

# EL TORBELLINO

NEWSLETTER OF SAN DIEGO ORBITEERS FREE FLIGHT CLUB

OCTOBER 2017



## *The Prez's Corner – Don Bartick*

It was great to see the good turnout at our last Indoor competition. Some new folks were getting into the spirit of free flight. As for me, I'm still trying to get a handle on the subject. Having spent a jillion years flying outdoor free flight hasn't helped. But I'm sure having fun. Not having to worry about weather and certainly not having to chase further than 75 feet after the planes is a big plus for indoors.

As you have read in the ET, the Board approved the expenditure for a gift to be given to Sandra del Costillo to thank her for Gus's free flight collection. I decided that a memory box with the Orbiteers logo and inscription would be best. Rancho Engraving came up with the appropriate box and I wrote the inscription. Look for photos of the box somewhere in this ET. The box was sent to Sandra on 9/30. She received it and responded by email that it brought more tears and she couldn't express properly her gratitude at this time.



Now that the grapes are picked and the wine made, maybe I can find some time to do some building. My free flight fleet is really sad. With that said, I need to allocate my time better. I did take time to have cataract surgery on my right eye. Wow, what an easy procedure. The results are fantastic. Colors are bright and being able to see much better is quite an experience.

That's a wrap for now.

Remember: "Giving up doesn't always mean you are weak. Sometimes it means you are strong enough to let go."

*-Author Unknown*





## BOARD OF TRUSTEES

### Chairman

Don Bartick ..... (760) 789-3773  
[dbartick@4-warddesign.com](mailto:dbartick@4-warddesign.com)

### Vice Chairman (Acting)

John Hutchison.....(619) 303-0785  
[johnhutchison1@cox.net](mailto:johnhutchison1@cox.net)

### Secretary

John Merrill .....(619) 449-4047  
[johnrmerill@yahoo.com](mailto:johnrmerill@yahoo.com)

Mark Chomyn .....(760) 753-7164  
[chomyn@roadrunner.com](mailto:chomyn@roadrunner.com)

Mike Pykelny .....(858) 748-6235  
[MPykelny@dslextreme.com](mailto:MPykelny@dslextreme.com)

Mike Jester .....(619) 575-1953  
[michaelhjester@gmail.com](mailto:michaelhjester@gmail.com)

**Open Position**.....(xxx) xxx-xxxx  
yourname@volunteer

### Treasurer (Trustee at Large)

Howard Haupt .....(858) 272-5656  
[hlhaupt1033@att.net](mailto:hlhaupt1033@att.net)

## ORBITEER TASK LEADERS

### Competition Director

Mark Chomyn .....(760) 753-7164  
[chomyn@roadrunner.com](mailto:chomyn@roadrunner.com)

### Safety Officer & Field Marshall

Open Position .....(xxx) xxx-xxxx  
yourname@volunteer

### Web Master

Kathy McLaughlin.....(619) 303-0785  
[kamclaughlin1@cox.net](mailto:kamclaughlin1@cox.net)

### Newsletter Editor / Membership Cordinator

Howard Haupt .....(858) 272-5656  
[hlhaupt1033@att.net](mailto:hlhaupt1033@att.net)

## 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.

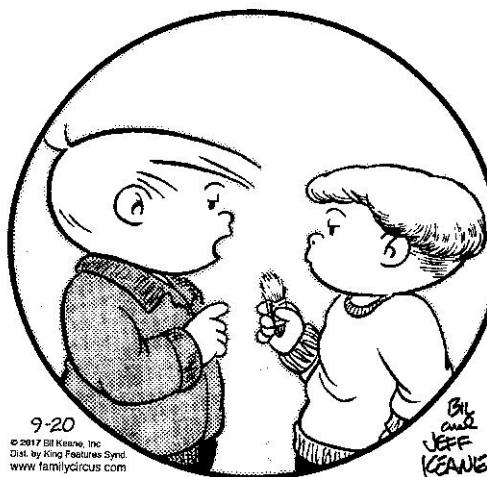
## ORBITEER WEB SITE

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

Webmaster: Kathy McLaughlin

---

## Family Circus BY JEFF & BIL KEANE



"I don't know how it could be. It sure wasn't lucky for the RABBIT."

