

EL TORBELLINO

NEWSLETTER OF SAN DIEGO ORBITEERS FREE FLIGHT CLUB

JUNE 2021



Chairman's Corner – Mark Chomyn

You will notice that the heading of this diatribe has changed. After recently perusing the Orbiteers website I took time to look at the **About Us** tab. I was surprised see that my current function is under the title of Chairman (not President) and that what I have previously (erroneously) thought was a Board of Directors is actually a Board of Trustees. Hence the title change above. Proving that you can learn something new every day providing you slow down, pay attention and read carefully.

Speaking of the Board of Trustees we will now have a new member. Tim Batiuk will become the seventh trustee member. Thank you and congratulations Tim. If you know anything about our free flight community, you are aware of Tim's many accomplishments as a free flight competitor. To list all his contest wins state and nationwide would take up more space that I'm allowed for this column. In addition to Tim's contest record, he is also on the NFFS Education Committee, a committee whose primary aim and goal is to promote youth free flight activities and get more young people interested and involved in the sport of free flight model aviation. The addition to the board is also significant in that we now have seven voting members. Which, if you've had any experience with voting boards, eliminates the possibility of a tie vote. Mind you, that the Orbiteers trustees are not prone to significant disagreement on issues. The board will be having it's first quarterly meeting in more than a year on June 16 maybe it's another sign that things are moving toward getting back to normal.

If you live anywhere near the coast, you are aware that we have now shifted from May Gray to June Gloom. Though the weather may be gloomy in coastal areas it's not expected to be that way at Taibi Field in Perris. Our next monthly is scheduled for Sunday June 13 and weather is currently forecasted as sunny with wind at 2 – 5 mph and temperatures starting in the mid 70's and reaching the high 80's at noon. Mike Pykelny has already sent a notice out to flyers so please check your e-mail for details. Mike's email notes that there will be a P-30 event with some decent cash prize payouts. Rumor has it that Mike Jester will be flying his 3 Night P-30 a new design with (I've heard) some impressive flying ability. The only way you'll find out is to show up in Perris. (P.S. Mike Jester this was not written to put any pressure on your performance). And, if you've not already heard, word came from Don Bartick via e-mail that the farmer has leveled the remaining mulch mounds at Taibi Field. As Don noted, you can better see your model when it lands but traversing the plowed area still takes a little effort.

The AMA Walk of Fame program is a program that provides AMA members, clubs and private individuals the opportunity to purchase a brick bearing the name of an AMA member and place it in the Walk of Fame that is the entry way to the AMA headquarters and museum. The Board of Trustees has moved to purchase such a brick in memory of John Oldenkamp a noted free flight flyer and designer, co-developer of the P-30 event and a long-time member of the Orbiteers. It's an honor for the Orbiteers to have the AMA place a brick in John's name on the walkway.

You never know what treasure you have hidden away in your garage. I renewed my Society of Antique Modelers (SAM) membership in March. I was a little late in renewing. When I hadn't received any issues of SAM Speaks by early May I began to worry that my renewal had "fallen through the cracks". Then in mid-May I received not only the May-June SAM Speaks but two back issues (Jan – Feb and Mar – Apr). I was in free flight heaven. So I began my reading assignment with the Jan – Feb issue. Moved on to the Mar – Apr edition that had a very interesting posthumous bio on Eut Tileston. On page 30 of that edition was an article titled Air Trails Annual by Bob Galler. In the article was a picture of the 1946 Air Trails Model Annual. On the cover of that large format magazine is a picture with a young man standing near a DC-3 commercial airliner and holding a yellow and green finished model of the Piper Skycoupe. I said to myself, well I'll be, I've got that magazine. In reading the article Mr. Geller writes, "If you are lucky to enough to have the larger format Air Trails Annual for 1946, you are lucky indeed. If we had to rate the top 10 all time favorite magazines (since we went to 1950 models) this one would be right at the top of the list".

