

EL TORBELLINO

NEWSLETTER OF SAN DIEGO ORBITEERS FREE FLIGHT CLUB



JULY 2022

Chairman's Corner – Mark Chomyn

We've entered the second half of year 2022 and made an adjustment to our contest schedule that will have us flying points contests in July and August. Last year we filled the hot months of July and August with optional fun flies. But this year we decided to see if we could adjust our stop/start times for monthly point contests to try and beat the heat. July 10th was our first attempt with this format and it was a success. We started flying at 7:30AM and concluded at 11AM. We had 13 flyers on the AMA event sign-up sheet. The P-30 event had 10 flyers with a payout of \$20, \$10 and \$5 for those placing in the top three. Gliders were going non-stop right up to 11AM (don't those guys ever get tired?). We'll try it again weather permitting on August 17th at Perris so keep your eye on the El Torbellino and your email for contest particulars.

And while on the subject of the glider guys, I've noticed that of all the flyers at Perris, the glider folk tend to be the best "streamer hawks" That is, they tend to have the best nose for sniffing thermals and using them to their advantage. My advice to those not flying a glider, stand in proximity to a glider flyer but don't make it too obvious. Notice when that glider flyer gets ready to go and time your launch accordingly (Note: I didn't say copy or sandbag). You may find yourself amazed at your results.

Thermals are not necessarily limited to outdoor flying. There is a rumor that these same streamer hawk glider guys can sense a thermal in an indoor venue. I didn't believe it myself until I got the May-June edition of the NFFS Free Flight magazine. And there it was, on page 28. A guy who looks a lot like Tim Batiuk is staring up at the ceiling of an indoor venue. Also notice he's got his right hand on his left wrist. A typical pulse check positioning. And therein lies the secret to caching an indoor thermal. You not only must sense the infinitesimal upward movement of indoor air you must also time it to your pulse rate. When air and pulse rate are in synch that's when conditions are optimal for launch. Don't believe it? Then just look at the results of this year's AMA Indoor Nationals and you'll find Mr. Batiuk and Mr. Buddenbohm (rumor has it he's also got this gift) listed as finishing 2nd and 1st respectively in AMA Glider Champion.



I hate to bore you (but I will). My quest for an ABAG (anything but a Gollywock) old time rubber contender still goes on. Still trimming the 1932 Gordon Light Wakefield, but since I had an old R/N Best-By-Test Stratometer hanging around I thought I'd build it as backup. Its fuselage is a balsa box and not too attractive. And the many stringers on the wing were a pain for notching alignment. But I got it built. Tried one test glide at the July outdoor and it yawed severely left breaking the prop. That broken prop was repaired and my hopes for an actual OT contender remain unfulfilled but undaunted. Checked it out after getting home and discovered two issues. One of the 3/32" wing mount rails was higher than the other causing one wing tip to be higher in dihedral than the other probably due to a slight difference in the



height of the all-sheet box fuselage from one side to the other. With the wing dihedral issue solved I now noticed that the stabilizer exhibited a left side high (tilt) orientation. So, a thin plywood shim under the right side of the stab corrected that misalignment. I'm hoping with those adjustments my flight trimming goes well at the next contest. Results of backyard test glides look promising.

If you are a NFFS member don't forget to look at your May-June edition of Free Flight. Great article about Lee Hines (Mr. Sweepette) and some kind words from the friends and flyers who knew him. I recall seeing him at Perris a time or two. Wished I'd taken the opportunity to introduce myself and get to know him better.

That's all for this month. Hope you all have a great month of July.

Mark

"Opportunity is missed by most people because it is dressed in overalls and looks like work"

Thomas Edison

History of our Club Name – Bob Beecroft

Something like sixty-three years ago several of us were talking about forming a freeflight competition club since the old Aeroneers were dead and gone. All the very first members came from a tiny U-control club, the Clairemont Clear Dopes. Yeah, honest, that was the name. One evening in early 1959 Jim Peterson and I were at the parallel bars at local Cadman Elementary. Jim was a gymnast. I was in awe of his strength and agility on the bars. Anyway, we were talking names for the new club to come. I suggested "Orbiters" and Jim thought that was pretty good but said "'Let's add an extra "e" and make it "Orbiteers"". And so it is! Jimmy's gone; God rest his soul, and may the Orbiteers he named, live on.

