R/C Soaring Digest

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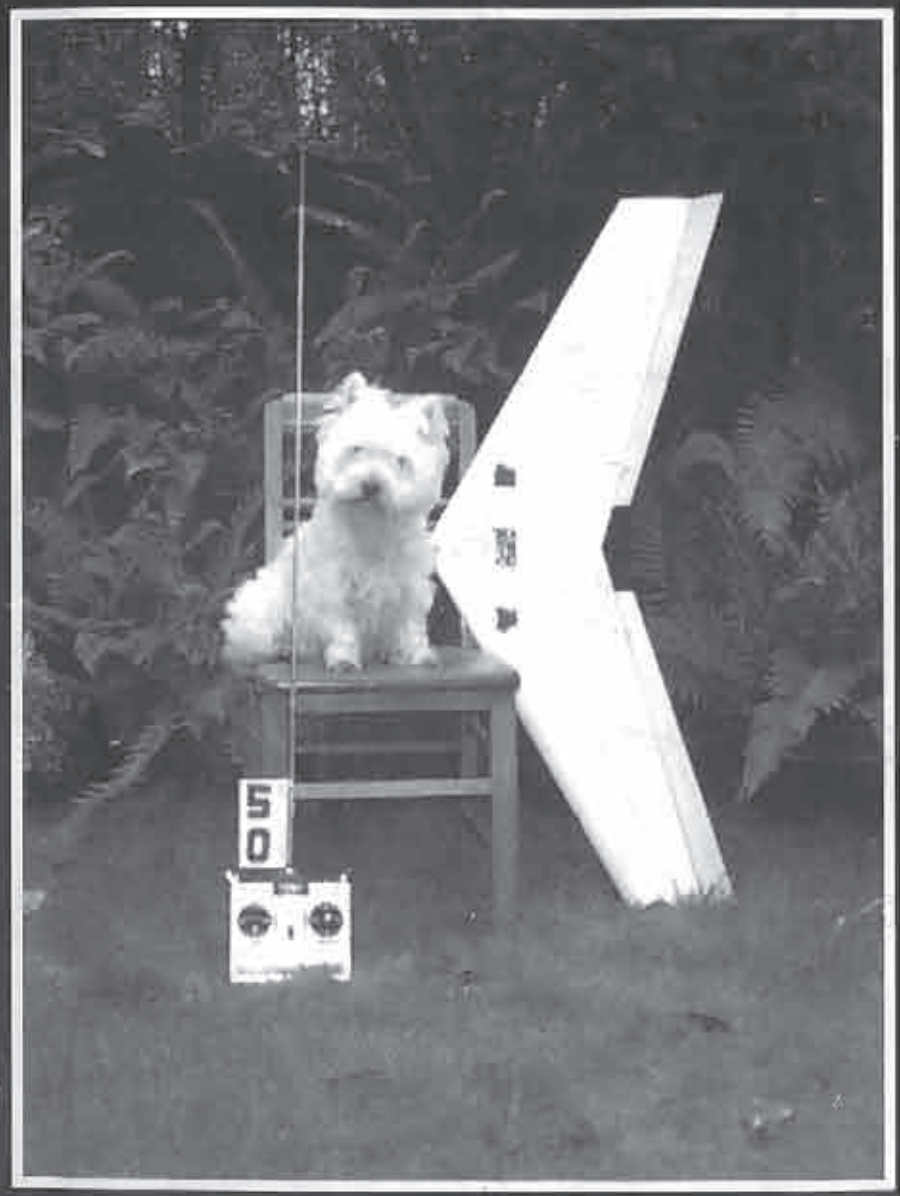

R/C SOARING DIGEST
A Publication for the R/C Sailplane Enthusiast!

Hobie Dogg, Bill and Bunny Kuhlman's West Highland White Terrier, poses next to a Trick R/C ZAGI, a nearly indestructible flying wing designed for slope combat. A review of the quick building ZAGI kit begins on page 6. Hobie, who insisted on being the ZAGI retriever during flight testing, has his own page on the World Wide Web <http://www.halcyon.com/bsquared/hobie.html>.

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

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The Soaring Site

Flight Simulation, Anyone?

A couple of folks have asked, "What's a good, flight simulation program(s)? For kids? For the Macintosh? For the IBM?" Our answer, of course, was, "Ahhh... We don't really know!"

But, we're interested, and perhaps some of you can help answer these questions. If any of you have had experience with any good (or, great) flight simulation programs, please let us know. A quick e-mail or short note on this subject is just fine; or, if any of you want to go into more detail on the simulation program(s) that you like, that's OK, too! We will, of course, include all the information we receive in *RCSD*.

Scanner Transparency Adapter

As of this issue, we can handle transparencies which includes 35mm slides. Some of you have asked on occasion, particularly of late, if we could scan from slides as opposed to photographs, and we've always said, "No." But, finally, since many of you prefer to take slides, we now have a scanner with the capability.

Now, this doesn't mean that we only accept slides/film. There are several ways to send in photographic images: photograph (color or B&W), film, 35mm slide, and via e-mail (usually, .tif or .jpeg attachments).

December Press Problem

There were a few more press problems than normal with the December issue. While we expect that January will go more smoothly, please let us know if any of you receive an improperly bound copy; while we did some heavy checking, we did not look at all 144,000 pages. We apologize to any of you that wind up with a bad copy that we missed!

Happy Flying!
Judy & Jerry Slates

ELMIRA AEROTOW "97" AT HARRIS HILL

June 13-14-15, 1997

TO BE HELD IN
ELMIRA, NY
SOARING CAPITAL OF THE U.S.

HOSTED BY:
HARRIS HILL L/D R/C
In cooperation with
The National Soaring Museum &
The Harris Hill Soaring Corp.

COME FLY WITH US AND SOAR TO NEW HEIGHTS!

Our event this year will be breaking new ground. We will be holding it at the full scale glider field atop Harris Hill. The field will be shared with full scale sailplanes, including ASK-21's and Schweizer trainers. Rides will be available during the event. The emphasis will be on fun and practicing aerotow techniques. Tow planes and experienced pilots will be there to tow you to altitude. Bring your 3 meter (118") or larger aileron sailplane, with nose release, and join the growing aerotow movement. Scale gliders are recommended, but not required. Pilots are also encouraged to bring their 1/4 scale, or larger, tow planes. We are hoping for this to be the year of the "scale" towplane. We will have a few scale sailplanes available on site for those who can't bring their own. Contact us if you would like to ship your sailplane in advance of the event. This year we are going to have a pilots choice award and other prizes to be announced. There will be a special award for the best example of a Schweizer sailplane. The only stipulation is that it must have a nose release and make one aerotow at the event. An evening Banquet with guest speakers is also planned, with Paul Schweizer and others to be announced. The Banquet will be held in the National Soaring Museum. We are working on some exciting possibilities; keep an eye out for further details as they become available. Current AMA membership is required . There will be a $25.00 pilot registration fee. For details & registration info. (including shipping your sailplane to Elmira), contact:
John Derstine at 717-596-2392.

Jer's Workbench

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Molded Hollow Core Wings Part V

The wing molds are now complete; spars are complete; Spyder foam core material is cut. No reason to put it off any longer; it's time! Let's do the wing.

Another coat of mold release wax was applied, and then buffed. Then, two coats of PVA mold release were applied. After being allowed to dry for about 1 hour, the molds were ready to be brush painted with K&B Super Poxy paint. The tops of the wings are white; the bottoms are red.

Unfortunately, I was a bit under the weather; I pretty much stayed away from shop work for two and a half weeks. Well, you guessed it. Everything just sat there, until I was ready to work on the wings, again.

Once I got back into the groove of things, the wings went together very quickly, much to my surprise!

First, a coat of epoxy was brushed into the molds. One layer of 1.5 oz. fiberglass cloth was layed in; this was followed by a pre-cut, to size, sheet of Spyder foam. The result went into the vacuum bag. I pulled 17 inches of vacuum for 24 hours.

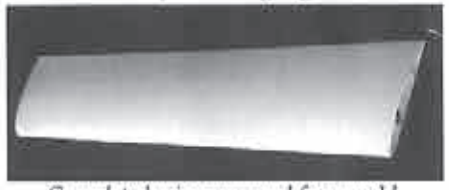
The next day, after the epoxy had cured, the molds were removed from the vacuum bag; all the rough edges were ***very carefully*** block sanded down to the edge of the mold. But, **NOT** block sanded into the mold!

Another coat of epoxy was then applied, along with a layer of 2 oz. cloth. This was set aside and allowed to cure. The rough edges were, again, block sanded down to the mold edges.

Now for the spars. First, the spars were epoxied in place onto the bottom half of the molds. A thick slurry of epoxy and cabosil was prepared, and applied along the leading edge, around the wing tip, and back along the trailing edge; it was also applied along the tops of each spar.

Lay-out of spars in bottom half of wing.

Wing mold standing on its leading edge; clamped trailing edge.



Completed wing removed from mold.

Yup! This is my first hollow core molded wing!

The top half of the mold was placed onto the bottom half of the mold. Then, they were bolted together, and the trailing edge was clamped as shown in the photograph.

To ensure a good epoxy joint at the leading edge, more epoxy was mixed, and then poured into the mold. I let it run down the leading edge, and around the tip; the excess was drained from the mold. The mold was allowed to cure standing on its leading edge.

The next day, the wing was removed from its mold. I was holding my breath, not knowing what the final

result would be...

Wow!! To my surprise, it looked like a hollow core molded wing!

I noted, however, that there was a problem with the plywood strip that had been glued onto the bottom half of the mold. It was intended as a step for the bottom of the aileron, but had pulled loose from the mold; it was in the wing. I was relieved to find that it pulled out of the wing very easily!

Next month, we'll finish the ailerons!

For information on which materials were used, and how to obtain them, please see the December issue, page 6.

■

on the Wing

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A Review of the ZAGI, a competitor for slope combat

Trick R/C, operated by Jerry Teisan, produces several tailless gliders for combat on the slope. In addition to the ZAGI-LE, probably one of the most popular slope combat 'ships available today, Trick R/C produces the B-2A in silhouette scale and the Razor, which has a swept wing planform and sports winglets.

The Kit

Our Trick R/C ZAGI came to us in a plain brown box measuring 28"x12"x4". It was nearly filled with components. A large plastic bag held the two wing halves still in their foam core beds, the pre-cut 1/8th inch balsa elevons, a complete hardware package, and the 12 page instruction manual. Outside the plastic bag floated a lead weight and a roll of packing tape. Although free to bounce around inside the box, neither of these objects seemed to have created any havoc with the foam cores.

The wings were impressive. The ZAGI has a wing span of 48", so each core is over two feet long. The airfoil Jerry uses is 12% thick, which makes the wings nearly two inches from top to bottom. The balsa elevons were not spongy, neither were they of such high density that they were overly heavy. The hardware package included pushrods, clevices, and control horns. The lead weight used for achieving the proper CG location weighed about 1.5 ounces. The packing tape was standard fare.

Required Tools

Anyone who has previously built an RC airplane more than likely has all of the tools needed to build a ZAGI. A sanding block with sandpaper of 150 to 320 grit is used to clean up the foam cores. Five minute epoxy is the only adhesive required. An X-Acto type knife and/or a Dremel tool makes easy work of cutting recesses in the foam. A ruler and a triangle or square with a 90 degree angle are used to place and align components. A round barreled pen or pencil is used to both mark the foam prior to cutting and as a fulcrum during balancing.

Construction

Cutting the ZAGI foam cores with a hot wire has got to be problematic because of the high taper ratio of the wings, yet the panels smoothed out nicely with a light application of sandpaper. We used the beds to support the wing panels during this process as well as while we rounded the leading edges. Once the wings were smoothed, everything, including the beds, was thoroughly vacuumed.