OCTOBER INDOOR MONTHLY 2017

(October 1, 2017)

CD: William Scott

**A-6:**

(Best two of five flights)

1)	Richard Wood	DW Okay	161	195	-	356
2)	Mike Jester	Czech	167	164	-	331
3)	John Hutchison	A6 Orgn.	112	166	-	278
4)	Walter Ainslie	A6 Plus	49	42	-	91
4)	Don Bartick	DB Spcl.	DSQ*			

\*Illegal use of carbon built up motor stick



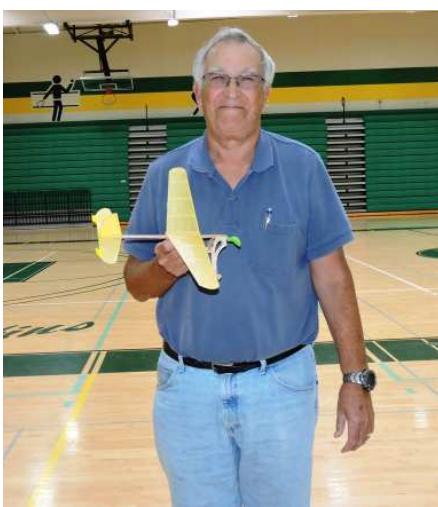
**Phantom Flash:**

(Best three of six flights)

1)	Richard Wood	74	86	80	-	240
2)	Don Bartick	62	69	71	-	202
3)	John Hutchison	66	67	52	-	185
4)	George Mansfield	56	75	28	-	159
5)	Walter Ainslie	54	57	41	-	152
6)	Nick Panousis	48	56	46	-	150



Photos by Arline Bartick



## Free-Wheeling Clutches for Rubber Powered Models

By Mike Jester



Outdoor rubber powered models without folding props need a mechanism to ensure that the prop free wheels after the motor run is completed. In our hobby this mechanism is typically referred to as a clutch. If a non-folding prop does not free wheel, the drag is substantial, and the glide of the model is killed. If a non-folding prop locks up, it acts as a crude dethermalizer and the flight of your model will end pretty quickly. A locked up prop can cause a spiral right dive from peak altitude. You might have to pick up a wrecked model. Let's review the basics of a few popular types of clutches.

We are all familiar with the ubiquitous ramp-style clutch that is incorporated into virtually every injection molded plastic prop that is designed to be spun by a rubber motor. In theory, when the turns on the rubber motor are nearly exhausted, the drive dog portion of the L-shaped front end of the prop shaft is supposed to disengage with the axial shoulder of the spiral ramp on the front end of the hub. If all goes well, this action allows the prop to spin freely. Good luck with that! The remaining tension on the rubber motor and/or its sagging due to its weight invariably pull the drive dog against the ramp and prevent or inhibit free-wheeling of the plastic prop. I have had many initially promising outdoor flights of my Phantom Flash and No-Cal models cut short by this action. Of course this is not a problem in indoor flying, where the prop should be driven throughout the flight and the model should land with unused turns on the rubber motor.



**Ramp-Style Clutch**

My personal favorite is the Garami clutch. It works especially well on the big carved balsa wood props found on Old Time Rubber and Nostalgia models, and on many models flown in FAC events. A U-shaped latch made of music wire is engaged and driven by the drive dog of the prop shaft. When the motor run is over, the latch swings out of the way and the prop free wheels. Make sure you use a tube-in-tube bushing assembly inside the prop hub with the inner tube slightly longer so that the drive dog does not push against the prop hub and generate undesirable friction. I used a Garami clutch on my first Gollywock and it has never failed me during many, many flights.



### Garami Clutch

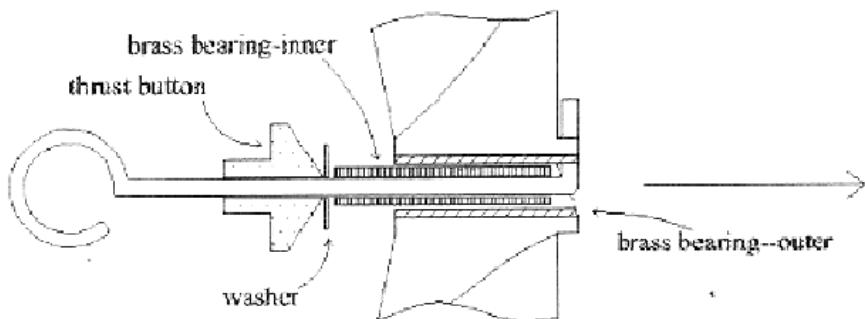
The Nason clutch uses a pair of pivoting arms or claws that are engaged by the drive dog of the prop shaft. The supposed advantage of this clutch is that it automatically re-engages if there is any disengagement. I have tried to make a Nason clutch and have not succeeded. The precise shaping and positioning of the claws is crucial and apparently beyond my skill set. The two claws have to be bent into the opposite end segments of a single piece of music wire. One of the claws has to be precisely bent after insertion of the wire through a Brass busing. I have yet to see a Nason clutch used at any flying field, however, expert fliers like Joshua Finn only use this clutch on their outdoor models.



