

# EL TORBELLINO

NEWSLETTER OF SAN DIEGO ORBITEERS FREE FLIGHT CLUB

NOVEMBER 2019



## Prez's Corner – Mark Chomyn

Where did the year go? Can you believe Thanksgiving is already upon us? Soon we'll be doing our Christmas shopping followed by celebrating a new year. And, speaking of an oncoming new year, I want to give all flyers an early heads up on our yearly banquet and awards ceremony. Our banquet will be held on Saturday, January 11, 2020. More details will be given in the El Torbellino and by e-mail to the club mailing email list. So, it's not too early to start rummaging through the garage, attic or your building area and looking for items you might want to donate to the raffle. Save the date!

We did a make-up event on Saturday October 2<sup>nd</sup> in an effort to get enough flights in for coupe points towards this year's club awards. Got a good turnout. Maybe it was the announcement of a \$20 prize to the winner that brought everyone out. Or, maybe it was just because we just love to fly any chance we get. The big prize winner was Mr. Stan Buddenbohm. Congratulations Stan!

I participated in the October 2<sup>nd</sup> contest but the old and tired Campbell Super Coupe wasn't able to do better than over a minute. On my third flight Mike Jester offered me a coupe motor and a winder with a torque meter. I put in about 450 winds and the torque meter was showing 4 oz. Let the Super Coupe loose and it made a decent climb but no max was in the cards. When I got home, I decided that it was time to decommission the Super Coupe. So, in the trash it went but not before I pulled the viscous timer and saved the front end (never know when you need a folding prop). That done, I realized that if I wanted to fly coupe I would need to start working on a replacement. And as luck would have it, Mike Pykelny had given me a Winterhawk II kit and now I had more than enough incentive to get it started. I should be able to get it done for the 2020 season.

I'm still into building the off the wall stuff. Latest attempt is a Carl Goldberg Cessna 180. Remember the Carl Goldberg all sheet series of 21-inch free flights? In addition to the Cessna there was the Spirit of St. Louis, Shoestring racer, and my favorite the Ranger 21. The Cessna was probably one of my E-bay purchases and it's old and the kit wood is very dry but it's going together OK using Testors "green tube" model airplane cement. Yes, they still sell the stuff and its aroma is strikingly similar to Duco. It's quick drying, sands well and is perfect for the all sheet construction. Hope to test fly this latest experiment in December.

Got my copy of the Nov – Dec Flying Aces Club News and in it was Roger Willis's report on the Sept 21 – 22 two-day Scale Staffel event in Perris. I was able to attend the first day of the event but did not make the second day so I caught up on the results via Roger's article. Not to my surprise, the Grand Champion of the event was Bob Hodes. Good going Bob! As you may know the Scale Staffel contest serves as a good warmup test for those flyers who are looking at attending WESTFAC VII in Buckeye AZ from Oct 17 – Oct 20. As I write that contest is history, but I did go to the WESTFAC website and check out the photo gallery for the event. I have to admit that my building skills aren't up to the level of craftsmanship shown in the photo gallery. And, not only do those planes look great, they fly that way too. I look forward to seeing a report on WETFAC VII in a future edition of FAC Club News.

That's all for now. Have a very Happy Thanksgiving.  
Mark

*"Learn from the mistakes of others.  
You won't live long enough to make  
them all  
yourself." (Eleanor Roosevelt)*

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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:

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### **THE FINE PRINT**

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## ORBITEER WEB SITE

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

Webmaster: Kathy McLaughlin

## 2019 INDOOR FLYING SCHEDULE

Dec 1 - P-18 & Embryo\*

**\*Scale Staffel Event**

## 2019 OUTDOOR FLYING SCHEDULE

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All are AMA Sanctioned & National Cup Events  
(Contests at Perris CA unless otherwise noted)  
(All Contests include E36, Power, & HLG/CLG)

