

Sky Hawk

**MICHAEL LACHOWSKI WINS
1995 EASTERN SOARING
LEAGUE CHAMPIONSHIP
SERIES FLYING SKYHAWK!**

*Available in
Michael Selig
"Red Hot" S7012*

*Designed by
Mark Allen
Packaged by
Slegers International*

Sky Hawk kit features a kevlar-carbon reinforced, fiberglass fuselage with carbon reinforced obachi-foam, pre-sheathed wings. A unique direct drive elevator servo is installed in the vertical fin.

Sky Hawk Attributes

- ✓ High aspect ratio wing
- ✓ "Swirl" wing tip technology
- ✓ Thin airfoils at the wing tip
- ✓ Large control surfaces
- ✓ Large tail surfaces
- ✓ Long tail moment
- ✓ Exceptional performance
- ✓ Sleek lines and good looks
- ✓ Easy to handle
- ✓ Lots of room for radio gear

Specifications

Wing Span	116"
Weight	58 - 65 oz
Airfoil - Root	SD 7037 or S7012
Airfoil - Tip	SD 7037 or S7012 - 8%
Wing Area	900 sq. in.
Wing Loading	9.5 - 10.5 oz / sq. ft.
Aspect Ratio	15:1

SLEGERS INTERNATIONAL

Route 15, Wharton, New Jersey 07885

(201) 357-0455 • FAX (201) 366-0549
9:30 A.M. - 5:00 P.M. (Closed Sun. & Mon.)

*High Quality Electric & Non-Electric Sailplanes,
Radios, and Accessories for the Sailplane Enthusiast!*

Now there are three locations to serve you better! Our sailplanes are available direct from us or through:
KENNEDY COMPOSITES, 15269 CR, 1227, Flint, TX 75762 • (903) 581-3924 • FAX (903) 581-3453
CALIFORNIA SOARING PRODUCTS, 1010 N. Citrus, Covina, CA 91722 • (800) 520-5649 • FAX (611) 968-7915

★ VISA ★ MASTERCARD ★ AMERICAN EXPRESS ★ DISCOVER ★

RIC
Soaring
DIGEST

December, 1995

Vol. 12, No. 12

U.S.A. \$2.50





R/C SOARING DIGEST

TABLE OF CONTENTS

- 3 Soaring Site
Jerry & Judy Slates
- 4 Aero Towing Demonstration at the
International Vintage Sailplane Meet
IVSM - 95
John Derstine
- 9 Aero Towing Demonstration
Martin Simons
- 9 Glider Tow Fun Fly
Robin Lehman
- 10 A Letter on the Subject of Aero Tow
Mark Foster
- 13 Jer's Workbench
Something to Think About
Jerry Slates
- 14 Spar Design
Matt Gewain
- 15 Three Peas in a Pod
Painting the Thermal Picture
Or, Three Peas & A Vacuum Hose
Mike Deckman
Paul Ikona
Curt Nehring
- 17 1995 X-Country & Pig Roast
N. Christopher Knowles
- 18 The Mystery Ship
Kit Review
Dave Wenzlick
- 20 Wing Planforms Compared
Charles Schmitz
- 22 Soaring East to West
Letters, We've Got Letters!
Bob Sowder
- 25 Guilt Free Flight
Joe Galletti
- 27 The Very First Flying Lesson
Robin Lehman
- 30 The PUPA, Part II
Clark Bowlen
- 32 Hello RCSD
Jack Sile



AEROTOW DEMONSTRATION IVSM - 95

Robin Lehman (L) of New York, NY and one of his beautiful scale models, LS-4, being prepared for aerotow. John Derstine (C) and Michael Derstine (R) look on.

Taken at the International Vintage Sailplane Meet IVSM - 95. Photo by Martin Simons.

John Derstine shares the thrill of the event, and Robin's successful aerotow demonstration on page 4.

- 35 A Soaring Blessing
David L. Steere
- 36 To Soar with Eagles
Pat Mattes
- 42 Mixing Full House Sailplanes
Rick Eckel

OTHER SECTIONS/INFORMATION

- 44 Events
- 41 New Products

ADVERTISING

- 45 Advertiser Index
- 40 Classified Ads



SPECIAL INTEREST GROUPS & CONTACTS

- 37 League of Silent Flight - LSF
- 37 Sailplane Homebuilders Association - SHA
- 37 Thermal Talk
- 37 T.W.I.T.T.
- 37 Vintage Sailplane Assoc. - VSA
- 38 H/C Soaring Resources

- Please renew my current subscription.
- Please enter my new subscription to *RCSD*.
- Please send the back issues I have selected.

(Check or Money Order, only, please. U.S. funds.)

Name _____

Address _____

Please return to R/C Soaring Digest,
P.O. Box 2108, Wylie, TX 75098-2108

R/C Soaring Digest (RCSD) is a reader-written monthly publication for the R/C sailplane enthusiast and has been published since January, 1984. It is dedicated to sharing technical and educational information. All material contributed must be exclusive and original and not infringe upon the copyrights of others. It is the policy of *RCSD* to provide accurate information. Please let us know of any error that significantly affects the meaning of a story. Because we encourage new ideas, the content of all articles, model designs, press & news releases, etc. are the opinion of the author and not necessarily reflect those of *RCSD*. We encourage anyone who wishes to obtain additional information to contact the author. *RCSD* was founded by Jim Gray, lecturer and technical consultant. He can be reached at: 210 East Chateau Circle, Payson, AZ 85541; (602) 474-5015.

RCSD should not be considered to endorse any advertised products or messages pertaining hereto. An advertising rate card is available for businesses, clubs and personal advertising.

RCSD Staff

Jerry Slates - Editor/Technical Editor
Judy Slates - Desktop Publisher, General
Managing Editor, Subscriptions
Bob Sowder - Assistant Publisher

[Material may be submitted via 3.5" Disk (MAC or IBM compatible), and is most appreciated!]

Please address correspondence to:

Jerry & Judy Slates
R/C Soaring Digest
P.O. Box 2108
Wylie, TX 75098-2108 U.S.A.
(214) 442-3910, FAX (214) 442-5258

Feature Columnists

Gordon Jones, Bill & Bunny Kuhlman (B's),
Fred Mallett, Kitty Pearson, Fred Rettig,
Martin Simons, Jerry Slates, Ed Slegers,
Scott Smith, Bob Sowder,
Mike Deckman/Paul Ikona/Curt Nehring

Artwork

Gene Zika is the graphic artist
who designs the unique **ZIKA** clip art.

Printing/Negatives

JACO-BRYANT Printers, Inc., Sam Lencke
(901) 743-3466, Memphis, Tennessee
Seamless Graphics, Carl Loomis
(901) 726-4113, Memphis, Tennessee

Copyright © 1995 *R/C Soaring Digest*.
All rights reserved.



R/C Soaring Digest
is printed on recycled paper.

The Soaring Site

Merry Christmas

It's December, again, and the holidays are upon us. There are things to do, places to go, cards to send, a tree to decorate, and the smell of gourmet cooking will fill the air. Special treats will be in the oven or on the counter, and many of us will solemnly promise to, "Go back on the calorie count, after the first of the year!"

But, this time of year is more than that, of course. We think of family and friends; we think of Peace on Earth, and Good Will Toward Man.

And then, of course, we go back to thinking about sailplanes, again. "Why Are RC Sailplanes So Addicting?" A wonderful two part series, Part I was researched and written by David Garwood; Part II was researched and written by Joe Chovan and included in the September 1995 issue. Those two articles say a lot.

It seems like something special happens almost every day. For example, a simple thank-you note written on the back of a renewal card that is returned, is quite common, and does not go unnoticed; but there are so many that we just don't have the time to acknowledge each and every one, and you really do make our day! These notes, however, are really addressed to all of us who share their love of sailplanes through the pages of *RCSD*, whether it be photos, articles, or artwork. So, on behalf of all the authors and artists, we just wanted to take a moment to acknowledge your thoughtfulness and say, "Thanks! And we hope that your Christmas may be bright!"

Best wishes to each and everyone of you during the holiday season. Fly safely, and have fun!

Merry Christmas!
Jerry & Judy Slates



Photo by Steve Savoie, Gorham, Maine.

Jim Blum with Ron Wahl's ASK-21. Robin Lehman photo.



Steve Savoie photo.

looking forward to attending. The prospect of seeing a sizable collection of rare vintage sailplanes virtually in my own back yard was exciting, to say the least. While attending a meeting of the Harris Hill L/D model club in April, an announcement was made that the CD of the IVSM was interested in having a demonstration of R/C gliders during breaks in the full scale action. Only a few people were at the meeting and no discussion followed; that was apparently that.

A few weeks later, after being frustrated trying to get good altitude by winching a 1/4 scale glider, I decided that I should investigate aerotowing. I had seen Robin Lehman's ad in the RCSD resources section about aerotowing in the Rochester, NY area, and decided that a two hour drive was worth the experience I might get trying this kind of sailplane launching. A phone call followed, whereby Robin graciously invited me to join he and Jim Blum at their field whenever I could. Unfortunately, weather and schedules did not co-operate for many weeks. Eventually, we did get together, but that's another article! At some point, through our phone conversations, a light bulb went on, and I asked Robin if he would have any interest in bringing some of his large scale sailplanes to Elmira to do an aerotowing demonstration at the IVSM

Aero Towing Demonstration At The International Vintage Sailplane Meet IVSM - 95

...by John Derstine Gillett, Pennsylvania

I had been aware of the upcoming International Vintage Sailplane Meet for some time, and was

gathering. He said that yes, he would, and that he could bring some other people along with him. Two phone calls later, one to Ernie Heyworth who had made the original announcement at our club meeting, and one to John Trimmer who was one of the IVSM organizers, and things were underway. Robin handled the rest of the arrangements, and after the dust had settled, it turned out that the IVSM officials had allotted a prime time slot of two o'clock in the afternoon on Saturday, July 22 for aerotowing model sailplanes!

In retrospect this should have come as no surprise; there has been a long association of modeling and full scale glider flying from the very beginning. Elmira NY, the birth place of soaring in the U.S. as well as the home of Schweizer Aircraft and the National Soaring Museum was the perfect place for all this to come together. The Schweizer brothers started out building models as young boys and gradually built bigger ones that they could sit in and fly. The National Soaring Museum, under the guiding hand of Paul Schweizer has, over the years, solicited the building and donation of scale models for their various displays, and many of the young (and old) members of the Harris Hill Soaring Club have their roots in model aviation, having benefited from the tutelage of the senior members of the local R/C club on their way to full scale gliding.

Robin was coming into town Friday the 21st. He was bringing long time friend and trusted tow pilot Tony Napoleon, with his two modified & enlarged Robinhood 99 tow planes. One of these had a Zenosah G-62 motor, the other a Quadra 100. These planes towed 1/3 & 1/2 scale gliders on a regular basis and were very impressive in their own right, with regards to their power and size. The sailplanes Robin planned to bring were a 1/3 size ASK-18 and Ka6E, as well as a huge 1/2.5 scale LS-4. Jim Blum & Ron Wahl were coming in on Saturday from Rochester, NY with a collection of 1/4 scale models to display & fly. Among these were an ASK-18, Ka6E, and ASK-21.

Friday arrived, and I went to meet Robin and Tony at their motel to welcome them to Elmira. (This was also a good chance to see all this neat stuff they brought.) When I got there, I met up with Robin and Tony in the parking lot and was surprised to see Steve Savoie, who had driven all the way from Maine for a one day visit to the IVSM. Now, that's enthusiasm! Speaking of enthusiasm, the first words out of Tony's mouth after a seven hour drive were, "Where can we go flying?" So, off we went to the local flying field to do some aerotowing before dinner!

The next morning, we met at Harris Hill at about eight o'clock so that we could get all the planes rigged and have plenty of time to enjoy the day before it was time to aerotow. The IVSM had been in full swing since the previous Sunday. It was pretty much



(L - R) Robin Lehman, Ron Wahl. Steve Savoie photo.

run like a giant fun fly for full scale gliders; the emphasis being on flying your vintage sailplane, camaraderie, and flying as many other vintage planes as you could get your hands on. There were no scheduled competition events, but whenever you get a bunch of glider pilots together, there's bound to be some impromptu, "Mine can stay up longer than yours," things going on. There was talk on the previous Tuesday of a cross country event



1/3 Ka6E with its big sister, & pilot Daniel Olson. Robin Lehman photo.

1/3 Ka6E and (L - R) John Derstine, Michael Derstine, Ron Wahl. Robin Lehman photo.

Wednesday if the good conditions held, but I don't know if they did that or not. There were about fifty vintage sailplanes at the event, and they were running two flight lines continuously most of the time, one for the vintage crowd and one for commercial sailplane rides. You could get a twenty minute hop in an ASK-21 high performance, two place for fifty bucks. They also had theme days for types of gliders. One such day for example was Schweizer Day, another was Warbird Day, where they would line these types of gliders up along the



Pete De Stefano's TG-2 in foreground. 1/3 ASK-18 in background. Robin Lehman photo.

fence next to the Soaring Museum so the public could get a good look. Speaking of the fence, no one without a field pass could cross over to the operations side, but you could buy a day pass for three dollars, or a week pass for ten and gain unlimited access to all these incredible aircraft! Well anyway, after we got the gliders and tow planes assembled and set up so people could see them, Robin went off to attend the daily ten o'clock pilots meeting. Then an amazing thing happened. Scale modelers, having seen the planes we brought on display, started bringing out their own models and setting them up. Before we knew it, there was a remarkable assemblage of models numbering around 12 or 13 (to be honest I didn't count them). One notable example was Pete De Stefano's scratch built TG-2. Of course, there were many more modelers in attendance without planes, and I was pleased to meet some of them throughout the day. It was a particular

pleasure to meet Martin Simons who stopped by as we were setting up the sailplanes. He is a truly a remarkable gentleman, very willing to share his knowledge with anyone who has a question, and quite unmistakable at a distance in his bright blue "Aussie" hat.

As two o'clock approached, Robin and Tony started getting their gear together, and the rest of us jumped in to help with moving planes and tow lines down to the end of the field where the demonstration was going to take place. The plan was to have a full scale bungee and auto tow launch demonstration using a primary type replica, and then,

while operations were still shut down, have the models towed up. Things got out of sequence somewhat when the bungee broke causing a delay, but then it was time to do the models. The weather was very hazy and there was a crosswind. Hazy meant that you didn't fly too high, and Robin and Tony had been practicing crosswind take offs earlier in the week so they were ready. By this time a large crowd had gathered at the end of the field where the flying was to take place, so we had to effect a little crowd control to keep gliders and people a safe distance apart. Virtually all the full scale people were down right next to us and along the flight line so they could get a good view. The towing went well, Robin flew his 1/3 scale planes and did some very impressive low level aerobatics with his ASK-18. Ron Wahl flew his 1/4 size ASK-21. This sailplane flew very smoothly and towed beautifully; it is kitted by Roedelmodel and is one of Robin's offerings through his Sail-



Martin Simons, one of our favorite people!
Robin Lehman photo.
"It was really delightful to have the opportunity of meeting Martin Simons at the Antique Sailplane Fly at Elmira. Perhaps the most extraordinary thing about him is that he is interested in all aspects of aviation, not just one thing, something that is quite rare, indeed! I had an absolute ball, and the enthusiasm of everyone there was really marvelous! It was wonderful to participate in such an event, because we probably saw a hundred or two airtows both before and after our time to fly. What great fun!"
...Robin Lehman

planes Unlimited, Ltd. venture. Robin and Tony capped it off by towing up the big LS-4. This was the first time some of us had seen this large a glider fly, and it was magnificent! Very graceful and very scale like, at altitude it was impossible to tell from full scale.

It also whistled nicely as it streaked by at low altitude. The only bit of bad fortune was that Tony's tow plane lost a wheel on the last tow. It rolled straight down the runway and was retrieved by one of the officials. The plane however suffered some damage when it nosed over as it landed after executing a perfect tow and release.

The day had gone very well. The flight operations started up again, and we all went back to being spectators at a full scale vintage sailplane meet, an international event not soon to be held in the U.S. again for some time.

I just want to add that this was truly an ad hoc group that came together to pull this off. We didn't represent a club or organization, just a group of people who shared an interest in modeling, some of us never having met before this weekend. Everyone just pitched in where needed to

get things together and to help out with logistics. A special thanks should go to Ernie Heyworth and John Trimmer without whose local support and enthusiasm this would not have taken place. ■

FIRST ANNUAL NORTHEAST AEROTOWING FLY-IN



June 1-2 1996
TO BE HELD IN ELMIRA NY - SOARING CAPITAL OF THE U.S.
HOSTED BY: HARRIS HILL L/D R/C
COME FLY WITH US AND SOAR TO NEW HEIGHTS!

This event will be modeled after similar fly-ins in Europe. The emphasis will be on fun and learning aero-tow techniques. Tow planes and experienced pilots will be there to tow you to altitude. Bring your 3 meter or larger aileron sailplane with nose release and join the growing aerotow movement. Scale gliders are encouraged, but not required. Also, if you have what you think is a good tow plane, bring it along and we will assess it. Please have a tow release installed. The flying site is an AMA chartered club field close to the Harris Hill soaring attractions, motels, and other local points of interest. Current AMA membership is required. There will be a \$5.00 pilot registration fee. For details, info, and rain dates contact John Derstine 717-596-2392.

R/C Soaring Digest



(L - R) Ron Wahl and Robin Lehman with 1/3 Ka 6E. Martin Simons Photo.

Aero Tow Demonstration

...by Martin Simons
Stepney, South Australia

The demonstration was very impressive and aroused a great deal of interest among the veteran pilots. Most of them have been, or still are, model fliers, but had not seen aero towing of such big models before.

The only important difference between Robin's methods and ours is that he includes a short length of bungee cord in the towline. We do not do this and have not found any need for it, but it may help. Perhaps, Robin could explain.

The 'Skyhawks' tug is very similar to the one we use, even to the engine.

The only mishap during the model flying was when a tug lost a wheel on take-off. The tow continued normally, but with one wheel missing, the tow plane was slightly damaged on landing. The glider models flew very well, with some good aerobatics as well as a little soaring.

The full scale vintage meet with about fifty old time sailplanes present was excellent. I was pleased to be able to fly in three of the American two-seaters — TG-2, LK-10, and Pratt-Reed, none of which I had flown in before. The LK-10 handles best. The TG-2 was not so easy, although much more of a true sailplane. It was good to see a Baby Bowlus Albatross flying, also the Örlík, I-23, I-19, Franklin Utility, and the very pretty I-21. Several gliders came from Europe — a Grovier, Meise, Kranich, King Kite, and Bergfalke. ■

December 1995

Glider Tow Fun Fly

...by Robin Lehman

Thanks for publishing my "search for airtow fly-in enthusiasts" last month. I am delighted to report that, so far, we have three definite airtow fun flys organized for next June: one in North Carolina, one in Elmira, New York, and one in Canada, near Buffalo, New York. All these folks are extremely enthusiastic!

I know that there are other groups out there that have been airtowing, and I wonder if they

might be interested in planning their own airtow fun fly for 1996. All it takes is a couple of towplanes with experienced tow pilots and a suitable flying site.

There are a lot of people out there who have never seen airtowing. These informal fun flys are a great introduction to airtowing and, for those of us who have been doing it for awhile, a great way to meet new people and, above all, HAVE FUN!

If someone would like to host an airtow get together, just pick a weekend (and perhaps a rain date) far enough in advance to get a little P.R. out there. Some folks might drive or fly long distances to participate, so local motel information and a telephone number for a contact person is vital.

A lot of modelers have scale sailplanes most suitable for airtowing, but have yet to try it. I am quite sure that some of these people would install a tow release in the nose of their sailplane if they knew there was going to be an airtow fun fly somewhere in their area. This is why advance notice is so important.

An experienced pilot can teach a glider pilot how to be airtowed in two flights or less. The same thing is true if you have a towplane, but have yet to airtow. Seeing is believing!

If you have been airtowing for some time now, I would encourage you to consider holding your own fun fly event. Pick a date and give the rest of us the opportunity of seeing and participating in the wonderful world of airtowing!

■

Page 9



Model tug plane motors used for demo. Martin Simons Photo.



Model Glider tow planes. Martin Simons Photo.



A Letter on the Subject of Aero Tow

...from Mark Foster
South Pasadena, California

After being an avid RC scale fanatic for the last 15 years, I finally got around to trying the most scale way to launch of all: aero tow! Slope soaring has been my preferred source for appreciating the beauty and excitement of scale models. Nothing equals the effortless fly-by of a 4, 5, 6, or even 7m scale replica. One can have endless hours of

enjoyment at your favorite ocean or mountain site. It was a Sunday morning in mid-September when I first experienced aero towing. I had a few moments of apprehension as my Viking Models Libelle rolled across the grass slowly, and gradually became airborne. I was told to keep my wings level and not go inside on the tug. I was also supposed to release if things got difficult. The advice was absolutely accurate and made the entire task become second nature. I had four launches that day (no need to release), and the realistic roll out and tow proved to be simply a heck of a lot of fun. I highly recommend the most scalist of scale activities: aero tow!

