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R/C Soaring DIGEST

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A Publication for the R/C Sailplane Enthusiast!

R/C SOARING DIGEST

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The cover photograph was taken by Sean Sharif of San Jose, California at the Los Banos Slope Scale SOAR-IN 1995. The 1996 event is scheduled for May 17 - 19th. For additional information about this event, please see the events schedule in this issue.

SLOPE FLYING AT LOS BANOS

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

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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
Bill & Bunny Kuhlman (B²), Robin Lehman, Fred Mallett, Steve Savoie, Martin Simons, Jerry Slates, Ed Siegers, 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

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The Soaring Site

Several of our authors have been on vacation from writing for awhile now, as we're sure most of you have noticed. We appreciate the fact that they have each taken time out of their busy lives to share their love of sailplanes through these pages. A simple, "Thanks," just doesn't seem enough. While we hope that they may find the time down the road to write a bit more, it's time for a changing of the guard, so to speak.

Yes, Robin Lehman of New York will be writing on a monthly basis for awhile with a new column he calls "Hot Air". It seems that, much to Robin's surprise, he has more to say than he thought he had! And Steve Savoie of Maine is joining us this month, too, with a column he calls, "Short Cuts". Thanks, guys!

This year seems to signal change. Much like the weather or the phase of the moon, little notes and things can often times say a lot. Perhaps it's time for *RCSD* to change a bit, too. In his recent editorial, David Garwood, Soaring columnist for *Model Aviation*, said, "*RCSD* is the longest running journal and voice of US soaring activity." Why has it been around for so long? Because you want it to... It's as simple as that. And, why do we really do it? Because we're appreciated.

One recent note said, "*RCSD* is too valuable a resource to just fade away." Hmmm. Well, it's your resource, readers. You keep us posted, write the articles, tell us about events, and do numerous other little things. So, if we need to say we're "The Journal for the R/C Sailplane Enthusiast" or some such, that's up to the input we receive from those of you that support us, write articles, and lend a helping hand in many ways, each and every month.

And, by the way, we don't have any intention of just fading away, and we hope this dispels some of the rumors floating around out there, today.

Happy Flying!
Jerry & Judy Slates

Ten year old Blair Carmichael steadies Libelle wing tip for dad.

Withering Heights
Or, How to get a 20 pound package to 2000 feet!

...by Asher Carmichael
Spanish Fort, Alabama
(Photos by Robin Lehman.)

When was the last time you were really excited about a new aspect of soaring? Was it the first climb-out from a hand launch or maybe your introduction to full-house controls? I have recently been excited by air towing and large scale sailplanes, and I would like to share some of my enthusiasm with you.

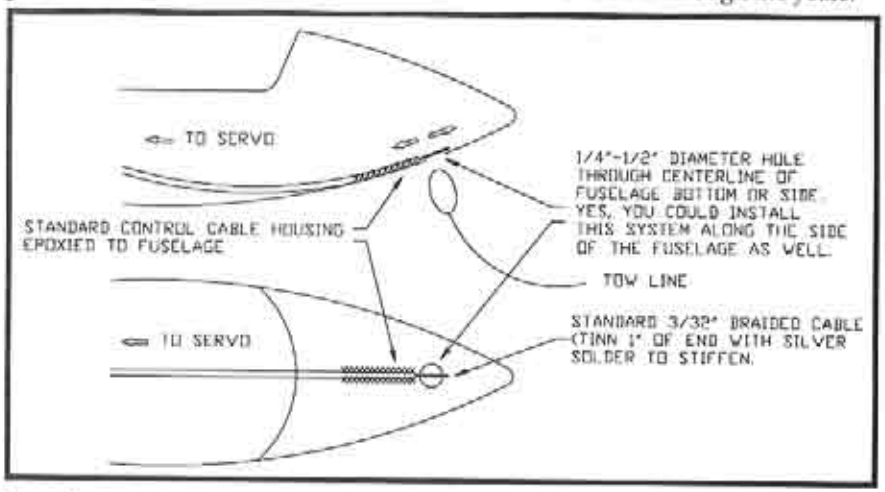
One of my dreams has been to fly a large scale "glass slipper". You probably know the picture, twenty feet or so of gleaming white wings curled up in the classic arc, right from the cover of *Soaring* magazine. Little did I know that my dream would be fulfilled along with the excitement of air towing.

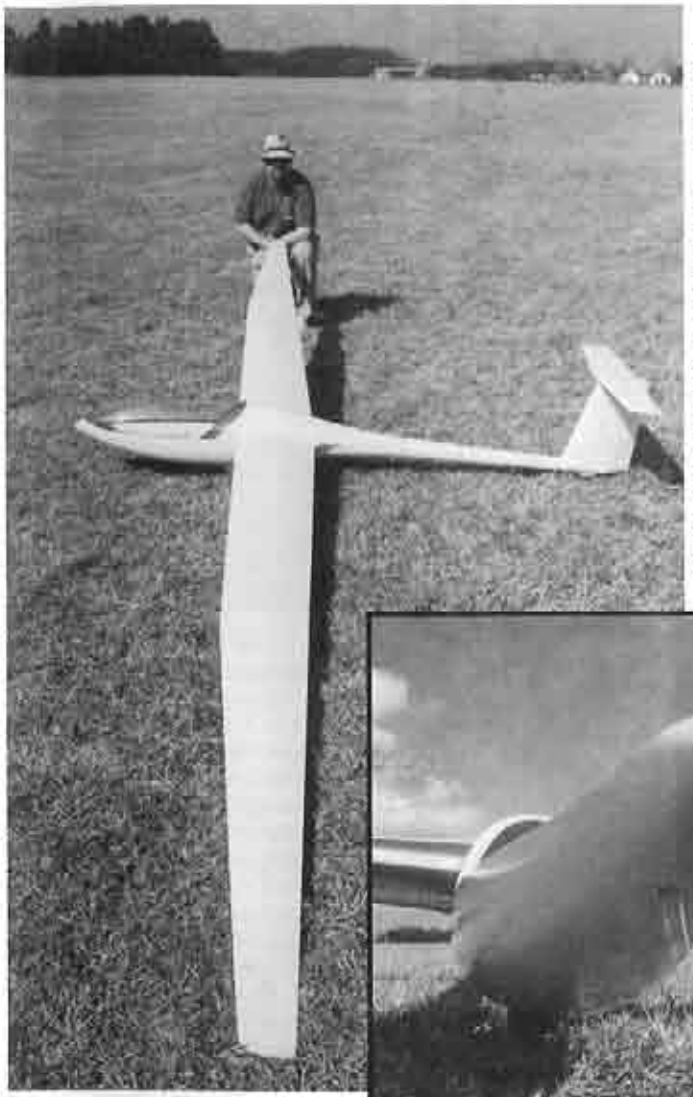
I have had several small scale gliders in the past, and they all flew well, but the desire to progress upwards to where the numbers really get impressive always seemed elusive because of the problem of getting a really good launch from a winch.

You see, we have no slopes along the Gulf Coast, and airtow was something for the "power guys" until late last year. My flying partners and I had been reading the various articles on airtow by Robin Lehman and we decided that this was the way to go.

Rusty Rood and Tony Fiorentino put together tow planes for our first attempts with input from Robin and other power fliers in our area.

I, in the meantime, was repairing a 1/4 scale ASW 20 and finishing up a 1/3 scale DG 600. We also managed to pool our funds and purchase a used 1/3 scale Libelle, the "orange pumpkin", as it was affectionately known by those who have owned it through the years.





Asher's 1/3 DG 600 Rosenthal fuselage. The rest is scratch built.

Tow release on Asher's DG 600.

We started out towing the ASW 20 behind Tony's tired, but capable, Senior Telemaster with a Super Tigre 90. It did the job, but we just couldn't seem to make the downwind leg after takeoff. We found ourselves fighting the tendency of the sailplane to overtake the towplane with an ensuing oscillation problem. We got a little higher than winch height with only one leg flown, but we were not satisfied. Robin coached as best he could through his articles and over the phone. "Practice, Practice, Practice... Fly wide circles, trim the towplane and sailplane for climb, and keep the sailplane over the towplane." It worked, but we were not getting the 1500 - 2000 foot tows that Robin claimed.

When Rusty announced that his combination of Senior Telemaster and Walker 3.2 was ready, we thought our problem was solved. There was enough power to overcome any obstacles in our search for the "outer limits". We stepped up in size to the 1/3 Libelle, but the same problem plagued us even though the Telemaster had plenty of power. Rusty and Tony are both excellent pilots and I do all right, myself. What's wrong, we asked? In our conversations, Robin indicated that he would be down our way in February and asked if we

Asher Carmichael with his 1/3 Krause Libelle. A very nice floater!

Tony Fiorentino with his Roke SB 10.

Talented tow pilot Rusty Rood. Perfect tows and he's only been flying power one month. Self taught!

would like to arrange a day or two of flying. "Twist our arms," we said.

Robin watched us the first couple of flights and didn't have much to say. Then, he asked Rusty for the "box". Up we went, Libelle trailing along behind the Telemaster as it responded to the master's hand.

First turn, then downwind leg. I thought, "Here it comes. What's going to be different this time?" We make 500 feet; then, 750. Hey, we're headed back across wind after a downwind leg, then upwind again; the "elevator" kicked in - 1000, 1250, 1500, 2000 feet! Robin asked, "Don't you want to get off? I'm having trouble seeing." Everyone just stood there, gathering their lower jaws up off of Site 8, the location where we fly...

I released and managed to miss all the questions thrown at Robin as I eased the Libelle back to earth. "That was fantastic! What happened? What was different?"

The difference started to become apparent after several more tows. Here are a few observations from those of us who are just learning and are fortunate enough to have experienced Robin's tutelage first hand.

1. A good tow is dependent on the tow pilot. Who would have "ever-a-thunk it"? A great candidate for a tow pilot is an FAI pattern flier. Find one who can fly a smooth circle and isn't "afraid" to come to the soaring field and be "hooked" on "towing". Robin says it happens every time. Towing requires smooth flying on the tow pilot's part. Fortunately for us, Robin says that Rusty is one of the best.
2. Circles are important if for no other reason than you won't fly out of sight. Remember when I spoke about downwind legs? We've learned not to fly straight legs. On downwind and crosswind legs, keep the tow plane moving in a large arc or circle so that you can see the tow process easily. This large turn also ensures that the sailplane moves to the outside of the circle which keeps the tow line taut. You definitely want to avoid slack in the tow line. Again, don't fly straight downwind; always keep things turning and climbing.
3. Trim the sailplane so that it is in a climb attitude. It must remain above the tow plane. Trim the tow plane, likewise. This ensures that no or minimal elevator input is required for tow plane and sailplane.
4. Don't hesitate at take-off. Have the tow pilot apply full throttle and go for it. He can always back off once you are both airborne. None of this slow acceleration stuff. Punch it, and go. The sailplane wing tips may skid once or twice, but the acceleration makes those skids incidental as you rapidly gain aileron control to help avoid them.
5. Try uncoupling rudder at take-off or using the appropriate stick for rudder, only. Use ailerons to level the wings; use the rudder to straighten the fuselage with direction of tow.
6. Use a bungee in the line to avoid severe jerking. Robin has plenty of information on tow lines in previous articles. Use his experience. As he told us, many of the ideas he has come up with are the result of a crash.
7. Within reason, you can't have too much power on the tow plane. See Robin's other articles on good combinations.
8. Have reliable releases on both planes.
9. The tow plane doesn't have to drop the tow line before landing unless there is a chance of catching it on something like a fence or tree on final.
10. Apply minimal inputs to both planes on tow. The sailplane should only need the wings leveled occasionally in the turn to ensure that it stays on the outside of the turn. Try ruddering the tow plane with minimal aileron input. This works well with some combinations.
11. Tow pilot and sailplane pilot should stand together just behind the sailplane or just off to one side so that they can communicate during the tow. The tow pilot must communicate his moves. "I'm going to turn left. Now right," etc. Plan your flight prior to beginning the tow. It helps, especially on sunny days, to plan for the flight so that you will avoid things such as flying through the path of the sun.
12. Perhaps the most important tool is the release on the tow pilot's and sailplane pilot's transmitter. Keep a finger on it throughout the tow so you won't be fumbling around looking for it in a moment of crises. You should both watch each other's planes, at least in peripheral vision, so that either can release if the situation warrants. You can always get another tow.
13. If someone within a day's drive of you is air towing and you want to learn, make arrangements to fly with them. Believe me. It's worth it. Equip your aileron ship with a tow release and go see them. A simple release is shown elsewhere.

Once you've learned the basics of the game, you'll love it. The tow pilot also certainly enjoys it. It is a quantum leap in getting a scale sailplane to working height.

In case you haven't noticed, interest in airtowing and scale is growing quickly, and several contests have been scheduled for various sections of the country, primarily in the east to date. Pick one close to you and "hook-up" with the action. You just might get excited. ■

An Aerotow Fly-In is scheduled for October 4 - 6, 1996 at Pensacola, Florida. For additional details, Asher Carmichael can be reached at (334) 626-9141 or Rusty Rood, (904) 432-3743.

■

"Hot Air"

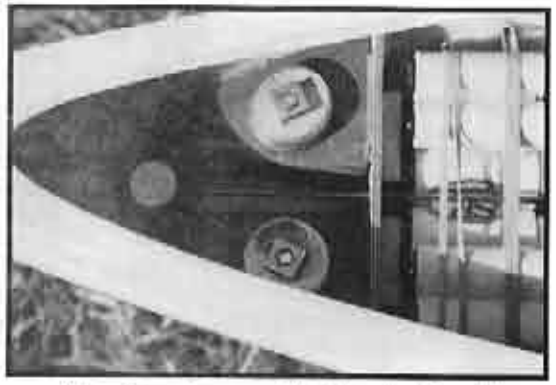
Robin Lehman
63 East 82nd Street
New York City, NY 10028
(212) 879-1634

Aerotow Fun Fly

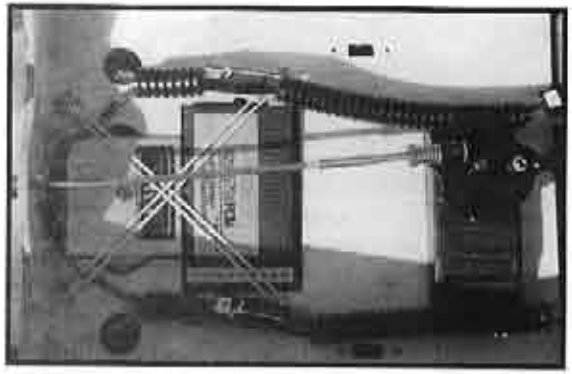
I have just returned from a short trip to visit Asher Carmichael and do some air towing with his group. I flew with them for two days and had a great time!

Asher Carmichael, Rusty Rood, and Tony Fiorentino started air towing only a month ago and are now doing just fine! Their secret is a blend of enthusiasm, good piloting, a great towplane, and some lovely scale gliders. The result is GREAT FUN!

We flew off of "Site 8" which is right near the Naval Aeronautics Museum in Pensacola. This flying site, available to these guys on weekends, is approximately one mile square of open, short grass, and will be the field used for the airtow fun fly these gentlemen are planning for October 4 - 6. Plenty of open space and forgiving grass to land on! It will be a wonderful get together!



Tow release shows part of a tube glued in with the pushrod coming through. Very simple!



The EMS battery backer is smaller than the receiver! Plug 2 Rx batteries into the unit and, if one battery runs low voltage, it switches to the other battery!

