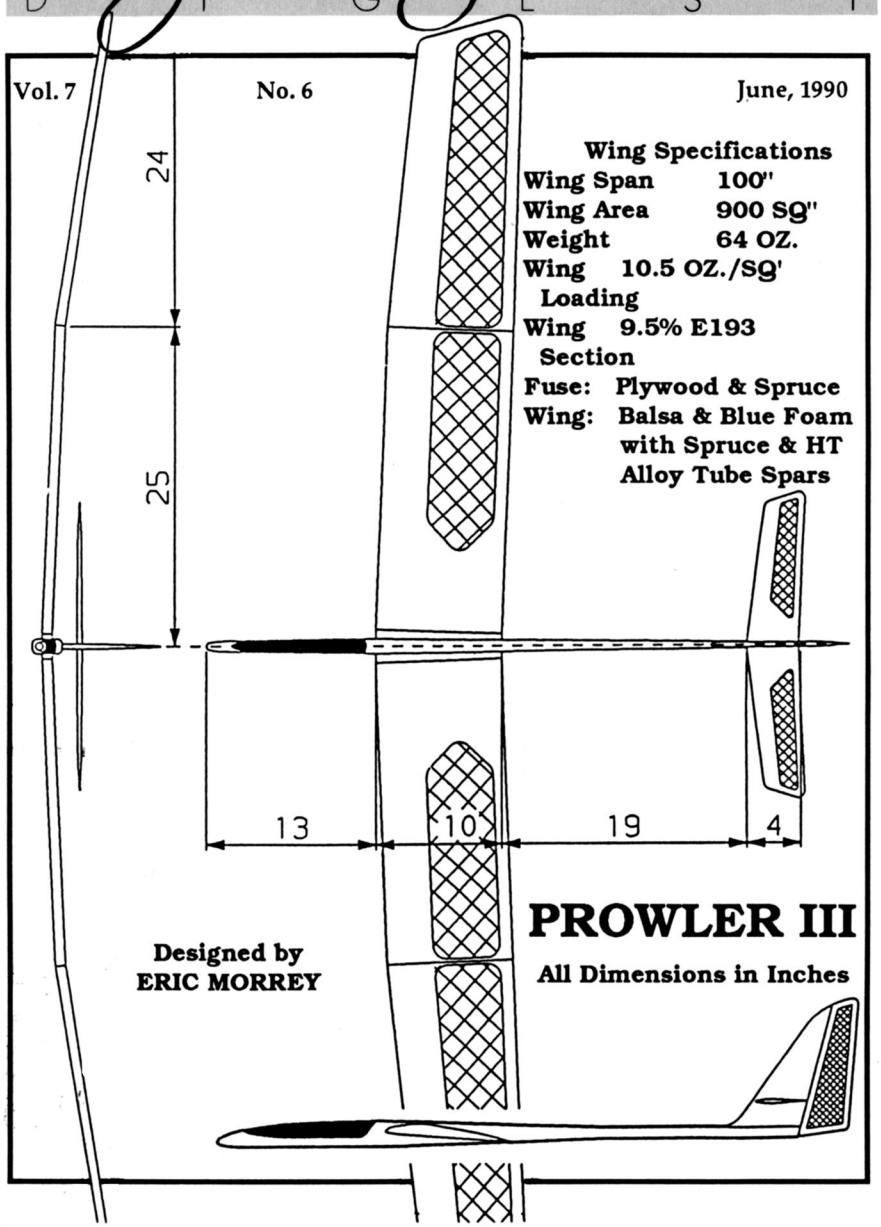
R/C Soaring DIGEST

Vol. 7 No. 6 June, 1990



Wing Specifications

Wing Span	100"
Wing Area	900 SQ"
Weight	64 OZ.
Wing Loading	10.5 OZ./SQ'
Wing Section	9.5% E193
Fuse:	Plywood & Spruce
Wing:	Balsa & Blue Foam with Spruce & HT Alloy Tube Spars

PROWLER III

All Dimensions in Inches

Designed by
ERIC MORREY

RC SOARING DIGEST
P.O. BOX 6670
CONCORD, CA 94524

ADDRESS CORRECTION REQUESTED
FORWARDING POSTAGE GUARANTEED

Schedule of Special Events

Date	Event	Location	Contact
June 9-10	Western U.S. R/C Soaring Championships Unlimited	Modesto, CA	R. Lenci (209) 838-3869
June 9-10	Thermal Soaring Unlimited	Little Rock, AR	R. Stanfield (501) 851-1697
July 7-8	International Slope Race	Davenport, CA	Ray Kuntz (213) 645-4269
July 21-22	F3J World Interglide	Warwick, England	Sam Hitchman (0926) 651511
Aug. 5	Thermal/Scale	Morgan Hill, CA	Mick Carlin (408) 263-3576
Aug. 11-12	19th Annual Soaring Contest	Sudbury, MA	John Nilsson (508) 520-1745
Sept. 1-3	Torrey Pines Scale Fun Fly		(Coming Soon)
Sept. 8-9	2 Meter & Open	Richardson, TX	Chuck Fisher (214) 270-2634 Jack Hamilton (214) 348-4669
Oct. 5-9	F3F Viking Race 1990	Buxton, North West Derbyshire England	Nic Wright 0352 720516

(The entry form is due to Nic Wright by July 1. The bulletin is 3 pages... If you need this information, please contact John Dvorak (SBSS) or RCSD.)

About the Cover

Eric Morrey of England designed the Prowler III. According to Verbals, Eric says, "This model is my third own design 100S model and is a development of the previous two. The basic dimensions are the same as the Prowler II, but the area has been increased to 900 in^2 following the relaxation of the BARCS rules. To try and reduce the dihedral required, I have swept the whole wing back slightly and altered the planform by keeping the trailing edge straight, therefore effectively increasing the sweepback. The wing tip panels have been constructed reasonably light to help turning. The basic construction can be seen on the accompanying drawings. The controls used are rudder (closed loop linkage) and all moving tailplane (Bowden cable). I have not fitted airbrakes mainly because I think they are unnecessary on a 100S model." (Drawings on pages 12-13)

The information on the Prowler III was provided by Tony Beckett of England. Tony says, "The way Eric works is typical of the better U.K. BARCS League pilots. Producing their own design which has their own personal "stamp". Eric's is the very thin fuselage and geodetic structure. His models are always very strong. They will withstand the maximum tow by the more gorilla-like towmen, and they don't break when they get "planted" for extra points in the landing circle."

"Prowler first appeared in Verbals, the club newsletter of the Soar Valley Soarers, a Leicestershire club, of which I am a member. The name comes from the River Soar. Too appropriate to be ignored. Derek Lucas is the Editor (50 Hazelwood Road, South Wigston, Leicester, England). Eric produced these excellent drawings himself."

The Soaring Site

With this issue, we are pleased to let you know that Martin Simons is coming to the U.S. this summer. He wants to meet with other modelers, so we wanted to let you know, unless something unforeseen happens, that he will be in Northern California between July 28 and August 5. There are two special contests planned for this occasion...August 4 (to be determined) & 5. The one on August 5th will be a Thermal & Scale at the Flying Lady Restaurant in Morgan Hill, CA. The contest director is Mick Carlin, and he can be reached on (408) 263-3576. Should your schedule allow you to join us during the week/week-end, please give Jerry or I a call, and we'll help with whatever arrangements are required.

I wanted to take a moment to point out the fact that Greg Harding of Triton Models, an advertiser & reader of *RCSD*, is moving from Alaska to Pennsylvania. His address appears in his new ad towards the back of this issue. Now would be a good time to note your records with the new address...I almost forgot to do it, myself.

Read & Enjoy, Judy

More on...The Vision Radio Modified

John Spindler of Wildwood, Illinois has written to advise us of additional modifications which should make the Vision radio less susceptible to noise.

"Connect a 4700 ohm 5% 1/4w resistor between the pin 2 input (orange wire) and pin 14 (blue wire Vcc). This will ensure the input is pulled up to Vcc when the switch is open. I would also suggest adding a .01uf disc or monolytic capacitor across Vcc (pin 14) and Grd (pin 7) on the 7486."

Eric says, "The parts for the modification are: PC Board (Radio Shack #276-168), Dip Switch (Radio Shack #275-1304), 7486IC (Radio Shack), 4.7K Resistor, .01uf capacitor."

About RCSD...

RCSD is a reader written-publication. The articles & letters are freely contributed to *RCSD* in order to provide:

"The widest possible dissemination of information vital to R/C soaring to enthusiasts all over the world."

It is the policy of *RCSD* to provide accurate information, but if we print a factual error, we want to make it right. Please let us know of any error in *RCSD* that significantly affects the meaning of a story. The opinions expressed are not necessarily those of *RCSD*. Please see the back cover for subscription costs and additional information.

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F3J REPORT

...by Al Scidmore

On Oct. 1, 1989 the Madison, WI club (MARCS) held an F3J contest using the United Kingdom proposed F3J rules almost in their entirety. A detailed account has been submitted to the NSS magazine SAILPLANE, *but I thought that the* RCSD *readers would appreciate getting a short note on our experiences with this event.*

The provisional rules for F3J have been discussed elsewhere, so I won't go into the rules in detail. In essence, F3J is a man-on-man slot-time hand-tow sailplane competition. Each "slot" of competitors has a 10 minute period in which they must launch, fly, and land. A slot is comparable to a "heat" in racing, and the competitors in the slot are randomly selected within the given transmitter frequency limitations. We followed the provisional rules proposed by the U.K. with only two exceptions. The two concessions that were made to the American way of doing things was that we substituted the "boundaries of the field are..." for the huge F3J outer diameter landing circle of 75 meters and, second, we did not require that each contestant to be able to fly on two separate frequencies.