Just a few words however about the acquisition of large scale model sailplanes. As you know, or may not know, nearly all scale models come from Europe (Germany). I had decided to join a select few individuals and import what I think is an excellent line of German Models. Things went well on my first two orders. The models were delivered promptly. However, my last order resulted in litigation against the manufacturer for failure to perform. Irrespective of performance, the company did not even communicate. Dozens of faxes and telephone calls were completely ignored. It required the Consulate General's Office to get a communication going. I was promised kits in a 2-3 week timeframe. They never arrived. So, now I'm in legal wrangles with the company; another expense.

Of course, this is distressing. However, the satisfaction experienced by watching modelers open the kit boxes of finely crafted German ships made up for the displeasure. There are only a few brave souls left who will venture forth and bring scale models to the U.S. Robin Lehman (Sailplanes Unlimited, Ltd.) and Pete Bechtel (Windspiel Models) are two. The generous time, money, and effort these men have put into offering the best of all model products is simply unmatched. For

R/C Soaring Digest



BAT Experimental sailplane. Very small span, and did not fly successfully. Might do better as a model. Martin Simons Photo.

example, the 4.2m Rodel ASK-21 is an unbelievable value. It includes a seamless white/white fuselage, obechi covered wings, bags of hardware, etc., etc. Through personal communication, I am aware that both Robin and Pete have also been burned by German manufacturers. Therefore, I highly recommend that the modeling community support these primary sources of beautiful model products.

Lastly, I would like to thank guys like Carl Bice, Phil Fugate, Dennis Brand, John Higgins, and Dan Troxell for their support and encouragement in my effort to import kits from Europe. ■

About Robin Lehman

An Editorial Note
...by Judy Slates

Having lived around sailplanes for years that were stored in closets, cupboards, garage, on workbenches, and hidden in any convenient cubby hole that a scale enthusiast can find, I've learned a bit about them, and the difficulty in obtaining them, not to mention the cost to import them to the U.S.A. Thank goodness, most of the models around the house are scratch

December 1995

built; otherwise I'd feel like we were living in Fort Knox! Jerry loves his scale models and may research for years on just one model to try to get it as scale as possible. And loving scale, he has always been there to help others, and has been manufacturing fuselages for the scratch builder since 1979. Many years ago, he ordered a kit from a manufacturer in Germany. He went on a dreaded waiting list, knowing this was the only way he was going to

be able to obtain one at the time. The kit arrived a year later; and of course, customs would not give it up until they had extracted their payment, as well.

But if you are not a scratch builder or want one of those beautiful kits, anyway, then it is often better, as Mark suggests, to let someone else take the risk, and do the work. Their knowledge, experience, and dealings with other countries also make them a valuable sailplane resource for all of us.

Earlier this year, because of notes and requests that we received on the subject of scale, we knew we needed someone knowledgeable that could write on the subject. We asked Robin, of course. But he said he was a flyer and not a builder and wasn't sure just what he could write about. We left the invitation open and, as most of you have noted, he has been writing articles that he thinks may be of interest to each of you.

Robin tells us that Sailplanes Unlimited, Ltd. was started to help people in the USA obtain large scale sailplanes AT COST and hassle free. The prices, although high, include the cost of the

Page 11

kit, shipping from Germany to the USA, customs entry, delivery to his office in New York City, some phone calls, and little else. As an aside, by the way, if you have access to any European magazines, check out the prices. We did, of course, and after having left smudges all over some beautiful sailplane kits, converted the dm to U.S. dollars, added around \$150 for shipping for the smaller kits, and guessed at 10% for customs. (I'm now hiding Robin's telephone number from Jer...)

A year ago, as you will remember, almost everyone importing quality scale sailplanes from Germany stopped doing so. Consequently, it became almost impossible to find any four (4) meter and larger scale ships.

It seemed obvious to Robin that if something wasn't done, the enthusiasm for scale sailplanes in the USA would wither and die. Several years ago, while attending a Swiss fly-in (RC Modeler - November 1992), he found glider heaven! It was an exclusively airto w fun fly with 10 or so towplanes and 60-80 lovely scale sailplanes up to six (6) meters or more! He had a ball watching! Perhaps as a direct result of that experience, Sailplanes Unlimited, Ltd. was born. Wouldn't it be nice to have similar regional fly-ins all over the USA?

Well, that would never happen here if large scale gliders were impossible to obtain. Hence his personal reasons for starting Sailplanes Unlimited, Ltd..

Aside from the normal Sailplanes Unlimited, Ltd. stocked items (ASK 18, ASK 21, Discus and ASK 24/27), Robin says that he has already ordered a few choice LARGE and unique sailplanes for 1996. Some of the following kits, and Robin's brief descriptions, are already here and the rest are "due" within the next few months. Oh, costs are in US\$, and don't include shipping in US or NY tax.

1/3.4 ASW 27 (by CNC), 174" span (4.41 meters), 77" long, 12 1/2 lbs., wing section HQ 3.0. This superb, high gloss, all-glass scale sailplane is totally finished. All flying surfaces are completely finished in high gloss epoxy glass. The spoilers are in place,

and the ailerons and flaps are on the wing and ready to go. This is one of the very best state-of-the-art sailplanes, and comes with winglets, a cockpit instrument kit, seat, wingbags, and a decal set. The wings have cut outs for all servos and the wing rod holes are pre-drilled in the wings and fuselage. Price \$1,950.00. One in stock.

1/3.5 ASW 27 (by Ripo), 170" span (4.28 meters), 12 lbs., wing section HQ 3.0/14-12-13. This beautiful, scale model comes with epoxy glass fuselage, rudder, and stab. The obechi-covered wing is totally finished with flaps and ailerons cut out. The wing joiner rod hole is totally finished, and the spoilers are installed. The wings have cut outs for all servos. Price \$1,200.00. One in stock.

1/3.5 DG 202/17 (by Roke), 191" span (4.86 meters), 11 lbs., wing section E 203/201/197. This model comes with an epoxy glass fuselage, obechi-covered foam wings with flaps and ailerons cut out, spoilers and wing joiners in place. All flying surfaces are totally finished. The wings have cut outs for all servos. Price approximately \$1,200.00. Available February, 1996.

1/3 DG 600/18 Evolution (by Ripo), 237" span (6 meters), 25 lbs., scale wing profile. The fuselage, rudder and stab come in an epoxy, glass mirror finish. The foam obechi-covered wings are completely finished and come with spoilers installed, wing joiner holes in place and cut outs for all servos and ailerons-flaperons are finished. All flying surfaces are completely finished. Price \$1,950.00. One in stock.

1/3 Nimbus 2 (by Muller), 266" span (6.76 meter), 25-30 lbs., wing section E 68. This superb scale model comes with a high gloss, epoxy glass fuselage and foam obechi-covered wings. The wings have cut outs for all servos. All flying surfaces are finished. The wing joiner holes are in place in the wing. Price approximately \$1,950.00. Available January 1996.

1/3 Twin Acro III (by Muller), 201" span (5.2 meters), 20 lbs., wing section E 209-207-205-203. This superb twin seater comes with a high gloss, epoxy glass fuselage. It has foam obechi-

covered wings and flying surfaces. The wings have cut outs for all servos, spoilers are installed, and the wing joiner rod holes are in place. Price approximately \$1,300.00. Available in January 1996.

Large Towplanes

1/4 Ralley Morane (by Rosenthal), 110" span (2.78 meters), 18 lbs. The Ralley is a French low wing, tricycle gear, top-of-the-line towplane used extensively in Europe. It comes with an epoxy glass fuselage, obechi-covered foam wings, flaps and ailerons, stab and rudder. Suitable for Zenoah G62, 3W60, etc. motors. Price \$495.00. One in stock.

1/4 PZL 104 Wilga 35 (by Frisch), 110" span (2.78 meters), 79" long, 20-23 lbs. This unique, taildragger is the most popular European towplane of all. Fuselage and cowl are epoxy glass, wings, flaps, ailerons, rudder and elevator are styrofoam obechi-covered. This towplane has a scale landing gear. Suitable motors are Zenoah G62, 3W60, etc. The wings have cutouts for all servos. Price approximately \$1,300.00. Available in January 1996.

Well, that's Robin's list! If you need any additional information on these kits, give him a call.

Robin Lehman
Sailplanes Unlimited, Ltd.
63 East 82nd Street
New York, NY 10028
(212) 879-1634
fax: (212) 535-5295

Pete Bechtel
Windspiel Models
P.O. Box 2121
Coeur d'Alene, ID 83816
(208) 667-2276
fax: (208) 667-8712

Jerry Slates
Viking Models, U.S.A.
2 Broadmoor Way
Wylie, TX 75098
(214) 442-3910
fax: (214) 442-5258

Readers, the full size glider photos will be included in a future issue. ED.



Jer's Workbench

Jerry Slates
P.O. Box 2108
Wylie, TX 75098-2108
(214) 442-3910

Something to Think About

In the last three years, I have been doing a lot of scratch building and find my present inventory to include 1 power, 1 electric, 4 scale, 3 slope (Still haven't done any slope flying in Texas, though, sigh...), and 7 thermal planes. And this doesn't include any projects that are on or under the workbench, or gathering dust in a corner. Unfortunately, in the last three months I have also wrecked three models: 1 electric and 2 open class gliders! So, I needed to see what kind of shape the other models were in if I expected to be able to fly.

The first model that I looked at needed a bit of work; I had to rehing the rudder. One of the ailerons was loose on a slope plane, but was set aside for another day, as this would be a major repair job. An open class glider looked OK, so out to the field I went to test it out. But, something was wrong; it just didn't feel right.

After making a few trim changes, and playing a bit with the C.G., I still couldn't correct the problem. So, back to the workbench we went. The C.G. was OK. The alignment of the wing and stabilizer were OK. And finally, there it was. One of the stabilizers was warped. "Now, just how did that happen..." I asked myself.

The original stabilizers were cut from 1 lb. white foam, and sheeted with 1/32 inch balsa, in order to keep them light. They were then finished with a modest, clear dope, which was OK, too. Unfortunately, this made the model difficult to see so, at a later date, I painted the bottom of the model black. It appears that the black dope shrunk, and pulled the trailing edge down. With no fiberglass in the trailing edge for reinforcement, the stabilizers were light, but now I have to build a brand new set. Something to think about...

Spar Design

The following contribution on spar design was written by Matt Gewain, Tehachapi, California. Matt is an aeronautical engineer.

When you talk to anyone about spar design, there are many different ideas on how it should be done. There are a million different ways to build a spar that won't break in a model wing, and over the years, some modeler has probably tried every one of them. If you put enough of almost any material into a wing, you can make it strong enough so that it won't break.

The question should be, "How do we build a wing with the best performance, overall?" This means that the structural aspects of wing design need to be integrated with aerodynamics in order to design a system with the best overall performance for the tasks to be flown. If only one portion of the design is optimized without optimizing the others, only a small part of the potential performance gain will be realized. As an example, the primary factor in selecting an airfoil thickness is the structural capability of the wing to withstand the flight loading.

The areas we need to address in the design, while maintaining a minimum weight, are:

1. Bending strength and stiffness
2. Torsional strength and stiffness
3. Airfoil performance
4. Planform shape and aspect ratio
5. Loading considerations other than flight (abuse factor)

When we design a spar, we are only addressing the first item on the list. Talking in general about spar design is good, but any specific design must be integrated with the overall design goals and considerations listed.

Stiffness is included with strength, because poor bending and torsional stiffness has dramatic effects on the

overall wing performance. A wing with poor bending stiffness will certainly have poor torsional stiffness, which means that the airfoil angle of attack will change with the wing loading, and the lift to drag ratio of the wing will suffer under load.

Material to be used must be selected by comparing the strength and stiffness of each material used. The table shows the specific unidirectional tensile strength and specific unidirectional and compression modulus for common materials. The word "specific" means that the material property has been divided by the material density. Also, "modulus" is the measurement for stiffness of a material.

Torsion strength is shown in the table. Typically, with any fibrous material (i.e., wood or cloth), the compression strength of the material is about one half the tensile strength. This does not mean that these materials should not be used on the compression side of the spar; only that the cross section on the compression side should be about twice the size of the one on the tension side of the spar.

Based upon these material properties, all primary structure responsible for providing the bending and torsional strength and stiffness in a wing should be built from carbon fiber. If a design uses one of the other materials, the performance reduction will be apparent under high loads; this is where a soft structure reduces the aerodynamic efficiency of the wing. Unless you choose balsa, then the strength to weight has nearly an order of magnitude disadvantage in addition to poor stiffness.

In the spar, this means that the spar caps both compression and tension sides should be unidirectional carbon fiber. The other part of the spar, the core, or shear web, is also critical and most often the cause of spar failure.

Wing failures on the compression side

	E Glass	S Glass	Aramid	Carbon	Balsa 16 lb.
Specific Unidirectional Tensile Strength ($\times 10^6$)	2.1	3.0	4.0	3.4	.49
Specific Unidirectional Tensile and Compression Modulus ($\times 10^8$)	.76	1.1	2.2	3.9	1.2

are common. It wasn't a material failure in compression, but a failure in the core material that allowed the compression material to buckle. The best spar core is made of a material with a high specific compression modulus, good sheer strength and stiffness, generally end grain balsa or Rohacell wrapped with carbon fiber

aligned with the carbon tows at plus or minus 45 degrees to the span.

I hope this discussion of material properties will make modelers think about the materials they are using and the accepted design standards. There is certainly much more model performance achievable as we incorporate more carbon fiber into our designs. ■

THREE PEAS IN A POD



Mike Deckman
1154 Strawberry Lane
Glendora, CA 91740
(818) 914-0311

Curt Nehring
764 S. Knollwood Lane
San Dimas, CA 91773
(909) 592-2105

Paul Ikona
1010 N. Citrus
Covina, CA 91722
(818) 966-7915

Painting the Thermal Picture

Or, Three Peas & A Vacuum Hose...

Paul: If there is something these Three Peas in a Pod know, it's about "hot air". We're so full of it, that we decided to collaborate on an article all about findin' them darn things we call thermals. So, one hot afternoon, at CSP, over some really cold ice teas, we did just that. We tried to keep it simple for the beginner. Heck, even my dog understands it. So, go find your favorite readin' seat, and come thermal huntin' with us.

Curt: About four years ago, when I purchased my first Mako, I started making consistent landings. But it wasn't until I read Joe Wurts' article on "How to Read Air" that I began making most or all of my times. Unfortunately, I don't remember when the article was originally published, but it first appeared in Byron Blakeslee's column in *Model Aviation* magazine. I highly recommend searching it out. It definitely changed my entire approach to R/C soaring,

gave me a whole new sense of enjoyment, added several hundred points to each contest score, and up-ed my overall standings. Now, locating thermals isn't just "flying around hoping to bump into something". I still read Joe's article from time to time when I think I need a refresher course, and would encourage all glider pilots to take the time to read whatever they can find on thermals and related topics. For the novice or sportsman class flyer, don't hesitate to ask an expert pilot for tips, or to sit in on one of their flights. I've seen Ben Clerx give Roger Lackey a lesson on thermal hunting, if that's any indication.

Mike: Obviously, flying from the ground poses a few problems in detecting good air that we might not experience if we were actually sitting in the cockpit. But what we can't feel or sense, due to the lack of an instrument panel, we can "see" because the plane will signal the thermal by a sudden jump (tail up), or one wing tip

will lift drastically. Conversely, if the tail is dragging, you're in sink (down air).

Curt: Before we get started "painting the thermal picture", I want to mention how important it is to get your eyes checked. I'm near sighted, and started wearing glasses about three years ago, after a conversation with my friend, Ross Thomas, regarding Roger Lackey's article, which I believe was entitled "Ten easy Ways to Improve Your Flying". Consequently, I also switched to blue blockers, and take a lot of kidding when I admit they help me see thermals. What I actually see, occasionally, is columns of dust particles. Sometimes, we have to search deep, and it can't be done if you can't see the airplane!

Mike: Curt sees a lot of things nobody else does!!

Paul: That's true! But back to thermals... Sitting in your living room, visualize this: the floor is the ground, the ceiling is the inversion layer. Suspended in the middle of the room, about one foot above the floor and one foot from the ceiling, is a flexible vacuum hose (our thermal) that, for some unknown reason, is sucking dust off the floor just like a vacuum cleaner would. When you open the living room window, the hose begins to bend and spin away from the wind, and looks something like a tornado. Now, keeping that picture in mind for awhile...

Mike: If the room was humid, your living room ceiling would only be about five feet high, and the vacuum hose would also be quite short. Humidity, or water vapor, absorbs heat (infra-red radiation), and keeps the thermals rather low to the ground. If you could get above the ceiling (the inversion layer), the thermals might be gigantic.

Curt: Let's say your living room air is kind of dry. In this case, your ceiling and vacuum hose (our thermal) might be twenty feet high, and the lift will be excellent, even close to the floor (ground). As the air gets warmer, your ceiling (the inversion layer) climbs, and so will the thermals. As your ceiling gets higher, the top of your vacuum hose (thermal) is about the diameter of a hoola-hoop! As this happens, the space

between thermals also increases.

Paul: There is a top to all thermals. Sometimes, this is actually the bottom of a cloud. To picture this, hold a lit cigarette at the bottom of your vacuum hose. The smoke will hit the ceiling (the inversion layer), roll over the top lip of the hose, and hug the ceiling. The wind from your window is spinning everything, and making the hose float across the room.

Curt: No one would know this better than Paul. I'm always bugging him about his smoking. I've actually witnessed this phenomenon many times in his hobby shop, California Soaring Products!!!

Mike: Remember, that sink (down air) is the wind from your window that surrounds the vacuum hose (thermal), and eventually gets sucked into it. It's always nice to know that a thermal waits on the other side of the sink!

Paul: Here's a few more good tips. A thermal upwind feels like you're standing in a lull (no breeze). Look for trees shimmering at the end of the turn-around, and fly toward the downwind side of them. A sudden, gusty condition usually means you're launching into sink, and the thermal is behind you.

Curt: Also, always fly toward the downwind shift of the breeze (or, let's say the general direction your antenna flag is blowing). Another clue is to watch for small birds scurrying about at low altitude; they're feeding on bugs caught in the base of a thermal.

Mike: If you ever find yourself circling in what you think is lift, and the plane doesn't gain altitude, it's either a very light, small-diameter thermal, a slight updraft from structures and the terrain below, or possibly a layer of wind we call "the wave". The wave usually occurs above buildings or a treeline anytime the wind is constant. Learning to ride it efficiently takes some practice, and is similar in technique to flying the slope, but that's another article.

Paul: So, take a few moments at home, find a comfortable chair in your favorite room, and imagine that elusive thermal. Then, tell your wife you have to go out for a couple of hours to find a vacuum hose! See ya at the field!

**Merry Christmas!
Until Next Month... Boomers! ■**

1995 X-Country & Pig Roast



(L - R) Vern Foutch, Woodbine, Iowa
Rick Waitullonis, Dearborn, Michigan
Pat Flinn, Dearborn, Michigan
N. Christopher Knowles, Omaha, Nebraska

...by N. Christopher Knowles
Omaha, Nebraska

Late last year, after thinking through the wariness expressed by folks coming over six hundred miles to our one day contest, we made it a two day affair. Because we were going to have everyone around anyway, it was decided to roast a pig. We wanted to get to know one another, and a significant information exchange did occur among competitors during and after dinner. And, the event organizers learned a lot. It is cheaper to roast one 154 lb. pig, than one 80 lb. one.

Considering the nature of cross country, where one is often flying on

the edge of vision, we were fortunate to have lost only two birds. One was a Catalina, which was lost by Pat Flinn's group, because of battery failure; the other, an Esteem, belonging to Jim Baker of Lincoln, Nebraska. He took his eye off the plane.

The event was blessed with good weather both days; flying conditions were spectacular! Pat Flinn did 48 miles his first time out on our 20 mile course! This was his second year and he was heard to say, "This is one of the best, if not the best, cross country in the country."

Week-end National Guard helicopter pilots put in an appearance, as they were curious about the cross country gliders. Unfortunately, they prevented the forward progression of gliders on the course, while doing their week-end job training exercises.

There were 19 competitors this year. The top 6 were:

- (1) Pat Flinn, Michigan
- (2) Charlie Fox, Iowa
- (3) Loren Blendi, Nebraska
- (4) Rusty Shaw, Iowa
- (5) Wayne Henning, Nebraska
- (6) N. Christopher Knowles, Nebraska

The sanction is in the mail for July 27 and 28, 1996. ■



(L - R) Mike Meyers, Col. Bob Schritter (President, SWIFT), Rex Burton (Vice President, SWIFT), Larry Puls

Kit Review
The
Mystery
Ship

Designed by
Bob Martin

Center panels
before top
sheeting.

Fuselage after
final sanding.

Mystery Ship
and David
Wenzlick at
CASL field.

Full wing, ready
to top sheet.

...Reviewed by
Dave Wenzlick
Central Arizona
Soaring League
Mesa, Arizona

The Mystery Ship is billed as the first all laser cut RC kit. It is intended to fill the need for a sailplane that can be competitive and yet simple to build by anyone who has built a couple of gliders. Its construction is straight forward and doesn't require bagging or working with composites. The parts count is high, which is to be expected on a built up

ship, but it goes together beautifully.