In order to have a firm fixture for construction, the two top beds are attached to each other using five minute epoxy; same for the two bottom beds. After placing waxed paper on the center line of the lower bed, the two wing halves were brought together and their fit checked. A mixture of epoxy and micro-balloons was applied to the root of each wing panel and the two parts brought snugly together using the bottom beds as a jig.

Believe it or not, when the epoxy has hardened, it's time to start covering!

Our ZAGI arrives!

Long strips of packing tape are layered in slightly overlapping fashion from the trailing edge to the leading edge. We placed the tape strips down while alternating between the left and right wing panels, thus making sort of an overlapping weave at the center of the wing. Top surface first, then bottom.

Once the wing is covered, it's time to take care of the elevons. The instructions say to cover the elevons with tape and then use tape to construct a hinge. This turns out to be a LOT of tape, which equates to a LOT of weight, much of it excess. The ZAGI is so short coupled that an extra ounce at the trailing edge required four ounces in the nose to compensate. If we had it to do over again, we'd consider putting a couple of coats of dope on the elevons and using the tape only to construct the hinge.

Now that the airframe is complete, it's time to install the radio gear!

Radio Installation

All of the main radio components are installed by forming a hole of the appropriate size at a predetermined location. Receiver, battery pack and servos are all press fit into the airframe. If done properly, this is very secure and affords quite a bit of protection.

Before laying out the location of the various components of your radio system, you'll need to know which of three radio installation procedures will be followed. This is because Jerry includes detailed directions for installations using transmitter based mixers, for those using add-on mixers at the receiver (Christy mixer or equivalent), and for those utilizing the Du-Bro mechanical mixer. We're using our trusty JR Century VII system which has both v-tail mixing and aileron-rudder mix. These two options, used together, allow us to fly elevon controlled aircraft off the single right hand transmitter stick.

Servo location is the same if mixing is at the transmitter or receiver, while the Du-Bro mechanical mixer requires servos be mounted in different locations. Locations of the battery pack and receiver are based on control setup, but are easily laid out.

Once locations of the components are marked on the foam, it's a simple matter to carve out a properly shaped receptacle in the foam. We cut the foam into small squares using an X-Acto blade, then cleaned up the recess with a small router blade mounted on a Dremel tool. It's important that everything fit snugly. We didn't run into any problems, but you can always fill a too large hole with balsa scrap.

The antenna and the wiring to the servos is run through shallow channels carved in the foam. We used an X-Acto blade to cut an initial guide groove, then ran the Dremel router beneath the surface of the foam while following the guide groove.

The lead nose weight is the last thing to be embedded in the foam core. The control horns are mounted on the elevons. A pushrod connects each servo to its respective elevon.

Having everything out in the open is a unique visual experience, and utterly efficient for use in slope combat.

Finishing Construction

Just two things left to do.

First, the elevons are set up for aerodynamic trim. This consists of using a straight edge to align the elevons with the bottom surface of the wing trailing edge.

Second, the location of the CG is marked on the bottom surface of the wing using a triangle or square, and that round barreled pen or pencil listed under "tools needed" is then lightly taped across the centerline right over that mark. The wing is placed right side up on a flat surface and weight is added to the nose in the area of the already existing lead nose weight until the complete ZAGI momentarily balances on the pencil. Because we fully taped the elevons, we had to add

quite a bit of weight to the nose of our ZAGI. As mentioned before, we will attempt a lighter finish on the elevons when we build another.

An optional step is painting. If you are to be involved in a slope combat environment, be sure to follow through on this. Identification of your 'ship in the heat of battle is imperative! It's also beneficial to use a different color for the top and bottom of the wing to aid in orientation under tense conditions.

SPECIFICATIONS		
	ZAGI	ZAGI-LE
Wing span	48"	48"
Construction	2 lb. white foam throughout	2 lb. white foam & EPP leading edge
Wing area	2.83 sq. ft.	2.83 sq. ft.
Airfoil	Zagi 12/5	Zagi 12/5
Weight	16 oz.	23 oz.
Wing loading	5.65 oz./sq. ft.	7.77 oz./sq. ft.
Required radio	2 channel with electronic or mechanical mixer	2 channel with electronic or mechanical mixer
Price	No longer available	US$45 plus US$6 P&P

Flying

Due to uncooperative weather during late summer, our flying experiences with our ZAGI were limited to some tosses off our deck and over the field below. The ZAGI flies fast, rolls quick, and exhibits rapid pitch response. These are all good characteristics. Recovery from strange attitudes is easy due to the ZAGI's inherent stability.

The instructions cover repair of major dings to the leading edge. It's just a matter of cutting out the dinged section, gluing in a styrofoam block, sanding the block to shape, and retaping. Since our field is filled with man-eating blackberry bushes and a grove of young alder, we got to experience some minor dings to the leading of our ZAGI wing during our experimentation. Most of these disappeared overnight, just as the instructions promised. The others, all minor, have not been repaired as yet because they don't seem to be adversely affecting flight performance.

Conclusion

The ZAGI builds incredibly fast - three hours max. We counted the curing time of the epoxy for this total, but not the time spent swinging various parts around our heads while making airplane noises. The resulting airframe is nothing if not downright cute. It is robust, flies great, and is ultimately portable. With some carefully chosen paint schemes, this little goblin has great potential as an art form.

Our ZAGI was produced by Trick R/C before the advent of the ZAGI-LE, and so is composed entirely of white styrofoam. The LE designation comes from the use of expanded polypropylene (EPP) foam on the leading edge of the wing. EPP foam is nearly indestructible; huge dents immediately spring back to their original shape.

The EPP foam leading edge brings the overall weight of the ZAGI-LE to 23 ounces, and the wing loading up to a bit over 7.7 oz./sq.ft. The ZAGI-LE will fly in winds of 7 to 50 m.p.h. Jerry has flown his ZAGI with an additional 16 ounces of lead right on the CG, effectively doubling the original design wing loading!

Jerry has also added winglets to the ZAGI-LE. These seem to improve performance, but can get knocked off in combat, leaving the aircraft nose heavy and more susceptible to hits from other combatants.

Due to the overwhelming acceptance of the ZAGI-LE, the original ZAGI is no longer in production. The ZAGI-LE uses the same construction techniques and is available in six colors. It sells for US$45.00 plus $6.00 packaging and shipping. Trick R/C, Jerry Teisan, 938 Victoria Ave, Venice CA 90291. To order call (310) 301-1614. On the World Wide Web, <http://www.zagi.com>; E-mail to Zod@zagi.com.

Buy it, glue it, tape it, chuck in your radio and fly it! What a kick in the head! ■

"SHORT CUTS"

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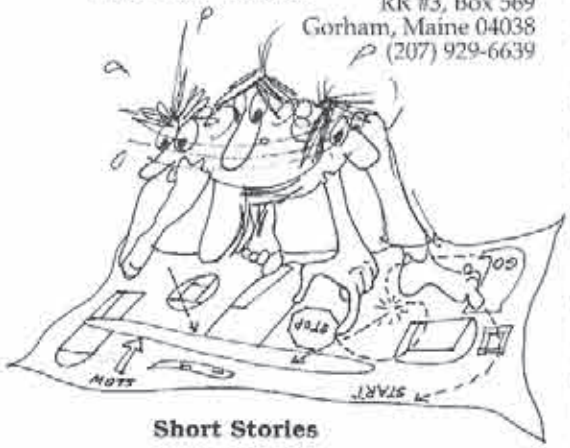

Short Stories

This month, I'm a little short on time, so I thought I'd cover several short subjects. Some of the ideas are mine, and others were passed on to me from fellow fliers.

Trimming Wing Coverings

I picked up this idea from a good old friend from the SOAR Club out of Chicago. Wayne Fredette gave me endless advice and inspiration during the building and flying of my first trainer, an Oly II. Wayne explained to me that trimming Monokote and other wing coverings can be made quite easy by using double edge razor blades. They are many times sharper than exacto blades and single edge industrial blades. The double edge blades glide effortlessly along leading edges especially when angled. Another bonus is two cutting edges. I was originally concerned that I would cut myself grasping one edge while cutting with the opposite edge. This hasn't happen yet in 7 years.

Easy Paint Jobs

This idea is from Walter Mudgette of the DownEast Soaring Club (DSC). When using Krylon paint, Walter immerses the lower half of the spray can in hot water, shaking occasionally. Yes, I know the can should not be exposed to temperatures greater than 140 degrees Fahrenheit, so do this outside and place a rag over the bucket, just in case. **And, don't get the water too hot!** The fuselage is then suspended over a clean area by a lint-free string, and then gently warmed with a heat gun, taking time to gradually warm the fuselage, without distorting it.

This process takes about 5 minutes. The paint can is removed from the hot (or warm) water, and then dried off so that no water drops accidentally ruin the finish. Then, just blast on the paint heavy, almost to the point of dripping. The warm paint flows on very smooth, and the heated propellant improves the atomization, while the warmed fuselage prevents dripping. Walter paints all his fuselages this way and always gets excellent results.

Low Tech Trickle Charger

Jim Armstrong (DSC), like many of us, doesn't have one of those fancy chargers that automatically kicks back down to a trickle after receiver and transmitter batteries are charged. Instead, he uses a simple lamp timer that feeds into a 6 outlet power strip, which is feeding many of the simple chargers that come with radio sets. After a day of flying he plugs everything in and sets the lamp timer to the on position, which bypasses the timer function. The next day, he shifts the switch to the timer that turns on the circuit for 1 hour every day, to maintain the batteries. Simple and easy.

Rosin Paper

This is a heavy duty, industrial grade paper that's about 1/64" thick, comes on 100' rolls, and costs about $7.00 per roll. It's used as a barrier between hardwood floors and sub-floors. I keep a roll suspended above my workbench on a length of pipe. To keep the workbench clean during wing bagging, I just pull a 5' length over the workbench and staple the overhang up underneath. The rosin paper is then pulled off and thrown away after the wing is inserted into the bag. This leaves behind a nice, clean bench to complete the bagging process.

Cheap Wing Bags

Most recently, I had to build wings bags for my DG-800. I wanted them to be durable, easy to make, and cheap. What I did was to purchase several yards of heavy felt from a fabric store, and stitch the seams together with hot glue. Felt for the top and bottom was cut a little over twice the needed width. The glue gun was brought up to temperature, and three side seams were glued together, leaving the entrance open, much like a sleeping bag. Initially, this looks a bit ragged until the bag is turned inside out. I then folded the bag in half lengthwise and ironed a crease along the fold. The glue gun was then used to stitch the center along the inside of the crease, and creates two bags, one for each wing.

Cheap, simple, and I didn't risk the chance of breaking needles on the sewing machine or mastering the art of threading the bobbin. The wing bag for the DG-800 cost about $9 and is very durable. Velcro strips can be added at the mouth of the bag to keep everything inside. I even made a mini bag for the highly polished, 1/2" steel wing rod for my ASW-24. I've found that if the rod is lightly sprayed with WD-40 and then inserted in the rod bag, a small amount of oil residue is retained by the bag, which keeps the finish free from surface corrosion.

Happy Building! ■

And another good tip? It is a very good idea to give these critters plenty of room, as I'm sure you all know!!

Steve Savoie with EMS DG 800, ARF, 4.2 Meter, 7 lbs. all up weight. Flown for the first time at the 1996 Canadian scale event. Robin Lehman photo.

1A. An airplane coming toward the viewer adds drama and excitement. Herk Stokely launches his Skeeter Hawk at the 1995 Nats HL contest.

Ten Tips for Soaring Photographers

...by Dave Garwood
Scotia, New York
...by Shelby Sanders
San Clemente, California

Introduction

Photography is a modern day folk art. Is there anyone who does **not** have a camera? Thought so. Is there anyone who has **not** made photographs of their pride and joy sailplane? Probably not. Do you like having pictures of the people you fly with? Yeah, so do we!