After the winners were announced, etc. we all sat down on our soft Wisconsin sod and did a critique of the day. The reaction of those that attended our F3J event was solid approval. Listed below are some of the observations that I made:

1. This competition format was enthusiastically applauded by contestants and spectators alike. Few were ready yet to give up our normal thermal type events completely, however.
2. Hand towing produced no real problems. We have a lot to learn on maximizing launches using hand-towing. On the other hand, super athletic ability is not a prerequisite to doing well.
3. Watching the slot-time man-on-man kind of competition is considerably more interesting for competitors and audiences alike than the usual thermal competition.
4. It will take some time for our flyers to get as familiar with the rules and their nuances as we are with our AMA competition.
5. Launching 6 or 8 flyers simultaneously is not a real problem, given a wide field. It would help if we had some geared line winders like those used in England. We had no snarled lines, but the potential is there.
6. Some sort of very loud signalling device (like a propane powered air horn) is essential to communicate with the flyers spread out across the field. Flyers and timers need to know when the time slot begins, when there is only one minute of slot time left, when the slot ends, etc.
7. Neither launch equipment nor aircraft requirements are sophisticated or complicated. Off the shelf thermal soaring sailplanes can be very competitive, and the tow equipment is absurdly simple. A reel and line can easily be fabricated for about $10.
8. Spectators can really get absorbed in this kind of competition...as timers, towmen, spotters, etc. This last feature of F3J is very appealing as a way to get others involved in the sport.

We had a great deal of fun holding the event, the flyers and spectators had fun and, in fact, we are scheduling one for next October (1990), as well. Give it a try in your area. I think that you will be pleasantly rewarded.

Allan K. Scidmore
5013 Dorsett Drive
Madison, WI 53711

Electric Events at the 1990 Nats

A message to the Readers ...from Mark Nankivil

Yes, there will be Electric events flown at the NATS!

We will fly three Electric events at the Soaring site which will be at Lincoln High School in Vincennes, Indiana (Right across the river from Lawrenceville). The events are as follows:

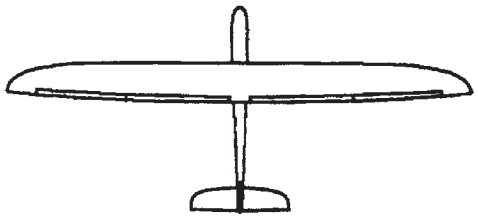
1. FAI F3E 7 cell — This event will be a distance and duration task as called out in the International Aeromodelling Rule Book. Four (4) rounds will be flown with the competitor allowed to throw out one (1) low round. Battery packs will be limited to a maximum of 7 cells.
2. Radio Control Class A Sailplane Limited Motor Run (Event 610) — This is a duration task and the motor run will be limited to 30 seconds. Duration will be 8 minutes with the motor run considered as part of the 8 minutes. Landings will be an in or out circle worth 50 pts. Battery packs will be limited to a maximum of 7 cells.
3. Radio Control Class B Sailplane Limited Motor Run (Event 612) — This is a duration task and the motor run will be limited to 20 seconds. Duration will be 8 minutes with the motor run considered as part of the 8 minutes. Landings will be an in or out circle worth 50 pts. Battery packs will be limited to a maximum of 30 cells.

For the above events the battery packs shall consist of nickel cadmium cells with a maximum cell size of 1200mah. Any type of electric motor will be allowed and the models shall meet all FAI/AMA limits for weight and size.

Cost will be $5.00 per class and there will be trophies for 1st through 3rd place in each of the three events. At this time, it appears that the F3E 7 cell event will be flown immediately after the F3B and F3B Sportsman Sailplane events so as to make use of the same distance course. The other two events will be flown after the Scale and Hand Launch Soaring on Tuesday. These times and dates are subject to change.

The Electric Event Coordinator will be Mark Nankivil. Should you have any questions on the events, you can contact him at: 5206A Devonshire, St. Louis, Missouri 63109; Phone (314) 832-0634.

Charles River Radio Controllers



19'th Annual Soaring Contest

Date: August 11, 12 1990
Place: Fort Devens, Sudbury Annex
Sudbury, Massachusetts
Event: AMA 444
ESL Open (any size)
Classes: Sportsman and expert
Fee: $20/day, $15 with preregistration
Preregistration strongly suggested
Max 6 flyers per frequency
Channel 20 banned
Plenty of generous prizes

Airtronics Servo #401

Would you like to update your servo? Pete Russell will replace the plastic output gear with a brass gear for $5.00. Contact Pete at 2086 Swensen Ct., San Jose, CA 95131 or (408) 259-1081.

On The Wing

...by B [2]

New airfoils always seem so exciting! Most of us can barely contain the urge to get into the shop and build a whole airplane around a promising new section. What could be better than a method by which the modeler can create his own new airfoils?

Well, for us "'wing nuts", how about a method of getting new airfoils for our tailless creations? To meet this challenge, we offer a small portion of an article written by Reinhard Werner. (The entire article appeared in The ~White Sheet Radio Flying Club's "Flying Wings Special #3", Sean Walbank, Editor: 29, The Gardens, Acreman Street, Sherborne, Dorset DT9 3PD, England.)

"Strictly speaking, it cannot be regarded as too profitable to use any home designed wing sections. If we really want to understand what's happening up there, as a matter of principle, we can't but use one of those wind tunnel tested airfoils, measure our model's performance parameters, and draw our conclusions from that. But unfortunately this would reduce our choice to just a handful of Eppler sections, and of course this seems to be quite a bit too restrictive. So just let's go on designing our own super sections, always remembering that two things seem desirable: low C_m and good lift/drag ratio. Personally I'm not wholly happy with this procedure, but I won't entirely deny that good results may come of it. One thing's for sure: we're bound for adventure this way!

"Just one example for such home bred sections: Alex Lippisch gave us a mean camber line with a slight reflex and the crossover point at 87.5% chord. This line was not stable and required quite a bit of sweep and/or twist. Now, if we modify this camber line a little, it looks like this:

$$y = \frac{f}{94350} \cdot x \cdot (x - 100) \cdot (x - 75),$$

with x running from 0 to 100, f = % camber.
(We note that the denominator, 94350, can be changed to 94500 with the result that the camber line peaks at exactly the correct value. With the 94350 value it's a bit too high. B²)

"This line has its crossover point at 75% and should be dead stable. It looks interesting, too, with the crossover at 80%:

$$y = \frac{f}{105000} \cdot x \cdot (x - 100) \cdot (x - 80).$$

"Now, just add a thickness distribution a la NACA, Quabeck, Kaczanowski or whatever, and you've got a weird looking section. And, well, there's still the Horten camber line:

$$y = \frac{f}{10546875} \cdot x \cdot (100 - x)^3.$$

"So just have a try out there — I'd be delighted to hear of the results!"

This whole concept sounded so intriguing to us that we wrote a computer program to figure out the three camber lines for us. Then we gathered up some thickness distributions that we felt might be appropriate for use. The result is an on-screen display of any chosen thickness distribution superimposed over the reflexed mean-line with the % camber of our choice. This program, written in Apple's Applesoft BASIC, can be easily modified for use with other graphics-capable computers. Anyone interested in a listing of the program, along with thickness distributions for Quabeck (HQ), Girsberger (RG), and other sections, need only send us the usual legal sized SASE.

Bill & Bunny Kuhlman
P.O. Box 975
Olalla, WA
98359-0975

My Notes on "Building the FALCON 880"

...by D. O. Darnell

If you are building, or are planning to build, a Falcon 880, you're lucky! The Falcon is quintessential, state-of-the-art in competition RC soaring machines. Like many greatly successful ideas, it is typical in its inspiration purely out of needing a machine to meet certain needs.

Unlike other contemporary designs, it is a clever, devilishly-simple, straight-forward design, kited in such a way as to allow anyone with average building skills to quickly construct and to fly. Its performance is World Class! If you think it sounds that I like this ship, you're right! It's truly American in influence and execution, entrepenurish in spirit, hi-tech, and tremendously exciting!

As you might know, Model Construction Videos was started to help the modeler see what specific kits are like to build and fly, without spending any money. The Mariah, a 2-meter design by Competition Products in Apollo Beach Florida, was the first subject. The Mariah is a very popular high-performance design. (I don't know how many have been sold but, it must be a bunch, because our tapes are sure selling well!) The second tape in the RC Soaring Series is T902 — "Building the Falcon 880", and covers the Flite Lite Composites first offering. We bought the "semi kit", as we intended to use alternate construction techniques (typically MCV) for the wing. Two kits were ordered at separate times and both arrived about 3 days after phoning in the order. Both kits contained rolled plans, a terrific fiberglass fuse, and excellently-cut white foam cores.

HIGHLIGHTS

- Wing LE is 5/32 (1/8 ID) aluminum tube.
- TE is carbon fiber tape/mat combination.
- 36 inches of 1/8 steel rod can be inserted into each LE for ballast, (6 oz) if needed.
- Wings are glassed 3 x 1 oz. layers with TAP epoxy.
- Mylar skins taped at TE and 1/4 short of LE and 1/16 short of root & tip.
- Tips panels are ultimately laminated with 2 layers of cloth and epoxy to root panels. (all shown on tape).
- Final alignment of joiner tube is done last thus avoiding minor misalignment during construction... this provides a better match.
- Finish is automotive lacquer.

The Falcon stab and rudder are conventional, built-up balsa construction, typical of Airtronics kits like the Saggita, etc. The stock wing is intended to be covered with 1/16 balsa sheeting and finished with a plastic film. Such construction typically yields finished ship weights of 60-65 oz. On the tape, we are doing a couple of things differently. Carbon mat and tape (from Aerospace Composites) are used along with HP cell from Hi Performance Supplies. HP cell, which replaces the balsa skin, is .065 thick. Surface sanding removes another .015 leaving about .050. The panels are then fiberglassed with 3 layers of 1 oz. cloth and laid up using vacuum bagging techniques. When finished, the profile thickness is very close to the balsa/film combination and the weight of the finished panels (sans paint and servos) are about 18 oz. each. With careful painting (lacquer), the ship will meet the target weight range of 60-70 oz.

The precision obtained using glass/foam/bagged (GFB) techniques is way beyond that of balsa-sheeting. GFB wings provide obviously superior performance and are almost bullet proof! Zoomie launches are the order of the day, and are so much fun that even if the 880 didn't fly any better than the older, polyhedral designs, launching provides enough excitement to give you an excuse to get one! Durability...*continued on pg 23*

"Building the Falcon 880" can be obtained from MCV for $24.95 plus $4.05 S&H.

Jer's Workbench

Static Cling: How to Keep the Inside of a Canopy Clean

You spend a lot of time building and detailing a new glider, so you want it to look good. And, if you add a canopy, because it is up there in the nose, it's out in front for all the world to see.