A general overview of the kit shows very good quality and completeness. All parts are identified in the instructions and the wood quality was very good. The

R/C Soaring Digest



instructions are quite detailed and walk you through the building process with many additional drawings and references. The plans consist of one large single sheet showing both wing panels and many cut-a-ways. When the plans are referred to in the instructions, you are given coordinates to help you find the detail quickly just like in a street guide for finding your way around town. Nice touch. They even show details as to how much servo travel will be needed to obtain the recommended surface throws.

This is an open class 118" span glider with a target weight of 62 - 68 oz. The first thing everyone wanted to see was the laser cutting of the ribs and rib tips. The precision fit which is obtained by laser cutting is outstanding. All parts are well identified, and held in their place until you cut away the tiny sliver of wood which keeps them from falling out of place until you are ready to use them. Laser cutting makes ribs that are far superior to even stack sanded ribs. The real beauty of this kit is that so much of it is laser cut. All formers (including push rod and antenna tube holes), fuselage sides, wing servo hatches (including servo arm slots and screw holes), canopy parts, dihedral joiners and even the built up stab and rudder are all laser cut from balsa or ply. Needless to say, all this precision cutting makes for a kit that is easy to build straight and strong.

The wing, when built, becomes a two piece plug-in wing with a 5/16" wing rod joiner. Construction is nothing out

of the ordinary, and the instructions are quite plain in their sequence. It is sheeted with 1/16" balsa top and bottom at the leading and trailing edges with cap strips in the middle. The flaps and ailerons are cut free after the wing is finished, which guarantees a good fit.

The stabilizer is mounted as a T-tail and is built by using a supplied cradle, in order to guarantee a true airfoil. The rudder is also built up, and both are sheeted in 1/16" balsa.

The fuselage is easy to build due to the precise cutting. The canopy is built along with the fuselage, and two small tabs are cut through to set it free of the fuselage after final sanding and rounding. The corners can be rounded off quite nicely due to the use of tri-stock inside the fuselage. I made two changes to the fuselage. I added my own tow hook, because I wanted one a little beefier; I make my own out of peg board hooks. I also glassed the entire bottom of the fuselage with a single layer of cloth and added a couple of layers on the nose. This is due to the fact that we land on dirt and rocks at our club field; not because the fuselage needed it. (This will account for the weight being slightly heavier than indicated on the plans.)

To keep the dollar count down, the Mystery Ship only uses two micro servos for the ailerons. The flaps use mini's, and the fuselage accepts standard servos. Also, there is plenty of room for a standard receiver. I used an 800 mah flat battery pack because I

December 1995

Page 18

Page 19

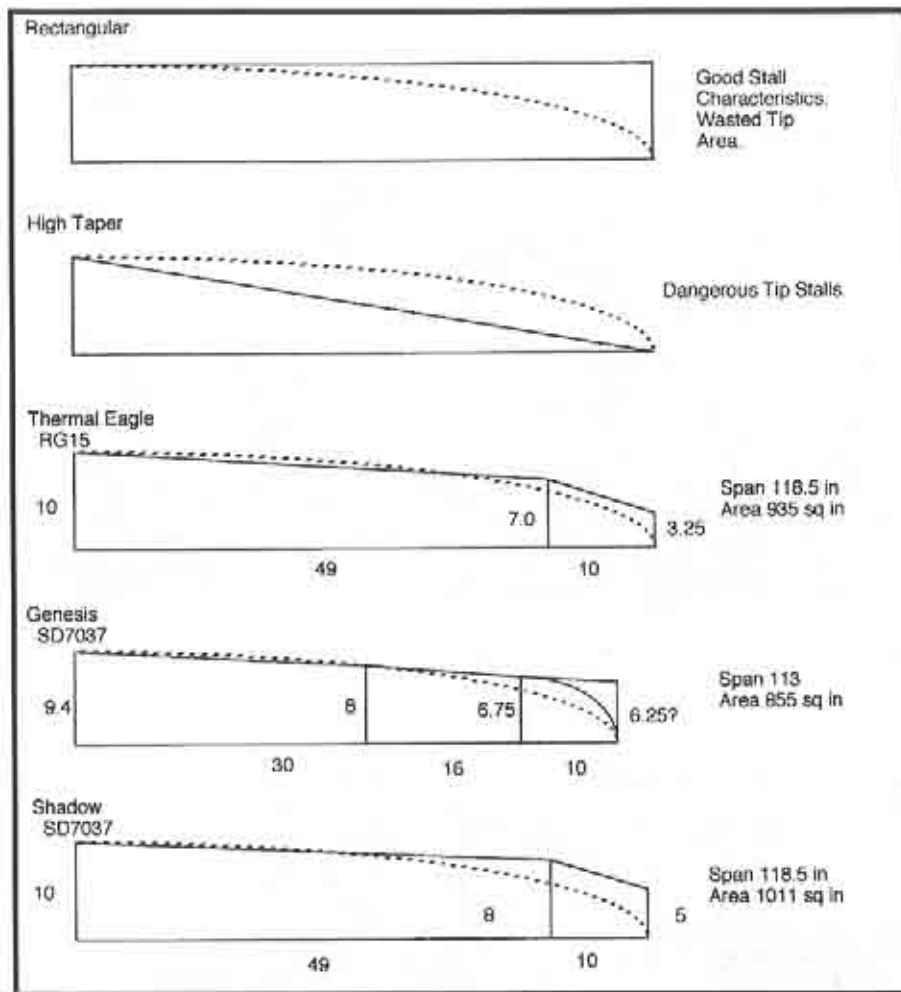
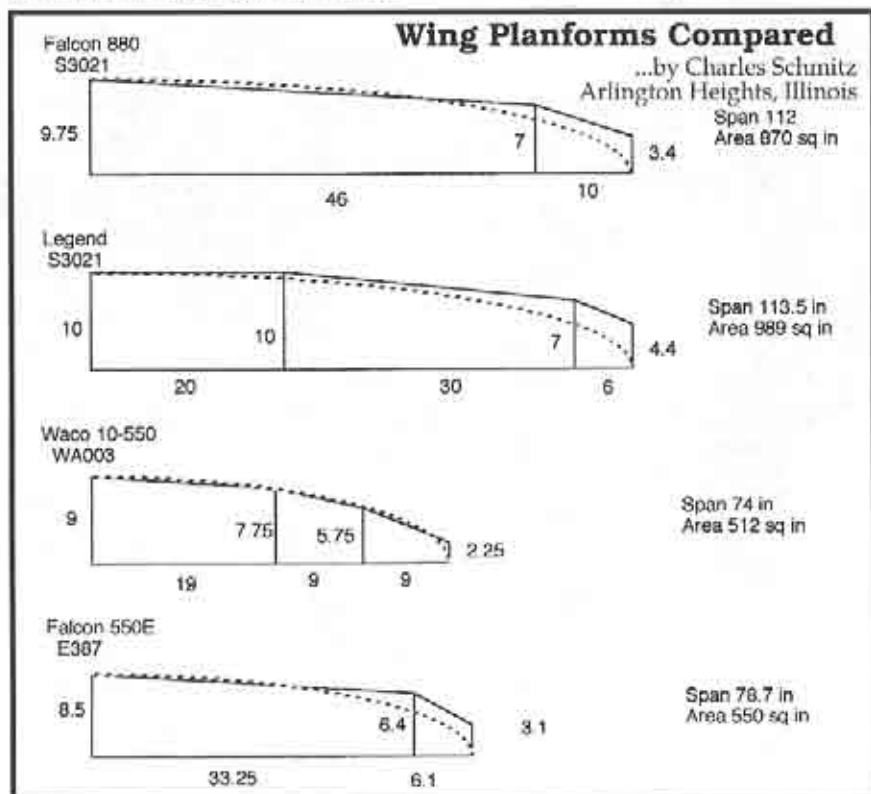
got them at a good price, but the standard 500 mah flat pack is all that is needed. I'm using Hi-tec hs-80 micros, 205BB mini's and 300 standards for servos. I fly my six servo ships with the Futaba Super 7 glider radio FP-T7UGS. I covered the ship with Monocoat; pearl teal on top of the wings and black on the bottom. Again, due to the rocky landing area, I opted to paint the fuselage, which will be easy to touch up occasionally.

The final weight came out at 71 oz. which is great for a 118" span glider. I'm flying it with the CG at the rear of what's called for on the plans, but I feel it could be moved back a little further as I get more stick time. As always, start with the recommended CG, then work your way to where it's comfortable for your flying style. I saw no reason to hand toss this ship for its first flight, so up the winch it went, straight and fairly steep, considering I didn't dial in any flap for the first launch. With the 7037 airfoil, it can cover the

sky nicely, and yet slow down if needed by camber changing. It can thermal quite flat. In fact, I flew nearly an entire flight using only the rudder and elevator to thermal. It is very easy to fly and doesn't need a lot of input to keep it heading where you want it to go. I placed fourth in our monthly club contest with the Mystery Ship; its first competition. I was pretty happy with that considering I didn't have much stick time on the ship and was still becoming familiar with landings, etc.

My overall impression of this sailplane is quite good. It is the kind of plane to recommend to someone who is ready to move up to a full house open class ship, but is on a budget, or is not quite ready to tackle the bagging and composite approach. It should be quite competitive in open class flying.

Major Hobby
1520 B Corona Drive
Lake Havasu City, AZ 86403
(520) 855-7901



For the past several years the elliptical planform has been regarded as the ideal outline for maximum efficiency of a wing. Martin Simons suggests that while the elliptical planform may be set up to be the ideal, the best practical planform may have the outer chord larger than that of the pure ellipse. This would keep the tips out of stall longer than the rest of the wing so control is maintained.

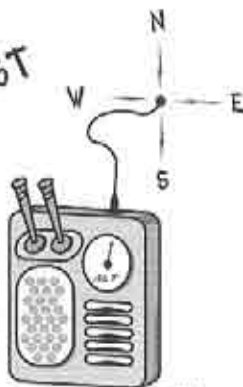
The following diagrams compare the planforms of many popular sailplanes to an ellipse (the ellipse is the dashed line). Which one do you like best for your next construction project?

Reference:
Martin Simons, "Model Aircraft Aerodynamics", Argus Books Ltd., London, 1987
Data for most planforms taken from MaxSoar V3.1, John Hohensee, Waukesha, WI



SOARING EAST TO WEST

with
Bob Sowder
1610 Saddle Glen Cove
Cordova, Tennessee 38018
(901) 751-7252
FAX (901) 758-1842



ZIEA

Letters, We've Got Letters!

I have been delighted to receive a number of letters and photos from soaring folks across the country. This month, I want to share with you some of their thoughts relative to recent articles in this column.

Bob Cook from Seattle, Washington dropped me a note as a follow-up to the October article, "Why an Entry Level Design?" Here is Bob's perspective.

"I just read your article in the October issue of RCSD. I liked what you said because I said the same thing a year ago in a different magazine. My first hobby is astronomy. I have 4 telescopes and have been at it for 35 years. (I'm 48 years old.) Astronomy has the same problem as R/C flying. No beginners... No one willing to teach beginners. It's true, our hobbies will die out if new people don't come in. I am taking up R/C flying as a second hobby. I don't even have my first plane done, yet, I'm building a Piece-O-Cake, electric version. I did get ignored and generally snubbed at the local flying fields. No one has time for beginners. I will learn to build planes and fly by trial and error, by myself. But that's life and I don't get upset about it. I thought you would like to know. You're right. We need beginners!"

And beginners need help. Unfortunately, some people are so focused on their own task, they won't take a few minutes to welcome a newcomer and offer some help. Fortunately, it sounds like Bob plans to stick with it and learn by whatever it takes. Hey folks, let's

all extend a hand to the beginner. Welcome them to your flying sites and show some interest. That individual may well become your best flying buddy.

On a completely different subject, I received a letter and photos from Lee Murray, a member of the Valley Aero Modelers of Northeast Wisconsin. For the past 12 years, Lee's club has conducted a thermal duration contest that features a very popular format in his area.

Here's Lee's report:

"In a recent article you asked for information about popular contest formats. You have also included information about successful clubs in your column. With this note, I am including information in both areas that may be of interest to your readers.

"The Valley Aero Modelers of Northeast Wisconsin have conducted a popular summer thermal duration contest for 12 years. It started out as a Two Meter contest with an Unlimited class to keep from excluding those without two meter ships. About five years ago, a Sportsman Unlimited class was added. The contest was designed to get new people into competition and be a low stress experience. I believe it has achieved its objective and provided an excellent format for a broad range of contestants.

"There are three 5 minute rounds, a 3 minute round and a 7 minute round. The goal is to try for the 7 min. max, but if you can't find the lift, land in 3 or 5 minutes. The task is declared after landing, and one point a second is awarded up to the max time. It is analogous to a triathlon event where the max time is chosen by the pilot and not the CD. There is a 30 second grace period to land the model without penalty. In the 7 min. round, actual flight time is used in the event of a tie.

"Pop-offs can be reflown if declared within 10 seconds of the pop-off. The CD has authority to deny a reflight if the launch was simply poor technique.

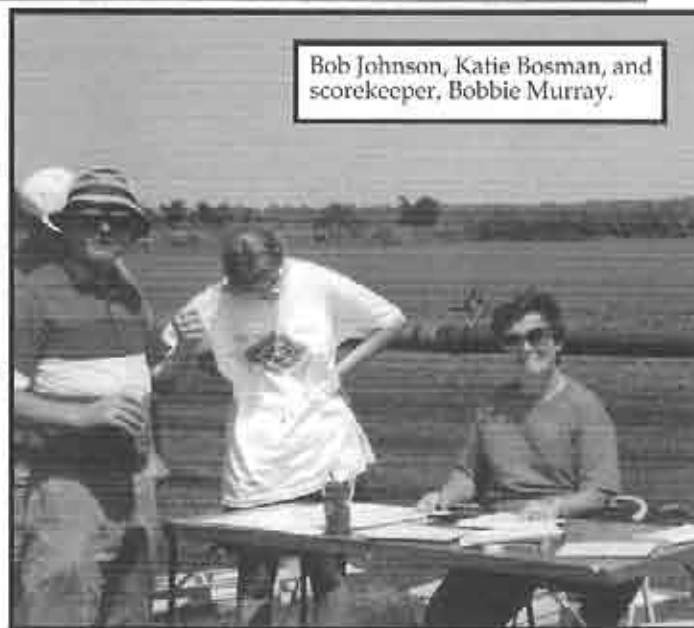
(L - R) Lee Murray & Bob Rae flying in contest with timers Bobby Bower and Brian Andreas.



The flyer simply goes to the back of the line at the winch, if there is one. Sportsmen have the option of launching from a high start or winch.

"A 50 foot landing circle is worth 25 points. There are no penalties for inverted landings or shed parts. The format rewards those who can find thermals and doesn't penalize those who can't land precisely. Despite this easy to accomplish format, only one person has flown a perfect score in 10 years. That includes a Lee Renaud trophy winner, Al Scidmore. The flying field is usually moist and the thermals are usually not available every time you launch. The same format is applied to all contestants, so the results can be grouped into a single class for LSF and state trophy points.

Bob Johnson, Katie Bosman, and scorekeeper, Bobbie Murray.



Plaques to third place and ribbons to 5th have been given. The entry fee is kept low and now stands at \$7 for single entry and \$12 for two classes.

"Yes, the best flyers often win, but sometimes a beginner does well or even wins an event. The spread between best and worst is compressed, which makes the upcoming flyer

motivated to keep trying. Our contest attracted a senior female flyer, Katie Bosman, who later became the AMA Senior Champion for 1994.

"What I believe turns off the sport flyers is:

1. The need for pinpoint landings (1 point/inch) which almost demands computer radios, landing skegs, and dork landings.
2. A team of experts following the "factory" flyers out on the field of competition.
3. Gorilla winches which would demolish an entry level model in a blink of an eye.
4. The use of 240 pound test line in a two meter contest.
5. Over-zealous competitors demanding reflights if the winch doesn't deliver the 200 foot zoom he expects from his \$500, ARF, glass slipper.
6. Sand baggers methodically manipulating their launch times at the expense of everyone else's enjoyment of the contest. You can recognize them when they stand in front of the winch, and then discover a servo that doesn't sound right, or has to do last minute mechanical trimming.

"Although the Valley Aero Modelers are comprised mostly of sport power flyers, we have a dedicated and growing group of sailplaners as well as a developing group of 1/2A pylon racers. I suspect that more thermal duration hours are flown each year than hours of powered flight. The sod farm where we fly is part of a peat bog and is somewhat slow to dry in the spring, but provides a soft landing in the case of "dumb thumbs" and radio failures. When the AMA obtained extra frequencies, we allocated odd frequencies below channel 36 to gliders. The power flyers had all even frequencies and odd and evens above channel 37. We didn't use the low, even frequencies while the old AM wideband receivers were being used heavily. Now, we use all 50 frequencies with little problem.

"We are the recipient of AMA's Award of Excellence for our community

involvement, educational efforts, and activities. We cooperate with the EAA in giving model building demonstrations and helping with the tasks of running their sea plane base during the EAA Oshkosh Fly-In. We have model building workshops in public schools and provide reference materials for the public library. Our Silent Flight Special Interest Group includes members of other clubs in the area and we meet during the LONG building season at members' homes to discuss new kits, radios, equipment, building and techniques. We are presently endorsing the Radio Control Soaring training program booklet in Pitsco's Aerospace Technology Education Series. RCSD helped promote that effort.

Lee Murray
1300 Bay Ridge Rd.
Appleton, WI 54915
ph: 414-731-4848
E-mail: Lee

Murray,74724.65@compuserve.com

Thanks for the input Lee. Sounds like a great club and an interesting contest format.

Many thanks to all of you who take the time to correspond. I consider it a privilege to pass along your views, information, ideas, and photos. Happy holidays to all, and let's look forward to a great year in soaring in '96.

Thermals - Bob ■



ZIRA

Guilt Free Flight

...by Joe Galletti
Austin, Texas

R/C slope soaring has become quite a passion for me. Out of the many sports I participate in, it is the only one that does not involve me physically risking my body in some manner. Funny enough, I still don't care much at all for any of the other R/C genres. The sport is indescribable to the uninitiated, but I find silent high speed R/C flight to be almost spiritual at times; at the very least, mesmerizing.

Those who come to the site to watch are usually transfixed in a matter of moments; either that or they are not even aware that there are aircraft whizzing about until their children scream in amazement. The same questions get asked every time. Does it have a motor? How long will it stay up? How much does it cost? How difficult is that to do? The last question should be worded with "frustrating" rather than "difficult". I have found that frustration with the sport is the major cause of new/potential pilots to: 1. Not even begin, 2. Begin, but never finish the first plane, 3. Build a first plane, but crash once or twice only to give up, 4. Etc., etc. You get the idea. In fact, I have found that even some experienced pilots are not aware of the frustrations that interfere with their continued enjoyment.

I am not bashing the sport. I am merely proposing what I believe can truly improve the sport for all pilots/potential pilots, regardless of experience. Eliminate the frustrating aspect of slope soaring as much as possible. Most seasoned and novice pilots will agree that the uncommon day where you repeatedly throw, fly and land without incident is the absolute best the slope flying experience can be. Try to remember the last time that happened. No frustrations. What if that could happen almost every time you even think about going to the slope? Wouldn't that be great? Wouldn't that get YOU out flying more? Wouldn't that experiences like that bring back those who are currently too frustrated to return? Don't you think that would get

others involved in the sport?

The flying is the reason I love this sport so much. The moments, minutes or hours of actual uninterrupted flying time. I enjoy building too, but I can experience building any time or any thing if I put my mind to it. The flying time is the uniquely exclusive experience I and others are after. Anything that interferes with actual flying time I consider to be a frustrating hindrance to the sport.

The following are the major occurrences that I feel detract from my flying experience at the slopes. See if any of these items run through your mind from time to time.

1. Taking 20+ hours of my valuable time to build a plane; fly it for 3-4 hours, crash it for any number of reasons, go home; take another 7-10 hours to make it airworthy again; repeat the process.
- 1a. As a beginner, finding that I was re-building at least twice as much as I was actually in the air.
2. A great flying site, with no landing area; or the landing area is a pine tree; see #1.
3. Sacrificing bringing all my cool stuff to the slope; bringing only one plane and only one passenger in my Honda Civic. This is primarily due to the fact that most planes do not disassemble into small pieces.
- 3a. Along the same lines: exiting my office at the end of the day to find 15 mph winds; only, I didn't bring my plane because of the space issue.
4. Driving out to a slope only to find that there may or may not be enough lift to fly and risking #1 is not worth the anguish or frustration. Or, simply deciding that if you fly and crash today, that the commonly repeated repair session tonight will strain your marriage or current relationship. Am I the only one with this concern?
5. Spending X amount on a kit only to find that it requires an \$80.00 servo(s), a micro receiver, \$15 - \$30.00 in glue or covering, and an olympic javelin thrower to launch

it, because there is no place a regular human can grasp it for a good toss out over the trees. (All flying sites are not created equal.)