Dec 15 - Old Time Nostalgia Rubber

**\* Non-Club Points Event**

Unlike a real airplane or a radio-controlled airplane, a free flight model airplane must maintain its stability without any pilot adjustment of control surfaces during a flight. Even more challenging, a rubber powered free flight model airplane must do this throughout the climb, cruise and glide phases of the flight as the torque of the rubber motor varies from high, and then to medium, to low, and finally to zero. It must do this while encountering disturbances in the air such as wind, turbulence and thermals. A rubber powered free flight model airplane needs roll (lateral) stability so that it will automatically raise a wing tip that swings low when the model encounters turbulence. In addition, the model must maintain pitch stability, which I covered in last month's article, and yaw stability, which I will cover in next month's article. In both full-size aircraft and model aircraft roll stability is achieved by angling the wing sections upwards on either side of the longitudinal centerline of the fuselage. This wing configuration is referred to as dihedral. When the model rotates about its centerline it begins to slip sideways causing the relative direction of the oncoming wind to change. The result of the dihedral is that the angle of attack (AOA) of the lower wing section is effectively higher than that of the higher wing section. The lower wing section produces more lift, causing the model roll back to an attitude with both wing sections at the same height.

## Dihedral Reduces Roll Rate Because Low Wing Produces More Lift

**boldmethod ➤**

The more dihedral your model has, the more resistant it will be to rolling to one side or the other. However, like most advantageous aerodynamic design features, dihedral comes at a cost, namely, increased drag. Excessive dihedral is also pretty ugly on scale models. Therefore, the rules of the Flying Aces Club place a limit of the amount of dihedral that can be present in a scale model, such as a WWII fighter. In full-size aircraft dihedral is used to make the airplane less sensitive to rolling, allowing easier control by the pilot. However, many full-size fighter aircraft and aerobatic airplanes have no dihedral in order to achieve maximum maneuverability.

Typically, free flight models have a V-shaped wing that provides the required dihedral. The optimum amount of dihedral is usually indicated on the plan and is achieved by joining half-wing sections with the wing tips raised a specified amount from the building board, i.e. 1 ½ inches. Sometimes free flight models have a polyhedral wing, the Gollywock being a good example. Other times the wing has a flat center section and upwardly angled tip sections.



**Polyhedral Wing Frame of the Author's First Gollywock**

Predetermined amounts of wash-out and wash-in (twist) in various sections of the wing are normally built-in during construction of a free flight model. Wash-out means that the trailing edge (TE) is higher than the leading edge (LE). Wash-in is just the opposite. Equal amounts of wash-out on the wing tips can help prevent the model from spiraling into the ground if one wing tip gets low. If the model is spiraling down or otherwise showing a tendency for one wing-tip to fly too low, check to see if there are unequal amounts of wash-out on the wing tips. Sometimes this can be corrected at the field with some brute force manual twisting. Other times it will be necessary to steam a tissue covered wing or apply a heating iron to a plastic film covered wing in order to equalize the wash-out on the wing tips. Wash-in on an inner wing section can help hold the wing level on a model, especially during the power phase. Typically, a model that is trimmed to climb right would benefit from a little wash-in on the right inner wing section. You can glue on a wedge or Gurney flap with Duco® cement to the top or bottom of the TE of the appropriate wing section and easily remove it with acetone if it doesn't improve flight performance.

High wing models such as a Piper Cub gain additional roll stability due the pendulum effect since most of the weight is below the wing which provides the lifting force. Ditto for outdoor sport models that have the wing mounted on top of a wing pylon. Most indoor duration models such as Limited Penny Plane (LPP) mount the wing on top of relatively tall wing posts, and again the pendulum effect aids in maintaining roll stability in such models.

Many indoor models have vertical tip plates or winglets on the ends of a flat wing. This effectively provides the model with dihedral and makes the wing of a very light weight indoor model a great deal easier to build. For reasons not fully understood by me, you rarely, if ever, see vertical tip plates used on outdoor free flight sport models. I have often thought of trying them on a P-30 just to have different looking model, but have never gotten around to carrying out such an experiment.