What may be interesting and useful to sailplane builders and flyers are examples of some of the tips, tricks, and techniques that we use to get the type of photos that magazine editors and readers like to see. Even if you don't expect to submit your work for magazine publication, perhaps you'll find some ideas here to improve your scrapbook photos of your planes and your flying buddies.

In action sailplane photography, the pilot is every bit as important as the photographer. The two must work together closely for the best result. The more the photographer understands about flying, and the more the pilot understands about what the photographer is trying to capture on film, the better the result can be. Practicing at working together improves pictures dramatically.

ABOUT THE PHOTOGRAPHERS

Dave Garwood has been working in photography more than thirty years, starting in the darkroom of his high school yearbook. He is a planner by trade, and has published 485 model airplane photographs, including 16 cover shots.

Shelby Sanders started in photography just two years ago and has already published 30 model sailplane photos including the *RCSD* cover for September 1996. She works at the most important job on the planet: raising children.

1B. An airplane moving away from the viewer is far less dramatic, and shows the back of the pilot rather than his face. Photos 1A & 1B by Dave Garwood.

1. Photograph planes flying toward the camera.

Ask the pilot to launch a thermal plane toward the camera position, or to fly a slope or thermal plane toward you. This gives a more exciting point of view of the sailplane; if you're shooting the plane and the pilot, it captures a larger image of the plane, and a smaller image of the pilot.

2. Eliminate distracting elements.

Many otherwise excellent photos are diminished by objects in the foreground, or background, that distract the viewer's attention away from the main elements in the picture. Practice looking for unwanted distractions in the viewfinder when you compose a picture. You may be able to move them yourself, to ask people to move a step or two, to shift your own camera position, or to wait a minute until the coast is clear.

3. Keep the plane above the horizon.

For the clearest view of a plane on the wing, ask the pilot or move your camera position so that it's against the sky. Airplanes on or below the horizon, very often, blend in with the background and become difficult to see.

2A. This would be a striking launch shot if it were not for the bystanders in the way. If you take note of the other "subjects" in the frame, you'll save film and avoid spoiling a great shot.

3A. Where's the plane? When the airplane is at or below the horizon it can blend in with the background and becomes hard to find in the picture.

4A. Move back to capture the overall scene. One problem, though, is the viewer has little feeling for the action. Charlie Richardson, Rick Shelby and Joe Chovan fly at the Torrey Pines Gulls (TPG) thermal field.

2B. This launch shot was set up more carefully, and the uncrowded scene gives a feeling of spaciousness. Photos 2A & 2B taken by Shelby Sanders at Los Banos 1996.

3B. The plane above the horizon becomes a prominent part of the picture. Here, Charlie Richardson prepares to catch a Climmax PF HLG. Photos 3A & 3B by Garwood.

4B. Move in close to capture the action. Note Joe Chovan's "at the ready" posture as he prepares to catch his WACO Mosquito at the TPG thermal field in February, 1996. Photos 4A & 4B by Dave Garwood.

5A. The dreaded "Statue of Liberty" shot; in this case, Bob Powers and Alex Paul at the spring Simsbury, Connecticut contest.

5B. Let's see action. Here, Steve Condon catches a Thermal Eagle during an F3J round. Photographed at the 1996 AMA/LSF Nats.

Photography by Dave Garwood.

4. Move in close.

The eye readily sees motion in nature, and perceives it easily. In a static representation of a natural scene, the motion is missing and often it's hard to see in a photo the action that was easy to see on the flying field. If the most interesting object in your photo is too small, the emphasis is lost.

One way to overcome this problem is to move in close and fill the frame with the action, to isolate the important part of the scene. Moving in closer almost always improves a photograph.

5. Go for the action shot.

The photos we remember most are generally action shots. Considering sailplane photography as sports photography improves your pictures. Pick up an issue of *Sports Illustrated* to see how the best photographers do this. Knowledge of the sport being

6A. Direct light. Bright sunlight shows color and detail, but strong shadows can make it hard to see the outline of the plane: DAW FW-190 PSS.

6B. Diffuse light on an overcast day still shows color and detail, but the softened shadows make it easier to see the plane's outline: DAW P-40.

Photography by Shelby Sanders.

7A. This shot shows the plane's belly. Photographing the bottom of the plane is generally easier, but makes for an uninteresting picture if the plane is the sole focal point of the photo. Joe Chovan's Slope Scale Aircobra at Los Banos.

7B. A top view is much more pleasing, as it displays the color and character of the airplane. Dave Reed's Whirlwind at Los Banos. Question for the reader: Do you prefer sky and clouds background, or do you like to see the horizon in the frame?

Photography by Shelby Sanders.

photographed helps the photographer know when and where the peak action will occur.

6. Study the light.

The term *photography*, from the Greek words *photo*, light and *graphos*, drawn or written, means to write with light. The more you pay attention to light, the better your writing or drawing with light will be.

We all know that there must be sufficient light available to properly expose the film, and going beyond this, the quality of the light plays a big part in how your pictures record the scene you wish to capture. One important characteristic for airplane photographers is direct versus diffuse light.

Direct sunlight, flood light, or photo flash give sharp, high-contrast images and is generally best for recording strong color on film. Light diffused by overcast sky, or reflected from a building and illuminating a subject in open shade, gives a softer rendering and tends to mute the strong colors. Diffuse light is generally more flattering for photographing people.

7. Plan the angle of view.

A view of the bottom of the plane is common and ordinary. Because of the markings, the top of the plane is often more interesting. Because the light most often comes from above, the top of the wing often shows up better on film. Working with the pilot to position the plane so we can photograph its top side, generally makes for a more interesting picture.

8. Watch for subtle differences in plane position.

Not many things improve the drama of in-flight shots like capturing two or more planes flying together. When you get the prints back, you'll be amazed at how much of the flight that looked fine in life looks ungraceful when frozen on film. Be prepared to discard some of

8A. This shot is passable to illustrate two planes flying in formation. The planes not "formed up" well (pointing different directions) makes the shot appear less realistic.

8B. Formed up nicely, and before a more interesting background of clouds and horizon below, these planes appear more natural.

Photography by Shelby Sanders.

the prints that show the planes at awkward angles, and show your friends the ones where the planes look "right".

9. Go beyond posed portraits.

Pointing a camera at them makes most people tense up, at least a little, and this shows up in prints as stilted or strained facial expressions, and tense body language. Sure, take your posed shot so you have it; then, keep the camera ready and look for an opportunity to take pictures of people who are doing something other than staring into the camera lens.

Sometimes, the plane is the most important object in a picture, and the person is secondary, but when you want to show the person **and** also show they are engaging in a sailplane activity, it's often not necessary to show the whole sailplane to convey the scene. And remember, move in close.

10. Be aware of the background.

Objects in the background can greatly add to or detract from the primary scene. They can serve to show where the photo was taken, like the tourist in front of Niagara Falls. On the other hand, it's amazing to see the number of club field shots that include a porta-potty in the background. Guess what draws the viewer's eye?

Study the background of everything you photograph, and decide in each case how showing more background can improve the picture. Ask yourself if showing less background better reveals the primary subject. When making head-and-shoulder portraits, one way to get a clear background is to squat down and shoot upward at the subjects, making the open sky the background.

9A. Posed portrait. When staring at a camera, most people tense up at least a little, and thus you capture a stilted or unnatural expression. Shadows cast by direct sun overhead don't help here, either.

9B. Candid portrait, which gives a more relaxed expression. Here, Michael Selig looks up while repairing his Blackhawk at the 1996 Nats. Open shade lighting is more flattering.

Photography by Dave Garwood.

10A. Portraits with background. Camera position further back includes interesting information about the location, but shows less detail in the human subjects. This photo of Dave Garwood and Twin Beech pilot, John Wilson, taken at Visalia by Mike Lee.

10B. Portraits closer in. Moving closer to the human subjects shows their facial expressions in more detail, and yet we still have a hint of the scene - an airborne photography mission. *RCM* columnist Mile Lee, with CVRC member and pilot, John Wilson, photographed by Dave Garwood.

Conclusion

If there's anything that improves with practice, it's photography. Sure, basic technical information is fundamental. And learning about composition by studying photos and paintings can improve your own composition skill.

Many photographers improve rapidly while taking a class, while others benefit more from self-study; there are many books available, but we think the best way to improve your technique and results is to practice. If you'd like to take better pictures, consider buying ten rolls of film and putting them through your camera in a month at the sailplane flying site. ■

John Roe's Spitfoam speeds by looking for the next available fresh meat! Shelby Sanders photo.

FIGHTING FOAM & HEAVY IRON

Volume 1, Number 4

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Happy New Year!

You'll be reading this in January, so I'd like to wish you and yours a happy and healthy new year, as well as hoping you all had a joyous holiday season. So, that aside, let's get back to our usual diet of tape and paint thinner...

How's that scoring work?

Myself and fellow club members are frequently asked how our club scores foamie combat sessions and how our engagement protocols work. It's actually real simple and goes like this:

If two aircraft touch, and both remain flying, no score is earned by either pilot.

If two aircraft touch, and one subsequently crashes as a direct result of the contact, then the pilot still flying has an OPPORTUNITY to score. He or she will not gain a kill until either a full 360 degree roll or 360 degree loop and return to level flight is performed. This is what we call a "verification maneuver", and proves that the victor is indeed still in controlled flight. This must be done prior to continuing on to another engagement, and is usually performed as soon as energy permits.

If two aircraft touch, and both cease flight (crash), then neither pilot scores. The walk of shame then ensues.

Yes, it really is THAT simple. Simple is good, since it leaves no margin for opinion; this methodology is practically un-impeachable in real-world practice. It does, however, necessitate flying real close to the ground. At our site, this is the norm since our ridge line has a sharp break; the lift band starts right at its edge and extends out from there. Not all sites can support flying close to the ridge, and some slopes I've flown don't really have a "break" in the slope at all, but rather curve gently from the incline to the flat at the top. Here it is more difficult to score by this standard, but it's definitely possible. The trick is learning to consistently fly the rough air at low altitudes on these slopes. If you hang around there long enough, you'll get some action, eventually, as other fliers begin to venture down into your "zone" to get a piece of you.

After a few big debates about who-got-who and what-not, our club had completely abandoned the "touch is score" method and resolved to go completely to the "downed aircraft" philosophy outlined above.

Try it and see what kind of results you get. The key to survival in this is being able to recover quickly from a hit and having a well trimmed, well balanced and lightly loaded airplane. Being the quickest to straighten out the plane, point its nose off the slope, and get airspeed, will usually be the winner.

If you'd like a copy of the Laguna Niguel Slope Soaring Guild's combat rules sheet, feel free to drop me a line and I'll get it right out to you via snail or electronic mail.

John preparing to do his tradmark inverted launch with the Spitfoam. John is the owner of the Martial Arts Academy of Laguna Hills, and can throw an airplane REAL hard. It's not a good idea to be flying by in front of him when he's launching - going for the "SAM" kill! Wade Kloos photo.

I'd especially like to hear from you readers about scoring systems used at your home fields, too, so we can share with our fellow enthusiasts here!

Bits and Pieces for Combat Killers

The search for solutions to a combater's ills is never ending; the stronger we make the planes, the harder we play with 'em! Here's some stuff that I've found helps keep the gremlins away...

For starters, there's pushrods. For quite a while, I hadn't given pushrods a second thought and was using the same old ones I always had in other planes. After a while, I noticed many of us at the field were beginning to have pushrod problems. I inspected the rod in one of my own birds the night after a particularly zesty session at the field, and found that it was kinked like a string of sausage. I replaced the inner rod and gained much better (like new!) control authority on the tail elevator. Some of the other guys tried piano wire, mild steel wire and even cables. None of these fixes were holding up much better. Later, I recalled seeing some monster rods at the hobby shop and resolved to go check and make sure they weren't just a hallucination. (Hey... It happens...) I was not disappointed! I found Sullivan "High Stress", No. 517 pushrods right on the rack. Heh, heh... These are no monkey business, friends! They come complete with massive 4-40 steel clevises and lugs, and are thick enough to get you respect on the streets of L.A.! I installed a set in my new Fw190 and they've held up great; whimpy pushrods no more!