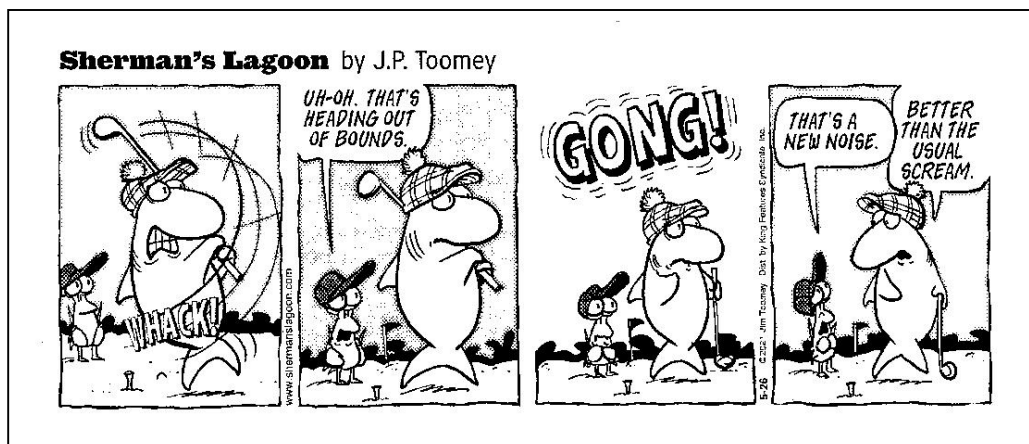
So, the lesson here is don't throw any model stuff out until you are assured you don't have a hidden treasure. Oh yeah, there was a bit of a disappointment along with my discovery of the treasure. The article goes on to note that Roland Friestad (editor of SAM Speaks) will provide you with a digital copy of the 1946 annual as part of your subscription to RC Microworld magazine. I was feeling somewhat deflated until I realized that although I did not have the only perusable copy of the 1946 Air Trails Annual, mine at least was an original. So, as Carl (Bill Murray) the golf course maintenance worker in Caddy Shack said, "So I guess I got that going for me". P.S. – Viewings of the sacred manuscript may be scheduled, just email me.

Well, June means Father's Day and you know what that means don't you? Better carve out a generous space in the model workshop for the model many model aviation gifts you'll be receiving from the family. Please don't dwell upon past occasions when you received a book you've already read or a bad tie.

It's a wrap. Stay healthy.

Mark

"I remember when I first became editor of MAN in 1931 how nearly impossible it was to have our full scale aviation men and our government men to consider models as anything but a toy"
Charles Grant



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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
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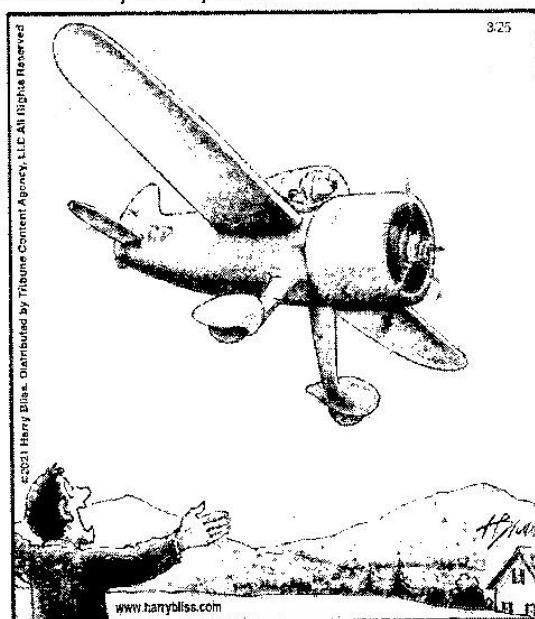
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ORBITEER WEB SITE

www.SanDiegoOrbiteers.com

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"Good dog!"

Finding Your Outdoor Free Flight Model Airplane After It Lands

By Mike Jester



One of the biggest challenges of our outdoor hobby is finding your model after it lands. I have lost my share of free flight models, but never when they were carrying one of my Walston RF transmitters. However, the cost, complexity, and weight penalty of electronic tracking systems means that most free flight enthusiasts don't use them. In this article I will review some of techniques that may help you recover your model after it has landed or flown out of sight (OOS).

The most important thing to remember is to never look away from your model until it has landed so that you can establish a visual line of site. I learned this lesson early in my outdoor free flight career. I had launched my first Flying Aces Moth on a low power trim flight at Perris, California. I looked down at my wrist watch to start its stop watch function. Incredibly I could not see my model when I looked back up after only a couple of seconds. The DT was set, however, two days of searching failed to locate my model.



HOT BOX P-30 by Mike Jester About to be Retrieved at Perris, California

Preferably have another person watch the flight with you. This could be your official timer, or a friend helping you trim the model, or just someone that might be interested in seeing how your model flies. They can also establish their own visual line of sight to your model. They may have better vision than you.

A good line of sight greatly lessens the area that has to be searched. Looking toward your model's landing spot (or in the direction where you last saw it) pick out a feature on the horizon directly behind. This could be a tree, a telephone pole, a particular ridge in the far-off mountains, or a recognizable house or other building. Turn around 180 degrees where you are standing and pick another feature on the opposite horizon. Then walk toward your model, occasionally looking back to ensure that you are walking on the line of visual sight between the two features.