A lot of time is spent in cutting and trimming that one canopy, because, if a mistake is made, it is very inconvenient to have to go back to the hobby shop or to write the manufacturer for a replacement.

With all this manhandling, the canopy winds up with "Static Build-up". All of that dust, lint and sawdust from the workbench is immediately attracted to the inside of your canopy.

In order to eliminate this "Static Cling", you can use one of the many anti-static cleaners and polishes on the market, today. There are two that I keep handy in my workshop. The first is Static Guard, which can be found in the supermarket in the soap section, or you may find that your wife has one in the laundry room. The second is Kleenmaster's Brillianize, which is recommended for all plastics. (I have found it useful to clean my glasses with.) It can usually be found at either a plastic supply, auto body, or paint supply store. It is easy to use. Just spray your canopy, inside and out, and wipe with a soft cloth.

A New Source

Composite Structures Technology (CST), a cottage industry, has put together a set-up for vacuum bagging. They also carry a complete line of supplies needed to vacuum bag your wings and stabs. (We understand that they are going to be adding even more.) Their order form includes: Deluxe Bagging System, Vacuum Pump, Vacuum Gauge, Vacuum Relief Valve, Push-In Tube Fitting, Vacuum Bagging Kit, Rigid Vacuum Line Tubing, Heavy & Light Bagging Vinyl, Mold Release Spray, Bag Sealant Strip, Distribution Rope, Carbon Fiber Sheets (several sizes), Carbon Fiber Tow, Kevlar, Domestic & Imported Fiberglass Cloth, Imported Clear Epoxy Set, Epoxy Brushes & Spreader, Sample Kit & Rohacell (comes in three sizes & different degrees of thickness).

If you are into hi-tech modeling, or you would like to become a hi-tech modeler, CST is offering a booklet on wing construction using negative molds (hollow core wings) and construction methods of forming shell surfaces. CST says, "We thank Verlag fur Technik und Handwerk GmbH, publishers of *MTB-14 Moderner Tragflachenbau (Model Airplane Construction Guide — Modern Wing Construction)* by Uwe Steenbuck and Christian Baron, for permission to translate and make available to our customers the following two articles:

13. Wing Construction Using Negative Molds, and
14. Other Construction Methods of Forming Shell Surfaces.

We also thank Rohm GmbH for graciously translating these articles for us and our customers." (This 52 page translation is available for $5.00 (cost) plus $1.25 postage and applicable tax.)

"CST supports all levels of competition. Members of all U.S. model aviation teams, including F3B, automatically obtain a 15% team discount on all CST products. We will provide 15% discount coupons on Rohacell foam for all entrants at any contest if the CD will let us know how many he needs and when and where the competition will be held. We will also provide gift certificates to be used as prizes with values and quantities dependent upon the size of the contest." Gail Gewain

About Rohacell®

...from Composite Structures Technology Gail Gewain

Ribless Shell Construction

Thin ROHACELL sheets sandwiched between reinforcing fabrics such as Kevlar or fiberglass makes ribless shell construction feasible with substantially reduced weight.

Before construction of the wing can begin, molds must be constructed for the upper and lower surface of each panel. The wing shells are built-up of consecutive layers of reinforcing fabric and epoxy. Then a layer of thin ROHACELL foam (the 2 mm works well) followed by a second layer of the same reinforcing fabric and epoxy. The layers are held tightly into the mold by sealing a layer of heavy plastic film over the mold and applying a vacuum so the outside air pressure will maintain a uniform pressure over the entire surface. After the epoxy has cured, the shells are strong enough to completely eliminate the need for ribs producing a wing that is light and extremely tough.

Solid Core Construction

Solid ROHACELL wing cores are more than 4 times the strength of other foams plus it is completely compatible with TRADITIONAL modeling adhesives and finishes. ROHACELL can easily be carved or sanded into shape using the same methods and tools as used for shaping balsa wood. The parts are covered with reinforcing fabric applied with epoxy or aircraft dope to provide the desired rigidity. ROHACELL'S high compression strength makes it the ideal core material for vacuum bagging as it will distort very little under pressure.

Properties

ROHACELL is a light, rigid, high-quality, polymethacrylimide foam. Most impressive is its strength to weight characteristics when compared to balsa, styrene and polyurethene foams (see the table below). ROHACELL'S high compression modulus makes it ideal for use as a core in high strength composite structures.

Material (lb./cu. ft.)	Compression Modulus	Crush Strength
Balsa (6)	5,100 - 16,000	50 - 84
Rohacell 71 (4.4)	13,100	213
Rohacell 51 (3.1)	9.950	128
Rohacell 31 (1.9)	5,120	57
Styrene foam (2)	850	20 - 40
Polyurethane (2)	1,300	16-43

Pure white in color, ROHACELL can be shaped with standard modelers techniques but should not be hot wired since harmful vapors may be formed. ROHACELL can also be thermoformed at moderate temperatures.

Compatibility

Most modeling adhesives are suitable including polyester and epoxy resins which give excellent bonds. Ultra-thick or slow cure cyanoacrylate adhesives also work well on ROHACELL. Since ROHACELL is non-porous, adhesives requiring evaporation to cure are not suitable for bonding two pieces of ROHACELL. Similarly, contact cements must be permitted to evaporate completely before mating components. Finishing is easy because ROHACELL is totally compatible with all common model finishes. For a smooth glossy surface, ROHACELL should be filled and sanded. Then any paint, varnish, lacquer, epoxy or model aircraft dope may be sprayed or brushed directly on ROHACELL.

Composite Structures Technology
Dept. M1
P.O. Box 4615
Lancaster, CA 93539
(805) 723-3783

The Southwestern Regional Contest

Eloy, Arizona
...by Chuck Wehofer

The Southwest Regionals Contest has been in existence for 40 years, making it one of the longest running contests in the USA. There was a soaring event in the "Regionals" up until 1981, which was revived in 1989, but not many contestants appeared for that year's event. 1990 was a true regional event. There was an excellent turnout, considering that this was the second year of the revival event and no pre-registration was required. There were a total of 54 flyers for each of the events, compared to last year's total of 16. The weather was just about perfect, the high for both days was about 74 degrees and the wind was very light. Plenty of sunshine and open air to fly in.

Flyers from Colorado, New Mexico, Washington, California and Arizona, came out and tried their skill. The contest was an unqualified success. Almost everybody said they will plan on coming out again next year and they were going back to their clubs to promote it as the first major contest of the year.

Another flier takes to the air & The Group poses for a Special shot.

The Saturday event was a 7-minute precision duration with three rounds and a 100 point landing tape. With a total possible of 1560 points, the high score for the day was 1513, put in by Gary Anderson. Plaques went out to fifth place and congratulations went to all participants. Sunday's event was a 15-minute cumulative duration, with no flight over 7 minutes. First place honors went to Randy Spencer, with 1151 points out of a possible 1200. There was a light wind on Sunday and we did have to move the winch direction in the last round. There was only one sailplane casualty for the entire contest and that is pretty good, considering there were a total of 327 launches. The diagnosis for the crash pointed to a loose battery wire connection. Other than that, the contest had no major electrical problems. There were no radio interference problems due to correct matrix grouping of flyers to avoid 3IM. We would like to thank Gary Anderson (American Sailplane Designs, for donating the prizes for the raffle, Bob Beemer (Beemer R/C West Distributors Inc.) for the use of the Multiplex number bibs, and Cyril Rahm for the use of his winch and retriever. Thanks to all the people that made this contest a success, the workers and members of C.A.S.L.

The planning is already underway for the 1991 Southwest Regionals — the Southwest's first and best soaring contest. Be there!

Chuck Wehofer
P.O. Box 2472
Chandler AZ
85244-2472

Sharing The Word

...by Gordon Jones

How many of you go out of town to attend contests? I would venture to say that there are relatively few who really get out and go places. And, why not?

Obviously a good many do not care for contests and are content to fly at their home field. Others are interested in contests, but never hear about them until they read about them in publications, such as this one. Why doesn't the word ever get out in time for the dates and places of contests to be of use? While the AMA attempts to put a complete listing in their magazine, there are space constraints and the usual problems such as a club submitting the sanction too late to be published. Add to this the fact that clubs in the same state or in the same geographical location don't really share information as well as they could.

Here in Texas, we have solved that problem to a great extent. Every winter, while everyone is working in the shop building for the summer months, a group of volunteers get together for the annual "Texas Soaring Conference". These hardy souls come from all over the state to sit down over coffee and hash out the contest schedule for the coming year. It is composed of officers from each club, or their designated representative, and they come with the authority to fight over the best contest dates. In this way we don't have contests on the same weekend, and we can separate the various types of contests so that we don't end up with all cross-country events in one month and the like. At the same time, contests can be designated as NSS or LSF contests, and there are no conflicts. Also, during this gathering, a date and location is set for the state contest: the "Texas National Tournament" (TNT). This contest is shifted around the various clubs and larger flying sites from year to year. This gives each area of the state a shot at hosting this contest and allows some interplay with regards to obtaining support from other clubs or individuals. If a club doesn't have a CD that has done a major contest like this before, and wants some help, there are people who can explain the logistics and procedures to make it all run smoothly. We have even had one TNT where the CD and equipment came from out of town so that the local club could sponsor the event for the first time. This cooperation works well, and it provides a means of communication between the different clubs. It also inspires more people to get more involved in other aspects of the hobby. At the end of the conference a list of contests is provided to each club, and the date and place which has been set up for the TNT. Upon returning to their home city, the list is then passed out at club meetings and the information is distributed via the newsletters. This way the word gets out and people can plan some trips for contests during the summer in other parts of the state. And some of us can plan trips, that will include the wives, to different places and keep in good stead with them, too.

This interaction between the clubs has some really good side benefits, as well. We are able to share the latest in ideas, and designs from around the state and pass on many, as well. This includes information on the latest building techniques and ways to run a contest more efficiently. Plus, you get to see and meet more people with the same interests, and you see other flying fields as opposed to the same old field. These benefits make the whole thing more interesting and more enjoyable for all. At any rate, that is the way that we do it down here and I thought I might just pass it along in order to generate some ideas so the word can get around a little better.

