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R/C  
*Soaring*  
D I G E S T

March, 1997  
Vol. 14, No. 3  
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## R/C SOARING DIGEST

A Publication for the  
R/C Sailplane Enthusiast!



R/C Soaring Digest (R/CSD) 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 R/CSD 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 R/CSD. We encourage anyone who wishes to obtain additional information to contact the author. R/CSD was founded by Jan Gray, lecturer and technical consultant. He can be reached at: 210 East Chateau Circle, Payson, AZ 85541; (602) 474-5015.

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On August 24, 1996, Dave Beck, Appleton, Wisconsin, with official observers, set a R/C model record flight, F3F solar powered, distance in a straight line. Application has been filed and is pending. Dave and observer, Lee Murray, explain how to pursue world records on page 8.

John Beck (L) and Karen Beck (R) are shown with Solar Solitude. The photo was taken just prior to completion, and does not show the solar cells which have since been added to its fuselage. John documents many of the flights with a camcorder, and joins his father when the plane is flown; even John has flown Solar Solitude, as well as other sailplanes in the Beck family fleet.

Karen draws the banners, posters, and pictures of the plane. When the record was set, Karen and a friend were in the lead car, so they were asked to sign the record dossier as unofficial witnesses!



## OTHER GOOD STUFF

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## The Soaring Site

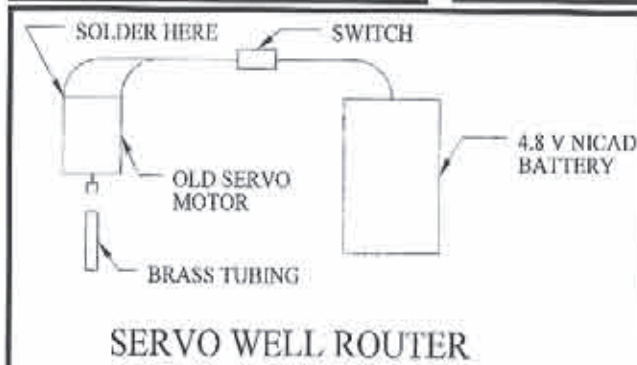
### Quick Survey Results

With the December issue, we asked if we "should print articles that have appeared before". There were 13 responses, all from folks having e-mail capability. While 11 said "yes", 2 said "no". We thank those that took the time to respond to our request.

Of the 13 that did respond, 5 included qualifiers. One qualifier read, "Yes, if you mean making the articles available for down-loading on e-mail. Also, attach pictures in .jpeg format to use in newsletter." Well, this wasn't quite what we had in mind, but it raises an interesting question, and one we have been thinking about for a long time: getting a web page in place. Do we intend to? Yes. Why haven't we? Because we have not had the time to do it. No, we don't currently plan to place each issue of RCSD on the Internet because, in an earlier survey response, most of you still wanted to receive a hard copy via snail-mail. But, when we do get a Page in place, we could provide some types of articles and information on-line, available for downloading by those having an interest.

In regards to reprinting articles that have appeared before, only the occasional article will be considered, based on content, and where and how

**NOTE: We can now handle ZIP cartridges!!**



many times it has appeared before.

### A Special Request

At most events there are usually a number of folks with cameras in hand, positioned, just waiting to get that perfect shot for their scrapbook or, perhaps, to enhance an article they are writing for RCSD. Unfortunately, with the sense of excitement that many events evoke, it is not easy to be on the lookout for folks with cameras in hand, as other photographers and spectators also position themselves to get the best vantage point to see the action first hand, as history is being made.

Next time you're at a flying site, we would appreciate it if each of you could make a quick note of camera carrying folks, and try to help detour others from crossing in front of the photographer that is positioned for a shot. Thanks in advance! Since many of us can't attend most events, just seeing the action shots is consolation enough!!

**Happy Flying!  
Judy & Jerry Slates**

**LSF**

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

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

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

### Correction

*This graphic did not reproduce well in the February issue, page 8. We apologize to Greg Norsworthy, and are reprinting it again, using a different resolution setting, of course! Sorry, folks! ED.*

### Radio Controlled Exhibit Opening

...from the National Soaring Museum  
James W. Swinnich, (607) 734-3128  
e-mail: nsm@soaringmuseum.org  
www.soaringmuseum.org

On May 3, 1997, an exhibit at the National Soaring Museum (NSM) at Harris Hill, Elmira, NY, will commemorate the 50th anniversary of radio controlled (R/C) model sailplane flight. The exhibit will include the 1937 - 1938 original "Skyrider", the "Windfree" 1970's champion, and a 1990's R/C sailplane named "Skyhawk".

Visitors will be able to work a typical control system on a model sailplane. Exhibit will include historic radio gear documenting the transition to ever smaller transmitters and receivers. Exhibit opening will be accompanied by a symposium on the history of R/C modeling and its relationship with soaring. The local Harris Hill "Lift Over Drag R/C Model Club" will conduct demonstrations with an R/C towplane taking up an R/C sailplane on a launch. Both events are scheduled for that Saturday afternoon, May 3.

### U.S. Soaring Hall of Fame Ceremony & Banquet

The above events are in conjunction with the U.S. Soaring Hall of Fame weekend. Carl Harold and E. Gene Hammond will be inducted at a ceremony and banquet that evening. ■

For those of you that may be a bit confused by all the events happening at Elmira, here's the breakdown.

- There is an exhibit scheduled for May 3, as shown above. Robin Lehman and John Derstine will be in attendance at the demonstration. To obtain additional information, give them a call.

- As of this writing, the guest speakers at the banquet on May 3 include Paul Schweizer and Martin Simons! Please contact the NSM for additional details.

- June 13 - 15 is the Second Annual Elmira Aerotow "97" event. Contact John Derstine for details.

- The speakers at the June 13 - 15 event include Paul Schweizer.

- If any of you wish to meet and chat with Martin Simons, before he returns to Australia, he will be in Wylie, Texas around May 8th. Contact RCSD. ■

## 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 encouraged to bring their 1/4 scale, or larger, tow planes (with release). This may be the "year of the scale tow plane". We will have a few scale sailplanes available on site for those who can't bring their own. This year we are going to have a pilots choice award, and a special award for the best Schweizer scale sailplane. Other prizes to be announced. We will have an evening Banquet Saturday night at the National Soaring Museum.

**Paul Schweizer** will be a featured guest speaker, with others to be announced. More exciting plans are in the works, so keep an eye out for further developments 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**  
717-596-2392  
johnders@postoffice.ptd.net





## Jer's Workbench

Jerry Slates  
P.O. Box 2108  
Wylie, TX 75098-2108  
(972) 442-3910  
RCSDigest@aol.com

### Weight Loss

Thank goodness that the holidays are over. Several folks have said that it's time to lose some weight, now that most, if not all, of the holiday goodies have been consumed. Not me! It took me over 60 years to get the way that I am, and I like it that way. However, I do have one model that could stand to go on a diet.

My latest model, a Stiletto sporting a S7037 airfoil has a gross weight of 68.18 ounces. The wing loading is 11.63 ounces per square foot of wing area. While the Stiletto flies quite well, I felt that it would fly better still, if it weighed a bit less.

So, the Stiletto was promptly positioned on the workbench where I could take a good, long look at it. What to do. Well, I asked myself, "What if I were to build a new, and lighter rudder?"

The original rudder was obechi sheeted over foam, and is on the heavy side; when the rudder was removed from the Stiletto, it weighed in at 1.3 ounces. So, as shown in the photos, a new rudder was constructed, and it weighed .28 ounces, prior to covering. Applying two coats of Balsarite, the new rudder was then covered with ThermalSpan, and heat shrunk; three coats of Sig Butyrate clear dope was applied, which was followed by one coat of Sig Supercoat Red. That brought the weight to .42 ounces. The rudder gained, or lost, depending on how you look at it, .88 ounce.

Now, I asked myself, "How about the stabilizers? What kind of a weight loss can we expect to obtain, here?" As you can see in the photo, holes were cut out; unfortunately, not much weight loss was attained. Once covered with ThermalSpan, and painted using the same process as for the rudder, a weight loss of only .18 ounce was achieved.



Stiletto with S7037 airfoil



Original rudder (L), new rudder (R)



Original stabilizer



Modified stabilizer

The new rudder and modified stabilizer were reattached to the Stiletto; it was then balanced on the appropriate CG, by removing 3 ounces of lead BB shot from the nose.

In conclusion, the total weight went from 68.18 ounces to 64.12 ounces, a total weight loss of 4.06 ounces. The wing loading changed from 11.63 to 10.94 ounces per square foot. While this change may not sound like much, I was pleased with the result.

When the weather warms up a bit, the Stiletto will be test flown, and I'll report on the result. In the meanwhile, if you have a model that seems a bit overweight, just a few simple modifications could lower its gross weight.

Most Materials obtained from hobby shop  
ThermalSpan - Harris Design  
2000 NW 84th Ave., Ankeny, IA 50021  
(515) 965-5942

### Getting Time Back From The Cybernetic Time Thief

...by Lee Murray  
Appleton, Wisconsin

*My American Heritage (on line) Dictionary* defines cybernetics as: cybernetics (si'ber-net'iks) noun (used with a sing. verb) as "the theoretical study of communication and control processes in biological, mechanical, and electronic systems..." In most context today, it applies to what we do with our computers.

As the years pass, I have less and less time to build models. I wonder just where the time goes. After some searching, I think I have found the answer — the cybernetic time thief. Yes! E-mail, net browsing, reading posts from mailing lists have robbed time from me like a thief. I thought the computer was to free us of manual labor and enrich our lives. Somehow, it seems as if it works the other way; we work for the money to get us more computer gear to let us do more things, faster, better... etc. What happened to the pleasures of just building, flying and reading *RCSD*? Cyberspace is a vacuum that will draw you into a distorted time dimension from which it is difficult to escape. One evening can be compressed into a moment with an excursion onto a few home pages, which hypnotically keep your interest as each new graphic is painted onto the screen. The scope of information boggles the mind and it is entertaining. Some universities now offer support groups for those struggling with the addiction of Internet use.

#### R/C Soaring Digest Index

Rather than walking away from the computer, because it takes away from modeling, we should make decisions about how we want to spend our time. I have a suggestion, which can give you back some time. By using the computer, with an index to *RCSD*, you can put yourself in touch with past

*RCSD* articles. Use those stored *RCSD*s more effectively and be able to tell your spouse why you are keeping those old magazines. You can get this database from several different sources:

1. *RCSD* Database/Index contains a description to every article in *RCSD* ever published. Copies of the database are on the CompuServe's Modelnet Forum in the General File Section (RCSD8496.zip).
2. Text copies are available from America On-Line (AOL). To access these files, the keyword is AVIATION. Pick SOFTWARE LIBRARIES, MODEL AVIATION SOFTWARE LIBRARY, and then INDEX TO R/C SOARING DIGEST, RCSD8496.ZIP. The download is less than 2 minutes at 14,400 baud, (and around 3 minutes at 9600 - ED). List and print the description that includes instructions for its use. The Zip file contains several text files that can be searched with a word processor. There are other ways to get to the Software Library, which will also work.
3. If you aren't connected to CompuServe or AOL, you can send me 3.5" high density discs and a SASE with stamps for 2 oz. With these files that you can load on to any word processor, you search for a word or phrase and see *RCSD* references pop up before your eyes (issue, author, date, page and comments).

Lee Murray, 1300 Bay Ridge Rd.  
Appleton, WI 54915  
(414) 731-4848 (after 5:30 p.m. days)  
E-mail: 74724.65@compuserve.com

**STOP PRESS:** The *RCSD* index is now available to be downloaded from the PC-Soar home page on the world wide web: >><http://dataex.com/~atkron95/pcsoar.htm><<

(Readers, Lee has done a wonderful job, since 1984, donating his valuable time, just to keep the index up to date, let alone, making it available in all the flavors you see here. PC-Soar is, of course, his home page. If you visit the page, please drop him a note of thanks, if you find the index a valuable tool, or have any suggestions or comments. Thanks, Judy) ■



## In Pursuit of AMA and World Records

...by Dave Beck and Lee Murray  
Appleton, Wisconsin



*Solar Solitude with (L - R) Jim Murray, Lee Murray, Dave Beck, Ted Elliot. Photos courtesy of Dave Beck.*

There are several reasons why you might be interested in establishing a world or AMA record. They include making the hobby more challenging, giving you pride of accomplishment, providing an opportunity to learn more about your sport, and occasions for you to get together with friends, or family members, who have similar interests. The process begins with matching your interests with the opportunities for records. Those opportunities come from the AMA for national records, and the FAI for world records.

AMA or National Records can be found in *Model Aviation* from time to time. The listing doesn't appear in the table of contents, but can be found immediately following the "Focus on Competition" section. The February '97 issue had a list of records, as of October 1, 1996. There are many record categories, with Indoor and Outdoor

Free Flight having the most, but I will be talking about here is electric powered and sailplane RC categories - the subjects of *RC Soaring Digest*.

### AMA Records

According to AMA's Steve Kaluf, the AMA is considering proposed record classifications for electric models. This could open many new electric flight categories for AMA members. Within the sailplane classification, the table below describes the categories. Within each grouping is three records for the age categories: Junior - under the age of 15 years old, Senior - at least 15 but less than 19 years old, Open - 19 years or older.

The requirements for AMA R/C Sailplane Records are spelled out in the *AMA Competition Regulations 1996 and 1997, Rules for Governing Model Aviation Competition in the United States* (pages 119-120), and records in general in the

Classification / Size	A. HLG	B. 2 Meter	C. Standard	D. Unlimited
Duration - Slope Soaring	J.S.O	J.S.O	J.S.O	J.S.O
Duration - Thermal	J.S.O	J.S.O	J.S.O	J.S.O
Declared Distance	J.S.O	J.S.O	J.S.O	J.S.O
Closed Course Distance	J.S.O	J.S.O	J.S.O	J.S.O
Altitude	J.S.O	J.S.O	J.S.O	J.S.O
Speed	J.S.O	J.S.O	J.S.O	J.S.O



*Dave Beck & Solar Solitude.*

*AMA Membership Manual for 1997* (page 7) which was mailed out at the end of 1996.

### World (FAI) Records

All world records are overseen by the Federation Aeronautique Internationale (FAI) located in Paris, France. They were originally formed at the turn of the century to classify and approve all world aviation records. To help in the organization, they delegate some responsibilities to each country's national aero club. It is the responsibility of each national aero club to verify and submit world record applications to FAI. In the United States, the National Aeronautic Association is the national aero club. The NAA further delegates matters of model aviation to the AMA, who issues sanctions and handles all paper work relative to model world records. All three organizations are involved; each world record aspirant has to join all three organizations. Fortunately, AMA makes this easy, by providing an easy way to join all three in a single payment.

World records do not have age or size classifications, but there are several electric classifications. To classify as a model, the weight must be less than 11 lb. Some other limits are maximum wing area 2325 in<sup>2</sup> and under 25.6 oz./ft<sup>2</sup>. The actual FAI records along with classifications are included in **World**

Task \ Propulsion	Unpowered Glider	E. Rechargeable Batteries	F.Non- Rechargeabl E	SOL.Solar Powered	COMB-All Sources
Thermal Duration	24	59	65	71	77
Distance in a Straight Line	25	60	66	72	78
Height (Altitude)	26	61	67	73	79
Speed	33	62	68	74	80
Distance in a Closed Circuit	34	63	69	75	81
Speed in a Closed Circuit	55	64	70	76	82

**and United States Aviation and Space Records and Annual Report.** This is a very interesting book of about 400 pages, which you get by virtue of membership to NAA. You may have noticed an area on your AMA membership renewal application for signing up for NAA & FAI membership. On the NET, you can see these world records on the FAI web page: <http://iria.mines.u-nancy.fr/~fai/acromodeling/records>.

