

Radio Controlled SoaringDigest

April 2005 — Vol. 22, No. 4



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Front Cover — Samuel Grob <<http://www.samgrob.ch>>, set to launch his Richter R/C *Alula* at his local hill in Switzerland. This photo is one of a series which were taken on a windless day in January 2005 and appeared in lower resolution on the RCGroups web site.
PHOTO BY PHILIPP SCHRANZ, <pschranz@transalpes.com>

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In the Air!

It is with great sadness we let you know Judy Slates passed away on the 10th of March.

Judy filled the role of Editor of *RC Soaring Digest* from 1990 through August of last year, but she was far more than simply an editor.

When *RCSD* was placed in her hands, she immediately began nurturing it, urging the magazine on to better serve the RC soaring community. Under her loving direction, *RCSD* more than doubled in readership, to over 2,000 subscribers in literally dozens of countries.

Our own relationship with Judy began immediately upon her taking on *RCSD* editorial duties, as we were already authoring our "On the 'Wing..."

column. While we never succeeded at building much of a backlog of articles, she didn't seem to mind. She was always able to find space for our larger contributions and make the best of the smaller.

Somewhat on the spur of the moment, we managed to visit Judy and Jerry while they were still living in Martinez California. Judy was on her way to a self-publishing workshop, but we were received and treated as royalty for our entire stay.

After we got back home, Judy shared vast quantities of workshop information with us, going so far as mailing a couple of books on self-publishing to us. Our own book publishing endeavors are a direct result of

her knowledge, foresight, and gentle encouragement.

Some years later, Bill stopped by Judy and Jerry's while they were living in Texas. As can be imagined, most of the conversations revolved around *RCSD*. Again, Judy's hospitality was astounding; she fixed absolutely delicious meals and shared recipes, and was most gracious when a combination of factors forced Bill to stay several extra days.

Judy built her own RC sailplane and was a capable slope pilot. She was always tremendously involved in local events and activities and enjoyed talking with anyone on the flying field.

Judy's passing has left a gaping hole in our lives. Although there were many miles

separating us, it seemed Judy was always close by; she could be counted on to give exceptional counsel and she was just a few telephone digits or an e-mail address away.

Judy greatly influenced our own lives and the lives of many in the RC soaring community. She was a friend, a colleague, an advisor and confidante, and we miss her terribly.

We send our most sincere condolences to Jerry and to all of Judy's friends around the world. This issue of *RC Soaring Digest* is dedicated to her memory.

in memoriam

Judy Slates

Bruce Abell:

Back in the spring and early summer of 1990 my wife, Marie, and I spent three months travelling around the United States of America and were fortunate enough to spend time in the homes of people that I'd been corresponding with for years.

Among them were the late Jim Gray and his wife Peg who had just sold *RC Soaring Digest* to Judy and Jerry Slates, so we contacted them with a view to seeing them before we headed back to Australia.

Until then we had never even heard of Judy and Jerry Slates but they insisted we stay with them when we got to Martinez. This we found to be typical of the hospitality of the American people we met who opened up their homes and hearts to two complete strangers from the other side of the world!

Those days we spent with Judy and Jerry in their home are vivid

and highly treasured memories and the shattering news we received this morning when we rang to say, "G'Day!", has left us very upset, knowing that we have lost a valued friend.

I know that all who read this will join with us in saying, "Goodbye, Judy! We're going to miss you, Mate!"

Edwin Wilson:

I met Judy while preparing to run the first Mid-South in Louisville.

She guided me through many problems and helped me make contacts for donations to make the contest a success. The phone conversations were many.

I know I thanked her many times, but to me it was never enough.

Thanks again Judy.

We will miss you.

Gordy Stahl:

I remember Judy...

I had been a power RC flyer, but always had an attraction to sailplanes, and I had seen that *RCSD* sailplane logo in *Model Aviation* many times. One day I noticed it again and decided it was time to learn more about RC soaring.

I didn't mail a subscription, instead I called the phone number and Judy answered the phone.

After an introduction I asked her if I could buy all the past issues and sign up for a subscription... I think that kind of shocked her, in any case it certainly made an impression, because not only did I get back issues, but she sent me one of the blue *RC Soaring Digest* coffee mugs!

I started reading the first issue and continued to what was at the time the current month's issue...but it wasn't enough! I was hooked, both on RC Soaring but also on *RCSD*! During that time I had called her a few more times just to chat about something in the magazine and I learned that *RCSD* was written by sailplaners - for sailplaners... and I intended that to be me... and told her so. :-)

I submitted my first article and that cemented a wonderful working friendship that lasted more

years than I care to count now... But Judy, I'll never forget her.

Not that long back I was working toward Dallas from Louisville and injured my foot seriously enough that it was 50/50 that I might lose it. It happened in Memphis and just ahead was the TNT contest in Dallas...and I was intent on flying it, injury or not. Judy and Jerry knew I was coming, but didn't realize how badly I was injured, the plan was to spend the weekend at their home. When I got there, Judy became my nurse and in fact it was because of her help that my foot recovered completely.

Judy's love for the magazine and knowledge of our hobby, contributed to all of us. Without the magazine, many techniques, models, knowledge, contests, and suppliers would never have become known and today, taken for granted.

She was a great woman and a great friend... to all of us.

John Derstine:

Judy Slates was a facilitator. She was a consummate networker before the term was popular.

Always the cheerful upbeat good spirit, she was one of the good

people. By that I mean she did her best to inform by proxy, allowing, through her generous spirit and encouraging word, anyone to share an idea, a theory, or a simple how to in the pages of *RCSD*.

Few knew the depth of her knowledge, and breadth of her reach in the soaring community. She had contacts throughout the modeling and full scale soaring communities that continued to amaze me every time we spoke.

In a personal way she helped me to get more involved in R/C soaring and the promotion of activities, events, and even prodded me to write my first published article in 1995. She introduced me to folks like Ed Slegers who taught me the ins and outs of wing building. Late night sessions with he and Brian Agnew were frenetic exercises in caffeine fueled mass production. She connected me with Martin Simons, whom I then had the opportunity to meet several times at Elmira IVSM rallies and full scale soaring conferences at the NSM.

After I wrote my paltry article on launching my first scale sailplane by winch, out of the blue, Robin Lehman called me and asked if I

would like to try aerotowing some time. He had seen my article and noticed that I lived not too far from him. These meetings led in no small way to the Elmira scale aerotow meets held at Harris Hill NY. That was Judy,

years I got out of touch, but when I called to talk about the move from print form to web page format last year, it was like we had talked the day before. That's the way it was, no pretense, good information, good conversation,

ation in general, was shaped in some way by what she did.

I never met Judy in person. I am not even sure now if we ever talked on the phone. However, we corresponded on paper and via the internet for several years during which she managed to beat my written word into some sort of shape that she could use in *RC Soaring Digest*. Over time it seemed like we were next door neighbors, although we lived half a continent apart.

I appreciated Judy's guidance and encouragement, along with the Christmas card she sent each year. "Who is this Judy Slates person who sends us a card every year?" my wife would ask. My wife is not a sailplane person. I explained that Judy was the nice lady who was managing editor of the soaring magazine.

I have been edited by all sorts of people: teachers, clients, judges, law partners, and even one other professional editor at Banks Baldwin legal publishing. Judy was the best, the friendliest, the most helpful. I am very grateful for the chance to have written for her, and I miss her distant presence.

Cool Summer Breeze

Standing in grass up to her knees
She flies her plane in the cool summer breeze
Soaring and rolling among the trees
She feels at home in the cool summer breeze
I never met her
But her legend I knew
She made her mark in the skies of blue
Looking down upon us from the clouds with ease
She's smiling and laughing in the cool summer breeze
— Alyssa V. Wulick

always putting people together, always looking for ways to connect people to people. That was her gift.

Anyone who ever knew her knew that there was no such thing as a five minute phone call with her. I don't think I ever talked less than a half hour. Over the last few

and she had this knack for getting you to do something to forward the cause of R/C soaring.

Tom Nagel:

I was a *RCSD* reader the whole time that Judy ran *RCSD*. Whatever it is I know or think about model sailplanes, and model avi-

Gregory Vasgerdsian:

The other day I lost a friend. Someone who I have a lot of fond memories of.

I've known Jerry and Judy Slates for something close to twenty-five years. Judy was always welcoming and made me feel at home.

A true promoter of the hobby, the amount of effort Judy spent in promoting r/c soaring through the pages of *RCSD* and behind the scenes was phenomenal! She was a major supporter for r/c soaring and gave her time and energy unselfishly as the hobby grew in the 80's and 90's.

She didn't design new airfoils, produce great sailplanes, win contests, or manage an FAI team. She worked behind the scenes in helping us do so. She had many friends, was well respected and well liked by almost everyone in the soaring community that knew her.

One example in her behind the scenes support is highlighted by today's vendors row found at most of the large soaring events.

Twenty years ago there were plenty of big soaring contests, but that's all they were. There was no vendor's row. Jerry and Judy had

put it out there that since the major hobby shows had little for the soaring enthusiast, we should create our own at the larger contests in the country by having a vendor's row.

Using the vehicle of *RCSD*, it's readers and advertisers, just such an event happened starting with the Visalia Fall Soaring Festival around 1989.

Judy was the lead enthusiast that made the phone calls and got vendors to show up *en mass*. From there it was a trickle down effect as she communicated with other soaring supporters and their events across the country. After the initial push the clubs took over and carried on the tradition from there.

In fact anytime a hobbyist was out to promote an aspect of r/c soaring, Judy encouraged them. She encouraged them by giving them a place to spread their ideas and thoughts in *RCSD*.

She helped them spread the word by personally placing phone calls and e-mails to other enthusiasts—it was all part of helping us promote our hobby—that was her thing. It's what she did. And her involvement helped us all enjoy our hobby ten-fold.

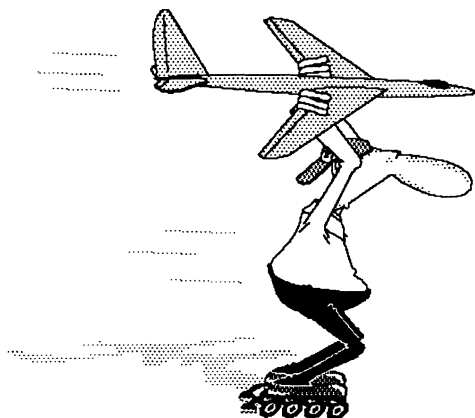
Personally, Judy encouraged me to write about soaring, to be active in promoting soaring and prompted me to contribute to the modeling press. I've had many

years of enjoyment with this hobby.

Judy, thanks for being on my path.



Jerry and Judy, 1999, courtesy Lee Murray



Gordy's Travels

Gordy Stahl, gordysoar@aol.com

Traveling to Australia Wearing Tube Socks, the New Sportube Sailplane Protection

Leaving Las Vegas is usually a good thing and in this case it's a very good thing! As I write this column I am thousands of feet over the Pacific, destination Melbourne Australia.