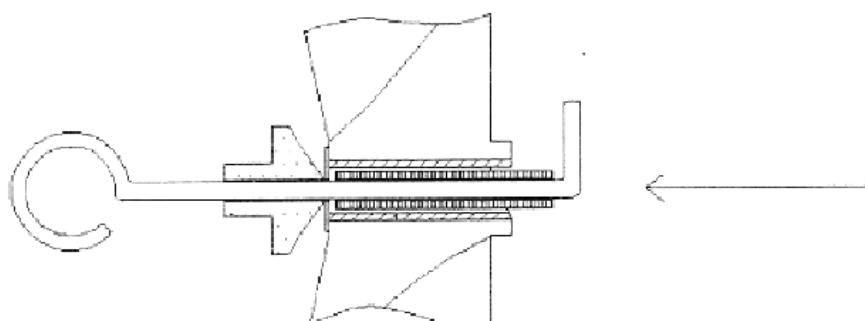
### Nason Clutch

The Struck clutch is useful with injection molded plastic props that have a spiral ramp on the front of the hub, such as those that must be used in the P-30 class. It was first introduced to me by Stan Buddenbohm when he gave me a nose block and prop assembly from one of his old P-30 models. I recall at the time marveling at its simplicity and cleverness. Inner and outer tubular bushings are incorporated into the prop hub. You need to file a matching helical shoulder on the front end of the inner tubular bushing. On P-30 props, the inner bushing is about 1/16 of an inch longer than the outer bushing. When the nose block and prop assembly are mounted on the fuselage after winding, the prop is manually pulled forward to ensure that the drive dog engages the axial shoulder of the spiral ramp on the hub. When the rubber motor run is over, the prop moves back slightly due to the on-coming air flow. This ensures that the drive dog disengages with the axial shoulder of the spiral ramp. Skeptics don't like the Struck clutch because there is supposedly a risk of disengagement before launch, but I have had very good results with this clutch. It is only beneficial in connection with injection molded props with a helical ramp on the front end of the hub. The following sketches, while blurry, best illustrate the structure and operation of the Struck clutch. They appeared in an

article by Dave Mitchell published in the September 2007 issue of the journal published by the DC Maxecuters.



Prop forward--ramp clutch engaged



Prop rearward--freewheel position

### Struck Clutch

Many modelers have migrated to the commercially available GizmoGeezer prop assembly. This is particularly true of those modelers who build and fly traditional stick and tissue models that are flown in FAC events. This prop assembly includes a very clever and sophisticated clutch mechanism. It relies on a coil spring and a helically threaded sleeve that axially moves a conical drive spinner clear of the roots of the prop blades when the tension on the rubber motor falls below a predetermined level. The GizmoGeezer prop assembly offers three distinct advantages: 1) absolute certainty in free-wheeling; 2) elimination of any need to braid rubber motors; and 3) precise thrust line adjustments. I use GizmoGeezer prop assemblies on many of my FAC models.