John Hutchison once told me that your model is almost never as far out as you think it is. I can't tell you how many times I have walked way farther out than necessary, only to re-trace my steps and find that the model landed closer in. Recently my HOT BOX P-30 caught a boomer thermal at Perris and flew very, very high. John Swain and I both lost sight of it as it seemed to be headed toward Hemet. We went a long

way south by car and got confusing signals from my Walston RF receiver/antenna combination. The signals seemed to indicate that the model was north of us, back toward the flight line. While driving north to take another reading, John spotted my HOT BOX a few feet off the road. Its viscous timer DT system had triggered late and the model had landed only about 100 yards from where it was launched. Similarly, a few weeks earlier Mike Pykelny lost his Candy G coupe and two days of searching were to no avail. Two weeks later he found his model when retrieving one of his gliders. His coupe had also landed only 100 yards away from where it had been launched.

If you are flying a scale model you are pretty much stuck with one of the color schemes of the original full-size aircraft. If you are flying a sport model pick colors that stand out in the environment where you will be flying. Yellow is bad for Perris since it blends in with the dead grass during most of the year. Green is bad for Buckeye since it blends in with the alfalfa. Orange or red on the top of the wings and black on the bottom really helps. White and blue are bad choices as a model in these colors is hard to see when airborne a long distance away. I favor red tail feathers on my models as they often land in vegetation with the tail sticking up at an angle and red is very conspicuous in all the terrains where I have flown.



Mike Jester's Gollywock at Perris, California

Some people use spotters with binoculars. Arline Bartick is particularly adept at getting a good line of sight on her husband Don's models using binoculars. She recently showed me her high-tech monocular. I didn't ask but I bet it has electronic image stabilization. You can use a magnetic compass to help you stay on the line of sight. It should be the kind of compass that you look through with one eye while you keep your target in your field of view through the other eye. I have not experimented with them, but there are apparently some apps for smart phones that use GPS to enable you to stay on your line of sight as you walk toward your model. Triangulation is also a good technique. Consider having your timer or observer stand 25-50 feet away from your launch point along a line perpendicular to the direction of the breeze into which you will launch your model. For a retrieval both of you then walk your own sight lines. The plane should be located where they intersect. I learned from Clint Brooks that it can be advantageous to wear a bright colored shirt. Other fliers can more easily see you when you trekking toward your model and are a long way away from the flight line. Carry your cell phone with you so that they can call you and give you directions.

Often a model will be a long distance away when it is about to land. It may only be a few feet above the ground when you lose sight of it. Keep in mind that it may have continued to fly a considerable distance from where you last saw it. On the same day that John Swain found my HOT BOX P-30 at Perris I found Mike Mulligan's scale WWII Soviet fighter. It had flown over Mike Pykelny's truck at low altitude and then into the area of the dry canal. Several people were searching in the canal area where the model was thought

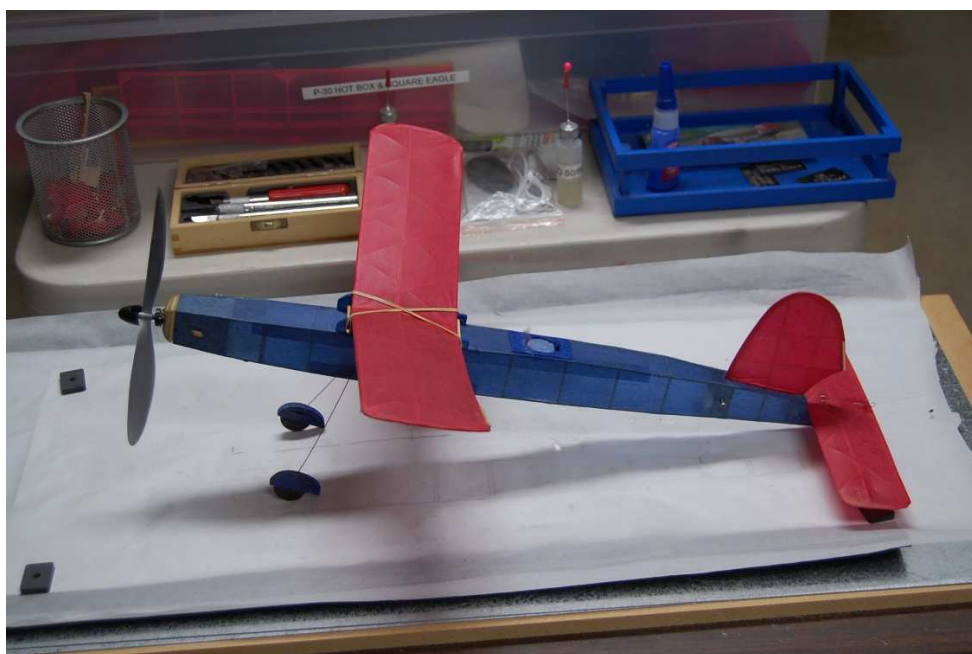
to have landed. Mike Pykelny astutely had me climb up on the dirt road west of the canal and walk south. I found Mike Mulligan's model about 75 yards south of where everyone else had been searching. The last anecdotal story brings me to the best retrieval strategy. After getting a good line of sight get a group of fellow friends to help you search by fanning out from the line of sight. I almost always join in these searches for other modelers because I know how much time they have invested in building and trimming their model. If someone has a motorcycle or an electric bicycle, then they can greatly expand the area searched. When all else fails, and you really want your model back you can get an experienced drone flier to scan a grid pattern and carefully observe the live video. I heard that Don DeLoach once had a pilot take him up in a private plane so that he could scan the field for his lost model from an ariel viewpoint.