Making the flight has been tough; I started the day of the flight from Vegas renting a new Harley motorcycle with some Aussie friends who were also in Vegas for the same trade show I was working. We put on over 300 miles cruising the western edge of Lake Mead, starting at Hoover Dam. Needless to say I was beat, but at the time it seemed worth it. The problem is that it got more "expensive" as the day went on. Rain set in and flights got delayed, so instead of leaving on the first leg at 6pm, the flight took off at 9pm for Los Angeles. We were assured we would make the

connector to Australia, but when we got there other delays had our flight filled and we were shuttled to a motel for the night.

It turned out to be a really good thing because I slept until 4pm the next day, with no worries catching my flight at 10:30pm.

I tell you all this because traveling is not easy now days, and that applies to our sailplanes also. The Sportube has become the standard for sailplane safe travel on airlines, so it makes sense that someone would come up with some devices to further improve sailplane comfort and safety while resting in the Sportube.

I had been using a JT Models Plane Pack bag for years, and while other bags have been excellent for protecting and

carrying sailplanes in cars, JTModels offered more than just that. The Plane Pack (PP) has Velcro'd straps to keep three piece wing panels from shifting around inside the bag, and the same for the fuselage which rests in the fold, inside the bag. Everything secure, the PP has proven to be a design ahead of its time. I think that I got my first one nearly five years ago, well before the Sportube was available or even thought of for sailplane transport.

Recently I contacted Jim Prouty to ask him to make me another bag for my Pike Superiors. (The first was designed especially for the Heinrich Stork, an early popular three piece wing molded ship which featured very deep curved tips and required a thicker pad separator to protect the tips.)

The new bag needed a little more room because of the Pike's unusually tall vertical, and I figured while he was at it, why not figure in room for carrying the "other" most popular moldies — the Sharon (it has an extremely long center panel) and the Icon.

Jim's career had changed a few times since retiring young from the military and a few moves, so he had suspended his bag business for the past years, but when I recontacted him, he felt they were settled enough to start making the PP again... a good thing for us contest sailplaners for sure.

During construction of the new PP, I had mentioned how specifically excellent the PP would be for use in the Sportube,

but that I was still concerned about protecting the skins of the wing panels, they are so skinny and susceptible to denting that it would still be necessary to put the panels into bubble wrap sleeves, especially since dust from the flying fields managed to blow into the PPs no matter how quickly we were to close them up after removing the sailplane components.

That got Jim thinking! He had found a new padded material while considering the design of the new PP. It wasn't thick enough for use on the PP, but with the idea of individual protection for panels, including stab halves, it seemed to be the cat's meow.

It was inexpensive and simple to sew, the shape would be generic and without esthetic consideration, strictly made with price and function as the primaries. The name "Wing Socks" was already taken by another producer of wing bags, and after some discussion I said that why not consider the reason for their invention as an inspiration for their naming? Sportube... inspired Tube Socks!



A Tube Socks for each wing panel was created to fit the planes indicated, with the center panel Tube Socks a simple constant chord shape, and the tip panels as single tapered flat ends and a flap with Velcro retainer to lock in and seal the panels. The material is very snag resistant, something that had been a hassle using bubble wrap containers. Aileron edges always snagged going in or out, offering a possibility of chipping a tip or damaging a hinge line.

The Stab Socks are similar to the tip panels in shape, but appropriately sized to fit full flying stab halves, and Velcro interlock if you prefer to plug the stabs together while in the PP.

JTModels Plane Pack consists of various sealable pouches, perfect for storing wing joiners, hardware, allen wrenches for wing bolts, stop watches and talking timers, Picolario walkie-talkies and wing tape with knife or scissors. Pretty much everything you might want to keep with your model while traveling.

It doesn't stop there, though! Because of the thick tip panel separator and the fact that the



Close-ups of some of the available JTModels products:

Lower left: Inside a Plane Pack.

Upper left: A full complement of Tube Socks. Stab Tube Socks at the top, Tube Sock for the wing center panel below, and two wing tip panel Tube Socks at the bottom.

Upper right: The Plane Pack pockets, ready for all of those miscellaneous items.



panels are held securely from shifting end to end, I found that I could also store my Stylus TX, and Infinity Charger at the bottom end of the PP while it was in the Sportube. That puts everything electronic and model oriented locked and secure in the Sportube as long as you have a TSA padlock and TSA Sportube "lock adapter" holding your Sportube together.

I can't emphasize how important it is to use this TSA lock on your Sportube. Every other lock I have used to keep the Sportube closed during flying has been cut off by inspectors and the Sportube left to open or close too far during its flights! When I tried just using a C-clip or a tie wrap, I found that the contents had been damaged by back room vandals, who supposedly aren't supposed to be digging inside bags after they had been TSA X-rayed or inspected. Four separate wing hole pokes were the result... flat out vandalism.

Since I installed the official TSA Lock and my Adapter (see a past issue or e-mail me for the photo detail), I have yet to have anyone bother to open the Sportube... a very good thing. One note: you are allowed to be there if they

want to open it and inspect the contents, and to repack and close it to protect your sailplane.

But I digress... JT has focused on creating both his Plane Pack sailplane carrier and the added protectors, the Tube Socks, because we need them. Take a look at JTModels website and the photos with this article and then get your order in! They take time to construct! Yes, it is possible to get a Plane Pack or Tube Socks custom sized... for a price.

My original Plane Pack has thousands of miles of traveling on it, it's still doing its job and is in excellent condition. At a price of approximately \$150, the cost divide into miles makes it a ridiculously incredible cost value.

Well I'm half way over the Pacific toward Sydney and my laptop battery indicator is flashing... so I'll end up saying if you want to protect your sailplane while traveling, the smart system is the Sportube, JT Plane Pack and JT Tube Socks.

Next project for JTModels? A transmitter Socks of course!

See you on the road!

Gordy

A close-up of Jim Prouty and JTModels

JTModels got its start by making Radio Mitts in '97. We soon started making inexpensive wing covers and moved up to Plane Packs shortly thereafter. I personally wanted a "bag" that would carry pretty much everything I needed to fly my sailplanes. We sat down and came up with the original Plane Pack. I made up the original product and then showed my seamstress (and wife of 19 years) what I had come up with. Being a professional seamstress she refined the design and made it look great!

After retiring from the Air Force in '99 I entered school full time while also working one full time and one part time job. At that point I didn't think I could devote the time I needed to be able to give our customers the customer service they deserve. We took a break from production until recently and are now back in full swing.

All of our products are made of the highest quality materials we can find. Both the Tube Socks and the Plane Pack use a sealed outer shell to help protect the plane from the elements. The Plane Pack uses 1/2" cushioning with a thicker layer between the wings in a three piece bag. We offer free embroidery on all of our products as well to give them that extra personal touch. Normally stocked colors are red and blue and other colors are offered for a small charge to cover the cost of shipping the materials to us.

Please note that all of our products are custom made at the time of order and production of the Plane Packs normally takes two weeks depending on the number of orders we currently have. We do our best to keep our customers informed of expected delivery dates and immediately inform them of any expected delays.



Blue and red Plane Packs, ready for shipment to a customer. Notice the embroidery work. Very cool.

The products that we currently offer are:

An updated version of the Plane Pack which will now easily carry the larger sailplanes in today's market, including the Sharon 3.7.

Internal dimensions are 67" x 14". The Plane Packs come in two versions, one for two piece

wings and one for three piece wings. The three piece wing version holds the wings in place with Velcro™ and is designed to give enough clearance for wings with curved up wing tips. The fuselage is strapped to the bottom of the bag and is carried internally. The outer shell has a zippered cover that holds a "Stab Tube" and holds the horizontal

stabs from the plane. This area also has pockets for storage of items that would be carried to the field when flying as well as wing spars.

The Tube Socks were designed to replace the bubble wrap that many fliers use when transporting their planes to the field. They have a layer of 1/4" foam around

them and an outer shell that is made of a water resistant material to help protect the model. A typical set of Tube Socks includes covers for a three piece wing and two piece stab. We also offer Fuse Tubes to protect the fuselage.

We also make custom covers. We are very willing to work with customers that want custom products. We can make covers for power planes as well as large scale sailplanes (we also supply the UAV market with covers).

We will be offering some slope planes in the very near future and hope everyone will enjoy them as well.

For more information on our products please visit us at [<http://www.jtmodels.com>](http://www.jtmodels.com).

Jim Prouty

As this issue was being put together, Jim notified *RCSD* he and JTModels are in a moving process. Please check out the JTModels web site for current contact information.

Steve Richman's

Sportube Travel Tips — Part 2

Last month I offered some tips to make air travel with Sportubes a safer experience. This month I'd like to share some ideas to make car travel with Sportubes much more enjoyable.

Sportubes are a real boon to R/C fliers who enjoy traveling to new flying venues. These telescopic plastic cases are a nice balance between protection offered and weight. The only potential downside is the challenge of transporting them in the average sedan or SUV.

After packing 3-meter TD or scale sailplanes, the overall length of the closed Sportube is about six feet. That's way too long to stuff in most sedans or SUVs if you are traveling with one or more passengers and have additional luggage.

Strapping Sportubes to the car roof is our logical best bet, but how do we do this and not have

these plastic beasts slip off and/or destroy the car's finish?

No worries mate... it's HandiRacks to the rescue!

HandiRacks are a very cool product, perfect for schlepping sailplanes and a whole lot more.

As you can see from the photos, a HandiRack consists of two inflatable bladders that strap on the roof of a 2-door or 4-door car or SUV. They support loads of up to 80 kg or 176 pounds.

The bladders are constructed with a PVC inner tube protected by a tough nylon laminated PVC outer layer and are ISO certified for safety.

Each bladder includes two air chambers, a strong nylon web strap that anchors it to the roof and several D-rings to secure the objects you're carrying. Both bladders conveniently roll up and store in a supplied nylon carrying case along with a high quality air





pump that quickly inflates on both pull and push strokes.

It takes about 10 minutes to install a HandiRack and strap down two Sportubes and about the same time to remove the Sportubes and stow the HandiRack in its case.

Although you can strap loads directly to the HandiRack's D-rings, I run web clamps over the Sportubes, through their handles and around the roof for additional security. The photo shows one web clamp in place.

Be sure to use two to secure your Sportube. Web clamps are available at most hardware and auto parts stores. Naturally you'll want to mount the HandiRack and web straps with the car doors open unless you prefer to enter and exit the vehicle through the windows.

I first used my HandiRack on a two week flying vacation in Germany and Switzerland last summer. We traveled hundreds of miles with plenty of high speed driving on the autobahn with



occasional rain as well as in-town and mountain driving. The HandiRack was mounted and removed a number of times and performed flawlessly.

The Sportubes never shifted more than an inch or so and the bladders never leaked.

On all long drives, the bladders would typically require a quick topping up of air at mid-day due to changes in temperature or altitude. At the end of our trip we returned our small rental car with Sportubes and car roof in pristine condition.

In addition to Sportubes, HandiRacks can carry surf boards, luggage, lumber and just about anything else you can safely strap to them.

I have nothing but praise for this well designed and engineered product. And with a street price of \$59.95, it's a bargain to boot.

Do a search for HandiRacks on Google and you'll find a number of camping and roof rack outlets that distribute this product.

Try it... you'll love it!