6. Having to repeatedly carry a "repair" kit to the slope to prevent something stupid from causing the afternoon to be ruined. Of course, NOT bringing the repair kit can be equally vexing. "My first born for a drop of CA!"
7. Get there only to find your batteries dead. Scream.
8. Having a good flight only to find that I am hungry; then deciding that it would be better to be uncomfortable rather than to risk landing and #1 or #2.
9. Not having enough wind or wind not blowing in the correct direction.

All of the mentioned problems are solvable with the exception of #9. Proving my theory is as simple solving one or all of the above frustrations and then evaluating your experience. I guarantee that solving for one of the above will improve your day at the slope, but solving for all will make even the most seasoned pilot have a renewed interest in going to the slopes.

Solutions:

1. This is the ever important build/fly/crash/repair/\$\$\$ time ratio. This is the major source of my frustrations. My time is my most precious commodity. One of two solutions is possible:
 - a. High performance kits should be designed to build really quick so that the ratio is good for flying. (Very difficult unless expensive; if you have the \$\$, go for it.)
 - b. Kits should be designed so that the plane is crash-worthy without sacrificing performance. The technology exists. It is out there. It is usually overlooked because people are unaware as to how it will improve their perception of the sport. Once again, high performance, crash-worthy planes are available. I have never had so much enjoyment

at the slope as when I and others are flying non-stop without the fear of a crash that might send one or all of us home. Imagine that: fly fly fly, crash, fly fly, crash, fly fly fly, land, go home eat dinner, no repairs, repeat tomorrow.

- 1a. The solution for #1a is the same for #1. Add the fact that if a beginner gets a crash-worthy high performance plane, this immediately accelerates their learning curve. Instead of starting with a breakable floater, they can move right to high performance without the fear of going home with their plane in a lunch bag. If a buddy box is used, most can be flying high performance in one day! Fly, crash, learn, fly fly, crash, learn, etc. Notice that "go home" and "repair" is not in that equation.
2. The solution for #1 is the solution here too.
3. There is no reason that even 60 inch wings should not break down into two pieces. It is not difficult to design or build into a kit and is so handy I cannot even begin to describe all the benefits a few extra construction pieces can be worth. Again, these planes are available, it is just that the potential benefits are usually overlooked. Need I mention traveling with a plane?
4. See solution #1.
5. Again, the technology exists to make hot-rod high performance plane kits that do not require the mentioned items. These planes exist and are on the market. Inquire to the manufacturer before falling in love with the picture if your slope soaring is on a budget. If you can get the same performance for less money, other than personal aesthetic criteria, why would you want to risk crashing the expensive plane? Remember, I am trying to lower the frustration factor here and increase the flying enjoyment of the sport. This, of course, assumes that you enjoy the flying more than building or preening. Maybe if all these solutions were in place, devoted

builders would become devoted flyers, again.

6. See #1 again.
7. Buy a quick charger. It quite possibly will be the best money you spend on slope soaring all year!
8. #1 again.
9. Pray, if you are inclined to do so.

I cannot begin express in words the amount of increased enjoyment I have

received from the sport of slope soaring since evaluating and solving the above mentioned frustrations. I only wish someone had told me this when I was first entering the sport. They would have saved me time, money, and a few arguments.

Joe Galletti
Austin, Texas

Home of big slopes with no landing area!
e-mail: Foameron@AOL.com

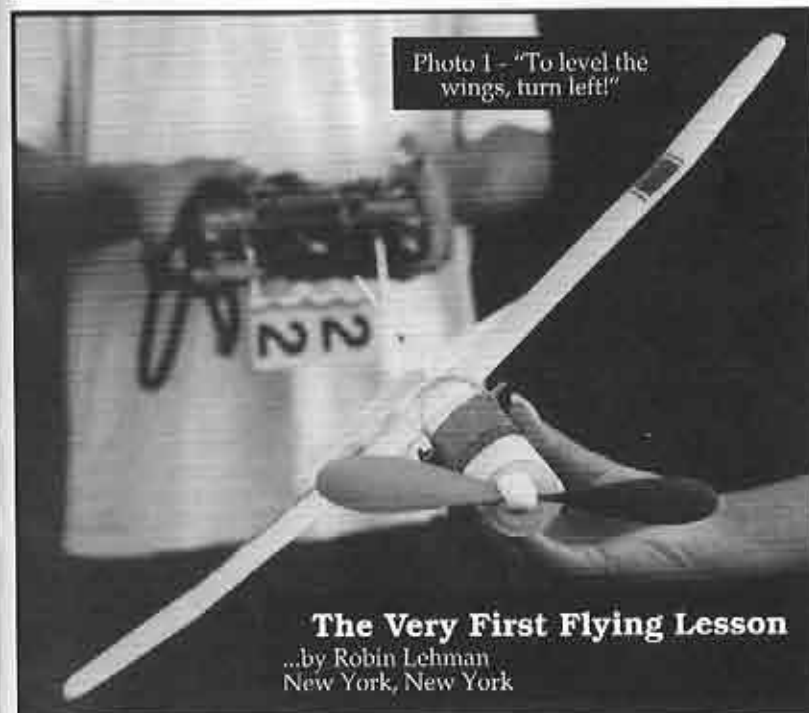


Photo 1 - "To level the wings, turn left!"

The Very First Flying Lesson

...by Robin Lehman
New York, New York

I've often been at the flying field when somebody is teaching a beginner how to fly, and the student really has no idea at all how to control the model airplane. More often than not, the whole lesson is spent by the instructor saying, "Turn right. Turn left. More up. More down. Turn left. More left," which, as a practical matter, means that the student doesn't fly the airplane at all, but is in fact himself a "receiver" for the verbal instructions coming from the instructor. That's better than crashing the airplane, but it certainly doesn't give much of a learning experience.

So how can you, in just a few minutes, teach somebody how to control an airplane?

Well, for what it's worth, here's what I do:

Step 1:

With a toy airplane, a stick airplane, or with a small R/C airplane (something small enough to lift easily), I face the airplane away from the student, tilt the wings and ask him to make the airplane fly straight. In other words, if the wings are tilted to the right the student has to move his sticks to the left to level the wings (photo #1). I

Photo 2 - "Yes! Turn right in order to level the wings!"



airplane is facing to the left or to the right.

Step 3:

Now comes the more difficult part. I point the nose of the airplane right at my student and lower one wing or the other (photo #3). For this step, I tell the student to completely forget his right and his left and just push the stick over to the wing he wants to "prop up". In this manner, in quite a short time, the student will learn to level the wings when the airplane is coming directly at him/her.

Step 4:

Now I mix steps one, two and three and have my student level the wing no matter where I point the airplane. I do not attempt to simulate flight. Once our student has mastered this, he is well on his way to controlling the airplane.

Step 5:

Now I let my student "fly" the airplane more or less in a circle. The idea is to keep the airplane in a "good" turn: Not too steep (level the wings) or too shallow (not turning enough - add a little). If the student has mastered points one through four, this should be relatively easy.

Let me diverge for a moment. To get a skilled student through exercise number five above, can take as little as 10 to 15 minutes; however, for somebody who is not particularly skilled at flying a model airplane, it might take that long for each of the above steps. The point I am trying to make is, "Do not tire your student." Do this exercise only as long as his attention span will allow. Some people will take to flying immediately, and can do it in a matter of minutes; other people are almost hopeless cases, and will never learn to fly properly. You have to judge for yourself how long and how much of these exercises to do at a time. Now let's move on...

Step 6:

Once our student has mastered

have him move both sticks, the aileron and the rudder. It seems to me if a person is going to learn they might as well use both hands at the same time. If they start this right from the beginning, controlling both rudder and ailerons is easy. The student simply moves both sticks in whichever direction.

Back to our lesson - I'll tilt the airplane right and left and right and right and left, mixing up which way the airplane is tilted, until the student can get the airplane level every time. At this point I'm not concerned with the subtleties of exactly how the airplane will fly, but I do want the student to be able to give the correct controls.

Step 2:

Once the student has mastered leveling the wings with the airplane flying directly away, I turn the airplane sideways so it's pointing either right or left and we go through the same procedure (photo #2). If at first, the student has a problem with orientation, I explain what we are doing and why. It then takes a remarkably short time for the student to be able to level the wings, whether the body of the



Photo 3 - "Yes, 'prop' up a wing to level out."

one way or the other, or to undo the turn and fly straight.

My experience has been that, when we get to this stage, the little or lot of time is well spent to cover the above mentioned points of "simulated" flight. Experience has shown that about half the people I have taught will go to the field and, after a flight or two, will be controlling the airplane all by themselves. The less gifted

students will always have a hard time flying, but at least they will have a good idea as to what to try to do. In all of these exercises, by the way, I leave the throttle somewhere about mid-point on the radio - medium throttle seems to be a good way to go without a trainer. If the airplane flies relatively slowly, it will also be somewhat docile and easier to fly. I cannot understand why so many people teach at full throttle the whole time, causing the airplane to become much more sensitive and difficult to control. To begin with, at least, I prefer a more docile approach!

Step 7:

There's plenty of information and instructors around to get our fledgling student from here to take-offs, landings, going solo, and aerobatics. By the way, for those of you who wish to teach people how to fly sailplanes, all the more reason that the student know what to do before they take the controls, because for every bad turn or mistake you are penalized - five feet, or ten feet, or more. Enough bad flying and you will be back on the ground - or worse - in very short order!

Step 8:

One last comment: I really do favor the trainer cord when teaching! Trying to grab the radio from frozen fists is not my idea of fun! But that's a whole other subject!

Step 9:

Happy Landings and Good Flying! ■

What to do with your butterfly wings if you are over 50.

**Part II
THE PUPA**

...by Clark Bowen
Manchester, Connecticut

I was over 50 and a novice HLG pilot, so it didn't take long to break my beautiful Monarch. I obviously needed to step back a couple of development stages. The wing survived, so I built an ugly, strong fuselage to go with my clean, beautiful wing. I called it the Larva (RCSD, January 1995). All the while I practiced with the Larva, I dreamed of a plane light enough to thermal on my hopes. Not a butterfly —not yet— but maybe...

A Pupa emerged from my larva dreams. Like the Larva it has:

- Slab sides of 1/16 contest balsa laminated with .2 oz. carbon mat and .75 oz. glass cloth on both sides.
- 1/4 triangle stock longerons with 3/8" .007 carbon strips the length of their hypotenuse.
- An empennage of 1/16" contest balsa laminated with .25 oz. Kevlar™ mat.
- A central former/boom holder of 3.1 lb. Rohcell™.
- A finger hole close to the trailing edge of the wing, so I can snap my wrist all I want and not wind up inverted at 3 feet.

Unlike my ugly Larva, which weighs 13 oz., or my beautiful Monarch, which weighed 11.5, the Pupa weighs 10.5 oz. (All weights are on my food scale, so....) The pod and boom configuration and

full-flying V-tail reduce aft weight enough to eliminate ballast up front, even with a nose moment shorter than the Larva's, or Monarch's.

Like me, the Monarch wing began showing pockmarks of continuous hard use, so I built a new one, using the same planform, but substituting the Selig 4083 for the Monarch's thinned out SD7037. And although it is still a Pupa, it floats like a butterfly. What little it lost in launch height, it gained in lightness of glide and love of thermal turns.

I'm over 50 and no expert, so I still bounce the plane, though not as often or as hard as I used to. The Pupa shrugs off my abuses and rewards me by signaling and turning to lift with alacrity. I still find sink as often as lift, but I'm beginning to get the hang of this HLG thing. I'm over 50, so I develop slowly, but maybe with the help of my Pupa, one day I'll fly... like a butterfly.

The drawing will give you a general idea of what the Pupa looks like. You can fill in your own details. If you like the wing, cores are available from RA Cores, rcores@world.std.com, (508) 765-9998, PO Box 863, Southbridge, MA 01550. ■

Ron Widel of Castro Valley, California & Peregrine Visalia '95

With 2 1/2 years of experience, Ron flew a Peregrine at the 1995 Visalia, Fall Soaring Festival. His model weighs 80 oz. and has been modified with a slip on nose cone and built-up stab. His timer was Joe Newland. Ron took 1st place Senior with a score of 2411, and 12th Overall, making the first page in the results listing. Congratulations, Ron! ED.



Hello RCSD

...by Jack Sile
Suffolk, England



100S Fly Off. Note the big coats as it was so cold!

At the invitation of Judy and Jerry, I am about to summarize a truly exceptional flying season in Europe, due to fantastic weather from June on. My first report is about Radio Glide, which is one of the "big three" soaring events in the UK. From there, I will bring you up to-date on the European F3J League, and the British F3J League. The BARCS league finishes at the end of this month and with that we can identify champions and just darn good pilots. So here goes, and let's hope you enjoy reading about soaring in Europe.

Radio Glide 1995

The British Association of Radio Control Soarers, BARCS, holds its championships annually at the end of May over three days. Radio Glide is rotated between four BARCS' areas, and this year it was the turn of the Southern Region. The location was Middle Wallop, home of the British Army Museum of Flying. The flying area is normally used for the training of helicopter pilots and was quite enormous. Although the organizing committee had worked for nearly a year and half to make this one of the best RG's ever, they were thwarted by the weather. High winds over the three days made thermalling a difficult matter, indeed.

Saturday is 100S day and only 100 inch models with no camber altering devices are allowed. There is no wing area restriction and the contest is man-

on-man with a mandatory landing within 75 metres of a target and is run over an eight minute working time during four qualifying rounds. The 100S category is promoted as a beginners class and is currently touted by the Peterborough & district flyers who hold Saturday competitions under the direction of Alan Moore and Neville Warby. Radio Glide 100S, however, brings together some very sophisticated machinery that experiments with all types of aerofoil sections and is a very serious competition. Launching is purely by hand-tow and with the force of the wind on the day, towing was almost academic. There were as many as 13 gliders in the air at one time and immediately it was evident that getting down intact was the major concern on most pilot's minds. Many an inverted landing resulted in carnage. Even though these were not ideal conditions, many continued to compete and this was to be the best thermalling day of all three.

Qualifying first for the Fly-Off was Bill Dulson with a 3964 out of a possible 4000, a very commendable score in light of the conditions. There were no real new names in the fly-off, but all credit must be given to those who made it! Alan Heber from the Isle of Wight was the eventual winner of the two round championship competition. John Howells and Dave Charles both flew very well and battled it for last down in round one, but both landed out! Result was a "0" score and much



F3J Fly Off.

embarrassment. Final placings in the 100S in descending order: Alan Heber, Brian Sharp, John Stevens, Bill Dulson, Malcolm Dennis, Steve Haley, Brian Johnson, John Hulett, Dave Varah, Adrian Childs, Dave Charles, George Chastell, and John Howells.

Also run on day one is the BARCS League fly-off between the top 2 of the five BARCS area leagues for the Humbrol trophy. This is a contest to see which area gets the bragging rights for all of BARCS for the previous season. This year it was Brian Johnson who took the trophy home and thus the Northern Area is the "Best of the Best".

Saturday best personifies the intent and real meaning of BARCS as friends and colleagues gathered on the campsite for barbecues and the like. Many a modeling conversation was heard to be taking place amongst the laughter and camaraderie of the participants. Of course, there was many a can of liquid refreshment consumed and just enough brew passed around to make it a very sociable occasion.

Day two (Sunday) saw the beginning of two days of big thermal soarers and the introduction of F3J as a major event. BARCS had, in fact, run one previous event to F3J rules when it was still a provisional class and the rules were more similar to their Open class. Unfortunately, the wind was once again very strong and this made the temperature unpleasant as well. Certainly not what one would have hoped for in late May. Some were deterred, but contrary to belief, many a long wing span was seen being joined

to equally long fuselages. Ballast was also seen, as judgments about weight and wind were taken into consideration. Those with 12 foot plus wing spans were determined to beat the wind. Nothing stops a determined thermal soarer. 113 die hards commenced battle, and almost immediately the wing folds began to occur. Heartache and disappointment became apparent as many a flutter and tail-plane dismemberment was seen. Those waiting their turn shuddered at having to join this fray and commiseration was the most popular subject of the day. Each round saw glaring gaps in the start line as attrition dictated the number of competitors willing to go on. But in the end we did have a lucky 13 who were to have a very good championship battle. This was a battle between the Thames Valley and Soar Valley Soarers, with the Kent Inter-league tossed in for balance. Top qualifier had been Peter Allen with a *Calculus* followed by Invicta's Dave Charles. F3J, unlike BARCS' Open rules, does not allow the use of an electric winch, but does allow two man tows and the innovation of a bungy plus monofilament tow-line. Other than that, it was a 15 minute fly-off (10 minutes in the qualifying) with bonus points given for landing nearest the center of a graduated tape. In these conditions, landing points were important.

The first round started in overcast and diminished light conditions, and Martin Bell with a *Calypso* was first off followed by Dave Charles, also with a *Calypso*. The rest waited to see if any lift was to be found by these two, and shortly all launched in an effort to beat



Many braved the wind with "120" plus wings!

the forces of aerodynamics and the weather. Now, F3J is about flying and decisions as to whether to relaunch if the first one doesn't look promising. One relaunch is allowed at any time during the working time, and the strategy is to get the best time from possibly two flights. As it turned out, most were down early to have a second go. Dick Edmonds, also with a *Calypso* (naturally, as he is the manufacturer), won the first round with a 7:46 flight and a bonus of 80. Dennis Heslop of Fairlop came second with a nice 7:13 flight and a 90 point bonus. Miss Sara Lucas had a longer flight, but missed the all important bonus points. Due to a line entanglement, there was a refly of round one with Dick Edmonds, as he is entitled to do under F3J rules, sitting out the second session. Dave Charles won the refly with an enviable 10:19 flight time and a 95 point bonus. A refly allows competitors to improve on their first round scores and, in the case of Adrian Lee who only scored 177 in his first flight, was able to improve to a 878 in the refly. Good fortune for some. Round 2 was a very difficult and a dismal affair. Getting up and coming down with no real drama was Simon Thornton (Soar Valley). He alternated between his own design and *Ellipse*, and was able to eke out a 7 minute flight. Notable was first time finalist Martin Bell (Bedford Silent Flight) who had electronic problems, and sixteen year old Chris James with an *Algebra*. Also proving that aging

models and designs still have a place was Colin Sparrow with a pair of differing span *Sagittas*. But the winner was Dick Edmonds with Adrian Lee and his *Algebra* derivative, *High Five*. Following in order was Dave Charles, Simon Thornton, Sara Lucas, Collin Sparrow, Eric Morrey, Martyn Johnson, Dennis Heslop, Peter Allen, Neil Hutchison, Chris James, and Martin Bell.

Day three was supposed to be greatly improved over the two previous days, but it was damp and the wind began to blow as it had consistently done on Saturday and Sunday. 143 had originally entered for the this event and on the day 127 turned up to fly. We did have moments of respite, and several did have some good thermalling weather. By slot 8 of Round 1, the wind had eased and two things were evident: the traditional "stuffing" by those getting away and those failing to stay aloft, and one wing fold per slot! Mid-air collisions played a small part in the carnage rate, but were still happening. At least, however, some were having some good flights and for them the whole weekend was not lost. We mentioned that electric winches were allowed and in total there were 4 employed. Of course, the opposite side of getting away is getting away and getting back. With the speed of the wind, the task was to determine how far to go back and still make the landing circle on return. Ground turbulence caused

many to fall short of the target.

By late afternoon, cold air again came through and slot times once again began to shorten, but demolition also slowed down and it was back to "launch and hold". Slot 1 Round 3 saw a "boomer" come through and 4 competitors latching on for a real nice ride. There were instant hopes of finishing the three days with one good round, but lift quickly disappeared and we were back to difficult conditions. At the end of the qualifying rounds the wind had returned with a vengeance. But a real ding dong battle finished the preliminary rounds between Steve Haley with a *Calculus*, and Paul Wainwright of Ipswich, both who had found good lift and used every bit of it. Unfortunately, Paul left his landing too late and, as a final example to summarize the contest, re-kitted his OD by breaking the fuselage in three places.

The fly-off started with regular top contender Chris Foss having qualified first, and Steve Haley second. Nice to see in the final 13, was Colin Boorman, Clive Cobley, and Gordon Loomes of the Kent Inter-Club League. Ray Staerck, Fairlop, was also a welcome addition, with other regulars Thornton, Charles, Sparrow, Sharp, Edmonds, Cubitt, and Johnson rounding out the field.

Round 1 was a tactical slot with most waiting to see who would launch first in the cold and rain threatening conditions. Chris Foss with the *Multi-Phase* was first to go thermal seeking. Steve Haley went next followed by the pack. Dave Charles and Pete Cubitt, both using winches, were quick to follow. All in all, it wasn't a bad slot with eventual winner Simon Thornton and Steve Haley getting ten minute plus flights, and only two flew sub seven minute flights. Round two summarized it all with absolutely terrible weather and the best anybody could do was achieve a seven minute flight. The average was in the two to five minute zone. Before the end of the slot, the rain began to lash down and most retreated for shelter as the final scores

were being worked out. Unfortunately, presentations had to be made in the shelter of the control tent. But a well deserved win was posted by Steve Haley followed closely by Simon Thornton. Next was Dave Charles, then Colin Sparrow, Gordon Loomes, Colin Boorman, Brian Sharp, Chris Foss, Clive Cobley, Dick Edmonds, Ray Staerck, Pete Cubitt, and Brian Johnson. And that ended a very windy and sometimes wet May Bank holiday.