As is usually the case with intelligent and dedicated modelers, they build on past ideas and come up with some really nifty new stuff. Rusty Rood, towpilot, builder and fellow enthusiast came up with the best Telemaster towplane package I have yet seen. I'd like to pass this on for those who might be interested:

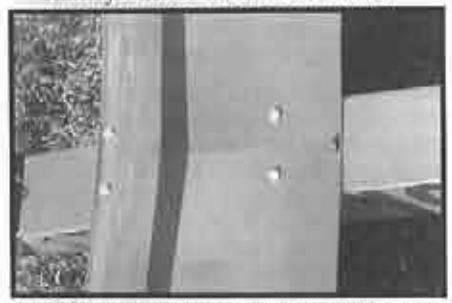
This Telemaster was built around the Walker 3.2 ignition gas engine which delivers 23 pounds of thrust with a 20 x 6.10 prop. This motor only weighs 3 1/2 lbs.! The Telemaster wing is beefed up in the center section, enough so that struts are not required, and the body is totally boxed with light ply. It weighs in at around 13 pounds! With 23 pounds of thrust, this Telemaster can pull up 1/4 sized gliders at quite a steep angle of climb, reaching a height of perhaps 1500 to 2000 feet in just a single circle. Given its pulling power and very light weight, it is certainly capable of towing up all 1/3 sized and larger gliders up to 30 pounds and perhaps more. They towed Asher's 1/3 DG 600 with ease!

The trusty Telemaster with a 3.2 Walker up front. Plenty of pulling power and very easy to fly!

The business end! A 3.2 Walker gas motor - No dirt, no vibration, and plenty of power - 23 lbs. of thrust! Wow!

Neat aileron hook-up on top of wing!

Hatch for access to servos in the rear.



Center section of wing bolted onto fuselage.

Neat tow release aft of wing.

This Walker gas engine (Brison now makes it) is one sweet and smooth running motor, with almost no vibration at all. Rusty mounted it in the airplane with rubber mounts, and this is certainly one powerful towplane, with 10 pounds more thrust than the airplane actually weighs. Wow!

I hope you enjoy the photographs! Asher Carmichael had a first flight on his 1/3 DG 600 and many flights on a 1/3 Krause Libelle. Tony Fiorentino also had many flights on his Roke SB 10.

It was really nice to get my fingers on the sticks again, as when I left New York it was ice and snow as usual! By the time I got to Florida my fingers were thawed out.

Tie Wraps

On another subject, for those who normally keep the wings on an airplane with large spring, rubber bands, or tie them in as I have in the past, Rusty Rood came up with a really nifty idea that will keep the wings on, but not put strain on the eyehooks. Simply get a large plastic tie wrap and tighten it up around the eyehooks; there you have it, the best wingkeeperoner I have yet seen. Needless to say, I will be visiting my local hardware store in the near future to buy some tie wraps!

Battery Backers

Battery backers are often complicated and some don't work. Asher Carmichael installed the Jomar battery backer in his brand new 1/3 DG 600 and this looks to be both a simple and an effective device. Just plug in two batteries (of unequal size if you wish) and fly. If one battery fails, the other one will fly you home! ■

ED: *"Hot Air"* is also the name of the newsletter for the North Bay Soaring Society. We wish to thank them for allowing us to use it for this column, as well.

The North Bay Soaring Society is AMA Charter Club #137 out of the Novato area in Northern California. The President is Courtland Rhib, Secretary/Treasurer is Bill Pearson, and Vice President and Newsletter Editor of *"Hot Air"*, a beautifully done newsletter I might add, is Mike Clancy.

Mike Clancy is also a resource for those interested in the soaring scene in Northern California. He can be reached at (415) 897-2917. *Judy*

■

Jer's Workbench

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

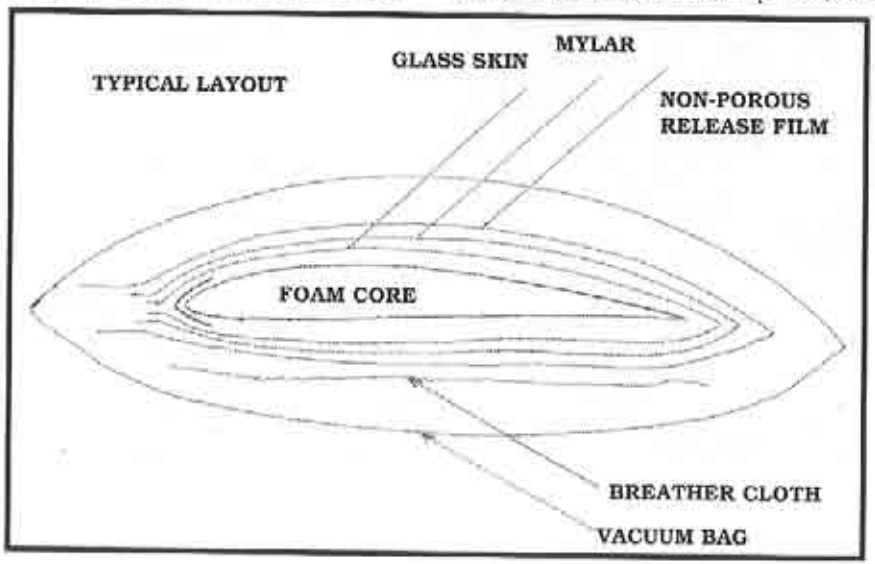
Vacuum Bagging Wings

Over the last couple of months we have been putting together the miscellaneous items required for a vacuum bagging system. This is the last step in the process, and we are now ready to start vacuum bagging our own wings.

In addition to the vacuum pump and vacuum bag, the items required are: several sheets of mylar, non-porous release film, breather cloth, fiberglass cloth, epoxy resin, and a set of foam cores.

The sheet mylar will be used to lay the epoxy resin, wetted out, fiberglass cloth on. The mylar sheet will be cut and trimmed about 1/4" - 1/2" larger than the foam cores that will be vacuum bagged. The non-porous release film is used to protect the vacuum bag and breather cloth, more or less to confine the excess or surplus resin that will be squeezed out when the vacuum is applied. The breather cloth is used to get an equal pressure over the entire length of the vacuum bag. We don't want the vacuum bag to seal itself half way down its length; there must be equal pressure at the far end, and the vacuum bag should not pull down over the end of the vacuum line.

Starting with a set of foam cores, install some sort of spar system and tubes for a plug-in wing; or, install hard points for a bolt-on wing. Install the root rib, and a false tip or wing tip. This is required because the ends of the core could be pulled down or flattened a bit when the vacuum is applied. Dents or voids in the cores should be filled using a light weight filler, and then sanded smooth. Flaws in the cores will be amplified, and



for this, there is no fix.

The thickness of mylar varies. The most popular thickness is .014", and is probably the best to use as it will make the best wing surface and hold a better trailing edge; it will also bridge any gaps or voids in the foam cores. However, this thickness will NOT bend around the leading edge. Some hand finishing will be required in order to finish the leading edges. I have seen some wings finished using .010" mylar, and it did bend around the leading edge, but I have been unable to find that size. So, I settled on .005" drafting mylar for the last couple of wings; it came around the leading edge very nicely, but I had to be very careful with the trailing edge.

How much and what weight fiberglass cloth should be used? I don't know. There are a lot of variables. How long is the wing? What kind of foam is used? Kind of spar? Are the skins carbon cloth or fiberglass? Type of flying: slope, thermal, or F3B? There is no absolute rule. All I can say is what I used on my latest thermal wing.

The wing panels are 53" long. The cores are Spyder foam; a 23" spar was installed. A 1" wide by 36" long .007" carbon strip was applied, top and bottom. The fiberglass cloth used was 1.4 oz.

I first cut a 3" strip and layed it around the leading edge. Next, a short piece, 23" long, went from the root to mid-span, and 2 layers full span. When completed, each wing weighed 13 oz.

Another set of wings are now under construction. Each panel is 67" long and the cores are again cut from Spyder foam. The spar is 40" long. The leading edge will be wrapped with 1.4 oz. fiberglass cloth; the wing skin will be one layer of 4.7 oz. 80/20 graphite/S-glass, and one layer of 1.4 oz. fiberglass cloth.

Now to vacuum bag. The cores are ready, the mylar has been cut to size, and the pre-cut fiberglass cloth is stacked and ready to apply. The next step is to wax and PVA (mold release) the mylars. (At this stage, if so desired, a coat of paint can be sprayed over the waxed and PVA'd mylar. This will transfer onto the wing.)

Next, brush a coat of epoxy resin onto the painted mylar; very carefully lay down the first layer of fiberglass cloth; use a squeegee to remove any and all wrinkles and excess epoxy resin. Lay down the next layer and apply epoxy resin and squeegee, again. Repeat these last steps until the desirable thickness is reached. Stand back and study the final result.

Are there any dry spots? If so, apply more resin. Once satisfied, squeegee one more time in order to remove any excess epoxy resin. Place foam core unto bottom skin; then place top skin on top of the foam core. Very carefully wrap non-porous release film around the mylar and foam core; insert the whole thing into the vacuum bag. Seal the vacuum bag and turn on the vacuum pump.

Some people prefer to hang the vacuum bag while the epoxy resin cures; others, like myself, prefer to lay the vacuum bag on a table and place the foam cradle, from which the wing core was cut, under the vacuum bag. Be sure that the table is flat, or the wing will be bent.

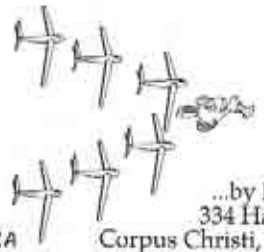
After about 24 hours, the wing can be removed from the vacuum bag. Peel off the mylar and admire the finished wing. Since most epoxy resins take about 72 hours to fully cure, the wing should be handled very carefully. The wing should rest until it is fully cured out of the way and on a very flat surface. Once cured, the edges can be trimmed.

I hope this has been some help to those of you interested in vacuum bagging wings. Take care when working with any of the materials discussed above. A well ventilated room is very important; I use disposable gloves, and try to have little direct contact with any of the materials.

Good Luck!

■

This Old Plane



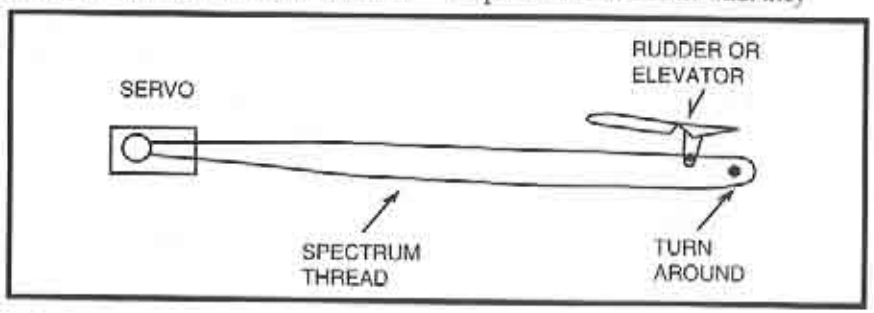
...by Fred Mallett
334 Haroldson Dr.
Corpus Christi, Texas 78412
(512) 991-3044 (Week Days)

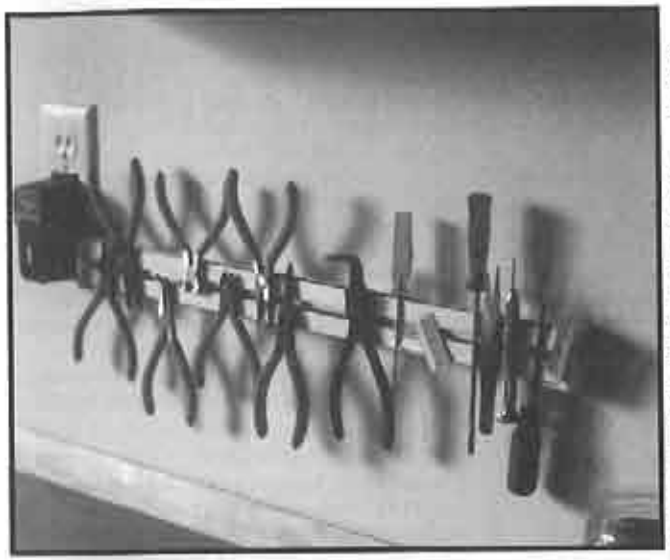
Eclectic tips.

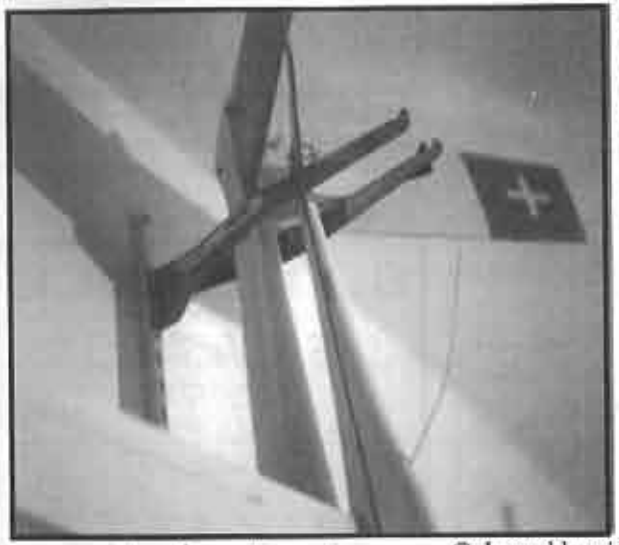
This column is going to be a fairly eclectic collection of construction techniques that were come across during show and tell sessions at contests and slope sessions this year. There were many more, but these are the only ones I remember. They include control surface connections, and mold making.

Quick molds.

Lonny, from the HOTSS (Heart of Texas Soaring Society) club, is a craftsman by trade, and always seems to come up with "better ways". He even molds his own tow hooks, and I noticed the finger throwing holes on his HLG's are forms made from fingertip molds. Talk about a fit! Turns out he has been experimenting with plaster molds for making fuselages. After calling to get some tips from his experience, and wanting to make a mold from an existing lost foam fuselage, and not wanting to take a chance on ruining it, I decided to give this a try. A local art and crap store has plaster paris, and something called Art plaster. Turns out the Art plaster was much better; it was smoother, and gave a far better surface finish. To make a mold from this stuff, it would be best to have a two part (half and half) plug; then stick half of the fuselage to a smooth surface, and goop the plaster over it (like Lonny recommended). I had a ready built fuselage, so instead built a box, and filled it with plaster; then pushed the fuse down into it just past the center line. It removed easily, and the surface was glass smooth. The problem was a few bubbles that rose to the surface and, since the fuse was on top, there were a few voids; but they were easily filled. This would not have happened with the plaster over the half plug, as the bubbles would have risen to the top (which would be the bottom of the mold). After waxing, parts made in the mold popped right out. I am told that you can use the mold many times, so long as you keep it well waxed (like any mold). It was really very simple, and I plan to use his technique more often. The only tip I can offer is to mix the plaster much thicker than they recommend on the container, to a consistency more like whipped cream. The thinner mix had lots of bubbles, and a rougher surface that I attribute to water separation during curing. After throwing that attempt away, all others came out great. I also made a one piece nose cone mold with this technique. Where this method would be real handy is in making a new plug from a lost foam fuselage. If a plane comes out well, then you want to make a mold, instead of making a new plug; use plaster to make a mold, lay up a very thick fuse from the mold, do the finish work, and you have the plug without all the work of carving.