Gordon Jones
214 Sunflower Drive
Garland, Texas 75041

Mark Allen, Flite Lite Composites, is moving June 1. More details to come..

My Sad Story

...by Don Anthony

At a major contest I encountered a situation that I believe should be shared with other flyers. I want to do this so that they will be aware of the possibility and perhaps save themselves the loss of contest points, the loss of a plane or damage or injury to other flyers. Since this is the 2nd time this problem has happened to me I am concerned that the problem may be widespread enough to require some changes in equipment or procedures to eliminate it altogether.

I was a contestant in a two-day contest. Day one was just standard competition.....high winds, spotty lift and a small, slippery landing zone. I flew three rounds on day-1 and the first round on day-2. I also was flying two sailplanes on one transmitter, an Airtronics SP7.

Recognizing the great potential for a Murphy's Law error, the transmitter and the planes had been fine-tuned the previous week so that only the servo-reversing switches had to be set to the correct position for each aircraft.. Trims had been fine-adjusted in both planes so that they were identical for the trim tab settings on the transmitter, meaning that I had no trim to worry about when I changed planes.

Flight number five was very exciting. I stepped up to the winch. I put in about 5 clicks of down trim for stability insurance considering the gusty, cross wind launch I was about to undertake. I launched.....and my plane went bonkers.

I popped off at about 15-feet. I could not hold the plane. It was stalling and falling off on a tip and traveling rapidly down wind. I dropped the flaps and tried to pancake the thing onto the ground at the bottom end of a swoop. I thought that I had succeeded, but it refused to stay on the ground, popped up about five feet, stalled and went in nose first. Ripped the wing jointing tape, but no other damage except for my peaked out blood pressure and the angry series of thoughts starting with "What the !!!??? happened?"

After a quick retape of the wing joints, I checked the control positions. I was shocked to discover that my normal elevator trim resulted in about 3/8 inch up-elevator deflection at the control surface. There was no apparent reason for this condition. I decided to assume that the servo had become "uncentered" and I picked up the change by adjusting the clevis. A quick hand toss to establish approximate flying trim and I was back in the line-up. I launched and flew a slightly squirrely plane to a landing with the plane still in one piece.

Two flight groups later, I was on the winch again with my other ship, a Mariah 2-meter plane. I had checked and double-checked, and everything seemed ready to go. Since I had been flying Mariah for about six-months with no transmitter changes, I was confident in the predictability of the plane's performance. I was wrong.

I launched and had a fight on my hands from the second the plane left my hands. After separation, I was faced with a series of stalls and instability that kept me on the sticks continually. I put in full-down trim and, by also adding a little down stick I was able to keep a reasonable glide path. I managed to get the plane on the ground in one piece. This was a major triumph. Needless to say, I blew the round.

At this point in time, with two planes suffering from mysterious elevator trim shift, I decided that the prudent thing to do was withdraw from the contest, and I did! The next day I was hot on the investigative trail. Both receiver batteries where fine. The push-rod control system was tight and the servo trays were solid as a rock. That left the transmitter.

Now the Airtronics SP7 transmitter has a number of special function switches. Among these are an Elevator pre-set #1 & #2 switch and a flap-elevator mixing switch. I DO NOT use these switches. I also took great pains to zero-out the control pots associated with these switches so that the switches would have no effect. That way I don't have to worry about what position the switch is in (i.e., with the pots zeroed, the switch position makes no difference). I have been flying with this set-up for the past six months.

Imagine my surprise when I threw the flap-elevator mixing switch and saw my elevator move about a half-inch! Also, the elevator preset switch was causing appreciable trim change. How in the hell could this happen? The control pots are under a cover and require a small screwdriver to adjust.

I **do not** have a sure answer for this but I do have a possible scenario: Assume that a flyer is using other than his regular timer and that the timer goes to the transmitter impound to pick up the flyer's transmitter for that flight. Now the timer is going by frequency. Also, being unfamiliar with what the flyer's transmitter looks like, the timer would take what ever the impound manager hands him.

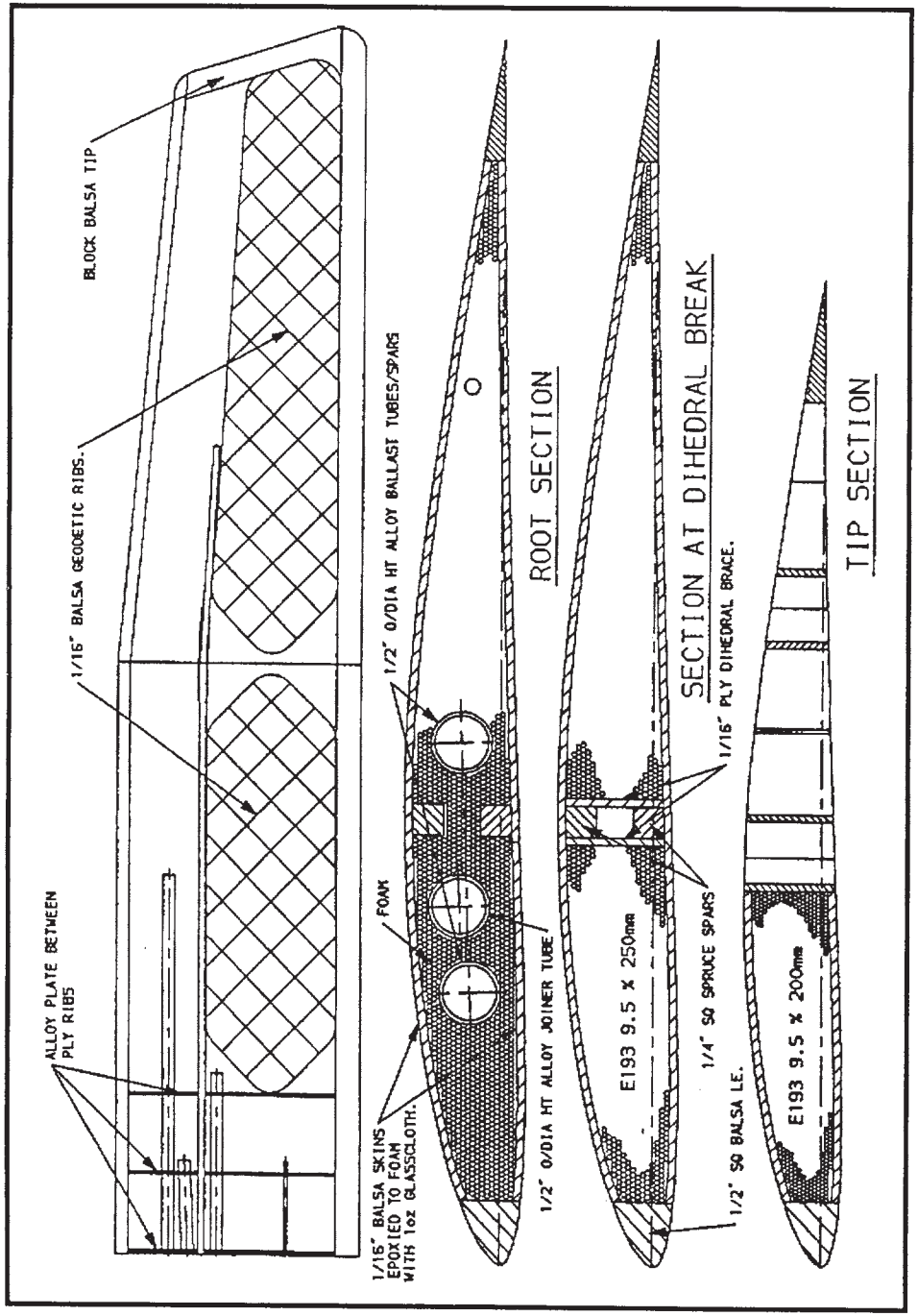
As a pilot, when I am handed my transmitter, I barely glance at it. I do however, religiously check all the functions I fly with. If a flyer was using the elevator preset switch for a launch trim setting, during the check out, when the switch was set and the elevator didn't move, the pilot **may** have whipped out his handy screwdriver and reset the pot for his normal elevator throw. Who knows! Perhaps, about this same time, the pilot looked closely at the transmitter and said, "Hey, this ain't my transmitter!" and sent it back to impound to be exchanged for the correct unit — with a built in booby trap for the unsuspecting real owner of that transmitter.