Other winners were Hand Launch Glider (an event that runs simultaneously) Dave Charles.

Best Junior was Kevin Price. Eric Morrey with his HLG that fits neatly in a small box and doubles for electric fun (word is that he won electrosport at Malvern on 2 July). Four man team, awarded by area, went to the South composed of Chris Foss, Colin Boorman, Pete Cubitt, and Gordon Loomes. Phil Ramsey got a special award for a successful landing with only half a wing during the F3J contest. Mark Easy was the best new comer and Dave Charles was the Victor Ludorum winner for the best 3 of 4 scores over the entire weekend.

The importance of all this is of course that there is an annual gathering of like minded souls who wish to attain some glory and modeling excellence. But then there were those who just came to compete and have fun, and despite the conditions many did that. Radio Glide starts the BARCS Open season with virtually a thermal contest every Sunday all summer. It is the centre piece for what BARCS represents and the organizers are to be congratulated for a superb effort in staging such a work intensive event. ■

A Soaring Blessing

May the Lift rise up to meet you,
May the Wind be always toward the hill,
May your Batteries stay fully charged,
May the Landing Zone be large and smooth,
And, until We meet again,
May the Thermal hold you gently in its core.

- David L. Steere

(based on an old Irish blessing)

To Soar with Eagles

I am an Eagle, I fly ever high.
I soar along with quite the keen eye.
I can see a bug, a fly or a gnat,
A mile away, imagine that!
They float along, in currents of air,
A twist of a wing, and whoosh! I'm there.
Not much of a meal, but works in a crunch,
A mouse would do rather nicely for lunch!
I scan the valleys looking for food.
Small, furry, and fat would be good!
But, wait! Down there. What do I see?
Rigid little birds, far below me.
I start to descend, to investigate
These bright little craft that imitate.
As I come near, they scramble my way.
I'm puzzled, I'm shocked, I start to pray!
I figure I'm doomed; I've had it this time,
These creatures have wings at least double mine!
And then it dawns, as clear as a bell.
They're looking for thermals, these demons from hell!
I'll show them! I'll clean their clock!
I'll flight right through, and disperse that flock!
I make a slow pass with wings extended.
They follow me, as intended!
They chase me for miles, twisting and turning,
My eyes are watering, my muscles burning!
But my wings are not equaled, my feathers not matched.
These balsa wood birds are quickly dispatched!
They fumble and falter, so close to the brink.
I find a thermal, they find sink.
This uprush of air, so welcome and warm,
Relaxes my wings, I regain my form.
I slowly look back, to see what became
Of my hard-feathered friends. Ha! What a shame!
They're so far from home, and still sinking low.
They're gonna go down. Watch out below!
One hits the ground, no worse for the wear.
Another finds grass, with nary a tear.
A third fares much worse, its altitude lacking,
Slams to the ground, crunching and cracking!
The fourth still aloft, slowly descending,
Might just make it, a touchdown pending.
I'm laughing so hard, I can hardly maintain
This abundance of lift, that rises again!
I've shown my prowess, and thereby reclaim,
My right to the thermal, MY claim to fame!

Pat Mattes © Copyright 1995
Yoder, Indiana

Sailplane Homebuilders Association (SHA)

A Division of the Soaring Society of America



The purpose of the Sailplane Homebuilders Association is to stimulate interest in full-size sailplane design and construction by homebuilders. To establish classes, standards, categories, where applicable. To disseminate information relating to construction techniques, materials, theory and related topics. To give recognition for noteworthy designs and accomplishments.

SHA publishes the monthly *Sailplane Builder* newsletter. Membership cost: \$15 U.S. Student (3rd Class Mail), \$21 U.S. Regular Membership (3rd Class Mail), \$30 U.S. Regular Membership (1st Class Mail), \$29 for All Other Countries (Surface Mail).

Sailplane Homebuilders Association
Dan Armstrong, Sec./Treas.
21100 Angel Street
Tehachapi, CA 93561 U.S.A.

THERMAL TALK



A NEWSLETTER FOR F3J ENTHUSIASTS WITH EUROPEAN F3J LEAGUE NEWS

Thermal Talk is an unofficial publication designed to act as a forum to discuss, educate, and exchange information concerning FAI Class F3J. Subscription Rates: £5.00 UK, £8.00 Continental Europe, \$11.00 North America, £8.00 Rest of World.

Thermal Talk

Jack Sile (Editor)
21 Bures Close
Stowmarket, Suffolk
England IP 14 2PL

Telephone: 01449-675190
e-mail: Jack Sile 100307.522 (CompuServe)
Or e-mail: Jack Termtalk@demon.co.uk

GONE
SOARIN'

ZIKA

December 1995



The Vintage Sailplane Association

Soaring from the past and into the future!
The VSA is dedicated to the preservation and flying of vintage and classic sailplanes. Members include modelers, historians, collectors, soaring veterans, and enthusiasts from around the world. Vintage sailplane meets are held each year. VSA publishes the quarterly *BUNGEE CORD* newsletter. Sample issue: \$1.00. Membership is \$15.00 per year. For more information, write to the:

Vintage Sailplane Association
Route 1, Box 239
Lovettsville, VA 22080

T.W.I.T.T.

(The Wing Is The Thing)

T.W.I.T.T. is a non-profit organization whose membership seeks to promote the research and development of flying wings and other tailless aircraft by providing a forum for the exchange of ideas and experiences on an international basis. T.W.I.T.T. is affiliated with The Hunsaker Foundation which is dedicated to furthering education and research in a variety of disciplines. Full information package including one back issue of newsletter is \$2.50 US (\$3.00 foreign). Subscription rates are \$18.00 (US) or \$22.00 (Foreign) per year for twelve issues.

T.W.I.T.T., P.O. Box 20430
El Cajon, CA 92021

LSF



The League of Silent Flight (LSF) is an international fraternity of RC Soaring pilots who have earned the right to become members by achieving specific goals in soaring flight. There are no dues. Once you qualify for membership you are in for life.

The LSF program consists of five "Achievement Levels". These levels contain specific soaring tasks to be completed prior to advancement to the next level.

League of Silent Flight
10173 St. Joe Rd.
Ft. Wayne, IN 46835

Page 37

R/C Soaring Resources

These contacts have volunteered to answer questions on soaring sites or contests in their area.

Contacts & Soaring Groups - U.S.A.

Alabama - North Alabama Silent Flyers, Ron Swinchart, 8733 Edgemoor Dr. SE, Huntsville, AL 35802; (205) 883-7831

Arizona - Central Arizona Soaring League, Iain Glidhero, (602) 839-1733.

Arizona - Southern Arizona Glider Enthusiasts, Bill Melcher (contact), 14260 N. Silwind Way, Tucson, AZ 85737; (602) 325-2729. SAGE welcomes all level of flyers!

California - California Slope Racers, John Dvorak, 1063 Glen Echo Ave., San Jose, CA 95125; (408) 259-4205.

California - Desert Union of Sailplane Thermalists, Buzz Waltz, 3390 Paseo Barbara RD, Palm Springs, CA 92262, (619) 327-1775.

California - Northern California Soaring League, Mike Clancy (President), 2018 El Dorado Ct, Novato, CA 94947; (415) 897-2917.

California - South Bay Soaring Society, Mike Gervais, P.O. Box 2012, Sunnyvale, CA 94087; (408) 683-4140 after 5:00 pm.

California - Southern Calif. Electric Flyers, John Raley (President), 1375 Logan Ave., Costa Mesa, CA 92626; (714) 641-1776 (D), (714) 962-4961 (E), e-mail: E-Flyer@ix.netcom.com

California - Torrey Pines Gulls, Ron Scharck, 7319 Olivetas Ave., La Jolla, CA 92037; (619) 454-4900.

Eastern Soaring League (VA, MD, DE, PA, NJ, NY, CT, RI, MA), Jack Cash (President), (301) 898-3297, e-mail BadIdeas@aol.com; Bill Miller (Sec./Treas.), (609) 989-7991, e-mail JerseyBill@aol.com; Michael Lachowski (Editor), 448 County Rt 579, Milford, NJ 08848, e-mail mikel@airage.com.

Florida - Florida Soaring Society, Ray Alonzo (President), 3903 Blue Maidencane Pl, Valrico, FL 33594; (813) 654-3075 H, (813) 681-1122 W.

Georgia - North Atlanta Soaring Association, Tim Foster, (404) 978-9498 or Tom Long, (404) 449-1968 (anytime).

Hawaii - Maui Island Slope Soaring Operation, MISO, Hank Vendola, 10-C Al St., Makawao Maui, HI 96768.

Illinois (Chicago Area) - Silent Order of Aeromodelling by Radio (S.O.A.R.), Jim McIntyre (contact), 23546 W. Fern St., Plainfield, IL 60544-2324; (815) 436-2744. Bill Christian (contact), 1604 N. Chestnut Ave., Arlington Heights, IL 60004; (708) 259-4617.

Illinois (Northwest) - Valley Hawks R/C Soaring Club, Jeff Kennedy (President), 414 Webster St., Algonquin, IL 60102, (708) 658-0755, eve. or msg.

Iowa - Eastern Iowa Soaring Society (Iowa, Illinois, Wisconsin, Minnesota), Bob Baker (Editor), 1408 62nd St., Des Moines, IA 50311, (515) 277-5258.

Indiana - Bob Steele, 10173 ST Joe Rd., Fort Wayne, IN 46835; (219) 485-1145.

Kansas - Wichita Area Soaring Association, Pat McCleave (Contact), 11621 Nantucket, Wichita, KS 67212; (316) 721-5647.

Kentucky - Bluegrass Soaring Society, Frank Foster (President), 4939 Hartland Pkwy., Lexington, KY 40515; (606) 273-1817.

Maine - DownEast Soaring Club (New England area), Steve Savoie (Contact), RR#3 Box 569, Gorham, ME 04038; (207) 929-6639. InterNet e-mail <Jim.Armstrong@acornbbs.com>.

Maryland - Baltimore Area Soaring Society, Russell Bennett (President), 30 Maple Ave., Baltimore, MD 21228; (410)744-2093.

Maryland & Northern Virginia - Capital Area Soaring Association (MD, DC, & Northern VA), Steven Lorentz (Coordinator), 12504 Circle Drive, Rockville, MD 20850; (301) 845-4386.

Michigan - Great Lakes 1.5m R/C Soaring League & "Wings" Flight Achievement Program & Instruction, Ray Hayes, 58030 Cyrenus Lane, Washington, MI 48094; (810) 781-7018.

Minnesota - Minnesota R/C Soaring Society, Tom Rent (Contact), 17540 Kodiak Ave., Lakeville, MN 55044; (612) 435-2792.

Missouri - Independence Soaring Club (Kansas City area, Western Missouri), Edwin Ley (Contact), 12904 E. 36 Terrace, Independence, MO 64055; (813) 833-1553, eve.

Nebraska - B.F.P.L. Slopers, Steve Loudon (contact), RR2 Box 149 El, Lexington, NE 68850; (308) 324-3451/5139.

Nebraska - S.W.I.F.T., Christopher Knowles (contact), 12821 Jackson St., Omaha, NE 68154-2934; (402) 330-5335.

North Carolina - Aerotowing, Wayne Parrish, (919) 362-7150.

New York, aerotowing Long Island Area, Robin Lehman, (212) 744-0405.

New York, aerotowing Rochester area, Jim Blum and Robin Lehman, (716) 367-2911.

New York - Long Island Silent Flyers, Stillwell Nature Preserve, Syosset, NY, Joe Coppola (President), (516) 798-1479, or Taylor Fiederlein (VP), (516) 922-1336.

Northwest Soaring Society (Oregon, Washington, Idaho, Montana, Alaska, British Columbia, Alberta), Roger Breedlove (Editor), 6680 S.W. Wisteria Pl, Beaverton, OR 97005; (503) 646-1695 (H) (503) 297-7691 (O).

Ohio - Dayton Area Thermal Soarers (D.A.R.T.S.), Walt Schmoll, 3513 Pobs Dr., Kettering, OH 45420, (513) 299-1758.

Ohio - Mid Ohio Soaring Society (MOSS), Hugh Rogers, 888 Kennet Ct., Columbus, OH 43220; (614) 451-5189, or e-mail tomnagel@freenet.columbus.oh.us.

Oklahoma - Central Oklahoma Soaring, George Voss, (405) 692-1122.

Tennessee - Memphis Area Soaring Society, Bob Sowder (contact), 1610 Saddle Glen Cove, Cordova, TN 38018, (901) 751-7252, FAX (901) 758-1842.

Tennessee - South Central Area, Brian Smith, 317 Crestwood Dr., Tullahoma, TN 37388, (615) 393-4876, anytime.

Texas - Texas Soaring Conference (Texas, Oklahoma, New Mexico, Louisiana, Arkansas), Gordon Jones, 214 Sunflower Drive, Garland, TX 75041; (214) 271-5334.

Utah - Intermountain Silent Flyers, Bob Harman, (801) 571-6406. "Come Fly With Us!"

Virginia - Tidewater Model Soaring Society, Herk Stokely, (804) 428-8064, email: herkstok@aol.com.

Washington - Seattle Area Soaring Society, Waid Reynolds (Editor), 12448 83rd Avenue South, Seattle, WA 98178; (206) 772-0291.

Outside U.S.A.

Australia - Southern Soaring League, Inc. (SSL), Mike O'Reilly, Model Flight, 42 Maple Ave., Keswick SA 5035, Australia. Phones: ISD+(08) 293-3674, ISD+(08) 297-7349, ISD+(018) 082-156 (Mobile). FAX: ISD+(08) 371-0659.

Canada - Manitoba, Winnipeg/MAAC Men Gliding Club, Bob Clare, 177 Tait Ave., Winnipeg, MB, R2V 0K4, Canada, (204) 334-0248.

Canada - Southern Ontario Glider Group, "Wings" Program, dedicated instructors, Fred Freeman, (416) 627-9090, or David Woodhouse (519) 821-4346.

England (BARCS & Europe), Jack Sile (Editor), 21 Bures Close, Stowmarket, Suffolk, IP14 2PL, England; Tele. # 0449-675190.

Hong Kong - Robert Yan, 90 Robinson Road, 4th Floor, Hong Kong; (852) 25228083, FAX (852) 28450497.

Scotland - Ron Russell, 25 Napier Place, South Parks, Glenrothes, Fife, Scotland KY6 1DX; Tele. # 01592 753689.

BBS/Internet

BBS: SLOPETECH, Southern California; (714) 525-7932, 1.4 baud - 8-N-1

BBS: South Bay Soaring Society, Northern California; (408) 281-4895, 8-N-1

Internet - Email list/resource of RC soaring related folks, including US and international club contacts, vendors, kit manufacturers/distributors, software, equipment and supplies. Also a resource for aeromodelling related WEB sites on the Internet. Contact Manny Tau at taucom@kaiwan.com, or on CompuServe: 73617,1731.

Internet soaring mailing list/serve linking hundreds of soaring pilots worldwide. Send a msg. containing just the word "subscribe" to soaring-request@airage.com. The "digestified" version that combines all the msgs. each day into one msg. is recommended for dial-up users on the Internet, AOL, CIS, etc. Subscribe using soaring-digest-request@airage.com. Post msgs. to soaring@airage.com. For more info., contact Michael Lachowski at mike@airage.com.

The Frequent Flier's Info. Hot Line, San Francisco Bay Area - Box 1 (lost & found airplanes, helpful tips, upcoming events), Box 2 (questions), Larry Levstik, (415) 924-4490.

Hobby Shops that Carry RCSD

Air Capital Hobbies 8989 West Central Wichita, KS 67212 (316) 721-4164	Hobbies'N Stuff 9577 L. Osuna Rd. NE Albuquerque, NM 87111 (505) 293-1217
California Soaring Products 1010 North Citrus Covina, CA 91722 (818) 966-7215	Hobby Counter 1909 Greenville Ave. Dallas, TX 75206 (214) 823-0208
Finney's Hobbies 3455 Peachtree Industrial Blvd., Ste. 980 Duluth, GA 30136 (770) 495-8512 (770) 495-8513 fax	Hobby Town USA 8090 S. 84th St. La Vista, NE 68128 (402) 597-1888
Gunnings Hobbies 550 San Anselmo Ave. San Anselmo, CA 94960 (415) 454-3087	Hobby Warehouse 4118 South Street Lakewood, CA 90712 (310) 531-8383
Gyro Hobbies 23052 Lake Forrest Dr. Unit C2 Laguna Hills, CA 92653 (714) 583-1775	PEC'S Hobby Supplies 947 Stierlin Road Mountain View, CA 94043 (415) 968-0800
HiTecHobbies 284 - B Welfian Way Richland, WA 99352 (509) 943-9241	Tim's Bike & Hobby 2507 Broadway Everett, WA 98201 (206) 259-0912

Reference Material

"Summary of Low-Speed Airfoil Data - Volume 1", Michael Selig wind tunnel testing results. \$25 USA (includes postage), \$29 surface outside USA, \$31 air Western Hemisphere, \$38 air Europe, \$42 air all other countries. Computer disk, ascii text files (no narrative or illustrations), is \$15 in USA; \$16 outside USA. Source for all "SoarTech" publications, also. Contact Herk Stokely, 1504 N. Horseshoe Cir., Virginia Beach, VA 23451. Phone (804) 428-8064, email: herkstok@aol.com.

Still a few copies available of some issues of the printed transcripts of talks given on RC Soaring at the Previous Annual National Sailplane Symposium. Prices reduced to clear out stock. Talks were on thermal meteorology, flying techniques, hand launch, cross country, plane design, airfoil selection, vacuum bagging, plastic coverings, flying wings, etc., etc. Send SASE or call for flyer giving details. Many copies of most recent (1992) transcript left. Clubs have found them good for raffle prizes, gifts, etc. Al Scidmore, 5013 Dorsett Drive, Madison, WI 53711; (608) 271-5500.

Seminars & Workshops

Free instruction for beginners on construction & flight techniques, Friday & week-ends (Excl. contest days), Bob Pairman, 3274 Kathleen St., San Jose, CA 95124; (408) 377-2115.

Classified Advertising Policy

Classified ads are free of charge to subscribers provided the ad is personal in nature and does not refer to a business enterprise. Classified ads that refer to a business enterprise are charged \$5.00 per month and are limited to a maximum of 40 words. The deadline for receiving advertising material is the 5th day of the month. (Example: If you wish to place an ad in the March issue, it must be received by February 5th.) RCSD has neither the facilities or the staff to investigate advertising claims. However, please notify RCSD if any misrepresentation occurs.

Personal ads are run for one month and are then deleted automatically. However, if you have items that might be hard to sell, you may run the ad for two months consecutively.

For Sale - Business

GLIDER RETRACTS - high quality, 1/5, 1/4, 1/3 scale made in U.S.A. 1/4 are standard or heavy duty. Contact Bill Liscomb, 7034 Fern Place, Carlsbad, CA 92009; (619) 931-1438.

PC-Soar Version 3.5 Sailplane Performance Evaluation Program Optional Sailplane Library now expanded to 54 models including: Akyone, Anthem, Genesis, Mako, Probe, Thermal Eagle, and Synergy-91. Free Library Upgrades. PC-Soar Upgrade to Ver. 3.5 \$10. PC-Soar New Purchase \$40. New Libraries of Sailplanes and Airfoil Polars \$30. Please include \$3 P&H for all purchases & upgrades. Also available: RCSD Database and Laser cut airfoil templates. IJM Associates, 1300 Bay Ridge Rd., Appleton, WI 54915; ph: (414) 731-4848 after 5:30 pm weekdays or on weekends.

PRECISION AMAP WING CUTTER, replacement parts, and service. AMAP Model Products, 2943 Broadway, Oakland, CA 94611. Butch Hollidge, (510) 451-6129, or FAX (510) 834-0349.

A.M.P. Aerial Model Products, sport, slope, race prototypes - all airfoils. 60" Del Valle Snake, 94" H&K Cobra, AMAP Flair, Kevin Cutler's full house Davenport Monitor. All race tested. Butch Hollidge, (510) 680-0589, eve, California.

WANTED: Sales Reps. Just Plane Fun Models is looking for energetic people who love flying R/C sailplanes and would like to support their hobby by becoming a sales representative for my line of sailplane kits. Be your own boss and set up your own territory. Call or write Buzz Waltz, Just Plane Fun Models, 3390 Paseo Barbara, Palm Springs, CA 92262; (619) 327-1775. Commissions paid on all sales.

FORD LONG SHAFT MOTORS, \$75. Classic glider kits, cool bands. HITEC, FUTABA, AIRTRONICS radios. #2 meter zip starts: \$24.95. Call us for your glider needs. 1-800-359-0233. Ask for Scott. 10AM - 4PM MTN time.

For Sale - Personal

Prism 117" open class sailplane, immaculate condition, red w/orange trim, RTF Futaba Super 7 computer radio, 6 micro servos, 2 1000mah Rx battery packs, 2 Tx battery packs... \$500.00 cheap + shipping, or \$200.00 aircraft only. Randy Martin, (310) 519-9539, So. Calif.