Pull/Pull Systems

After my first pull/pull control setup (on a corndogger HLG), I need to admit to being something of a P/P freak. Now it goes into all my planes except those pure speed lead sleds for the slope, where weight means speed. Here are a few items about pull/pull that have wandered under my nose recently. Met a gentleman from Houston at Kingway Hobby who told me of using P/P in his open class, flying stab plane (forgot which one). He ran the cables to the back, and had a cross tube and screen door pulley mounted low in the fin, so that the bottom of it was in the right place to turn the cables from the servo 90 degrees so that they ran up the fin, and to either end of a control horn that pivoted on the stab pivot wire, and had the actuating wire hole in the front. Sounds like a real positive connection. Only problem is, the cables are traveling in different directions, so there is not much reason to make the turn point a pulley. Spectrum thread (white) does not fray like the kevlar (yellow) stuff you can get.

A pull/pull aileron method used that freaked me out was seen on a prototype for a Micro electric Warbird series that CAB designs is coming out with this winter. The planes are designed for speed 400 pylon racing. In testing planforms for a Hurricane, Chris wanted to quickly build a version. He put a straw in the wing core, and cut a

hole in the wings at the end of the straw. After flaring the end of the straw with heat, he just ran spectrum thread out of the holes top and bottom, and to the control horn top and bottom holes. I was laughing at how he would have to make another wing since this would never work smoothly and precisely, while he was running the threads and adjusting the controls. He was laughing after throwing the plane to me; I stood there slack jawed working the controls. The plane now has many flights on it, and still has precise control. There is very little tension on the threads, but no slop either. By the way, the production planes have a torque tube bagged into the wing, and use a short push rod similar to what you would put on a wing servo to aileron connection.

A real slop free precise pull/pull connection can be had on V-tails and elevators if there is some room designed into the fuselage tail for a turnaround behind (aft of) the control horn. This method was shown to me by Alex of the HOTSS club, on his own design open class V-tail ship called the Velocity 117. It is set up as shown in the diagram, but the trick is not to put much pressure on the lines; they are only tight enough to take out slack, and make the most precise, slope free connection I have ever seen. Much tighter than push/pull rods as there is no slop from clevises or tubes. The only thing to remember if running these over long runs (like to the tail on an open class ship) is to install a tube for the threads so that they do not try to sag so much. I have used several methods for the turnaround, from a carbon tube with no sleeve on smaller slopers and HLG's to real ball bearing pulleys to my current favorite, a thin carbon tube, with a brass tube over it that is free to spin, and short lengths of surgical tubing as stops to keep the spectrum thread from falling off the end of the tube. (Be sure the thread is in the right place before adjusting/tightening.)

Hangers

A method for hanging models in limited space is shown in the picture. Using shelving tracks from the hardware store, I took two of the brackets, and pop riveted them together; then bent them to make the two armed hangers shown. This method is good as you can combine shelves with wing, and fuselage hangers, and modify the system as your squadron of planes changes. Changes by selling planes of course; never due to crashes or anything else.

■

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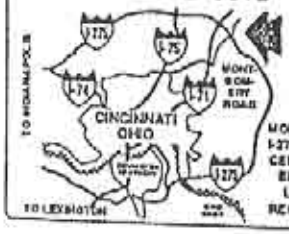

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on the Wing

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Joined 1, a super fast 'wing, and some thoughts on airfoil thickness

Here's a super fast 'wing from Germany, the Joined 1 by Hans Jürgen Unverferth. This relatively small tailless design, piloted by Peter Kowalski, flew through a measured 200 meter course in under three seconds — a speed of over 150 miles per hour. Joined 1 uses the EH 1.0/7.0, which is essentially a thinned down version of the EH 1.0/9.0 section.

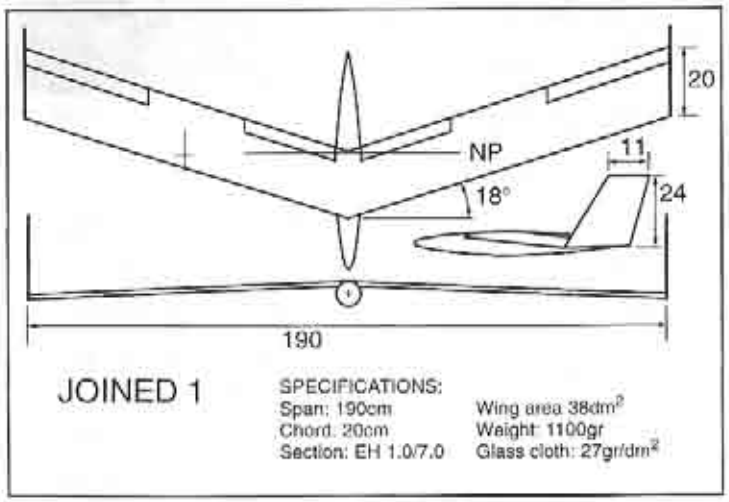
There is now a move by designers of conventional tailed aircraft to utilize thinner wing sections. Two advantages can usually be derived from going to a thinner section: lower drag and less weight. Drag is lowered because there is less frontal area, while weight decreases because less material is required to construct the wing. This latter point is especially important during the construction of outboard wing panels, as any additional mass in that area translates into inertia which inhibits roll response.

Using a thin airfoil on a tailless planform does not necessarily yield such positive results, however.

- While drag may indeed be lowered by using a thinner section, tailless planforms are inherently faster than their tailed counterparts from the outset. Joined 1, with its near record breaking performance, uses a section which is 7% thick.
- There are also structural considerations. Swept wings need both stiffness in the span-wise direction and torsional rigidity. These two goals are better accomplished with a thicker section because torsional rigidity is increased as the wing section becomes deeper, and rigidity along the span is a function of spar height.

These two points should get you to thinking about the appropriateness of a 9% section for a tailless thermal soarer. A 10% or 12% section, with 2% to 3% camber, may give superior thermal performance and provide a wider speed range. A thicker section will be better able to provide the strength needed for winch launching, yet high speed travel between thermals should not be adversely affected to any great degree.

Suggestions for future columns are always welcome. Contact us at P.O. Box 975, Olalla WA 98359-0975 or <bsquared@halcyon.com>.



Information from Silent Flight, Dave Jones Editor, Spring 1992, and personal correspondence with Dave Jones. ■

Tangerine Soaring

...Submitted by John Masiello
Winter Springs, Florida
(Article appeared in *The Buzzard*.
Editors: John Masiello & Rob Rierson.)

Orlando Buzzards held the 22nd annual Tangerine soaring championships in Central Florida on November 24, 25, and 26th, 1995. With Thanksgiving the day before the event, members and guests had plenty for which to be thankful. The Little Big Econ State Forest and the Florida Department of Forestry provided over 240 acres of prime championship flying area. Weather conditions on Friday and Sunday were near perfect with temperatures in the 70's, light winds and sunny skies. Saturday presented a soaring challenge with a front passing through central Florida and cooler temperatures. The contrast provided by these weather conditions tested the soaring ability of all competitors and truly demonstrated the high skill levels achieved by TD champions.

All contestants received a large bag of tangerines donated by Red Hill Groves of Orlando. Contestants also received an official Orlando Buzzards flying cap, logo, and ticket for a multitude of door prizes ranging from gift certificates to servo savers. And of course, we can not forget Velma Goodwin's

Dr. Walt Good and his lovely wife, Joyce.

delectable world famous soaring chocolate chip cookies.

On Friday, contest director Cy Baylor announced the official start of the first day of competition. Over 85 contestants from 9 states gathered for procedures and flight requirements. The task was for 2 meter thermal duration with a first round of 5 minutes and 4 subsequent rounds of 7 minutes. Landings in designated circles provided 10 or 20 points putting a greater emphasis on thermaling ability and increased competition for

Co-Pilot, Dee Lawless showing off her husband Ben's V-tail Prism.

After the awards presentation on Saturday, contestants prepared for an evening of fine dining, camaraderie and an informative presentation by Dr. Walt Good (AMA #11). The Orlando Buzzards and guests were honored to have Dr. Good speak on the history of RC flying. His devotion and dedication to this hobby dates back to the early days of sport flying.

Sunday was the icing on the cake. The weather was near perfect with sunny skies, warm breezes, and thermals abound. Contestants from northern climates were especially thankful considering the weather conditions back home.

Orlando Buzzard's President, all. Three winches were available for launching and all rounds completed in a timely fashion.

Two pilot classifications were scored with the following results: (2-Meter)

Sportsman	Expert/Master
1) Terry Fallon	Derek Khaw
2) Terry Cusack	Brian Smith
3) Jerry Ferguson	Dick Tymic
4) Dwight Parks	John Claytor
5) Mike Picon	Carl Luft

On Saturday, weather conditions changed as a fast moving front provided a challenge to winches and contestants alike. Contest director John Claytor announced to 71 open sailplane competitors that the task required a first round of 5 minutes, a round of 7 minutes and 3 additional rounds of 10 minutes. Landing in designated circles contributed 20 landing points.

As the day progressed, weather conditions improved and all contestants completed their assignments with minor casualties.

Saturday provided the following results:

Sportsman	Expert/Master
1) Jerry Ferguson	H. Rindfleisch
2) R. D. Smith	Tom Tock
3) Rick Kiburis	Ollie Wilson
4) Paul Perret	Ray Alonzo
5) Don Cleveland	Brian Smith

Mark Kummerow

Ray Alonzo receiving his plaque from President, Hank McDaniel.

Hank McDaniel, directed the final day of open competition. He announced to 68 contestants a first round of 5 minutes and 4 subsequent rounds of 7 minute duration. Landing in designated circles netted 30 points.

Final scoring resulted in a tie for third place with Don Cleveland and Frank Mangas competing in sportsman's' class. A fly-off was required with a 3 minute flight and a graduated landing tape. A mere few points separated the competitors with Don Cleveland edging ahead. The following are the final results:

Sportsman	Expert/Master
1) Joe Melchiorre	Ray Alonzo
2) Paul Perret	*Brian Smith
3) Don Cleveland	Mark Atzel
4) Frank Mangas	W. Blanchard
5) Curtis Smith	Derek Khaw

* Won overall championship for 1995

The Big Raffle

The scores were tallied, trophies awarded, and finally it was time for the big raffle. Contestants have come to look forward to the possibility of winning that computer radio they dreamed about or that special sailplane kit they hoped for but couldn't afford. Especially when your wings just didn't make it to the winners circle.

A special thank you and much appreciation to all the supporters of the Orlando Buzzards, including the following for their generous donation: Futaba 7-channel Sailplane radio, JR 388 Computer radio, Slegers International (Vulcan Sailplane), Mark Kummerow (Assembled TMSS hand launch sailplane), Dremmel Tools, Chuck Anderson (Custom Design Program).

Throughout the day, several American Bald Eagles soared over the flying site checking out those stiff flying machines in all shapes and colors struggling to stay afloat. To watch the masters fly with so little effort builds envy and increases appreciation.

Perhaps one of the greatest experiences of thermal soaring is to fly with eagles and the Orlando Buzzards at Tangerine. Plan now to compete in the 23rd Tangerine Soaring Championships in Central Florida November 22, 23, and 24, 1996. We hope to see you there. For more info call Rick Eckel at (407)366-8852. ■

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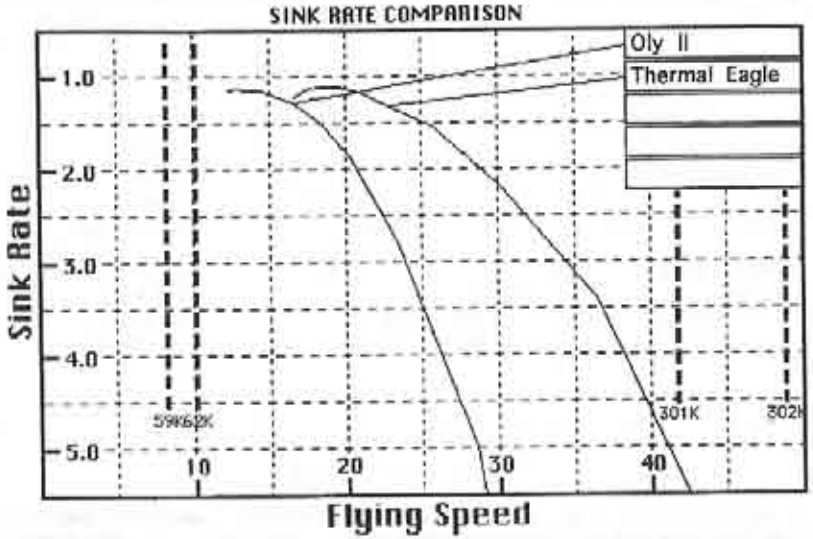
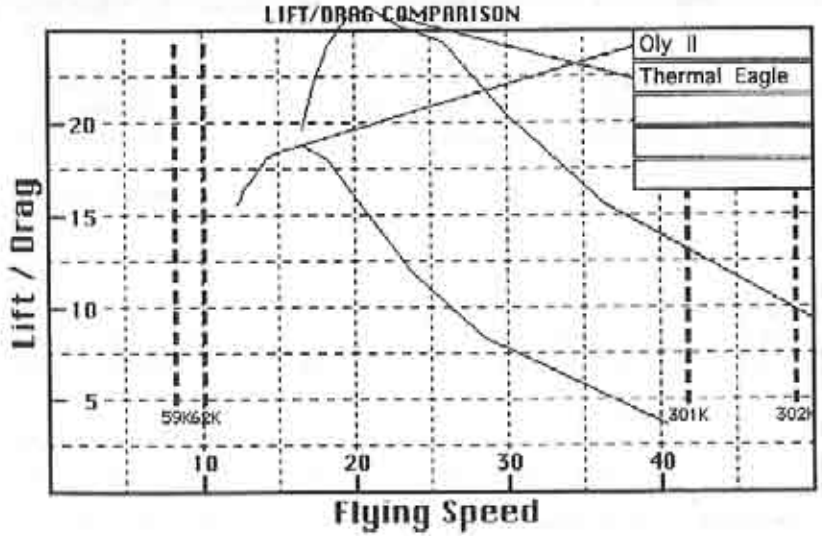
A Comparison Between The Champions Of The '50s And The '90s.

...by Charles Schmitz
Arlington Heights, Illinois

The Olympic II (Oly II) is a classic of design and construction; a light weight floater with a polyhedral wing, open wing rib sections and a slab fuselage. Match this up with the current "classic" technological design of the all composite Thermal Eagle; sleek styling, structural strength unheard of in the '50s, and a wind tunnel tested and selected airfoil. "Not fair," you say. Maybe not, but it does make an interesting study for comparison.

With the help of the MaxSoar sailplane analysis program by John and Linda Hohensee, we can compare these two classics. Some of the major differences are identified below.





Sink Rate

Major contributors to this key characteristic are wing loading, profile drag, induced drag, and parasitic drag.

Wing Loading (wing area/weight) — The Thermal Eagle has a 60% higher wing loading than the Oly II. This is the major reason the peak in sink rate is at a higher speed for the Thermal Eagle.

Profile Drag (two dimensional airfoil drag) — The airfoil on the Oly II is flat-bottomed similar to the Aquila airfoil. This is an old airfoil suited well to the "floaters" of the time. It is fairly thick at 10% and has a high camber of about 4%. The Thermal Eagle uses an RG15 which has a much thinner airfoil that reduces drag, and a lower camber which reduces the maximum lift but also reduces drag at lower lift coefficients. The low Reynolds number drag for the RG15 is actually lower than for the Aquila airfoil. The reduced max lift means that the stall speed will be higher for the Thermal Eagle than for the Oly II and the reduced drag means that the sink rate will be lower, at least for the profile drag portion.