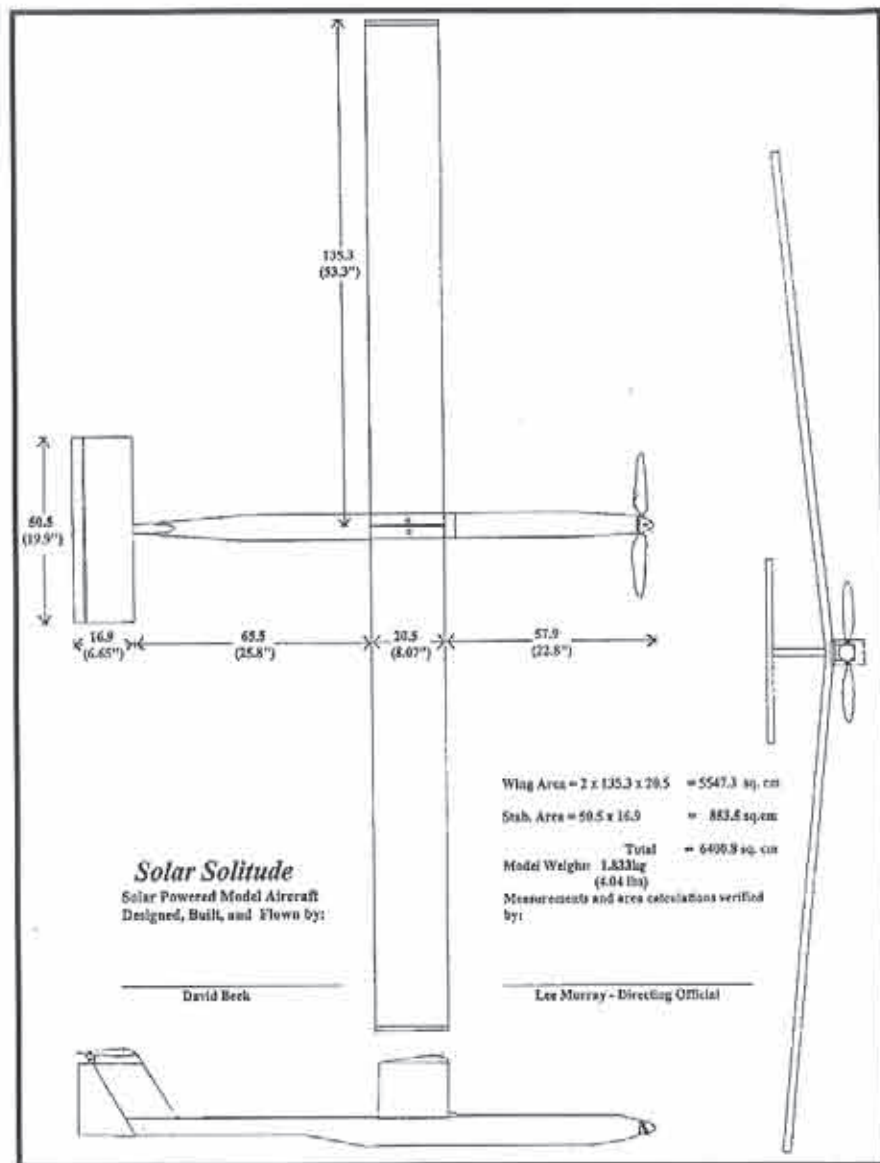
If you decide to go for a record, either AMA or FAI, you will need a copy of the **Sporting Code**. This book contains a list of requirements for your record attempt application. The Sporting Code was last printed in 1993. Models records are discussed in Section 4a, Part 7. The classification numbers are shown in the table below.

As a directing official for my friend Dave Beck's pending solar powered model records, we have some experience with this. After some unsuccessful attempts at altitude records, we were successful at establishing a 24.17 mile declared distance in a straight line (category 72). This pending record is presently stalled at the NAA where, hopefully, it will eventually be passed on to the FAI in Paris where it is homologated (officially approval). Due to a staff shortage at NAA, record attempts were temporarily relegated to a lower priority.

### Dave's list of things which need to be done to secure your world record

1. Join AMA.
2. Join NAA (FAI) through AMA at a reduced rate.
3. While joining the NAA, ask for the FAI sporting stamp. The NAA will send a card with stamp, which needs to be referenced on a record dossier.
4. Determine what record you quest.





- Get a support team consisting of a C.D. (directing official for FAI), two qualified observers (AMA members will do), and perhaps a back up pilot if that is permitted in your task.
- Write AMA and request a sanction for that record. Specify the record in FAI terms (i.e., F3E-72 for the solar powered distance record). Each sanction costs \$2 and is good

for the calendar year. You will receive an official looking certificate suitable for framing, which expires the end of March to correspond with the end of AMA's yearly insurance coverage. A second certificate will follow starting April 1.

- Notify AMA at least 48 hours in advance of attempting your record. Also declare necessary

goals as outlined in the Sporting Code. For example, starting and landing sites need to be declared for a distance record according to code.

- The fun part... You do the record.
- Notify the AMA of your record within the time limits cited in the Sporting Code. Generally, this is within 48 hours, but may be longer if on a weekend. The AMA has a FAX on Demand service. By dialing 1-800-500-3139 you can request the document number 311 *Application for Possible National R/C Sailplane Record*. You will have to provide your FAX number.
- Write your dossier in compliance with the requirements of the Sporting Code. Send one original and two copies to AMA within one month of the flight. The original needs to have original calibration records, maps, etc., as well as other specific elements, such as a drawing of the model, its weight, wing loading, span, etc. Check the list in the Sporting Code.
- According to the Sporting Code, records copies are to be submitted to FAI within two months of the record. This may be a problem in the case of our record because of personnel changes at AMA and NAA. We are hopeful that the FAI will recognize extenuating circumstances.

#### Other Suggestions

- Talk to other record holders and get a copy of their dossiers. Any dossier is available from the FAI for 250 FF (~\$40 US). Some successful record flight descriptions can be found on the FAI home page mentioned earlier.
- Acquire well in advance any specialized equipment such as larger cells, guidance equipment, and altimeters, which are needed for your attempt.
- Practice your skill and place yourself and your model in the situation you will face during the attempt (e.g., fly at high altitude); practice finding your plane after

losing sight of it under controlled conditions.

- Calibrate any documentation equipment you will need for the attempt. Some calibration needs to be performed within 12 months prior to the record flight, or 6 months after the flight. Considering the need to submit records within one month, do things in advance.
- Plan for the things you know will happen during the course of your attempt. List them and think through how these will be accomplished, such as crossing a busy highway at a stop sign.
- Select a plan which maximizes the fun you will have in pursuit of your record.

By being prepared you can minimize the number of times you have to assemble your team. You can't plan on them being available every weekend, so be prepared when the opportunity presents itself. ■

ED: Detailed information regarding Dave Beck's pursuit of a world record is available at web site: [http://home.cdsnet.net/~purple/your\\_cps/dbeck.htm](http://home.cdsnet.net/~purple/your_cps/dbeck.htm). Additional information is on page 42 in the 11/96 issue of RCSD.

**THERMAL TALK**  
F3J LEAGUE NEWS

A NEWSLETTER FOR  
F3J ENTHUSIASTS WITH  
EUROPEAN F3J LEAGUE NEWS

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

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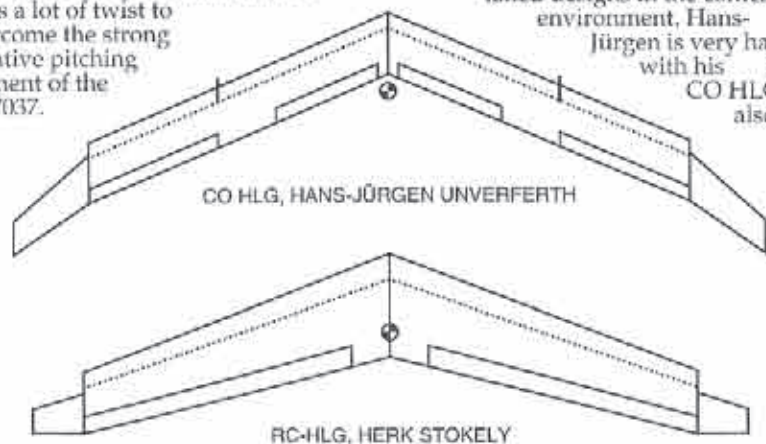
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### A Comparison of Two Tailless RC-HLGs

We recently received a packet of information from Andrew MacDonald, our Australian correspondent, in which was contained information on Hans-Jürgen Unverferth's latest creation, a tailless RC-HLG. At about the same time, Herk Stokely sent us photos and basic planform measurements for his latest RC-HLG, which is tailless, as well.

As both of these aircraft were designed and built within roughly the same time-frames, we thought *RCS* readers would like to see a comparison of the two gliders.

We'll start with Herk Stokely's creation. Herk's 'ship has a tapered wing and eight degrees of washout. The relatively large amount of washout is dictated by the airfoils used, a thinned SD 7037 at the root and a thinned SD 8020 at the tip. Pitching moment is determined by camber line shape and not by thickness, and it takes a lot of twist to overcome the strong negative pitching moment of the SD 7037.



Hans-Jürgen's design, in contrast, utilizes a constant chord wing and four degrees of washout. The airfoil used, which bears the designation RS004A, is essentially a slightly thinned version of the RS001 described in a previous column. The pitching moment of the RS004A is not so large as the SD 7037. The CO HLG also uses flaps. This option allows slower speeds, very tight turns, and exceptional control during landing approaches.

The pictures of Herk's design in the February 1997 issue of *Flying Models* magazine show some very light carbon fiber reinforcement, specifically on the upper surface. There is also a carbon fiber arrow shaft spar system. Two servos are used. The CO HLG, on the other hand, has spars with carbon fiber caps, and the wing itself is of high density foam. This design uses four servos — two in each wing. These factors dramatically influence weight and wing loading, so while Herk's design is very light and has a wing loading under four ounces per square foot, Hans-Jürgen's CO HLG is heavier and, with less wing area, its wing loading turns out to be more than double that of Herk's.

Herk has been throwing and high-starting his 'wing, while Hans-Jürgen has been throwing and winching his into the air.

Herk is very pleased with his RC-HLG design. It is stable, capable of being flown by near-novice pilots, and competitive with conventional tailed designs in the contest environment. Hans-Jürgen is very happy with his CO HLG, also. It

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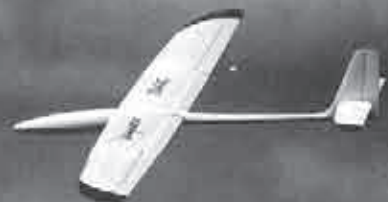
DIMENSION	DESIGNER	
	Herk Stokely	Hans-Jürgen Unverferth
Span	60", 1524mm	58.5", 1485mm
Chord, root	10", 254mm	6", 153mm
Airfoil, root	SD 7037 (7.5%)	RS004A (9%)
Chord, tip	6", 152mm	6", 153mm
Airfoil, tip	SD 8020 (6%)	RS004A (9%)
Sweep angle	22.5° at LE, 20.85° at $c_{0.25}$	24.9 degrees
Wing area	480 in <sup>2</sup> , 30.97 dm <sup>2</sup>	351 in <sup>2</sup> , 22.645 dm <sup>2</sup>
Washout	8 degrees, linear	4 degrees, from half semi-span
CG location	7.7", 195mm, behind apex	7.7", 195mm, behind apex
Elevon size (l, w <sub>r</sub> , w <sub>t</sub> )	26", 2", 1.7" 660.4mm, 51mm, 43mm	12.5", 1.2", 1.2" 317.5mm, 30mm, 30mm
Flap size (l, w <sub>r</sub> , w <sub>t</sub> )	flaps not used	7.7", 1.2", 1.2" 195mm, 30mm, 30mm
Fin size (h, w <sub>r</sub> , w <sub>t</sub> , sweep)	5", 4", 2.5", 1.5" 127mm, 102mm, 63.5mm, 38mm	7.3", 4.7", 3.15", 5" 185mm, 120mm, 80mm, 126mm
Construction, wing	foam and fiberglass, with CF arrow shaft spar	foam and fiberglass, with 7mm x 1mm CF spar system
Construction, winglets	1/16" balsa sheet	unknown; could be made of balsa sheet
Weight	11.8oz., 334.5g	17.6oz, 500g
Wing loading	3.54 oz/ft <sup>2</sup> , 10.8g/dm <sup>2</sup>	7.22oz/ft <sup>2</sup> , 22.1g/dm <sup>2</sup>
Battery type	125mah	500mah
Controls	elevons only	elevons and flaps
Notes	Extremely easy to fly; has very good performance	Uses wing fences and flaps; is capable of very tight turns

exhibits good dead air time from a hand launch (50 secs.), and the flaps greatly expand the speed range and help with precision landings. Wing fences help maintain aileron control, and turns are said to be incredibly tight with this machine. The report we received from Andrew indicated Hans-Jürgen had been flying only the CO HLG for the last five weeks, and he is now seriously considering a second construction with a Speed 400 motor installed! CO HLG appears in the January 1997 issue of *Aufwind*, the German aeromodelling magazine devoted to sailplanes.

An included table details the dimensions of the models and shows the similarities and differences of these two designs. We hope this information is of interest and use to *RCS* readers planning to design, construct, and fly their own tailless RC-HLG.

We are always looking for topics for future columns. If you have ideas, questions, or suggestions, we're eager to hear them. Contact us by mail at P.O. Box 975, Olalla WA 98359-0975, or by e-mail at bsquared@halcyon.com. You can also leave a message at our web page <http://www.halcyon.com/bsquared/>. ■





*Vaquero during first day of flight testing. After this a radio antenna tube was installed in the fuselage.*

## Sailplane Systems Vaquero

...by Dave Garwood  
Scotia, New York



*Vaquero on close pass, again on first day of flight testing.*

### Introduction

I met Tom Finch at the February 1996, Inland Soaring Society, monthly contest in Riverside, California, where he kindly let me fly his unlimited class Vigilante in the contest and his two meter Vaquero after the contest. I was so impressed with the 2M plane's design features and flight performance that I bought one.

The Vaquero is a six servo, two meter span, competition sailplane with a light fiberglass fuselage, hollow molded wings and stabs, and large carbon fiber wing joiner rod. I like the cruciform, all flying, horizontal stabilizer placement, and the fact the wings and stabs pull off, so that the completed plane fits back into its original shipping box for easy storage and transportation. I also like the slip-on nose cone.

The wing planform is double tapered at LE, straight at TE, with SD-7037 airfoil, molded Kevlar/fiberglass/Spyder-foam skins with carbon spar caps. The fuselage is vacuum bagged, Kevlar-reinforced fiberglass. The design weight is 38 - 42 ounces, wing area 565 square inches, for a wing loading of 9.7 to 10.3 ounces per square foot.

The wings, stabs and fuselage are light and are pre-painted in the mold; no

finishing is needed. The cost of this high tech, nearly fully built sailplane is \$449, with your choice of wing and stab bottom color.

The Vaquero is light, well engineered, and attractive looking. It launches high and flies exceptionally well. This review is written after a full season's experience with the plane, and as you shall see, "We have had our ups and downs, but we're still playing together."

### Kit Contents and Construction

The wings come completely built and finished, with ailerons and flaps hinged and gap seal installed. All that remains is to install the servos, control horns and servo linkages. The stabs are built and finished also.

Fuselage construction requires only installation of the stabilizer bell crank and the servo tray, and cutting holes for the wing servo wires. The joiner rod hole is cut and ingenious molded wing alignment guides are installed at the factory. The rudder is installed, as are the rudder and elevator control rods.