https://en.m.wikipedia.org/wiki/1959_San_Diego_F3H_crash

The link above tells of a young, heroic Navy pilot (Albert J Hickman) who rode his broken jet to the ground and was killed. He managed to get it passed housing and barely above the fence in a Clairemont elementary school. He crashed in the canyon right behind the schoolyard. Bob Stiles, also an Orbiteer, and I were riding our bikes home from junior high and saw him go down. We were close enough to see the airplane quite clearly and the smoke trail following. We went to the crash site, got off our bikes, and walked into the canyon. There were several small fires all around the smashed airplane, and it, fully engulfed. The SDFD and other first responders showed up about the same time as us. We couldn't get too close to the plane, but I clearly remember seeing a turbine, other engine parts, and pieces of sheet aluminum structure all around.

A fireman told us in no uncertain terms to get the Hell out. We did, but the crash and fire was also deeply burned into my memory. I imagine Bob's as well. I don't think we ever spoke about it again.

MORE HISTORY – H.Haupt

The Orbiteers flying site used in the 60's, is now a city park named Hickman Youth Fields. The Navy donated the land to the City when construction of the Hwy 52 sliced off that corner of land from the Miramar base over flight area. It currently is dedicated for use by youth leagues, for the sports of baseball, softball, and soccer. The REI store to the NE of the park is also located on area where we used to fly.

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ORBITEERS MEMBERSHIP DUES

Annual Membership - \$20

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Non-Member Newsletter Subscription - \$15

Junior Members 16 years old or younger - Free

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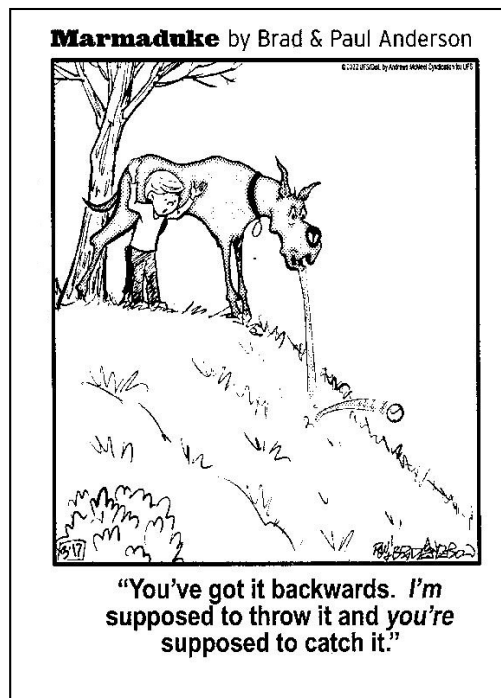
THE FINE PRINT THE FINE PRINT

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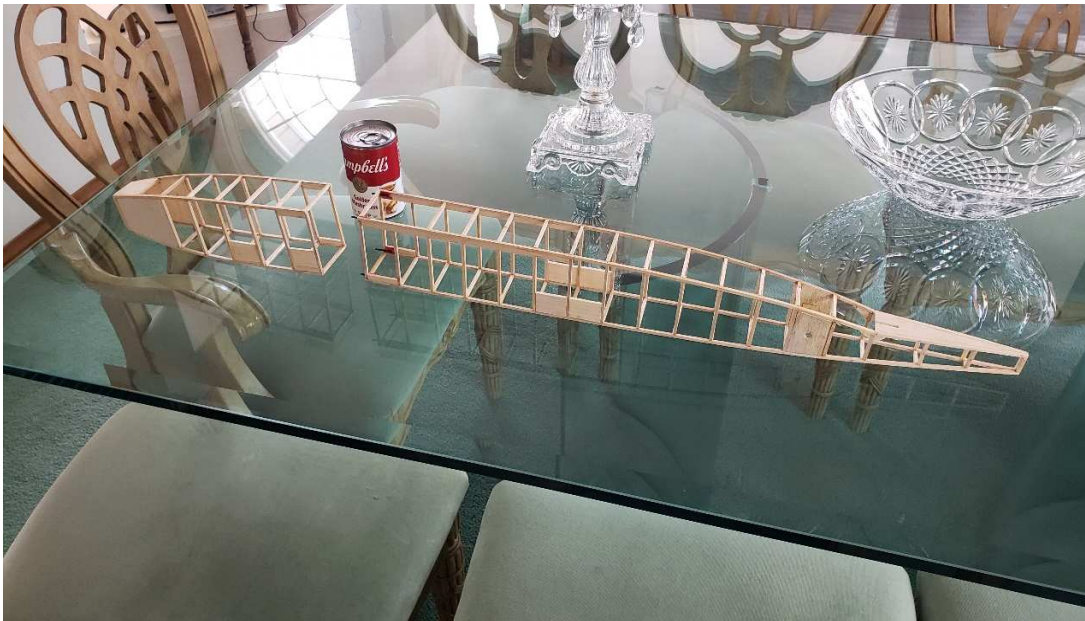