Induced Drag (aspect ratio dependent, wing span/avg chord) — The areas of the two wings are similar, but the wingspan of the Thermal Eagle is 20% greater. This increased span means that the aspect ratio is also 20% greater, resulting in lower induced drag. Induced Drag has the most significance at low flying speeds where there are high lift coefficients.

Parasitic Drag (fuselage, control linkages in the breeze, etc.) — The

MaxSoar V3.1

DESIGN INFORMATION — Oly II — ☐ Metric ☐ Comments

WING DATA: Airfoil: AQUILAP

	Position	Chord	L.E. Sweep	Dihedral
Root	0	10	0	0
Break1	31.5	10	0	2.5
Break2				
Tip	49.5	5.5	1.5	2.6

Location: (◉) High ( ) Mid ( ) Low

Area Correction: .5

HORIZONTAL STABILIZER DATA: ☐ Tee

Span	24	Root Chord	6.75
L. E. Sweep	2	Tip Chord	4.25
Area Correction	2	Location	18

FUSELAGE DATA:

Nose Length	11
Max Height	3.3
Max Width	2.4

FIN/RUDDER DATA:

Height	10.25	Root Chord	9
L. E. Sweep	6	Tip Chord	4
Area Correction	3	Location	18.75

MISC. DATA:

Weight	42
Drag Add.	0

MaxSoar V3.1

CALCULATED DESIGN PARAMETERS — Oly II — ☐ Metric

WING PARAMETERS:

Area	909.5	Equivalent Dihedral	8.2	Neutral Point	6.12
Aspect Ratio	10.78	Rec. Dihedral	7.1	Front CG Limit	2.50
Ave. Chord	9.19	Angle of Incidence	-.9	Rear CG Limit	3.12
Aero. Center	2.55	Loading	6.65	Minimum Sink	1.14
				@ Speed	12.7
				Maximum L/D	18.8
				@ Speed	16.5

HORIZONTAL STABILIZER PARAMETERS:

Area	134.0	Ave. Chord	5.58	Long. Stability Factor	0.445
Aspect Ratio	4.30	Aero. Center	2.32	Percent of Wing Area	14.7

FIN/RUDDER PARAMETERS:

Area	66.9	Ave. Chord	6.53	Vertical Tail Volume	0.023
Aspect Ratio	1.57	Aero. Center	4.32	Sideslip Instab. Fact.	-.00089
% of W. Area	7.4				

MaxSoar V3.1

DESIGN INFORMATION — Thermal Eagle — ☐ Metric ☐ Comments

WING DATA: Airfoil: RG15P

	Position	Chord	L.E. Sweep	Dihedral
Root	0	10.00	0	0
Break1	49.16	7.00	3.00	2.30
Break2				
Tip	59.28	3.25	3.75	1.75

Location: (◉) High ( ) Mid ( ) Low

Area Correction: -4.12

HORIZONTAL STABILIZER DATA: ☐ Tee

Span	24.00	Root Chord	4.38
L. E. Sweep	0.57	Tip Chord	3.81
Area Correction	-2.67	Location	22.81

FUSELAGE DATA:

Nose Length	13.00
Max Height	2.50
Max Width	1.44

FIN/RUDDER DATA:

Height	9.38	Root Chord	9.38
L. E. Sweep	5.63	Tip Chord	4.13
Area Correction	2.40	Location	21.00

MISC. DATA:

Weight	70
Drag Add.	0

MaxSoar V3.1

CALCULATED DESIGN PARAMETERS — Thermal Eagle — ☐ Metric

WING PARAMETERS:

Area	935.3	Equivalent Dihedral	4.5	Neutral Point	6.64
Aspect Ratio	15.03	Rec. Dihedral	7.9	Front CG Limit	3.31
Ave. Chord	7.89	Angle of Incidence	1.5	Rear CG Limit	4.14
Aero. Center	3.83	Loading	10.78	Minimum Sink	1.14
				@ Speed	18.1
				Maximum L/D	25.6
				@ Speed	22.9

HORIZONTAL STABILIZER PARAMETERS:

Area	95.6	Ave. Chord	3.98	Long. Stability Factor	0.392
Aspect Ratio	6.02	Aero. Center	1.30	Percent of Wing Area	10.2

FIN/RUDDER PARAMETERS:

Area	65.8	Ave. Chord	7.01	Vertical Tail Volume	0.019
Aspect Ratio	1.34	Aero. Center	4.22	Sideslip Instab. Fact.	-.00063
% of W. Area	7.0				

Thermal Eagle is a modern sleek design, with a narrow fuselage and well faired flying surfaces resulting in low parasitic drag. The Oly II has much more fuselage area and the tail feathers are larger and less faired into the design than the Thermal Eagle. (While the MaxSoar program allows for the sleekness of the design to be included in the calculations, it was not considered for this analysis.)

Conclusion — The Thermal Eagle has a surprisingly low sink rate compared to the Oly II. The low profile drag of the RG15 at low Reynolds numbers contributes to this as well as the higher aspect ratio. The increased speed of this sink rate is due to the higher wing loading and the lower max lift of the RG15.

Lift/Drag

This plot is actually from the same data as the Sink Rate plot. In the case of Sink Rate, the speed downward (sink rate) is plotted vs speed forward (flying speed). For Lift/Drag, we calculate a new number which is the speed forward divided by the speed downward. This is the same ratio as the total lift divided by the total drag. This number is plotted vs speed forward (flying speed). The Thermal Eagle really shines when compared to the Oly II. At increasing airspeed, the low drag offered by the RG15, and the higher aspect ratio of the wing planform are significant factors.

Handling Characteristics

While not shown in the plots, the handling characteristics of the two planes do come through in the numbers. The large stab and fin on the Oly II contributes to the increased Longitudinal Stability and Sideslip Instability Factor. The polyhedral design with almost double the Equivalent Dihedral makes the Oly II a very stable design and very suited to beginners. It should also be noted that the higher flying speed of the Thermal Eagle allows good control to be maintained with smaller tail surfaces. Also, the ailerons on the Thermal Eagle do not require as much dihedral for good control in the turns.

These are some of the major items I was able to pull out of the analysis provided by MaxSoar. Scan through the data and you may find more interesting points of comparison. ■

Per John and Linda Hohensee, "The all composite Thermal Eagle in the MacSoar program is the original Thermal Eagle, from plans drawn by Jim Thomas." There were several Eagles, and this should clarify the exact plane used in the comparison.

MaxSoar is available from:
John & Linda Hohensee
ImagiSoft
648 Martin Drive
Cedarburg, WI 53012
(414) 375-9664
email: 76571,163@compuserve.com

The PC Version is available from:
Lee Murray
LJM Associates
1300 Bay Ridge Road
Appleton, WI 54915
(414) 731-4848 after 5:30 pm

■

ZIKA

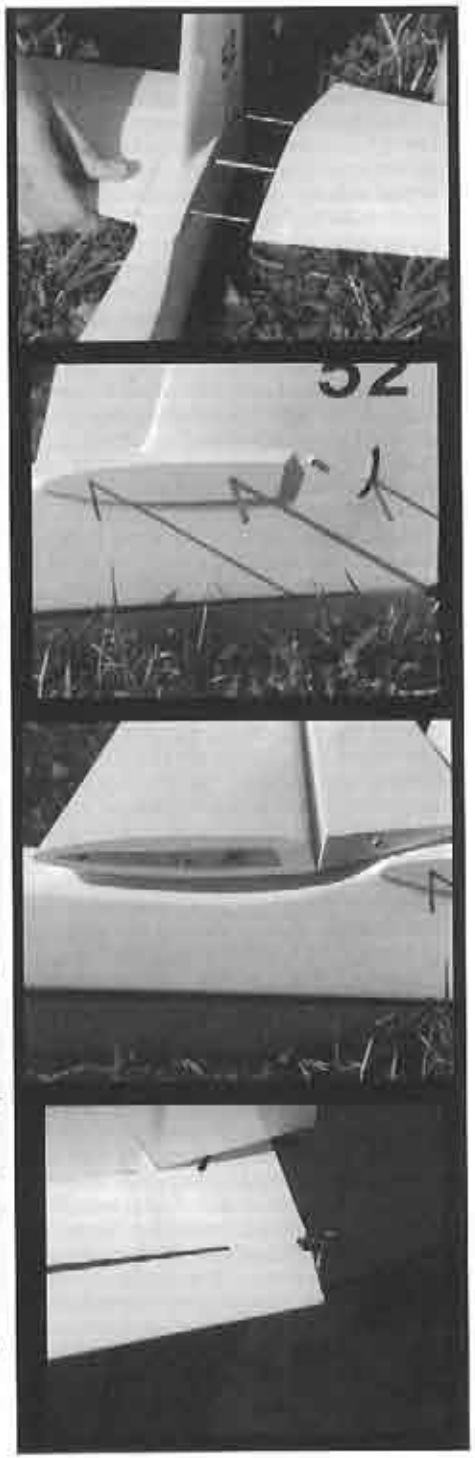
Roke ASK 18 Review

...by Jim Blum
Springwater, New York

Having finally completed and flown the Roke ASK 18, I thought I would share my experiences. The Roke ASK 18 is an exquisite quarter scale "kit" of the Schleicher sailplane, manufactured by Roland Kern of Germany. I purchased the kit from Sailplanes Unlimited, Ltd. My first impression when I opened the box was, "Wow, this is a big sailplane!" I followed that by, "Gee, there's not many parts here!" Indeed, most of the difficult tasks are done, assembly of the major pieces and covering are all that is required to complete this kit.

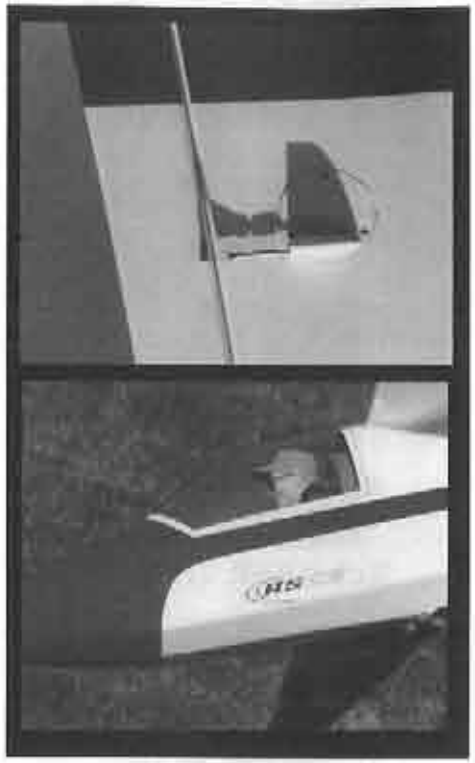
The fuselage is of fiberglass construction with a dull white gel coat finish. I decided to paint mine based on a photo I had seen. Preparing the fuselage for painting only required a light wet sanding with #400 sandpaper to insure that all traces of mold release were removed as well as to provide some "tooth" for the paint. The lack of pinholes and other surface imperfections made this the easiest paint job I had ever done. The resulting unique color scheme was well worth the effort, drawing compliments wherever it is flown.

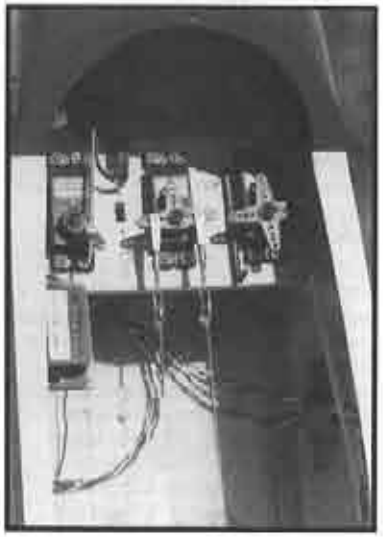
The normally tedious job of fitting the canopy was very easy due to the



excellent fit of the fiberglass canopy frame to the fuselage. The clear vacuum formed canopy was trimmed to shape and glued to the frame after a 1/4 scale pilot bust had been glued in. Next, I installed a 3" fixed wheel and an aerotow release. I make the wheel removable by using commercially available Du-Bro axle straps. A light balsa canopy is built over the wheel inside the fuselage to prevent grass and dirt from getting inside while the aircraft is rolling. I purchased a nifty German-made tow release from Sailplanes Unlimited, Ltd., which was simply epoxied into the nose. It uses a cam which captures a fishing line loop we use for aerotowing. It is small, scale-like, and foolproof. A simple ply servo tray was fabricated to hold the elevator, rudder, and tow release servos. Installation of the wing joiner mechanism has always been my least favorite chore. Things went well on this project for a couple of reasons. First, the fuselage is cavernous, allowing you to get at the piece you are trying to install. Secondly, accurate markings are provided to assist you in cutting the holes in the proper place. The joiner, which accepts the wing blades, was epoxied into place after carefully checking the alignment with a slurry of West System slow epoxy and shredded carbon fiber. A brass tube, which accepts the music wire locating pins from the wing, was installed in like fashion. A 3/8" dowel was also epoxied ahead of the wing joiner to prevent crushing of the fuselage in the event of a hard landing.

The wings included with this kit are exceptionally nice. Only a little finish sanding on the trailing edge and tips is required before covering. The joiner blades and locating pins are pre-installed along with Schempp-Hirth type spoilers. The leading edge and wingtips are installed and shaped. The ailerons are cut out, faced and ready for covering. The aileron and spoiler servo holes are pre-cut in the bottom of the wing. The wing is pre-sheeted with very nice balsa which is light and smooth. The trailing edge is straight with washout built in. After installing two micro servos in each wing (one each for aileron and spoiler), I covered with Goldberg Ultracoat Plus.





Graupner hinge tape was used to attach the ailerons. I really appreciated not having to install the wing joiner blades and the spoilers. The wings were done in just a couple of evenings.

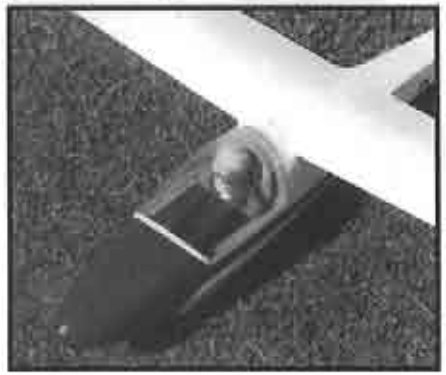
Like the wings, the rudder and stabilizers are made of white foam pre-sheeted with balsa. They are totally finished and ready for covering. The stabilizers have ply root ribs with brass joiner tubes pre-installed. A supplied bellcrank is installed in the fuselage fin which accepts the stabs using music wire rods. This allows the stabs to be removed for easy transportation. A ply rudder post was glued into the fin and Foremost snap hinges were used to allow easy removal of the rudder. I elected to use a pull-pull rudder installation, so a control horn on each side of the rudder was installed. Two small holes were drilled in the rear of the fuselage to connect the Kevlar™ rudder cable to the horns. The lack of external control mechanisms makes for a very low drag, eloquent installation.