Mako w/HQ 2.5/10 - 3/9 wing, Mako w/HQ 2.5/9 wing, Stiletto 1 HQ 2.5/9 wing, all in great condition... \$350.00 each + S&H; Genesis, good condition... \$295.00 + S&H; Raven gull wing, very pretty, plan... \$200.00 + S&H. Dale, (214) 475-8093, Texas.

2M Duck, 7037 airfoil, quick change ballast system, never crashed, wired for Airtronics 4 - 141's & 2 - 102's (servos) incl., D&D shipping Nest... Dale Nutter, (918) 492-3760, Oklahoma.

JR Galaxy 8 ch PCM, computer radio, has 7 model memory, mixing, whistles and bells, charger, + 2 mini 7 ch PCM receivers, all on ham band 50,920 mhz (06), in original box w/manual... \$275.00 + shipping. Don Scharf, (619) 571-5893, So. California.

Aeronaut Sunfly, Hecktoplett 320/6, Simprop P-90 S/C, all NIB... \$625.00 shipped. Ric Vaughn, (770) 998-3051, Georgia.

NIB kits + UPS. Multiplex: Cortina... \$325.00; Akro... \$200.00; LS-3... \$300.00; Flamingo Contest... \$250.00. CHK: Kaus... \$325.00; Flipper... \$375.00; Crystal... \$375.00. Soarcraft: Glas Flugel 604... \$200.00; Kestrel 19... \$200.00. Graupner: Culmus 2800, #4235... \$150.00; Cirrus 75, #4262... \$200.00; ASK-14... \$150.00; Discus 4m w/s... \$400.00; wing kit for old Cirrus, #4220... \$50.00. Craig Christensen, (612) 435-7406, after 4pm, Minnesota.

Open class Spectrum, 3021 airfoil, Brian Agnew's personal plane, complete w/servos... \$500.00 includes shipping; Müller Comet 89T, includes servos... \$500.00 includes shipping; 1st in USA Calypso Contest, all moulded F3B, NIB, includes carrying bags, beautiful fit & finish... \$1000.00 includes shipping. Ed Slegers, (201) 366-0880, New Jersey.

1/3 Club Libelle (Krause), 5 meter span with servos rigged for Futaba with nose release, absolutely ready to fly... \$895.00; Twin Astir (Wik), 4 meter all glass, excellent condition, completely finished, ready to fly, slight hangar rash, has an immaculate detailed twin cockpit, competition worthy, all servos rigged for Futaba radio, nose tow release for airtowing... \$795.00; Wik Speed Astir (Roebbers), all glass, NIB, 3.8 meters... \$595.00; Twin Acro III, NIB, 4 meters... \$495.00; huge towplane, 134" span, will tow the largest sailplanes, 1/3 L5 with Saks 8.4 twin and Futaba servos, mint condition... \$2500.00; Graupner Electric UHU plus Graupner direct drive speed 600 motor plus on and off switch plus two Sanyo batteries plus Aristocraft AC/DC multicharger... all for \$395.00. Robin Lehman, (212) 879-1634, New York.

NIB kits, prices include shipping: F3B Spectrum by Ron Vann, RG-15, beautiful molded 117" T-tail for F3B/thermal duration... \$850.00; DLD Saturn 3.0, deluxe glass kit with wing finished, Q2.5/9 airfoil... \$550.00; Terry Luechenbach Probe, CF molded wings & stab, 129", E214, excellent quality... \$575.00; Airtronics Sagitta 900... \$125.00; Sagitta 600... \$100.00; Off the Ground Models Prodigy... \$100.00; Bob Smith Sundancer II... \$100.00. Tom Gressman (303) 979-8073 or (303) 744-3535 X3105, Colorado.

Wanted

FM Vision 3.0. Todd Presley, 3803 Kaimuki Ave., Honolulu, HI 96816; (808) 732-1432.

The LASOAR 1200

...from Perret's Studio

Perret's Studio is proud to introduce the LASOAR 1200, designed and manufactured by Paul Perret, winner of the '94 and '95 Nats. The LASOAR 1200 won Class "B" at the '95 Electric Nats.

The LASOAR 1200 will winch launch straight up, zoom out, penetrate on command, and thermal out like an eagle. But you don't need a winch; this is an electric sailplane with a wingspan of 139", SD 7037 airfoil, and full-depth laminated spar. It uses a 25- to 40-size electric motor on 10 or more cells. The fiberglass fuselage is reinforced with kevlar and carbon fiber; the wings are pre-sheathed with obeche; includes pre-cut flaps, ailerons, and servo wire holes. Motor mounts are pre-fabricated; top quality balsa, plywood, and hardware; plans are rolled. Cost is \$395.00 direct from Perret's Studio, 1780 Prytania Street, New Orleans, LA 70130; (504) 524-3442. ■

NEW PRODUCTS

The information in this column has been derived from manufacturers press releases or other material submitted by a manufacturer about their product. The appearance of any product in this column does not constitute an endorsement of the product by the R/C Soaring Digest.



2 Meter Osprey

...from Sky Bench Aerotech

The 2m Osprey, an all wood construction sailplane kit, has an optional wing configuration and can be built as a polyhedral, or flat wing spoileron, or aileron and flaps. Comes in two versions: one-piece bolt-on wing or two piece wing. Specifications: Schuermann planform wing with upturned tiplets, S 3014 airfoil, 670 sq. in. wing area, fully sheeted, 43 oz. recommended weight for the spoileron version with two piece wing (9.27 oz. wing loading); 37 oz. recommended weight with bolt-on wing (7.97 oz. wing loading).

Kit includes hand selected wood, machined parts, illustrated construction manual, and detailed plans. Bolt-on wing version intro price is \$79.95; two piece wing version intro price is \$89.95. S&H is \$6.00. Recommended for beginner or expert, for more information send SASE to Sky Bench Aerotech, 58030 Cyrenus Lane, Washington, MI 48094; or call (810) 781-7018. ■



Mixing Full House Sailplanes

...by Rick Eckel © Copyright 1995
Winter Springs, Florida

Let's admit it. The simple two channel 'floater' type sailplanes are the most relaxing and enjoyable planes to fly. They look graceful in the sky, practically fly themselves, and land so slowly you can walk beside them. On a beautiful, calm, sunny, summer Sunday there is no better way to spend time than guiding a floater beneath billowy clouds suspended in a deep blue sky. But...

There are some of us who can't leave a good thing alone. We must have speed... Or "performance"... Or a thousand little switches sticking out of our transmitters. We want launches to the moon, thermal searches that cover at least three states and landings on the head of a nail every time. For us there's no fun like the good adrenaline rush of a high speed pass low across the field!

So we opt for the full house sailplane. Fiberglass, carbon fiber, kevlar, foam, fiber, and servos in every nook and cranny. Beasts that are inherently unstable, fast as the dickens and prone to landing like lawn darts. And then we are faced with trimming the dang things, getting them to fly in a civilized (or at least somewhat controlled) manner, and landing 'em without cutting off our own legs. The key to all this is a computer radio and that most dreaded of all procedures: mixing.

Many newcomers to our wonderful sport have approached me and asked about computer radios, how to choose one and what it is that you really do with one when you have it. Nosy and full of questions as they are, they are seldom satisfied with "mixing" as an answer. So here is the lowdown on what 'real' sailplane pilots do with a computer radio.

Let the mixing begin!

Setting up, or 'mixing', a full house sailplane with a computer radio can be a pretty intimidating task for the uninitiated. There seem to be so many possibilities, so many control surfaces, so many switches and so many terms and nomenclatures. Actually... there

really are too many. But they're manageable if we first understand the basics of what we need to accomplish. Then we must translate that into the terminology and control functions provided by our particular computer radio manufacturer.

Sailplanes have three distinct flight requirements: launching, landing and the flight task. Mixing is used to enhance the flight characteristics of the plane for each of these requirements. In launching we want to obtain the highest possible altitude. For landing we require slow speed with the most control possible in order to land very precisely. The flight task requirements vary with the task. (I'm most familiar with the thermal duration task, but there can also be speed and distance tasks.)

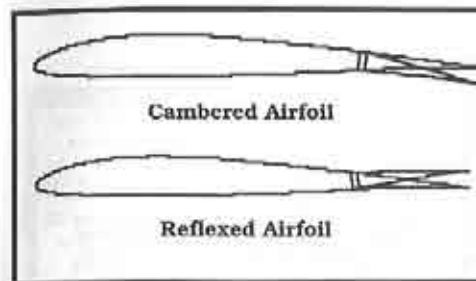
As the full house sailplanes and computer radios have become more common, basic ways of enhancing each of these flight requirements have become more or less standard. They are enabled by mixing two or more control functions (for instance: flaps and elevator or aileron and rudder) together so that the flight characteristics of the plane are optimized for a particular flight requirement. The interesting part is that each airplane design will have its own reaction to the typical mixes and must be optimized individually for top performance.

A Few Definitions

Camber, reflex, crow and butterfly are terms tossed about by those baptized in the use of computer radios as if their meaning were obvious. From my experience, they are only obvious if you already know them. (Or is that obvious?) Anyway, a brief review won't hurt.

Camber and reflex are kind of equal but opposite terms. They refer to the position of the wing's flaps and/or ailerons. Camber means that the flap or aileron is deflected a little downward, effectively adding undercamber to the normal wing airfoil. Adding undercamber means that the bottom surface of the wing becomes more concave. Reflex, on the other hand, is the deflection of the flaps or ailerons upward. Moving the flap or ailerons up removes camber in the airfoil, making the bottom more flat or even giving the wing a 'reflexed' trailing edge.

Butterfly and crow are different terms for the same thing. A sailplane in the crow or



butterfly configuration has its flaps lowered and both ailerons reflexed (raised). The ailerons stick up and the flaps hang down making the plane look reminiscent of a crow or butterfly as they approach a landing.

The flaps, ailerons or the full trailing edge (both flaps and ailerons) can be referred to as cambered or reflexed. Camber and reflex are used in a variety of circumstances. Crow (or butterfly) is only used for landing, or perhaps for diving out of a thermal.

Launch Mixing

A sailplane will launch from a winch or high start perfectly well without any trim adjustments - assuming that the tow hook is well positioned. However, the launch may be enhanced by several adjustments. The first is to camber flaps a bit to generate more lift during the launch. A little up or down elevator compensation is frequently of benefit when flaps are used during launch.

Flaps only cover perhaps 1/2 of the length of the trailing edge of the wing. Some fliers find that additional lift can be generated and a steeper launch attained if the ailerons are also cambered to match the flaps, or a little less, when launching. As a beginning point of reference, we are talking about a cambering of flaps and ailerons of perhaps 1/4".

At the end of the launch, some additional altitude can be gained by "zooming" off of the winch line. This zooming can be enhanced by reducing airfoil drag by reflexing the trailing

edge. That is, reflexing both the flaps and ailerons slightly above their normal positions. Again, as a point of reference, we are talking about maybe a 1/16" reflex of flaps and ailerons.

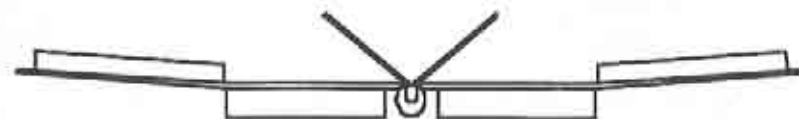
All of these things can often be controlled using the 3-position flaps switch as the master channel for the flaps and slaving the other channels that require adjustment (elevator and ailerons) to them. This means that a lot of flexibility for mixing to flaps is necessary for the launching task. That makes it one of the key things to look for if you are choosing a radio for a full house sailplane.

Landing Mixing

For landing a sailplane, the flaps are again important. They are useful for obtaining the slow speeds while retaining good control that make spot landings easier. Most airplanes exhibit a nose up pitching motion (or "ballooning") when flaps are deployed. So, a mix of elevator to the flaps is employed to counteract the pitching. The elevator mix used in the launch may or may not work (or be available) for the landing flaps deployment. So a different elevator mix may be needed. Most pilots also prefer to have landing flaps fully proportional and controlled by the throttle stick on the transmitter so that they can vary the flaps depending on their landing approach.

Another enhancement to the landing function is the use of ailerons as spoilers. When both ailerons are reflexed and the flaps are lowered, the plane is said to be in the "crow" or "butterfly" configuration. A little reflex of the ailerons just dumps (spoils) the lift of the wing and steepens the glide slope. A large degree of reflex adds drag, as well.

So this landing mix is a lot like the launch mix except that the ailerons have a different motion, the elevator to flaps mix is different and the flaps are proportionally controlled by the



Crow (Butterfly) Configuration

throttle stick rather than having preset positions via the 3-position switch. Only the more advanced programmable radios and/or those specialized for sailplanes will have the ability to provide both launching and landing mix setups.

Flight Task Mixes

Perhaps the most widely used flight task mix is rudder to ailerons. The purpose of this mix is to allow coordinated turns to be accomplished using only the right stick on the transmitter. This mix also eases the transition from a two channel (rudder-elevator) sailplane to an aileron equipped model. (Just don't forget that the ratchet trim for the rudder is now under the left stick!)

There are also a variety of other mixes for the flight task requirements for sailplanes. Pilots tend to vary in their preferences for these mixes. Part of the preference is personal and part is because different planes respond differently.

Some pilots like to have the trailing edge of the wing camber, either just flaps or flaps and ailerons, with the application of up elevator. This gives an apparent increase in the effectiveness of the elevator. Conversely, they sometimes want the trailing edge to reflex with the application of down elevator. This makes the plane accelerate more quickly. Pilots like to be able to switch this mix in and out depending on whether they're in a thermal or not. So, they turn it on and off with a switch on the transmitter.

In addition to or in place of the above, some pilots like to be able to 'dial in' some camber on the wing while they are working a thermal. With more camber, some airfoils can fly slower, develop more lift, and get more altitude out of a given thermal. Once a thermal expires or is lost, pilots want to 'flee the sink'. The ability to reflex the trailing edge can be very effective when you need to get away from a particular piece of sky quickly. These controls are often handled by a pot (potentiometer) on the transmitter, or as an alternate by the throttle stick, so that they are proportionally variable.

In slope racing it is very important to make good 'bank and yank' turns. I understand that some pilots like to use an inverse aileron differential mix in order to put some adverse yaw in the plane as they bank up for the turn just prior to the 'yank'.

The Mix is the Secret!

There are many other mixes and variations on mixes that different pilots use for different flight requirements. I think that some of them must be closely guarded secrets! Secret mixes that provide a competitive edge that pilots develop and hand down only with greatest ceremony to select co-conspirators! I think that's why I can't fly as well as Brian Agnew or Joe Wurts (or a lot of other pilots for that matter) - I don't have any secret mixes! (Aren't conspiracy theories wonderful excuses?)

Thermals! Rick

email 76054.1200@compuserve.com

Are your models structurally challenged?

VACUUM BAG

CST's Pro Systems

Extremely Reliable Pump
Precise Vacuum Control
Optional Multi-Bag Capability

Choice of Bag Kits

Wing Skinning Kit
Molded Parts Kit
Deluxe Kit (for both)

Free Price List or \$5 for Complete Product Guide



Building with Today's Technology
Composite Structures Technology
PO Box 642, Dept. ML, Tehachapi, CA 93581
Order Toll Free: 1-800-338-1278
Technical Support: 805-822-4162

Advertiser Index

55	Aerospace Composite Products
52	Aire Master
48	Anderson, Chuck
49, 51	B* Streamlines
63	California Soaring Products
45	Composite Structures Technology
49	Comp-U-Cut
45	C.R. Aircraft Models
48	Dave's Aircraft Works
50	Dave's Wood Products
52	David Layne Designs
47	Dream Catcher Hobby, Inc.
48	Elf Engineering
50	Finney's Hobbies
46	F.K.H. Enterprises
46	Hog Wild
51	ICARE Sailplanes
46	I&C Hobbies
57	Just Plane Fun Models
52	Kennedy Composites
46	McCaun, Tim
56	Perret's Studio
50	Performance Composites
51	Plane Talk
46	PLAN-IT Industries
49	RA Cores
56	RnR Products
62	Sailplanes Unlimited, Ltd.
47	Sanders, Eric (CompuFoil)
60, 61	Slegers International
64	Slegers International
55	Sport Flyers
50	Squires Model Products
48	Taucom
53	Tekoa: The Center of Design
50	The Birdworks
47	TLAR Enterprises
48	TNR Technical, Inc.
53	Torque & Recoil Club
58, 59	Viking Models, U.S.A.
57	Windspiel Models
48	Zatloka, George

Advertising

Special Events

Schedule of Special Events

Date	Event	Location	Contact
Jan. 13-14	2m, Unl.	Punta Gorda, FL	Ollie Wilson, (941) 627-2117
Feb. 24-25	2m, Unl.	Cape Coral, FL	John Agnew, (941) 936-7148
Mar. 23-24	2m, Unl.	Orlando, FL	Hank McDaniel, (407) 831-3688
Apr. 20-21	2m, Unl.	Orlando, FL	Hank McDaniel, (407) 831-3688
May 24-27	2m, Unl., Fun, XC	Morrison, FL	Ken Goodwin, (904) 528-3744
June 1-2	1st Annual Northeast Aerotowing Fly-In	Elmira, NY	John Derstine, (717) 596-2392
June 8-9	SWSA 2M Soarfest '96	Southern CA	Pete Olsen, (909) 597-2095
June 20-23	Mid-South Championships	Memphis, TN	Bob Sowder, (901) 751-7252
June 29-30	2m, Unl.	W. Palm Beach, FL	Jim McCudden, (407) 967-8909
Aug. 3-4	2m, Unl.	W. Palm Beach, FL	Jim McCudden, (407) 967-8909
Aug. 30-Sept. 2	2m, Unl., Fun, XC	Williston, FL	Ken Goodwin, (904) 528-3744
Sept. 21-22	2m, Unl.	Orlando, FL	Hank McDaniel, (407) 831-3688
Oct. 19-20	2m, Unl.	Williston, FL	Bob Wargo, (813) 938-6582

LIMMAX
60" Span Hand Launched

NEW! BLAZER
Outstanding Light-Lift Performance!

60" Span, 2 or 4 Channel
7-16 CF Wing Loading
Bolt-on Wings
Epoxy/Glass Bod
Rolled Plans
V-Tail Hardware

FG Kit \$79.95
FG Kit with Pre-Sheeted Wing \$99.95

CR
Shipping & Handling \$5.00
California Sales Tax 7.5%

SEND S.A.S.E. FOR FREE 1995 CATALOG Of Sailplanes & Accessories

C.R. Aircraft Models • 205 Camille Way • Vista • CA • 92083 • 619 / 630-8775

PERFORMANCE PAD



RC TRANSMITTER TRAY

Designed and manufactured with the RC flyer in mind. The unit was designed using Human Factors Engineering to be ergonomically pleasing, reduce fatigue, and enhance flying performance.

F.K.H. ENTERPRISES
21651 BALERMA
MISSION VIEJO, CA. 92692
PHONE: 714-859-3208

SUGGESTED RETAIL PRICE:
\$35.95
(plus \$3.00 shipping & handling)
FAX: 714-859-1223

J & C HOBBIES

100 A Street, Penn Hills, PA 15235
ORDER LINE: 1-800-309-8314
INFO LINE: 412-795-9344
Everyday Low, Low Hitec Prices

Supreme Receiver w/crystal	59.95
535 Micro Rx w/crystal	61.95
HS-60 Super Micro Servo	33.95
HS-80 Sub Micro Servo	24.95
HS-80MG w/Metal Gear	33.95
HS-101 Mini Servo	21.95
HS-101MG w/Metal Gears	28.95
HS-205BB Super Mini	25.95
HS-205MG w/Metal Gears	35.95
HS-605BB Ultra Torque	32.95
HS-605MG w/Metal Gears	40.95
HS-615MC Super Torque	40.95

CALL FOR OTHER LOW HITEC PRICING
VISA/MASTERCARD/DISCOVER

INJECTION MOLDED OF TOUGH POLYETHYLENE PLASTIC
R/C SAILPLANE
LANDING SKIDS \$4.95 ea.
IMPROVE YOUR LANDING SCORES
POSTAGE PAID U.S. ORDERS ONLY

- EASY INSTALLATION
- VIRTUALLY UNBREAKABLE
- REDUCES LANDING DAMAGE
- SMOOTH

SHARKTOOTH
SKID

ORDER DIRECT FROM:
TIM MCCANN
P.O. BOX 2095
HARRISON, AR 72602

SKID PROTECTS FLAP SERVICE



HOG WILD OF COOS BAY, OREGON INTRODUCES TWO NEW MODELS, AND AS AN EXTRA INCENTIVE OFFERS BOTH AS CHRISTMAS SPECIALS.

THE "NOMAD"™

THE NOMAD IS AN INDESTRUCTIBLE SLOPE (COMBAT & AEROBATIC) PLANE, THAT ALSO DOUBLES AS AN EXCELLENT 1/2A PERFORMER. JUST ADD TRICYCLE LANDING GEAR AND .09 ENGINE.