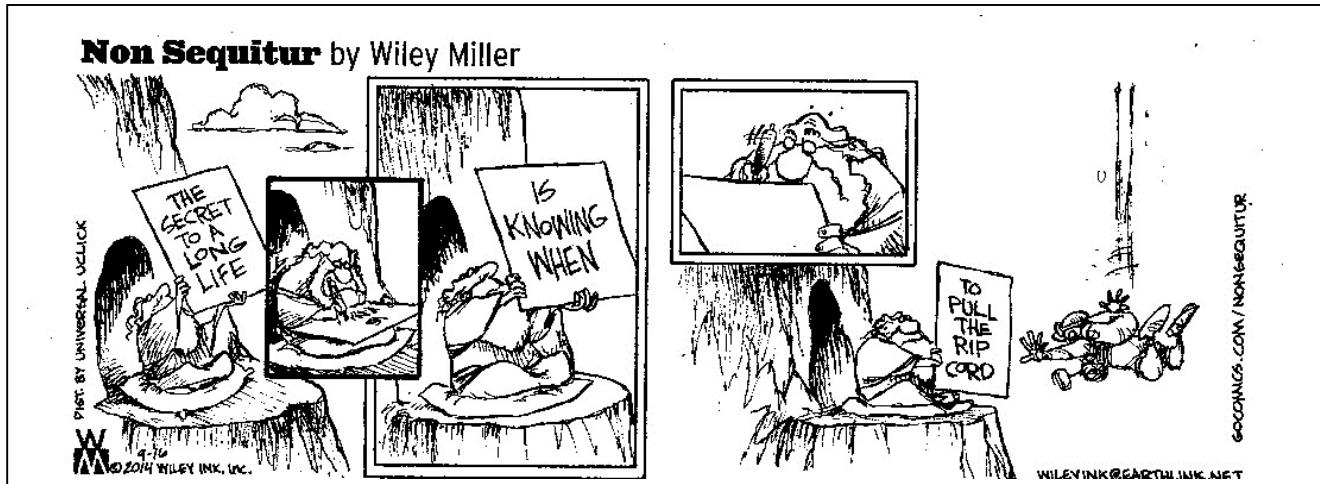
Continued Next Page ➞



### GizmoGeezer Prop Assembly with Integral Clutch

You might wonder why I bother building my own clutches. One reason is that P-30 rules are very strict about modifications to the prop. Another reason is that the maximum diameter of a GizmoGeezer prop is 10 inches, which is not nearly enough for the Wren and the Miss Canada Senior OTR models that are on my build list.

There are other types of clutches used in rubber powered free flight, such as the bail-type clutch and the Superior Props latch-and-pin clutch. However, the foregoing summary is already long enough for this newsletter.



**SAN VALEERS 30th ALL NOSTALGIA ANNUAL  
LOST HILLS, CALIFORNIA\* OCTOBER 21-22, 2017**

**C.D. Terry Thorkildsen 805/495-6135; Co C.D. Tom Laird 310/544-7606**

**CAT 2– 3 MIN. MAX. THIS IS A NFFS NATIONAL CUP CONTEST  
(Combined with old timer SCIFS/SCAMPS Contest Same Weekend,  
SCAMPS contact D. Heinrich (909) 593-5789 SCIFS M. Myer 818 439-3799)**

**SATURDAY**

**7:00AM – 4:30PM**

**1/4 A NOSTALGIA**

**1/2 A NOSTALGIA**

**C NOSTALGIA**

**SUNDAY**

**7:00AM - 3PM**

**A NOSTALGIA**

**B NOSTALGIA**

**Vintage FAI  
(rules per NFFS 2015/2016 )**

**BOTH DAYS**

**NOSTALGIA CABIN combined  
Any cabin design & engine size  
including Payload (dummy optional)  
Must Have Front Windshield**

**ONE DESIGN EVENT:  
ZINGO/ WITCH HAWK 500**

**1/2 A EARLY BIRD**

**COMBINED NOST RUBBER**

**COMBINED ONE**

**NOSTALGIA Plus GLIDER  
DESIGN GAS**

**(A1/A2) Proxy Towing ok if physically required**

**MODELS (All previous eligible designs)**

**\*\*VECO .19 Legal nostalgia engine donated by Jim Hurst\*\* to be awarded  
by Raffle (1 ticket for each event entered or \$3 ea, or \$5 for 2, or \$10 for 5)**

**EVENT PRIZES: MERCHANDISE \* ENGINES\*KITS\*BALSA\*ETC.**

**ALL MODELS MAY BE CHECKED AND WEIGHED LESS FUEL, BEFORE FIRST FLIGHT**

**ONE DESIGN: ZINGO (AMA OR FAI)/ WITCHHAWK 500 WITH LEGAL CLASS A NOSTALGIA  
ENGINE      EVENT PRIZES: \$45 FOR 1<sup>ST</sup>, \$30 FOR 2<sup>ND</sup>, \$15 FOR 3<sup>rd</sup>**

**COMB NOST RUBBER: Designs from 1943-1956, Maxes: 2 min, 3 min, 4 min, & all flyoff  
flights 4 min max**

**ENGINE RUNS ALL NOSTALGIA EVENTS & 1 DESIGN: First 3 Flights 10 Seconds HL 13 sec  
VTO, all Flyoff Flights will be 7 Secs HL and 9 secs VTO, all other rules per NFFS Rulebook 2015-  
2016 for CAT 2. (see NFFS 2015/2016 for vintage FAI rules)**

**NFFS RULES LIST NO. 2015-2016 NO RE-ENTRY.**

**Entry fees: Registration \$5.00, SR. & OPEN: \$5.00 per event or \$35 unlimited entry,  
JR's: \$3.00 All EVENTS ARE JSO**

# WESTFAC 6 Schedule of Events

Wednesday, 25 October 2017, Noon – 6 p.m.