Golden State X.C. Race

April 23, 24, 2005

California Valley, CA

SPECIAL ANNOUNCEMENT

We are excited to announce that the South Bay Soaring Society is sponsoring the Golden State X.C. Race, April 23 and 24 2005. This race is the ultimate challenge in cross country soaring. It is three days of fun and competition for all levels of X.C. Soaring. April 22, Friday, will be a course practice day. We will also offer LSF levels 3, 4, and 5 task goals and return markers set on course. Level 2 witnesses will be available to sign off your completed tasks.

With the cooperation of California Valley Lodge owner Ken Tab, we have moved the start finish line and launch area next to the California Valley Lodge. This will allow pilots to setup and launch within walking distance to the lodge and restaurant. In addition, the course has been expanded to a 50K or 31 mile course and most of the course is on pavement. The course still offers an unobstructed flight path as far as trees and other vehicle traffic. The new course has all the features which can develop the world famous lift that California Valley is known for.

California Valley is located at the northern tip of the Carrizo Plain Natural Area Preserve. The preserve is predominately shrub and grassland which provides an arid basin allowing wide open spaces for the best thermal activity. It is bordered by the Tremblor Mountains to the east and the Caliente Mountains to the west. The central feature is Soda Lake. One of the largest undisturbed alkali wetlands in the state. In May, the lake may have evaporated leaving behind a glistening expanse of white salts which illuminates your sailplane as it is crossing.

The South Bay Soaring Society would like to welcome any and all pilots to participate in this fun and challenging event. If you have any questions or want additional information, Please feel free to call me. (408)683-4140 or e-mail gervais1@sbcglobal.net

Thank you for your interest and hope to see you there.

C. D. Mike Gervais

The Tool Room

Steve Richman
<S.richman@verizon.net>

A Review of the Multiplex Sailplane Balancer

In my brief and checkered power plane past, a pair of index fingers were the only tools necessary to check my glow sport plane's CG. They did a perfectly adequate job and price was right.

Fast forward to the present with a shift in interest to precisely framed or molded TD and scale sailplanes and somehow these aging digits don't seem up to the task of determining the exact CG of a high performance sailplane.

A couple of years ago I took a quick look around the marketplace and settled on the #69 3054 Multiplex Schwerpunktwaage (or center of gravity gauge for those of you less than fluent in German).

Open the box and you're faced with a handful of square plastic bars, some molded parts and assorted hardware. A few minutes

of assembly and you're rewarded with a well designed, sturdy and extremely sensitive sailplane balancer.

As you look at the pictures, the Multiplex balancer looks disarmingly simple. However, the more you use it, the greater you appreciate the excellence of its design and how well it functions. Essentially, this tool consists of two teeter-totter balance beams that pivot on simple bearings consisting of short lengths of music wire riding in plastic bearings.

Each balance beam includes two sliding parts: a moveable stop that rests against the wing's leading edge. You read the balance point with this part. The beam also includes a sliding counter weight on the other side of the pivot.

The uprights that support the balance beams slide back and forth along a square base bar and accommodate a wide range of fuselage sizes. That's about it. There's nothing high tech about this gauge, no fancy ceramic bearings, etc.

To use the balancer, set the wing leading edge stops to the plane's recommended CG location using the built-in metric rules, then slide the two black plastic counter weights until the balance beams are level. Now set your plane on the beams and check your CG. You'll quickly discover just how sensitive this balancer really is. It takes less than a half millimeter's movement to change from perfect balance to complete out of balance.

There's no way even the most finely calibrated index fingers can

come close to this level of precision. And there's no danger of fingernails denting or poking holes in the undersides of your wings as the Multiplex balancer evenly supports the bottom surface of the wings. This balancer is so sensitive that it should do an excellent job with lightweight planes like HLGs, though I've never tried it for this purpose.

At the end of last summer I completed the 3.7 meter Sharon Pro electric sailplane shown in the photos. I set up the plane using the manufacturer's recommended CG. Happily all that was required was a modest amount of tail weight. Rather than epoxy in this buckshot, I placed it in a small Ziploc™ bag and taped it to the boom.



After the first couple of flights and dive tests, the plane seemed tail heavy and I moved the CG forward by removing some shot and positioning the remaining shot further forward on the boom. After each adjustment, I checked the plane's CG to be sure the change I made was incremental. The balancer allowed me to precisely zero in on the CG location I was most comfortable with.

Even though this product may look a bit spindly, it's quite strong. Multiplex claims it will support up to 10 kg or 22 pounds. The balancer has a large enough

footprint so you can comfortably use it at the field on less than perfectly level ground.

The balance beams can accommodate fuselage widths as small as 1-1/2" and up to about 11" for large scale ships. The CG range is from 30 to 150mm or about 1-1/16" to 6" behind the wing's leading edge. That covers quite a range of sailplanes.

Another nice feature of this product is its portability. It easily knocks down for travel. Most of the parts are a simple friction fit. Just a couple of layers of bubble wrap protection and it's ready to stash in your luggage.

No review would be complete without a few negatives to report. You'll notice bits of blue tape in the photos. Some prevent the balance weights from sliding off. It would be nice if there was a positive stop so these bits don't get lost. Others prevent the short lengths of metric music wire that serve as pivots from drifting out of place, especially when the balancer is bouncing around in your car trunk. If I didn't travel with the unit, I would simply glue the pivots in place. Instead the blue tape keeps them in place but makes them easy to remove to make a compact travel package.

If you're interested in purchasing the Multiplex balancer, you can contact Hitec RCD USA www.hitecred.com for the current price and availability. Another source is Punctilio Model Spot www.modelspot.com in merry old England. Gordon Upton is the proprietor and a stocking Multiplex distributor. He accepts credit cards and ships to the U.S. The cost of the Multiplex balancer is about \$42, not cheap, but a very worthwhile investment in my opinion.

Regards until next month,

Steve Richman



An Me-262 at the Inland Slope Rebels Spring PSS Fest 2004.
Photo submitted by Brian Laird

This year the **Inland Slope Rebels** will again be hosting their P.S.S. Festival — The 8th Annual Power Scale Soaring Fun Fly — May 28, 29th, 2005 (Memorial Day weekend) at Cajon Summit, California USA

Each year on Memorial Day weekend the Inland Slope Rebels host the Annual Spring PSS Festival Fun Fly and flyers from all over the United States come to experience some of the best slope soaring on the West Coast.

Please join the Inland Slope Rebels for an exhilarating and dynamic meeting of the best PSS pilots in the USA!

For more information, visit <<http://www.inlandsloperebels.com>> and click on "2005 PSS Festival Information."

REYNOLDS NUMBERS

by Gregory Ciurpita

Because of my limited experience, I don't have a feel for the Reynolds Number (RE) that the various wings sections are operating at without going through the calculations which I then second guess.

I find the two plots below helpful in quickly giving me the numbers I need.

RE is calculated from the following equation, where v is airspeed in m/s, l is length in meters, ρ is air density (1.225 kg/m^3), and viscosity of air ($0.00001789 \text{ N-s/m}^2$).

$$RE = v * l * \rho / \text{viscosity}$$

Airspeed and length in english units of feet can easily be converted to meters in order to use the above equation, avoiding the need to find the english equivalents of ρ and viscosity.

The constant, $\rho / \text{viscosity}$, is equal to 68474, and the english equivalent is 6352. For example, (from Anderson's "Introduction to Flight") the RE for an airspeed of 120 m/s and a length of 0.05 is 410844.

However, such calculations can be avoided by using Figure 1. It provides a set of curves, for

various chord lengths, relating airspeed to Reynolds Number.

Determining the airspeed range for a particular aircraft can also be tedious. It can

be determined using the following equation where W is weight, S is wing area, and CL is the lift coefficient.

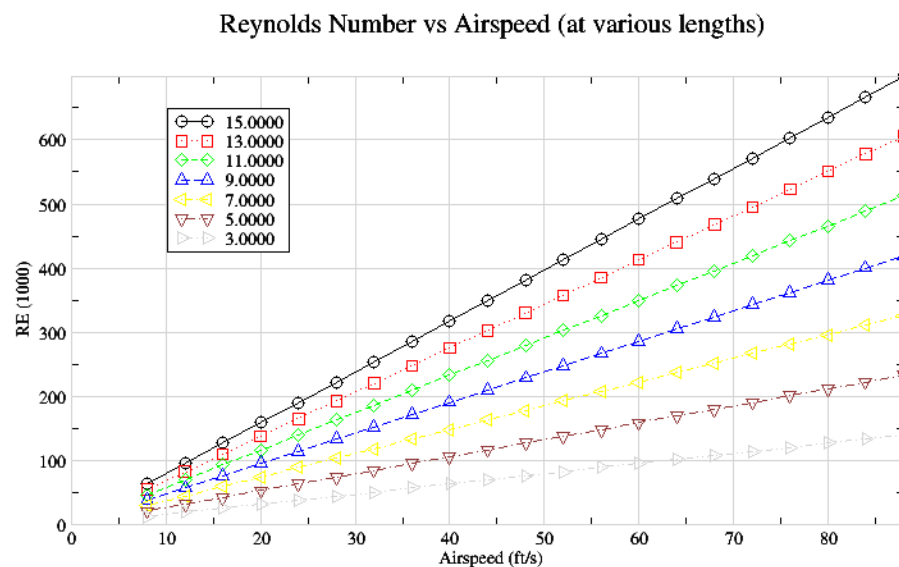


Figure 1

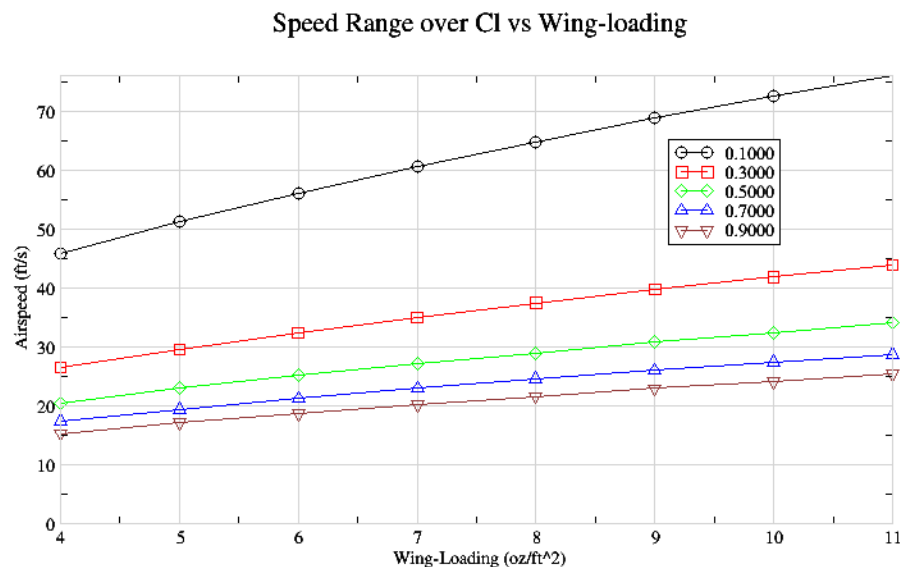


Figure 2

The range of values can be simplified by recognizing that W/S is simply wing-loading, which has a practical range. CL is also limited, maximum speed near 0.1, minimum speed and sink near 0.9, and best lift/drag (L/D) is probably around 0.7.

Figure 2 provides the airspeeds over a range of CL values as the wing-loading varies.