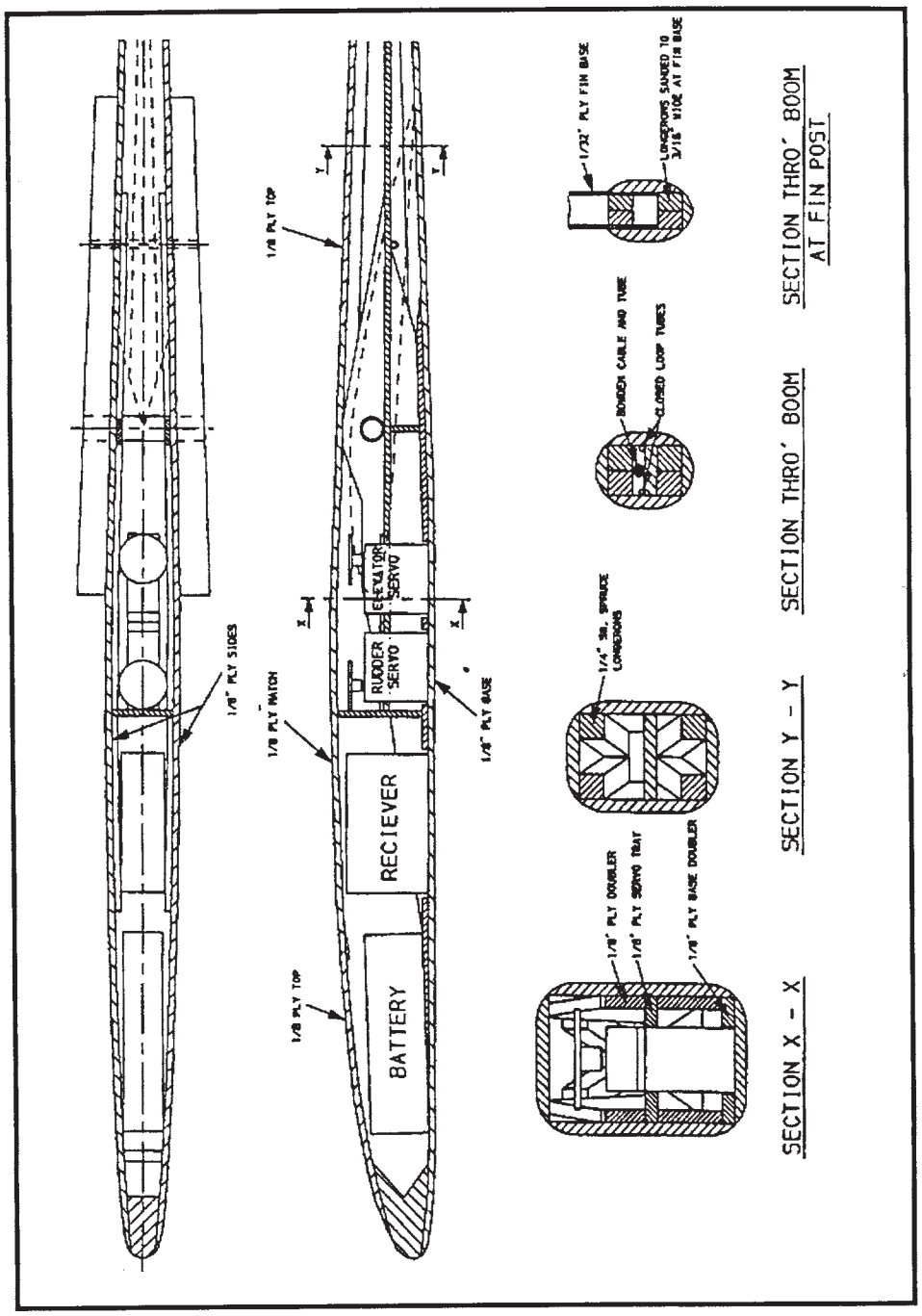
I do not know if the above happened. I do know that I did not do any pot diddling at the contest. It also could be that the pot was changed a long time ago, and the controlling switch just happened never to be used until round #5 of the contest. Whatever! The important points I want to make are: 1. If you receive a transmitter from impound, check to see if it is yours before you diddle any adjustments. 2. If you do accidently adjust pots in a transmitter that isn't yours, please inform impound so that the real owner can be alerted. 3. I plan to mark my control cover by painting it some distinctive color and putting a large name tag on it. By this I hope to make it a lot easier to **not** mistake my transmitter for someone else's. 4. My check list is going to be expanded to include things that couldn't possibly go wrong.

In case you think that perhaps I am crying wolf where no wolf exists, this is the second time that this has happened to me. The first time was at a Southern contest where I was flying a V-tail and using an old Futaba transmitter. The fanciest thing on that old four-channel box was a set of servo reversing switches, recessed, on the rear panel. I completed the contest and went home.

Friday night, I put the xmitter and plane on charge as I was going to fun-fly Saturday at the local field. Saturday, I went to the flying field and got my sport winch set up. I took my plane and transmitter to the winch, wiggled my control surfaces, checked my trims, hooked up and launched right into excite-ment city! I did some unexpected barrel rolls, at least one end-over-end tumble and other interesting maneuvers before the plane packed it in into the grass. Fortunately, other than my ego, the only damage was a cracked stab and bruised wing on the plane.

Casual inspection and testing revealed that both my elevator and rudder were reversed. Now there was no way for the reversing switches to be thrown by accident. I believe that at the contest in which I flew the preceding Sunday, after my last flight, my transmitter was handed out by accident. The pilot must have checked his plane and control action and corrected the switches for his own application. Who know, he may have flown the round with my transmitter and never knew that he had some one else's transmitter. Whatever. When the transmitter went back to impound, it was booby trapped for the rightful owner....me! And when I went to fly that next Saturday, it caught me!...*continued on pg23*


BLOCK BALSA TIP
1/16" BALSA GEODETIC RIBS.
ALLOY PLATE BETWEEN PLY RIBS
1/16" BALSA SKINS EPOXIED TO FOAM WITH 1oz GLASSCLOTH.
FOAM
1/2" O/DIA HT ALLOY BALLAST TUBES/SPARS
1/2" O/DIA HT ALLOY JOINER TUBE
ROOT SECTION
E193 9.5 X 250mm
1/4" SQ SPRUCE SPARS
1/2" SQ BALSA LE.
SECTION AT DIHEDRAL BREAK
1/16" PLY DIHEDRAL BRACE.
E193 9.5 X 200mm
TIP SECTION


1/8" PLY SIDES
1/8" PLY TOP
1/8" PLY MATCH
1/8" PLY TOP
1/8" PLY BASE
RUDDER SERVO
ELEVATOR SERVO
RECIEVER
BATTERY
1/32" PLY FIN BASE
LONGERONS SANDED TO 3/16" WIDE AT FIN BASE
BOWDEN CABLE AND TUBE
CLOSED LOOP TUBES
1/4" SQ. SPRUCE LONGERONS
1/8" PLY DOUBLER
1/8" PLY SERVO TRAY
1/8" PLY BASE DOUBLER
SECTION X - X
SECTION Y - Y
SECTION THRO' BOOM
SECTION THRO' BOOM AT FIN POST

Understanding Thermal Soaring Sailplanes

Aspect ratio effects

...by Martin Simons

Once again, computed comparisons show how development might proceed. In Figure 14 a wing design of maximum allowed area with a span of 5 metres, is sketched. This wing has the same section, Clark Y-PT, as the 4.5 metre wing whose polar appeared earlier in Figure 13. A similar type of taper has been used for both. The wing loading, 3 kg/sq m, is assumed to be the same. (This might not be easy to achieve in practice, but the assumption is made for comparative purposes.) The crucial difference between the two wings is the aspect ratio, 15 in one case, 18.5 in the other. The high aspect ratio wing aims to reduce vortex drag, even though this costs some additional profile drag owing to the low Re of the narrow chords. The lower aspect ratio wing tends the other way, vortex drag will be greater but profile drag is saved. The resulting polars are compared in Figure 15, the open circles representing the 5 metre wing, the solid dots showing the 4.5 metre wing. The tabulated figures (Tables 1 & 3) give the L/D ratios and sink rates at each flight speed for the two wings. (The actual values would be worse because of the drag of tail and fuselage, but the comparison remains valid.)

There is not very much difference in the polars for these two wings and if they were used on two otherwise similar models, any difference in flight would hardly be detectable. They stall at the same airspeed. The 5 metre wing would have a better low speed performance; the computer gives minimum sink rate of 0.257 m/s for this wing against 0.278 m/s for the shorter span. Assuming, which is reasonable, that adding the drag of fuselage and tail would not greatly change the **difference** in performance, theoretically, the model with high aspect ratio wing, perfectly trimmed and flying in the same air, would be 1.26 metres higher than the 4.5 metre wing after one minute or, after ten minutes, 12.6 metres (41 ft). This could conceivably show up in a contest between equally skilful pilots. The best L/D ratios of the two wings are very

...continued on page 16

Table 3
Performance Polar for
Wing Number 2

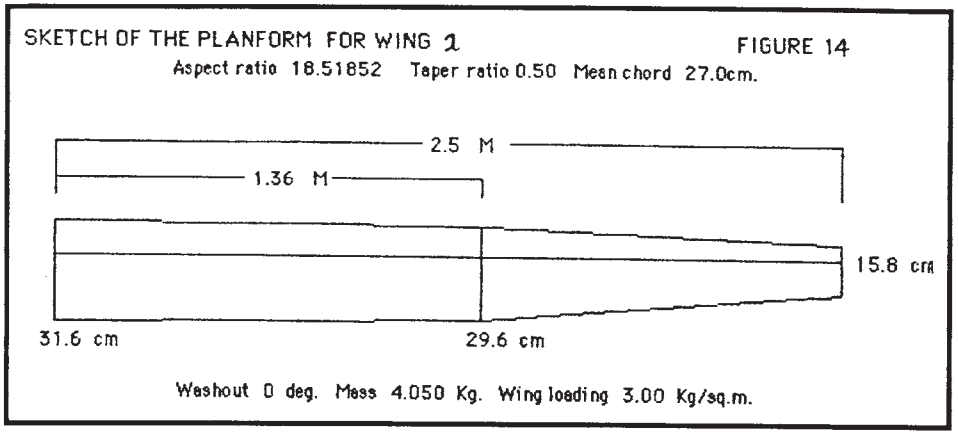
Clark - Y - PT,
Wing Loading = 3.00 kg./sq. m.
Span = 5.00 metres,
Aspect Ratio = 18.51852
Root Chord = 31.60 cm.
Mid Chord = 29.60 cm.,
Taper Ratio = 0.50

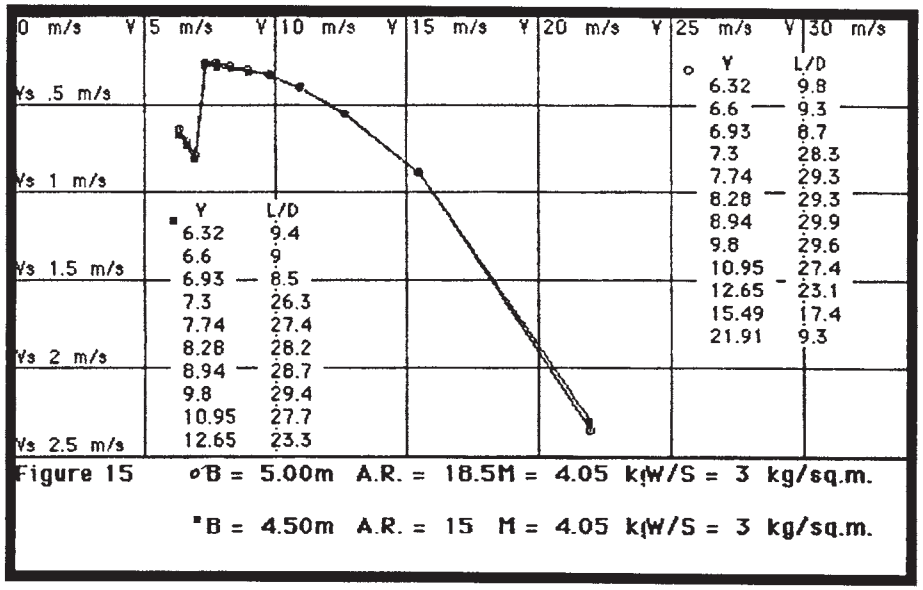
Velocity Sink	L/D	
Metres/Sec	M/Sec	Ratio
21.92	2.347	9.34
15.50	0.887	17.47
12.65	0.547	23.15
10.96	0.400	27.41
9.80	0.331	29.63
8.95	0.298	30.00 *
8.28	0.282	29.38
7.75	0.264	29.30
7.31	0.257 *	28.38
6.93	0.788	8.79
6.61	0.705	9.37
6.33	0.640	9.89