Registration, FAC scale judging vendors, and refreshments

## Thursday, 26 October 2017 8 a.m. – 5 p.m.

**Mass Launch Events**  
8:30 WWI  
10:30 Modern Civilian  
12:30 Thompson Trophy

**Judged Scale Events**  
FAC Peanut Scale  
FAC Rubber Scale  
FAC Jumbo Scale  
FAC Power Scale

**Total of Three Flight Scale**  
Golden Age Monoplane  
Dime Scale

**Total of Three Flight Non-Scale**  
OT Rubber Stick  
Jimmy Allen (ROG)

## Friday, 27 October 2017 8 a.m. – 5 p.m.

**Mass Launch Events**  
8:30 Double Trouble  
10:30 WWII  
12:30 Greve

**Judged Scale Events**  
FAC Peanut Scale  
FAC Rubber Scale  
FAC Jumbo Scale  
FAC Power Scale

**Total of Three Flight Scale**  
Golden Age Biplane  
Modern Military

**Total of Three Flight Non-Scale**  
OT Rubber Fuselage (ROG)  
Embryo (ROG)

## Saturday, 28 October 2017 8 a.m. – 4 p.m.

**Mass Launch Events**  
8:30 Spanish Civil War  
10:30 Biplane  
12:30 Low Wing Military Trainer

**Judged Scale Events**  
FAC Peanut Scale  
FAC Rubber Scale  
FAC Jumbo Scale  
FAC Power Scale

**Total of Three Flight Scale**  
Spanish Civil War Aircraft  
Simplified Scale  
Jet Catapult scale

**Total of Three Flight Non-Scale**  
2-bit +1 (ROG)

**Dinner/Awards 8 p.m.**

**Spanish Civil War Mass Launch** — any aircraft that saw service during the Spanish Civil War, military or civilian (must have appropriate markings). \* bonus seconds awarded for each round: 1.) biplane —15 seconds; and 2.) twin or tri-motor— 20 seconds

**Spanish Civil War** — total of 3 flight scale — any aircraft that saw service during the Spanish Civil War, military or civilian (must have appropriate markings). \*\*\* for this total of 3 flight scale event — bonus seconds (same as FAC scale bonus points) will be added for each flight.

### **Special Spanish Fly award**

1. Spanish Civil War models can be entered in any applicable event to accrue points (as long as the model qualifies for that event). example: besides the two dedicated Spanish Fly events, qualified models can be entered in Biplane ML, Low Wing Military Trainer ML, Double Trouble ML, FAC Scale, Peanut Scale, Jumbo Scale, Power Scale, Golden Age Monoplane, Golden Age Biplane, Dime Scale or Simplified Scale.
2. Points will be awarded according to how each Spanish Civil War aircraft finishes in each event. Placement points will be awarded to each Spanish Civil War aircraft to determine the top flyer.

This website has a great list of Spanish Civil War aircraft: <http://bioold.science.ku.dk/drash/model/Spain/did.html>

**Double Trouble ML** — any scale twin engine aircraft of any era, military or civilian. Concept aircraft that were on the drawing board but never produced are eligible.

**Biplane ML** — any scale biplane, military or civilian, 1919 until present. Tandem wing aircraft are not eligible. WW1 aircraft flown after 1918 are not eligible.

**Jet Catapult Scale** — best 3 of 6 flights (per rule book)

**WESTFAC VI REGISTRATION FORM**  
**BUCKEYE, ARIZONA**  
**OCTOBER 25<sup>th</sup> THRU 28TH 2017**

[Please Print]

Name \_\_\_\_\_ Address \_\_\_\_\_ AMA # \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_ Email: \_\_\_\_\_

Entry Fee @ \$30 (flies all events): \$ \_\_\_\_\_

WESTFAC V T-Shirt @ \$15 each: size \_\_\_\_\_ \$ \_\_\_\_\_

Big WESTFAC V Awards Dinner @ \$27 each: \$ \_\_\_\_\_

Total Enclosed: \$ \_\_\_\_\_

No entry fee for contestants under 18 years of age. Please send your check prior to October 15<sup>th</sup> 2017 so you won't have to stand in line at registration. Mail entries to: WESTFAC, % T. Arnold, 3862 Ridgecrest Dr, Casper WY 82604. Registration form MUST be received by October 11, 2017 in order to guarantee banquet seat, T-shirt, and entry plaque. While we will have on-field registration, we cannot guarantee if meal, t-shirt, and plaque will be available. We will be unable to refund cancellations after October 15, 2017. Make your check out to: WESTFAC. AMA membership required and AMA entry forms are available at the field.