Then there was the servo scare... Jeez, I thought I'd NEVER hear the end of this one! Remember, these planes are meeting the ground at high velocity and are subsequently pretty unforgiving to your radio equipment. I've already busted the ceramic filter coils in a couple of receivers and, yes, stripped a couple of servos. One guy called his servo's manufacturer and asked them to honor their warranty! It went like this:

Combat Neanderthal: "Hey, I was flying last weekend and one of your

%&$#@! servos stripped out on my plane!"

Tech Support: "How'd it happen? Did you drag a flap on landing?"

Combat Neanderthal: "Nah... I flew it straight into the ground from 100 feet in the air. Why?!"

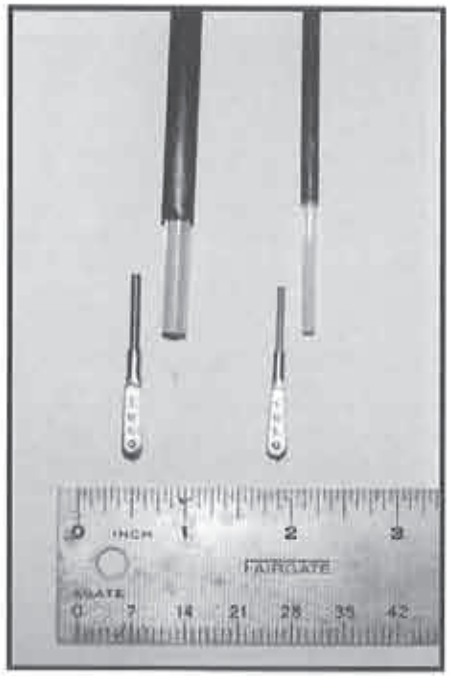
Tech Support: "Uh... It wasn't one of OUR kits, was it?"

And thus, one radio manufacturer learned all about slope combat. Not wishing to puree any more servo gears, some of our locals started using servo savers. The best ones discovered so far are made by Kimbrough Products, 1322 Bell Avenue Unit 1-C, Tustin, CA, 92680, (714) 258-7425. They come in a couple of different sizes, and the smaller variety work well in typical combat planes; model numbers 113 (JR, Airt. - grey), 114 (Fut. - white) & 131 (Hitec - red). These are available at most hobby shops and can be found in the R/C car accessories section, so check there before calling the factory. The clever design uses an annular spring system that is fully enclosed in the body of the unit. They've proven to protect the servos really well, yet are still strong enough to stand up to normal flight loads on control surfaces without giving. Also, their profile height is almost as low as a conventional arm, so if your plane's servos are enclosed, they won't stick out of the airframe. Another bullet dodged!

Most serious combat pilots have also taken to using individual servos for each aileron to allow camber control and quick maintenance of the gear. For this setup, I still like a plain old No. 2 wire pushrod with a nylon clevis at the aileron end and a "Z" bend at the servo arm end. Also, I omit the servo arm screws and just let the arms friction fit on the output shafts (works well on JR servos). In the event of a hard hit, an arm will just pop off the servo or the nylon clevis pin will break, which saves the servo. These built-in and predictable failure modes can save some trouble, especially at a contest, where you're under pressure already and DO NOT want to be swapping a set of gears.

Spitfoam?

That's right! I know there's a dedicated core of Spitfire fans out there, and one of the worst of 'em is this month's Reader's Ride inductee, John Roe! He's goaded me for ages to design him a Spit' and I never did it. I got my eventual punishment for this indiscretion by his bashing one of my own kits!



Sullivan No. 517 "High Stress" pushrods compared with the regular, red-housing, Gold-n-Rods. The 517's are extra chewy, as you can see.

John's beautiful Supermarine charmer started life as a D.A.W. Kawafoamie. It got an inch bobbed off the nose and had its spinner area and chin re-contoured. The aft end of the fuselage and the canopy areas were left as supplied in the kit. John cut his own tail feathers from coroplast in the appropriate, and very British, shapes.

The wing required the most extreme alteration. The stock tapered wing had the ellipse cut into the leading and trailing edges starting about 30% of the panel span from the tip. This ended up giving a pretty convincing scale planform shape and, after spar installation, the tips were very carefully re-contoured to a near symmetrical airfoil on a disc sander. By the way, John says this is one of his favorite tools for shaping EPP planes.

Kimbrough Products' servo saver. Originally designed for R/C cars, they're small and light yet plenty strong enough for use on combat ships. Different models are available for specific servo brands. See text.

Taping, radio installation, etc., is done pretty much by the book, with Household Goop used for all the joinery. John guides his Spit' with an Airtronics Stylus system using three 141 servos in an aileron/elevator setup, utilizing individual aileron servos for full trailing edge control on the wing. Covering is overall light gray Ultracote with olive Monkote over that to make the camouflage pattern on the top surfaces. The wing leading edge flash, spinner and fuselage band are yellow U-cote. Canopy glazing is light blue U-cote, and sets off quite nicely against the camouflage pattern. National insignias and the tiger nose art are Major Decal pressure sensitive decals, sheet No. 240 by Northeast Screen Graphics, which are available at most hobby shops (for .40 size models). Nice work, John! Now, will ya' quit bugging me about Spitfires already?!

Errata and Sign-Off

The November edition of FF&HI contained two errors I'd like to correct. Judy mentioned these in last month's editorial, but I wanted to air it here, too.

First, the captions for the Ruffneck II and Survivor II did get reversed! Most of you picked it up due to the text, but still... Sorry 'bout that Pat and Marc! Actually, I don't get away THAT easy... I know the Parker Mountain crew will be paying extra close attention to the aft areas of my aircraft at the next contest! Does this make me nervous? Actually, uh... Yeah... It does.... Gulp.

Second, Ron Davis' phone number was in-correct... I typed it wrong even though we'd spoken a couple of times already! It should be: (805) 250-0020.

So that's all friends... Now, I gotta' go find my cold weather gear for the cool season, and I'll probably even be forced to wear shoes. The good part is that the winter winds are great for flying my lead sled PSS planes! Yeee haaaw!! See ya' in a couple months!

■

Electrics at the '96 SAM Champs

...by Mark Nankivil/Jay Burkart
...photos by Jay Burkart

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7411 Canterbury Ave.
St. Louis, Missouri 63143
(314) 781-9175

The Society of Antique Modelers (SAM) held their '96 Champs in Pensacola, Florida from October 12th through the 16th. While most of the classes flown are gas or rubber powered, there are three electric events flown: Spirit of SAM, Limited Motor Run (LMR), and Electric Texaco. The contest is run somewhat differently than what we are used to with our sailplane contests in that you have a task with rounds to fly for the day. You just go up to the scoring booth, ask for a timer and get your frequency pin, and then go fly your round. Some contestants would get their rounds in early in the day, while others would wait 'til later in the day. It was the most relaxed contest flying you can imagine. You set your own schedule and do your own thing. Flying was from 8 a.m. to 4 p.m., and that's it!

Rick Richardson holding his Cleveland Viking, powered by an Astro FAI 6T with Astro gearbox. Rick placed 2nd in LMR.

Phil Pearce holding his Lanzo Bomber for Texaco.

Dick Huang holding his Phantom Fury for the Sprit of SAM event, powered by a Graupner Speed 400.

Phil Pearce holding his Whitman Skyrider for the spirit of SAM event, powered by a Multiplex 380 with Multiplex 10:1 gearbox. Phil placed 3rd in the event.

This year's Champs were flown from a 1 mile square, out landing field for the U.S. Navy. The place was like a huge putting green. It was beautiful and quite easy to get used to for flying. There was some paved runway surface for the ROG, and a landing area half the size of Kansas...

The weather was generally pretty good, but always windy in the morning and breezy in the afternoon. The weather report was for mostly fair skies with variable cloudiness for the week.

The Spirit of SAM event was the first electric class flown. The class is for models of pre-1943 rubber models with a weight limit on the motor battery pack of 4.1 ounces. This class is ideal for Speed 400 size motors, typically fitted with gearboxes. We had two rounds to make 2 maxes, and the event was won by Jay Burkart, flying a Lanzo Cabin powered by a Speed 400 motor with a 5.25/1 Simprop, turning a

Pat Harrison holding his Lanzo PussMoth, Spirit of SAM event, with a Speed 400 with gearbox.

Jerry Smartt holding his Heller's Mulvihill, Spirit of SAM event, Kyosho Bienchen motor with Marx Pile 6:1 gearbox.

Jerry Smartt holding his Lanzo Bomber for the Texaco event. Trinity 16T motor with Master Airscrew 3.5:1 gearbox. Jerry placed third in Texaco, using the same plane and motor that he used in LMR, due to the weather conditions.

Jay Burkart holding his Lanzo Cabin for Spirit of SAM event. Powered by a Graupner Speed 400 with Simprop 5.25:1 gearbox. Jay won the Spirit of SAM event.

13.5x8 prop. Eut Tileston came in 2nd flying a beautiful Stahl scale Fairchild 24. This model used a Speed 400 motor with a Graupner 6/1 gearbox and Sonic Tronic 12x7 prop.

The second electric event was Limited Motor Run (LMR). In this class, the designs allowed are pre-1943 gas powered designs; you are allowed a 90 second motor run and use a 7 cell 800mah motor pack. Props are not allowed to fold, and the target time is 10 minutes for the total flight. Jay Burkart flew a Pylon Playboy to 1st in the event. The model used a MEGA Mini motor with a Kruse 2/1 gearbox and Aeronaut 14x7 prop. Rick Richardson finished 2nd, flying a Cleveland Viking powered by an Astro Flight geared FAI motor turning a Master Airscrew 11x7 electric wood prop.

The third class flown was Electric Texaco; the task is longest flight of the day with two tries and an unlimited motor run. The models are restricted to a 7 cell 800mah motor pack. Jay Burkart made it 3 for 3 with a 1st, flying a Lanzo Bomber using a Speed 400 motor with a 5.25/1 Simprop gearbox swinging a special 16x16 prop. Jay's winning time was 36 minutes. 2nd was Jack Hiner

Eut Tileston launching the Caudron for Kirby Hinson.

Eut Tileston with his Stahl scale Fairchild 24 for the Spirit of SAM event. Powered by a Graupner Speed 400 with Graupner 6:1 gearbox. Eut placed 2nd.

Jay Burkart holding his Playboy Pylon for the LMR event. Powered by a MEGA Mini Kruse 2:1 gearbox. Jay won the LMR event.

Eut Tileston with his Stahl scale Caudron Fighter for Spirit of SAM event. It was flown by Kirby Hinson, and performed very well. Graupner Speed 400 with Simprop gearbox 5.9:1.

Jay Burkart receiving the perpetual trophy.

flying a Lanzo Racer powered by a Leisure 28T motor using a Leisure gearbox turning a 16x15 prop. Jack's high time was 29 minutes. Some of you will remember Jack from his long distance R/C Sailplane records in the '80s and from the Great Race.

This year was the first time that a perpetual trophy was given to the Spirit of SAM winner in the memory of Australian Colin Borthwick. Presented to Jay Burkart, the trophy is a beautiful polished full size metal aircraft propeller blade mounted on a wood base with logos colorfully mounted along the blade face.

Colin was instrumental in starting the SAM movement in the land down under, and this is a fitting tribute to him.

Next year's SAM Champs will be in Las Vegas from September 22nd thru the 29th. Step back in time, build an Old Timer, and join in on the fun! ■

Flat Field Performance
Just how well does your (scalc) sailplane fly?