## Orbiteers - Indoor Contest Results - November 3, 2019

### Limited Penny Plane

<u>Flier</u>	<u>Best 2 of 5 flights</u>		<u>Total</u>	<u>Rank</u>
Greg Hutchison	313	357	670	1
John Alling	317	313	630	2
Mike Jester	294	296	590	3
John Hutchison	288	171	459	4



## Scale Staffel - Indoor Contest Results - November 3, 2019

### Canard Special Contest

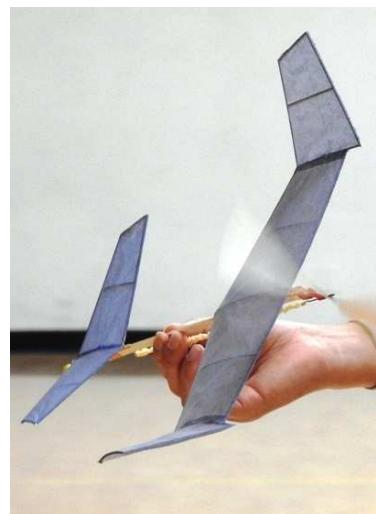
#### Wood Prop

<u>Flier</u>	<u>Best 3 of 6 flights</u>			<u>Total</u>	<u>Rank</u>
William Scott	13	16	31	60	1
Walter Ainslie	15				2



#### Plastic Prop

<u>Flier</u>	<u>Best 3 of 6 flights</u>			<u>Total</u>	<u>Rank</u>
John Hutchison	68	77	75	220	1
Walter Ainslie	39	35	44	118	2
Nick Panousis	50	23	17	90	3



### Mass Launch

John Hutchison, Walter Ainslie and Nick Panoussis

Winner - John Hutchison

There were no official flights in the scheduled **No-Cal** event

Photo by A.Bartick, Nov. 2018 →

# Orbiteers - Outdoor Contest Results - November 2, 2019



## Coupe

<u>Flier</u>	<u>3 flights</u>			<u>Total</u>	<u>Rank</u>
Stan Buddenbohm*	120	120	120	360	1
Mike Jester	114	120	120	354	2
Mike Pykelny	107	86	120	313	3
Mark Chomyn	61	63	59	183	4

## Glider

<u>Flier</u>	<u>Best 3 of 5 flights</u>			<u>Total</u>	<u>Rank</u>
Tim Batiuk*	103	80	120	303	1
Stan Buddenbohm*	103	120	70	293	2
M. Pykelny	120	50	39	209	3
Mike Jester	32	21	21	74	4

No fliers put in official flights in the **Power** event.