THE "PROWLER"™

THE PROWLER IS AN EXCELLENT SLOPE GLIDER WITH GOOD, LOW SPEED TO HIGH SPEED PERFORMANCE AND, LIKE THE "NOMAD", THE PROWLER IS ALMOST INDESTRUCTIBLE. THE NOMAD COMES IN 36" AND 48" WING SPANS, WITH THE LENGTH AT 18". THE WING LOADS ARE 8 OZ. AND 9 OZ., RESPECTIVELY. THE PROWLER COMES WITH A 48" SPAN WITH 12" LENGTH, AND A 9 OZ. WING LOADING.

INCLUDES ***SPECIAL CHRISTMAS DEAL***
S&H IN U.S.A. NOMAD 36": \$24.95
NOMAD 48" & PROWLER: \$29.95 EA.



HogWild Hobbies/Craft
(503) 269-2423

3261 OLIVE BARBER RD.
COOS BAY, OR 97420

FLASHY TAPE

HIGHLY REFLECTIVE TRIM TAPE

INCREASE VISIBILITY - LOOKS GREAT ON L.E. OR WING STRIPES

SOLD TO SATISFIED FREE FLIGHT MODELERS FOR THE PAST 2 YEARS

VERY LIGHT WEIGHT----- ONLY .001" THICK

SIX BRIGHT COLORS: GOLD, RED, CHROME, BLUE, PURPLE, GREEN

3/4 X 650 inches. \$3.85 PER ROLL, OR \$16.00 FOR THE SET - POST PAID.

SATISFACTION GUARENTEED---FOR FREE SAMPLE SEND SASE TO:

PLAN-IT INDUSTRIES; 15121 62nd AVE. W.; EDMONDS, WA. 98026

Bae HAWK
Power Scale Slope

Wing Span 47.5"
Wing Area 336 sq. in.
Alleron/Elevator

Fiberglass fuselage
Foam core wing & stabs
with Obuchi sheeting
Cad drawings

Price: \$120.00 plus shipping (CK or M.O.)
TLAR Enterprises - 738 Marshall Ave., Sedro Woolley, WA 98284 • (360) 855-9721 PST

"The best just got better!"

CompuFoil Professional

For pricing and feature options, contact
Eric Sanders
3904 Trainc Dr.
Kettering, Oh 45429
Phone/Fax 513-299-7684 7-11PM EST
internet.compufoil@aol.com

All New!!
Windows Version

Starting at only \$35!! Purchase user upgradable features when you need them. Full Windows help file.

* Deep discount upgrades for DOS version users also available.

**Used by NASA, schools, universities, major model mfgs, and hobbyists world wide

*Also available-Feather/Cut foam core machine. The perfect CompuFoil foam core partner.\$149.50

ASW-19 Dream Catcher Hobby, Inc.
1/3 SCALE
R/C Glider Kits & Supplies
P.O. BOX 77, BURLINGAME, CA 94010-0077
219-848-1427

SAILAIRE
*Machine Sanded Ribs
*Epoxy Glass Forward Fuselage
*Rolled Plywood Tail Cone

White Epoxy Fuselage
Pre-Sheeted Obuchi
Main Wing

In Res. Add 5% Sales Tax.
For Shipping Handling Info.
Please Call or send SASE for more info.
Hours Weekdays 8pm-10pm CST
Hours Saturday 10am-10pm CST

Robbie double deck spools included
ASW-19 Plans are CAD Drawings
Stab & Rudder Pre-Sheeted Balsa
Fiberglass Canopy Tray
Pre-Tinted Canopy
Building Instructions

Sailaire wing span 149 in.
Sailaire weight 5 to 11 lbs.
Sailaire kits produced from new tooling.
This plane has been a winner since 1976
and still wins large contests.

ASW-19 Kit Price \$880.00 + S&H
Sailaire Kit Introductory price \$159.00 + S&H

As of 01-01-1996 the Sailaire introductory price of \$159.00 will be increased to \$199.95 + S&H
The tooling and manufacturing process used to kit the ASW-19 has been changed. This new process allows the fuselage to be produced in white epoxy and the wings will be supplied presheeted. Please call for more details.

Elf Engineering

Hand Crafted Pre-Sheeted
Obecht Over Foam Core Wings
Custom Wings Designed To Enchant The
Creative Modeler. Satisfaction Guaranteed.



Parachutes
By Mrs. Elf \$10.

Dale King, Head Elf
1111 Highridge Drive
Wylie, Texas 75098
(214) 475-8093

SANYO BATTERIES

RECEIVER PACKS
TRANSMITTER PACKS
HIGH CAPACITY CELLS
LIGHT WEIGHT PACKS
SHRINK WRAP
GELL CELLS

1-800-346-0601

FAX 407-682-4469

TNR TECHNICAL INC.
279 DOUGLAS AVENUE
ALTAMONTE SPRINGS, FL 32714

WWII SLOPE GLIDERS



Me109	30 1/2"	w.s.
P40	31 1/2"	w.s.
Ta 152	34 3/4"	w.s.
P51-D	34 3/4"	w.s.
Ki61	36"	w.s.

THE FUN AND INEXPENSIVE WAY TO FLY SCALE...

WWII Fighter Slope Gliders. Complete kits include: foam wing cores, pre-cut balsa and ply parts, complete quality hardware, rolled plans & instruction manual. All fighter kits \$35.95ea. + \$7.00 S/H per kit. (CA residents add 7.75% tax). SEND \$1.00 FOR CATALOG TO:

DAVE'S AIRCRAFT WORKS

123 Avenida Buena Ventura
San Clemente, CA 92672
714-498-4478

OK, FLYING FRIEND!

So you want instantaneous improvement
in your flying, and to have more fun? The
new *Flying Buddy '94 Transmitter
Support* will do it for you! To get yours,
just send:

\$48.00 + \$6 for S&H

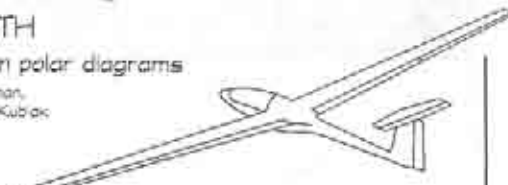
To: **George Zatloka**

12212 NE 66th St., Kirkland, WA 98033
(206) 827-1960

UNDERSTANDING POLARS WITHOUT MATH

A guide to getting the most from polar diagrams

by Bill E. Bunny (B²) Kunman,
with a special section by Bill Kuback



US\$18.00, packaging and shipping included

B²Streamlines
P.O. Box 976, Olalla WA 98359-0976 U.S.A.

<bsquared@halcyon.com>

Vinyl Letters and Numbers

Computer cut to your specifications and promptly shipped.
Prealigned and spaced for easy application and professional results.
**Mail order special - 1 1/2 inch AMA numbers in black or white
block letters only \$2 + \$1.50 S&H.**

Calif. residents add 8.25% tax. Send SASE for information.
Call (909) 624-2906 or write:

Comp-U-Cut, 976 W. Foothill Blvd. Suite 328, Claremont, CA 91711
ddmc@cyberg8t.com or 74076.1464@compuserve.com

Affordable Custom Cores for modelers, by modelers

Custom computerized cutting services. Spans to 56", chords to 27"
.001" accuracy or better. Gray or white foam. Raw cores or full custom glider
wing kits with balsa or obechi sheeting and spar materials available (stabs too)
Obecht in stock - 10" wide, \$9.00 per linear foot with core order

Rejuvenate or upgrade your floater with a new airfoil/wing/controls
Gentle Lady or Spirit 2M full wing kits, S3021 or SD7037, balsa or obechi - \$35
Large airfoil library including Soartech foils direct from Dr Selig on the net
White foam single taper stabs or HLG - \$10, 2M - \$15, Std - \$20, Open \$25
add \$5 for each additional taper. Gray foam - \$5 extra stabs/HLG. \$10 larger
All orders add one \$5 S&H charge - COD \$6 additional

Call/email us to quote your next project - Internet: racores@world.std.com

RA Cores, P.O. Box 863, Southbridge, MA 01550 or (508) 765-9998



RC POWER DUCK ANTENNA

- Individually hand-tuned for 72MHz
- BNC quick disconnect for Airtronics, JR, & Futaba tx's, 12" height
- Black, blue, red, yellow or pink colors
- \$23.95, 7.75% CA res. sales tax, \$3.00 S&H

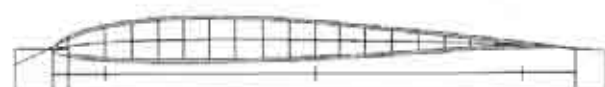
CRONUS STOPWATCH

- Dial pre-sets for count-up/down timers
- Programmable time and Lap Counters
- Ideal for thermal duration and F3B
- \$25.00, 7.75% CA res. sales tax, \$1.00 S&H

TAUCOM, 2490 S. Ola Vista, #2B
San Clemente, CA 92672
(714) 492-9553, FAX: (714) 586-8508



Airfoil Plot 6.0 \$35



Also Available
Airfoil Plot 6.0 Pro \$80
Model Design \$50
Model Design Pro \$75

Plot Airfoils and Tecoa foam core templates for only \$35. Requires computer running
MS-DOS 3.2 or later and a dot matrix or HPIL LaserJet compatible printers. View airfoils
on screen if CGA, EGA, or VGA graphics are available. NACA 4-digit, NACA 5-digit, and
Quaback airfoil generators plus 42 airfoils are included. You can also enter coordinates,
change camber, change thickness or combine airfoils. For more info send SASE to
Chuck Anderson, P. O. Box 305, Tullahoma, TN, 37388 Phone 615-455-6430

**WINGS
BY FINNEY'S HOBBIES
OBECHI & WHITE FOAM**

RG-15 & SD7037
REINFORCED WITH
CARBON FIBER & GLASS CLOTH

1.5 METER 80", 7.5" ROOT CORD
4 PANEL POLYHEDRAL \$60
2 PANEL ROUTED AILERONS .. \$65
2 PANEL NOT ROUTED \$60

2 METER 78", 9" ROOT CORD
4 PANEL POLYHEDRAL \$75
2 PANEL ROUTED AILERONS .. \$80
2 PANEL NOT ROUTED \$75

18" STABS, 4.5" ROOT (PAIR).. \$30

BALSA LEADING EDGE
& WING TIPS ADDED \$20

ADD \$10 SHIPPING PER ORDER.
PLUS TAX FOR GA RES.

VISA • MASTERCARD • DISCOVER

FINNEY'S HOBBIES
3455 Peachtree Industrial Blvd., Ste. 980
Duluth, GA 30136
(770) 495-8512 • fax (770) 495-8513



DAVE'S WOOD
PRODUCTS.
12306 BERGSTRASSE
LEAVENWORTH
WA 98826
1 (509) 548-5201

1. CONTACT CEMENT:
INDUSTRIAL GRADE, NON TOXIC
HEAT RESISTANT, WATER BASE.
2. HOBBY LOBBY ITEMS:
DISCOUNT ON PURCHASES
OVER \$50.
3. OBECHI VENEER:
SELECT & STANDARD GRADES.

SEND SASE FOR INFORMATION.

VISA & MASTER CARD

Case-Hardened Tool Steel

☆☆ **WING RODS** ☆☆☆

For All Sailplane Types

- Guaranteed to NEVER set a bend on the winch or in flight! Competition Proven!
- From 5/32" to 1/2" Dia.; 7" to 25" Lengths
- Falcon 880 Drop-In Repl. \$10.00 Incl. S&H

SQUIRES MODEL PRODUCTS
574 MAPLE AVE., SUNNYVALE, CA 94086
(408) 245-8111

Send SASE for Free Price List

**PERFORMANCE
COMPOSITES**

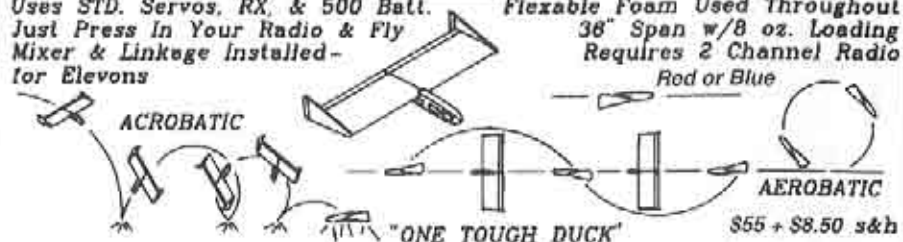
Before buying your next glider, make sure to get our brochure on the many variants available of our popular Starling and Starship, 60" and 2m gliders. All feature rugged 100% Kevlar™ fuselages.

PERFORMANCE COMPOSITES
P.O. Box 6843
Napa, CA 94581
(707) 253-8029
e-mail: perfcomp@community.net

THE RUBBER DUCK 100% BUILT "ELASTIC SLOPER"

Uses STD. Servos, RX, & 500 Batt.
Just Press In Your Radio & Fly
Mixer & Linkage Installed-
for Elevons

Flexible Foam Used Throughout
36" Span w/8 oz. Loading
Requires 2 Channel Radio



THE BIRDWORKS P.O. Box 1302 Port Orford, OR. 97465 (503)332-0194

**RC SOARING...
A LAUGHING MATTER**
by Gene Zika



ZIKA

JUST IN TIME FOR CHRISTMAS!

The perfect gift for the RC soaring enthusiast!
Nearly 200 original cartoons!

US\$15.00, packaging and postage included, delivered worldwide

B²Streamlines
P.O. Box 976, Olalla WA 98359-0976
U.S.A.

<bsquared@halcyon.com>

Spyder Foam WingCores

from: **Aire Master**

Core sets for:

Thermal Eagle \$59.95 + S&H
Falcon 880 \$59.95 + S&H
Falcon 800 \$59.95 + S&H

Airfoils Available:

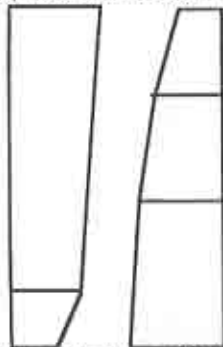
RG15, SD7037, S7012, S3021/3014

Many Other Airfoils Available.
Templates Generated With CompuFoil

Core sets for many other competition gliders. Quotes for custom work upon request.

**Cores Sized for Composite or
Obечи Skin--Please specify**

Call for pricing on Airtronics sailplane kits, fuses and accessories.



Double Taper Planforms \$59.95 + S&H
Triple Taper Planforms \$74.95 + S&H
Stabs \$14.95 + S&H

**Spyder Foam is the
Premier Material**

for composite wings. Unmatched
compression strength paired
with vertical grain direction for
superior epoxy penetration.

Call Alan at (314) 878-7701

or Write to: **Aire Master**

1630 Renoir Lane
St. Louis, MO 63146

100% CARBON
ARMOR WING RODS
CARBON SPARS

Obечи Wood
• 10 Inches Wide
• 10 Feet Long
• 10 Bucks!!

**KENNEDY
COMPOSITES** Barry Kennedy
15269 CR. 1227, Flint, TX 75762
903.561.3924 • FAX 903.561.3453

For info. on our products, please send L9ASE.
Call for wholesale & manufacturer's pricing schedule.

DL D
David Layne Designs

1808 Applegate Drive
Modesto, CA 95350
(209) 529-8457

Saturn Sailplanes

Saturn sailplanes utilize a unique spar system which incorporates a 3/4" T6 aluminum alloy tube for the wing root allowing tremendous launches. With high quality Kevlar reinforced fuselages and obечи covered foam wings these designs are built tough. The HQ airfoils have a great lift capability for thermal flying and enough speed for something different on the slope.

	Saturn 2.9T	Saturn 2.5T	Saturn 2.0
Wing Span	113 inches	99 inches	78.5 inches
Wing Area	988 sq in.	825 sq in.	585 sq in.
Airfoil	HQ 2/9-2/B	HQ 2/0-2/B	HQ 3/10-3/B
Weight	65 - 72 oz	57 - 65 oz	40 - 45 oz
Wing Loading	10 - 11 oz./ft.	10 - 11 oz./ft.	9 - 10 oz./ft.
Price	\$199.00	\$199.00	\$149.00

Pre-assembled kits avail. for additional \$100.00.
\$18.00 S&H Continental U.S.A. Calif. res. add 7.25% tax.

FOR PERFORMANCE OUT OF THIS WORLD

FEATHER/CRAFT™

READY BUILT WINGS

2 METER (78") Double Taper \$78.00
\$10.00 Shipping
100" Double Taper \$100.00
\$15.00 Shipping

CHOICE OF RG-15 OR 7037 AIRFOIL

WE ALSO HAVE OPEN CLASS WINGS IN STOCK

BUCK AN INCH - HARD TO BELIEVE? High quality, finish sanded, Obечи over white foam wings. These BUCK AN INCH BABIES are strong - reinforced with a full depth sheer web and carbon. Sharp trailing edges are inlaid with fiberglass. **TOO GOOD TO BE TRUE - FAST FINISHING!** Just dig into your "left overs" box and come up with the leading edge, tips and aileron/flap trim material. Fiberglass the two wing panels together and you're finished. **GREAT ONE PIECE BOLT-ON WINGS.**

Blue Anodized Control Hardware
Stainless Heat Treated Tow Hooks
Ready-Built Stabilizers and Rudders
2M & 3M FG/Kevlar Fuselages

NEW!

20" Long CARBON JOINER ROD, 1/2"d, 5"
14" JOINER RODS, 1/2" diameter
ALUMINUM 6", STAINLESS 6", CARBON 5"

The NEW Shadow 120 Open Class and Shadow 2M WINNERS are in stock!

WOW! RUSH MY ORDER!

909.763.0464 fax 909.763.0109 MASTERCARD
email LNFE21A@PRODIGY.COM VISA



TEKOA: THE CENTER OF DESIGN
49380 SKY HARBOR WAY
AGUANGA, CA 92536

FOAMERON
Revolutionary Design Will Change How You Feel About Slope Soaring

\$69.95
+ Shipping

FEATURES:
All Assembly Materials/Hardware/Sheeting Included
NOTHING ELSE TO BUY (radio NOT included)
Disassembles in Under 30 SECONDS For Easy Transport
Builds in Under 7 Hours Without Any Type of Glue or Balsa
Flies & looks like built up / composite plane, not a compromise
Sheeted in our EXCLUSIVE 3mil Vinyl • Many Colors to Choose From
Wing Loading Adjusts in Seconds w/Revolutionary New Machined Wingrod Ballast System
Controls: Wingeron & Elevator • Wingspan: 62 Inches, 7.75" Root, 5.75" Tip • RG-14 Airfoil

Distributed By:
Torque & Recoil Club • 7004 Chinook • Austin, Texas 78736
Ph/FAX 512/454-0061

VISA **MasterCard**

Plane Talk™



BRINGS YOU
A QUANTUM LEAP
IN TECHNOLOGY FOR
BROADCAST QUALITY VIDEO

Ready to Use
Hobbyist & Commercial
Airborne Video Systems



☆☆100% FCC Legal☆☆
for use anywhere in the U.S.A.

For the Hobbyist

S.O.S. Model™ Video Systems

SOS FM 2.4
Color w/remote Head
SOS FM 2.4 BW
Small B&W Package
SOS FM 2.4 CAM
Transmitter for
Camcorders



Available in PAL Format
5 Mile Range

No Vibration Problems
Nothing to Assemble

No Airborne Receiver Interference

For Commercial Use

Minilink 2.4™



Commercially Rated
FCC Approved
No License Required
Five Channels

Built by R/C Flyers for R/C Flyers



Plane Talk™
(714) 650-5004
fax (714) 432-0205
Or send a S.A.S.E. to:
P.O. Box 11364
Costa Mesa, CA 92627

ASK-21 (2m)

Wing Span: 83" Airfoil: E374
Weight: 42 oz. Wingload: 11 oz/sq. ft.
ARC Wing Kit: US \$185.00 + 15.00 S&H



SALTO H101

Wing Span: 53" Airfoil: GOE 795
Weight: 16 oz. Wingload: 11 oz/sq. ft.
ARC Wing Kit: US \$145.00 + 10.00 S&H



SPARK electric sailplane

Wing Span: 71" Airfoil: E211
Weight: 48 oz. Wingload: 12 oz/sq. ft.
ARC Wing Kit: US \$187.00 + 15.00 S&H



Etienne Dorig
381 Joseph-Huet
Boucherville, Quebec
J4B 2C5 Canada
(514) 449-9094



Sport Flyers

Our FIFTH year of offering RC fliers the ONLY fully underwritten (not self-insured)
liability benefit with A+ rated insurance companies.

\$2,500,000 per Occurrence Liability
Coverage

FREE Event Advertising in
R/C Modeler Magazine

FREE R/C Modeler
March • June • Sept • Dec

R/C Modeler - 50% Off Newsstand
One Year Discount Subscription

\$30.00 Adult - includes \$5,000 Medical \$15 Youth (under 16) \$2.00 Opt. Medical to \$25,000

Name _____ SFA # _____

Address _____ Phone _____

City•State•Zip _____ Fax or
E-Mail _____

V/MC _____ Exp. _____

Join Toll Free 800-745-3597 • Fax to 214-522-0868
Sport Flyers • 4444 Westgrove • LB11 • Dallas, TX 75248

Membership in effect January 1, 1998 through December 31, 1999 immediately discontinued by Sport Flyers of Application by phone. R/C in mail. Family Discount \$1.00

EZ-LAM & FIBERGLASS A SMOOTH COMBINATION!