Bernie Crowe after Hal Cover's Successful Location of his Gollywock via Drone

One of the best pieces of advice about retrieving model airplanes was given to me by Stan Buddenbohm. He said that you should start walking or riding toward your airplane as it is moving away from you. Do this sooner, rather than later. This obviously allows you to keep your model in sight longer and gain a better line of sight.

If you are flying an expensive Wakefield or coupe model it certainly should be carrying a GPS locator or an RF locator. If your model is an inexpensive model, you may decide to give up after a few hours of searching. Several years ago, when my Debut Embryo flew into the 3-foot-tall weeds between the flight line at Perris and San Jacinto Boulevard, I gave up on retrieving it almost immediately.



Mike Jester's Embryo Debut - Gone but Not Forgotten

If you are flying a non-scale model your AMA number on the wing will help you get it back if you have given up on your retrieval and days or weeks later another flier finds it. I try to remember to put my name and cell phone number on my models. A person who is not involved in our hobby is probably not going to look up someone's AMA number.

I usually stop flying when the wind gets above 5 mph. The chases are long and the odds of losing a model go up significantly when it is being blown a great distance downwind by a stiff breeze.

You may resolve to build a model of the same design to replace one that has been lost. In my experience it usually turns out to be better flier. Recently, at Washoe Lake, Nevada, I lost the first Three Nite P-30 that I built from a prototype of the Volare Products laser-cut short kit. It was descending after a max and was a long way from me. My wife and I both lost sight of the silhouette of the model when it blended in with the fir trees on the distant mountains. After my wife and I searched for a couple of hours without success I called it quits. I built another Three Nite P-30 from a production version of the Volare Products short kit with lighter balsa wood. It weighs 5 grams less and flies even better than the one that I lost.



Replacement Three Nite P-30 by Mike Jester Built from Volare Products Short Kit



← Mike Jester Three Nite P-30 at June Orbiteer Constest

MAY 2nd 2021 OUTDOOR MONTHLY

Coupe

- 1) John Hutchison (Tie)
- 1) Greg Hutchison (Tie)
- 3) Don Bartick

CLG

- 1) Tim Batiuk
- 2) John Swain
- 3) Mike Pykelny

HLG

- 1) Tim Batiuk
- 2) Clint Brooks
- 3) Brad Terrell

Power

- 1) Hal Cover
- 2) Mike Pykelny
- 3) John Swain



Hal Cover

MAY 2nd 2021 OUTDOOR MONTHLY

Old Time Nostalgia

- 1) Henry Kruse
- 2) David Wade
- 3) Mike Jester

CLG

- 1) Tim Batiuk
- 2) Mike Pykelny
- 3) Mike Jester

Power

- 1) David Wade
- 2) John Swain
- 3) Don Bartick



Henry Kruse with Dad Matthew

John Merrill's gaggle of planes →



Photos by Arline Bartick



David Wade



Tim Batiuk



John Merrill



Guy Mennano



Mike Jester

The Flight Line →



Last Sunday was a great contest at the Perris, CA field, and several things made the day special. At one point I think I counted 31 cars there, darned impressive! Once again, Mike and Linda did a wonderful job with the CD duties. An extra special treat was Linda cooking us all hot dogs! Complete with all the goodies, too, including condiments, potato salad, cookies, etc.

Many thanks to all the participants who came out in the heat to have fun with their P-30s, gliders, power ships, etc. Extra thanks again to Mike and Linda for all the work and skill they put into making that such a fun day for all.

We've gained several new members lately, some joining up right on the field. I'd like to say welcome to you one and all, and thank you very much. I hope you find your membership entertaining, helpful, and rewarding.

One of the things I like most about the free-flight community is that even during a contest, in the heat of battle, there aren't many secrets. Competitors are perfectly willing to help another who may be struggling, or just looking for a bit of advice. Whether you've known your competition for years, or just met for the first time, help is there for the asking. I can only believe that there aren't many other sports like that anywhere in the world.

Welcome once again!