Sectioning Large Fuselages for Transport

By Mike Jester

Safely transporting my outdoor models to and from the flying field has always been one of my top priorities in our hobby. I transport all of my outdoor models in the same semi-transparent plastic boxes that measure approximately 31 x 12 x 6 inches. I can get several models in each box and the boxes stack very securely, making it easy to safely transport a dozen models to and from a contest. The only exception is my Fairchild 24, which I built in 2011 from the Herr Engineering kit. With the excellent mentoring of John Hutchison, that was my first outdoor scale model that I built. He recommended I skip the DT. Despite one 6-minute flight, I still have it.

John Swain recently gave me a generous gift of a Smith 1941 Mulvihill Winner kit from Campbell's Custom Kits. This model is basically an overgrown Gollywock that flies with a 24 x 1/8 rubber motor that weighs 60 grams! In anticipation of long flights, I purchased a Pyxis GPS locator system from Starlink Flitotech. This system is well-engineered and has excellent documentation. Thank you, Mike Pykelny, for offering this unique system. The battery and beacon weigh about 5-6 grams, total, but this huge model can easily carry that payload without much penalty in terms of performance. The fuselage of the Smith Mulvihill is 37 inches long, without the nose block and prop installed. That is 6-inches longer than the length of my standard plastic transport box. I can easily make the wing of the Smith Mulvihill into two separable sections, having done this many times before on coupe models and my Korda C Old Time Rubber model. I decided to make the fuselage of my Mulvihill separable into two sections so it would fit into my standard plastic transport box. I watched a YouTube video in which Joshua Finn of kit supplier, J & H Aerospace, made the rear 1/4 of his huge Dawn Patrol model separable. That gave me inspiration, but I had to improve on his technique.



Smith Mulvihill Fuselage Separated into Two Sections

I built the fuselage of my Mulvihill per the plan, as described in my article in last month's edition of this newsletter. I added 1/16-inch sheet balsa wood panels to provide a gripping region and to provide mounting locations for parts of the DT. I glued in extra 1/8 x 1/8 cross-pieces spaced 1/32-inch apart just ahead of where the LE of the wing is located. I sawed the fuselage into two sections, cutting the longerons

between the closely spaced extra cross-pieces. Using medium CA, I then glued four ¾-inch long segments of .079-inch (2 mm) OD carbon fiber rod segments to the insides of the corners of the rear section of the fuselage. They plug into the front one quarter section of the fuselage. I reinforced the joints between the rods and the fuselage with overlapping segments of red Esaki tissue soaked with CA. The sawn ends of the longerons butt up against each other. It is critical in maintaining alignment that these butt ends are not sanded.



Carbon Fiber Rods that Align Fuselage Sections

My theory, yet to be tested, is that minute variations in the angular displacement of the two fuselage sections, if they occur, will have less negative effect if they involve the thrust line instead of the decalage. This is why I broke the fuselage just ahead of the wing of my Mulvihill. I plan to write follow-up articles about the remainder of the building and the trimming of this model.



Joined Fuselage Sections

EVOLUTION AND THROWING

by Stan Buddenbohm

Why we throw

When humans came down from the trees we developed abilities other than walking upright, one of these other abilities was throwing. Specifically we are discussing overhand and sidearm styles.