One most extraordinary day in the middle of August, I had the opportunity of flying a 1/4 sized Roke ASK 18 (4 meters, 12 pounds, wing section E 193/197) which I've flown for 6 years, a 1/3 Müller Grob Twin Acro III (5 meters, 22 pounds, wing section E 209-207-205-203) which was a week old and had maybe ten airtows and two hours of airtime, and last but not least, the Ripo 1/3 DG 600 (6 meters, 22 pounds, scale wing section), which had never flown before.

On the first airtow, I released the DG 600 three feet off the ground for a test glide; it flew for several hundred yards before I deployed spoilers and got it back down on the ground in the dirt, well past our landing strip. Needing only a little up trim to keep straight and level (Who knows how far it would have gone without the spoilers?), this ship was quite obviously well-balanced and ready for its first serious airtow.

On the next airtow, trusty towpilot Tony Napoleon, with his G-62-powered Robin 99, towed the DG up to around fifteen hundred feet, and I released. After trying out some 360s, which required only minimal aileron control and just slight rudder, I handed the radio to Sal Iasilla and he flew this bird around for forty-five minutes. Apparently, he could do no wrong, and no matter where he went, up went the DG 600! This twenty-five pound bird streaked around the sky and continued to rise no matter what we did! A little later, Sal told me he hadn't given his batteries a full charge, so we decided to get lower to the ground and land. Sal handed me the radio; I deployed spoilers, and down we came. At about a hundred feet, I retracted the spoilers and did some 360s. I expected to do two or three full circles and then enter the landing pattern, but it was more like twenty-five to thirty! And perhaps, most extraordinary of all, not only was this ship scale-like to behold, but it had the unmistakable whistle of a full-sized sailplane. We couldn't believe our ears! After

Sal Iasilla (L) and Tony Napoleon, 1/3 Ripo DG 600.

marveling for quite some time at what we were seeing and hearing, I entered the traffic pattern and made a normal landing. What an amazing flying machine, and what an impressive first flight!

Interestingly, the only description of the Ripo DG 600's wing section which I could obtain was "scale wing section". I've seen nothing like it on a model aircraft before. Whatever this section actually is, it makes no compromises and produces a most extraordinary L/D; and, as I said before, it gives off this most amazing, scale-like whistle! Most impressive!

Immediately after landing, we then flew Tony Napoleon's (Roke) ASK 18 and it performed flawlessly - a more docile easy to fly scale sailplane will be very hard to come by!

And after that, we flew the 1/3 Müller Grob Twin Acro III. As might be expected, this ship required a bit more control than the ASK 18, but was much more docile than the DG 600. After all,

Tony Napoleon, Roke 1/4 ASK 18.

Ripo 1/3 DG 600
Root Section
The trailing edge actually curves up! The model has flaps, ailerons, and spoilers.

it is a 2 place trainer! We then had another flight with the DG 600. By then, calm air; and again, what a sound!

As Sal commented, "The ASK 18 was like a Cadillac, the Twin Acro more like a Mercedes, but the DG 600 was definitely a Ferrari!"

That memorable afternoon became dead calm, with cooling air - the remains of a high-lift day. The air was very stable and like velvet. The gliders went wherever we put them, without the slightest twitch. It was just beautiful. Flying in exactly the same conditions, you could immediately see how each sailplane responded to controls, and how well each stayed up. Each had its own particular "feel" and flight characteristic.

The ASK 18 was quite slow flying and floated around. The Twin Acro was a little bit faster, and covered a bit more ground, but stayed up just as well. The DG 600 was very sensitive on the controls and responded to the slightest input. Although it could fly fairly slowly, it seemed to be most efficient with a bit higher air speed. It seemed to have the best glide angle, and as mentioned before, most surprisingly it had this incredible whistle wherever it went. As I commented to Sal that day, normally when you hear a scale sailplane making this noise you are in deep trouble, as you are going way too fast. But in this case, this most unusual and exceptional scale ship seemed to be humming out loud, "HMMMMMMMM... Yes. That's just

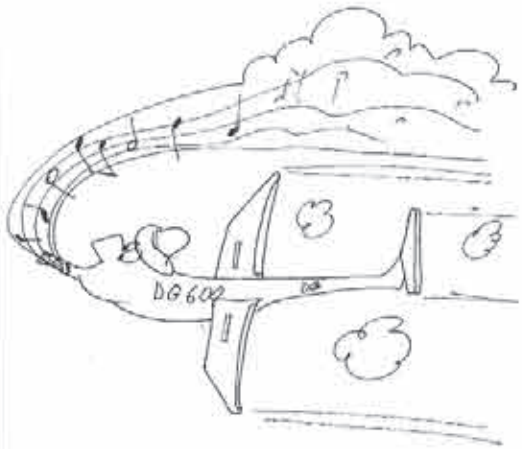
Steve Savoie, Müller 1/3 Twin Acro.

the right air speed; fly me this way, and I'll reward you. I'll stay up forever!"

What impressed us so much was that flying each of these superb aircraft immediately after the other, in dead calm air, really enabled us to see, evaluate, and FEEL the different flight characteristics of each of these wonderful scale ships! But most impressive of all... That sound!

When you're flying slope and you have a decent breeze, there's no trick to staying up. When the air begins to die, you usually try and land while you can. We've all made that one turn too many, and said, "Damn, I should have landed a minute ago," and found ourselves in trouble. So, it's a little bit difficult to evaluate your bird off a slope, because you must fly in lift all the time!

It dawned on me on this wonderful, calm, August afternoon, that if you



really want to find out just how well your particular ship performs, winch it up; or better yet, get a nice, high airtow, and see how it performs in perfectly still, dead calm air. Then, immediately fly some other ships in identical conditions. The differences between each will immediately become apparent; and best of all, several pilots can share the same experience in but a minute or two of flight - by passing the radio around! In just an hour or two, several pilots can gain valuable insight and comparisons between their different aircraft.

All of this seems pretty obvious by now, but what a wonderful experience it was to be able to fly three, superb, scale sailplanes one after the other on such a perfect day. And more than that, all three of us were able to share this experience first hand! There might be a valuable lesson here for those of you interested in competition flying.

Taking a feather out of the competitive sailor's hat (racing sailboats or iceboats), two or more of you can go out and "tune" up your birds together for the best possible performance. In retrospect, this all seems pretty obvious, but for those of you who have not shared this experience, at the very least, you will find this little exercise most enjoyable. At most, if you work together to tweak your bird for the best possible performance, you might find yourself with a new competitive edge. One final point: only change one thing at a time on one aircraft. That way you will have a good way of telling whether your change has enhanced or hurt performance.

Last but not least, which of the three scale sailplanes did we enjoy most? They were all different, but let's just say that the DG 600 whistling sound was really something else!

Good flying! ■

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Designed by Brian Agnew

- Glass, reinforced with kevlar, fuselage accommodates standard servos
- Pre-sheeted wings & stabs
- Wing incorporates a poly break sheeted with one piece of obechi without a seam
- Full flying stabs
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Kit includes: full instructions, Squires wing rod, Byron Blakeslee control cables, Ziegelmeyer control horns and tow hook. All wood and hardware is of highest quality available.

Specifications

Wing Span	110"
Airfoil	SD7080
Weight	59-61 oz.

VULCAN 2M

Designed by Mark Allen

V-tail

Vucanistics:

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

Pre-sheeted wings
Epoxy, high tek fuselage

SPECTRUM OPEN & 2M

SLIP ON NOSE CONE
PRE-SHEETED WINGS AND STAB
KEVLAR REINFORCED FUSELAGE
PRE-CUT AILERONS, FLAPS, AND ELEVATOR

Specifications	Spectrum Open	Spectrum 2M
Wing Span	104"	78.5"
Wing Area	855 sq. in.	554 sq. in.
Airfoil	SD7037/RG-15	SD7037
Aspect Ratio	13:1	11.2:1
Weight	60 oz.	40 - 43 oz.
Wing Loading	10 oz/sq. ft.	10 oz/sq. ft.

ELECTRIC HAWK

Designed by Mark Allen

Wing Span: 74 in
Wing Area: 510 sq in
Airfoil: SD7037

Fiberglass fuselage reinforced with Kevlar
Pre-sheeted wings and stab
Double taper planform
7 - 10 cell electric

NIGHTHAWK

Designed by Mark Allen

Wing Span: 60 in
Wing Area 370 sq in
Airfoil: RG15

The design features a slightly longer fuselage and larger stab for high speed stability and to provide better energy retention through turns and aerobatics
Fiberglass fuselage
Pre-sheeted wings

Sky Hawk

Designed by Mark Allen

Sky Hawk Attributes

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

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

Specifications

Wing Span	116"
Weight	50 - 65 oz.
Airfoil - Root	SD 7037 or S7012
Airfoil - Tip	SD 7037 or S7012 - 8%
Wing Area	900 sq. in.
Wing Loading	9.5 - 10.5 oz./sq. ft.
Aspect Ratio	15:1

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Taylor (L) and Zev have a good laugh about their very close encounter.

Good Air, Mid-Air and Hot Air

...by Taylor Fiederlein
Oyster Bay, New York

It was one of those days us glider guiders dream about (at least I dream about them): a cold evening, followed by a beautiful sunny day. It was noon, and the noon balloon was in full force. Even club member, Paul Wohlrab, had no trouble keeping his scale TG-3 up for 40 minutes. In conditions like this, LISF (Long Island Silent Flyers) club members smell thermals, and we had at least 20 flyers that day. Our field is huge and, even with many flyers in the air, we usually have no problems. But several of us just couldn't resist one big fat thermal, which sucked our planes skyward.

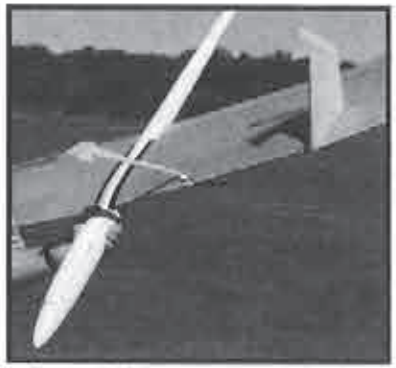
There were about eight of us in the same thermal. We were at least 800', maybe higher. I could just about see my Saturn 2.9T. Naturally, I was higher than everyone else, and I wasn't even smoking or drinking anything. "Ah! It's time to relax," I thought. And, then, it happened.

"I've been hit," screamed Zev Alabaster.

"Oh boy, too bad," I thought. "I wonder who hit him." But a split second later, I realized it was my Saturn flying knife edge, straight down. Oh no! I had hit Zev, and my plane was out of control.

Fortunately, the Saturn is extremely strong, and it withstood the dive, but I had to slow it down. I tried turning it, but seemed to have no control. "Looks like I'm going in," I muttered. Then it hit me. Deploy the flaps. I brought the flaps down slowly, and my Saturn righted itself nicely. However, turning was almost impossible. So, I just let it fly straight, as it was flying toward me anyway. But, Zev was having real problems. I noticed that his plane was just looping, and he literally had no control. Poor Zev. Looks like he's a goner.

Anyway, I brought my Saturn about 200' over my head and headed down the field. I noticed something strange about my left wing and shouted, "It looks like my left aileron was knocked off the hinges!" I landed about 400' away and walked briskly to my plane. When I got close, I couldn't believe my



Taylor Fiederlein says, "I wouldn't have believed it unless it happened to me."

eyes. Both the left and right V-tails of Zev's plane were impaled in my leading edge. I couldn't help myself; I just started laughing. I picked up my plane, as is, and walked back to the other flyers. When I arrived, Zev was standing there with his plane in remarkably good shape, except for the V-tail, that is. Zev had gotten lucky and hit the ground at just the right time, so no major damage was done. I told Zev I had something I thought was his. When everyone noticed what I meant, they all cracked up. Danny Maas got his camera and took a few shots.