The ASK 18 is unusually easy to rig, because the aileron and spoiler servos are all contained in the wing. No fussing with linkages and adjustments. Just plug in the two wings, the stabs, plug in the servo connections, and tighten the wing joiner. The whole operation only takes a few minutes. The recommended balance point of 2.5" ahead of the wing joiner was achieved by epoxing 12 oz. of lead shot in the nose and, using a 1500 mah receiver battery. After double checking the CG and all control surfaces, I was ready for the maiden flight. The plane came in at an all-up weight of 11.5 lbs.

I was not expecting any surprises with the "18" as two others are regularly flown at my field. My good friend, Ron Wahl, who has been flying one all summer, checked mine over and deemed it ready. Nonetheless, I was nervous as I was hooking up the towline. The first tow was conducted with my smaller O.S. 1.08 powered towplane. Glen, my tow pilot, gunned the engine, and I was airborne in less than 30 feet! I added a bit more up elevator, and kept the wings level as I followed the towplane through several large, climbing circles. When the "18" was suitably small to the eye, I released the towline and reset the elevator trim. The sailplane is a real floater; it flies very slowly and is not the least bit twitchy. Everything happens slowly, and it is very easy to turn tightly without stalling. Roland Kern certainly did his homework on the transition Eppler 193/197 airfoil. This airfoil in conjunction with the wing washout provides excellent performance with great immunity to tip stalls. When properly trimmed, the ASK 18 can be flown "hands-off". After 20 minutes, I was ready to land. Although I had flown other ASK 18's before, I had never landed one. It was easy. The slow flying speed gives you time to react properly, plus the spoilers can be deployed without a large pitch change. I now have over 20 flights on mine, the longest being 68 minutes. Scale aerobatics including spins, loops, chandelles, and stall turns have been gracefully executed.

The Roke ASK 18 has met all my expectations. It is by far the easiest quarter scale sailplane I have ever flown. It gets off the ground very quickly on aerotow, and the high wing configuration makes "catching" a tip on tow much less likely. It can be towed with a relatively low powered towplane. (We routinely use an O.S. 1.08 powered Telemaster.) The docile handling characteristics make it easy to thermal and land. I think the ASK 18 will perform well from a winch launch. The low sink rate should give good dead air time and the predictable handling will be appreciated on the winch line. While the kit is not cheap, I feel the end result represents good value. You can have a beautiful, great flying sailplane in the air in a matter of weeks, not months.

Last, but certainly not least, the ASK 18 has aesthetic appeal. The large fuselage and 164" wing span really make an impression. I have received many compliments from both sailplane and power flyers alike on the beautiful lines and flight characteristics of this classic soarer. Perhaps more than any other pre-fabricated glider I have seen, the ASK 18 has the ability to fly in a slow, steady manner, reminiscent of its full-scale counterpart. If you have ever wanted to try flying a large scale sailplane, but thought they were too difficult to build or fly, try the Roke. ASK 18. It's as good as it gets in quarter scale! ■



About Steve Savoie

Steve is a CWO4 (Naval Engineer) in the Coast Guard with 22 years service. Currently a Marine Inspector at the Marine Safety Office in Portland, Maine, he inspects Tankers, Cruise Ships, Freighters, and Small Passenger Ships for the Coast Guard. We asked Steve to tell us a bit about himself.

"I've been flying R/C Sailplanes since the summer of 1988 when I joined the SOAR Club of Chicago. I'm thankful of the splendid introduction and training they gave me. I still have my trusty trainer (OLY II) but have moved on to slope, flying wings, cross country and now scale. Not being an avid competitor, I enjoy the tranquillity and challenge of every flight. I'm just a middle of the road flier. I was one of the original founding members of the DownEast Soaring Club in Portland, Maine, and was secretary for many years until November 1995 when elected president. I'm also one of the driving forces behind the New England R/C Soaring Conventions. While everybody else is building a better mouse trap, I'm attempting to improve the mouse. Always looking for an easier and quicker way to build something: plane, tool, etc., I thoroughly enjoy the tranquillity and challenge of tinkering." ■

WINTER FUN!

Los Banos Slope Scale Soar-In

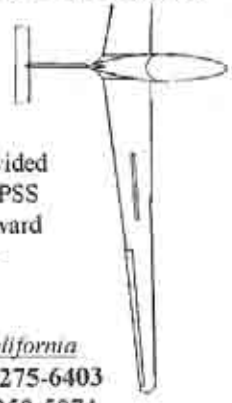
sponsored by

South Bay Soaring Society

MODERN • VINTAGE • POWER SLOPE SCALE

FUN - FLY

May 17,18 & 19, 1996



- No Scale Documentation Required
- Winches & Aero Towing will be Provided
- Awards for Best Modern, Vintage & PSS
- Special Outstanding Achievement Award
- Nearby Hotels, Motels & Restaurants
- AMA Sanctioned Event

At Los Banos Reservoir, Los Banos, California

Event Director: Lynsel Miller (408) 275-6403

Assistant Director: Sean Sharif (408) 258-5074

$15 Advanced Registration Fee - $25 on Site Registration

"SHORT CUTS"

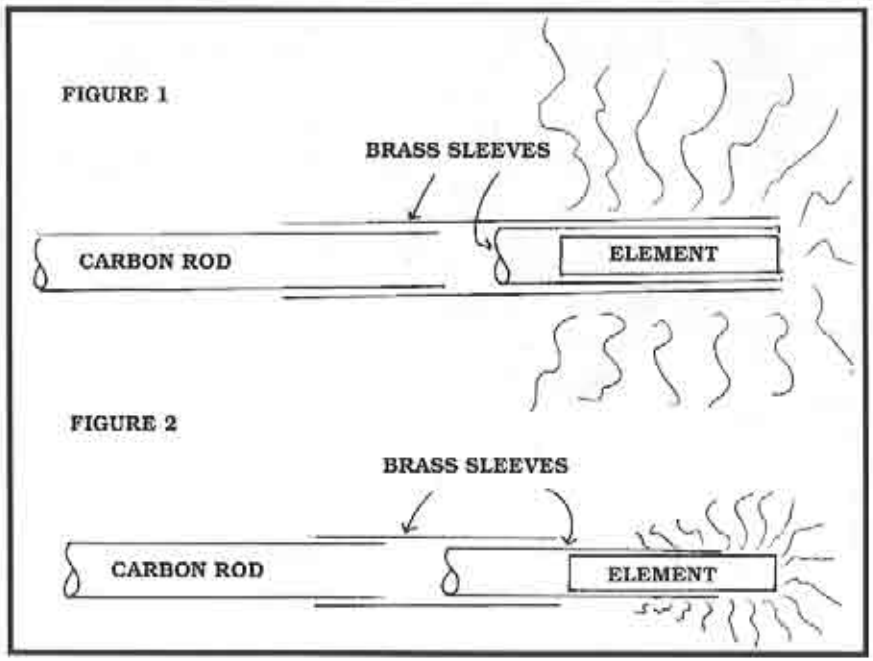
Steve Savoie
RR #3, Box 569
Gorham, Maine 04038
(207) 929-6639

Servo Channel Melt Out Tool

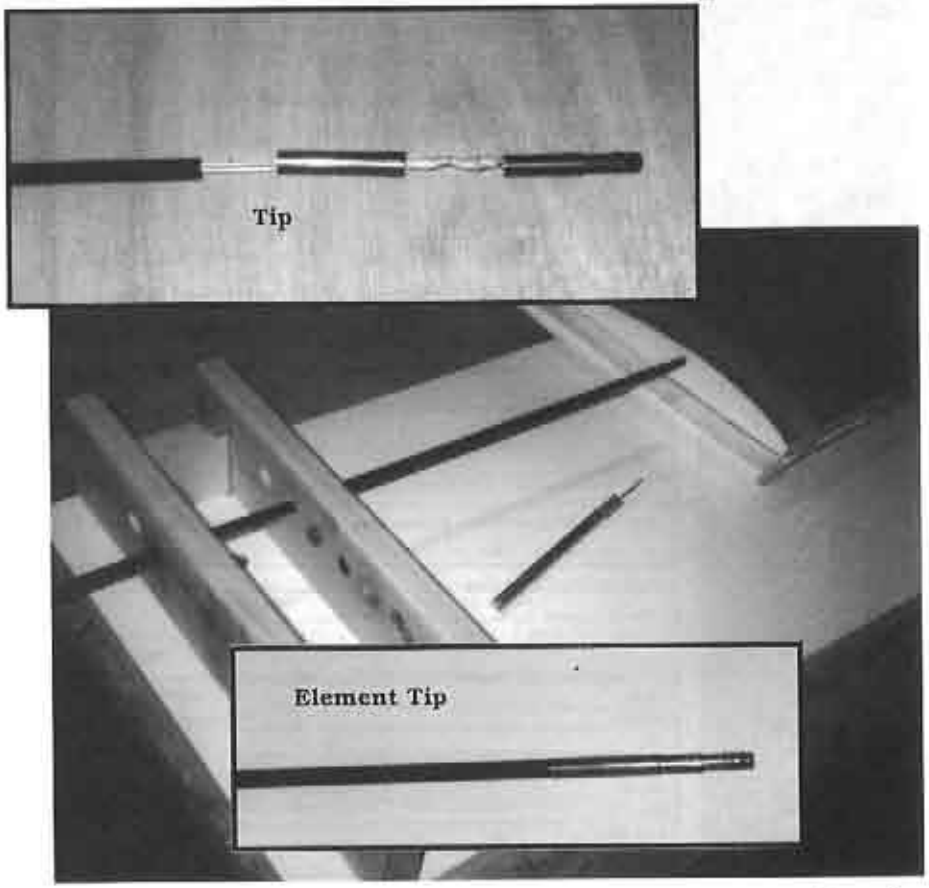
Have you ever bagged a wing and had everything come out just right with a mylar paint transfer finish and then dread the fact that you have to guide a red hot poker down the center to melt out servo lead channels? I have been quite lucky the majority of the time and have beaten old Murphy at his own game. Did you notice I said "the majority of the time"? My last wing was for a SD7037 Pixy, which received some minor blemishing when the 3/16" poker got hung up on the sub-root. That was it! There had to be a better way to melt out channels than to heat up the end of a weenie roaster in the wood stove and take the deep plunge!!

A few weeks later, I was scanning an electric supply catalog when I noticed an ad for cartridge heaters. Cartridge heaters are used for custom design when a small heat source is needed at a remote location, such as an electric glue gun, or a mold heater. The one I selected from the catalog was 1 1/4" inch long by 3/16" in diameter and rated for 40 watts. The only problem was that it was designed for 120 VAC. I wanted to use the power supply from my foam cutter, 4-16 VDC, but this was not practical according to the design engineer at the company. So, I ordered the 40 watt unit and waited for it to come in. It was a bit pricy, $18, but comparing the price against the time and materials invested in the Pixy wing, it was well worth it. My next obstacle was how to safely wire and guide the unit.

I called George Sparr at Aerospace Composite Products and he set me up with a 4' length of .245" O.D. hollow carbon fiber rod which was stiff, lightweight, and provided a large enough I.D. for the wiring. The only thing I didn't like was the fact that carbon fiber would conduct current. I used small gauge wire and spliced the two leads of the heater at different lengths and I doubled up on the shrink tubing. The next step was to adapt the 3/16" O.D heater to the .245" O.D. rod. Several small pieces of brass tubing were used to accomplish this. I had to pinch in the sides of the tubing, prior to fit up, to give the entire assembly a tight friction fit.



To guide the unit I used a drill jig, ***RCSD June 95***, that already had guide bushings for a 1/4" drill bit. The first few attempts to melt out foam worked well, but the channels were too large: 5/16". The tip of the element took about 2 minutes to come up to temperature due to the low heat output of the element, but the rate of feed was just right. The original set up is shown in Figure 1. The problem with this arrangement was that the brass tubing was absorbing too much heat and since its O.D. was slightly larger than 1/4" it melted out larger channels. To cure this, a new set of adapter tubes was cut and arranged so that the smaller O.D of the heating element was exposed to the foam. See Figure 2. This produced channels 1/4" in diameter. I have used this heater several times now and I'm quite pleased with the results. Several pictures are included that depict the final versions. And as of this writing, the old weenie roaster has been retired. ■



International Hand Launch Glider Festival '96

...by Ron Scharck
La Jolla, CA

The Torrey Pines Gulls (TPG) is happy to announce that *Airtronics* has chosen to sponsor the 1996 International Hand Launch Glider Festival (IHLGF) which will take place June 15 and 16 at the TPG Poway Flight Center, Poway, California . This commitment on the part of *Airtronics* is the latest, and most significant, endorsement of the IHLGF as one of the premiere radio controlled hand launch glider (RCHLG) events in the country.

It was just a short two years ago while in the search for a signature event for the Torrey Pines Gulls that the IHLGF was conceived by Steve Stricklett, Steve Condon and a small group of TPG hand launch glider fanatics. What started out as an anomaly for RCHLG contests with its two day — thirteen round format, the International Hand Launch Glider Festival has developed into a truly international championship event.

With the strength of *Airtronics* sponsorship and the marvels of electronic mail, this years IHLGF will become more than a Southern California RCHLG Championship event. Early commitments from Robert Schmid (Vienna, Austria) and Nobusuke "Buzz" Tokunaga (Tokyo, Japan) assure the IHLGF will indeed be "International". Dr. Paul Clark of Osaka, Japan, advises me that "Buzz" is Japan's answer to Joe Wurts. Every bit as important is the national flavor that this year's Festival will have. Pilots from Colorado, Nevada, New Mexico, Texas, Utah,

International HLG Festival

The Torrey Pines Gulls

in cooperation with

AIRTRONICS

invite you to attend the

1996 International HLG Festival

June 15 and 16

TPG Poway Flight Center - West Garden Road, Poway, California

(15 miles north-northeast of San Diego)

Ten Rounds of Open Competition - Three Fly-Off Rounds for Championship

Plaques through 10th place - Junior/Senior Champion - Team Championship

Vendor donated prizes awarded to "Those Who Also Flew"

Pilot Check-in: 8:00 a.m. Pilots Meeting: 8:45 a.m. First Round: 9:00 a.m.