What did this ability do for us? It became instrumental in killing prey and enemy humans. So the better one could throw the more likely they would survive. I propose that some mutation happened that gave some humans a shot of endorphin, or similar, when they threw, even more so when it was a good throw. This encouraged them to throw more and they got better at it. The more that they practiced the more likely they would survive. Of course not every human had this mutation but the ones that did not were less likely to survive. So, over many eons the majority of humans acquired the mutation that encouraged them to throw.

Throwing hand launch gliders gives most of us a good feeling. I have done an informal, face to face, careful survey of FF hlg flyers and the good feeling from throwing seems to be real. Of course there can be other interpretations.

THE BEST REASON FOR PARTICIPATING IN FREE FLIGHT

There are many reasons for doing anything but what is the best reason for doing Free Flight? It is that Free Flight is theraputic, it encourages us to have good thoughts. I have asked many people "When you are flying your model do you think about the problems in your life?" "No, not at all." This is the typical answer.

The next best reason

Physical health. Look around at a Free Flight contest, practice session, or a fun fly get together. At least temporarily people are not practicing their bad habits. Instead they are doing things that are good for their bodies.

SDO July 10 Monthly Results

JULY MONTHLY PHOTOS

By Arline Bartick

Orbiteers

Non Orbiteers

P-30

- 1st Don
- 2nd Clint
- 3rd John S

1st Stan

CLG

- 1st Chris
- 2nd MP

HLG

- | | |
|------------------------|-----------------------|
| 1 st John M | 1 st Colin |
| 2 nd Brad | |
| 3 rd Clint | 3 rd Stan |

Power

- 1st Don
- 2nd MP
- 3rd John S



Colin Griaas



Greg Hutchison



Don Bartick



John Swain and Mark Chomyn



Clint Brooks



Stan Buddenbohm



Chris Reck



John Merrill



David Wade and Bernie Crowe

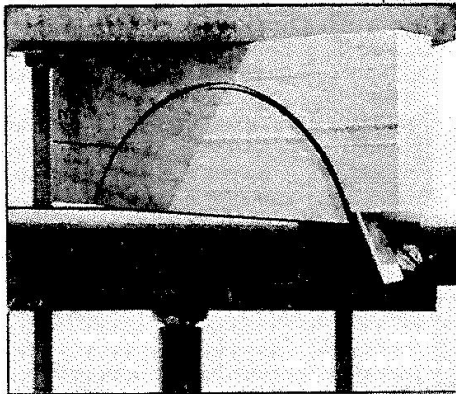


EDITOR'S NOTE

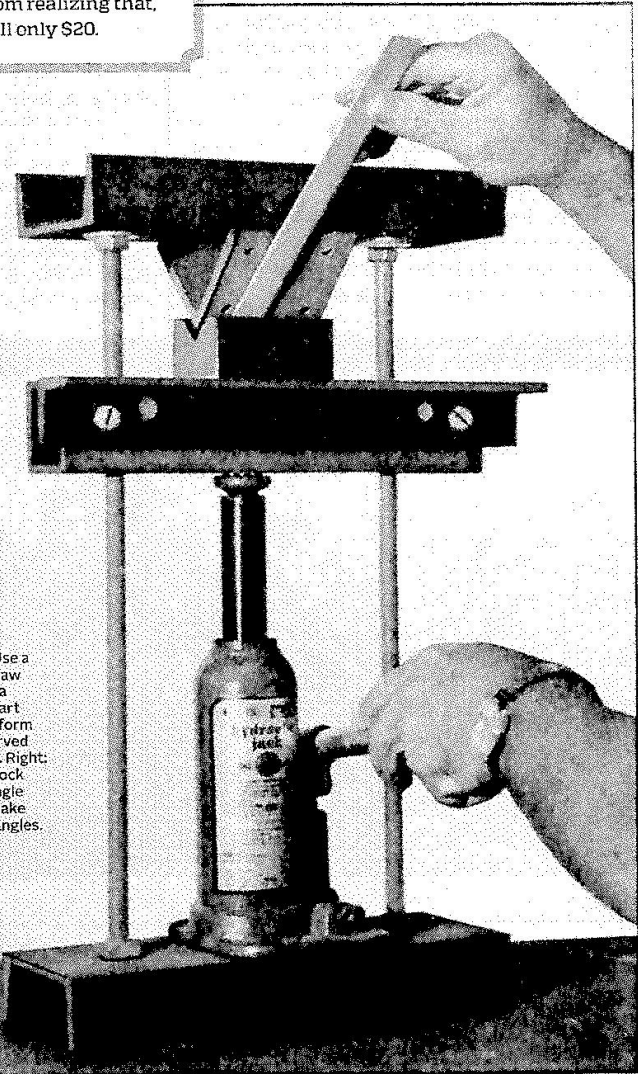
There's an old saw about not wasting your time on tools that are only good for one thing. The pleasure of this project comes from looking at a car's bottle jack and realizing it has more uses. And from realizing that, forty years later, a jack is still only \$20.