Onto another fun subject. Have you ever been yelled at? No, I don't mean by another person, but by a part of your body? I think it was 3 contests ago. I was done flying whatever the rubber contest was, got in my 3 sure-to-be last place flights. Still being fairly early in the morning, I pulled out a box of gliders that have been sitting in my garage for a Very long time. I didn't expect to compete with them, I just wanted to fly them for fun. Having sat for so long, I anticipated that they would have enough warps to resemble a potato chip anyway. I pulled one out, gave it a good look-over, and to my surprise it actually seemed okay. I gave it a gentle toss, just to see if it would even glide half way decently. Surprised once again, it had a very nice, gentle glide. Being a hand-launched glider, I decided to give it a little more of a toss. Nothing too hard, just enough to get her a little more altitude. It did pretty well, and again I was surprised and pleased. Then it happened, and you may well see where this is going...my 20 year-old mind in my almost 60 year-old out of shape body said "let's give this a great almost vertical launch!". Not being all that smart, I pulled back my right arm like I was going to throw a fastball over home plate. I gave that little bird a mighty heave, and with it came a bit of a yelp. Just enough to get a few snickers from some much wiser folks nearby. Remember me mentioning getting yelled at by body parts? Yup, that was it. My shoulder let me know immediately that I was an idiot. It sent directly to my ear alone a line of profanities that would make a sailor blush. It also let me know that, under no uncertain terms, was I to EVER do that again!

Catapults! Yes, I shall attempt catapult launched gliders yet again. I have failed miserably with them so far, but I shall attempt them once again....as soon as I get permission from my shoulder to build a new one.

Next Sunday is Father's Day, so to all the dads out there I wish you a very happy Fathers Day. I have a step-daughter who is now grown up and in her 30's. She was only 7 when I married her mom 25 years ago this month. The life lesson I learned many years ago was that being a dad is one of the hardest and most challenging jobs out there, yet none is more rewarding. Dads, I salute you. Keep being awesome, and again, Happy Father's Day!

Respectfully submitted by your humble secretary,
John R. Merrill



JUNE 13TH 2021 OUTDOOR MONTHLY

- Photos by Arline Bartick



Bill Booth



Art Chmielewski



Don Bartick



John Alling



Hal Cover



Terry Kerger



Mike Pykelny



Brad Terrell



Stan Buddenbohm



Cark Redlin



Fernando



Lance Powers



← Clint Brooks



Linda Piazza and the lunch BBQ



Hudson Kruse



Thirteen members in attendance tonight, including our hosts Mike and Dorothy Jester, Mark and Nancy Chomyn, Don and Arlene Bartick, Mike Pykelny / Linda Piazza, John and Kathy Hutchison, John Merrill, and our newest member Tim and Giselle Batiuk.

After a wonderful meal provided by our gracious hosts, the meeting was called to order at 6:38 p.m.

Minutes of the previous board meeting were approved as published.

Treasurer's Report: was approved as provided to the board members. Thank you to Howard Haupt for his great accounting!

Membership Report: there was some discussion of restarting the club's Junior/Senior membership program, as there are more youngsters getting active in the club. So far this year, we've had a bit of a surge in new members, with 13 new members, which is fantastic.

We will be restarting the distribution of club flyers and cards. Thank you to Linda for keeping up with that task.

Old Business: our AMA Club Charter was renewed with insurance coverage for the Grossmont College indoor site. Update on that under New Business.

The Gird Road site in Fallbrook is a no-go with the school district there. The search is still on for a site in San Diego that would be suitable at least for testing models. If you know of a decent spot, Please let your board members know!

New Business: welcome back to Mike and Dorothy Jester! Nice to have you back, even though it's for a relatively short time span.

Welcome to Tim Batiuk, our newest Board of Trustees member. Tim brings a wealth of knowledge and experience to our board, and we all appreciate his involvement.

A discussion arose concerning the purchase of an AMA Walk of Fame memorial brick for John Oldenkamp from the San Diego Orbiteers. A motion to purchase the brick was brought forth, and it passed unanimously.

Linda is looking into the possible purchase of more club t-shirts, including sizes, costs, etc.

Contest Schedule:

There was a brief review of our contest schedule, including the summer hiatus, which is July and August. It was decided that there will be a fun-flys only, with no points to be obtained.

The Dual Club Free Flight Bonanza May contest that was postponed due to unfavorable weather conditions in Lost Hills is being rescheduled to November 13&14. The contest will share the field that weekend with the Patterson FAI contest.



This year's contests have been thrown off considerably by weather, especially in the early portion of the year. We have now made up all the cancelled contests, so there is not a need to further adjust the schedule for make-up events.

Update on the Grossmont College gymnasium: John and Kathy have talked to the new college dean, and thus far he seems agreeable to what we do there. He has asked that we recontact him in the Fall after the semester gets started. We will naturally keep you posted.