I've had good luck with the durability

and precision of JR servos, and for this project I installed two JR 3021 mini servos for elevator and rudder control and four JR 341 servos for flap and aileron control. An RCD 3600 receiver and a Sanyo 600 mAh battery pack completed the on-board radio installation.

My JR 388 transmitter has proven its flexibility and reliability over the last few years, and so was selected again to control the Vaquero.

These steps took me about eight hours over three evenings. The only change I made from the instructions was to install servos with double-stick foam servo tape, rather than epoxy or CA as suggested by the maker.

Final construction completed, I added three ounces of nose weight to balance the plane 1/4 inch in front of the recommended specification - to err on the side of caution.

### First day flight testing

With the snow clearing, and daily high temperatures creeping above 50 and toward 60 degrees, New York soaring pilots begin to leave the balsa dungeon and gather on the flying field. On this day, the weather was mostly sunny, with low cumulus and high stratus clouds; wind 5-8 MPH with higher gusts. The Vaquero proved stable and responsive in trim tosses, so on to the winch.

Warned by the manufacturer to *throw* the plane vigorously, and to make the initial launch without flaps, I did exactly that. Straight up on the line it went, and fast. At the end of the launch the plane zoomed upward like a rocket. *Like A Rocket*. I was unprepared for the ballistic climb for another 80-90 feet off the line, but it was totally under control, so I was pleased.

Control throws seemed fine; turns were smooth and solid. The glide was flat and fast. On landing approach, even with flaps down and ailerons up, the plane scooted along. After a couple of launches, pitch control grew erratic, and I found the nose weight and receiver had shifted back on launch. (NOTE: The flap chord has been increased to improve their ability to slow the plane.)

While in the air, a whirlwind strong enough to lift paper and trash came across the field, and naturally I headed into it for a blast of lift. The plane went up, all right, then wham! Loss of control. I couldn't tell if it was a radio problem, the tip stall of a lifetime, or just the extreme turbulence, but the plane was tumbling out of the sky. Be still, oh heart of mine.

Bob Powers calmly suggested pulling the flaps on, which I did, and the plane recovered. I flew it back over the flying field with full flaps, and it seemed just fine. I circled with flaps on and set up for landing without further incident; the problem has not recurred.

The Vaquero goes up easily in lift, and on that first day I easily got three, seven minute, max flights, more than I get on some contest days, even with other pilots showing me where the lift is. I was pleased with the plane, given the impressive launch performance and its splendid thermal riding ability.

### Second day flight testing

On the first real day of spring weather in upstate New York, four sailplane pilots met at a local 400 foot hill - a gentle agricultural slope where we generally fly in mixed slope and thermal lift. Bob Powers brought his Shadow 118, Dave Knight his Quasoar, Jim Harrigan his Sensoar, and me the Vaquero. My intent was to accumulate some stick time with the new plane and to learn its habits and capabilities.

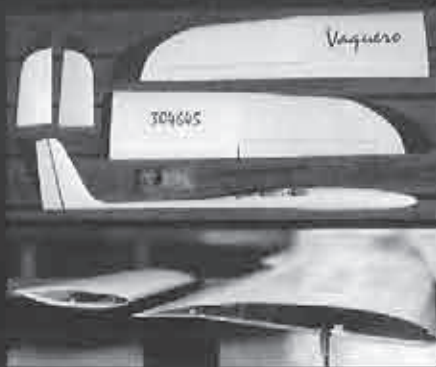
When we got to the hill, the wind was not from the south as we expected, but from the northwest; so out came the small high start to get up and over the tree line on the west side of the hill. It was the kind of day that, while windy, the slope lift was not steady enough to support long flights, but it could be used to boost the launch to venture out and find thermal lift. Most of the day it was easy to get a five minute flight, but tough to break ten minutes.

Like the first day, the Vaquero launched fast and high. The straightest launches are achieved with no flaps deployed. Dropping flaps and ailerons slows the plane, stretches out the high start line, and requires more piloting on the way up. Reflexing flaps and ailerons 2-3 degrees gives an amazing



Contents of the box as shipped: fully built wings with flaps and ailerons cut out, hinged and gap sealed, completed stabs, molded fiberglass fuselage with wing rod holes drilled, CF wing rod, and small bag of parts and hardware.

Vaquero hollow molded wing and stabilizer, shown here with servos installed. These parts come from Sailplane Systems painted and completely finished.



burst of speed and was needed to penetrate and get out past the tree line. Once out over the valley it was time to engage the thermal finding skills, sometimes with the guidance of Red-tailed Hawks.

The Vaquero signals lift readily: tail up, tip up, or entire plane going up, and fast. There is no sluggishness in this plane's response to lift, and it holds a constant thermal turn like a polyhedral plane - no cross control or rudder needed, aside from aileron to rudder mixing in the transmitter. This plane makes it easy to read lift and to stay in lift.

The Vaquero is more than agile, it's nimble. No other thermal plane I've flown has the instantaneous roll response like this one does. I think it's due to a combination of the light wings and the higher speed at which the plane demands to be flown, but response to aileron control input is right there, right now. The Vaquero handles more like a high performance slope soarer than any thermal duration soaring machine I've ever flown.

On the last flight of the day, I was comfortable enough with the Vaquero to try aerobatics: loops, slow rolls, and extended inverted flight. During the 20 minute flight, I was able to do three Cuban-8s, all lower than 100 feet AGL, venturing out past the tree line and finding more lift between maneuvers. I'm liking this plane more and more.

The sailplane was flying so well that I did not remove any nose weight. The dive test resulted in a sharp pitch up

upon release of the stick, indicating nose-heaviness. I'll need to work on finding the optimum balance point.

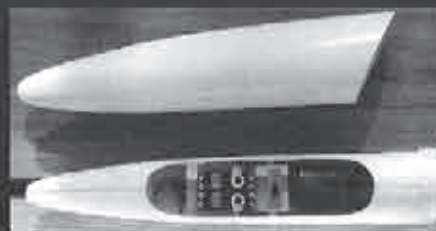
Late in the afternoon, the lift improved and my confidence in the plane let me climb high and enter a long dive for a fast pass. At the pullout point the right stab broke and the left stab fluttered. I pulled flaps on, the plane slowed suddenly, and the nose cone shot off. Out of balance and lacking elevator control, the plane met the ground in the most ungraceful manner imaginable.

I sent the Vaquero back to the factory for examination. Tom Finch performed the fuselage repairs, pronounced the wing intact, and suggested I do not fly the plane again without the fin post installed. He graciously gave me another set of stabs, this pair with a longer spar.

#### More spring flying

With all nose weight removed, the Vaquero weighed in at 40 ounces exactly and balanced at the factory recommended CG. It continued to show stellar launch and thermal riding performance throughout spring practice.

As the date for the Simsbury Spring Sailplane Challenge approached, I decided to work on improving my launch height. On one practice day, the stabs fluttered at the top of the launch, and I lost elevator control. With flaps deployed, the plane made a gentle landing. Like an idiot, in my excited rush to get the plane into the air, I had



Fuselage radio installation showing very precise JR NES-3021 mini-servos, RCD 3600 receiver, and 650 mAh battery pack in the nose.



Control system parts prior to installation: JR NES-3021 mini servos for elevator and rudder and JR NES-341 servos for flaps and ailerons, RCD 3600 receiver and Sanyo 600 or 250 mAh battery packs, depending on final balance.

again failed to install the fin post. For the second time I had contributed to my own demise.

I patched up the minor airframe damage, replaced the stripped elevator servo gears, and Tom sent me a new set of stabs, this time with a stronger glass layup and beefier spars. And now I've got a fin post, as instructed by the designer, and as provided in the kit.

#### 1996 Nationals

I got another lesson in full-on winch launching watching the F3B flyers. Those guys make Muncie look like Cape Canaveral. Man, was I pumped! Then came 2-meter day. On my first launch with a new Mike Wade winch, the Vaquero stabs exploded just as I pulled up-elevator to leave the line. Joe Wurts and Gordon Jennings, engineers and USA F3B Team pilots, looked at the fuse and the shattered stabs and suggested the elevator bell crank should be turned around so that the pivot is in front, the incidence pin at the rear.

Jim Haught, *Model Aviation* editor, let me use his shop and I built new laminated balsa stabs. Joe Wurts inspected the new stabs, and applied a band of carbon fiber to stiffen the root. Gordon Jennings repaired the wing where it had delaminated from the spar in the crash.

With help from these three famous guys, I got back on the field in time to fly the fifth round, where I made my ten minute time and got 85 landing points. I flew the second day of the 2-

meter contest without incident.

#### Visalia 1996

Tom Finch decided the way to handle the stab flutter problem was to sweep the stabs to move the center of pressure behind the pivot point. He sent me a third set of stabs in time for the Visalia Fall Soaring Festival. Tom and I both flew Vaqueros in that meet, sporting the new swept stabs. We launched hard for two days and neither of us had stab problems.

#### Another voice

Dave Elias, former soaring columnist for *Flying Models* magazine, called to ask what I thought of the Vaquero. I told him I was happy with the way the plane flew, but had experienced some problems with breaking stabs. I further commented that my fuse and wings showed slight decorative imperfections like little epoxy bumps and thin paint in some places. I told him I felt that Tom Finch had put the emphasis on structural strength and reducing airframe weight, and had put aesthetics second. Elias and I agreed that Finch had his priorities right.

Dave ordered a Vaquero and was prepared to pay close attention to stab problems on launch. "Nobody in Florida launches harder than I do," he said.



Dave placed first and second in his next two contests, beating unlimited planes with his new 2M Vaquero. In a later call, Dave commented, "The Vaquero is strong as Hell. It launches hard and goes up fast. I've never flown a plane that indicates lift as well as the Vaquero does." Dave noted that the Vaquero flies faster than most two-meters, and maybe doesn't climb as quickly in lift as others.

"Thermaling is a compromise." Elias said. "A thicker airfoil would go up faster, but the plane would not be able to range as far in search of lift." After a month's experience with the Vaquero, Dave Elias ordered Tom Finch's unlimited class plane, the Vigilante.

#### Conclusion

Like Steven Stills said, reflecting on about the rocky road traveled by his formidable band, Crosby, Stills, Nash and Young, "We've had our ups and downs, but we're still playing together." After ten months with the plane I am left with four impressions:

1. The Tom Finch Vaquero remains the best-launching and best-handling 2-meter thermal sailplane I have ever flown. Thanks to the extensive pre-fabrication done

at the factory, it is well worth its cost.

2. The Vaquero needs the fin post installed to launch hard and to fly fast.
3. The long and winding road to successful sailplane design is full of exhilaration and disappointment. "The hopes and fears of all the years," as it were. There's a lot more to sailplane R&D than is apparent to the casual observer.
4. "I get by with a little help from my friends." — John Lennon

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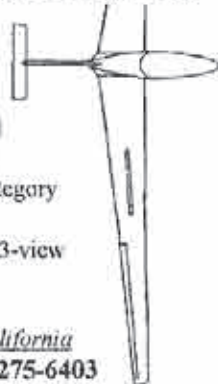
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## 1997 IMS SHOW

This year's annual International Model Show, on January 17 - 19 in Pasadena, California, saw combat and PSS models in evidence at several booths, as well as in the static judging contest. Here's some of the stuff I saw...

### STUDIO B

Lex & Roberta Liberato came all the way from the Big Island of Hawaii with a bundle of their new EPP'ee models. I got a chance to examine one of the kits; nicely done and very complete with a comprehensive, illustrated manual. At \$49.95, it's a real bargain for an all EPP model. The tapered, SD6060 wing, sleek fuselage shape, and V- tail configuration give this model real eye appeal. See the Studio B ad in this issue of RCSD to contact Lex for more information about the EPP'ee, as well as his other products.

The other hot news is that Studio B will soon be releasing two more foamic combat competition machines: a semi-scale MiG-3 and an Avro Vulcan... Stay tuned for these! I'm happy to see Lex pick up on the MiG in particular, as there's a conspicuous shortage of Russian models on American slopes.

### TRICK R/C

Jerry Teisan of Trick R/C in Venice, California paused for a moment from his brisk business to chat with me and show his wares. Coming off a sweep of the top three places at the recent LNSSG Turkey Shoot, he was having no trouble unloading a whole bunch of Razors and Zagi-LE's. He also had one of his B2 Bombers on display, which is a very convincing semi-scale rendition of the enigmatic original. Check out Trick R/C's full page ad in this issue of



Lex Liberato of Studio B with his EPP'ee combat/sport plane.



Jerry Teisan (left) and John Stossel at the Trick R/C booth at the IMS show. The "Razor" is a very recent release; notice outboard placement of the elevons on this design.



Merril Brady (right) and Mark Navarre at the MM Glidertech booth. Merrill holds his new "Ding-No", an all EPP combat design.

RCSD for pricing and how to contact Jerry, and the January issue for a review of his original Zagi by RCSD's very own Bill & Bunny Kuhlman in their "On the Wing" column.

Trick R/C is also expecting a spring time release of "The Beater", a 2 meter all EPP trainer design. The debut of



K&A Models Unlimited's Me109 and Spitfire Mk XXIV. These are elegant small-scale PSS kits. Ken's line is expanding rapidly - see text.



I knew who built this model the moment I saw it - Brian Laird's Slope Scale P-40 Warhawk in the IMS static contest. Brian has a sensitive feel for how much detail to add to a PSS plane for the most spectacular effect. Call letters are his daughter's initials!



Absolutely fantastic A6M5 Zero by unknown builder in IMS static contest. This plane was really beautifully done and carefully detailed. It's a perfect reproduction of the plane in the photo, seen in front of its documentation.

larger, thermal capable, planes signals the coming-of-age of the foamic airframe format, and will insure that it's here to stay.

### MM GLIDERTECH

Along with Merrill Brady's established handlaunch and two-meter built up designs, I got a peek at his new "Ding-

No", a 49" span EPP foam combat/acrobatics ship slated to retail for around \$52.00. This plane could be a contender in future contests, with its generous wing area and overall, well-proportioned moments and volumes. The wing design features swift-style tips, straight leading edge, and a forward swept trailing edge.

An upcoming MM Glidertech model will be an all EPP foam North American F-86 Sabre. This is one model I've personally heard MANY requests for, and should be a hot item with its release. Merrill's will be combat legal and sport an SD6060 airfoil.

Also, Merrill and his wife gained themselves a new member of the MM Glidertech organization with the birth of their son, Matthew Paul Brady, only days prior to the show! A hearty congratulations to the Brady's! Whadda' ya' bet there's a transmitter in this kid's crib?

### K&A MODELS UNLIMITED

Ken Williams of K&A Models Unlimited has been working real hard since I saw his booth at the '96 show! He's got a whole slew of new models in the works for the PSS fans; just take a look at this: 1/12 scale Me109G & Fw190A-0 (both 704 combat legal), 1/15 scale Me109J, 1/12 scale Supermarine Spitfire Mk.24, MiG-3 and MiG-15, and an F-86 Sabre. For the electric enthusiasts, he'll soon be releasing four fabulous, new, twin Speed 400 models: the Douglas DC-3/C-47, the B-25 Mitchell, the DeHavilland Mosquito, and the Mitsubishi G4M "Betty" (The plane Yamamoto was shot down in.). All these will be in the 60" span range. Ken had examples of some of these models on hand, and all were very scale in appearance. A sample fuselage was on display as well, and it exhibited outstanding glass work with beautiful lap seams and very lightweight. Any of these models would be outstanding slope performers. My previous experience with Ken's kits has been very positive; time to update my collection! See K&A's ad in this issue of RCSD to contact Ken and find out more about his extensive line of kits.