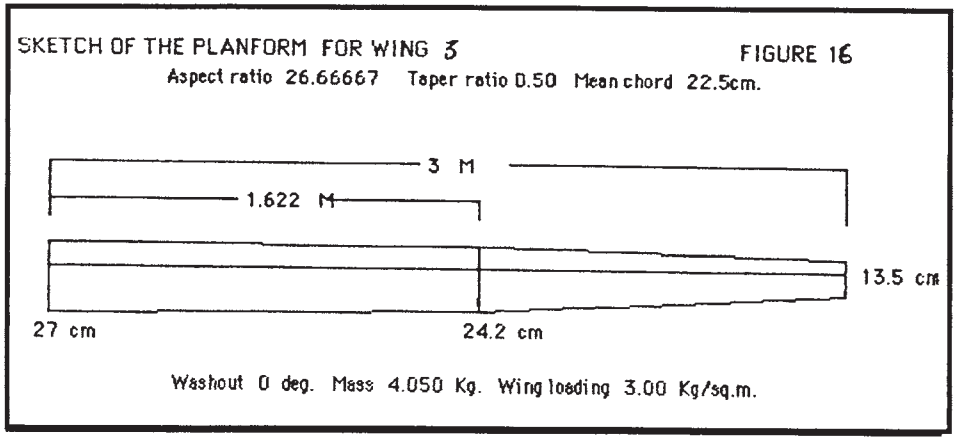
Table 4
Performance Polar for
Wing Number 3

Clark - Y - PT,
Wing Loading = 3.00 kg./sq. m.
Span =6.00 metres,
Aspect Ratio = 26.66667
Root Chord = 27.00 cm.
Mid Chord = 24.20 cm.,
Taper Ratio = 0.50

Velocity	Sink	L/D
Metres/Sec	M/Sec	Ratio
21.92	2.435	9.00
15.50	0.910	17.02
12.65	0.567	22.31
10.96	0.431	25.44
9.80	0.342	28.63
8.95	0.302	29.66
8.28	0.274	30.21
7.75	0.249 *	31.09 *
7.31	0.348	21.01
6.93	0.753	9.21
6.61	0.668	9.90
6.33	0.600	10.54







Understanding Thermal Soaring Sailplanes ...continued

close, 29.4 and 30.0. At the high speed end of the scale, the lower aspect ratio wing has a very small advantage showing up at flight speeds above 15 m/sec, but not enough to matter. (15 m/s = 54 km/h = 33.6 mph.) The implication is that for this model, the swings/roundabouts equation is nearly in balance. The saving of vortex drag achieved by the higher aspect ratio is just about offset by the increased profile drag due to the lower Re numbers.

In Table 4 figures are shown for a 6 metre span wing of aspect ratio 26.66, the geometry shown in Figure 16. To build a model with this aspect ratio at this weight might be an impractical proposition but the theoretical comparison is interesting. There is a further improvement in minimum rate of sink, the best L/D improves by about one point, but the 4.5 metre wing does slightly better at high speeds. The polar curves appear in Figure 17.

Moving in the other direction, towards smaller spans and lower aspect ratios, the original 4.5 metre wing is compared in Figure 18 and 19 and Table 5 with one of 4 metres span, aspect ratio just under 12. There is virtually no difference between the two at high speeds. The 4.5 metre wing does better at low speeds, the advantage amounting, theoretically, to 17.4 metres (58 ft) difference after ten minutes in the same air. The 4.5 metre wing also has a better maximum L/D ratio. It seems that here the losses of vortex drag caused by reducing the aspect ratio, are beginning to outweigh, though only very slightly, the savings of profile drag due to higher Re numbers.

Table 5
Performance Polar for
Wing Number 4
Clark - Y - PT,
Wing Loading = 3.00 kg./sq. m.
Span = 4.00 metres,
Aspect Ratio = 11.85185
Root Chord = 39.80 cm.
Mid Chord = 36.80 cm.,
Taper Ratio = 0.50

Velocity Metres/Sec	Sink M/Sec	L/D Ratio
21.92	2.253	9.73
15.50	0.883	17.56
12.65	0.530	23.86
10.96	0.401	27.31
9.80	0.350	28.04 *
8.95	0.327	27.34
8.28	0.315	26.27
7.75	0.311	24.91
7.31	0.307 *	23.77
6.93	0.825	8.40
6.61	0.750	8.81
6.33	0.712	8.88

Continuing to an even lower aspect ratio, Figures 20 and 21 together with Table 6 compare the polar of the 4.5 metre wing with one of 3 metres span and aspect ratio only 6.67. This speaks for itself. The low aspect ratio wing is considerably worse at all airspeeds less than 15 m/s, and flown at minimum sink would be 81 m (266 ft) below the 4.5 metre wing after ten minutes. Vortex drag has increased considerably. This would undoubtedly be noticeable in competitions. The very slight advantage at high speeds would not compensate for this relatively poor soaring ability.

Three metres, or just under ten feet span, is a very popular size for a model sailplane. Usually, however, such models are not built with large wing areas, so have aspect ratios around 12 to 15. To make a final point in this section, Figure 22 with Table 7 compares the polar of the 3 metre span model of Aspect ratio 6.7, from Figure 21, with a much more 'ordinary' 3 metre model with the same wing loading and aspect ratio twice as much. The remarks above about the importance of using the largest permitted wing, should be considered again in the light of this result. The three metre sailplane is better at low speeds than the low aspect ratio, large area type of similar span, but is inferior at higher speeds. Evidently, the recommendation, to build large models, does not mean simply increasing the wing area while keeping the span down to more or less standard limits. The aspect ratio, and hence the wing span, must increase in proportion.

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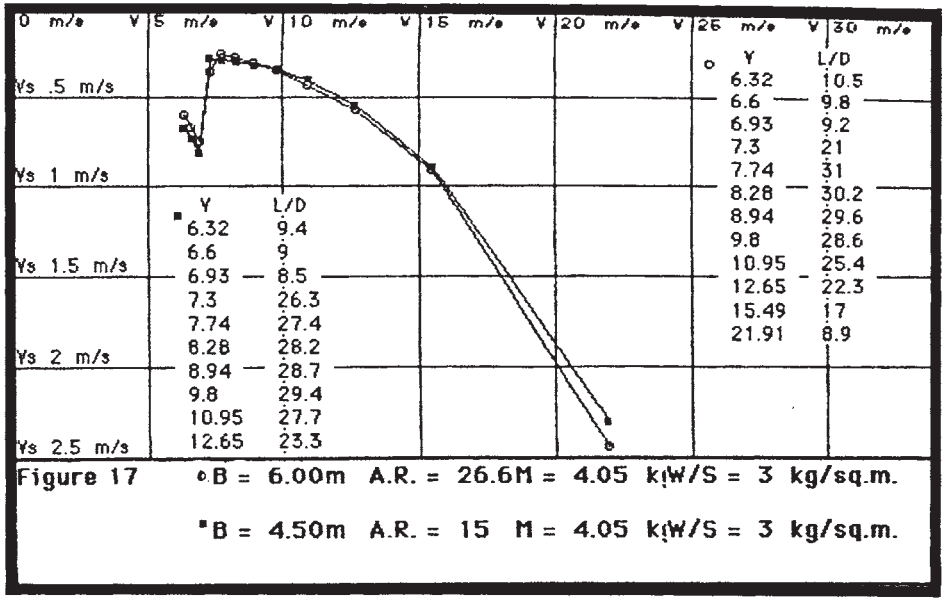
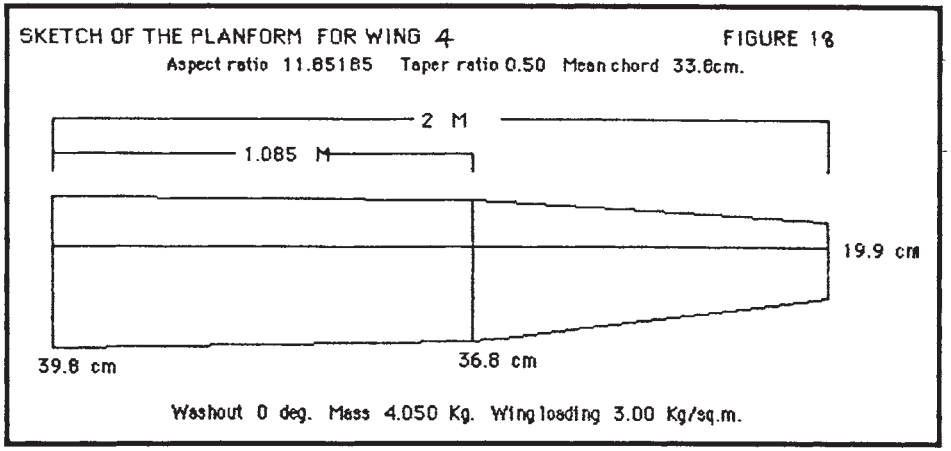


Figure 17 *B = 6.00m A.R. = 26.6M = 4.05 kW/S = 3 kg/sq.m.

*B = 4.50m A.R. = 15 M = 4.05 kW/S = 3 kg/sq.m.



John Dvorak has written to let us know that they will be selling this patch at the International Slope Race (July 7-8 at Davenport, CA.) at AMA's cost — $3.25. John also says, "I'll mail them for a SASE and the $3.25."

John Dvorak
c/o South Bay Soaring Society

Understanding Thermal Soaring Sailplanes ...continued

At all flight speeds, as comparison of Table 2 and Table 7 show, the 3 metre, aspect ratio 12.7 wing is significantly poorer than the 4.5 metres, A = 15 wing. The three metre model flown at minimum sink, would be 28 metres (91 ft) lower after ten minutes, and also would be inferior in penetration.