The Comfort Suites in Goodyear, AZ, (623) 266-2884 is the HQ and site of judging and banquet. They will hold a block of rooms for us until September 25 for the low price of \$129.99 each. After that date the rooms are \$169.99 (if available). Procrastination will kill you.

**Waiver:** I/We hereby release WESTFAC LLC, Rovey Farms Corp., Flying R Farms, 66LP, JPS Rovey L.L.C., the Scale Staffel Model Club, Lone Star Squadron, The Alamo Esquadriile Squadron, MMMFFMAC, The Rio Grande Squadron, Arizona Condor Squadron, and the Flying Aces Club, Inc., and all other persons and organizations connected with this contest from any liability whatsoever for accidents incurred while participating in this contest. I/We, also agree to abide by all flying and field rules in force at this contest. I/We also understand that if we are late for a pilot's/mechanics call for Mass Launch Events, we may be disqualified. The time for these "calls" and events will be posted at the Scoring Tent.

Signature \_\_\_\_\_ AMA NUMBER \_\_\_\_\_

All scale judging will take place on WEDNESDAY Oct 25 from 1PM until finish at the Comfort Suites, 15574 West Roosevelt St, Goodyear AZ. No one admitted until 1PM except Vendors. Vendors admitted at noon.

**Bring your models and documentation.** Documentation should include: a three-view, and documentation supporting the color, markings and details you used. Photos are encouraged and should complement 3-views. Mass Launch aircraft not entered in FAC Rubber Scale will be judged using the PPLC Check List at the Scale Judging. Other events needing points (Dime, Simplified, etc.) will also be judged then at special tables. All radial engine models in Mass Launch events must have at least a paper engine inside the cowl. All military models in Mass Launch must have armament built into the model—no "painted on guns". No slab-sided models unless the real aircraft was slab-sided. No folding props in any events. You are responsible for knowing the rules for your events as outlined in the 2016-2017 FAC Rule Book.

There is overnight vehicle parking at the flying field. See the contest flyer and General Information Sheet for more information at [www.westernfac.com](http://www.westernfac.com)

**Please circle the events you plan at this point to enter**

Jet Catapult Scale (best 3 of 6)  
FAC Rubber Scale  
FAC Peanut Scale  
Simplified Scale  
Greve Mass Launch  
FAC Jumbo Scale  
FAC Power Scale  
"Double Trouble" Twin Mass Launch  
2 Bit + 1(ROG)  
Jimmie Allen (ROG)  
Low Wing Trainer Mass Launch  
Thompson Mass Launch  
Embryo (ROG)  
O.T. Stick

Golden Age Biplane  
Golden Age Monoplane  
DIME Scale  
WW I Combat  
WW II Combat  
O.T. Rubber Fuselage (ROG)  
Biplane Mass Launch (Military or Civ from 1919 to 2015)  
Modern Military  
Modern Civilian Scale Mass Launch  
Spanish Civil War Mass Launch  
Spanish Civil War TOTF

**ORBITEER OUTDOOR MONTHLY YTD  
(As of Sept 28<sup>TH</sup> 2017)**

<b>Total A-6</b>	<b>Points</b>	<b>Place</b>	Total Coupe	Pts	Place
Mike Jester	12	1	John Hutchison	8	1
C.M. Kim	11	2	Mike Jester	7	2
Greg Hutchison	6	3	Mark Chomyn	7	2
Richard Wood	5	4	Greg Hutchison	5	3
John Hutchison	3	5	Mike Pykelny	5	4
Don Bartick	2	6	Don Bartick	1	5
<b>Total Penny Plane</b>	<b>Points</b>	<b>Place</b>	<b>Total Power</b>	<b>Pts</b>	<b>Place</b>
Mike Jester	16	1	Don Bartick	5	1
Richard Wood	13	2	Mike Pykelny	1	2
John Hutchison	7	3	Total Glider	Pts	Place
Don Bartick	6	4	Greg Hutchison	6	1
Greg Hutchison	4	5	Mike Jester	4	2
C.M. Kim	3	6	Mark Chomyn	2	3
<b>Total Catapult Glider</b>	<b>Points</b>	<b>Place</b>	<b>Total P-30*</b>	<b>Pts</b>	<b>Place</b>
Richard Wood	8	1	Don Bartick	5	1
Mike Jester	3	2	Mike Pykelny	4	2
Don Bartick	3	3	Mike Jester	2	3
John Hutchison	1	4	Includes Hot Box*		
<b>Total Indoor Points</b>	<b>Points</b>	<b>Place</b>	<b>Total Nostalgia</b>	<b>Pts</b>	<b>Place</b>
Mike Jester	31	1	Mike Jester	4	1
Richard Wood	26	2	Mike Pykelny	2	2
C.M. Kim	14	3	Mark Chomyn	1	3
Greg Hutchison	10	4	<b>Total Coupe</b>	<b>Pts</b>	<b>Place</b>
John Hutchison	10	5	John Hutchison	8	1
Don Bartick	9	6	Mike Jester	7	2
Total P-30*	Pts	Place	Mark Chomyn	7	2
Don Bartick	5	1	Greg Hutchison	5	3
Mike Pykelny	4	2	Mike Pykelny	5	4
Mike Jester	2	3	Don Bartick	1	5
Includes Hot Box*					
Total Nostalgia	Pts	Place			
Mike Jester	4	1			
Mike Pykelny	2	2			
Mark Chomyn	1	3			