Entry Fee: $25 (includes T-Shirt and lunch on Saturday)

Pizza Party Saturday evening at Round Table Pizza - Poway $8 per person

Lodging: La Quinta Inn - 619-484-8800 / Poway Country Inn - 619-748-6320

RV Parking and Camping at field - no hook ups

CD: Steve Condon - 3737 Scenic Way - Oceanside, CA 92056 (619) 630-2909

Entry limited to 50 Pilots - Entries must be postmarked no earlier than May 1

*Please complete the following information, together with your **check made payable to TPG**, and return to:*

Ron Scharck
7319 Olivetas Ave.
La Jolla, CA 92037
(619) 454-4900

Entries must be postmarked MAY 1 or later

Name: _____
Address: _____
City: _____ State: _____ Zip: _____
Phone: (____) _____
AMA #: _____
AMA Club _____
Frequency 1st ____ 2nd ____ 3rd ____
Tee-Shirts: M____ L____ XL____ XXL____

Entry Fee	$25.00
Extra T-Shirts ($12 x ___)	_____
Pizza Party ($8 x ___)	_____
Total Enclosed	$ _____

1996 International Hand Launch Glider Festival

Schedule of Tasks

Saturday

Round	Window	Throws	Objective
1	10	Unlimited	The most number of flights in the following sequence: :10, :15, :20, :25, :30, :35, :40, :45, :50, :55, 1:00, 1:05, 1:10
2	10	Unlimited	Longest three flights
3	10	Unlimited	Total time. Each launch after first launch incurs 10 sec. penalty
4	10	6	Longest five flights, none over two minutes
5	7	6	One five minute flight
6	10	Unlimited	A two minute, a three minute, and a four minute flight

Sunday

Round	Window	Throws	Objective
7	10	Unlimited	Most flight time from increasing flights. Must have at least 3 flights. First flight must be at least 15 sec. To receive credit for a flight it must be longer than previously credited flight.
8	10	Unlimited	Longest three flights
9	10	Unlimited	Total time. Each launch after first launch incurs 10 sec. penalty
10	7	Unlimited	Three longest flights, none over two minutes

Championship Fly-Off - Top Ten Competitors

Round	Window	Throws	Objective
11	4	4	Three one minute flights
12	7	Unlimited	Total time. Each launch after first launch incurs 10 sec. penalty
13	10	6	Longest five flights, none over two minutes

Rules

1. This is an AMA sanctioned event. AMA rules will apply. Maximum wingspan is 60 inches.
2. Heats will be posted in advance and announced as a courtesy. Pilots are responsible for knowing which heats they are in, and for being ready on time.
3. All heats will be flown man-on-man and scores will be normalized for each group.
4. Time for a flight commences when the model leaves the hand and ends when the model comes in contact with any land based object, including people.
5. There is no restriction on the number of planes a pilot may fly during the contest, provided all planes are on the same frequency.
6. All launches and landings must be made within the field boundaries.
7. Any launch made before the Official Timer declares "launch" or a landing that occurs after the Official Timer buzzer stops, will receive zero flight points for that flight.
8. Mid-air collisions will not receive any reflight consideration. Pilots should observe "Blue Sky" rules.
9. Another person may launch a pilot's model provided the pilot either touches the plane before the launch or touches the thrower after the previous flight is complete.
10. Warm-up and test flights will only be allowed between heats.

Ohio, Illinois, and Washington have declared intentions of attending the '96 IHLGF.

Airtronics has been keenly aware of the growing popularity of RCHLG not only in the U.S., but internationally. It was only a matter of time before Tim Renaud would put his creative mind to work on a hand launch glider that was worthy of the name Airtronics. With design input from former F3B world champion and premiere RCHLG pilot, Joe Wurts, Tim has designed the *"Gem"*, a championship caliber RCHLG. Tim picked the IHLGF, with its international reputation as a championship caliber event, to introduce the *Gem* to the RCHLG community. If this year's contest is anything like last year, the "Gem" should have plenty of opportunity to prove itself against the best designs on the market. Last year, we had six of the major manufactures of RCHLG competing in the IHLGF.

Contest Director, Steve Condon, has announced that there will be 6 rounds of competition on Saturday, followed by four rounds on Sunday. The top ten pilots, as determined by the 10 rounds of open competition, will compete in a three round fly-off to determine the 1996 IHLGF Champion and final standing for the remaining nine pilots. All scores will be carried forward from the open rounds into the fly-off. Plaques will be awarded through tenth place and there will be a special plaque for the Junior/Senior Champion. There will also be a Championship Team plaque awarded to each member of the three man team with the highest cumulative score.

Thanks to the unsolicited generosity of vendors such as Airtronics, Michael McKeown of Performance Composites, and Chris Boultinghouse of CAB Designs, there will be prizes (nine so far... but expected to grow) in the form of HLG kits, servos, receivers, etc., that will be awarded to a special category entitled "Those Who Also Flew". The TWAF prizes will be distributed to those pilots who have distinguished themselves by finishing in the middle of the field. Considering the prizes already donated, being an "also ran" will definitely have its advantages.

After the contest on Saturday evening, we will adjourn to the Round Table Pizza in Poway to have an old fashioned "all you can eat" Pizza Party. The Pizza Party will cost $8 per person and includes a variety of pizzas, a salad bar and soft drinks. For those of us who want to celebrate making it through the first day with arm in tact, beer and wine will be available. Steve Condon is planning an "After Dinner Fun-Fly" for those of us who just can't get enough of a good thing.

In our traditional manner, we have selected a series of tasks for the IHLGF that will be fun and challenging. With an emphasis on thermalling, there will tasks that will challenge the pilots ability to control his craft and others that will require strategy, and of course, as with all RCHLG events, it helps to be a bit athletic. The tasks and rules for this year's event, together with a registration form, appear on the following pages.

The entry fee for the two-day contest will be $25. Included in the entry fee will be a complementary lunch on Saturday, sponsored by *Airtronics*, and a '96 IHLGF T-shirt. Entries will be limited to 50 pilots. This restriction is being implemented to insure an efficiently run contest for both pilots and staff. The entry forms should be returned, complete with payment, postmarked *no earlier* than May 1. Entries postmarked May 1 and later will be processed May 15. The first 50 qualifying entries will be accepted. If you know of someone who would like to receive an entry form, give me a call at 619-454-4900 or e-mail me at Scharck@aol.com.

With TPG and *Airtronics* teamed up, you can expect the very best in RCHLG competition. If you love hand launch gliders and competing against many of the best pilots in the world (including current IHLGF Champion, Joe Wurts and Japan's "Buzz" Tokunaga), make plans to attend the 1996 International Hand Launch Glider Festival. Make a vacation out of it and you will be a hero with your family. San Diego is a great place to spend a vacation. ■

20th Annual Northwest Championship Soaring Tournament

September 14 & 15, 1996
Tri-Cities, Washington

- 1 1/2 days qualifying rounds
- 1/2 day final flyoffs
- two team competitions
- Saturday night banquet

Northwest Soaring Society

CD - Tom Culmsee, (509) 375-1587

SILENT WINGS SOARING ASSOCIATION

Proudly Presents

2M SOARFEST '96

June 8 - 9, 1996

Las Palmas Jr. High School
Covina, California

CLASS: 2 METER - 442B
AMA SANCTION #80428
1996 AMA CARDS WILL BE REQUIRED AT REGISTRATION TIME.
ALL AMA RULES APPLY.

C.D.: PETE OLSEN
(909) 597-2095
15409 OAKGROVE CT.
CHINO HILLS, CA 91709-2448

LAUNCHING SYSTEM: 12 VOLT WINCHES WITH RETRIEVERS
APPROXIMATELY 600 FEET LENGTH
LANDINGS: GRASS, 1 METER CIRCLE
20 POINTS IN - OUT
RADIOS: ALL LEGAL FREQUENCIES ALLOWED.
(EXCEPT CHANNEL 16, DUE TO LOCAL INTERFERENCE.)
MAXIMUM 3 PERSONS PER FREQUENCY.

ENTRY FEE: $30
(NON-REFUNDABLE, BUT TRANSFERABLE, SAME FREQUENCY.)
ENTRIES: 100 MAX.
(1ST COME BASIS.)
AWARDS: 1ST - 10TH PLACE
RAFFLE: GREAT HOBBY ITEMS!
SUNDAY, IMMEDIATELY FOLLOWING CONTEST.
FOOD: LUNCH TRUCK
RESTROOMS: ON SITE

HOTELS, MAPS, RV PARKING INFORMATION WILL BE MAILED WITH CONFIRMATION.

TASKS
CALLED FLIGHT ORDER

SATURDAY	
ROUND 1:	3 MIN.
ROUND 2:	10 MIN.
ROUND 3:	5 MIN.
ROUND 4:	10 MIN.
ROUND 5:	7 MIN.
ROUND 6:	5 MIN.
SUNDAY	
ROUND 1:	5 MIN.
ROUND 2:	10 MIN.
ROUND 3:	6 MIN.
ROUND 4:	8 MIN.

PRE-REGISTRATION CLOSES APRIL 15, 1996!

NAME _____ PHONE _____
ADDRESS _____
CITY/STATE/ZIP _____
AMA # _____ ENTRY FEE ($30) $ _____
FREQ. #1 _____ T-SHIRTS ($15 x #___) $ _____
FREQ. #2 _____ TOTAL ENCLOSED $ _____
FREQ. #3 _____

2M SOARFEST T-SHIRTS
Please check size.
SMALL _____
MEDIUM _____
LARGE _____
XLARGE _____
XXLARGE _____

MAKE ALL CHECKS PAYABLE TO: GLENN CLIFTON

MAIL TO: SWSA 2M SOARFEST '96, PETE OLSEN, 15409 OAKGROVE CT., CHINO HILLS, CA 91709-2448

TIDBITS & BITS

A Note of Thanks

This note was written by Steve Savoie before he found himself a regular writer in these pages.

"I thoroughly enjoyed the article concerning Ford starter motor types. The information concerning the shunt coil and especially the model types was great. You have no idea what it's like to look across the counter at an automotive supply house and ask for a long shaft Ford starter for a sailplane winch and have no clue to the part number. Keep up the great articles."

Thanks, Steve.

Appalachian Soaring Association

The following is from Greg Finney, Abingdon, Virginia.

"We are a newly formed group (one and a half years) of glider guys that have broken off from the power club. We have three different sites and two sets of winches on trailers. One site is off the visitor overlook on top of Clinch Mountain, which is half slope and half thermal; the other two sites are at 1000 foot and 600 foot, which we share with Ultralites on calm days. They go up in their homemade craft, land, and tell us where the thermals are! We fly every week on the average through the entire year, weather permitting. We also run three successful sanctioned sailplane events, annually. We are located in the heart of the Appalachian Mountains in the western part of Virginia near Bristol, Virginia - Tennessee. It is very accessible by Interstate 81. We would more than welcome any fliers who travel through our area to come and fly with us."

This listing is now included in the "Resource" section under Virginia.

Hand Launch in Florida

The following is from Ed White, Florida.

"The Orlando Buzzards are hosting the first ever hand launch contest in Florida. Although Florida has a large number of handlaunchers, we have never had a contest. The contest will be on May 5th, 1996 at our Econ site at 10:30 A.M. Rounds will be as follows (10 minute window, man-on-man): 1) 3 two minutes, 2) 5 two minutes, 3) 3 three minutes, 4) 1 five minute, and 5) Five, three, two minute tasks. There should be some pretty soar arms after the contest."

"Also, the Tangerine will be held on November 28, 30 and December 1st. It is the oldest 3 day contest in the Southeast. Last year, we had contestants from all over the U.S."

"The Orlando Buzzards invite everyone to enjoy Thanksgiving, Florida Style - Soaring."

(Signed) Contest Director, Ed White, (407) 277-3862 (w), (407) 321-1863 (h).

Viking Race

The announcement for the Viking Race was sent in by Ron Russell of Scotland. It is summarized here for those wanting more information.

The Viking Race Organizing Committee is pleased to invite Slope Racing enthusiasts from F.A.I. affiliated countries to take part in the Viking Race, F.A.I. category F3F on August 6 - 13th, 1996. It will take place in Hvolsvöllur, situated on the south coast of Iceland. The distance from the Keflavik airport to village Hvolsvöllur is about 159 Km, through the capital of Iceland, Reykjavik. Each competitor must have a F.A.I. Sporting License valid for 1996. The contest has been scheduled as an open international contest to current F.A.I. F3F rules.

The last closing date for accepting entries will be Friday, April 30, 1996. They should be sent to Mr. Jón V. Gíslason, Neshamrar 18, 112 Reykjavik, Iceland. Phone: 354 587 6789, fax: 354 557 6209.

The actual announcement is 9 pages long, and includes the formal entry form that must accompany payment for the event. If any of you need a copy, just let us know, or contact Mr. Jón V. Gíslason, as shown above.

Looking for Large Scale Sailplanes?

The following is from Robin Lehman at Sailplanes Unlimited, Ltd. in New York.

"It recently occurred to me that I can find almost any large scale sailplane that a person might want. So, if those of you out there are looking for something interesting, and larger, give me a call and let me know what you're looking for.

"I will be visiting Dortmund the end of March, where many of the manufacturers debut their new products and I have no doubt that I will see some new and interesting large sailplanes there. However, in the past 6 to 12 months, I am happy to report that I have made contact with a number of manufacturers who are producing superb large, scale sailplanes, some of which can be special ordered with virtually any wing section one might want. I have found sources for things like the 5 meter ASK 18 which I flew at Elmira, a 5 meter 1/3 Ka6E similar to the one seen at the recent scale fly-in in Los Angeles, and again, similar to the one I flew at Elmira. Some other hot numbers might be a 1/3 Pilatus B 4, a 1/3 ASK 13, a 1/3 Twin Acro, a 1/3 Duo Discus, LS 4, Nimbus 2, LO-100, Minimoa, etc."

Well, a few days later, Robin found himself the exclusive U.S. distributor for EMS products.

"The catalog for EMS contains, among other things, many ready made scale sailplanes, retractable landing gears, cockpit and instrument sets in various sizes, and airplane transport bags. Their scale sailplanes include a Ventus 2c (profile HQ 2.5/14/12, a 6.25 Nimbus 4 (F 68), a Nimbus 4E (7.04 meters), a Duo Discus (5.33 meters), a DG 800 (4.2 meters, HQ 2.5/14), a Pilatus B4 (3.75 meters), a mini ASW 24/27 (3 meters), a Foka (4.5 meters, HQ 2/12, a 1/4 sized ASH 25 (6.6 meters, E 68), an ASW 22 (6.6 meters), and a Discus (4.2 meters)."

Robin says he imported one example of the Nimbus 4, and that the workmanship is superb. It was the first time he had seen spoilers installed in the wing with cap strips on! For more information, Robin's number is (212) 879-1634.

■

SPECIAL SCALE SAILPLANE DRAWING

Interested in Large Scale Gliders?

Well, the folks at *R/C Soaring Digest* have managed to secure a donation from Sailplanes Unlimited, LTD: a beautiful, Roedelmodel ASK 21 (1/4.5)! This kit is totally complete, except for choice of covering material; the wing span is 157" (4.2 m) with an E193 mod. wing profile, and the weight is approximately 11.5 lbs.

Now, what do we do with it? Well, we're going to hold a "Special Scale Sailplane Drawing". And, all proceeds, less administrative costs, will be given to charity.

After much discussion, it was decided that this special drawing will take place at the Mid-South Soaring Championships in Memphis, Tennessee on June 22nd, 1996 following the dinner and guest speakers: Tim Renaud, and Bob Champine. The administrative work will be overseen by the experts that have been coordinating the MSSC for what is now the 5th year: the members of the Memphis Area Soaring Society and the North Alabama Silent Flyers; and the charity will be of their choosing.

This drawing is not limited to the participants of the MSSC! While we **have** limited the participation to Canada and the U.S.A., one need not be present to win. If you **won't** be able to attend the MSSC, but wish to enter this special drawing, simply fill out the form and send it to the MSSC. All mail entries must be received by June 3; after that date, all entries for this drawing must be done at the MSSC.

If you have any questions, please contact *R/C Soaring Digest*, (214) 442-3910, or Bob Sowder, (901) 751-7252.

SPECIAL SCALE SAILPLANE DRAWING 4/96 RCSD

I will not be able to attend the 1996 MSSC and wish to purchase (#)_____ tickets at $5.00 per ticket, or 5 tickets for $20.00. Total enclosed is _____.

Name _____

Address _____

_____

City/State/Zip or Province/Postal Code/Canada

Phone # (Day) _____ Phone # (Eve) _____

Make checks payable to the Memphis Area Soaring Society. (Do not send cash.)