### CARL GOLDBERG MODELS

The other day, my good friend Dennis



Duncan stopped over at the house with an amazing thing in his possession. A sack of gold coins? A bag of hundred dollar bills that fell off the back of a Brink's truck? A suitcase full of diamonds? Nah... Who cares 'bout that stuff?! No; he had in his hands two full, brand new, rolls of Olive Drab Ultracote! This is something I've been wanting for years!! The first thing I did when I walked onto the IMS show floor was beeline to the Goldberg booth. I marched up and said, "Is it true? Can it be that Ultracote is now available in Olive Drab Green?" The answer was a resounding, "YES!" It's #904. It's accompanied by another great shade, too: #905 Corsair Blue. Both these colors I've only seen previously in Monokote, so I'm gratified that I can now get my favorite covering material in wonderful, military colors. Sometimes, the planets just line up right.

#### OTHER IMS STUFF

In the static display area, there were two excellent PSS planes present. One was a beautifully finished P-40 Warhawk built by Brian Laird from his own Slope Scale kit. It sported the tan/brown RAF African camouflage, and was completely weathered and panel lined. Colors were laid down with specially color mixed Testors Model Master enamels; panel lines were inscribed with an extra-fine, Sharpie permanent marker, which Brian told me has worked very well for him; it offers the opacity and clarity of traditional India ink, in an easy to use, standard pen applicator. He also likes the fact that the ink has no tendency to bleed under his straightedges and templates. I can attest to the outstanding results, as his 'hawk's appearance was absolutely stunning.

Also on display was a very nicely done and well documented Mitsubishi A6M5 Zero in an overall gray color scheme. Regrettably, the builder's name was not noted on the documentation due to the contest rules, but whoever you are, if you're reading this, I say to you, "Nice work!"

As a last note on the show, I'd like to say thanks to Jerry Teisan for the La Primadora and Phil Lontz for the Arturo Fuente, fine cigars generously

given to me by a couple of fine gentlemen.

#### BATTERY INSURANCE

So, you've spent countless hours detailing and preening your new PSS plane, poring over every bit of documentation available, to create the most realistic model possible. Wouldn't it be a shame if it were killed by a low or faulty battery? We all know this is a fact of life; it's happened to anyone who's spent any significant time flying models, especially in the demanding slope flight profile with its attendant abuses. Well, this doesn't have to happen to you if you're willing to make a small investment in a very neat piece of equipment I recently obtained from Darrin Braybrook at Warp Speed in Australia.

Warp Speed manufactures the "Plane Saver", a small battery warning AND backup unit. This slick little device, which weighs about an ounce, does two things. First, if it detects a low-voltage condition on your flight pack it emits a piercing audible signal telling you that failure is imminent. This, however, is just the start; after all, it's no consolation to know why your bird went in when you're scraping it off the



Warp Speed's "Plane Saver" battery warning and backup system. Its compact size and light weight make it cheap insurance for your hard-won models. See text for details.

side of the hill. This device allows you to run a second, backup, battery pack. When the Plane Saver detects low voltage on the main pack, it signals, then immediately switches over to the backup pack, allowing a safe and sane landing.

This system works for any capacity battery system and is very easy to use. It can be run with a dual switch setup, or you can simply connect the backup pack, then switch on the main pack and you're ready to fly. The unit's small body will easily fit in fuselages with limited interior space and only requires about a 3/32 inch diameter hole on the exterior of the plane at the buzzer's diaphragm opening - nearly invisible!

If you're a little lackadaisical about battery care, and are flying expensive or high-labor airplanes, this is an item that makes a lot of sense. I know many of us are guilty of very poor battery care and a little insurance can't hurt. For pricing and shipping, contact Darrin at Warp Speed, 26 The Crescent, Hightett Vic 3190, Australia. Ph: 61-3-9532-6003, Fax: 61-3-9532-6003 or E-mail at: blackandred@msn.com.

#### 'HOOKED' ON SKYHAWKS

Jim Babcock in Chico, California is still scratch buildin' away, and he's brought us this month's Reader's Ride. You'll remember a few columns back we featured his and Lorne Tucker's V1 project. You'll also recall his cool "paperweight". Well, he decided he'd add to his collection of Navy-type stuff



Jim Babcock's slick little scratch-built A-4D Skyhawk. Probably a tough bird to fly on overcast days at only 34 inches span!

with this project, a 34" span, 28 ounce, Douglas A-4D Skyhawk, which appears to hail from Attack Squadron VA-34, flying from the USS Saratoga, circa 1956. An S3021 foiled wing, carrying 14.4 ounces per sq. ft. on 280 sq. in. of area, keeps her aloft in reasonable air, but can be testy in light lift.

The wing is of built up construction and the fuselage is 1/2 ounce glass/epoxy over a carved white foam plug. Jim just left most of the nose portion of the plug in place after completing the glass work and cleared cavities for the radio equipment. He also cleaned out a channel from the intakes back to the tailpipe opening as an experiment in drag reduction, but says the result is inconclusive. Just seemed like a fun idea to try, and it does add to its visual appeal. Also notice the pilot figure complete with O<sup>2</sup> mask and visor!

Jim mentioned that it took a while to get it trimmed out correctly, but after fooling around with stabilizer incidence and CG location a little, he finally started getting respectable performance. The delta planform wing and short coupling make the A-4 a tricky subject, and getting one through its growing pains can challenge your patience!

Control is aileron/elevator with mini equipment. Finish is Monokote and Krylon paint. Thanks again, Jim, for the sampling of your talent!

#### KNIFE IN THE TEETH - CALIFORNIA STYLE

For all the southern California readers, there's a whole bunch of combat events scheduled for '97 by both the Laguna Niguel Slope Soaring Guild and the Torrey Pines Gulls. The LNSSG events will be at the club field in Laguna Niguel, and you can get the info from me. The TPG events will be held at the Gull's Poway slope site (near San Diego). For info on the TPG dates, contact this year's LNSSG Turkey Shoot Champion, Mark Navarre, at 5948 Hersholt Avenue, Lakewood, CA 90712, or phone him at (310) 920-2058.

That's all for this month. So, until next time, watch your six and pick your shots carefully! ■



## 1996 SIG/LASS Midwest Slope Challenge

...by Paul Wright  
Garland, Nebraska

...photography by Christopher Knowles

The Sig/Lass Midwest Slope Challenge (MSC) was held on May 17-19, 1996 at Wilson reservoir in Russell County, Kansas. The weekend was quite successful with 27 pilots, 47 entries, 10 additional pilots not registered in the competition, and an estimated 50 spectators over the course of the race day. Pilots traveled from 8 states to attend the event.

The event officially began Friday night with Steve Rohman demonstrating several successful launches of his rocket powered Phoenix glider. The sight of a sailplane, with a 4 foot tongue of blue flame propelling it

straight up, is quite a sight (and sound). This was followed by a night fly on the slope using LED's and light sticks. More pilots elected to watch than fly. A few of the TD (thermal duration) events here in the Midwest feature night flies as part of the fare. However, night slope flying was new to everyone. We found it to be a little more challenging, due to the fact that the perspective of the aircraft to the pilot changes much more rapidly than night winching on a big, open field.

My alarm went off just before sunrise

on Saturday morning. After I shut it off, I heard a noise that sounded like water running. I stumbled through the motel room, stuffed with aircraft and chargers, to look out the window. "WIND!" I told myself. "That's what that noise is!" Lots of wind, right out of the south!

By 9:30 am, everything was set up, thanks to a lot of help from some really nice pilots. The pilots meeting was held in a constant 20 MPH breeze coming straight up the pipe of the best hill. It was observed that we had obviously made the proper sacrifices to the wind gods, in the form of destroyed aircraft over the preceding year. The wind gods were smiling this day, and so were the pilots.

The first class to go was stock Ninja. This class pits pilot against pilot since the aircraft are so nearly identical. Smoothness, and the ability to make clean turns close to the pylon, are the keys to victory. 17 Pilots flew 25 heats in just over 2 hours to determine the final 4. These pilots then flew off for the top 4 places.

After Ninja, we took a short break for lunch. By the time we started the 60-inch class, the winds had reached a steady 30 MPH. A lead salesman in the pits could have retired on the money to be made. The lift was still pretty laminar, but the gusts were creating turbulent pockets close to the face. Most racers during this class flew out away from the face to find smooth air.

60-Inch class was run as a double elimination bracket. This made for man-on-man racing, with less fear of mid-air than the 4 at once format. The pilots did an excellent job watching the status board of the bracket. Nearly everyone was standing at the start area with airplane, transmitter, and caller ready to go, when their race was called. This was key to getting a lot of racing done in one short day. It was also greatly appreciated by the CD.

Unlimited was the last event of the day. By the time it began, the wind was screaming like a banshee up the slope. The temperature passed the century mark, and everyone was getting pretty dried out. Winds during

Unlimited were measured as high as 45 MPH. The lift was incredibly strong and getting pretty turbulent. By this time, the 50 or so spectators from the local towns were packing it in; everyone was ready to call it a day.

Unlimited was also run as a bracket race with double elimination. Again, the pilots did a great job of watching for their races and being ready. The CD learned a valuable lesson during Unlimited. I didn't stretch the course out for this class, and it was a mistake. Some pilots observed that the short course and high winds likened this class to "flying jet fighters in a gymnasium". This led to the most incredible head on mid-air, between two unlimited birds, that any of us have ever witnessed. The sound of impact and the resulting debris field were both... well... large. Fortunately, both pilots involved were still smiling afterwards. It is hard to swallow sometimes, but that's racing. The Unlimited course will be longer this year.

The day ended up the road about 10 miles where a local restaurant had prepared us a banquet dinner. With everyone seated around the room, the owner and his family served the dinner family style: Prime Rib, fresh baked bread, veggies, mashed potatoes & gravy, etc. All this and lots of iced tea really hit the spot. The owner then surprised us all as he wheeled out dessert - on the house.

The award presentations began, along with some fun-poking at some of the days more notable occurrences. Kits were handed out for the winners in the Ninja class. The 60-Inch and Unlimited class winners shared a purse of \$250. Randy McCleave of Wichita, Kansas had his birthday recognized with some of the worst singing ever heard in central Kansas. Jim Porter of Sig Manufacturing kept the mood light with some gag prizes and few, really good stories. The party broke up and everyone returned to their digs for the night.

We found a full keg waiting at the race headquarters. (Thanks SIG!) It has been rumored that there was quite a good sing-along around the campfire that night for those hardy souls that like to brave the elements. The story

### Official Results STOCK NINJA CLASS:

1. Paul Wright
2. Wayne Henning
3. Jim Frickey
4. Jim Porter

### 60 INCH CLASS:

1. Paul Wright
2. Jim Porter
3. Mike Green
4. Dale Pahl

### UNLIMITED CLASS:

1. Ken Hawkins
2. Paul Wright
3. Pat McCleave
4. Jim Baker



R/C Soaring Digest

Steve Rohman's Phoenix rocket glider in action. The dusk launches on Friday evening were really spectacular.



goes, that with the help of guitars and bongo drums, the singing was much better than what had occurred at the banquet.

All things considered, the 1996 SIG/LASS MSC was quite a success. Smiles and friendly competition were abundant. As with any race or event of this size, there is always something to be improved the next time. The 1997 event will see a lot of these better ideas incorporated. Some things just can't be made better, though. These include Midwest hospitality, good slopes with access and huge landing areas, strong winds, and competitors that put "have fun" ahead of "win at all costs".

The 1997 SIG/LASS MSC will be held on the traditional date of the weekend after Mothers Day. This year that is May 16, 17, and 18th, and we are adding a racer's clinic on Friday afternoon, so that new, as well as experienced, pilots can "tune-up" for the race. The SIG factory pilots will be on hand to help with tuning and technique. Some organized slope combat is planned, as well as a repeat of the night-fly. The 1997 event will also see the return of the Stock Samurai class of racing. Additional information

## SLOPE RACE SIG/LASS MIDWEST SLOPE CHALLENGE

### MAY 16 - 18

4 Classes:  
SIG Ninja  
SIG Samurai  
60"

Run What You Brung

Where? Lucas, Kansas  
Who? Contact Paul Wright  
at (402) 796-2175 or  
paulw@isco.com

"Which plane does what go with what?"  
Racing action was suspended during  
Unlimited for the removal of debris. Buzz  
Averill of New Mexico and Terry Thornton  
of Kansas were the unfortunate pilots.



(Below) An arsenal of race  
birds: SIG Ninja, 60 inch  
home brew, F3B Eagle, and  
WHIP. The SR7 in the  
foreground was not raced.



Event sponsor, Jim Porter (L) and event  
organizer, Paul Wright (R), try to keep  
things lively at the awards banquet.

can be obtained about this year's event  
by contacting me at the address given at  
the end of this article.

I want to single out some people who  
really make this event the good time that  
it has grown to be. If I missed anyone  
who pitched in, please don't be of-  
fended: Jim Porter - Sig Manufacturing,  
Hazel Sig - Sig Manufacturing, Jim  
Bowen - Wilson Reservoir Project  
Manager, Lucas Kansas Chamber of  
Commerce, Judy Slates - R/C Soaring  
Digest, Steve Rohman - Lincoln Area  
Soaring Society, Tom Neil - Lincoln Area  
Soaring Society, Kent Pyle, Doug Brandt,  
Gary Gasser, Randy and Pat McCleave,  
and George Voss.

Information on the 1997 SIG/LASS MSC  
can be obtained from: Paul Wright, RT 1  
Box 21W, Garland NE 68360; (402) 796-  
2175, <PaulW@isco.com>. ■

### Schedule of Special Events

Date	Event	Location	Contact
Mar. 15-16	FSS#3 2m/Unl.	Orlando, FL	Don Cleveland, (407) 696-7516
April 9-13	Dortmund Intermodellbau - Germany	Orlando, FL	Don Cleveland, (407) 696-7516
April 19-20	FSS#4 2m/Unl.	Orlando, FL	Wayne Parrish, (919) 362-7150
April 25-27	Airtow Fun Fly	Fayetteville, NC	NSM, (607) 734-3128
May 3	R/C Exhibit Opening	Elmira, NY	NSM, (607) 734-3128
May 3	U.S. Soaring Hall of Fame	Elmira, NY	Rod Armstead, (301) 498-7192
May 3-4	Hand Tow, Spring Training	Washington, DC	roda@msn.com
May 3-4	Spring Soaring Contest	St. Louis, MO	Wayne Wimbish, (314) 947-9294 wdwimb@aol.com
May 3-4	Spring Intergalactic R/CHLG	Cincinnati, OH	Paul Siegel, (513) 561-6872
May 10	15th Annual ISS HLG Contest	ISS Riverside, CA	Robert Cavazos, (909) 485-9563 RCAV@aol.com
May 16-18	Los Banos Slope Scale Soar-In	Los Banos, CA	Lynsel Miller, (408) 275-6403
May 16-18	SIG-LASS Midwest Slope Challenge	Lucas, KS	Paul Wright, (402) 796-2175 PaulW@isco.com
May 16-19	Coupe du Quebec Slope Race	Leclercville, Qc, Canada	Etienne Dorig, (514) 449-9094 ICARE@telts.com
May 31	HL Meet	Lafayette, IN	Adam Weston, (765) 742-7558 Glenn Sembroski, (765) 463-6306
June 7-8	IHLGF	Poway, CA	Ron Scharck, (619) 454-4900 Scharck@aol.com
June 13-15	Elmira Aerotow 97	Elmira, NY	John Dorstine, (717) 596-2392 2076482@mcimail.com
June 19-22	1997 MSSC	Huntsville, AL	Ron Swinehart, (205) 883-7831
June 28-29	1st Annual Sailplane Weekend	Washington, MI	Ray Hayes, (810) 781-7018
June 28-29	Ontario Grand Prix Soaring	Cookstown, Ont.	Jack Nunn, (705) 728-4467
June 28-29	IGG Airtow Weekend	Bendam, Switzerland	(Model Club Lichtenstein) <a href="http://www.interconnect.ch/customers/igg">http://www.interconnect.ch/customers/igg</a>
July 19	RCHLG	Orlando, FL	Peter Aeberli, 011-41-1-915 37 53
July 20	Gentle Lady	Orlando, FL	Jack Kagi, 011-41-1-926 2187
Aug. 16-17	Scale Fun Fly (GNATS) Sailplanes/Motorgliders	Nigara Peninsula, Canada	Ed White, (407) 321-1863 Rick Eckel, (407) 365-9795 Gerry Knight, (905) 974-7451 Don Smith, (905) 934-3815 Mistral@niagara.com
Aug. 23-24	IGG Slope Soaring Weekend	Hahnenmoos, Switzerland (near Adelboden)	<a href="http://www.interconnect.ch/customers/igg">http://www.interconnect.ch/customers/igg</a> Peter Aeberli, 011-41-1-915 37 53
Sept. 13-14	Sailaire One Design Contest	Cincinnati, OH	Jack Kagi, 011-41-1-926 2187
Sept. 13-14	DMFV Scale Masters Motor Glider - Germany		Paul Siegel, (513) 561-6872 Winfried Olgard, or Bernd Wich 011-49-28 97 85 011 (direct line)
Sept. 19-20	DMFV Scale Masters Scale Sailplane - Germany		Winfried Olgard, or Bernd Wich 011-49-28 97 85 011 (direct line)
Oct. 4-5	24th CVRC Fall Soaring Festival	Visalia, CA	Phil Hill, (209) 686-8867
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@acombs.com
Nov. 28-30	24th Tangerine	Orlando, FL	Don Cleveland, (407) 696-7516

### Thank-you for keeping your listings up to date! It is appreciated!

If you don't see a listing for an event that  
you think should be included, please let  
us know. We **do not** automatically  
include information from other publica-  
tions or newsletters, as we realize that  
some dates are tentative and subject to  
change.