The rest of the day was a riot. The other club members, especially Joe Copolla, our club secretary, showed no mercy (Other club members never show mercy, do they?); he kidded Zev and myself about our close encounter of the weird kind. I even kidded Zev, and told him that it was obvious that my plane was higher than his.

Both planes are now repaired and flying. But before we launch, Zev and I are careful to see where the other pilots' plane is, so we can give each other a wide berth. We may not be so lucky next time. Next time? Yes, of course there will be a next time. It may not happen exactly the same way, but it will happen. As one of our senior club members, Len Hauff, once told me, "If you can't stand to see them crash, you shouldn't be in the hobby, because they ALL crash!"

Just one thing, Zev, "Keep out of my thermal!" ■

Schedule of Special Events

Date	Event	Location	Contact
April 9-13	Dortmund Intermodellbau - Germany		
May 3-4	Spring Intergalactic R/C HLG	Cincinnati, OH	Paul Siegel, (513) 561-6872
June 13-15	Elmira Aerotow 97	Elmira, NY	John Derstine, (717) 596-2392 2076482@mcimail.com
June 19-22	1997 MSSC	Huntsville, AL	Ron Swinehart, (205) 883-7831
Aug. 16-17	Scale Fun Fly (GNATS)	Nigara Peninsula,	Gerry Knight, (905) 974-7451
Sailplanes/Motorgliders		Canada	Don Smith, (905) 934-3815 Mistral@niagara.com
Sept. 13-14	Sailaire One Design Contest	Cincinnati, OH	Paul Siegel, (513) 561-6872
Oct. 11-12	Fall Intergalactic R/C HLG Championship	Cincinnati, OH	Paul Siegel, (513) 561-6872
Nov. 15	New England R/C Soaring Convention	Portland, ME	Steve Savoie, (207) 929-6639 Jim.armstrong@acorn.bbs

'Extreme' Slope Soaring Niagara Falls

...by Gordy Stahl
Louisville, Kentucky

My new job's got me traveling again, so I loaded up a few planes and headed out from Louisville, Kentucky toward Ohio, Pennsylvania and New York. I did not have an actual flight plan for the trip, so I decided to fly as the opportunities presented themselves. Frankly, since I moved to Kentucky from Wisconsin's Lake Michigan slopes, I had been experiencing slope withdrawal pains. Kentucky has lots of tall hills; the problem is they are all covered with trees and all blocking each other.

My first weekend free on the road landed me in Buffalo, New York. I phoned the local *RCSD* club contact, but he could not spare the time to go flying. I was determined to find a slope, and since I was less than twenty miles from Niagara Falls, I decided to look there.

I had an old hand launch that has the alignment of an aero-dynamic pretzel, due mostly to lost battles with ground turbulence. I found that my Airtronics Infinity 660 Tx, as well as my Rx battery had been left on since I last flew if two weeks prior. I hooked them up to my peak charger and headed off toward the Canadian side of the Falls. The Canadian side because it offered more faces for lift in a southwest wind.

The weather was gorgeous; so were the Falls. I really wanted to slope the edge facing one of the Falls, but after the heat I took when I launched at the Grand Canyon from the park rangers, I chickened out (not to mention there would have been no recovering my ship from catastrophe). I went in search of a less monitored area. Mind you it might have been worth the loss considering the story, but I had a long trip ahead and needed to have a ship to fly another day.

I traveled east on the Niagara River Parkway from the Falls, tracking the river, looking for just the right spot. I got to the Aero-Car landing area above the Whirlpool (a cable car that crosses the river), and went to the edge to check for a site. The Whirlpool is located in a sharp bend in the river, and this gave a great view of the slopes well up the river.

What I found were flags visible on both sides of the river; there was a rock face jutting out, dead in line of the wind, up river.

I followed the Parkway road to that spot. It turned out to be a tourist stop called Christmas Gardens. A souvenir shop, lookout point, and picnic area were all part of an area called Niagara Glen.

The wind was dead on; there were Gulls indicating strong lift along the railing of the lookout point. There is even a metal stairway, to reach your bad luck flights, down below.

It was noon and the tour buses were filling the area with tourists. Landing would have to be into a tree or, with a lot of luck, in a forty foot patch next to the railing. Just to be safe, I made a loud announcement to those gathering near my launch area to stand away.

My handlaunch was CG optimized for its usual task, and had no place for ballast. My launch ballooned wildly, and I found that there was not enough down trim lever authority to get it to settle down. The lift (plus thermal activity I did not factor in from the hot rocks below) coupled with the critical CG was really giving the crowd an aerobatics show! I was actually getting applause, while my heart and blood pressure were screaming with the stress of trying to keep the plane out and up!

The only thing I could do was to get into the program trim "Centering" to get the elevator position down some. That meant opening the front panel, punching the "Edit" button to reach centering, and then getting to the "Elevator" control prompt.

All that, while flying a wild banshee in the air, seeing though the sweat pouring into my eyes and a barrage of, "How high can it fly, how fast does it go, how much does it cost, how much does it weigh, what happens when it crashes...?"

Somehow, I got to the prompt, depressed the "-" button for more down, only to find that it was the wrong trim direction. The plane was 200 feet above me, and started porpoising to stalls and blowing into the slope. All that up trim wiped out the down stick I had been relying on for stability.

I quick hit the "Clear" function that returned me back to the semi-controllably condition where I had begun. Back to the display, I got on the '+' button and, thank God... GREAT FLYING!!!

It was AWESOME; the lift band combined with the thermals allowed me to fly virtually all the way over to the other side of the river! The Gulls were happy, too. They stuck with my now, smooth flying plane, tracking the tail and wing tips.

I flew the railing length up and back, and the spectators loved it. Unfortunately, the day's stress and temperature had me worn out, so after twenty-five minutes I decided to attempt a landing.

I asked a close by onlooker to clear the open patch for my landing and much to everyone's delight I plopped it right at my feet. Total luck for sure!!! Of course, I did not admit that to the crowd.

'Extreme' Slope Soaring provides a rush equaled only by hooking a monster thermal from a handlaunch of your unlimited ship. To do it safely you have got to put in stick time.

I would caution 90% of you reading this to never attempt this kind of slope soaring. I have been fortunate to have experienced slope soaring in every condition, from 50 mph Lake Michigan snow storms, dam faces, ridges and rock faces; I have dealt with multi-directional rotor on landings.

I have wrecked too many aircraft in search of those few great rides, because I have got the guts to sacrifice my ship in the interest of safety. I have also been fortunate to have had some of the best mid-west slope legends share their techniques and experiences.

I hope to have more experiences to share as I head South and East from my Louisville hanger, though next time it'll be spoilerons for landing control!

Expect my phone call if you're listed in *RCSD* and I get in your area. If you have a great slope area and you live in America's Southeast, call me with directions at 502-491-5001 or fax me at 502-495-6357, and I'll fit it into my itinerary. ■

Out to Launch
A ZIP Start Design For HL/RC

...by Dave Register, Tulsoar
Tulsa, Oklahoma

These notes are for those of you who, like myself, may be codgerly challenged but aren't handling it with all that much grace and dignity. Perhaps you've had a conversation with your physician (typically 20 years your junior) something like this:

"Shoulder hurts like h—, Doc."

"Hmm, you're in your 50's now, aren't you?"

"Yup!"

"Been throwing things or using a throwing type motion with that arm lately?"

"Yup."

"Well, at your age you should expect discomfort like that."

"OK, but what can I do about it?"

"Well, you know that throwing motion you're doing?"

"Yup."

"Don't do it anymore."

So, how do you tell this kid that the problem is tossing model airplanes and, if you had to stop, you might as well go down to the family plot, dig a hole next to gramps, and throw yourself in? Of course, you can always hook up to a light duty high start and go fly, but an unlimited launch height seems to violate the spirit of the HL concept. And laying out a full length high start is a bit of a hassle of an evening after work.

The beauty of hand launch is the simplicity of the equipment. You, your plane, a Tx, and you're ready to fly. A concession to father time shouldn't compromise this simplicity too much. That's where the ZIP start comes in. This is basically a short high start that tries to emulate the height you would obtain with a hand toss. Problem is, how to control that height so you're on a reasonably equal footing with a true tosser.

We were faced with this problem at Tulsoar with the 1996 version of our Last Fling of Summer. Bob Rhea and Daryl Reimer brainstormed some ideas at a club meeting and came up with using a length of line tied to the tubing to limit the stretch. A few field trials showed promise but, on a windy day, this setup tangled. My contribution was to put the line INSIDE the surgical tubing, and this approach seems to have worked well enough to share with the rest of the community. We have several hundred launches on at least 8 different ZIP starts built this way and haven't had a problem yet.

Dimensions used for the Tulsoar ZIP start are:

* 10 feet of 5/16" OD surgical tubing,
* 30 feet of twisted dacron line inside the tubing, and
* 20 feet of line between the tubing and the tow ring.

These dimensions give a 3:1 stretch of the rubber and about a 40 to 50 foot launch height (30 feet plus a little zoom). Since the tubing stretches uniformly, the dacron line bunches up uniformly inside the tubing and doesn't appear to tangle. The use of twisted line gives a little bit of stretch so you don't rip the bottom out of your fuselage when you get to the end of the line.

The only trick is getting the line inside the tubing. To do this, first cut the tubing and line to length and prepare two dowel plugs for the tubing ends (about 1 to 2 inches of 1/4" dowel rod is fine). Secure a small, closed hook in each dowel plug (pre-drill or they'll split), and tie the line to one of the plugs. Using a convenient size music wire (I used a 2 foot section of 1/32 diameter wire.), bend a tight loop in the end of the wire and tie the line to the loop. Snake the wire through the tubing by stretching and pulling until you've got it all the way through. (Pick a good football game to watch and you'll be surprised how easily this can be done.). Tie the end to the other dowel plug.

To insert the dowel plugs, it helps to moisten them a bit. You have a convenient moisture source on your face, but plain water will also work OK. Insert one of the plugs in the tubing, then attach it to a hook on the wall; stretch the tubing until almost all of the line is inside. (You might want to let some of the moisture dry out for a few minutes first, or you'll get a pretty good snap on the hands! Trust me on this one.) Then, insert the other dowel plug and pull the last of the line in, with a final full stretch of the tubing. Attach the 20 feet of tow line, a tow ring and a tie down ring; you're done.

Now for a few ZIP notes:

1) Don't use nylon or poly line inside the tubing. Both of these tend to 'fluff' and are difficult to pull through. They're also very 'draggy' once you've got them installed.

2) Don't use braided winch line. It's too thick and stiff and won't bunch up very well inside the tubing.

3) A convenient source of line is the twisted retriever line most clubs use. Actually, just go to any contest and when they cut out the inevitable 'furrball', take it home and untangle it; you've probably got all the line you need.

4) A short, open tow hook appears to work well. Too long or too close to the fuselage delays the release and tends to drag you back down.

5) Launch for velocity, not altitude. If you're launching by hand, you get velocity that you convert to altitude. Same goes here. If you stretch the line on tow, it will pull you back down before release. Launch straight ahead, so there is no stretch or snap in the line when the plane releases the line. Gradually increase your launch angle until you just start to hang at the top; then back off a bit.

6) The old free flight technique of launching, with the wings tilted at an angle to the horizontal, works very well. This generates a climbing right turn (if you're right handed), and gets a good release angle on the towhook, while preserving a lot of velocity.

Hope this helps and puts a little fun back in your hand launch plans. Throw out those atlatls; the ZIP start works pretty well! ■

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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 nolify *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

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; http://dataex.com/~atkron95/pcsoar.htm.

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.