Continued Next Page 

## FROM THE WORKBENCH - J.Merrill

<u>Total Power</u>	<u>Pts</u>	<u>Place</u>
Don Bartick	5	1
Mike Pykelny	1	2

<u>Total Glider</u>	<u>Pts</u>	<u>Place</u>
Greg Hutchison	6	1
Mike Jester	4	2
Mark Chomyn	2	3

<u>Total Outdoor Points</u>	<u>Place</u>
Mike Jester	17
Mike Pykelny	12
Greg Hutchison	11
Don Bartick	11
Mark Chomyn	11
John Hutchison	8
	4



These are a few of the planes I currently have in progress. The top photo is a 12" peanut scale P-47 which I obtained from the June board meeting, from the collection of Gus Del Castillo. So far it's going together fairly well.. The next photo is of a Lark, from Jetco. Supposed to be a 27" wingspan, but I cut it to 26" so as to be able to fly it in the 2-Bit+1 event. I don't know as it would fly in any other class or category. Not sure it's old enough for Nostalgia, but maybe. It's going together pretty easily as well, seems to be a kit for folks without too much experience in building models, which is fine by me! Next month, show us what you are working on!



The Physics of...

# TUBULAR DUDE

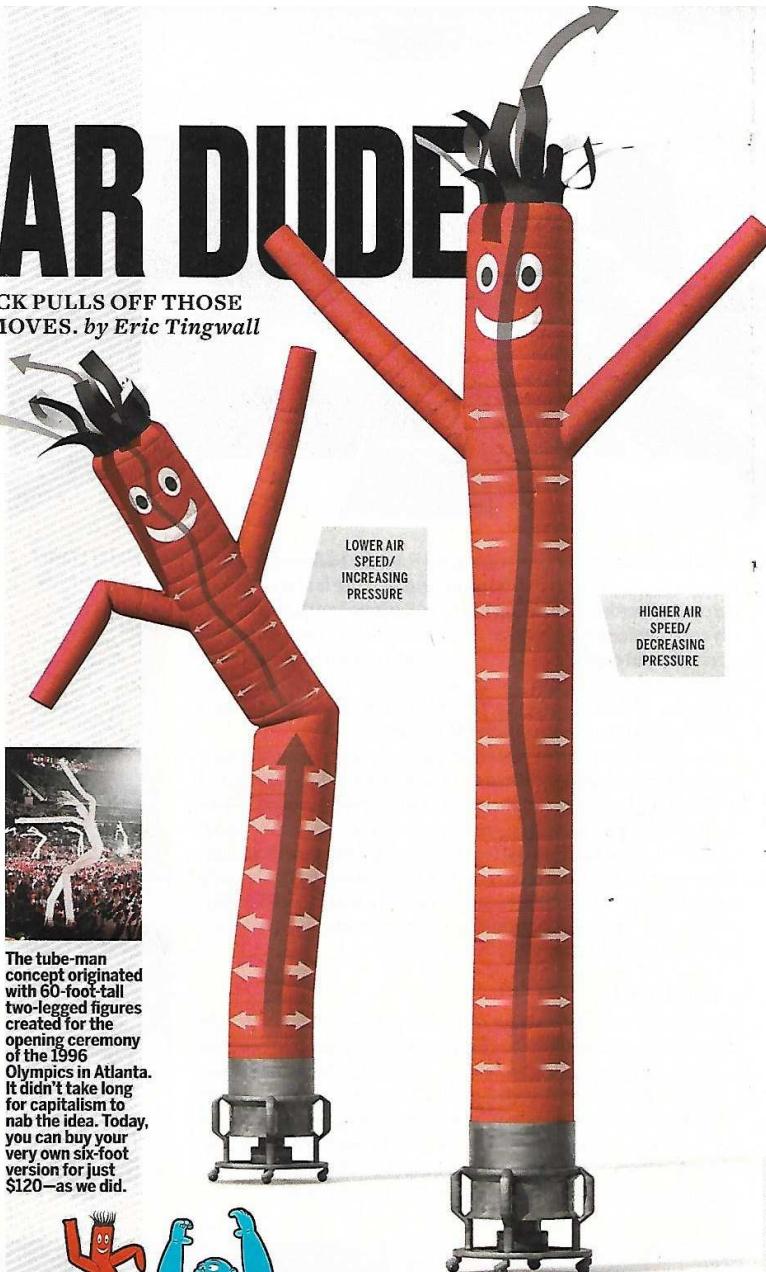
HOW THAT GLORIFIED WINDSOCK PULLS OFF THOSE FRESH POP-AND-LOCK DANCE MOVES. by Eric Tingwall