Return to: Bob Sowder, Memphis Area Soaring Society,
1610 Saddle Glen Cove, Cordova, TN 38018

Schedule of Special Events

Date	Event	Location	Contact
Apr. 20-21	2m, Unl.	Orlando, FL	Hank McDaniel, (407) 831-3688
Apr. 20-21	Rose Bowl Soaring Festival	Pasadena, CA	Paul Trist, (818) 545-7551
Apr. 28	Spring "Intergalactic" RCHLG Championship	Cincinnati, OH	Paul Siegel, (513) 561-6872
May 5	HL Contest	Orlando, FL	Ed White, (407) 321-1863
May 11	2M Thermal Soaring	Tullahoma, TN	Brian Smith, (615) 393-4876
May 17-19	Slope Scale Soar-In	Los Banos, CA	Lynsel Miller, (408) 275-6403
May 17-19	SIG/LASS Midwest Slope Challenge	Lucas, KS	Paul Wright, (402) 796-2175
May 18-19	Spring Fling	Davis, CA	Jim Ludwigson, (415) 387-6260
May 18-19	CSS STD & UNL (Sanct.)	Cincinnati, OH	Chuck Lohre, (513) 731-3429
May 24-27	2m, Unl., Fun, XC	Morriston, FL	Ken Goodwin, (904) 528-3744
May 25	SASS HL #1	Redmond, WA	Jim Thomas, (206) 488-2524
May 25-26	Spring Thermal Soaring	Tullahoma, TN	Chuck Anderson, (615) 455-6430
June 1-2	4th Annual High Country Soaring Festival	Montpelier, ID	Arlie Stoner, (208) 847-3925
June 1-2	1st Annual Northeast Aerotowing Fly-In	Elmira, NY	John Derstine, (717) 596-2392
June 1-2	LSF V Task Weekend	Tri-Cities, WA	Don Pesznecker, (503) 659-9624
June 7-9	Second Annual Aerotowing & Scale Fun Fly in the South	Fayetteville, NC	Wayne Parrish, (919) 362-7150 Bernie Coleman, (704) 536-5260 b1rdbernie@aol.com John E. McCullough, (919) 851-3538 jem1@nando.net
June 8 - 9	SWSA 2M Soarfest '96	Covina, CA	Pete Olsen, (909) 597-2095
June 8-9	HLG (8th)/2M (9th)	Baltimore, MD	Jack Cash, (301) 898-3297 or BadIdeas@aol.com
June 15-16	Int'l HLG Festival	Poway, CA	Ron Scharck, (619) 454-4900
June 20 - 23	Mid-South Championships	Memphis, TN	Bob Sowder, (901) 751-7252
June 29-30	Ontario Grand Prix Soaring	Cookstown, Ontario	Jack Nunn, (705) 728-4467
June 29-30	I.G.G. Aerotow Fly-In	Belpmoos (Bern), Switzerland	Jack Kagi, 011-41-01-926-2187
June 29-30	2m, Unl.	W. Palm Beach, FL	Jim McCudden, (407) 967-8909
July 11-14	Flying Circus Model Flying Festival - Fiss, Austria		Flying Circus, + 07161 929385
July 13-14	SOAR 96 (Unl., 2M)	Redmond, WA	Jim Thomas, (206) 488-2524
July 16-21	Canadian R/C Soaring Nationals - Write: SOAR NATS 96, 18C Arnold Dr., Nepean, Ontario, Canada K1A 0K2	Ottawa, Ontario	
July 20-21	XC & Pig Roast	Omaha, NE	Christopher Knowles, (402) 330-5335
Aug. 3-4	2m, Unl.	W. Palm Beach, FL	Jim McCudden, (407) 967-8909
Aug. 6-13	Viking Race	Hvolsvöllur, Iceland	Jón V. Gislason, + 354 587 6789
Aug. 10-11	Thermal Grabber (Unl., 2M)	Redmond, WA	Jim Thomas, (206) 488-2524
Aug. 24-25	I.G.G. Annual Scale Slope Soaring Festival-Swiss Alps	Adelboder, Switzerland	Jack Kagi, 011-41-01-926-2187
Aug. 30-Sept. 2	2m, Unl., Fun, XC	Williston, FL	Ken Goodwin, (904) 528-3744
Aug. 31	SASS HL #2	Redmond, WA	Jim Thomas, (206) 488-2524
Sept. 14-15	20th Annual NW Championship Soaring Tournament	Tri-Cities, WA	Tom Culmsee, (509) 375-1587
Sept. 21-22	Scale Fun Fly	St. Catharines Ontario, Canada	Gerry Knight, (905) 934-7451 Don Smith, (905) 934-3815
Sept. 21-22	2m, Unl.	Orlando, FL	Hank McDaniel, (407) 831-3688
Sept. 21-22	Fall Thermal Soaring	Tullahoma, TN	Chuck Anderson, (615) 455-6430
Oct. 4-6	Aerotow Fly-In	Pensacola, FL	Asher Carmichael, (334) 626-9141 Rusty Rood, (904) 432-3743
Oct. 6	Fall "Intergalactic" RCHLG Championship	Cincinnati, OH	Paul Siegel, (513) 561-6872
Oct. 12-13	CSS STD & UNL (Sanct.)	Cincinnati, OH	Chuck Lohre, (513) 731-3429
Oct. 19-20	2m, Unl.	Williston, FL	Bob Wargo, (813) 938-6582
Nov. 29-1	Tangerine	Orlando, FL	Ed White, (407) 321-1863
Various*	1.5m Hi Start Contests	Washington, MI	Ray Hayes, (810) 781-7018

*May 4, 11, 18, 25 & June 1, 8, 15, 29 & July 6, 20 & Aug. 10, 24, 31

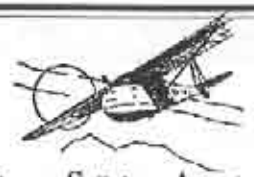
Sailplane Homebuilders Association (SHA)

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 desiminate 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.



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

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

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 20130
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

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 Swinehart, 8733 Edgehill Dr. SE, Huntsville, AL 35802; (205) 883-7831.

Alabama - Central Alabama Soaring Society, Ron Richardson (Tres.), 381 Stonebridge Rd., Birmingham, AL 35210; (205) 956-4744, e-mail: lameraf@ix.netcom.com.

Alabama - Southern Alabama & NW Florida Aerotow, Asher Carmichael, (334) 626-9141, or Rusty Rood, (904) 432-3743.

Arizona - Central Arizona Soaring League, Iain Glithero, (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!

Arkansas - Northwest Arkansas Soaring Society, Tom Tapp (President), RT 2 Box 306, Huntsville, AR 72740; (501) 665-2201, eve.

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, 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.

Colorado - Rocky Mountain Soaring Assn., Phil Weigle, 1290 Salem St., Aurora, CO 80011; (303) 341-9256 eve.

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./Tres.), (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 Vendiola, 10-C Al St., Makawao Maui, HI 96768; (808) 572-5283.

Illinois (Chicago Area) - Silent Order of Aeromodeling 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.

Missouri - Mississippi Valley Soaring Assoc. (St. Louis area), Ken Trudeau, 3033 Plum Creek Dr., St. Charles, MO 63303; (314) 926-8556.

Nebraska - B.F.P.L. Slopers, Steve Loudon (contact), RR2 Box 149 E1, 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 Jersey - Vintage Sailplane R/C Association, Richard G. Tanis (President/Founder), 391 Central Ave., Hawthorne, NJ 07506; (201) 427-4773.

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 - (Buffalo/Niagara Falls area) - Clarence Sailplane Society, Lyn Perry (President), (716) 655-0775; e-mail perryl@sstaff.sunyerie.edu; Jim Roller (Competition Coordinator), (716) 937-6427.

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 - Cincinnati Soaring Society, Chuck Lohre, 3015 Beaver Ave., Cincinnati, OH 45213; (513) 731-3429, lohre@iac.net, http://www.iac.net/~lohre.

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

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

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

Tennessee - Memphis Area Soaring Society, Bob Sowder, 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 - Appalachian Soaring Association, Virginia's Southwest (Bristol area), Greg Finney, 266 Plumb Alley West, Abingdon, VA 24210; (540) 628-4992 (H), (540) 676-3788 (W), (540) 676-3094 (fax).

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.

Reference Material

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.

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 - Greater Niagara Area Thermal Soarers (GNATS), Flat Field Soaring & Aerotowing, Gerry Knight, (905) 934-7451 or Don Smith, (905) 934-3815.

Canada - MAAC Men Gliding Club, Jim Holland, 168 Verona Dr., Winnipeg, Manitoba, Canada R2P 2R8; (204) 697-1297.

Canada - Southern Ontario Glider Group, "Wings" Programme, dedicated instructors, Fred Freeman, (905) 627-9090, or Bill Woodward, (516) 653-4251.

England (Thermal Talk & 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.

Japan - Dr. Paul "Sky Pilot" Clark, 2-35 Suikoen Cho, Hirakata Shi 573, Osaka Fu, Japan; IAC+(81) 720-41-2934, fax: IAC+(81) 6-954-4144, e-mail: 76055.3546@compuserve.com, http://ourworld.compuserve.com/homepages/skypilot.

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

BBS/Internet

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 listserve 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.

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

Advertising

Advertiser Index

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.

Hobby Shops that Carry *RCSD*

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Wichita, KS 67212
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California Soaring Products
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Covina, CA 91722
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Finney's Hobbies
3455 Peachtree
Industrial Blvd., Ste. 980
Duluth, GA 30136
(770) 495-8512
(770) 495-8513 fax

Gunnings Hobbies
550 San Anselmo Ave.
San Anselmo, CA 94960
(415) 454-3087

Gyro Hobbies
23052 Lake Forrest Dr.
Unit C2
Laguna Hills, CA 92653
(714) 583-1775

HiTecHobbys
284 - B Wellsian Way
Richland, WA 99352
(509) 943-9241

Hobbies'N Stuff
9577 L Osuna Rd. NE
Albuquerque, NM 87111
(505) 293-1217

Hobby Town USA
8060 S. 84th St.
La Vista, NE 68128
(402) 597-1888

Hobby Warehouse
4118 South Street
Lakewood, CA 90712
(310) 531-8383

PEC'S Hobby Supplies
947 Stierlin Road
Mountain View, CA 94043
(415) 968-0800

Red Baron Model Hobbies
77 Daily Dr.
Camarillo, CA 93010
(805) 482-0250

Tim's Bike & Hobby
2507 Broadway
Everett, WA 98201
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The Auto-Vac kit comes completely assembled, mounted on a wood base, and ready to use. Included in the kit are the E-Z Vac II electric pump, rated at 24 Hg, adjustable vacuum switch, vacuum gauge, large capacity reservoir, check valve, neoprene tubing, E-Z Vac connector, two Quick-Lock seals, 9' of 18" wide bagging tube, 9' of 15" wide breather cloth and a set of vacuum bagging instructions.

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THE GREATER NIAGARA AREA THERMAL SOARERS (GNATS)
Will Host a
SCALE FUN FLY for
SAILPLANES & MOTORGLIDERS
SEPTEMBER 21 & 22, 1996
Approx. 30 Miles West of Buffalo/Ft. Erie
Niagara Peninsula, Canada

Emphasis will be on aerotowing, although winches will be available for those wishing to launch smaller size sailplanes. Bring your 3M (118") or larger sailplane with releasable nose hook and ailerons. Enjoy the thrill of being launched behind a skilled tug pilot; join the growing aerotow movement. 1996 MAAC and/or AMA membership required. $6 pilot registration fee.

We are expecting Robin Lehman, Sailplanes Unlimited, Ltd., and Jim Blum to be on hand, with their 1/3 and 1/2 scale gliders & tugs, to demonstrate and instruct in the art of aerotowing.

For additional information contact:
Gerry Knight, 360 Bunting Rd., St. Catherines, Ontario, Canada L2M 7L6
(905) 934-7451
Don Smith, 996 Lakeshore Rd., Niagara-on-the-Lake, Ontario, Canada L0S 1J0
(905) 934-3815

FIRST ANNUAL NORTHEAST AEROTOWING FLY- IN

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

Three meter & larger w/ailerons & nose release
Fun & training- join the growing aerotow movement. Experienced tow pilots & tugs willbe provided. Large flat site. $5.00 reg.
Contact: John Derstine 717-596-2392

SECOND ANNUAL AEROTOWING & SCALE FUN FLY IN THE SOUTH

June 7 - 8 - 9, 1996

To be Held at the
PIEDMONT AEROMODELERS
R-C Club Field
Fayetteville, North Carolina

Mark your calendar! See you there!

For further information, contact:
John E. McCullough, (919) 851-3538
or e-mail jem1@nando.net
Bernie Coleman, (704) 536-5260
or e-mail b1bernie@aol.com
Wayne Parrish, (919) 362-7150 After 9 pm

This event is open to anyone with a $5 landing fee, a valid AMA license, and a real interest in scale sailplanes. It is being held to bring scale enthusiasts together for a fun time and to meet others who love flying beautiful sirplanes. Scale soaring is growing by leaps and bounds. Five years ago, scale sailplanes were scarce and aerotowing was a dream. Today, scale sailplanes are admired wherever they are flown, and aerotowing is catching on fast. Our first effort in May, 1995 brought 14 pilots, 12 sailplanes and 4 towplanes together for some great flying. The weather was great, and the 1/2 mile square hay field is ideal. It was the first time aerotowing for most, but all wanted to know when we were doing it again. Now they know! If you want to learn how to aerotow your sailplane, to learn how to be a towplane pilot, to share your plane with others, or just have fun, come fly with us! The field is easy to find. It is in the heart of North Carolina's Costal Plains off I-95. Take I-95 exit 58 east on U.S. 13 for 2.2 miles, turn right on Hayfield Rd. for 1.5 miles to stop sign, straight at stop sign for 1/4 mile, and field is on left. There are motels close by and some of the best Southern Fried Chicken you have ever tasted!

Classified Note

Please note that the cut-off date for classified ads has been changed to the 1st of the month.

The cut-off date for display ads is also the 1st of the month, and the ad must be camera ready.

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 1st day of the month. (Example: If you wish to place an ad in the March issue, it must be received by February 1.) *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: Alcyone, 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. LJM 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.

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PARACHUTES: $10. Dale King, 1111 Highridge Drive, Wylie, TX 75098; (214) 475-8093.

NIB, 2 RARE "YELLOW" Rubber Ducks... $75.00 each + shipping. Hog Wild, (541) 269-2423, Oregon.

For Sale - Personal

Futaba 7UGFS w/R128DF, ch #30 FM, excellent radio with full documentation for glider platforms, excellent condition, has memory space for 4 aircraft... $395.00 complete. Irv, (219) 447-3138, Ft. Wayne, Indiana, after 5 pm, EST.

Spectrum 104" w/S3021, NIB, pre-routed flaps/ailerons/servo holes, slip on nose cone... $270.00 + shipping. Wayne Scott, 167 Villa Ave, #8, Los Gatos, CA 95032, (408) 395-2629, eve.

Ace Thermal Sniffler, NIB... $130.00 + shipping. Bob, (308) 697-4472, Nebraska.

Electric Falcon 880, RTF, just add batteries and receiver, Robbe KE 70/4 motor, Robber on/off relay w/brake, all servos installed in fuse and wings (Airtronics 141, HS-80 MG, and RCD), launches & flies very well, never crashed... $675.00 + S&H, or $550.00 without wing servos + S&H. Chuck, (201) 584-3117, after 6 pm, New Jersey.

Vision V58SP w/four 8 ch PCM rec., rubber duck antenna, 1700 mah battery, ch #32, charger & manual... $695.00; Futaba Attack-4 with rec. & charger, ch #30... $90.00; Falcon 105" span, S3021 airfoil, good flying plane... $325.00. Plus S&H on all items. Dale, (214) 475-8093, Texas.