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ELECTRICS ARE NOW: Specializing in ASTRO FLIGHT & LEISURE equipment. Illustrated catalog with special ELECTRIC FLIGHT information packet available. Phone 508-947-2805, $7.00 USA, $8.50 Canada, $10.00 overseas. Visa, Master & Discover Card. CS FLIGHT SYSTEMS, 31 Perry Street, Middleboro, MA 02346; ph/fax 508-947-2805.

X-MODELS NOW AVAILABLE IN THE U.S.A! European built, ready to fly, Electrics, F3J & F3B planes you've seen in QFI, Silent Flight, and EFI! Send SASE for the price list to Dave Darling, 2705 Harvest Road, Modesto, CA 95355-3430.

ThermalSpan — A tough, light, non-woven fabric. Heat shrinkable. Resistant to moisture, puncture, and tearing. White, like silkspan, but tougher. 2.2 mils thick, 9 oz./sq. yd., 14" by 16 foot pkg. $10 + $3 S&H. Harris Design, 2000 NW 84th Ave., Ankeny, IA 50021; (515) 965-5942.

For Sale - Business

PARACHUTES: $10. Dale King, 1111 Highridge Drive, Wylie, TX 75098; (972) 475-8093.

For Sale - Personal

100" Super V, great deal, flown less than 8 hours, never crashed, includes 6 servos, skin hinges, RTF (your Rx & battery)... $450.00. Dennis, (801) 675-3777, Utah.

Ace Micropro 8000, 2 stick, AM, w/2 RCD receivers, just checked at factory and recalibrated... $250.00 + shipping. Ken Troxell, (301) 762-6913, Maryland.

Discus, 1/4 scale, 4m, 158" w/s, Graupner, RTF, flown only once... $750.00 w/servos; ASK 21, 3.2m, semi-scale, Roedel, 2 place cockpit, 2 landing wheels, RTF, never flown... $675.00 w/servos; Candida, 140" w/tips, flaps/spoilerons,ailerons, Graupner, flown but not abused... $595.00 w/servos; Condor, 4.2m, 165" w/s, Multiplex, RTF, never flown... $1050 w/servos. Models close to museum quality. Greg Weatherford, (619) 568-2224, S. Calif.

LJMP Comet 15' XC, NIB... $375.00. David Crutchley, (309) 829-5564, djcrutc@rs6000.cmp.ilstu.edu, Illinois.

The "Orange Pumpkin", 1/3 scale standard Libelle by Krause, perfect introduction to giant scale soaring, RTF... $850.00; Dodgson Designs Windsong, circa 1986, RTF... $375.00; Flite Lite Composites "Falcon 600", full house, 2m, immaculate, RTF, 38 oz., SD7037 foil... $450.00; Dodgson Designs "Anthem", stretched to 144", immaculate, RTF... $650.00; Mueller Comet 91T, immaculate, RTF, Anigre Veneer wings... $900.00. The above "competition" ships constructed with TLC by Asher Carmichael. All planes, less receivers and batteries, rigged for Airtronics. Shipping extra. Asher Carmichael, (334) 626-9141, ACARMIC985@aol.com, Alabama.

JR 341 micro servos, NIB... $39.00 ea.; Airtronics Peregrine kit, NIB... $324.00; Visionary, kit (sloper by Hangar 4 models), NIB... $35.00; Whirlwind, kit (sloper by Hangar 4 Models), NIB... $25.00; Foameron, kit, sloper, NIB... $59.00; Firebird, kit (generic Ninja), by Hobby Shack, 99% finished & covered with Ultracoat, just add radio & fly... $89.00. All plus shipping. Don Masse, (916) 891-1465, donmasse1@aol.com, N. Calif.

1/4 Roebers Pilatus B4, 3.75 meter span (147"), wing profile Ritz 3, NIB... $495.00; 1/4 Roedel Super Cub (towplane), 2.687 meter span, wing profile Clark Y mod. (suitable motors are 160 T, 300 T, OS BGX-1, Brison 3.2 or similar), NIB... $385.00; 1/4 Rosenthal Ralley Morane (towplane), 2.78 meter span (109"), NIB... $495.00; 1/5 Wik Twin Astir, all glass, NIB... $595.00; Roedel PSS A-10 Warthog, all styro, 1.7 meters, E205 wing profile, weight ca. 4 lbs... $100.00. Contact Robin Lehman, 63 E. 82nd St., New York, NY 10028; (212) 879-1634.

NIB: 2m Baby Esteem w/carbon/glass wing & stab... $290.00; 2m Alcyone kit... $70.00; 1.5m Phasoar E w/3 ch radio... $70.00; Graupner motor, prop & speed ctrl... $60.00. UPS shipping $10 ea. item. Bill, (817) 285-0398, Texas.

NIB kits, plus UPS: CHK Kaus... $325.00; CHK Flipper... $375.00; CHK Cystal... $375.00; Multiplex Cortina Flying Wing... $350.00; Multiplex ASW-20... $300.00; Multiplex Alpina CS... $500.00; Multiplex Arriba Elec... $400.00; Multiplex Alpha Elec... $200.00; Airtronics Sagitta XC... $225.00; Pierce Aero Paramount... $200.00. Craig Christensen, (612) 435-7406, after 4:30 pm, Minnesota.

Wanted

HLG kits such as the LJMP Flinger, Request, Vagabond, Craig Robinson Sunrise 60, DJ Aerotech Monarch 93, Wristocrat, BODST, Mini-Mirage, Paraphase, Gnome, Kastaway, Tercel, and others. Tom Gressman, (303) 744-3535 X3105, 8 am - 5 pm, MST, tgressman@aol.com, Colorado.

TIDBITS & BITS

Flying in Illinois

...Photos from Ron Kukral

"Photo (R) taken at club (S.O.A.R. - Silent Order of Aeromodeling by Radio) contest on September 22. Contest Director, Mike York, is watching a "visitor" we had at the field. Don't know who the pilot was, but it was a beautiful airplane, even if it did have an engine. It was pretty windy the day of the contest, so some of us packed off to the local slope."

"Rich Hixon is flying his NE Sailplane 60" sloper. The plane flew well unballasted in the 20 - 25 mph winds."

"Jim McCarthy (R) is flying his 2M Levoe sailplane out over the slope. It also flew well unballasted."

Radio Control Sailplanes Rule Change Proposal

David Godfrey of Alabama has written the following, in response to the "Radio Control Sailplanes Rule Change Proposal", which starts on page 5 of the November '96 issue.

"I have a few comments about the proposed rule changes as voiced by Bob Johnson in the November *RCSD*. At the end of the article, Bob mentions that "the concept of skills classes has merit". For the last five years, the Mid-South Soaring Championships has used skill classes loosely, based upon the LSF levels, with great success. I flew in the first two Mid-South's as a novice flying a Quasoar with flaps. I had a blast, and did well in my skill category. I flew year three as a sportsman, and the last two years as an expert. My ten year old son has flown the last two Mid-South's and other contests, as both a junior or a novice. He too enjoys flying and being competitive within his skill category."

"The real problem with new flyers is not with their planes, but that they do not have the skills necessary to be competitive against experienced flyers. If the rules proposed were to be utilized, entry level flyers would not do well at contest. The real answer to the problem is to use skill classes, and leave the airplanes alone. Tweaking the standard class rules by adding 10 inches of wing, limiting the number of servos, etc., will not add lasting change, or promote new flyers to the soaring scene. People build what is appealing to them, especially entry level flyers. Let them build what they want, regardless of size or features, and allow them to compete in the appropriate class. There does not need to be a rule change to allow a CD to have a contest based on skill levels." ■

NEW PRODUCTS

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

Chrysalis

...from DJ Aerotech

The Chrysalis is a 1.5 meter, 2-channel, R/C Hand Launch Glider intended for the beginning hlg flyer, sport flyer, or as a low-cost practice and backup ship for the contest flyer. Particularly good in light-air conditions, the airfoils are designed for easy handling, excellent launch, even at low weights, while still providing excellent low speed performance. All-wood construction, the wing ribs are laser-cut; other key components are either laser-cut or machined. Wing rib shapes are corrected for covering sag in order to provide an accurate airfoil shape. No balsa wing sheeting is necessary. Fuselage is large enough for a 250 mah battery and standard servos and receiver, but can easily be slimmed-down during construction to fit micro size radio gear. The elliptical planform is easy to build; all major elements of the wing structure are straight, except for the dowel leading edge, which is glued in place last. Fuselage is a simple flat-bottomed box with special features included to make it easy to build and warp-free. Tail surfaces are simple sheet. Very thorough and easy to follow instructions, with separate supplemental pages of building and flying tips for beginners and for advanced flyers. Can be built with either conventional or V-tail; parts included in kit for both. Fuselage includes plywood finger pegs that double as a towhook mount for hi-starts. A two-piece wing option is available.

Span: 59 inches
Area: 410 sq. in.
Airfoil: Blend of several related sections, varies non-linearly along the span.
Length: 39"
Weight: 8.1 to 13.7 oz. depending on radio and covering options.
Price: Around $40 plus shipping

Wizard

...from DJ Aerotech

The Wizard is a 1.5 meter, 4-channel, R/C Hand Launch Glider, intended for the serious contest flyer. Particularly well suited for high winds, turbulence, precision time or landing tasks, distance tasks such as hand-launch golf, aerobatics, and occasional slope soaring. Airfoils are derivatives of DJ's new F3B section, the DS5081, which are specially designed for extremely high launches and outstanding penetration, while still maintaining good low speed performance. The sections are individually optimized along the span for local conditions in each segment of the wing.

Fuselage is carbon-reinforced fiberglass; wing and tail panels are fiberglass over blue foam. Wing spars are carbon fiber. Control surfaces are full-span; hinges are integral with the wing and tail skins. Wing and tail tips are integral with the bagged panels.

Highly prefabricated for very short building times, wings and tail are bagged, leading edges are trimmed and rough sanded, control surfaces cut free. Gap seals for the control surfaces are included. 4 micro servos and micro receiver are required. DJ recommends a 110 to 250mah battery, a computer transmitter with mixing for V-tail, flaps-to-ailerons, and ailerons-to-rudder in order to use all the features of this aircraft to their fullest advantage. Normal configuration is V-tail, but plans for optional conventional tail are included. Fuselage includes plywood finger pegs that double as a towhook mount for hi-starts. Two-piece wing option is available.

Span: 59 inches
Area: 360 sq. in.
Airfoil: Blend of several related sections, varies along the span.
Length: 33"
Weight: 10.5 to 12.5 oz.
Price: Around $160.00 to $185.00, plus shipping

DJ Aerotech, 719 Fisk St., Piqua, OH 45356; (513) 773-6772; <DJWerks@bright.net>. ■

We now have in stock one (1) Prißek 1/3 ASW 27 and one (1) Prißek 1/3 Ka6E. The 27 weighs in at under 18 pounds, and the Ka6E will be in the low 20s - both extremely light for their size. These are completely built and ready to cover A.R.F. kits of superb quality. This is just about the best building I've ever seen. For more information, contact Sailplanes Unlimited, Ltd., 63 E. 82nd St., NY, NY 10028; phone: (212) 879-1634, fax: (212) 535-5295.

Fox

...from Sailplanes Unlimited, Ltd.

The 2 place Fox and its single seat, sister ship, the Swift, have recently dominated the World Aerobatic Championship (top 15 places out of 61, last year). With its beautiful sleek lines and superb aerobatic performance, the Fox is one of the most popular scale models in Europe. Sailplanes Unlimited, Ltd. imports three versions of this aircraft.

The 1/3.75 Roedelmodell Fox (3.8 meter, 149" span, RC 12 wing profile, ca. 14 lbs.) comes with a white epoxy-glass fuselage with wing cut outs, canopy, canopy tray, decals, plans, and an accessory pack. The rudder and stab are styro-obechi built, as are the wings, with spoilers partially installed, ailerons cut out and faced, and cut outs for servo trays. This aerobatic beauty will thermal and can be winched, although it is best launched via airtow or off a slope.