The easiest way for CD's and contacts to  
submit information is via e-mail.

### STOP PRESS:

The Third Annual Fayetteville Airtow Fun  
Fly event is scheduled to take place April  
25 - 27. They will also have some sort of  
airtow scale competition along the lines of  
the guidelines suggested in the February  
issue of RCSD. So, for you competitive  
types, this will be the first airtow  
competition of its kind. Contact Wayne  
Parrish at (919) 362-7150 for more info.



"Hot Air"

Robin Lehman  
63 East 82nd St.  
NYC, NY 10028  
(212) 879-1634



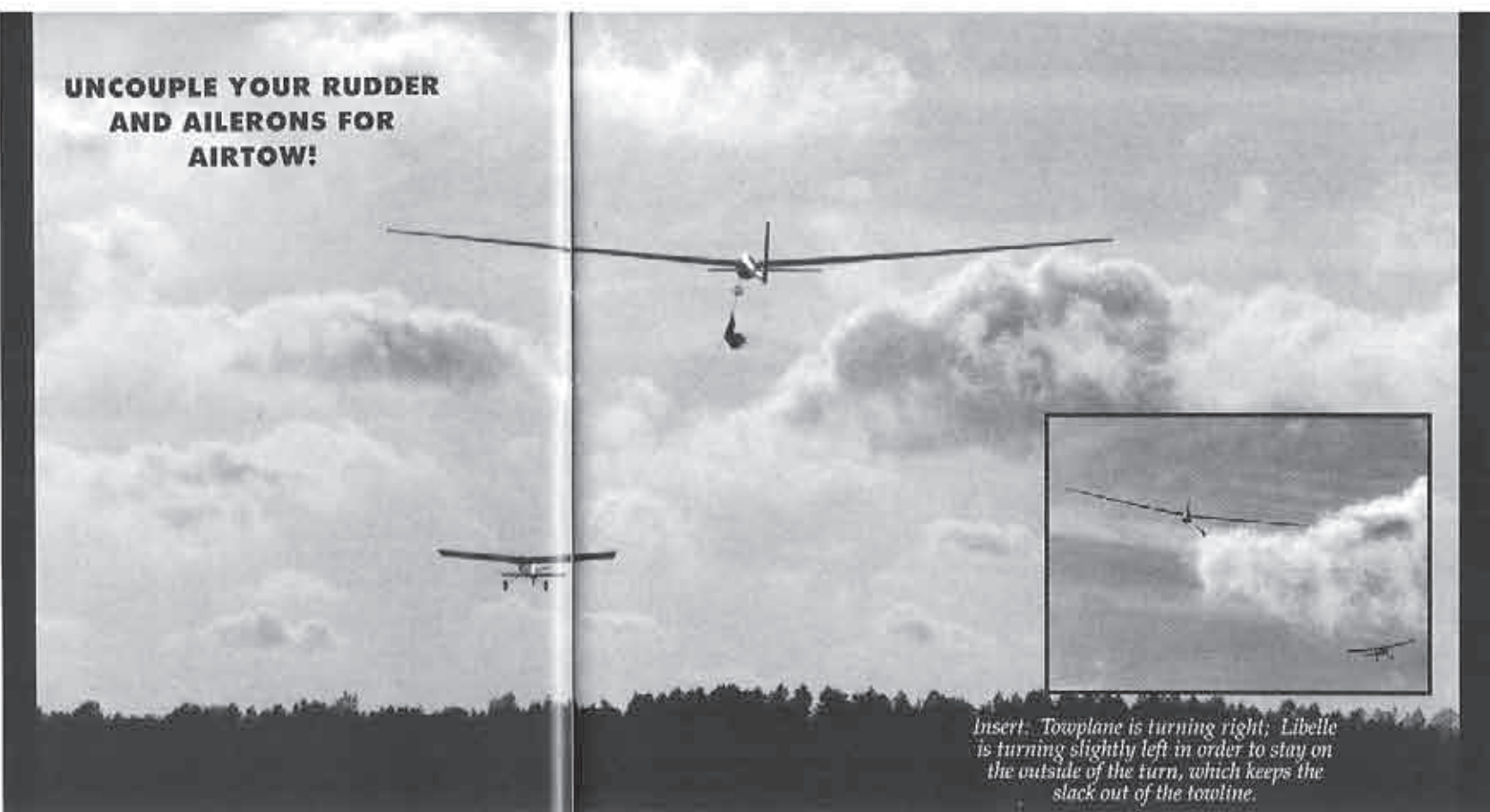
*The perfect tow position on take-off. Both aircraft are climbing. Soon, the towplane will start a gentle turn, while the sailplane should simply fly straight (wings level). A 1/3 Libelle on tow.*

This winter, I had the pleasure of flying quite a few different scale sailplanes belonging to other people. Almost every single one of these gliders was set up with ailerons and rudder coupled. I found this quite interesting, because I never fly with coupled anything (except for flaps-elevator or spoiler-elevator in rare instances). Flying all these different scale airplanes, one after the other, gave me pause for thought! What follows is a direct result of these flights.

A lot of you will be airtowing for the first time in 1997. While you are on airtow, I strongly suggest that you uncouple your ailerons and rudder for the following several reasons.

Assuming you have an excellent tow-pilot pulling you up, your job is to keep your wings level and the fuselage straight! In order to do this, you use your ailerons to keep the wings level and your rudder to keep the body straight, not necessarily ailerons and rudder at the same time or, for that matter, in the same direction. This is especially true during crosswind take-

## UNCOUPLE YOUR RUDDER AND AILERONS FOR AIRTOW!



*Insert: Towplane is turning right; Libelle is turning slightly left in order to stay on the outside of the turn, which keeps the slack out of the towline.*

offs. Think of it this way: You have two entirely separate controls - the only function of the ailerons is to keep the wings level, and the only function of the rudder is to steer the body straight.

If you couple aileron and rudder, when you make an aileron correction, the body of the aircraft will also turn, due to the rudder input. Now, you have to use your rudder to turn the body straight, when it was straight in the first place! To make matters worse, if you are inexperienced and over-control the sailplane (which often happens on first airtows until you get used to what inputs are required), you will start zigzagging, which compounds the problem, when all you needed in the first place was a small aileron correction.

If you fly on a calm day (the best possible of flying days when airtowing), you will find that to start

with you will need a lot of aileron control to keep the wings level and off the ground; as you gain speed, you need less and less. Full aileron one way or the other, when you don't need the rudder, may get you into a wobble, back and forth situation which, if bad enough, could require you to abort the airtow.

Now, let's say that you have taken off and all is well; your tow-pilot starts a left turn. You may well find that your wings will tilt somewhat to the left. In order to keep the wings level, you might have to put in a little bit of right aileron. Once again, if your ailerons and rudder are coupled, you will turn the body as well, which might be unnecessary. What is generally required is a little bit of aileron only, not rudder, just to keep the wings level. This automatically keeps the glider on the outside of the turn, keeping slack out of the towline.

For the above-mentioned reasons, I strongly suggest that, when on airtow, you uncouple your rudder and ailerons. Once at height, couple or not - that's up to you!

But once you start your thermal sniffing, coupling can sometimes prevent you from getting the most out of your scale sailplane.

While it's perfectly true that some scale sailplanes fly extremely well with coupled controls, it's also true that each scale sailplane has its own particular flight characteristics. Once in a turn, some gliders do not require exactly the same amount of rudder with exactly the same amount of ailerons on every turn, which of course is what coupling does. When circling, some scale airplanes require crossed controls in order to maintain a perfectly flat turn, while others require only ailerons or only rudder or even nothing at all.

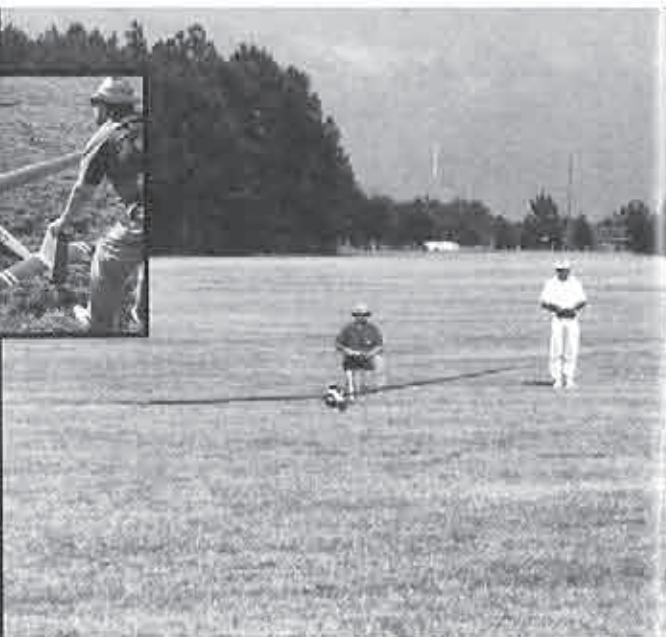
Remember, your sailplane is ALWAYS





Asher Carmichael will have to give right ailerons in order to get the wings level. As the fuselage is already straight, no rudder input is required.

Keeping the wings level (with ailerons) and the body straight (with rudder) is the best way to go.



coming down. (Although the air it's gliding in may well be going up; hence a gain in altitude.) You pay a penalty for every bad circle or turn you make - 5 feet, 10 feet, 30 feet or more if you really screw up.

Often, every bad turn decreases your airtime. Because of this, you are well advised to get to know your scale sailplane to see what combination of aileron and rudder (and elevator) is required for the best possible performance. In some instances, you will find that coupling is just fine, but in other instances, with different scale aircraft, you may find that flying uncoupled will get you the most out of that particular sailplane.

However you choose to soar, remember to uncouple your rudder and ailerons while airtowing.

#### A Scale Trailer

Scale is alive and well in southern California! Mike Reagan sent me this nice photo of Dennis Brandt, Rick Briggs, Ben Clerx, and Larry Jolly with their (Orfa 1/3.3) ASW 27s, all built by Rick. There are at least five of these now flying. (Mike Reagan built his own.) According to Mike, "...All of these pilots are top competition pilots, and really make these birds perform!"

Also, what I'm sure will be of interest to many of you, Mike is building a

scale trailer. He says, "...Don't laugh. This will be a useful workhorse. It's all fiberglass sandwich construction. It will open like the real thing, and will be for car top carrying. (I'll be able to take a passenger, now!) You won't have to buy a mini van to fly scale! It should ship by air excellent, with no damage to your precious plane. It will come in three lengths for 1/4 to 1/3.3 scale."

Mike's address is 14705 Loyola St., Moorpark, CA 93021-2556; (805) 529-5513 (home).



R/C Soaring Digest



#### Winglets

I received a letter from Bill Murroe of Hurst, Texas. As he works on full-size aircraft, he seems to know more about winglets than most of us. Here are Bill's observations.

"...The article you did on winglets - the Beech (Raytheon) 1900 D with all the little wings on tail... The horizontal wings on fuse and inverted wing on stab prevent tail moment whip as the fuse is stretched. The 45 degree approx. on bottom of tail section is to allow ACFT to be flown without an operative yaw-damp (i.e., yaw stability). Also, the winglets on the Starship are called "sails" and are for yaw (rudder) control, and they tip inward about 5-6 degrees and are coupled to the elevons. From maintenance and engineering data I've reviewed, winglets on high-speed ACFT primarily prevent tip vortices, aid in aileron authority, and help prevent flutter. On "ST.O.L." ACFT, the vertical sections mid point of wing act as an air dam and separate air flow over flap and aileron sections to help prevent turbulent air over ailerons when flaps are lowered. This is my summary information; the real engineering and technical data is quite comprehensive and in most instances is way over my head; as an A & P Tech, I primarily work with Nav & Auto flight control systems."

Thanks for the insight, Bill!

Good luck and good flying! ■



#### Elmira Aerotow "97"

Aerotow "97" at Harris Hill has just become the first international aerotow event in the U.S. We have just learned through the efforts of Gerd Holzner (organizer of the well known Fiss slope event in Austria) and myself, that at least 10 pilots, along with 20 large scale sailplanes will be coming to our fly-in, June 13 - 15, at Elmira, New York. This will include a German team that will do some outstanding flight demonstrations.

Come see the state of the art in scale soaring, and exchange ideas with an international gathering of pilots. We will, if the wind blows, be sloping off of Harris Hill during part of the weekend. This, for those that don't know, is where it all began for full scale slope soaring in the thirties. Come visit and fly with us in June.

If you have any questions about the event or on tow release set up, etc., please don't hesitate to give us a call!

John Derstine  
(717) 596-2392

e-mail: johnders@postoffice.ptd.net

WEB page: [http://](http://www.vivanet.com/~zigy300/av00006.html)

[www.vivanet.com/~zigy300/av00006.html](http://www.vivanet.com/~zigy300/av00006.html)



## This Old Plane



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

### Reflections on IHLGF 96 Anticipating IHLGF 97!

What better way to spend Fathers Day than out with the best group of HLG pilots ever assembled! I base this on my experience at the 1996 International Hand Launch Glider Festival (IHLGF), where I had the extreme pleasure of competing with some really great pilots. These were the best flying, most flying, best organized, most fair, nicest bunch of contest fliers I ever met. Throw on top of that the hospitality of the Torrey Pine Gulls (TPG) club (i.e., group dinners, traveling contestant hosting, etc...); and, this has got to be the one contest of the year that a true HLG fanatic should attend, whether they fly or not.

#### Best pilots:

The list of contestants reads like a

### Tie? Or, Fly?

(Short letter to the spouses of male HLG fliers.)

So, what should a Dad and HLG flier get for Fathers Day?

