this all mean to the typical free flight hobbyist? Since most of us are not going to design a model that we build, we need to be aware of the aerodynamic drag of each model when we select the same. If you are building a scale rubber powered model, analyze the drag of various designs under consideration. The rules in scale classes severely limit your ability to alter the design to reduce drag. A WWI biplane has very high drag, and will have a hard time flying more than one minute if rubber powered. The low aspect ratio wings, struts, and simulated wire bracing generate a lot of drag. Fixed landing gear are also a big source of drag. Sport classes that merely limit the size and/or weight of the model provide a lot of opportunity to minimize drag by selecting an optimum design. My P-30 that has a relatively thick wing with a flat bottom surface and a large chord does not glide nearly as well as my Pirate P-30 designed by Burdov. The latter has a much higher aspect ratio wing with a thin, under-cambered airfoil. Be careful when trimming. If the CG is too far forward, the wing of your model may need a high angle of attack, which generates more induced drag. It should be obvious that in a given free flight class, my lighter models generally fly better (longer) than my heavier models.

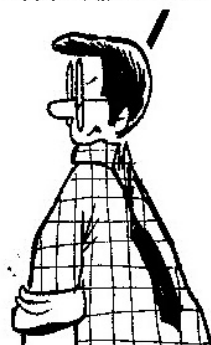
As promised, no equations were given above. My apologies to the experts for any errors caused by the foregoing over-simplification of a highly complex subject.



### Grand Avenue by Steve Breen



OK, WHO THREW THE  
PAPER AIRPLANE?



www.gocomics.com © 2014 Dist. by Universal Uclick for UFS

## San Diego Orbiteers Board of Trustees meeting

Wednesday, September 13, 2017

Held at the home of Ann and John Merrill. Also in attendance was President Don and Arline Bartick, John Hutchison and Kathy, Michael and Dorothy Jester, Mike Pykelny, and Mark Chomyn.

After dinner, the meeting was called to order at 7:12p.m.

**Minutes** of the previous meeting were approved as published.

**Treasurer's Reports**, both Annual and quarterly, were approved as provided to the board members. Kudos to our Treasurer, Howard Haupt, for a great job assembling all the figures.

**Membership Report:** we have a new member, Walter Ainslie. Welcome Walter!

### Old Business:

1. Membership campaign: Discount Hobbies in Kearney Mesa and one other shop up in San Marcos are the only true hobby shops left, both display our flyers. Kathy said the the Flying Leatherneck Museum still has some, too.
2. Recommendations for an additional board member: there seems to be a few potential candidates, more next meeting hopefully.
3. Perris field condition for a Cat III contest: it was determined that it depends on the wind direction and velocity. Still some tall, dry weeds to the north.

### New Business:

1. Don made a motion to spend up to \$150.00 for a club gift for a person who recently made a large donation to the club. The motion was seconded by Mike Jester, and it passed unanimously.
2. Still no suitable flying fields have been found in San Diego, so we remain in Perris for now.
3. The annual banquet was scheduled for next January 27<sup>th</sup>, a Saturday as usual.
4. A flyer was circulated regarding the Scamps 29th Lotto contest on October 8<sup>th</sup>. See elsewhere in the E.T. For the full flyer and more details.
5. Next board meeting will be held on December 13<sup>th</sup> at the Jester's home.

### Contest reports:

1. September indoor contest had a good turnout, despite the rain falling hard enough to hear it on the roof. Richard Wood beat John Hutchison by only 4 seconds. Mike Jester won the glider event.
2. September Scale Staffel had a two day contest on the weekend of the 9<sup>th</sup> and 10<sup>th</sup>. Warm weather, good turnout, and some great flights. Up until about 9:30, there were flights over 4 minutes, with the plane landing just a few feet away.

**Open Discussion:** Mike Jester is giving a presentation to the Board of Education regarding the Wright Stuff event of the Science Olympiad. He's working with the middle school classes, Division B.

**Good of the Order:** Don is in the process of harvesting his crop of grapes and going through crush. He has an upper and lower field, each yields about 10 ½ gallons. Arlene had a successful hip surgery, and is recovering wonderfully. Don will have his eyes operated on next month. Kathy has two pieces of art in the Modesto Agricultural Art Exhibit. During the meeting she was informed she had won an award! The Jesters have their 1<sup>st</sup> grandchild led on the way, will be a boy, due the end of September.