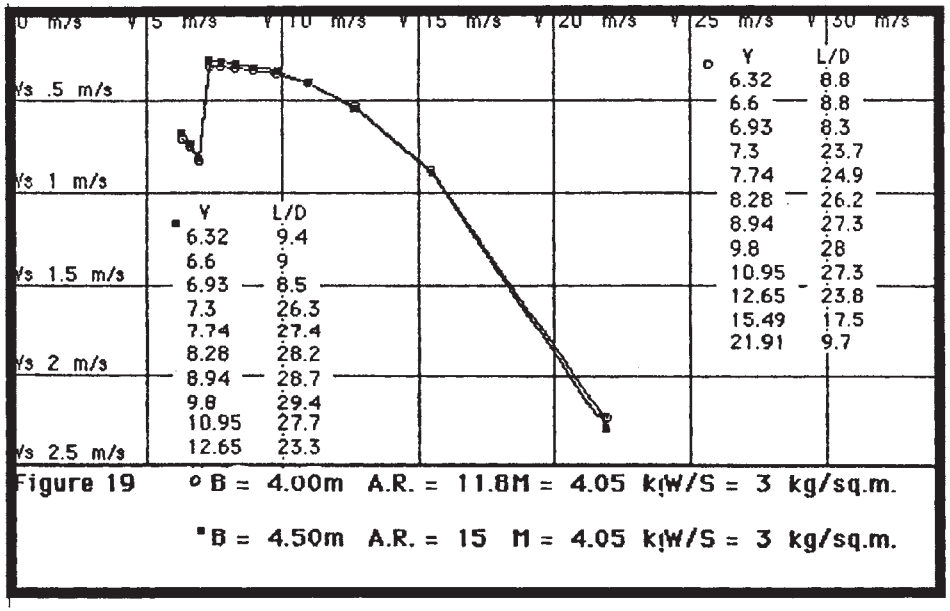


Figure 19 o B = 4.00m A.R. = 11.8M = 4.05 kW/S = 3 kg/sq.m.

*B = 4.50m A.R. = 15 M = 4.05 kW/S = 3 kg/sq.m.

Summarizing

Generalizing from these results, a model for this type of soaring should be built with a wing span not less than 4 metres. To gain a little climbing ability, at some slight cost in

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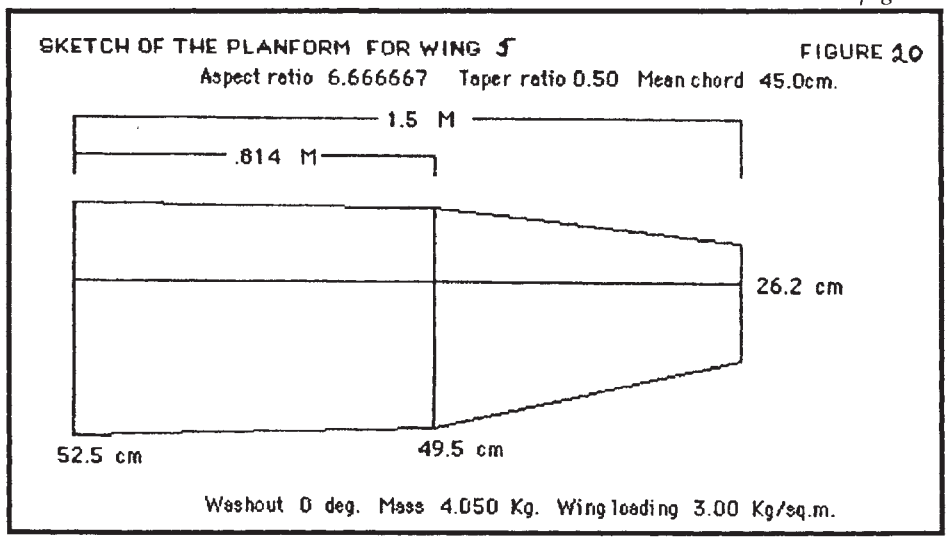

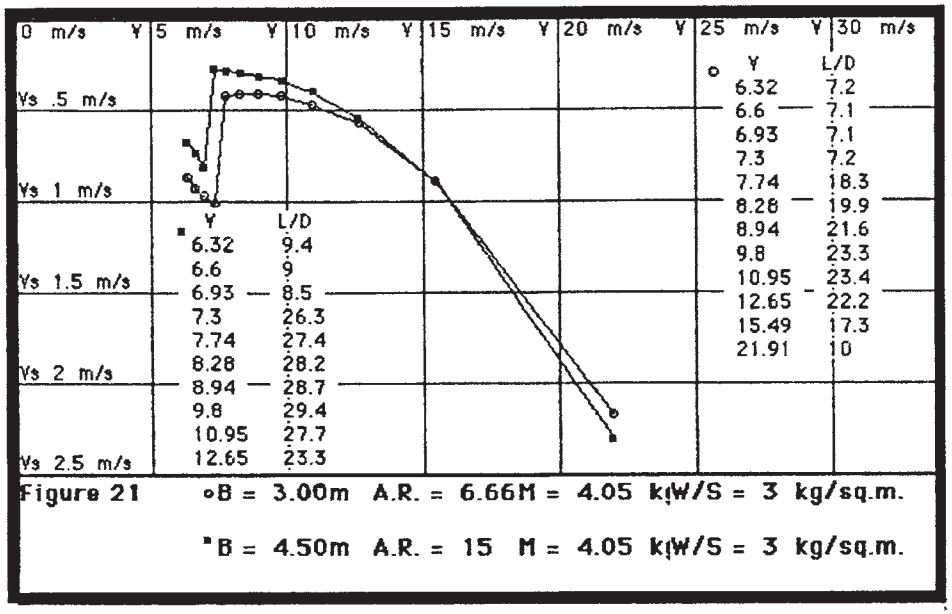

Figure 21 oB = 3.00m A.R. = 6.66M = 4.05 kW/S = 3 kg/sq.m.

*B = 4.50m A.R. = 15 M = 4.05 kW/S = 3 kg/sq.m.

Table 6
Performance Polar for
Wing Number 5

Clark - Y - PT,
Wing Loading = 3.00 kg./sq. m.
Span = 3.00 metres,
Aspect Ratio = 6.666667
Root Chord = 52.50 cm.
Mid Chord = 49.50 cm.,
Taper Ratio = 0.50

Velocity Metres/Sec	Sink M/Sec	L/D Ratio
21.92	2.173	10.09
15.50	0.895	17.32
12.65	0.568	22.26
10.96	0.467	23.45 *
9.80	0.421	23.31
8.95	0.413 *	21.65
8.28	0.415	19.97
7.75	0.423	18.31
7.31	1.009	7.24
6.93	0.969	7.15
6.61	0.926	7.14
6.33	0.871	7.27

Thermal Flying Wing Contest University of California at Dominguez Hills

(Soaring Union of Los Angles — SULA Field)
June 16, 1990
Three Flights to Make 15 Minutes
Current AMA License & Identification on Plane is Required
Entry is $5.00
Plane can have no separate horizontal tail.
Only other plane limitations are standard FAI rules.
Ability to launch from 12 volt winch with retriever.
CD: Dave Jones (213) 316-3814 Evenings

Understanding Thermal Soaring Sailplanes ...continued

penetration, a span up to 6 metres might be used but in practice anything between 4 and 5 metres would be satisfactory. Any sailplane within these span limits, with the largest permitted wing area, would be competitive, the large spans being slightly better in weak thermals, the smaller spans being easier to handle in rough air and marginally better at high speeds. The 4.5 metre (14.76ft) span, aspect ratio 15 wing seems a very fair compromise.

Martin Simons
13 Loch Street
Stepney
South Australia 5069

Table 7
Performance Polar for
Wing Number 6
Clark - Y - PT,
Wing Loading = 3.00 kg./sq. m.
Span = 3.00 metres,
Aspect Ratio = 13.33333
Root Chord = 26.25 cm.
Mid Chord = 24.75 cm.,
Taper Ratio = 0.50

Velocity Metres/Sec	Sink M/Sec	L/D Ratio
21.92	2.456	8.92
15.50	0.944	16.41
12.65	0.660	19.17
10.96	0.486	22.55
9.80	0.409	23.99
8.95	0.369	24.28
8.28	0.340	24.36 *
7.75	0.325 *	23.82
7.31	0.360	20.30
6.93	0.837	8.28
6.61	0.756	8.74
6.33	0.705	8.98

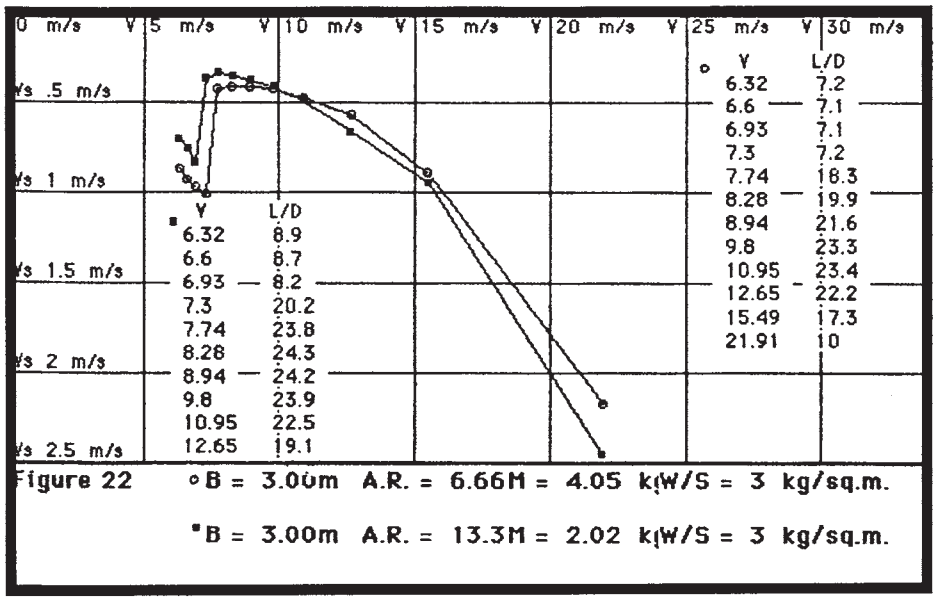

Figure 22 ∘B = 3.00m A.R. = 6.66M = 4.05 kW/S = 3 kg/sq.m.