ACP has formulated EZ-Lam Epoxy Resin System specifically for the modeling industry. EZ-Lam is a proven product, used and trusted by modelers for over six years. It offers:

- ♦low viscosity
- ♦superior wet out
- ♦high strength
- ♦easy sanding

Available in 30 or 60 minute working time.

12 Oz. Kit \$12.00
24 Oz. Kit \$21.00
48 Oz. Kit \$38.00
192 Oz. Kit \$92.00
6 Gal. Kit also available

ACP offers the LARGEST SELECTION of fiberglass cloth at the LOWEST PRICES. Call or write for a FREE CATALOG & PRICE LIST.

Weight	Width	Weave	Quantity	Price
.58 oz	38"	plain	10 yds +	\$3.60/yd
.73 oz	38"	plain	10 yds +	\$1.75/yd
1.4 oz	38"	plain	10 yds +	\$1.35/yd
1.4 oz	63"	plain	10 yds +	\$2.30/yd
2.0 oz	38"	plain	5 yds +	\$1.90/yd
3.0 oz	38"	plain	5 yds +	\$1.90/yd
3.0 oz	38"	satin	5 yds +	\$2.95/yd
3.0 oz	50"	plain	5 yds +	\$2.25/yd
3.0 oz	50"	satin	5 yds +	\$4.00/yd
4.0 oz	49"	plain	per yd	\$3.90
6.0 oz	49"	plain	per yd	\$2.90
8.5 oz	38"	bias	per yd	\$7.75

14210 Doolittle Dr.
San Leandro, CA 94577
Tel. (510) 352-2022
Fax (510) 352-2021

AEROSPACE
Composite Products

1994 & 1995 A.M.A. NATS CHAMPIONS

Lasoar 1200

- ✓ Wingspan: 139"
- ✓ Airtail: SD7037
- ✓ Wing Area: 1194 sq. in.
- ✓ Ready-to-fly weight: 100 oz.
- ✓ Wing loading: 12 oz./sq. ft.
- ✓ Full-depth laminated spar - 8 layers carbon fiber / 7 layers balsa
- ✓ Uses 25-40 size electric motor on 16 or more coils
- ✓ Carbon fiber encased in brass wing rod

- ✓ Aspect Ratio: 16:1
- ✓ Winch launch capable
- Price: \$395

Simply the best performing electric glider ever!

LASOAR 1200 AND LASOAR 650

Lasoar 650

- ✓ Wingspan: 92"
- ✓ Airfoil: Eppler 387
- ✓ Wing Area: 650 sq. in.
- ✓ Ready-to-fly Weight: 50 oz.
- ✓ Wing loading: 11 oz./sq. ft.
- ✓ Easy to lift/launches in 45 sec. on .05 geared motor on 7 cell
- ✓ Effective spoilers for very precise landings
- Price: \$240



THE HIGHEST PERFORMANCE ELECTRIC SAILPLANES AVAILABLE

PERRET'S STUDIO
1780 Prytania Street
New Orleans, LA 70130
(504) 524-3442

KITS FEATURE:

- ✓ Presheathed Oboche Wings
- ✓ Epoxy glass/Kevlar carbon fiber-reinforced fuselage
- ✓ Pre-cut flaps, ailerons & servo wire holes (650 has ailerons only)
- ✓ All balsa, plywood, and hardwood included
- ✓ Pre-labrated motor mount

thermo flügel

& Fiber Glas Flügel

from

WINDSPIEL MODELS

Importers of Fine
R/C Scale Sailplanes & Dealer
for JR Radio

COBRA
3500mm, HQ 1512



ASW 24
4200mm, Eppler E-203



ASW 20
3500mm, Flitz II mod.



Our Full Color Catalog
for Fiber Glas Flügel
in English is \$10.00 U.S.

Scale & Competition Sailplanes
Almost Ready to Fly Kits
Several Sizes

AMIGA
4000mm, HQ 312 mod.



Please send SASE for more Thermo Flügel information to:
Windspiel Models, P.O. Box 2121, Coeur d'Alene, ID 83816
(208) 667-2276 • FAX (208) 667-8712

Mastercard & Visa

IMPROVED PERFORMANCE FOR 1995



The 1995 models of every sailplane made by RnR incorporate design and construction improvements suggested by you, our customers. All wings are now laid-up at a 45 degree bias using lighter and stiffer materials to decrease weight and increase torsional stability. All fuselages and other parts are also built stiffer while keeping the weight to a minimum.

PRODUCTS™ Ask about complete building services

Still At 1991 Prices!

SYNERGY III SE

Models have white fuselages, wing tops, stabs. Choice of colors on wing bottoms and rudder.

Synergy III SE
Span: 120"
Airfoil: S2048
Three-piece Wing
Parabolic Platform
Parts Hollow-Core Molded

THE SYNERGY SPECIAL EDITION SERIES

Lighter and stiffer layup coupled with much larger flap and aileron chords makes for higher launches, crisper performance and unbelievable glidepath control! These F3B models are now as competitive in duration contests as any duration plane—with performance to spare.

Synergy 91 SE
Span: 117"
Airfoil: S2048
Two piece Wing
5/8" Carbon Joints
Vents Hollow-Core Molded

SYNERGY 91 SE

Not Shown:
S2X/C
Cross Country

Parts and Joiner systems available for scratch builders.

ORDER DIRECT
408/946-4751
(WINGS-51)



PRODUCTS™

1120 Wrigley Way - Milpitas, CA 95035

Also Distributed By Slegers International 201-366-0880

A Classic is Back!

Just in Time for your Classic Sailplane Meet

THE RETURN TO RUBICS...
AND THE HISTORY OF THE ORIGINAL

BIG BIRDY

100" STANDARD CLASS
SAILPLANE KIT

WINGSPAN: 100 INCHES
WING AREA: 1049 SQ. INCHES
FUSELAGE LENGTH: 49.5 INCHES
RADIO FUNCTION: 2 OR 3 CHANNEL
W/ SPOILERS



For Kit
and
Dealer Direct
Information
Contact:

JUST PLANE FUN MODELS
3390 Paseo Barbara Road
Palm Springs, CA 92262
(619) 327-1776



1/4 Scale PIK-20

Holiday Special!
\$135.00 + \$20.00 S&H
 Offer good until December 31, 1995.

NEW!

Design Suggestions

Wing Span 150"
 Airfoil E203
 Controls Rudder, Elevator,
 Ailerons, Flaps
 Control Options Spoilers

The fuselage cockpit is large enough to add full cockpit details, retractable landing gear, and aero-tow release in the nose. Just right for that extra, realistic, scale effect. Photograph shown here is a full-size PIK-20 belonging to Mike Evans.



Short Kit Contents
 64" Epoxy Fiberglass Kevlar™ Reinforced Fuselage, Crystal Clear Canopy, Fiberglass Canopy Tray, Set of Full-Size Drawings

Price: \$155.00 + \$20.00 S&H

Scale

Epoxy Fiberglass Fuselages

	Price	S&H
1/6 Scale DPS Reiter V2 (120"/Scale/4) 46" fuse, canopy, plans	\$85.00	\$10.00
1/5 Scale ASW-19/20 (132"/RITZ III/4) 54" fuse, canopy, plans	\$85.00	\$10.00
1/5 Scale Nimbus (159"/Wortman/4-5) 54" fuse, canopy, plans	\$85.00	\$10.00
1/5 Scale Rhoenbussard (112.5"/Scale/4) 40" fuse, plans	\$80.00	\$10.00
1/5 Scale ASW-17 (135"/Mod. Eppler/4-5) 49" fuse, canopy, tray, dwg.	\$90.00	\$10.00
1/5 Scale Orlicz (135"/E392/3-4) 49" fuse, canopy, tray, dwg.	\$80.00	\$10.00
1/5 Scale Ormith (142"/E392/3-4) 49" fuse, canopy, tray, dwg.	\$90.00	\$10.00
1/5 Scale Salto (90"/E387/3) 42" fuse, canopy, plan	\$80.00	\$10.00
1/4 Scale PIK-20 (150"/E203/4-5) 64" fuse, canopy, tray, dwg.	\$155.00	\$20.00
1/4 Scale DG-100/200 (147.5"/Wortman/4-5) 64" fuse, canopy, tray	\$155.00	\$20.00
1/4 Scale Libelle (154"/RITZ I/3-4) 58.5" fuse, canopy, frame	\$155.00	\$20.00
1/4 Scale Jantar (187" or 202"/Wortman/4) 67" fuse, canopy, plans	\$155.00	\$20.00
1/4 Scale HP-18 (147"/RITZ III/4) 69" fuse, canopy, plans	\$145.00	\$20.00
1/4 + 10% Scale Salto (142.5"/RITZ I/3-4) 61" fuse, canopy, frame, plan	\$155.00	\$20.00
1/4 Scale SZD-30 Pirat (147"/Clark Y/4) 62" fuse, canopy, plans	\$155.00	\$20.00
1/4 Scale Kestrel (167" or 187"/RITZ/4-5) 63" fuse, canopy, frame	\$155.00	\$20.00
1/3 Scale ASW-19/20 (16.5"/Wortman/4-5) 89" fuse, canopy	\$250.00	Call
Semi-Scale ASK-14 (90" or 110"/flat bottom/4) (motor glider .15 cube in. or electric) 40" fuse, canopy, plans	\$80.00	\$10.00



**VIKING
 MODELS,
 U.S.A.**

**Serving Scratch Builders
 Since 1979**

2 Broadmoor Way
 Wylie, TX 75098-7803 U.S.A.

**(214) 442-3910
 FAX (214) 442-5258
 9:00 A.M. - 5:00 P.M. CST**

These epoxy fiberglass fuselages include suggested specifications (Wing Span/Airfoil/Radio Channels). We do not carry a large inventory, but rather custom make each fuselage as the orders are received. Please allow 6-8 weeks for delivery on partial/short kits and canopies.



NEW!

Design Suggestions
 Wing Span 60"
 Airfoil - Root NACA 63A010 10%
 Airfoil - Tip NACA 0008 8%
 Wing Loading Appx. 10.5 oz./sq. ft.
 Controls Aileron, Rudder,
 Elevator
 Designed by David F. Woods.
 Recommended for expert slope flier.

Short Kit Contents
 43" Epoxy Fiberglass Kevlar™ Reinforced Fuselage, Plans
Price: \$65.00 + \$10.00 S&H

AEOLUS III

Canopies & Accessories
 An in-house vacuum form machine allows us to produce our own canopies, which are made using PETG.040. If you are looking for a canopy or other vacuum formed accessories (including sailplane, power, etc.), please let us know. We have a large inventory of canopies and do short production runs. Manufacturer inquiries are welcome.
 Glider type from 11" - 24"
 Standard type from 4" - 18"
 Detailed type from 6" - 13"
 Others - Various Sizes

Price Range:
 Glider Type \$5.00 - \$18.00
 Standard Type \$4.00 - \$12.00
 Detailed Type \$4.00 - \$12.00



Servo Cover Set w/Instructions
 Covers 1 1/2" x 1 1/2" Servo Well
 Trimming Req. \$4.95 per set

**Need Custom
 Mold Making?**
 Please call

Thermal or Slope

Epoxy Fiberglass Fuselages	Price	S&H
Aeolus III (60"/NACA 63A010/3) 43" fuse, plans	\$65.00	\$10.00
Condor 3m (bolt-on wing mount/up to 10" chord) 52 1/4" fuse, nose cone	\$80.00	\$10.00
Contestant (148"/E205/3-4/10.5" chord) 60" fuse, canopy, tray	\$80.00	\$10.00
Elf 2m (bolt on wing mount/up to 10" chord) 44 3/8" fuse, nose cone	\$70.00	\$10.00
Factor (83"/E193/3) 41" fuse, hatch, plans	\$75.00	\$10.00
Oden (100-130"/83021/As Req./10.25" chord) 51" fuse, canopy	\$75.00	\$10.00
Raven 3m (119"/Mod. E193/As Req./10.75" chord) 51" fuse, plans	\$80.00	\$10.00
Smoothie (100"/None/Var.) 49" fuse, hatch	\$70.00	\$10.00
Special Edition (100-130"/Any/As Req./9.625" chord/bolt-on wing) 54" fuse, nose cone	\$80.00	\$10.00
Stiletto I (100-136"/Any/As Req./10" max. chord/plug-in wing) 49" fuse	\$75.00	\$10.00
Stiletto II (100-136"/Any/As Req./10" max. chord/bolt-on wing) 49" fuse	\$75.00	\$10.00
Stiletto RG-15 (100-136"/RG-15/As Req./plug-in wing) 49" fuse	\$75.00	\$10.00
Stiletto HQ 25/9 (100-114"/HQ25/9/As Req./10" root cord/plug-in wing) 49" fuse	\$75.00	\$10.00
Zen (100"/None/Var.) 51" fuse, hatch	\$75.00	\$10.00

All fuselages are Kevlar™ reinforced.

??NEED WINGS TO GO WITH THESE FUSELAGES??

Selected foam cores are available thru Elf Engineering:

Dale King
 1111 Highridge Drive
 Wylie, TX 75098
(214) 475-8093

Foam cores or Ben Matsumoto, custom, glass bagged wings, stabs, rudders and other building services for all Viking Models, U.S.A. fuselages are available thru California Soaring Products, and Slegers International.

California Soaring Products, Paul Ikona
Orders: (800) 520-SOAR
 Inquiries: (818) 966-7215
 FAX: (818) 966-7915
 Slegers International, Ed Slegers
(201) 366-0880, FAX: (201) 366-0549

S&H via U.P.S. - Continental U.S.A.
 (Texas residents add 7.25% state sales tax.)

Check or money order only, U.S. funds, please. C.O.D. \$4.75 additional. Prices subject to change without notice.

VULCAN 2M

V-tail

Vucanistics:

Wing Span 78.73"
Weight 33 - 38 oz.
Airfoil (8 1/2%) S7012
Wing Area 556.55 sq. in.
Wing Loading 9.25 oz./sq. ft.
Aspect Ratio 11.13:1
Average Wing Chord 7.07"

...Designed
by Mark
Allen

Pre-sheated wings
Epoxy, high tek fuselage

SLEGERS INTERNATIONAL

Route 15, Wharton, New Jersey 07885

(201) 366-0880 - FAX (201) 366-0549
9:30 A.M. - 5:00 P.M. (Closed Sun. & Mon.)

High Quality Electric & Non-Electric Sailplanes,
Radios, and Accessories for the Sailplane Enthusiast

Now there are three locations to serve you better! Our sailplanes are available direct from us or from:

KENNEDY COMPOSITES, 15209 CR. 1227, Flint, TX 75762 • (800) 561-1074 • FAX (800) 561-3193

CALIFORNIA SOARING PRODUCTS, 1010 North Calumet, Covina, CA 91723 • (800) 620-9049 • FAX (810) 960-7915

★ VISA ★ MASTERCARD ★ AMERICAN EXPRESS ★ DISCOVER ★

PRISM

UNLIMITED THERMAL DURATION SAILPLANE

PRISM STANDARD TAIL.

Specifications

Wing Span	117"
Wing Area	910 sq. in.
Stab Area	102 sq. in.
Airfoil	SD7037
Aspect Ratio	15:1
Weight	60-65 oz.
Wing Loading	9.8 - 10.5 oz./sq. ft.

PRE-SHEATED WINGS AND STAB
TRIPLE TAPER WING PLANFORM
SERVO BAYS ROUTED & WIRE CHANNELS CUT
ROUTED HINGE LINE W/PLYWOOD ROOT RIB PRE-INSTALLED
FIBERGLASS W/CARBON FIBER KEVLAR REINFORCED FUSELAGE
SLIP ON NOSE CONE
3/8" TITANIUM WING ROD
COMPLETE INSTRUCTIONS & HARDWARE

NEW!!

PRISM V-TAIL
You asked for it...
And, now it's here!!

SLEGERS INTERNATIONAL

Route 15, Wharton, New Jersey 07885

(201) 366-0880 - FAX (201) 366-0549
9:30 A.M. - 5:00 P.M. (Closed Sun. & Mon.)

High Quality Electric & Non-Electric Sailplanes,
Radios, and Accessories for the Sailplane Enthusiast

Now there are three locations to serve you better! Our sailplanes are available direct from us or from:

KENNEDY COMPOSITES, 15209 CR. 1227, Flint, TX 75762 • (800) 561-1074 • FAX (800) 561-3193

CALIFORNIA SOARING PRODUCTS, 1010 North Calumet, Covina, CA 91723 • (800) 620-9049 • FAX (810) 960-7915

★ VISA ★ MASTERCARD ★ AMERICAN EXPRESS ★ DISCOVER ★

LARGE Scale gliders available



Roedelmodel ASK 21

(1/4.5) 4.2 meter span (165"), wing profile E393 mod., weight ca. 3900g.

Roke ASK 18

(1/3.85) 4.15 meter span (164"), wing profile E193/197, weight ca. 4600 g.

Roebbers Discus

(1/3.75) 4 meter span (158"), wing profile HQ 3.0/14, weight ca. 4200g.

Roebbers ASW 24/27

(1/3 .75) 4 meter span (158"), wing profile HQ 3.0/14, weight ca. 4200 g.



ASK 18

Other sailplanes and towplanes up to 6 meters in stock.
Sailplanes Unlimited, Ltd.,

63 East 82nd Street, New York, NY 10028 Phone (212) 879-1634 Fax (212) 535-5295



CALIFORNIA
SOARING
PRODUCTS

HOBBY SHOP
OPEN TO THE PUBLIC

FOR ORDERS ONLY
(800) 520-SOAR
VISA • MASTERCARD • DISCOVER
FAX (818) 966-7915
INQUIRIES: (818) 966-7215

KITS IN STOCK

NIGHTHAWK 60"	RG15	\$195.00
VULCAN 2M	S7012	\$239.00
SPECTRUM 2M	SD7037	\$259.00
SKY HAWK 116"	SD7037	\$359.00
SPECTRUM 104"	S7037/RG15	\$359.00
PRISM 117"	SD7037	\$359.00
ELECTRIC HAWK 74"	SD7037	\$229.00
AVENGER	SD7037	\$185.00
PRISM V-TAIL	SD7037	\$359.00
BARRACUDA	S7080	\$395.00
STEVE LEWIS F3B EAGLE		CALL
MM GLIDER TECH LINE		CALL
C.R. AIRCRAFT RENEGADE COMPOSITE RG15		\$269.95
C. R. AIRCRAFT CLIMMAX PRE-FAB HLG		\$169.95

WEST COAST DISTRIBUTOR FOR
SLEGERS INTERNATIONAL • (201) 366-0880

(Prices do not include S&H and Calif. sales tax.)

USED KITS & RADIOS

JR 347, COMPLETE	\$220.00
ACE MICRO PRO 8000	
DUAL STICK W/2 MODULES	\$300.00
FALTRUM, COMPLETE RTF	\$575.00
BIRD OF TIME, ARF	
GLASSED FUSE & WINCHABLE	\$275.00
CUMIC + RTF (ADD ELECTRICS)	\$175.00
BOB SEALY LASER, ARF	
124", 62 OZ., SD3021	\$185.00
DIAMOND MOLDED W/SERVOS, RTF	\$500.00
MAKO 114" V-TAIL W/SERVOS	\$550.00
USED VISIONS, PCM RX'S, XMTR BATTERY PACKS	VARIOUS PRICES

YOU MAY BE A SOARHEAD IF:

#2 - You tried to cycle your NiCads and got them caught in the chain.

PRISM V-TAIL

WING SPAN	117 IN.
AREA	910 SQ. IN.
STAB AREA	102 SQ. IN.
ASPECT RATIO	15:1
WEIGHT	80 - 85 OZ.
WING LOADING	9.8 - 10.5 OZ./SQ. FT.
AIRFOIL	S7037
PRICE	\$359.00

CALIFORNIA
SOARING
PRODUCTS



Soar Head.

SLEGERS INTERNATIONAL © 1994

California Soaring Products, 1010 North Citrus, Covina, CA 91722

Closed Mon., Tues. - Thurs. 11:00 AM - 6:00 PM, Fri. 11:00 AM - 9:00 PM, Sat. 11:00 AM - 6:00 P.M., Sun. 11:00 AM - 3:00 PM

JR RADIOS
HITEC RCD RADIOS
AIRTRONICS RADIOS
ACCESSORIES
MODELING TOOLS
BUILDING MATERIALS
COVERING MATERIALS

SAILPLANE KITS:
SLOPE SCALE ELECTRIC
PREVIOUSLY OWNED

"WINGS BY
MATSUMOTO"
CUSTOM BAGGED.
CALL FOR QUOTE.

PLEASE SUPPORT
THE F3B TEAM!

T-SHIRTS (M, L, XL) .. \$10.00
White, red, or blue 50/50 w/graphics on
back & on sleeve. Contrast blue lettering
on white; white lettering on blue or red.
HATS \$7.50
VISORS \$7.50