**Show-and-Tell:** Mike Jester talked about using Eze Dope, thinned 50/50 with water, and applied by an atomizer. He also had a half-size Gollywock. Very cute, but so far doesn't fly well. He was advised to use a better prop, and it should fly fine.

Meeting adjourned at 8:27p.m.

Respectfully submitted by John R. Merrill, Orbiteers secretary



## SEPTEMBER OUTDOOR MONTHLY

(Sept. 17, 2017)

CD: Mark Chomyn



Pictures and results follow for the September meet.

Pictures by Arline Bartick.



## SEPTEMBER 2017 OUTDOOR MONTHLY - CD: Mark Chomyn

### Coupe

Flyer	Time	Place
John Hutchison	360	1st*
Mike Pykelny	360	2nd
Mark Chomyn	334	3rd
Greg Hutchison	332	4th
Mike Jester	330	5th
Don Bartick	312	6th
Clint Brooks	294	7 <sup>th</sup>

\* Won in fly-off

### Power

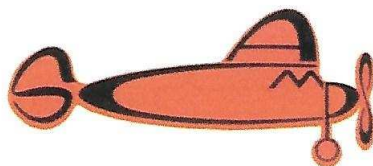
Clint Brooks	360	1st
John Swain	320	2nd

### Glider

Stan Buddenbohm	360	1st
Tim Batiak	313	2 <sup>nd</sup>
Greg Hutchison	255	3rd
John Swain	160	4th
Mike Jester	102	5th
Mark Chomyn		DNF

**Photos by Arline Bartick**





## **29<sup>th</sup> SCAMPS Twin Pusher & Lotto Fun Fly** **Sunday, October 8, 2017 - SCAMPS Field – Perris, CA**

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### **EVENTS:**

**LOTTO FUN FLY** – FLY ANYTHING, Gas – Glow – Electric – Rubber  
**Twin Pusher** (Mass Launch 1 Flight)

**\*Perris Special** (15 Second engine run glow & 20 sec. Ignition)

**\*ABC Old Time Gas Combined** (20 Second engine run)

**\*Large & Small O.T. Rubber Combined** - (Stick & Fuselage)

Prizes – 3 top times plus 1<sup>st</sup> place in each class

**\*1/2A, A, B, C Nostalgia** – (10 Second Hand Launch, 13 Second VTO or ROG, then 7 sec HL, & 9 sec VTO) Must be touching the ground to be a legal VTO

Prizes – 3 top times plus 1<sup>st</sup> place in each class

**E-36** – First 3 flights 10 sec motor run then 5 in fly-off. All 2 minute maxes

**\*Nostalgia Electric** – 12 second motor run first 3 flights, then 8 seconds, 3 min max

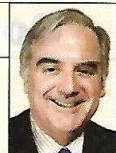
**\* 3 minute Max**

**FEES:** The price for regular events is \$5 each, and this will include entry into the Lotto. For Lotto only, it is \$1 per entry.

Flying is **7:00am to Noon!**

**CD Hal Cover**

(909) 591-3717



By William Garvey

William Garvey is Editor-in-Chief of Business & Commercial Aviation. Join the conversation at: [AviationWeek.com/IBA](http://AviationWeek.com/IBA)  
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## COMMENTARY

# Propulsion Plentifully

A Wright was right again

**T**o the unknowing, it may seem among the more prosaic—even dated—elements of modern aviation.

But the fact is, the vast majority of today's business and general aviation aircraft, along with thousands of military and regional commercial aircraft, owe much of their performance and their very propulsion to propellers. And no producer is more steeped in blade-making than Hartzell.

This year is the family-owned enterprise's centennial; during those 10 decades it has delivered more than half a million props. And credit for the successful, long-ago launch goes to none other than Orville Wright.

Back in 1917, the company was a lumber supplier and wagon maker, and it had begun manufacturing gun-



stocks as the Great War got underway. But Robert Hartzell, grandson of the company founder, turned out to be more interested in aviation than ash and sassafras, becoming instead an able airplane mechanic and rebuilder. In the doing, he noticed a high failure rate among wooden props of the era.