For example, the airspeed range for a wing-loading of 8 oz./sq.ft. is 22 to 65 ft/sec, and best L/D around 25.

$$v = \sqrt{(W / (0.5 * \rho * S * CL))}$$

Figure 1 can then be used to consider the range of Reynolds numbers over this speed range for the wing chords of the planform being considered.

A planform with a root chord of 9" and tip chord of 5" will have RE ranges from 100k to 300k at the root, and 50k to 150k at the tip.

And airfoil performance can be better evaluated knowing the Reynolds Numbers that they will be operating at.

THE 2005 WORLD CHAMPIONSHIPS FOR RADIO CONTROLLED GLIDERS CLASS F3B



The Finnish Aeronautical Association has the pleasure to invite all the members of the FAI to participate in the 15th F3B World Championships, which will take place in Lappeenranta, Finland, 31. July to 6. August 2005.

Wing Shear Loads

Part 1/2: Wood wings

by Mark Drela <drela@MIT.EDU>

Shear loads in wings tend to be much less understood than the more intuitive bending loads. This month we present some sketches which illustrate what the shear loads look like in a wood I-beam spar.

Figure 1 shows what happens when a spar consisting of only top and bottom spar caps and ribs is loaded. The spar/rib rectangle sections try to shear, or deform into parallelograms, producing high cracking stresses at the rib/spar joints. This is not an efficient structure.

Figure 2 shows a greatly improved structure, namely a truss, whose diagonal members see alternating compression and tension loads, which resist the parallelogramming deformation. Several truss configurations can be used, as shown. The truss is efficient, but has the drawback of

a high parts count, and little tolerance to imperfections. A failure in any one of the many joints can cause complete structural collapse.

Figure 3 shows a few shear web structures, which are somewhat more practical alternatives to the truss. The ideal shear web can be thought of as numerous fine truss members, which must take compression and tension loads just like the truss. Such a “continuous truss” is closely approximated by a composite cloth at +/-45 degrees, which will be examined next month. For an all-wood spar, a shear web is commonly made from sheet balsa, whose grain can be either vertical or horizontal. Contrary to popular belief, the grain orientation does not affect the wood's ability to withstand a shear load, which is in effect compression along one diagonal,

with equal tension along the other diagonal. The little load diagrams in Figure 3 are the same for the two grain orientations, except for a 90 degree rotation.

The main effect of the web grain orientation is what happens after the wood develops a shear crack from excessive shear load. The failure propagation for the two grain orientations is shown in Figure 4. It's likely that the endgrain is much more resistant to peel from the hard spar cap than from the soft rib wood, so that the vertical-grain web is likely to be stronger. But this is only conjecture, and tests of spar samples would be the only way to confirm this. For wood wings whose spar web is not interrupted by ribs, these weak peel points do not exist, and the horizontal-grain web may well be superior. Again, tests would be needed to confirm this.

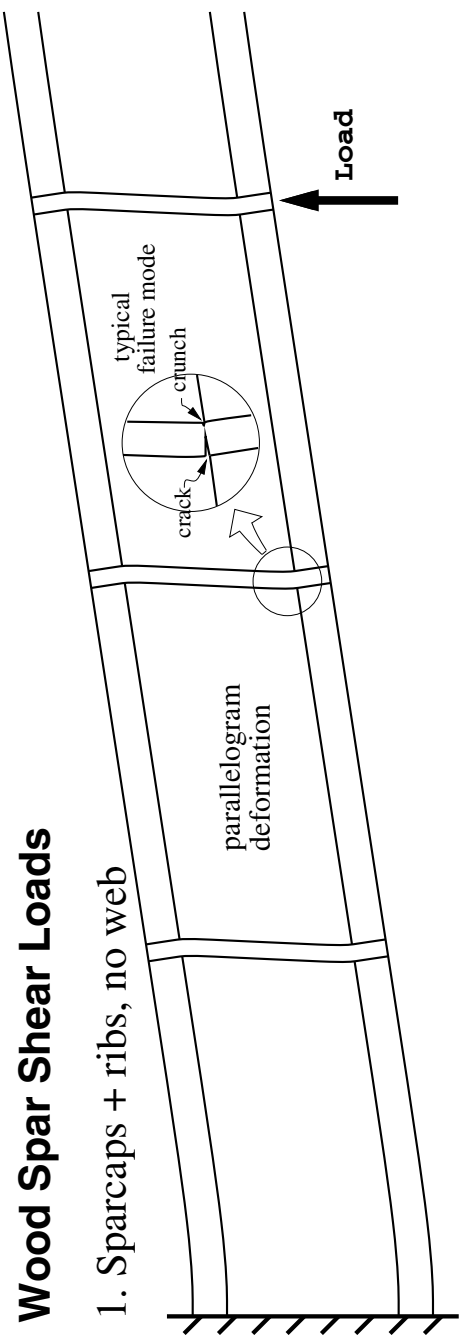
For typical wood wings which have ribs piercing the web, it's essential that the shear webs are glued to the ribs. As Figure 4 indicates, a gap is equivalent to the shear crack, with the resulting peel stress concentration and premature failure.

An efficient shear web or torsion structure should pass the “pressure vessel test.” If you mentally pressurize the air on one side of a shear web or inside a D-tube, the air should not be able to escape. Any hole or gap at a rib or spar cap will have large local shear and/or peel stress concentrations which may cause premature failure. If you must have a hole in the shear web for any reason, that hole should be reinforced with extra balsa, light ply, or bias glass.

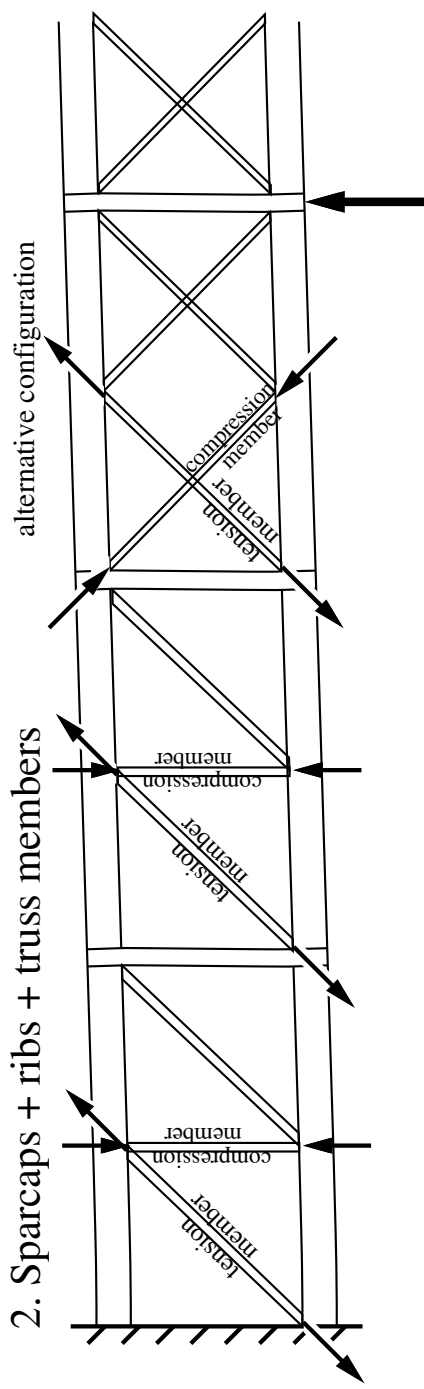
Next month: Shear loads in composite spars.

Wood Spar Shear Loads

1. Sparcaps + ribs, no web

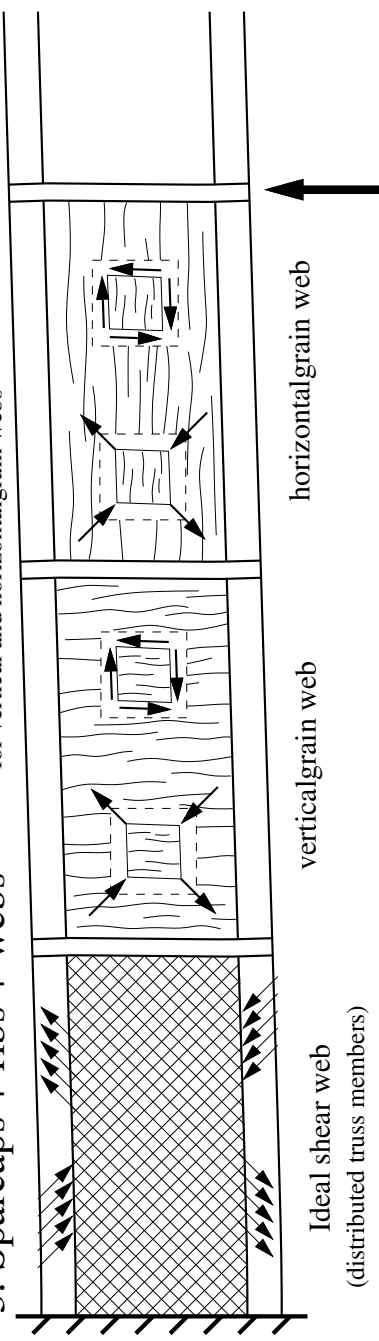


2. Sparcaps + ribs + truss members



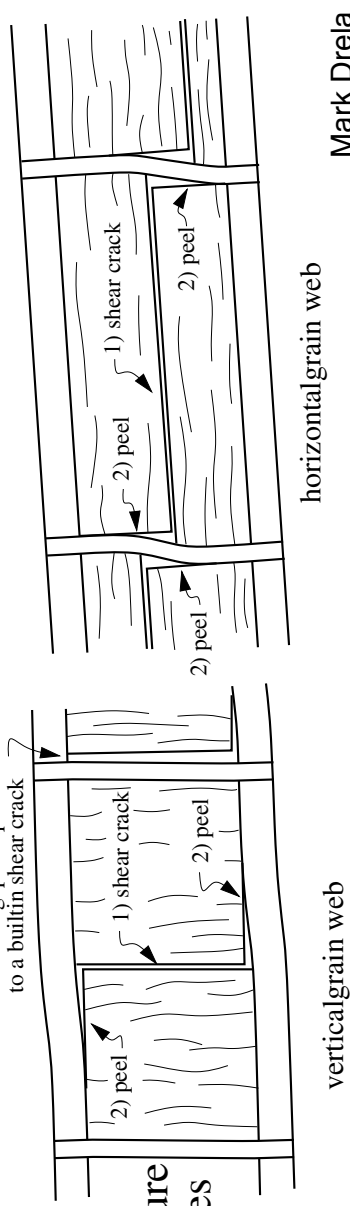
3. Sparcaps + ribs + webs

+/- diagonal loads (= shear loads) are the same for vertical and horizontal grain webs



a rib/web gap is equivalent to a builtin shear crack

4. Failure Modes



Soaring High

by Gregory Vasgerdsian
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www.hobiehawk.com