Tim talked briefly about NFFS University. Many of our members are also members of NFFS, and the program he told us about seems like a great one, well worth looking into.

Contest Reports: Mike Pykelny talked about the recent John Oldenkamp Memorial P-30 contest held at the Perris site. There were 16 P-30's entered, including 2 Hot Box models. Fantastic turn-out, at one point there was at least 31 cars counted there at the field. A big added treat after the contest was Linda cooking us all hot dogs, with all the extra goodies to make it a terrific picnic. That was very much appreciated by all who stuck around to the end of the contest.

John Hutchison reminded us that Scale Staffel will have a 2-day contest on Labor Day weekend, September 4th and 5th at the Perris site. That will be a good warm-up for the Westfac contest at Rovey Farms near Buckeye, AZ on October 21-24.

Open Discussion: the 2021 awards banquet was discussed. We have recently used the Filippi's Restaurant in Kearney Mesa, but feel we may have outgrown their banquet room. A date was set for the next banquet, Saturday, January 22nd 2022. Since so many of our newer members are from north of San Diego, a location is being scouted a little farther north. Thank you once again to Linda for being the organizer in this event! Linda is also tallying the 2021 awards points.

Kathy is looking for someone to take over the duties of webmaster. She says it isn't a hard job, but would like to retire from it. We thank her for her many years of taking care of all the design and updates on the site!

Mike Jester's Three Night P-30 is now being kitted by Volare. He flew his to great success during the last contest.

The next board meetings will be at the Bartick's home on September 15th, then at the Batiuk home on December 8th.

Call for adjournment at 8:50 p.m.

Respectfully submitted by John R. Merrill, Secretary



The '**Flight-Line**' at the June 16TH 2021 Orbiteers Outdoor Contest - Photo by Arline Bartick

Westfac contest at Rovey Farms near Buckeye, AZ on October 21-24, 2021. See flyer on following pages for all the details.

**FLYING
ACES**

Squadron 41

San Diego



Scale Staffel

September 2021 - Outdoor Flying Contest

Saturday and Sunday, September 4-5, 2021

7:30 a.m. to 12:00 p.m., Taibi Flying Field, Perris, CA

(Location: 33.7803656, - 117.1972964)

Prizes for 1st, 2nd & 3rd

Fees

- \$8 entry fee includes one event
- \$3 for each additional event
- \$20 maximum: includes entry fee and 5 or more events.

Contest Director

John Hutchison
johnhutchison1@cox.net
619-504-5731

Awards Presentation

Immediately following the final event on Sunday

Hotel Accommodations

Red Lion
480 S Redlands Ave.,
Perris, CA 92570
951-943-5577

GRAND CHAMPIONSHIP:

The flier who earns the most 1st - 3rd place points will become the 2021 Grand Champion. The trophy will be presented on Sunday, Sept 5.

Pilot's Meeting @ 8 a.m. each day

FAC Single Model Events

Fly any event on either day or on both days.

1. Golden Age Combined
2. Old Time Rubber Stick & Fuselage Combined (hand launch)
3. FAC 2-bit + 1 (ROG)
4. Jimmie Allen (ROG)
5. Dime Scale*
6. Simplified Scale*

*(Dime Scale and Simplified Scale will be judged on the field)

7. Embryo Endurance (ROG)
8. FAC Rubber Scale / 2x Peanut Walt Mooney Combined (Special award for 2x Peanut Walt Mooney entries)

Mass Launch Events will use the "Delayed Launch"

Saturday

9. FAC World War I Combat
Wind at 8:20 a.m., Launch at 8:30 a.m.
10. FAC World War II Combat / Spanish Civil War Combined
Wind at 9:20 a.m., Launch at 9:30 a.m.