That's when Wright, a friend, suggested Hartzell use the company's walnut, a hardwood, for aircraft propellers. He agreed, and soon he and a single employee were using hand axes to fashion Hartzell's very first propeller. The material proved strong and the timing propitious, as the rapid buildup of materiel for the war effort meant a lot of new airplanes needed strong propellers. The nascent Hartzell Walnut Propeller Co. readily responded (see photo, middle column).

The postwar oversupply of airplanes



HARTZELL PROPPELLER INC. PHOTOS

and parts had a reverse effect on the company's fortunes. The staff of 200 was slashed to 20. In an effort to bring in cash, Hartzell began making wood steering wheels and then industrial fans for buildings, which proved to be a good business move. Mind you, it still produced propellers—notably several for the USS Shenandoah, the U.S. Navy rigid airship that in 1925 came to grief in a storm not far from the Hartzell plant in Piqua, Ohio.

Yet another global conflict had Hartzell increasing prop production again—in 1942 it hired more than 350 new employees to maintain the pace—and transitioning to metal blades. It also experimented with composite material in some props.

Fast forward, and today Hartzell is a global brand in a specialized market. It supplies propellers to three-quarters or more of the in-production piston and turboprop aircraft manufactured in North America, Europe and elsewhere. Each year it produces some 3,000 new props—ranging from two blades to six—to translate output from engines spanning 100-2,000 hp into actual propulsion. The company has more than 400 different blade designs. Its systems also propel hovercraft operated by the Canadian

Coast Guard and wing-in-ground-effect vehicles used as ferries in China.

Although the Hartzell family divested the propeller company to TRW in 1981, it is still family-owned. That's because six years later the conglomerate sold it to James Brown, Jr., an Ohio industrialist, former U.S. Navy pilot and aviation enthusiast. Brown's Tailwind Technologies Inc. owns Hartzell Propeller and its sibling, Hartzell Engine Technologies, which manufactures accessories such as turbocharging systems, alternators and fuel pumps. Brown's sons Joe and Jim are chief operating officer and president, respectively, of Tailwind, which has nearly 400 employees. Joe (see photo below) is also president of Hartzell Propeller and board member of the General Aviation Manufacturers Association.

While the majority of props Hartzell builds today are metal (see photo, first column), it is investing heavily in composite technology and says nearly one-third of its production features carbon-fiber or Kevlar blades mounted on stainless steel shanks. And, Executive Vice President J.J. Frigge explains, because composite blades are lighter, there can be more of them in an assembly, which in turn boosts performance. Consequently, the company believes composite blades will eventually prove more popular than metal.



Another evolving development is supplying the rapidly expanding UAV market. Hartzell blades are already fitted on some units—Frigge estimates 100—but the company is in several competitions for higher-performance UAVs and is confident that segment of its business will grow steadily as well.

Launching into Hartzell's second century, the company plans to “continue setting the industry's very best propeller design and manufacturing standards,” says Joe Brown. “Our individual customers have come to anticipate the ultimate performance from us, and we will strive to keep exceeding expectations.”

Surely, Mr. Wright would have approved. ☺

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Howard L. Haupt / Editor  
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San Diego, California 92117-4266



## WHAT'S HAPPENING -

October 2017 / November 2017

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Oct. 1 - **Indoor Flying**, Grossmont College (Upper Gym), 7:30 am to 11:30 am.  
Feature Event: **A-6**, Other Event: **Phantom Flash**

Oct. 8 - 29<sup>TH</sup> SCAMPS Twin Pusher & Lotto Fun Fly  
SCAMPS Field, Perris CA, 7:00 am.  
(See enclosed flyer)

Oct. 15 - **Orbiteer Outdoor Monthly**  
SCAMPS Field, Perris CA, 8:00 am.  
Feature Event: **P-30** Other Events: **Power & Glider**

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Nov. 1 - **Indoor Flying**, Grossmont College (Upper Gym), 7:30 am to 11:30 am.  
Feature Event: **Penny Plane**, Other Event: **No-Cal & Canard One-Design**

Nov. 12 - **Orbiteer Outdoor Monthly**  
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Feature Event: **Old Time Nostalgia Rubber** Other Events: **Power & Glider**