*B = 3.00m A.R. = 13.3M = 2.02 kW/S = 3 kg/sq.m.

The DIGEST'S MAIL

On the Subject of SMTS

Dear Jerry,

The SASS officers are still considering sponsoring an SMTS "non-competition" (practice) this summer to enable interested parties to get familiar with the speed and distance events so the club can decide whether or not to include them in the 1991 contests.

On the subject of SMTS, I'll put in my two-bits worth. I selfishly want to see the 75 ounce weight restriction go away to be replaced by the 12 ounce/s.f. wing loading limit. The reason this is selfish is that my Lovesong weighs (don't laugh — the extra weight is due to several repairs) 79 ounces. Also, I think locking out pilots just because they fly larger ships is inappropriate, although I have to admit a Lovesong can be built under the 75 ounce limit. The cost and time-to-build differential between, say, a 76 ounce Lovesong and the lighter Falcon 880 or Camano is really insignificant, though. Whether the Lovesong, because of its higher aspect ratio wing, has an unfair performance advantage over the smaller ships is a matter for debate. Maybe our practice session will shake out an answer — except nobody around here is flying an 880. SASS, at least, will be using the wing loading limit rather than the absolute weight limit if we sponsor any SMTS events. After all, this is Lovesong country (and they fly better heavier: higher Reynolds Number).

Sincerely, (signed) Waid Reynolds, Seattle Area Soaring Society (sec./treas./ed.), 12448 - 83rd Ave. S., Seattle, WA 98178

Response: Thanks for the input Waid. I have a few planes in this condition myself, and I can certainly understand your point of view. Your letter reminded me that now is probably a good time to to tell the readers about the F3B/U.S.A. newsletter. Byron Blakeslee, in the latest issue of *Model Aviation*, says:

"F3B/U.S.A. is the special newsletter for fans of F3B and Sportsman Multi-Task flying. The objective of F3B/U.S.A. is to print the latest news and information F3B and SMT fliers need to keep up with this fast-moving portion of the sport. Subscriptions were formerly handled out of an Irvine, CA P.O. Box, but since the first of the year editor Randy Reynolds has taken over responsibility for the subscription list. Subscriptions are $12 per year for six issues. Please send your check to Randy Reynolds, 122 E. Uintah St., Colorado Springs CO 80903 (Tel. 719-471-3160). If you sent a check to Irvine and haven't received a newsletter, please check with Randy to see if your name somehow missed getting on the list." Jerry

♣ ♣ ♣

Dear Jim,

S-MTS last year...We, at SOAR, flew MTS with some changes. We put a cap of 30 seconds on speed, 12 laps 4 minutes for distance, and 6 minute duration with FAI landing tape. There was no relaunch and no working time. It worked very well, as both the top guns and the sportsmen flew together. With the cap on speed and distance, there is no need for a 75 oz. or 12 oz. / sq. ft. restriction. the speed was set to the 1984 qualification plus 3 seconds. The distance task was 6 laps for the first round. If you did not make 6 laps, it stayed at 6. If you made 6 laps or more, it went to 8 laps in the next round. Then, it went to 12 laps in the 3rd round.

In 1984, I flew in the finals in California. I was flying a 107 inch SAGITTA flat wing with ailerons and spoilers. This airplane is a very good MTS airplane, BUT it weighs 80 oz. (too bad). Also, if you figure the wing loading, it comes out to be 12.67 oz./ sq. ft. (too bad, again).

Forget the restrictions on the airplane! Design the task to fit what real people are flying.

At our contest, we had COMETS, KINGS, SAGITTA, ANTARIES, and several FF originals. Everyone...*continued on page 22*

The Digest's Mail...continues

enjoyed themselves and had a sense of accomplishment when it was over. WE ALL HAD FUN!

Sincerely, (signed) Wayne Fredette, 17841 67th Avenue, Tinley Park, IL 60477

Response: **Thanks, Wayne, for sharing the S.O.A.R. experience with us. It is good to know that the blend of F3B and S-MTS was successful. Your modifications of F3B rules to make them applicable to the needs of S-MTS should well serve as a model for other clubs.**

I agree that the SAGITTA can be a formidable machine in the hands of a skilled pilot but, also, would have to say that it needs a "modern" airfoil to reach its full potential...and perhaps a straight wing with ailerons.

I can't fully agree with you about forgetting the sailplane limitations and use what "real" people are flying. The idea is O.K., PROVIDING that some means of classifying pilots and structuring contests around a pilot limitation rather than a sailplane limitation. Most of us are fully aware of the possibilities with the latter type of structuring...and I am pleased to say that some clubs have reported that they no longer hold contests based on sailplane type (Unlimited, Standard, 2-Meter) but, rather, allow any pilot to fly anything he wants and is comfortable with — BUT, divides the pilots into Beginner, Intermediate and Expert, or Sportsman and Expert. Personally, I favor the latter, and can look back on the many years that the Eastern Soaring League has done just that.

Keep up the good work, and please let us know how the system adopted by S.O.A.R. continues to work in 1990. Happy Soaring, Jim

♣ ♣ ♣

Flying in Canada — Southwestern British Columbia

Dear Jerry,

Locally in Victoria, there are both types of soaring — thermal and slope. We are blessed with a pretty good slope (Beacon Hill Park) over looking the Juan de Fuca Straight and Port Angeles. We get some really good winds from the water, so most any slope monster will fly. The problem is landing. The slope has a pretty bad rotor and there are usually a lot of tourists walking around having a look. The best place to land is on the slope face, but that leads to ding repairs in a hurry. There is a large field behind the slope, but the tourists usually are in the way. It is funny how trusting people are. Rarely does a person move even when a glider is heading right for them. I guess they really trust our flying skills.

Our thermal site is on a farmers field. It is unfortunately closed for a couple of months of the year during haying season. That is when most people switch to slope. Again, most people thermal fly rather than slope. Some aren't into the mach 2 "crash" landings.

Most of the flyers are sport flyers who enjoy the hobby as a way to relax and get out of the house. Some do compete in the local events, but few go out of town. We have contests in Vancouver and northwest Washington.

The majority of people fly two to three channel polyhedral gliders (Gentle Ladies, Sagittas, Olympics, own designs...). A couple of guys do fly Windsongs and more are getting into the higher performance thermal ships. Construction materials and techniques are very conventional... like built-up wings and fuselages. Few have used composites for the majority of their aircraft. We do not have good sources for Obechi, Rohacell, honeycomb fiberglass, etc. No one uses these materials, so lack of availability is not a problem.

On the slopes, a lot of people just fly what they normally fly in thermal. Those that are getting better and want to try slopers which are more aerobatic and fast, usually fly the Banzai or a similar two channel aileron/elevator home-built aerobatic ship. The popular airfoils are the Eppler 374 and mystery home-builts. Slope ...continued on page 23

The Digest's Mail...continues

scale is being done and has been pretty successful. Most of the slopers use a built-up fuselage with fiberglass covering and foam core wings.

I think one of the problems with the lack of varied slope planes is that the kit costs are high compared to yours and most people aren't into going fast, landing fast (oops, that should get me into lots of trouble!). This also applies to thermal ships. A Sagitta 600 kit can sell for as much as $125 Cdn, and slope ships twice as much as what they cost in the U.S. I am sure that when more reasonably priced kits get on the market, and interest and skill improves, more will be getting into the high performance slope and thermal ships. I intend to produce several kits in this area at reasonable prices.

Sincerely yours, (signed) Jeremy Teo, 2997 Anderson Ave., Port Alberni, BC V9Y 2V3

Notes...continued

of glassed wings is also a real plus.

While on the subject of vacuum bagging, I'd like to plug one of my friend's efforts. Julien Tamez', Channel One Productions, markets three tapes which, for the money, are a steal. The bagging techniques utilized at MCV are the same as those on Channel One's (vacuum bagging) tape. If you're looking for info. on the technique, Julian's tape is an excellent tutorial, is highly recommended and, in my opinion, really worth the bucks! The Falcon tape has an epilogue section, new with this volume, which tells about what we would have done differently if we had to do it over again. If you would like to know what these things are, I guess you need see the tape!

D. O. Darnell
Model Construction Videos
4227 E. 83rd St.
Tulsa, Ok. 74137

Sad...continued...I admit that I do not know if the above scenario is true. However, circumstantial evidence is fairly strong. I flew one plane with one transmitter. At that time, it was my one and only plane. I didn't throw the switches and the only time the transmitter was out of my control was when it was in the custody of transmitter impound at the contest. Again, the point is that I believe that a wrong transmitter can be inadvertently handed out. I also believe that a pilot, under the pressure of launch preparation, may diddle the transmitter before he realizes that it is the wrong transmitter. And if it happens to you, please make sure that every interested party is informed. NO one needs these kind of surprises.

Don Anthony
7562 Langmuir Ct.
Dublin, Ca. 94568

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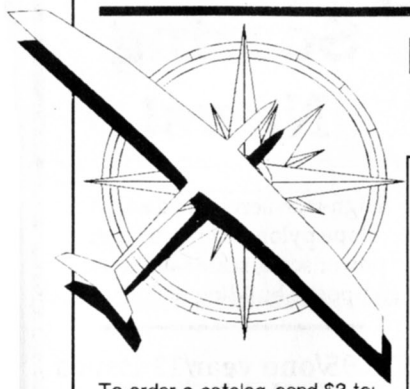

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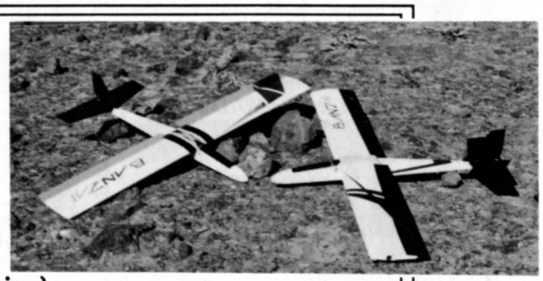

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