Sunday

11. FAC Greve / Thompson Race
Wind at 8:20 a.m., Launch at 8:30a.m.

FLYING ACES

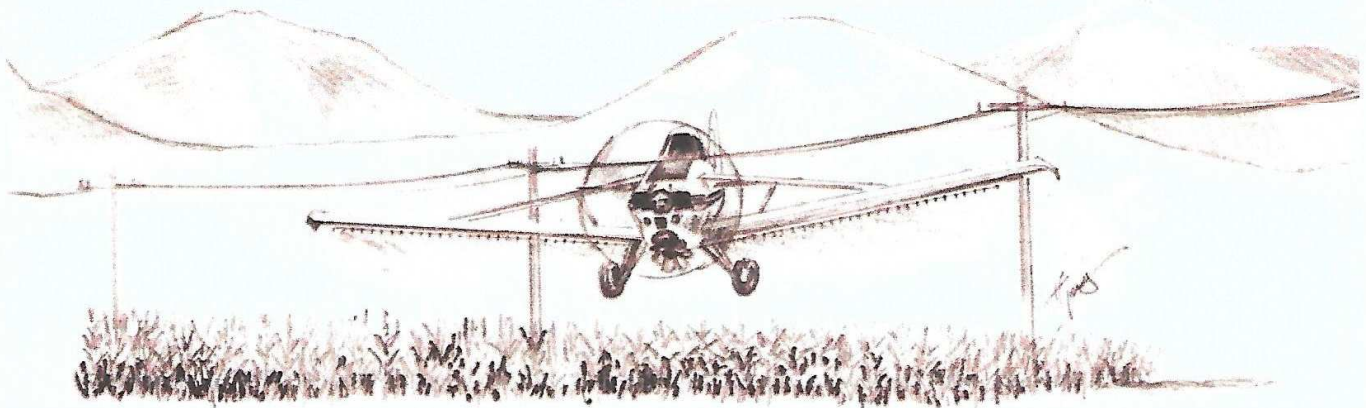
Mark Your Calendars for the

WestFAC 2021

21 – 24 October

Rovey Field, Buckeye Arizona

Featuring Working Aircraft of the World



Schedule of Events

Thursday, 21 October	Friday, 22 October	Saturday, 23 October	Sunday, 24 October
Arrival Day	<u>Mass Launch Events</u>	<u>Mass Launch Events</u>	<u>Mass Launch Events</u>
Registration and FAC	9:00 WW1	9:00 Double Trouble	9:00 Working Aircraft
Scale Judging	11:00 Greve/Thompson	11:00 WW2	11:00 Flying Horde NBM
Field Available for	<u>TOTF Scale Events</u>	<u>TOTF Scale Events</u>	<u>TOTF Scale Events</u>
Trimming	Crop Dusters	Working Aircraft	Mail Aircraft
	Dime Scale	Simplified Scale	Golden Age Monoplane/Biplane
	Carrier Acft – Hand Launch	Carrier Acft – Deck Launch	
	<u>TOTF non-scale</u>	<u>TOTF non-scale</u>	<u>TOTF non-scale</u>
	OT Rubber Stick	OT Rubber Fuselage (ROG)	2Bit + 1 (ROG)
	Jimmy Allen (ROG)	Embryo (ROG)	2Bit + 1 (ROG) NBM
	Jimmy Allen (ROG) NBM	Embryo (ROG) NBM	
	<u>Judged Scale</u>	<u>Judged Scale</u>	<u>Judged Scale</u>
	FAC Peanut Scale	FAC Jet Cat Scale	FAC Power Scale
	FAC Jumbo	FAC Rubber Scale	
			<u>Special Event 3:00pm</u>
			Blue Ridge Special Mass Launches

**Awards ceremony Sunday on the field following the Blue Ridge Special event
informal Dinner at the Arriba Mexican Grill – self pay**

- See Field Notes on WESTFAC website as to the definition of a "working aircraft". Bring documentation to answer any questions for any unique aircraft.
- PPLC compliance checks and Dime Scale/Simplified Scale judging will be done on the field.
- Awards will be presented on the field at the end of flying on Sunday. Kanones will be awarded for first place.
- Carrier events - any naval aircraft with a tailhook is eligible.
- Mass Launches may have an unlimited motor size but we will use the Delayed Launch in which the prop is released 3-4 seconds before the aircraft are launched.
- Go to the website (www.westernfac.com) to print out registration forms and download important field notes.
- Current AMA License is required.

\$30 Entry Fee covers all events and all days

PROPULSION

CHARGED UP

➤ ROLLS-ROYCE PREPS FOR ACCEL ELECTRIC-FLIGHT-RECORD TRIALS

➤ OPERATING AT FULL POWER COULD QUICKLY DRAIN BATTERY

Tony Osborne London

JANE STOCKDALE/ROLLS-ROYCE

Rolls-Royce is preparing for the first flight of what it hopes will become the world's fastest electric-powered aircraft.

The engine manufacturer is targeting a 300-mph+ speed record for its Accel (short for Accelerating the Electrification of Flight), an all-electric conversion of a Sharp Nemesis NXT racing aircraft that it plans to fly in the coming weeks, with an eye toward the first speed record attempts this summer.

Rolls-Royce, together with partners Electroflight and UK-based electric-motor supplier Yasa, has transformed the Nemesis into a "battery with wings strapped on," Matheu Parr, Accel project manager for Rolls-Royce, said during a Royal Aeronautical Society webinar.

"This aircraft has set out to be a pioneer for the third age of aviation," Parr said. "It will accelerate innovations and offer an understanding about batteries, electric motors, power electronics, cooling systems and thermal management."