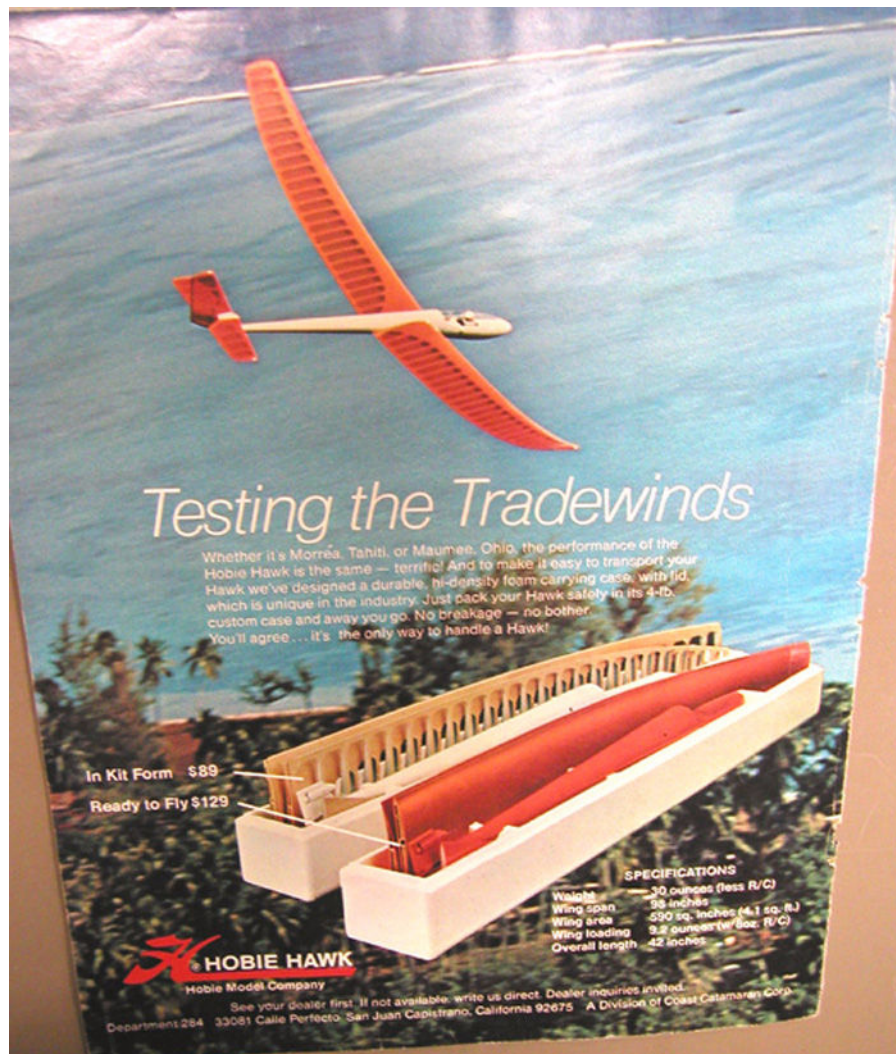
Hobie Hawk

Say those words to a fellow soarer and you're likely to get one of two responses. One response might be that it's an out of date design that people are willing to pay too much money for these days. However the other

response you can see as you watch their eyes dilate and a warm fuzzy feeling sweep over them with a smile as they remember the Hawk they once owned. Well, I'll admit it — I fall into the later category, as I fondly remember flying my Hobie Hawk

some twenty years ago. The Hobie Hawk was my favorite (and maybe still is) inland slope ship. On countless occasions I specked it to a dot in the sky to where I could not make out the wings from the fuselage. Then I'd just point the Hawks nose down

and dive it for hundreds of feet back down. It was a wonder I never ripped the wings off! But, the Hobie Hawk was a robust model that was ahead of it's time, and I flew the heck out mine!



Title photo, opposite page: Flying to the clouds. With its distinctive wings there's no mistaking a Hobie Hawk in the air. Photograph courtesy of <<http://www.hobiehawk.com>>.

Above left: I love old ads — years later they often look pretty silly, but this old Hobie Hawk ad would still do well today. Photograph courtesy of <<http://www.hobiehawk.com>>.

Upper right: Up and away — on the slope is where the hawk really performed the best. Photograph courtesy of <<http://www.hobiehawk.com>>.

Lower right: Another look at a 10-foot span Hawk. There's plenty of dihedral here! Photograph courtesy of <<http://www.hobiehawk.com>>.

These days I don't have the nerve to put a model to that height. Something to do with being young and having no fear I suppose. Some who owned a hawk complained about it having a dutch roll problem — yet, I never experienced that problem. I guess it's all based on your own experience with a particular model, but I feel in some cases it's the lack of building and model setup skills that make for ill handling aircraft. The Hawk came with wings and tail feathers ready to cover or already covered. And it was a strong model with the wings made of thin plywood laminated foam cores with the “rib” bays routed out. A ship that was way ahead of it's time, it featured a molded plastic fuselage and compared to the other kits on the market it was in a league of its own.

Today there are still quite a few Hawks out there, some are hangar queens but many still take to the air. A simple rudder elevator ship that featured full-flying tail surfaces, the Hobie Hawk could move out and was not nearly a “floater” like the Aquila and Olympic II gliders. Because it came completely built, quite a few beginners acquired Hawks, but they were certainly not a trainer. In fact the one I bought in 1980 was bought from a friend who received his Hawk completely covered as a Christmas gift. After slightly damaging it a few times he decided to sell it rather than break it further.

For those of you that want to know more about the Hobie Hawk you can visit Brian Jolder's Hobie Hawk website at <<http://www.hobiehawk.com>>. He's got a great site that covers everything from flight trimming to balancing, to a photo gallery and additional tips. For me most interesting part of the site is the History page complete with an interview of Hobie Alter. Here's a small excerpt:

March 1974 the Hobie Hawk was released by the Hobie Model Co. of San Juan Capistrano California. Designed by Hobart “Hobie” Alter of Hobie surf board and sailboat manufacturing fame.





Start to finish... beauty eh??!!

Opposite page: This image is from Ross Models and shows the router jigs for manufacturing the wings. Photograph courtesy of <<http://www.hobiehawk.com>>.

Above: Here's a Hawk wing panel in blue foam, covered in ply and routered out and covered, ready to fly. Photograph courtesy of <<http://www.hobiehawk.com>>.

The Hobbie Model Co. sold somewhere between 10,000 and 14,000 of these birds! These are the best estimates I have. Many of the early Hawks were sold through the Hobbie Cat sailboat dealers not just hobby shops. This is probably part of where the Hobbie Hawk "reputation" got started... many first time r/c flyers were buying these cool looking birds, not really knowing what they were purchasing - a high performance sailplane not a beginners trainer!

I had the great pleasure of talking to Hobbie Alter via telephone and was able to ask a few questions, here is some of what he had to say:

Q: How long before the production of the Hawk were you interested in r/c gliders?

Hobbie: "Since around 1954, I flew when the transmitters had buttons, not levers! You pushed a button once to turn left and twice for right etc., so I've been around r/c flying for a long time."

Today the original equipment for making the Hawk is with Ross Models, who on an occasion turns out a new batch. Known as the Super Hawk, it features a stretched 10-foot span. Very cool! But don't expect to get one tomorrow, as they are made on a very irregular basis.

One eye opener on Brian's site are the photos that show some of the steps to make a Hobbie Hawk. Just like full-scale sailplanes it requires plenty of hours to complete! I also enjoyed finding the old ads for the Hobbie Hawk that were run in the modeling press.

If you own a Hobbie Hawk and need parts there are some available from the site, and occasionally a complete Hawk comes up for sale. One of the frustrations of the site is that if you are looking for a Hawk you will find a number of them described and shown but will then note the red text that says, "Sold!" Heck!

So check out <<http://www.hobiehawk.com>> it's a fun place to visit a classic r/c sailplane!

Tech Topics

by Dave Register, regdave@aol.com

CUTTING A TAPERED FOAM CORE

Last month we reviewed a method for making templates for cutting foam cores. Whether that technique is used, or any of several others available to the scratch builder, the next step is cutting the core.

Equipment is available in several flavors for core cutting. Since we've made a physical template, CNC cutting – which appears to be a great emerging technology - doesn't apply.

Probably the most popular, accessible and reliable equipment these days is a “drop-arm” cutter, best exemplified by the Feather Cut system. I do not own one of these units but continue to be impressed by how well they work for both production and scratch building. If you don't have a cutter and don't want to kluge something up from pieces, I

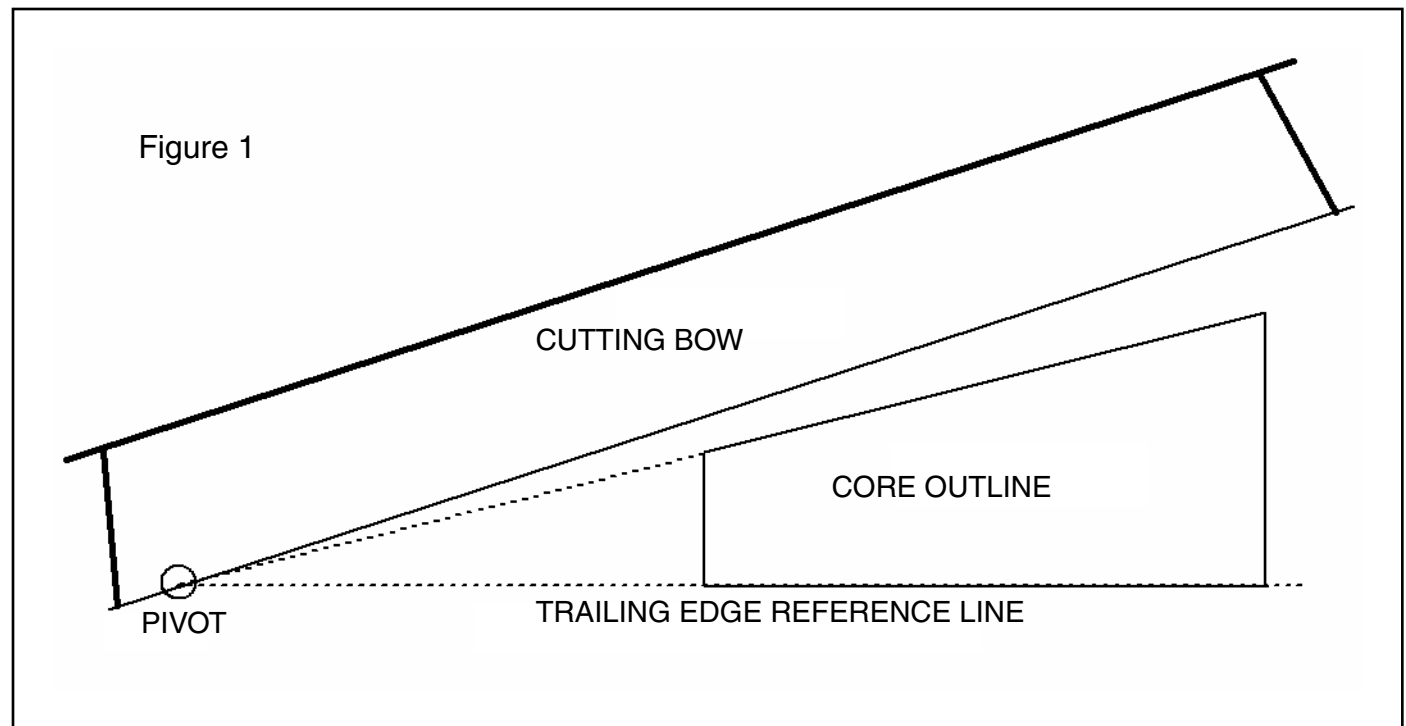
highly recommend going with the Feather Cut.