Hydraulic Press You Can Build

A simple frame and hydraulic auto jack make a powerful press for bending jobs.



Left: Use a band saw to cut a two-part wood form for curved bends. Right: A V-block and angle iron make right angles.



BY MORTON E. MILLIKEN

A hydraulic press is expensive ready-made, but you can make one from a few dollars' worth of structural iron and a \$20 hydraulic auto jack. My press uses a 3-ton jack; do not use a larger one. The base and top parts of the press are 10-inch lengths of 4-inch channel; the movable jaw is made of two 10-inch lengths of 2-inch angle. The two rods are the result of cutting a 3-foot length of $\frac{1}{2}$ -inch-diameter threaded rod in half.

Weld together the pieces of 2-inch angle to create a box—the moving platform. (For a wider platform, bolt an extra length of angle to the platform, as pictured.) Then create a cardboard template to help locate $\frac{1}{2}$ -inch-diameter holes 7 inches apart, center to center, on the platform and both pieces of channel. Assemble the frame by threading the rod through one piece of channel, then the moving platform, then the other piece of channel, using

one nut and washer on either side of each channel hole. When the frame parts are assembled, the platform should drop to the base without binding. Put the jack in place and the press is complete.

Center the jaw and the work to prevent snagging. Neat right-angle bends in mild steel are easy with a V-block and angle iron as a form. A two-part form band-sawed in 2-inch oak block will produce curved work.

DARPA To Demonstrate Flying, C-17-Size Liberty Lifter Amphibian

➤ LIBERTY LIFTER CONCEPT UNVEILED BY DARPA

➤ DAYLONG PACIFIC CROSSINGS SOUGHT WITH 80-TON LOADS

Steve Trimble Washington

New DARPA projects come about for various reasons, but sometimes they start with an impossible question. Five years ago, Alexander Walan, a program manager for the agency's Tactical Technology Office, started asking if it was possible to design an ocean-crossing cargo vessel with a 100-kt. cruise speed.

"The short answer was: not really," Walan tells Aviation Week.

would cross the Pacific Ocean in about a day—not 2-3 weeks, as required for a seagoing freighter. The DARPA concept also could land and take off from bodies of water rather than the easily targeted runways and dirt strips used by Boeing C-17s.

That unique operational profile is the entire point for a military reorienting itself to strategic competition in the Indo-Pacific area, but it also creates an

DARPA's concept calls for operating in ground effect over waves up to 18 ft. high, covering about 85-90% of maritime conditions, Walan says. Moreover, if the military decided to move a Liberty Lifter from the Atlantic Ocean to the Gulf of Mexico, it would be better to fly overland rather than around the tip of Florida, he adds. So DARPA added a requirement for up-and-away flight to 10,000 ft.