A new tie? Get a grip.

A new tool for the shop? Ok.

A new set of super-sub-micro servos? Great idea!

A new super-dandy-climbs-by-itself HLG kit? Wow! Great present!

A trip to (and excuse from other duties) the 97 IHLGF? That would be worth more return favors than anyone could possibly expect in one life time: household chores, tea parties attended, relatives entertained, and breakfasts in bed. And why not come along on the trip? That would make it even better. There is lots of socializing at the IHLGF, as well as this being the best spectator soaring event around. Where else can you watch 70 adults act like little boys all in a football sized field? Where better to spend a few days than southern California? San Diego is just a short drive away.

who's who of HLG pilots. There were also a fair number of typical skill level pilots, many of which mentioned, towards the end of the contest, that they learned more about finding and working lift in this 2 day event, than in their last, entire year of flying. As an example of the caliber of pilot in attendance, I had a prototype Epsilon with me and, after the contest on Sunday, it was trimmed as AFT CG as I

could stand it. I could barely control it. People I had never met took turns flying this thing; everyone flew it as easily as I might a Gentle Lady. I had no qualms about handing over the sticks, having watched this group of people fly before and during the contest.

#### Most flying:

There were 10 rounds of flying; most rounds were 10 minutes. Compare this "well over an hour of flight time", per contestant, to the typical, thermal duration contest; there is no comparison. And, this contest is put on by true sailplane addicts. I could tell because, when a round was not in progress, like during lunch, we were allowed to fling. At most large contests, this would guarantee a dirty look when asking for a frequency pin, in order to fly during lunch! If you were lucky (me) or good enough (look at the list) to get in the top 10 after the first 10 rounds, there were still 3 more fly-off rounds. I remember thinking to myself, "What a bore if you do not make the fly off." Now, I almost wished I hadn't! (Well... Not really!) What a great time to watch 9 of the world's best fight it out. I wished I could have seen how people like Joe Wurts, Don VanGundy, and Steve Cameron flew so well in those rounds against their competition; instead, I was busy losing places. Shown below are the places of three un-shakable competitors after 10 rounds; then after the fly-off. Steve and Don moved 5 places in 3 rounds!!

	After 10 rounds	After fly-off
Joe Wurts	6	2
Steve Cameron	8	3
Don VanGundy	10	5

It was interesting to note, with this many rounds, that every flier in the top 10 had one bad round, which was less than 700 points. One could make up for a bad round, simply with consistent flying. With 10 people in each flight group, it was fun to watch.

#### Best organized:

Besides organizing the whole contest, and the social events, the actual running of the event was great. Hats off to the Torrey Pines Gulls! Granted, they propose to do even better this

### Top ten 1996 IHLGF scores after 10 rounds

(These people went on to the fly-off.)

1. Daryl Perkins	9,548.25
2. Buzz Tokunaga	9,398.46
3. Fred Mallett	9,253.93
4. Bill West	9,248.38
5. Phil Pearson	9,232.91
6. Joe Wurts	9,223.06
7. Dave Kornberg	9,211.32
8. Steve Cameron	9,203.49
9. Arthur Markiewicz	9,164.40
10. Don VanGundy	9,069.12

### Final scores after the fly-off

You carried your points from the first 10 rounds. There were plaques for top 10.

1. Daryl Perkins	12,278.09
2. Joe Wurts	12,223.06
3. Steve Cameron	11,967.41
4. Fred Mallett	11,906.43
5. Don VanGundy	11,879.72
6. Arthur Markiewicz	11,852.19
7. Buzz Tokunaga	11,532.50
8. Bill West	11,106.68
9. Phil Pearson	10,694.23
10. Dave Kornberg	10,116.02

year by ironing out a few minor equipment issues, but what a concept: the timing of rounds was done by computer voice, which guaranteed uniform count downs to the start and finish of each round. This was great, as one did not have to worry about when the official time keeper was going to start counting down. It was the same every time. If you landed late and lost a flight, tough luck, as there was no excuse. Scores were always posted on time, and accurate. We were kept up to date on any delays; all in all, a great job.

#### Most fair competitors:

It was interesting to note, that the official countdown before a round was set at three minutes. If the count down was stopped, due to a late frequency pin, or a time keeping equipment problem, we all grumbled and complained mercilessly.

The posturing before a round was amazing. We are talking real strategy, here. Everyone would look to the best lift reader in the round, and sort of drift where ever that person drifted. With 10 seconds to the start, that person would often run to the other corner. In one memorable round, Joe Wurts threw on the horn and headed north; 4 or 5 others in the round threw

### The Tasks for 1996:

All tasks were scored man-on-man, and normalized within the heat.

Round	Window (Minutes)	Throws	Objective
<b>Saturday</b>			
1	10	Unlimited	The most number of flights starting in the following sequence: :10, :15, :20, :25, :30, :35, :40, :45, :50, :55, 1:00, 1:05, 1:10
2	10	Unlimited	Longest three flights.
3	10	Unlimited	Total time. Each launch after first launch incurs 10 sec. penalty.
4	10	6	Longest five flights, none over two minutes.
5	7	6	One five minute flight.
6	10	Unlimited	A two minute, a three minute, and a four minute flight.
<b>Sunday</b>			
7	10	Unlimited	Most flight time from increasing flights. Must have at least 3 flights. First flight must be at least 15 sec. To receive credit for a flight, it must be longer than previously credited flight.
8	10	Unlimited	Longest three flights.
9	10	Unlimited	Total time. Each launch after first launch incurs 10 sec. penalty.
10	7	Unlimited	Three longest flights, none over two minutes.
<b>Championship Fly-Off - Top Ten Competitors</b>			
11	4	4	Three one minute flights.
12	7	Unlimited	Total time. Each launch after first launch incurs 10 sec. penalty.
13	10	6	Longest five flights, none over two minutes.



and followed. No one saw Joe bail out of the launch, and quickly re-launch in the opposite direction. It was a great play. The amusing part of this rabid competition was that it was done with great sportsmanship.

When asked to time for someone, without exception, the timer or lift spotters would work their best to help the person they would be competing against in the next round. The best example of this was in the fly offs. I think it was round two. Steve Cameron noticed, with one minute to go, that he had a dead battery. Everyone in the round could have just ignored it, and Steve would have lost quite a bit of time; instead, everyone agreed to have the clock stopped so he could charge. What a gang!

Big thermal duration contests feel like a carnival to me, which is fun in itself; but I never feel the heat of competition. IHLGF was a different type of contest for me. It was looking at the list to see who was in my flight group (Oh, no! Not Art Markiewicz, and Joe Wurts, again!); and, getting nervous as the 1 minute timer, to the start of the round, counted down. This was serious competition. It was also lots of fun. And, it was also a great place to watch the best.

Come on out and join in the excitement this year; the thermals are great!! ■

### International Hand Launch Glider Festival '97

...by Ron Scharck  
La Jolla, California

The Torrey Pines Gulls (TPG) is pleased to announce the fourth annual International Hand Launch Glider Festival (IHLGF), which will take place June 7 and 8 at the TPG Poway Flight Center, Poway (San Diego), California. It is with pride that we announce Airtronics has again chosen to sponsor the IHLGF. With TPG and Airtronics teamed up, you can expect the very best in RCHLG competition.

With the strength of Airtronics sponsorship and the marvels of electronic mail, last year's IHLGF became more than a Southern California RCHLG Championship event. Fifty-seven pilots representing nine states and three foreign countries made

the 1996 IHLGF a truly international event.

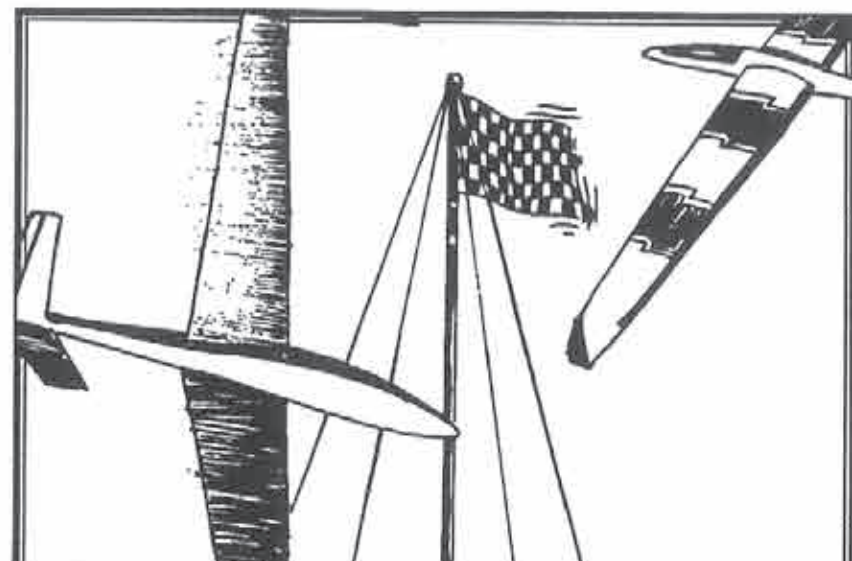
Early commitments from current F3B World Champion and IHLGF Champion, Daryl Perkins, the 1997 United States F3B team of Joe Wurts ('94 and '95 IHLGF Champion), Randy Spencer, Gordon Jennings and B. J. Wiseman, together with a majority of the outstanding field of pilots from last year led by the likes of Steve Cameron, Fred Mallett, Joe Hahn, Phil Pearson and Paul Siegel, give the 1997 version of the International Hand Launch Glider Festival all the markings of a world class contest.

Steve Condon, the CD for this years event, has announced that there will be 6 rounds of competition on Saturday, followed by four rounds on Sunday. The top ten pilots, as determined by the 10 rounds of open competition, will compete in a three round fly-off to determine the 1997 IHLGF Champion and final standing for the remaining nine pilots. All scores will be carried forward from the open rounds into the fly-off. Plaques will be awarded through tenth place. Additionally, we will be awarding a plaque to the Junior (age 15 and under) and Senior (55+) Champions. There will also be a Championship Team plaque awarded to each member of the three man team with the highest cumulative score.

In our traditional manner, we have selected a series of tasks for the IHLGF that will be fun and challenging. With an emphasis on thermalling, the tasks will challenge the pilots ability to control their craft, and others that will require strategy; of course, as with all RCHLG events, it helps to be a bit athletic.

After the contest on Saturday evening, we will adjourn to Round Table Pizza in Poway to have an old fashioned "all you can eat" Pizza Party. For those who want to celebrate making it through the first day with arm in tact, beer and wine will be available.

The entry fee for the two-day contest will be \$25. Included in the entry fee will be a complementary lunch on Saturday, sponsored by Airtronics. Entries will be limited to 70 pilots. Entry packets will be mailed out to interested parties on March 15. Entries forms must be postmarked April 15 or later. If you, or someone you know, would be interested in additional information, please give me a call at 619-454-4900 or e-mail me at Scharck@aol.com. ■



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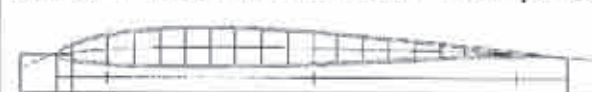
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## VULCAN 2M

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Wing Area 556.55 sq. in.  
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Wing Loading	10 oz./sq. ft.	10 oz./sq. ft.

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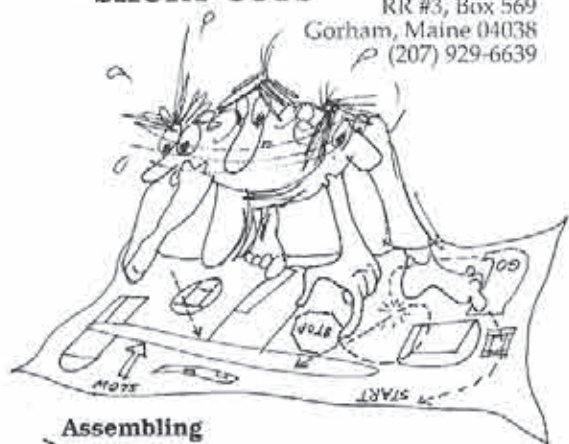
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### Assembling

#### Building the E.M.S. DG 800

This month's column will discuss the most recent addition to the hanger, an E.M.S. DG 800, which was acquired through Robin Lehman of Sailplanes Unlimited, Ltd. This plane boasts a 4.2m and 3.7m wingspan (with winglets), and utilizes the HQ 2.5 14 airfoil, with a scale very close to 1/4. This is my second scale glider and my first ARF. As this title implies, this glider is highly pre-fabricated right out of the box; the workmanship is second to none. The shipping box is heavily reinforced and comes with an internal support to position the fuselage during shipping. I decided to keep the box since the plane can be disassembled and will fit back in the box for transport. Those Europeans are years ahead of the U.S. when it comes to recycling. Instead of white peanuts or shredded newspaper, small plastic air pillows provide the cushioning. Let's get into the kit.

#### Fuselage

The fuselage is pre-painted, high glass white, and is very light. The canopy is fitted to its frame and already rigged to the fuselage with an alignment pin in the rear and rubber band in front; no work is needed. The retract is already installed; the doors are hinged and rigged to close upon retracting the wheel. Once again, no work is required. Just like its full size counterpart, a tall wheel is pre-installed under the vertical fin. The control surfaces on the tail are controlled by thin music wire (.032") fitted inside a set of two plastic sheathes. These are also pre-installed, and require only threaded connectors soldered onto the music wire. The only amount of work, required on the fuselage, was to install one of Sailplanes Unlimited Ltd. nose releases (\$15), and to build a servo tray.

The servo tray contained servos for the rudder, retract, elevator, and nose release, as well as the



Winglet tip extension and tailplane.



Nose weight, bolt, and servo tray.



The fuselage right out of the box.



Fuselage - Note CG mark and retract.



Tail wheel and rudder control wire.



1/2" nylon clevis cut down for elevator, elevator T-slotted and filled with micro-epoxy.



Vertical fin and elevator control wire.

receiver and battery back-up unit. Airtronics 94831s were used for the elevator and nose release; 94102s were used for the remainder of the servos in the fuselage. The servo tray for the spoilers was mounted up and behind the main servo tray, and required a bit of planing so that it was accessible for rigging, while not interfering with the retract, or blocking access to the wing joiner lock-down screw. Easily replaceable nylon clevises were used to attach the activation cables for the spoilers to the servo arm.

Did I mention that the wing joiner receivers for the wing blades and alignment pins were already installed? The wing alignment was checked with two Robart alignment jigs and was perfect. A 1/4 x 20 carriage bolt was mounted to a 1/4" aircraft plywood oval, which was epoxied in the nose just aft of the tow release to hold nose weights. I used 1300mah and 600mah battery packs, which tied into a Jomar battery backer for added protection. I had no plans to detail the cockpit, so a piece of black felt covered the interior of the cockpit to keep the electronics out of sight.

#### Wings

Not much to do here. The wings come covered, spoilers installed, hinged, have joiner blades installed, and have a perfect matched fit to the winglets, the 15" tip extensions, and the fuselage at the root. The servo channels and wells are already there. Servos (HS80 - Ailerons/Flaps) were installed with GE clearseal, and the wells were capped with 1/32" ply secured with screws into 1/4" balsa stock at each corner. I've been told that the wings are reinforced with glass and carbon fiber. For the control horns, I used FRP units from Slegers International that were cut down in size to match up with the width of the ailerons and flaps.

#### Tail

The horizontal stab and elevator were complete, covered, hinged, pre-drilled, and came with two nylon screws to secure the whole thing to the vertical fin. The only thing to do was to slot out the elevator to receive a control horn. The rudder was also covered and pre-drilled to receive pin style hinges that came with the kit. Even the vertical post was already installed in the vertical fin and pre-drilled for the hinges. All that was needed was to epoxy in the hinges and install a control horn onto the rudder. The fit up of the rudder was so exact that gap seal was not considered necessary.