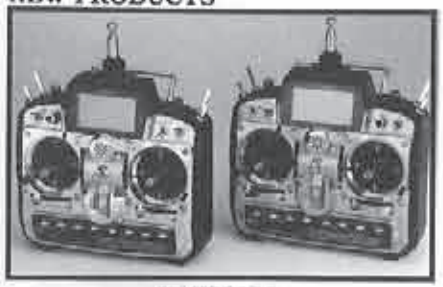
The special order 1/3 Prißek Fox (4.66 meter, 183" span, E374 wing profile, ca. 20 lbs.) comes with a white epoxy-glass fuselage, with wing joiner tube in place, canopy, canopy tray, completely finished styro-obechi covered wings with spoilers installed and capped, ailerons finished, servo boxes installed, and wing joiner in place. The rudder and stab are also completed. Many extras are available. This aerobatic ship can be winched, although it is best flown via airtow or off a moderately sized slope.

The special order 1/3 Schüler & Fleckstein all-glass Fox (4.66 meters, 183" span, E374 wing profile, ca. 25 lbs.) comes with all surfaces finished in epoxy-glass with a scale color scheme (orange under the wings, yellow and red trim on the fin and

1/3 Schüler & Fleckstein all-glass Fox

wingtips). The ailerons are hinged, spoilers installed, and the servo boxes are in the wing. The fuselage comes with the wing joiner tubes in place. Canopy, canopy frame, and decals are included. Many extras are available. This aerobatic model is more difficult to airtow and, although it can be winched, it is most suited to the slope where it really comes into its own.

Sailplanes Unlimted, Ltd., 63 E. 82nd St., New York, NY 10028; (212) 879-1634, fax (212) 535-5295. ■



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An 8 channel computer radio, the JR XP8103 has a huge LCD screen positioned at the top of the transmitter for easier viewing. More useful information can be shown at the same time, making programming and mixing easier to understand. Additionally, important words can now be spelled out, rather than abbreviated.

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The JR XP8103 is exclusively distributed by Horizon Hobby Distributors, 4105 Fieldstone Road, Champaign, IL 61821; (217) 355-9511; or, contact your local hobby shop or other sailplane related businesses and manufacturers that sell JR products. ■

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There is a web site that may interest many of you, as it contains information regarding how to obtain numerous gliders and electric gliders, such as Simprop Solution, Simprop Fashion, X-Models Little Star, DG200/17, Pilatus B4, LO100, and L33 Solo.

Unbeaten Path Imports: <http://www.unbeatenpath.com> ■

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, AL35210; (205) 956-4744, e-mail: lamreht@concentric.net.

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) 287-0375.

California - Inland Soaring Society, Robert Cavazos, 12901 Forman Ave., Moreno Valley, CA 92553, RCAV@aol.com.

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

California - South Bay Soaring Society, Dave Burwell, P.O. Box 2012, Sunnyvale, CA 94087; ticedoff@ix.netcom.com.

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, Mark Atzel (President), 1810 SW Terrace, Ft. Lauderdale, FL 33312, (954) 792-4918.

Georgia - North Atlanta Soaring Association, Tim Foster, (770) 446-5938 or Tom Long, (770) 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), Chris Bovais (Coordinator), 12504 Circle Drive, Rockville, MD 20850; (703) 643-5513.

Michigan - Greater Detroit Soaring & Hiking Society, Greg Nilsen (Sec.), 2163 Highsplint Dr., Rochester Hills, MI 48307; (810) 651-8598, GNilsen624@aol.com.

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) 926-3537.

Nebraska - B.F.F.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.

Nevada - Las Vegas Soaring Club, Jim Allen (President), 7117 Caprock Cir., Las Vegas, NV 89129; ph (702) 658-2363, fax (702) 658-1998.

New Jersey - Vintage Sailplane R/C Association, Richard G. Tanis (President/Founder), 391 Central Ave., Hawthorne, NJ 07506; (201) 427-4773.

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

New York - Elmira - Harris Hill L/D R/C, aerotowing & slope, John Derstine, (717) 596-2392, e-mail 2076182@mcimail.com.

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

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, Taylor Fiederlein (President), (516) 922-1336, or Joe Coppola (VP), (516) 798-1479.

New York - Syracuse area, Central NY Sailplane Group, Dave Zinteck, Minoa, NY, (315) 656-7103, e-mail Zinteck@aol.com.

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

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.

Oregon - Salem Soaring Society, Al Szymanski, 8991 Edcliff Ct. SE, Aumsville, OR 97325-9549, e-mail aszy@teleport.com, (503) 585-0461, fax (503) 585-6929.

Oregon - Southern Oregon Soaring Society, Jerry Miller, 3431 S. Pacific Hwy. TRLR 64, Medford, OR 97501, e-mail jmill@cdsnet.net, ph/fax (541) 535-4410.

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

Tennessee - Tullahoma (Southern Middle Area), Coffee Airfoilers, Craig Logan, 147 Stillwood Dr., Manchester, TN 37355, (615) 728-5446, jclogan@edge.net.

Tennessee - Soaring Union of Nashville, Terry Silberman, PO Box 17946, Nashville, TN 37217-0946, (615) 399-0846.

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

Texas - aerotowing, Dallas area, Andrew Jamieson, 9426 Hillview, Dallas, TX 75231, (214) 349-9346, e-mail ajsleep@aol.com. Larry Sengbush, (972) 291-4840.

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

Virginia - Tidewater Model Soaring Society, Herk Stokely, (757) 428-8064, herkstok@aol.com.

Virginia - Appalachian Soaring Association, Virginia's Southwest (Bristol area), Greg Finney, 266 Plumb Alley West, Ahingdon, VA 24210; (540) 628-4469 (H), (540) 676-3788 (W), (540) 676-3094 (fax).

Virginia - West Virginia & Western PA area, Chip Vignolini, 1305 Perry Ave., Morgantown, WV 26505; (304) 598-9506, ydne30a@prodigy.com.

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

Outside U.S.A.

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

Canada - 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 R2J 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.

England (southwest) - Sean Walbank, Woolcombe Hays, Melbury Bubb, Dorchester, Dorset, DT2 0NJ, phone 01935-83316.

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

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://chaos.fullerton.edu/~jclark/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. Check out the web site: www.ocpapsych.com/yellow.htm, or contact Manny Tau at taucom@kaiwan.com.

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 mikel@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.

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.

"Summary of Low-Speed Airfoil Data - Volume 1" & "Volume 2", Michael Selig wind tunnel testing results. Cost for each: $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 (757) 428-8064, email: herkstok@aol.com.

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RCSD Index/Database

If you aren't connected to the internet, please send 3.5" high density disks and SASE with stamps for 2 oz. Files can be loaded onto any word processor; search for a word or phrase and references pop up by issue, author, date, page, and comments. If you are connected, the index is available on-line. Lee Murray, 1300 Bay Ridge Rd., Appleton, WI 54915; (414) 731-4848 after 5:30 pm weekdays or on weekends, 74724.65@compuserve.com.

Seminars & Workshops

Free instruction for beginners on construction & flight techniques, week-ends (excl. contest days), "AJ" Angelo, South Bay Soaring Society (San Jose area), (415) 321-8583.

THANK-YOU FOR KEEPING YOUR LISTINGS UP TO DATE!!

International Scale Soaring Association (ISSA)

ISSA is a non-profit organization formed in 1996, governed by a board of directors, dedicated to the advancement and expansion of all aspects of scale R/C soaring, both vintage and modern. It encourages LSF Achievement Goals, and promotes general interest in scale flight. Quarterly newsletter provides information on plans, kits, accessories, and membership list of others interested in scale, as available.

General membership is $15 per year, which includes organization By-Laws. Rules and Regulations for initial ISSA festivals and competitions, to be held at Empire Polo Field in Indio, California, are also available. For additional information, contact:

International Scale Soaring Association
37545 Oak Mesa Drive
Yucaipa, CA 92399-9507
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Dave Wood And Dave Walter (R) discussing strategy.

Clamdigger's Soaring Report
19th Empire State Soaring Classic

...by Dave Wood
Hampton Bays, New York
E-mail: davewood77@aol.com

Warning! I didn't want to make this article just another one of those boring contest reports, so some of the following statements are slightly sensational. The story has been stretched just a bit so it gets into print. What you need to keep in mind is that there are kernels of truth to it all.

First... Who am I? Well, my name is Dave Wood. Don't confuse me with Dave Garwood (who graciously provided the photos for this article), or any other soaring people or companies that sound like Dave Wood. I'm a Long Islander (New York). I've been flying radio control aircraft for about 18 years. I started soaring about 16 years ago when my wife gave me a Gentle Lady as a present. At that time, like many of the locals, I was a professional clamdigger. To me, soaring was kind of like digging clams, but that's another story. What matters is that I grew to love flying R/C sailplanes. I'm almost obsessed with it, to the point of having it interfere with my clamdigging activities. I belong to the Long Island Silent Flyers, and also compete in as many of the Eastern Soaring League contests as I can.

Probably not many of you realize that the East Coast of the U.S. is a hotbed of R/C soaring. I'm certainly no historian, nor am I on the local tourism committee; but to start with, Long Island is known as "The Cradle of Aviation". The Lunar Lander was built on Long Island. Flying is in our blood out here. When we're not out digging clams, our families are involved with flying and/or building planes. We've been doing it since the earliest days. Heck, some of my friends were born in airplanes! Even though things have changed around here since the early days, we still fly 'em as good as anyone, anywhere. Some of the world's best R/C soaring pilots are from Long Island and the East Coast in general. I'm not going to drop names, 'cause you guys from elsewhere, you know who they are!

Our contests are great too! We had one just a few weeks ago. It was the 19th Empire State Soaring Classic held in beautiful Syosset, Long Island, New York. The field is about 35 acres of mowed grass surrounded by acres of woodland. The weather on Saturday was excellent, with warm, light winds and lots of thermals. We had eight rounds of seven

Mike Popescu - Father of all Grand Esteems.

minute duration, with a hamburger and hot dog barbecue lunch break in between (next year, maybe clams). The contest was won by Josh Glaab (former Long Islander) in the expert class, and Steve Lucke in the Sportsflyer division. The mishaps of the day included a Probe blown up on the winch by contest-director Gordon Stratton, an unfortunate radio-interference shoot-down of the mother of all Grand Esteems - Mike (Inventec) Popescu's personal G.E., and a nasty red-tail hawk attack on a couple of contestants' planes.

On Sunday it rained. It was the first rain-out for this contest since anyone can remember. We set up early, and flew one round in the drizzle. The thermals were elusive to say the least. Then it poured. During the pouring rain, we had our raffle. I would like to thank our raffle sponsors: Airtronics, Siegers International, and Northeast Sailplane Products. Through their generosity, our club was able to donate a nice chunk of cash to the local charity via our local parks department, and also send three wet and happy contestants home with brand-new, open class ships. After the raffle we decided to cancel the rest of the contest. Wouldn't you know it, but immediately after all the stuff was packed and people were leaving the field, the rain stopped?

Well, I've rambled for long enough. For me, it's time to put that new plane together, so it'll be ready in time for next year's contest season. Next year will be the 20th Empire State Soaring Classic. It should prove to be the biggest and best ever. Bring your clam knives. ■

Note Bill Miller's controversial East vs. West T-shirt.

Peter Nicholson

Dave Wood launching. Dave Walter of Charles River Radio Controllers on right.

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Designed by Paul Perret

The wing is lightweight, stiff, and strong. Within its two-piece, triple-taper planform is a 1/2" carbon fiber wingrod mated to two 30" carbon fiber tube spars. The structure is further reinforced with carbon fiber spar caps, carbon fiber servo well reinforcements, and fiberglass at the wing roots and trailing edges.

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