■ BECAUSE A 1998 PLYMOUTH BREEZE no longer turns heads as it once did, used-car salesmen are masters of countless attention-grabbing gimmicks. Among the tactics, no shtick is simultaneously as eye-catching and absurd as the spastic flail of a perky nylon tube with vaguely human features.

Known as a Tall Boy, Fly Guy, AirDancer, or, more commonly, "that ridiculous thing," this used-car-lot staple might be the pinnaclle of lowbrow marketing, right up there with "buy a car, get a gun." But there's a load of no-nonsense science behind the tube man's random yet seemingly unending pop-and-flop routine. There's also some brilliance in the simplicity of the thing. A conventional fan turning at a constant speed blows air up through the lightweight nylon sleeve, resulting in pressure fluctuations inside the tube sufficient to incite an AirDancer's signature samba.

The behavior is explained by Bernoulli's principle, a fluid-dynamics tenet derived from Newton's second law of motion. It states that as the velocity of a fluid increases, its pressure decreases. Initially, the moving air, which behaves as an incompressible flow in the open-ended AirDancer, creates enough pressure to inflate the tube. As the tube stands more upright, the turbulent air inside flows more freely and its speed increases until the decreasing pressure can no longer support the mass of the nylon fabric. The collapsing material creates a kink in the tube, a constriction that causes the air speed to temporarily slow and the pressure to rise again. The elevated pressure drives the bend upward, sending a shimmy through the AirDancer and restarting the cycle.

Used inside a building, a tube man cycles in an almost-repeatable pattern. Outdoors, its interactions with the wind give the inflatable its erratic flail. That is to say, an AirDancer is excited by a breeze to get you excited about that breeze.



The tube-man concept originated with 60-foot-tall two-legged figures created for the opening ceremony of the 1996 Olympics in Atlanta. It didn't take long for capitalism to nab the idea. Today, you can buy your very own six-foot version for just \$120—as we did.

## THRILLA VS. GORILLA

When it comes to selling cars, you can't talk AirDancers without mentioning the inflatable gorilla on the neighboring lot. Which draws more shoppers? Our Traffic-Generating Factor (TGF) predicts the increase in traffic a dealer can expect by putting an inflatable on the lot.

A 20-foot-tall red tube man starts with a metaphorical leg up on a 20-foot blue gorilla due to red light's longer wavelength ( $2.29 \times 10^{-6}$  feet versus  $1.54 \times 10^{-6}$  feet), but it's not even a competition once you factor in the AirDancer's ability to pitch and roll about its base, effectively quadrupling its TGF.

$$TGF = \frac{H \times 2^{DOF} \times 10,000,000 \times W \times N_{TOYOTA}}{D^2 \times N_{PTCRUISER}}$$

H = Height of the inflatable, in feet  
DOF = Number of degrees of freedom to allow motion  
W = Wavelength of light for the color of the inflatable, in feet  
N<sub>TOYOTA</sub> = Number of Toyotas on the lot  
D = Distance from adjacent road, in feet  
N<sub>PTCRUISER</sub> = Number of PT Cruisers on the lot

INSET ILLUSTRATION BY CHRIS PHILPOT, INSET PHOTO BY DORON GAZIT

SAN DIEGO ORBITEERS  
Howard L. Haupt / Editor  
3860 Ecochee Avenue  
San Diego, California 92117-4266



## WHAT'S HAPPENING -

**October 2017 / November 2017**

---

Oct. 21/22 San Valeers 30<sup>TH</sup> All Nostalgia Annual  
SCAMPS Field, Perris CA, 7:00 am.  
(See enclosed flyer)

Oct. 25-28 WESTFAC VI FAC Scale Contest  
Buckeye, Arizona  
(See enclosed registration form and flyer)

---

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