#### Set Up

The fuselage is shipped with a CG marker on it, and I found that about 7 oz. of lead was needed to balance off the plane when finished. I borrowed a friend's Stylus radio, and quickly became accustomed to the programming, which was quite similar to that of the Infinity 600 and 660 radios that



I currently use. The ailerons were set up with 2:1 differential; the elevator was given a lot of authority for the first flights. I didn't bother programming in aileron-rudder coupling, because it's a hindrance for aerotowing, and works against the plane in flight, but that's another story. The flaps were programmed for 25 degrees down and no reflex. I found a way to program the Stylus to control both the flaps and spoilers such that pulling the stick 1/3 down drops the flaps; the remaining travel pops out the spoilers. Robin Lehman was a bit apprehensive about this arrangement, but after landing the plane he, as myself, felt it worked quite well.

### Flying

The plane's first flight was at The Greater Niagara Scale Fun Fly held at St. Catharines, Ontario, Canada. The 12 hour drive went quicker than I thought it would, especially when in the company of good friends. I decided to make a few warm up flights with my 1/4 scale ASW 24 before rigging up the DG-800. The first flights of the DG-800 were made with the wing extensions plugged in, since I had never flown a plane with winglets before. Even though the plane had a fully functional retract, I decided to make use of the dolly for the first flights; why chance it? The DG-800 was smooth on the tow and only required a little bit of up trim (as most planes on tow need) to keep in step with the tug. The first tow was only to about 1200', and the release was uneventful except for a minor stall. The plane quickly responded to trim and seemed to be more of a floater, until I put a couple of clicks of down into the elevator. Boy she really took off; no need to reflex this airfoil.

Several more flights were taken that day from both the dolly and off the turf. The retract adds quite a bit of realism and caught everyone's eye. The thermals were quite abundant that September afternoon, so I really had to cap the altitude at about 2000'. The bottom of the long, slender wings were striped, but still the plane could quickly disappear, at that altitude, with a good cloud backing. The transmitter was passed to several other fliers, who



Canopy and tray with rudder.

Steve Savoie & E.M.S. DG 800, bottom and top views.

had praise of the plane's handling and flying characteristics. I overshot my approach on one flight, and came into a little bit of up air; so I decided to camber the entire wing to get the most out of the airfoil; I was not disappointed. The tips were solid and the only noticeable difference was the need to use a bit more stick authority.

The next flight was made with the tip extensions removed and the winglets installed. The plane was a bit faster, but still considered a floater. The real surprise was when I bumped into some up air at about 100' of altitude. My comrades beckoned me to go after this little bump of up, so I swung the 800 around and found the sweet spot of the lift. Those long slender tips banked at about 60 degrees; she held her own and

eventually began to rise. I was pleasantly surprised to see how dependable the winglets were at such a steep angle (and low altitude).

It was like flying a different plane with the winglets plugged in. The plane was flown by several other pilots that afternoon; all of them remarked about how responsive she was with the winglets. I did force some tip stalls later in the day; they were mild and not at all unexpected. Spoiler deployment did not seem to affect the plane's trim, and the CG was never moved; seems like the designers got this one right on the money.

Robin Lehman has since put me in touch with a gentleman on Long Island who has been campaigning a DG-800 at thermal duration contests, and has been quite successful at winch launching. He informed me that a 1/4" plywood insert (mini bulkhead), immediately behind the aft support of the retract, works well for anchoring a tow hook. The only other mods needed were to grind a small radius into the retract doors, where they close around the tow hook.

In summarizing, I can not find much fault with the E.M.S. DG-800. The workmanship far exceeds that of my own and most anybody I know. The plane's performance is exceptional; it has no bad habits and a very wide speed range. I would challenge any flier to find a better plane for the money. You simply get what you pay for. I took my time building this plane, but I'm sure it could be completed in less than 10 hours, with most of that being servo rigging. If you value your time and want to get started into scale with a versatile plane that can be winched, then this one's for you. ■

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  - 1/4.2 FiberClassics Nimbus 4 - 6.28 meter span (246"), wing profile F 68-66, ca. 18 lbs.
  - 1/3.6 Roedelmodell DG 800 - 4.15 meter span (163"), wing profile F 207, ca. 11 lbs.
  - 1/3.75 Roedelmodell Fox MDM-1 - 3.8 meter span (149"), wing profile RG 12, ca. 15 lbs.
  - 1/4 Roebers Pilatus B-4 - 3.75 meter span (147"), wing profile Ritz 3, approx. 8 lbs.
  - 1/4 Roedel Piper Super Cub (scale towplane) - 2.687 meter span (105"), wing profile Clark Y mod., approx. 15 lbs. This airplane is partially built. It requires additional building and covering. Suitable motors are OS 160 T, OS BCX-1, Brison 3.2, or similar.
  - 1/4 EMS DG 800 with electric pop-up motor installed - 3.7 (145") to 4.2 (165") meter span, wing profile HQ 2.5/14, ca. 7.5 lbs.
  - 1/2.77 PriBek ASW 19 - 5.4 meter span (212"), wing profile Ritz 3 mod., ca. 20 lbs.
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## TIDBITS & BITS

### From Colorado

We received the following note from Bob Lockwood in Colorado.

"I used to say I was born in the wrong time, but having found R/C soaring, I'm really having fun. The sport is really moving out, with so much room for experimenting; design, building techniques, etc. The photo is of some wings I enjoy. Smallest wing span is 16", and 88 gram weight."

Thanks, Bob. The little wings are beautiful. Thanks for sharing! Ed.



### From Pennsylvania

Ed Lightcap of Pennsylvania writes, "Enclosed are pictures of my two scale ships. Both are Viking fuses as you probably know. The Libelle is 150" span with an E203 airfoil. It weighs 8 lbs., giving it 18 oz. wing loading. It is a super flier, and now has about 40 winch and 15 aerotow flights."



"The SZD 30 Pirat has not been so successful. On its first flight, the week before Elmira, it snapped in on an attempted

winch launch. The cause was not compensating for the depth of the body with the tow hook location. After summer long repairs, another flight was attempted. She launched fine, flew OK, but on turn onto final, carrying what I thought was enough speed, she violently tip stalled in from 20 feet. I haven't decided if I'm going to rebuild or not.

"As you have probably heard, the Elmira Fun Fly was a BLAST. It sure is nice to fly without the pressures of a contest."

Thanks for sharing, Ed. And now to get ready for Elmira 97. Right? ED.

### Scale Glider Festival

Mark Foster in California, attended the Scale Glider Festival, and sent in the following.

"The southern California Scale Soaring Festival was exceptionally well planned and organized. Even the weather complimented the event with almost flat field thermal conditions. Being primarily a slope fanatic, I may not know all the fine points of thermal flying. However, I found myself using spoilers rather frequently to just keep my 6 meter, 18 1/2 lb. ASW-17 in sight. Flying was virtually non-stop for the two day event. Merrill Brady captured a cash award for the longest flight (over 1 hour). He flew a beautifully detailed Roebers ASW-24.

"Altogether, 8 trophies were awarded: 5 for modern and 3 for vintage. Randy Martin took 5th place in modern with his nicely done ASK-

21 by Rodell, a very impressive plane in the air. Both aesthetics and performance are served well by this model. Ron Gustin won the 1st place trophy for vintage with his Fafnir II. Rick Briggs's LS-4 took 1st in modern. The cockpit detail alone represents one of the best scale replications seen to date. Yes, I even got in the winner's circle with my 1/3 size Grob Twin III and ASK-18 (2nd & 4th place modern).

"The turnout was excellent. Thank-you Dennis Brandt and Rick Briggs for a double heck of a good time."



"Dave Wenzlick from Mesa, Arizona and his 1/4 size ASK-21."

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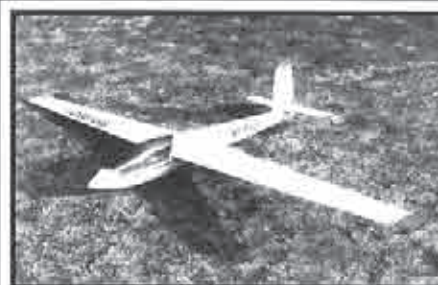
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### SWIFT-S1 (1.9m)

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Sugg. retail price: 229.00 US

Intro. offer: 209.00 US +15.00 US S+H

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Wingspan: 83" (2.1m)  
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Wingarea: 516 sq. in.  
Airfoil: E374

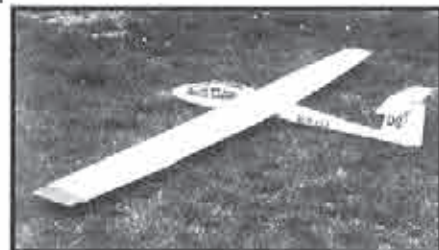
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"Rex Powell studies the 1/3 size ASW-17 for take-off."



"Randy Martin's trophy winning ASK-21."



### The Vintage Sailplane Association

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

Vintage Sailplane Association  
Route 1, Box 239  
Lovettsville, VA 22080  
<http://www.iac.net/~feguy/VSA>



"ASW-17 & Twin Astro."

### SOARNATS 96

Ken Norris, Ontario, Canada, sent in some photographs of the SOARNATS 96 event, and a write-up written by Jacques Des Becquets, also of Ontario. The event was held during the week of July 16th - 20th at the Peterson Sod Farm in Manotick, south of Ottawa. Of note is F3J, which was their first attempt in central Canada, and it was well attended. As for the 1997 NATS sailplane event, Jacques says, "Talks are reportedly underway."

So, if any of you are interested in attending SOARNATS 97, keep an eye on the schedule in RCD.



"Ken Norris launching his LJMP Meteor."

### T.W.I.T.T.

#### (The Wing Is The Thing)

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

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"Alan Schwerin of Louisiana launching his original design, open class sailplane."



"Neil Tinker, MAAC Sailplane Chairman (far left), explaining the F3J rules at the pilots briefing."



### International Scale Soaring Association

There is a growing interest in scale soaring in the U.S. We are dedicated to all aspects of scale soaring. Scale soaring festivals and competitions all year. Source for information on plans, kits, accessories and other people interested in scale. For more information, write to:

International Scale Soaring Association  
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Yucaipa, CA 92399-9507  
e-mail: 70773.1160@Compuserve.com



"Aurele Alain of Ottawa checking out his landing."

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### Sailplane Homebuilders Association (SHA)

A Division of the Soaring Society of America



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

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

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## 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.

### Viper-S and Viper Series ...from Dream Catcher Hobby, Inc.



**Viper-S**  
Wing span 60 ins.  
Wing area 325 sq. ins.  
Overall length 37 3/4"  
Flying weight 12+ ozs. poly version  
13 1/2+ ozs. aileron version  
Root cord main wing 7 1/2"  
Airfoil SD-7037

Viper-S and Viper series hand-launch glider kits feature fiberglass with Kevlar<sup>TM</sup> and carbon fiber reinforced fuselage, unique hatch, 1/8" dia. solid epoxy/carbon fiber pushrod for elevator control, carbon fiber wing rod, full flying stabilizer, fuselage has molded in color (orange and lime yellow available), CNC machined stabilizer bellcrank, pre-sheathed (contest weight balsa) wing and stab. with carbon fiber reinforced trailing edges or sheet your own kits available, main wing has root rib installed and drilled for wing rod tubes, CAD drawn plans.

The Viper family of gliders includes the Viper-S, Viper-RG, Viper-RGV and the Viper-V. The Viper-RG is similar to the Viper-S, but has a longer fuselage, a RG-15 airfoil and a wing with an 8 in. cord, 335 sq in. wing area. The Viper-RGV has the same wing as the Viper-RG, but has a V tail and molded in V tail pad on the fuselage. The Viper-V has the same wing as the Viper-S, but has a V tail.

All kits are in stock and ready to ship. Viper-S pre-sheathed kit is \$179.95; Viper-S complete kit (sheet your own) is \$119.95. Dream Catcher Hobby, Inc., P. O. Box 77, Bristol, IN 46507; (219) 848-1427, e-mail: DCHOBBY@skynet.net. Please send \$0.64 in stamps for catalog. ■



### "Guide to Computer Radio Control Systems"

...from Dynamic Modelling

"Guide to Computer Radio Control Systems" is an instructive textbook and comprehensive guide, covering all aspects of all brands of programmable computer radio control systems. Whether you fly sport models, pattern, sailplanes, helicopters, fun flies, or scale ships, this is a valuable addition to every modeler's library, and compliments all instruction manuals. The "Guide" is intended for both expert and beginner, alike.

The "Guide" is softbound with bright yellow covers, containing over 180 pages, 100 illustrations, and 23 information tables filled with instructions and step-by-step procedures that explain all aspects of

computer radios. A comprehensive index allows the reader to quickly locate all references on the subject of interest.

Contents include how AM, FM, and PCM radio control systems operate, servo utilization, information on interference, antennas, 4 vs. 5-cell receiver battery packs, definitions of system commands, menu structures & functions, and programming techniques with detailed examples of how to do an initial set-up. There are also detailed descriptions of why you'd want to utilize your radio's functions, which are better for particular tasks, and how to use the built-in capabilities of your radio system more effectively; model trimming instructions and procedures charts include step-by-step descriptions of how the controls affect model trim and proper control responses. For the advanced user, 21 different detailed programmable mixer examples cover "custom" programs; and, the "Guide" includes a RC system maintenance and troubleshooting section.

"Guide to Computer Radio Control Systems" is \$17.95 postpaid (US\$ only) in the U.S. (CA residents add \$1.20 state tax per book) available from: Dynamic Modelling Computer Book, 4922-9P Rochelle Ave., Irvine, CA 92604-2941; (714) 552-1812 (Visa/MC). Or, send ordering information to <72417.2067@compuserve.com>. Foreign shipping, please add: Canada US\$4, Europe US\$8, Asia/S. Pacific US\$10. Dealer and distributor inquiries are invited. ■

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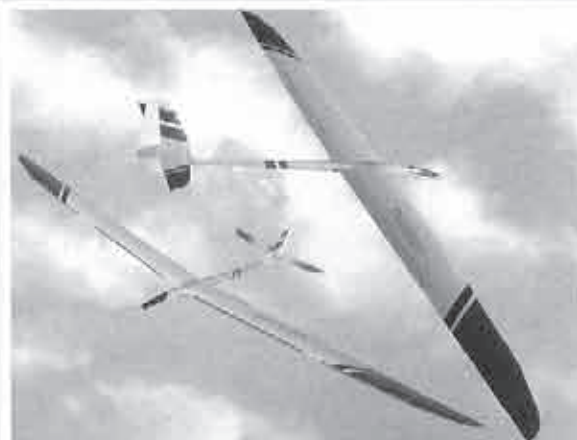
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## New Products

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### Challenger

The Challenger by Otto Heitcker was considered the very best designed sport or competition glider back in the 70's, winning all the major contests. This stable design was easy to fly for both expert and beginner, in both light or high, gusty winds.

Today's Challenger is laser cut, based on the original design, and includes all the fuselage formers, fin and rudder ribs, stab and wing ribs. Modifications include one piece plywood shear webbing to withstand zoom launching, and larger wing joiner rods. Kit includes all wood, plans, and construction article.

Specifications: 145" wing span, 1242 sq. in. wing area, 86 oz. weight, Clark Y airfoil, and extra long flaps (70% of wing span).

Cost is \$195.00 + \$5.95 S&H.