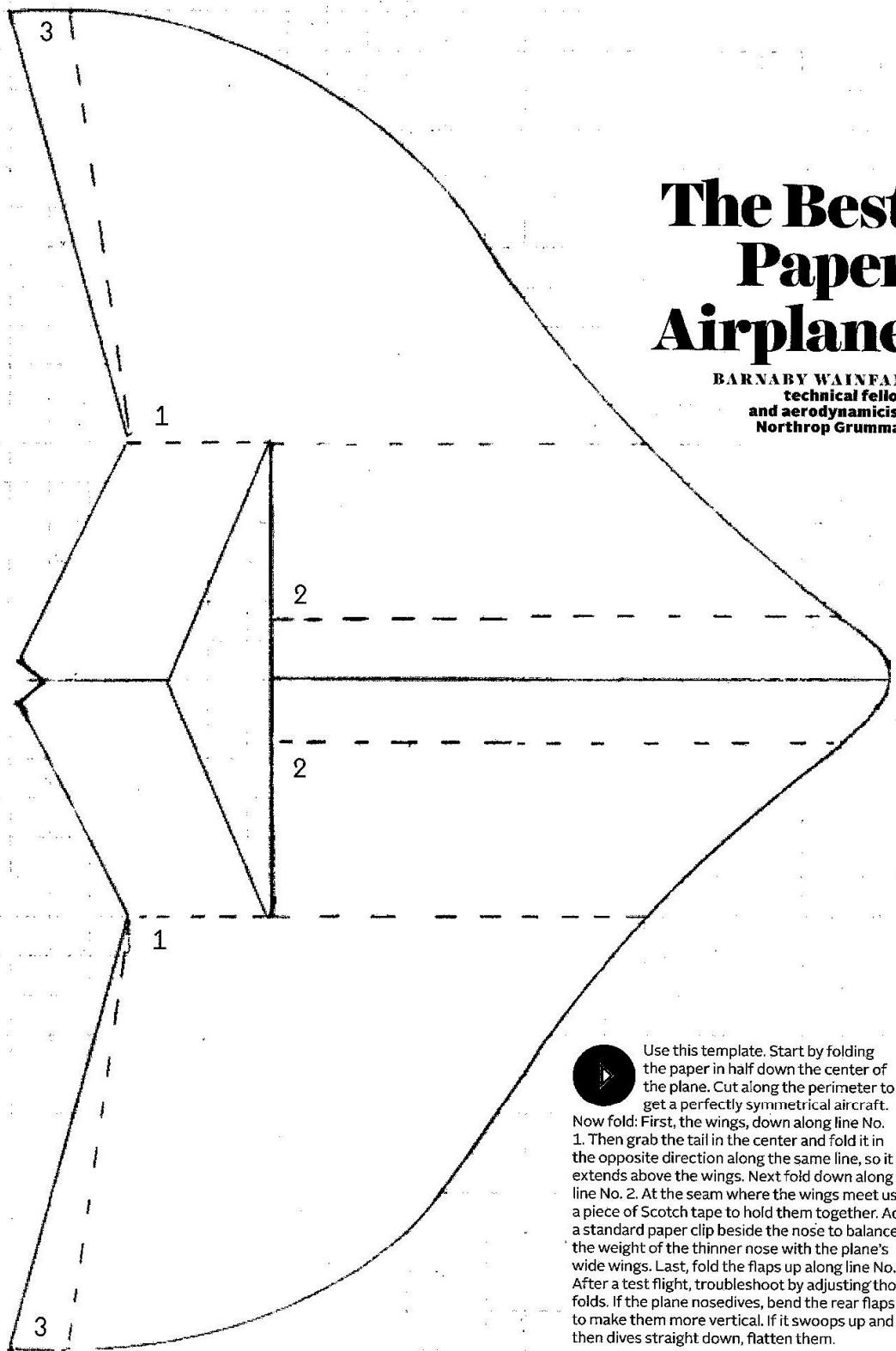
\*not an SDO member



Photos by A.Bartick from previous Coupe contests

# The Best Paper Airplane

BARNABY WAINFAN,  
technical fellow  
and aerodynamicist,  
Northrop Grumman



4/02/4/3  
100/100

Use this template. Start by folding the paper in half down the center of the plane. Cut along the perimeter to get a perfectly symmetrical aircraft.

Now fold: First, the wings, down along line No. 1. Then grab the tail in the center and fold it in the opposite direction along the same line, so it extends above the wings. Next fold down along line No. 2. At the seam where the wings meet use a piece of Scotch tape to hold them together. Add a standard paper clip beside the nose to balance the weight of the thinner nose with the plane's wide wings. Last, fold the flaps up along line No. 3. After a test flight, troubleshoot by adjusting those folds. If the plane nosedives, bend the rear flaps to make them more vertical. If it swoops up and then dives straight down, flatten them.

SAN DIEGO ORBITEERS  
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## WHAT'S HAPPENING - November / December 2019

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### Dec. 1 - Indoor Flying

Grossmont College (Upper Gym), 7:30 am to 11:30 pm.  
Feature Events: **P-18 & Embryo**

### Dec. 15 - Orbiteer Outdoor Monthly

SCAMPS Field, Perris CA, 8:00 am.  
Feature Event: **Old Time Nostalgia Rubber**  
Other Events: **E36, Power & HLG/Catapult Launch Glider**

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### Jan. 11, 2020 - SanDiego Orbiteer and Scale Staffel Annual Banquet

1:00 pm to 4:00 pm  
Filippi's Pizza Grotto  
5353 Kearny Villa Rd.  
San Diego, CA 92123  
(858) 279-7240