Large tow plane, "Stinson Reliant", Stearman Bi Plane or trade for large gliders, scale, etc. Gene Molnar, 5362 Aurelia St., Simi Valley, CA 93063, (805) 527-8582.

Glas Flügel Salto, 4.55m, all glass, built and flown, 141's for ailerons/flaps/and in each stab of V-tail, excellent soaring machine, pictured in 10/95 edition of RCSD... $1250.00; Viking Models 1/4 scale Libelle, incl. all servos, retract, air tow release... $550.00; Quality crafted vintage SG-38 Primary Glider, incl. servos and rigging, 1/4 size... $500.00; Electric PT Trainer... $125.00; RC soaring videos - scale: "Big is Beautiful" and "Soaring Down Under"... $25.00 each, limited supply. Mark Foster, (213) 257-4573, after 5 pm, PST, S. California.

Airtronics Infinity 1000, ch 52, complete w/extra 1100 mah TX battery, 10 ch PCM RX, new 700 mah RX battery, 5-94102 servos, case, charger, as much of the manual as Airtronics has received (enough to fully use the radio)... $875.00; NIB kits: Mariah 2m... $100.00; Multiplex Schaumpus (3 or 3.5m)... $375.00; Falcon 600, Mark Allen version... $200.00; Airtronics Sagitta 600... $85.00; Airtronics Sagitta 900 w/extra wing kit... $140.00. Ready to fly: Airtronics Swift, 2m, RG-15 custom 2-piece wing (transportable)... $300.00. Shipping on all items extra. Jim Thomas, (206) 488-2524, Washington.

Ultra GP, all molded slope pocket rocket, described in NSP catalog, NIB w/some construction already begun, includes new Airtronics 94735 high torque servo... $300.00; Cheetah, custom E374, 60" wing, w/full fiberglass under balsa, carbon spars, servo well reinforcements, extremely strong, very cool looking, built w/rudder, unbreakable fuse, extra tail components, 2 ea. HS-80MG servos in wing... $170.00 or $100.00 w/o servos; Super Visionary, 60" acro sloper w/glass & carbon reinforced obechi wing, glass & Kevlar™ wrapped fuse, extra large ailerons, elevator & rudder, good condition, switch, 500ma battery, 2 ea. S133 in fuse, 2 ea. HS-80MG in wing... $175.00 or $50.00 w/o electronics. All shipped at buyer's expense. Don Whiteside, dwhiteside@aol.com, or (510) 227-3321, N. California.

Model Technique, 110" "Crystal" F3B sailplane, circa 75-80, factory obechi over foam, E-205 section, full house (flaps, no spoilers), 6 servos required, glass fuse, all carbon tail boom (also factory) w/T-tail, servo wiring harness in wings incl., excellent condition, never damaged... $300.00; Fiber Glas Flügel V-tail Salto H101, 106" span, E-393/374, moulded section, glass fuse w/canopy, landing wheel & easy servo access, full house (flaps, no spoilers), 6 servos required... $400.00. Gary Rake, (805) 493-1238 or (805) 488-8747, California.

Huge towplane, 134" span, will tow the largest sailplanes, 1/3 L5 with Saks 8.4 twin and Futaba servos, mint condition... $2500.00; German tow plane - Roebers Sky Wing, 99" span, suitable for 1/4 sized & larger gliders, NIB... $175.00. O.S. 320 F.S. Pegasus, like new... $795.00; Saito 300, like new... $595.00; Ohio Ultimate, black & yellow, covered in Ultracoat, absolutely immaculate finish, with or without Saito 300, set up for airtow... $995.00; Sig 1/3 Spacewalker, completely built, black & orange, finished in 21st Century, set up for airtow... $495.00. Robin Lehman, (212) 879-1634, New York.

Wanted

The S.W.I.F.T. Club needs a retriever, badly! The design should have a positive history and be complete or kit or plans. We need a retriever this season. Christopher Knowles, (402) 330-5335, Nebraska.

SENSOR, NIB, Mark's Models. Nick, (415) 728-7709, N. California.

Vision 3.0, ham band great. Wayne Scott, 167 Villa Ave. #8, Los Gatos, CA 95032, (408) 395-2629, eve.

Gnome kit or rebuilt for reasonable price, in good condition. Nathaniel Smith, 421 Shirley Rd., Royston, GA 30662, (706) 245-0456; 1 - 2 pm, afternoon, only, EST.

Unbuilt RnR Genesis. Steve Gibson (713) 880-7185 (day), (713) 550-2827 (eve), Texas.

Large wood sailplanes, Baby Boas, Albatross, Minimoa, Comet, broken or not, kits or plans for gliders. Synergy 91SE, Samurai, ASK 18, or wings and tail feathers for DG 600. Gene Molnar, 5362 Aurelia St., Simi Valley, CA 93063, (805) 527-8582.

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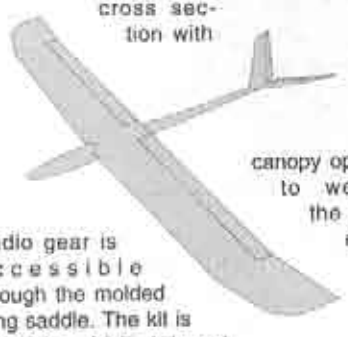

Wing	60" span - 372.5 sq. in.
Airfoil	Phil Pearson Modified 7% 7032
Weight	Maple Leaf 2.2P - 9.75 - 11oz. (3.76 - 4.25 oz./sq. ft.)
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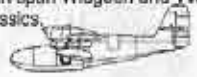

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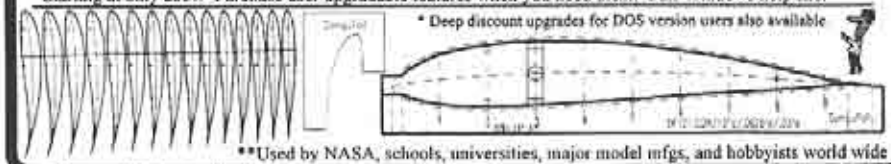

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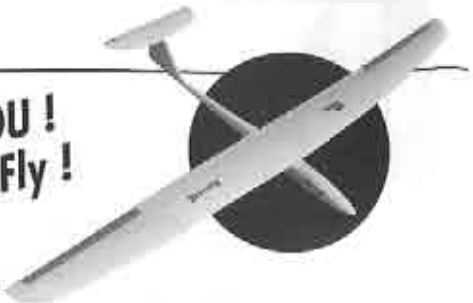

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Wingspan : 2 100 mm
Airfoil : RG15
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Wing area : 34,5 dm2
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Wingspan : 2 800 mm
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Length : 1 230 mm
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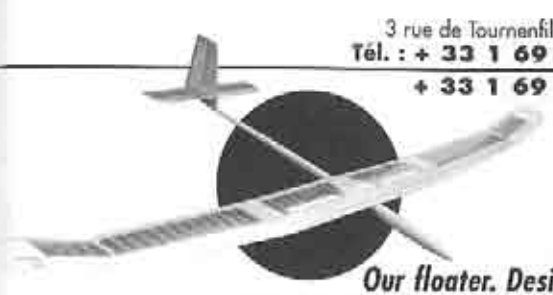

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- Complete accessory pack.

Wingspan : 3 100 mm
Airfoil : SD 3021
Length : 1 420 mm
Wing area : 63 dm2
Airframe weight : 1 050 g (Glider & Elektro)
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- Fiberglass/epoxy moulded T stab.
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Wingspan : 1 800 mm
Airfoil : RG15 8,5%
Length : 980 mm
Wing area : 33,5 dm2
Airframe weight : 610 g
Functions : ailerons, elevator
Power : 7-16 cells

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- Fiberglass/epoxy moulded T stab.
- Pre-hinged ailerons and elevator.
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Airfoil : RG15 8,5% mod
Length : 985 mm
Wing area : 31,3 dm2
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SPECIFICATIONS
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Wing Area = 328 sq in
*Weight = 9 oz
Wing Loading = 5.3 oz/sq ft
Radio = Micro

*Empty weight. Final weight depends on radio selection and construction techniques.

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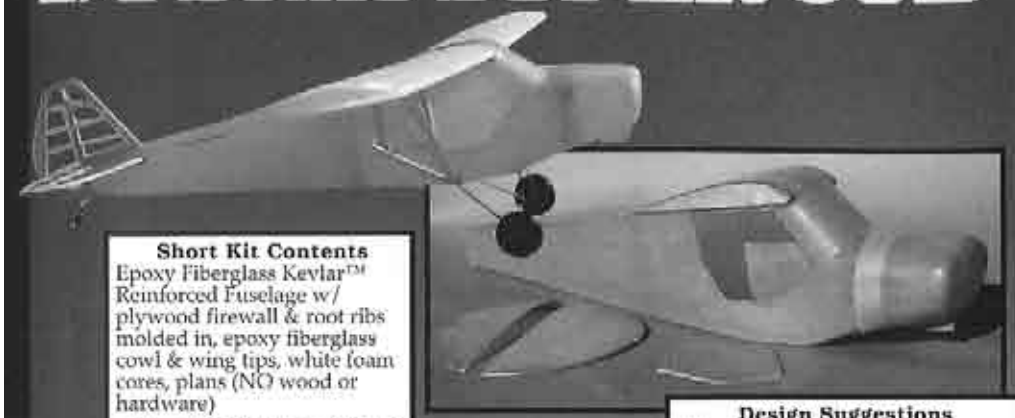

Short Kit Contents
Epoxy Fiberglass Kevlar™ Reinforced Fuselage w/ plywood firewall & root ribs molded in, epoxy fiberglass cowl & wing tips, white foam cores, plans (NO wood or hardware)

Price: $250.00 + $25.00 S&H (2 boxes)

Design Suggestions

Wing Span	108"
Weight	12 - 20 lbs.
Controls	Rudder, Elevator, Ailerons, Throttle
Power	Zenoah G-38 or Equiv.

Can be used for aerotowing, docile to fly, quick and easy to build, looks right.

Scale

Epoxy Fiberglass Fuselages	Price	S&H
1/6 Scale DFS Reiher 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 Orlice (135"/E392/3-4) 49" fuse, canopy, tray, dwg.	$80.00	$10.00
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1/4 Scale DG-100/200 (147.5"/Wortman/4 - 5) 64" fuse, canopy, tray	$155.00	$20.00
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Design Suggestions

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Airfoil	You Choose
Chord	10" Max.
Controls	As Required

Bolt-on wing.

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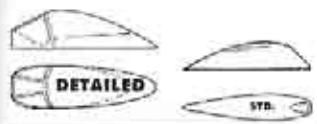

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WING LOADING	9.7 - 10.3 OZ./SQ. FT.

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CONDOR

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The Condor is designed by Mark Allen, who is considered one of the best model sailplane designers in the United States, if not the world. Mark has taken all of his previous experience in competition thermal duration flying, plus all the knowledge he has gained from his earlier contest and sport designs, to design the Condor. Mark Allen's previous planes, to name only a few, are: Falcon 880 and 800, Falcon 600, Swift, Thermal Eagle, Vulcan, Night Hawk, Sky Hawk, Electric Hawk, Falcon 550E, Rocket, Pocket Rocket and, of course, the molded, world championship F3B Eagle. By taking the best of these designs and the new construction techniques available today, Mark has come up with, what we feel, is the absolute best open-class sailplane available.

The wings are made in America by Ron Vann, owner of Spectrum Enterprises. Ron is also an avid competition flier, and is considered to be one of the best wing manufacturers in the industry. Taking his years of experience in manufacturing wings, Ron has produced wings and stabs for the Condor that we feel are world class. Starting with the spar that Mark Allen designed, Ron uses only the best and most accurately cut foam cores available. He then uses hand-picked obechi from Kennedy Composites, which is applied with West Systems epoxy. This is after he has first reinforced the wing with carbon fiber and fiberglass. The servo wells are routed out, as are the flaps and ailerons. What this means for the sailplane enthusiast is a minimum amount of work before getting the sailplane into the air. The wing is light but strong enough to take "pedal to the metal" launches. Also available as an option is Ron's unique internal capped hingeline. This means even less work for the modeler.

The fuselage is made by Steve Hug, owner of the Fuse Works. Steve is another master at what he does. Fuse Works makes what we consider to be the best fuselage in the business. Steve uses only the best fiberglass and Kevlar™ available. All fuselages are manufactured using the West Systems epoxy. Steve's fuselages have the least amount of pinholes, if any, that we have seen. In fact, the fuselage is so pretty that many people do not paint it. The fuselage is extremely light, and yet strong enough for very aggressive flying and landing. For those with very little building time, and those who don't like to paint, there is an optional pre-painted, in the mold, fuselage which includes a unique carbon fiber canopy.

All kitting is done at Slegers International's new and larger manufacturing facilities. We have spared no time or expense with supplying the modeler with the best materials available. The kit contains pre-sheeted wings and stabs by Ron Vann, fiberglass and Kevlar™ reinforced fuselage by Steve Hug, 3/8" diameter titanium wing rod from Kennedy Composites, optional 3/8" diameter steel wing rod by Squires Model Products, control horns and tow hook by Ziegelmeyer Enterprises, pushrods by Sullivan, or optional one piece steel rods. All wood is custom cut. Specially cut basswood of 60" is supplied to eliminate splices in leading edge, flaps and aileron capping. All balsa is hand picked, light to medium, to ensure light weight wing tips, stab tips, and rudder. Aircraft ply is used for the pre-fit servo tray and towhook block. A comprehensive instruction manual is included.

The Condor, designed by Mark Allen, wings by Ron Vann, fuselage by Steve Hug, and kitted by Slegers International, we feel, is the best open-class, thermal duration sailplane available, at an affordable price of $395.00 plus S&H.

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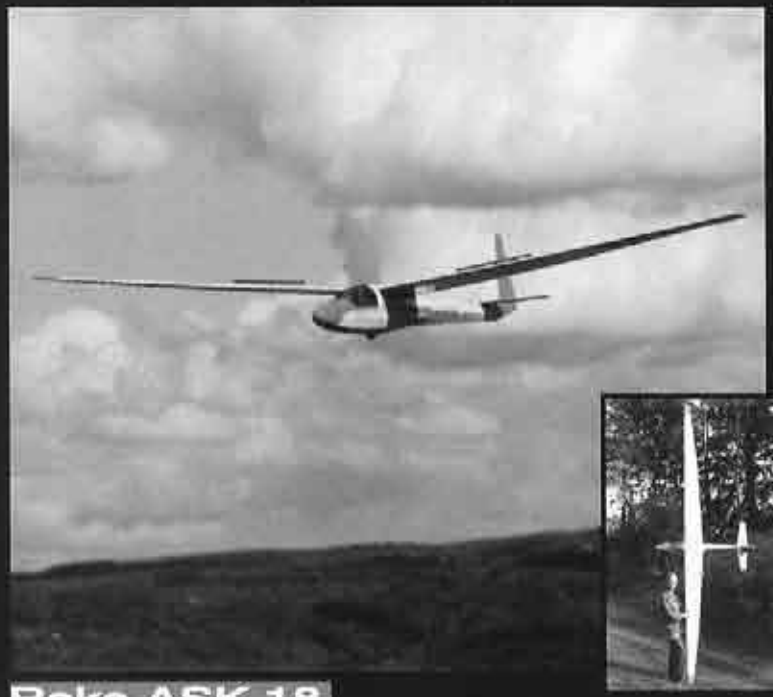

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