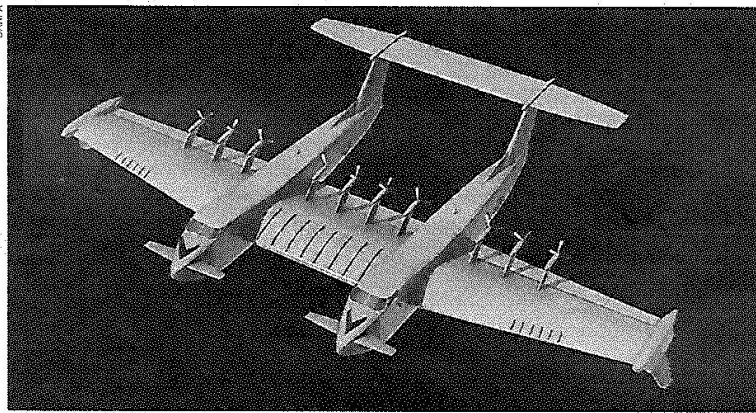
Bidders for a Phase 1 study could propose alterations, but DARPA came up with a design for a Stratolaunch Roc-style twin-fuselage arrangement, with canards in front of a long wing powered by 10 turboshaft engines positioned on the trailing edge. Most ekranoplan designs position engines in front of the wing to stimulate the ground-effect airflow, but DARPA rejected this approach. Mounting the engines on the wing's trailing edge protects the blades and turbines from corrosive saltwater spray, and the Liberty Lifter's wings can generate enough of an air cushion for ground-effect flying anyway, Walan says.

As the concept blurs the line between aircraft and boat, so does DARPA's concept for the structure. The Liberty Lifter should be built from medium-grade aluminum, splitting the difference between lighter aerospace alloys and cheaper, heavier metal forms used in ships. A risk reduction project by DARPA manufactured a center section wing using 3D-printed aluminum panels, which were joined using friction stir welding, Walan says.

The proposed amphibious aircraft will need an advanced control system, including fly-by-wire and wave-monitoring sensors. Any given sea state involves more than simply the height of the waves, including the distance between the waves and the interaction between them. "If I know what the waves look like—not only the crests, but also wavelength, etc.—I can optimize how high I want to fly," Walan says.

The DARPA project comes amid a revival of interest from startup companies in wing-in-ground-effect vehicles. Although Flying Ships and Regent have held discussions with DARPA, both companies say they are not participating. For his part, Walan expects industry teams composed of aviation and maritime companies.

"We kind of gave a heads-up last year that this might be coming," Walan says, "to let people start working those relationships." ☉



DARPA has released a conceptual design for the full-scale Liberty Lifter demonstrator, but bidders can propose deviations.

By pursuing that line of inquiry for several years, however, Walan settled on what became the newly unveiled Liberty Lifter concept. Starting with a \$31 million budget request for fiscal 2023, DARPA hopes to demonstrate a C-17-size, seagoing strategic airlifter by 2028.

In fact, DARPA's proposed design calls for a hybrid configuration. The Liberty Lifter would be a wing-in-ground-effect aircraft that skims on a ground-effect air cushion over the tops of waves at up to 200 kt., but would also be a flying boat capable of ascending up to 10,000 ft.

If the Liberty Lifter concept works in five years, the U.S. military would have the option to field a new type of cargo transport and amphibious assault ship. The seaborne airlifter

organizational dilemma. As the project gets started, DARPA officials are not yet clear on whether the operator for the Liberty Lifter should be the Air Force's aircraft-focused Air Mobility Command, the Navy's ship-oriented Military Sealift Command, or both.

"We're probably doing something right if the services like it but can't figure out where it fits," Walan says. "That means it's new and different. So that's an opportunity and a risk."

The concept evokes the Cold War-era "ekranoplan" fleet, which included the Soviet Union's A-90 Orlyonok transports and Lun-class anti-ship missile launchers, but the Liberty Lifter comes with a major difference. Due to a design limited to ground-effect flight only, the Soviet vessels were limited to flying over calm seas.

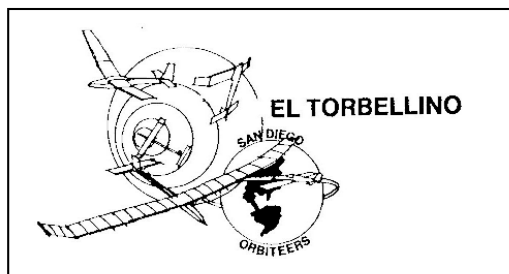


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“ 10 - Aviation Week &
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WHAT'S HAPPENING - August 2022

August 17 San Diego Orbiteer Outdoor Monthly
Taibi Flying Field, Perris CA, 7:30 am.
Events: **Coupe / Glider / Power**

September 16-17 Free Flight Championship at Lost Hills

September **25** San Diego Orbiteer Outdoor Monthly
Events: **OT-NOS Rubber / Glider / Power**