The system I use is derived from Hi Johnson's pulley method but has evolved to a drop arm

configuration a few years before the commercial units became available.

Over about 20 years of use, one problem stands out with these

units – when you're cutting a small, highly tapered core, setting up the drop arm gets a little touchy.



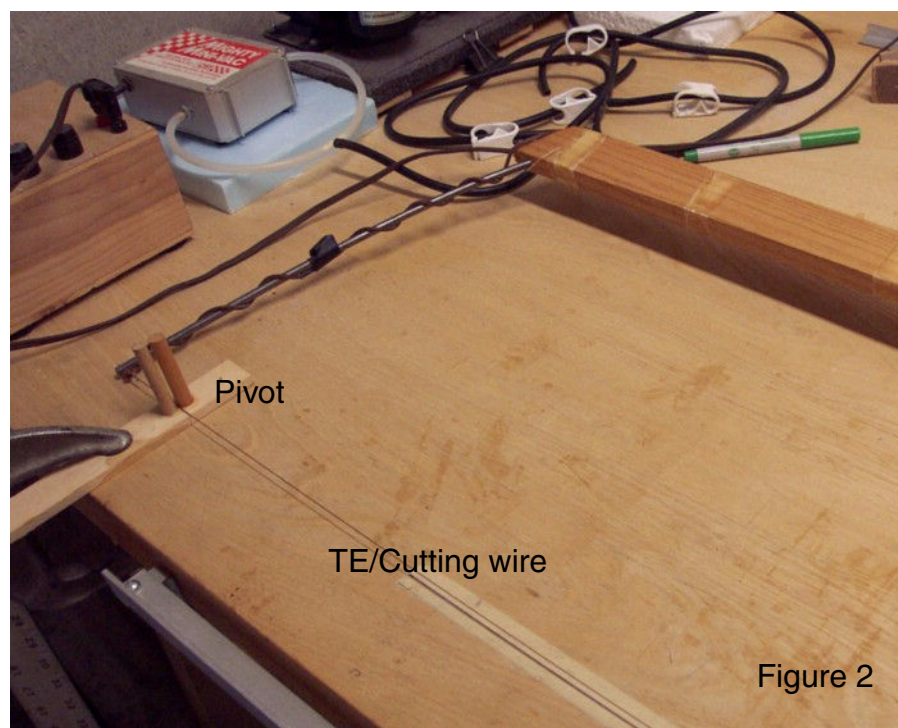


Figure 2

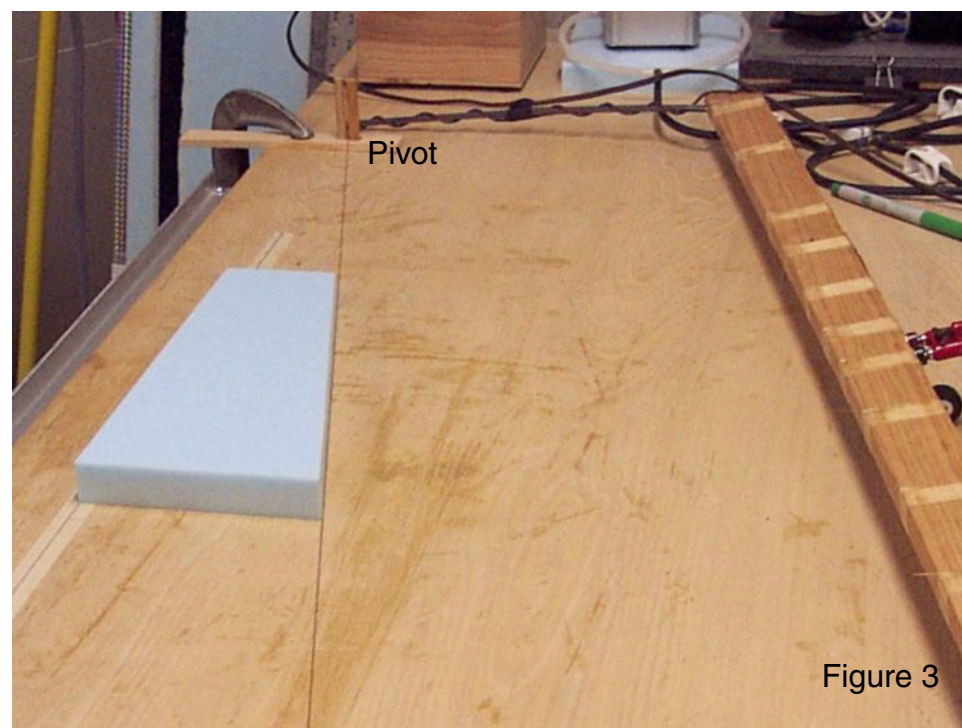


Figure 3

Why so? In principle the taper ratio of the core (root chord / tip chord) shouldn't make any difference. But in fact, as the taper ratio approaches 2:1, I usually have problems setting things up on the first pass. For my work, the first pass is often the only pass I want so I'd like to get it right from the start.

I suspect the problem derives from very slight errors in the core dimensions which make setting the EXACT drop arm distances a little dicey. When the taper ratio

gets high, the wire pulling through the tip travels noticeably less distance than the root. The pulling force on the root may also be higher than the tip. So a combination of mechanical settings and actual pull conditions makes this a bit of a problem for me.

A simple solution has been to pull only at the root — set up a pivot for the wire so the cut has to work out correctly. Sounds simple — and it is — but let's iron out the details a bit.

Refer to Figure 1 for a description of the geometry that's used. The core, ~ 2:1 taper ratio, is drawn in solid. The extension of the core LE and TE is drawn as a dotted line to the pivot point. Basically, the pivoting wire forms a triangle and the core is positioned within that triangle so the TE lines up with the base and the LE lines up with the hypotenuse.

If this geometry is set up right, once the wire starts cutting at the LE, it HAS to pop out at the TE

evenly. But a few details need to be addressed to make this a practical approach.

First, the bow needs to be at least twice the length of the core. The most likely use of this method is for stabilizer cores so that means your bow needs to be about 24" to 36" in length.

Second, good bow tensioning is required. I use the old RCM method of bending some hefty music wire supports to keep the wire taut when it heats up. Other



methods use springs either directly on the wire or indirectly on one of the support arms. However you do it, the wire needs to be tensioned and the longer the bow, the more this becomes an issue.

Third, the pivot should not be “sloppy.” If the wire can rattle around in the pivot (horizontally), the cut will be inexact. The pivot I use is a couple of dowels mounted in a block of wood. These can be positioned conveniently on the table and

then clamped so the pivot won’t move.

Fourth, you need a template at both ends of the core. No cheating here. If you skip the template at the tip chord, you’ll still get a nice pull but you’ll just make a straight line cut through that end. Seems obvious but... Finally, always do the lower surface first. And clean your wire between cuts. The wire in the tip area is traveling slower and will thus burn a deeper kerf than the root and generate more melted material.

Cutting the lower surface first allows the core to drop into the bed before making the upper surface cut, thus largely compensating for the change in kerf across the span of the core.

To set up the geometry for this cut, let’s do an example. I need to make a set of V-stab cores for a 2M ship. I’ve selected the HT13 airfoil for this job. The HT series has a rather thin TE with a long taper so this cut needs to be done right.

This stab has an 11.5 inch span with a root chord of 5.5 inches

and a tip chord of 3 inches (taper ratio ~ 1.83) so it’s just about right for this example. I’ve cut this core successfully using the drop arm cutter with a pull at both ends. However, it took a little tweaking to get it right.

Figure 2 contains a picture of the bench setup. Some masking tape has been applied to the table to set up the TE reference line. The pivot is aligned with the TE line.

Figure 3 shows the core adjusted along the TE line until the wire lies parallel, and in contact with, the LE of the core. Iterate back

and forth a few times to be sure the TE is properly lined up on the TE reference line AND the LE wire is lined up properly as well.

Once you're happy with positioning the core, add the weights and start the cut. Figure 4 shows the wire about to exit from the TE of the core after the lower surface cut. This was the first shot at this cut (honest!).

Figure 5 indicates the quality of the TE of the finished core. If the wire does not exit the TE almost simultaneously along the core span, it's difficult to get this level of uniformity. Figure 6 shows an example of the final bagged stabilizer.

That's about it. If you spend a little time getting the geometry and the pivot right, this cut is pretty easy.

For those who may need software for printing templates, I've uploaded my template software to a web site. The installation file, some preliminary instructions, and an airfoil library can be found at:

<<http://myweb.cableone.net/regdave/index.htm>>

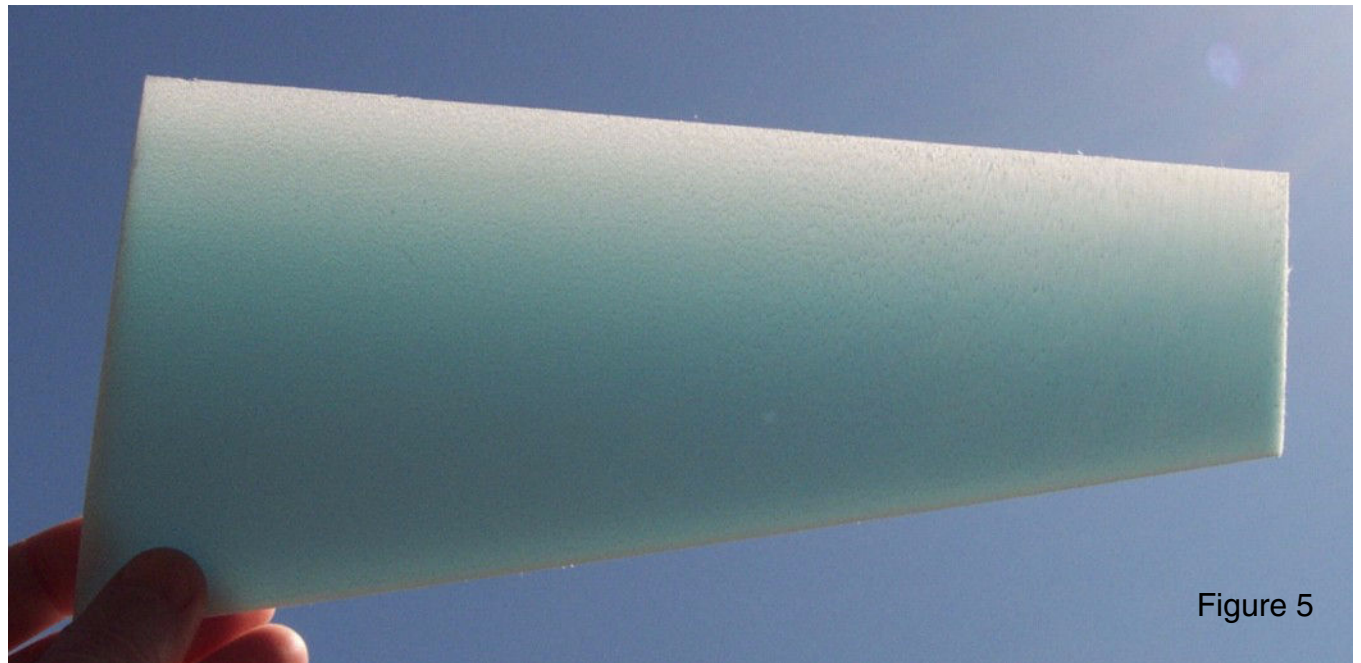


Figure 5

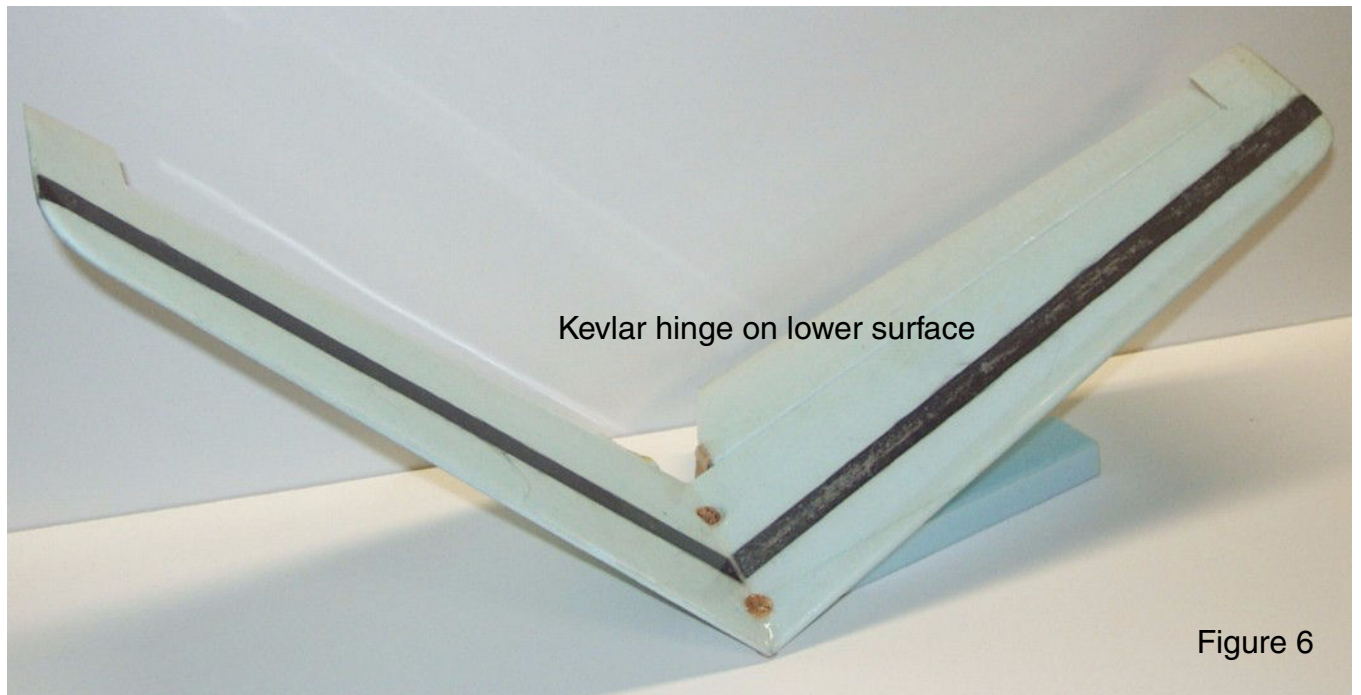


Figure 6

Have Sailplane Will Travel

CALIFORNIA SLOPE SAFARI

This month's installment of HSWT is a California slope saga from Jim Prouty. Jim currently lives in Crofton, MD, and has been California Dreamin' since Mama Cass was singing lead

with the Mamas and the Pappas. His company sent him to the west coast on a business trip, and he finally got his chance.....

Tom Nagel

<tomnagel@iwaynet.net>

Jim Prouty's "Ka" flying along the beautiful slopes of Oceanside.

I've been involved in all aspects of R/C for over 28 years now and have made friends around the world because of it.

Several years ago while stationed in Okinawa, Japan, a good friend of mine described how he used to go slope flying in California on the weekends. He talked about the warm breeze coming in off

the ocean and how he was able to sit on the hill and fly as long as he wanted. Just by listening to him, I was hooked without even being able to give it a try or having access to a slope.

Ten years later my last assignment in the Air Force took me to Maryland and I was finally able to give sloping a try. Although it was fun, it wasn't the near mystical experience that my friend had described. Somehow the cold wind blowing over Cape Cod during an autumn trip just wasn't the same as the warm slopes of California. I kept at it,

flying when and wherever I could. It seemed the only places suitable to fly slope in central Maryland required winds that only faced the slope in the winter. Being from Florida, and then spending 16 years on a sub-tropical island in Japan tends to thin your blood, making cold weather very hard to tolerate.



Paragliders off the cliffs of Torrey Pines..

A few years later, I retired from the Air Force and began building and flying models for a living. (I'm currently an Unmanned Aerial Vehicle Systems Engineer and run my own business on the side, JTModels.) I finally got the chance to visit southern California while attending a UAV convention in Anaheim last August. I was determined not to let this golden opportunity go to waste, and packed my Ka micro

HLG (my own design) and my Turbo into my trusty golf club travel case and off we went. Why, you may ask, would I bring a micro HLG on a slope trip? Read on!

My "slope tour guide" and fellow traveler was Steve Fujikawa, a veteran of the California sloping community. After our business meeting the first day, we loaded up our planes and headed out. The first slope we came upon was

in Oceanside. The view was spectacular and the water was like glass. Yep, you guessed it. I finally made it out to slope heaven and winds were slack. There was just a very slight breeze, enough to keep a lightly loaded plane in the air? Ha! Time for the Ka!

I got the Ka out and, sure enough, flew it for over an hour while most others had to sit and watch. A couple of flying wings were

able to fly but struggled to keep in the air. Looks like some of my thermal flying skills were paying off on the slope!

The next day we headed down to the grand-daddy of all slopes, Torrey Pines Glider Port. What a beautiful site! The view of the Pacific Ocean from above the weathered sandstone cliffs is nothing less than breathtaking. We watched some of the paragliders launch but they soon



Steve's P-51 cruising the beach at Avenue M in Redondo Beach.

returned (or landed way down on the beach) because the wind was too light. Once again Mother Nature was not on our side. A couple of local fliers came out and one of them was brave enough to launch and test the air. The plane seemed to handle the light winds well and he was able to fly for quite a while. However, since we were not club members and were not able to be checked out by one of the Torrey Pines Gulls Flight Directors, we weren't able to fly.

The next day we headed back to Oceanside and the winds were still light. Again I got some air time with the Ka and my cohort sat and watched due to the air being too light for his Turbo or his P-51. We decided to head North towards LA for Avenue M in Redondo Beach where the winds turned out to be more favorable. Steve and I both got into the air here, me with the Ka and Steve with his Patton Aircraft

P-51. The air was super smooth and perfect for our smaller planes. What a weird feeling:



sloping when it's warm!

On our final day we decided to drive to Palos Verdes and try our luck. We stepped out to the slope and, finally, the wind was rocking! The slope is a large bowl and the wind was blowing right into it. A local flyer, who I only know as Jim, was already at the site and

was flying his F-20 Tigershark. Steve put together his Turbo and was soon in the air with Jim. What a kick! This is what I always dreamed sloping would be like! Strong, clean air coming into the slope generating enough lift to "fly the transmitter". The Prouty Slope Curse was still with me, though. The one wrench that I needed to put my Turbo together had fallen out of my travel box at the hotel and there wasn't another one to be found! Guess I was getting pay-back for flying on the light wind days while my friends could only watch.

Steve and Jim flew for a couple of hours while I took some pictures with my digital

camera.

Upset because I didn't get to fly? Not on your life! I was just happy to be able to watch someone else enjoy the slope without having to worry about my teeth chattering in the cold!

If you ever get the chance to head to California on a sloping safari, do it! It's the most fun I've ever had flying any kind of R/C model.

Jim's F-20 making a high speed pass.

The Oceanside slope is located near the intersection of Carlsbad Rd and Palomar Airport Road. Most favorable winds are from the W-SW. This is a fairly low slope but can work very well when the winds come up. Before you attempt to fly there you should read the web page at <http://www.torreypinesgulls.org/FlyingTorrey.htm> which has the rules and requirements for flying there.

The Torrey Pines Glider Port is located in La Jolla, California, on N. Torrey Pines Rd. This slope is about 300' high and can really rock. West winds work best.

The slope in Redondo Beach appears to have been shut down since we visited there in August. It seems a foamie hit a city official in the head, leading to the demise of yet another good flying site!

The Palos Verdes slope is located at Bluff Cove off of Palos Verdes Drive W. to Paseo del Mar. Park at the dead end and you're at the flying site. This site is very high and works best with WNW winds. The landing area can leave a little to be desired but the lift can be extreme when the winds are right.

Happy flying,

Jim Prouty
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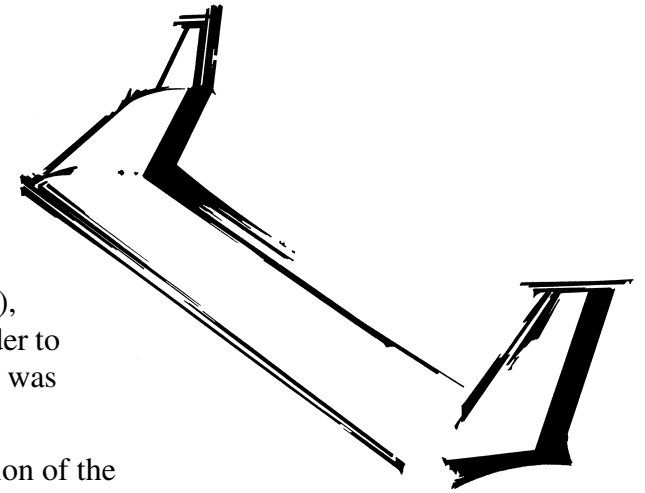


Steve's Turbo tearing up the Sky.

On the 'Wing...

Bill & Bunny Kuhlman, bsquared@themacisp.net

Alexander Lippisch' *Storch IX*



Alexander Lippisch had an early interest in aviation, having witnessed a flight by Orville Wright in September 1909 at the age of fourteen.

The tailless aircraft of Dunne and Etrich became the focus of his attention, and after the end of World War I he turned this interest toward the design of numerous gliders and powered aircraft.

Lippisch designed his first tailless glider in 1921, and the aircraft was built by Gottlob Espenlaub, a fellow glider enthusiast.

Although the resulting aircraft, the Lippisch-Espenlaub E2, was not a complete success, Dr. Lippisch went on to design more than 50 swept wing tailless aircraft.

As was the usual case with Pre-war German aircraft designers having limited resources, Lippisch found an

efficient methodology for bringing his concepts to reality. The ideas were first tested by means of flying models, then as a man-carrying glider, and then as a powered aircraft. Lippisch believed this process would provide the same results as wind tunnel testing with less expenditure of time and money.

Two astoundingly successful series of tailless aircraft came from this paradigm: the Storch and the Delta.

In all, eight Storch aircraft were designed. All were high wing monoplanes incorporating sweep back.