Six thousand lithium-ion cells designed for use in power tools drive the three Yasa-developed galvanically isolated 750-volt, 133-kW motors that give the aircraft a power output of 400 kW, which is the equivalent of nearly 550 hp.

In economy mode, the battery would give the 1,250-kg (2,750-lb.) aircraft a range of about 180 mi. The push for speed, though, means that at maximum power output, endurance would likely be limited to just 8-9 min. in which to take off, position to fly, complete a speed course of four 3-km

(2-mi.) runs and then land safely. This compares with 25-min. endurance for its piston-powered counterpart. The average airspeed over the four runs is the measure for the speed record.

The short flight time is further complicated by the aircraft's "difficult" handling characteristics, including an "aggressive stall," Phill O'Dell, Rolls-Royce's director of flight operations and Accel's test pilot, said during the webinar. O'Dell conducted the aircraft's initial taxi trials in February.

"I can't see anything—it is by far the least visibility I've had," O'Dell said. "I'm almost lying down in the aeroplane." Concerns about low visibility from the cockpit have forced the program to conduct flights from an airfield with a wide runway. For that reason, a military flight-test airfield at Boscombe Down, England, has been selected for both initial flights and the record-breaking attempts. As part of the preparation for flight, O'Dell has been through upset prevention and recovery training in aerobatic aircraft and has practiced procedures for high-speed forced landings that could potentially reach speeds of up to 150 kt.

O'Dell said there are notable differences for a pilot flying an electric aircraft compared with a conventionally powered machine: "There are differences, but none of them are mountains. There is nothing that is insurmountable at all."

His preparation will also be bolstered by a series of planned flights in the company's Supermarine Spitfire as well as advice from experts from the Red Bull air racing team.

O'Dell said he has even been through

Accel's lithium-ion battery makes up about half the weight of the heavily modified Sharp Nemesis NXT racing aircraft.

a weight-loss program. While Accel's engineers shaved off hundreds of kilos or grams throughout the aircraft, O'Dell himself provided the single largest weight reduction, losing 10 kg through a mix of dieting and home-gym workouts.

Among the Accel development challenges has been extracting the necessary performance from the batteries. When the project began in 2018, batteries available at the time produced about 120 Wh/kg. Such density, however, was not enough for the record-breaking flight, prompting an in-house redesign of the battery that stripped out the packaging and resulted in a battery that produces about 155 Wh/kg. Parr said the team was able to achieve this density using part of the £6 million (\$8.3 million) of industry and government funding for the project.

By comparison, he notes, the automotive industry spent \$90 billion moving from 120 kW/kg to 160 kW/kg in two years. Parr said such advances were possible because the team had "adopted the culture of a startup and was working to a single purpose."

Other challenges include managing the rapid discharge of the battery to deliver the required power levels throughout the flight.

A bespoke liquid cooling system is part of the "secret sauce" of high power delivery and also prevents a thermal runaway event. If such an event occurs, however, the battery has been designed to contain it for up to 10 min.

In addition to providing power, the battery acts as part of the aircraft's structure: electric motors hang from it.

Parr said the work on the Accel program is directly relevant to Rolls-Royce's strategy of developing a new range of electric aviation products to support the potentially growing commuter market.

"This is how we think we can start to push sustainable aviation in the 2024-25 timeframe rather than in the next single-aisle aircraft," he said.

The speed record of 213 mph is held by an Extra 300 aerobatic aircraft modified by Siemens eAircraft business unit, which was purchased by Rolls-Royce in 2019. ☼



San Diego Orbiteers
Flying Schedule 2021
Taibi Field Perris, Ca

<u>Primary Date</u>	<u>Rain Date</u>	<u>Event</u>
January 24 (Cancelled)	January 31 (Cancelled)	P30/Glider/Power
February 21 (Cancelled)	February 28 (Cancelled)	Coupe/Glider/Power
March 21	March 28	OT-NOS Rubber/Glider/Power
April 18 (Cancelled)	April 25 (Cancelled)	P30 Oldenkamp Memorial
May 2 (New Date)		Coupe/Glider/Power
May 15-16 (New date Nov 13/14)		Dual Club Lost Hills, Ca
May 23		OT-NOS Rubber/Glider/Power
June 13	June 27	P30 Oldenkamp Memorial
July		Fun Fly (No contest)
August		Fun Fly (No contest)
September 19	September 26	Coupe/Glider/Power
October 17	October 24	OT-NOS Rubber/Glider/Power
November 13/14		Dual Club Lost Hills, Ca
November 21	November 28	P30/Glider/Power
December 19	December 26	Make-Up



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WHAT'S HAPPENING - JULY / August 2021

- July - Fun Fly (No Contest)
Taibi Flying Field, Perris California
- August - Fun Fly (No Contest)
Taibi Flying Field, Perris California