### LIL' Bird 2

A revision of the original LIL' Bird, LIL' Bird 2 has an enlarged wing span, and is a miniature Bird of Time; it is easier to fly, very stable, and easier to build. The wing span is 59", 352 sq. in. wing area, and S3014 airfoil. When finished and covered, wing should weigh 3 oz. or less; total flying weight is 9 oz. or less, depending on micro RC system used. Fuselage will accept full-size servos and receivers, and is designed so that additional nose weight is not required.

All wood kit with laser cut parts comes with pre-shaped wing sheeting; rib cap strips are not used. Fuselage sides, top, and bottom parts, as well as stab and rudder parts, come pre-shaped. Kit includes pre-shaped plastic heat shrink film, all hardware, towhook, and construction manual.

LIL' Bird 2, 1.5 meter RC HI. glider kit is \$49.95 plus \$5.95 S&H.



### Osprey

The 2 meter Osprey features a fiberglass fuselage reinforced with Kevlar™, and laser

cut wing ribs and parts. Easy to fly and build, the wings can be built with either ailerons/flaps or polyhedral. Wing loading for the polyhedral version is 8.10 oz./sq. ft.; spoileron version is 8.5 oz./sq. ft. Wing area is 685 sq. in. Wing tip is elliptical shaped for minimum drag. Osprey can be launched by high start or winch.

Introductory price is \$119.95 (reg. \$139.95) plus \$7.95 S&H. Send a large S.A.S.F. for a complete, picture information pack.

Sky Bench AeroTech, P.O. Box 316, Washington, MI 48094; (810) 781-7018. ■



### 1/2 Size ASW 27

...from Sailplanes Unlimited, Ltd.

PriBek is coming out with a 1/2 size ASW 27, 7.5 meter wing span, and it will weigh in at only around 40 pounds! For additional information, contact Sailplanes Unlimited, Ltd., 63 E. 82nd St., New York, NY 10028; (212) 879-1634, fax (212) 535-5295. ■

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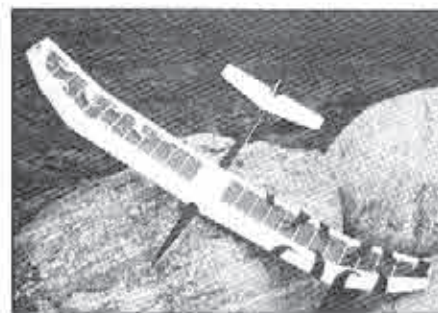
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NWSS President, Jim Pugh, launches his backup Anthem during the final fly-off's. His Shadow was damaged in the winds during the Friday practice session. Timing is his wife, Sandie, past President of the NWSS.

## The NorthWest Soaring Society 20th Annual Tournament

...by Les Grammer  
Pullman, Washington



Waid Reynolds brings his own design in on landing approach.

(R) Jim Thomas is ready to test the winches to ensure their readiness after the rain delay. Four out of five winch lines broke on his test launches. After the repairs, there were no further problems.



### The Background...

The NorthWest Soaring Society (NWSS), by last count, has around 105 flyers participating from Washington, Oregon, Idaho, British Columbia (BC), and Calgary. (Somehow, some stragglers from Arizona and California snuck in, also.) The contest sites range all the way from Calgary, Mission (BC) to Portland, Eugene and Seattle, to Spokane and smaller locations throughout the Northwest. To fly the complete circuit requires a lot of time (long distances to travel), a good set of wheels (long distances to travel), and a very understanding spouse (long distances to travel).

Because of the wide geographical area covered, the Cascade mountains create a natural division of the 'east' from the 'west' in the NWSS. The west side has the higher population concentration, big cities and suburbs, coastal-type terrain conditions, and mountains, etc. The east side is farmland, desert, or inland mountain type terrain... It's very rural. (In fact, you can drive for hours and only encounter a few people along the way.) Heavy, moist air on



Tournament winner, Arend Borst, receives his trophies. His F3B skills made flying the winds feel at home!

the west side; dry, light air on the east side. Friendly on the east... Busy on the west. (OK, OK, friendly on both sides!) Regardless, fliers on the west side of the Cascades tend to compete in 'west side' contests, and vice versa, with only a brave few daring to cross the border. (Usually, to their complete enjoyment!)

Each side boasts names you may have read about in major magazines, or seen on the Internet. The east is heavily laced with Weston designs (read 'Magic') and Jousters. (Harley Michael-

lis lives just down the road an hour or two.) The west is the land of Dodgson, but now seems to include every other bleeding edge design in technology.

These divisions have created a degree of friendly competition between the two sides, with more than one contest being punctuated with comments about the 'other side' not being 'up to snuff'. However, the fact is, the competition is hot and heavy on both sides.

All the barriers drop and everyone mixes it up once a year at the season's tournament! The best in the west (side) get to go head to head with the best in the east (side). Team competitions occur simultaneously, so not only are the top dogs fighting for bragging rights, the 'other' fliers are at it, also.

### Day Zero... The warm-up...

As this was only my second Tournament, I arrived at the flying site early the Friday before, hoping to get some practice in and watch the scheduled, scale fun-fly. The site was a sod farm just north of the Tri-Cities area in Washington, thus plenty of grass to fly from. What wasn't in sod was either

scrub brush or corn fields. Generally, with no obstructions around, this made for wide-open flying as far as you could see.

Only 3 fliers were on site when I arrived, they were flying off hi-starts. David Beardsley was testing out a Super V prototype (which was flying very nicely), while Jim Thomas, a perpetual tournament favorite, was trimming out his own design (affectionately named *The Beast* by other fliers). Art Boyson brought his *Nimbus 4*, a beautiful scale glider with an amazing wing aspect. He assembled the glider but, unfortunately, discovered the elevator servo was shot before





Forest Ingraham's Magic on launch.

he had an opportunity to fly it. Instead, attention turned to getting the winches/retrievers set up for practice.

By 2:30, the launching equipment was ready, so 3 or 4 fliers started giving each other launches. It was very laid back flying; the temperature was about 80 degrees with 10-15 mph winds adding an element of interest. Somewhere during the course of this casual practice something changed; suddenly, the winches had a line of 15 planes ready to go... And more were on the way. The pilots seemed to have snuck in from everywhere, and the laid-back practice session suddenly took on a bit more of an air of seriousness. The wind continued to blow, and it was easy to see who had not flown in winds for a bit. Marking that fact, the wind took its first big toll of the contest with NWSS president Jim Pugh. His Shadow got caught in a sudden gust during landing approach, blowing it over on a tip/cartwheel, and seriously damaging the plane. A few other damaged airplanes (mostly minor cracks and dents), a weather forecast calling for wind and rain for the weekend, and things were off to an auspicious start. As if to foreshadow things to come, the walking circle sprinkler system, which waters the sod daily, started 'walking' around 5:30. That called an abrupt halt to the flying.



Latest in thermal sniffers? No, a Windsong fully equipped with an on-board, remote control camera. While one pilot flew the plane, another 'flew' the camera while watching through 'video goggles'. Unfortunately, the wings folded on the third launch, before many had a chance to 'view' the flight.

(As well as the NWSS board meeting, which was taking place on-site... Who says board meetings have to be boring?) It was just as well, as everyone needed to go for dinner, rest up, and get ready to go the next morning.

#### Day 1... Ohhh, the wind and the rain...

At 7:30 the next morning, the contest site was set up under a threatening sky. The forecast was calling for wind and rains; however, at the moment, it was calm but overcast. Fifty registered fliers gathered (with a few extras in attendance to simply watch) as the Contest Director (CD) went over the rules and tasks. The tasks for Saturday and Sunday morning would be flying 7-minute ID with 50 foot landing lines. The only exception was the requirement to fly one 4-minute ID during one of the rounds, pilot's choice. At noon on Sunday, the competition would stop, and the top 12 fliers move on for the final competition. An interesting announcement was made by the CD when he declared "the county" as the field boundary. Rules for timing planes which dropped from sight were covered. (Count to 10... If the plane reappears, continue timing; otherwise, mark the time and remove the 10 count.) This seemingly generous declaration would have an interesting impact during the final fly-off's, when competition turned to man-on-man.



NWSS Season Point Champion (both 2 meter and open), Forest Ingraham accepts his award from CD Tom Culmsee.

The pilots meeting concluded, and at 9:00 the first group of 8 started hooking up to launch. Literally, as we were hooking up, it started to rain, and rain it would for the next hour and 15 minutes. However, by 10:30 the rain had stopped, and the sky appeared to be clearing; so, we started again. This time, the first group would launch into promising conditions, as the lift started building rapidly. With all that air, it was amazing to see a mid-air within the first 4 minutes of the contest. A Magic and a Jouser mixed it up as they worked the same thermal, knocking off the Jouser's outer wing panel. The resultant crash totaled the Jouser, while the Magic went on to complete the 7 minute task with no discernible damage. (That Magic would be called *The Killer* from that point on!)

In spite of the delayed start, the pilots jumped into their assigned roles (flying, timing, winch operators, impound, etc.), the contest got on a roll, and the rounds started clipping along. Conditions varied, as the sun would duck in and out of clouds, and cold air would come by in waves. Most fliers would try to punch out upwind to the west, as there seemed to be a perpetual area of lift directly ahead if you could travel far enough to reach it. Everyone noticed as the clouds to the west started laying over, indicating the wind would be coming on strong; by



WACO Warriors (Forest Ingraham, Guy Russo, Kelly Johnson) receive their 1st place Expert Team trophy. All flew Magics throughout the competition.

the end of round 4, it hit. Suddenly, light wind conditions were replaced with 15 mph winds, and that took its toll. One Windsong went down with a folded wing, followed shortly by a Magic with a similar wing failure. (Both gliders were older, battle worn planes.) Guy Russo, a perpetual Tournament favorite, blew the tail feathers off a prototype Magic during a particularly hard launch. He made a brilliant recovery, bringing the glider down to about 20 feet, inverted. It looked like he might minimize the damage by pulling off the inverted landing, but the wind finally overcame what little control he had been able to maintain, piling the glider in nose first. Other flyers adjusted rapidly to ease off the pressure on launch, but they were still battered when coming in for landings, with many being caught landing short when they encountered the varying gusts.

By the end of day one, Forrest Ingraham (the 96' NWSS Season's Point Champion for both open and 2-meter) was in good position and leading the way! Three of the top 4 positions were flying Magic's (each a different vintage). After Forrest, the top 12 in order were: Jim Thomas, Kelly Johnson, Guy Russo, Arend Borst, Barry Kurath, Art Boysen, Fred Chima, Jim Pugh, Ray Cooper, Terry Goodman, and Prashant Manikal.



### Day 2... The blowout...

No one held any pretenses that the weather for day 2 would be better... And it wasn't. Though the rain clouds had disappeared, the wind had increased. At the start of the first round, the wind was measuring 15 mph, gusting to 20. By noon, it would increase to 20 mph, gusting to 30. As a result, the name of the game would be *lead*, and lots of it. Those who had provisioned their gliders to accept ballast, loaded up, with minimum increases starting at 2 lbs. Those who couldn't accommodate ballast, suffered. Not only could they not afford to turn away from the field (lose any hope of making it back), landing approaches were at best *wild*, with many planes being damaged (followed by frantic field repairs). Battery drain from constant controlling cost a couple of planes. The use of retrievers was abandoned for safety concerns on the line blow-backs. Even the ballasted airplanes wouldn't venture downwind. Though the tasks for the morning were the same as the previous day, very few 7's would be found, with most fliers lucky to scratch out 4 or 5 minutes and a landing.

In spite of the conditions, the cream always rises to the top (albeit many with their 'second' airplane, having broken their first), and the standings going into the fly-off's were: Forrest Ingraham, Fred China, Dave Johnson, Barry Kurath, Jim Thomas, Guy Russo, Kelly Johnson, Arend Borst, Gary Brokaw, Waid Reynolds, Jim Pugh, and Harley Michaelis.

### And in the end, there was just one...

The tasks for the fly-off's were 10 minute International Duration flown man-on-man, alternating with 3 minute Precision Duration. Spot landings with a 50' tape would be used for both tasks. For once, 3 minute pd's were *very* significant tasks, as it was as much of a battle to get a good time, as it was to get a good landing. The combination of fighting nerves and the wind was obviously taking its toll, as the number of missed landings was notable, particularly considering these were the top 12 fliers. The man-on-man competition was particularly interesting, with some fliers forfeiting the landing points to try to maximize their flight times (and thus win the round). Most notably was Jim Thomas, who

found an area of lift and appeared to abandon any attempt to make it back to the landing lines. (Remember, the field boundary was declared to be *the county*; thus where you landed had no impact on your flight score.) His strategy paid off, as twice he was able to stay aloft significantly longer than the others in his group, and offset the loss of landing points by racking up a significant time difference. (Where his strategy *didn't* pay off was the damage to his primary plane during an 'out-of-sight' landing, which forced him to his backup glider.)

However, in the end, the battle of nerves and flying skill was not won by 'the east', and was not won by 'the west', and was not won by the Season Point Champion. Instead, our neighbors to the north made their presence known, as Arend Borst from Chilliwack B.C., flying his custom RG15 design (and a similar backup after battery draining his primary plane in flight) came through with the coolest nerves and tightest flying. This was not something he was unaccustomed to, however. In talking to him, I discovered his father had been an F3B National Champion for Holland, and he himself had placed as high as 3rd in the Holland National Championships. Coming from an F3B world, he likes to fly heavy and fast, and this tournament's conditions had fit his style nicely.

The final standings after the fly-off were as follows:

#	Pilot	Airplane	Score
1)	Arend Borst	(Own design)	4374
2)	Guy Russo	(Magic)	4236
3)	Dave Johnson	(Saber)	4156
4)	Jim Thomas	(Own design)	3745
5)	Gary Brokaw	(Anthem)	3285
6)	Fred China	(Run Away)	3118
7)	Kelly Johnson	(Magic)	3026
8)	Harley Michaelis	(Genie)	2873
9)	Forrest Ingraham	(Magic)	2797
10)	Waid Reynolds	(Own design)	2578
11)	Barry Kurath	(Wagoner design)	2504
12)	Jim Pugh	(Anthem)	2499

Interesting results given the conditions. The Super V's, Grand Esteem's, Spectrum's, Maverick's, Shadow's, Spirit's were all present, but the Dodgson & Weston designs prevailed in amongst all the special designs. (Maybe we all don't need that *newest* design after all!) A job well done, a tournament well run, and another season had come to a close. When I left, there were 3 fliers on site, flying off a hi-start...

**'Til next year!! ■**

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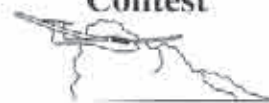
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### Contacts & Soaring Groups - U.S.A.

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

Alabama - Central Alabama Soaring Society, Ron Richardson (Treas.), 381 Stonebridge Rd., Birmingham, AL 35210; (205) 956-4744, e-mail: lamrchi@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 Clithero, (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, A.J. Angelo, P.O. Box 2012, Sunnyvale, CA 94087; (415) 321-8583, fax (415) 853-6064.

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./Treas.), (609) 989-7991, e-mail: JerseyBill@aol.com; Michael Lachowski (Editor), 448 County Rt 579, Milford, NJ 08848, e-mail: mikel@airage.com.

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

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

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

Indiana - Bob Steele, 10173 5T 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.

Kentucky - Louisville Area Soaring Society, Ed Wilson (Contact), 5308 Sprucewood Dr., Louisville, KY 40291; (502) 239-3150 (eve), e-mail: Jay\_Burkart@hp.com.

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@acorrbbs.com>.

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

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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.

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The Frequent Flier's Info. Hot Line, San Francisco Bay Area - Box 1 (lost & found airplanes, helpful tips, upcoming events), Box 2 (questions), Larry Lovstik, (415) 924-4190.

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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](mailto:herkstok@aol.com).

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