The Storch I (1927) and the Storch II and III all suffered from lack of aileron effectiveness. At the suggestion of Igo Etrich, the ailerons were redesigned to more closely follow the outline of a Zanolina seed, as seen on Etrich's *Taube*, with excellent results.

The Storch IV (1929), the first Lippisch glider to utilize this planform, was a complete success.

A public demonstration of the Storch V led to the financial backing of Captain Herman Kohl. Captain Kohl was interested in acquiring a tailless powered aircraft for trans-Atlantic flights. With Kohl's backing, Lippisch temporarily stopped work on the Storch VI and began working on what would eventually become the Delta series.

Although Lippisch became heavily involved in development of the Delta series, he remained interested enough in the Storch line to produce the Storch VII, powered by a 24 hp engine. This aircraft won a prize for the first tailless aircraft to fly non-stop for 300 km.

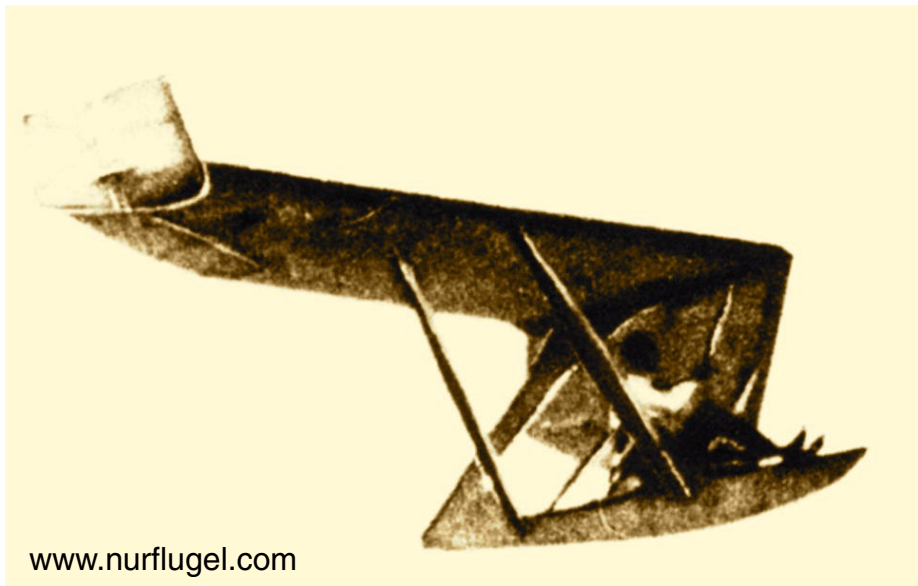
The Storch VIII, privately financed, was rather unique, as it

was able to be flown either with or without a tail.

The Storch IX, the subject of this column, was the result of Lippisch's belief that a tailless training glider was necessary. It was successful enough that two variations were derived from it, the IXa and IXb.

The Storch IXa incorporated a streamlined fuselage hanging below the wing and a semi-enclosed cockpit. The IXb was a powered version of the same basic design.

Dr. Lippisch went on to design the Messerschmitt Me 163 *Komet* during World War II. There is some evidence to support the



view the *Komet* was the first aircraft to exceed the speed of sound, although this feat was never officially recognized.

Construction of a scale model of the Lippisch IX would be a most interesting project. A quarter scale rendition would span 2.6 meters, a reasonable size for an aircraft with a deep fuselage.

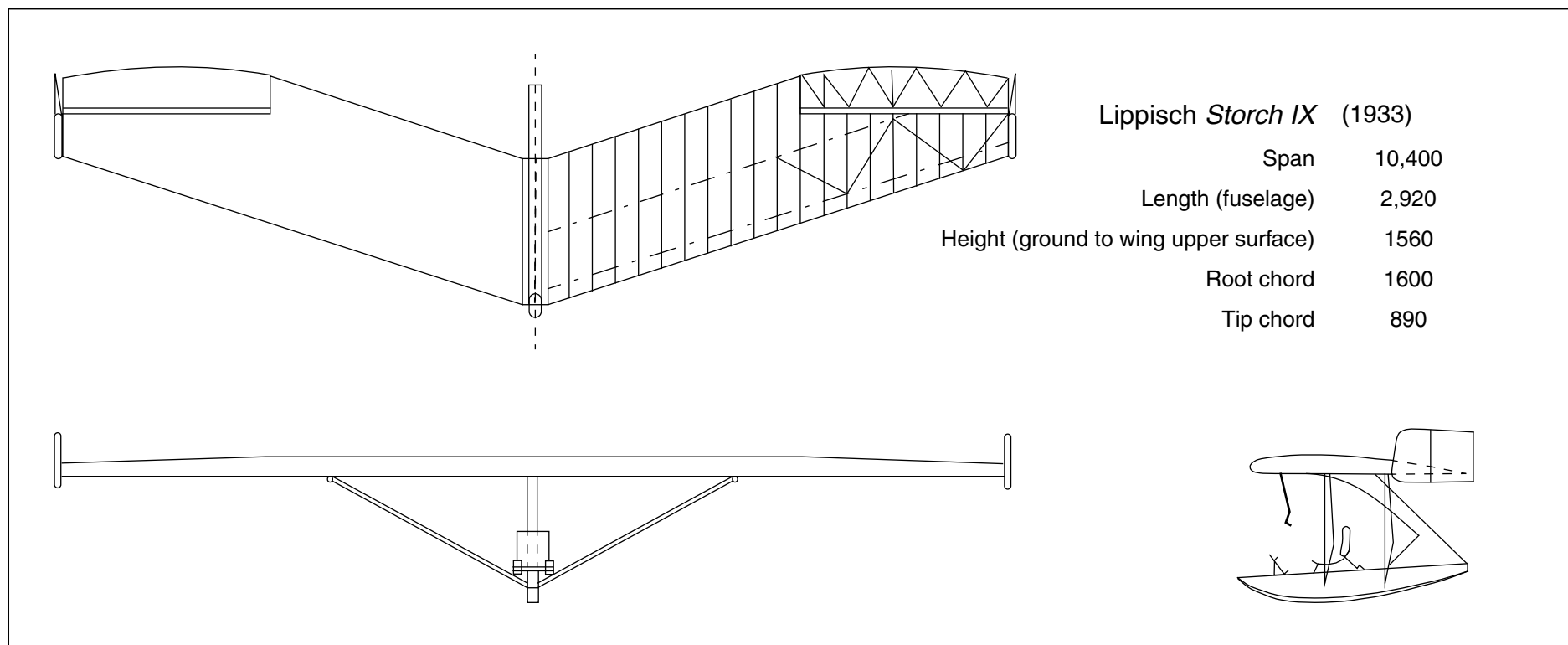
So far as airfoil, the root can be something along the lines of the Clark Y. In the area of the elevons, the airfoil should be a progressively modified Clark Y

so the elevon itself becomes an extended area of reflex. This is in keeping with the airfoils used on the original.

The Storch IX, being a trainer, was usually launched by means of a short duration hand tow using a heavy weight bungee, primarily on gentle slopes so flying height was not an issue.

Simple control system, unique design, simple structure.

Sounds good to us!





Jef Raskin mathematician, musician, composer and conductor, painter, model airplane designer and the original impetus for the Macintosh computer, passed away on February 26th.

Jef is seen by many in the aeromodeling community as the originator of today's tape covered "foamie," where the tape is actually a part of the structure, creating the Anabat series of combat and aerobatic slope gliders in the early 1990's.

While he was no longer employed at Apple Computer when the Macintosh platform was

first released in 1984, he was most definitely the primary force in its initial development. If it were not for Jef, *RC Soaring Digest* would most likely not exist, as the magazine has relied exclusively on the Macintosh OS for its publication since around 1986.

More information on Jef's life and his passions, a complete *curriculum vitae* can be found at <http://jef.raskincenter.org> and <http://www.digibarn.com>

There are a number of model related articles on Raskin Center web site, including a description of an airfoil designed for small

In Memoriam Jef Raskin

March 9, 1943 - February 26, 2005

RC models, an overview of the Coanda effect, how to balance a model, and an ergonomic design for an RC transmitter control system.

Jef wrote over a dozen articles for *RC Soaring Digest*, from event reports to explanations of aerodynamic phenomena.

Vol: 9 No: 11 Nov-0-92 Pg: 50
4th annual precision slope aerobatics contest in Pacifica California, diagrams of maneuvers.

Vol: 9 No: 12 Dec-0-92 Pg: 46
Standard configuration for a sailplane.

Vol: 10 No: 1 Jan-0-93 Pg: 2 Is there an optimum wing loading?

Vol: 10 No: 1 Jan-0-93 Pg: 4
Stabilizer type, flat vs. symmetrical airfoils, SD8020.

Vol: 10 No: 2 Feb-0-93 Pg: 64
Anabat VI, rules for aerobatic competition reviewed.

Vol: 10 No: 4 Apr-0-93 Pg: 18

The relative unimportance of wing loading.

Vol: 10 No: 6 Jun-0-93 Pg: 23
Elevator trim

Vol: 10 No: 9 Sep-0-93 Pg: 38
Thinner vs. thicker sections at wingtips and effects of sweep on yaw-roll coupling.

Vol: 10 No: 10 Oct-0-93 Pg: 40
Thoughts on *Model Builder* article by John Papillo regarding forward sweep.

Vol: 10 No: 12 Dec-0-93 Pg: 51
New Anabat and the 5th Annual Precision Aerobatic Soaring Contest.

Vol: 11 No: 3 Mar-0-94 Pg: 38
AMA training tape on judging glider aerobatics. Larger Anabats.

Vol: 11 No: 3 Mar-0-94 Pg: 40
Explaining the term "modified" with respect to a named airfoil.

Vol: 11 No: 9 Sep-0-94 Pg: 40
Swept forward and backward wings re: John Rapillo's articles in *Model Builder*.

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More about those cover photographs...

We are subscribers to a number of soaring related on-line groups and so receive a very large number of e-mails every day. Ib Jensen wrote a rather simple message through the Yahoo flyWeasel group, "Here is a link to some great Alula pictures posted on RC-Groups. They were taken in Switzerland and show the effects of a tip launch on the Alula well.

<http://www.rcgroups.com/forums/showthread.php?t=333815>>"

Always on the lookout for photographs to grace an *RC Soaring Digest* cover, we visited the link and were astounded to see a series of truly exceptional images posted by Samuel Grob. Turns out they were taken by a professional photographer, Philipp Schranz, pschranz@transalpes.com, <http://transalpes.com>. Philipp has graciously consented to the use of two of the photos within *RCSD*.

Sam lives in Central Switzerland, in a small village on Lake Zurich.

He was introduced to the R/C world by his father when he was a child, and together they built and flew control-line thingies and the occasional R/C glider. Sam re-discovered the hobby some five years ago when he was looking for something to counterbalance his "egghead" job in computers. By chance he came across a nearby hill where some locals have a glider club, saw gliders flying there, and was immediately hooked. He now features his models on his web site <http://www.samgrob.ch/>.

The Alula pictures were shot in January this year on Sam's local club hill. Lacking any wind Sam practiced some throw-n-catch with the Alula. A passer-by asked whether he could take some pictures, of course Sam obliged. Sam says the combination of the action-shots with the beautiful backdrop are quite unique.

Obviously, we agree.

Our thanks again to Philipp Schranz for providing the high resolution photos.

