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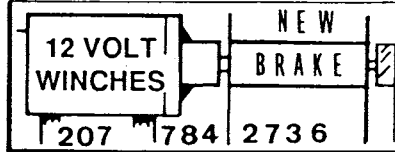
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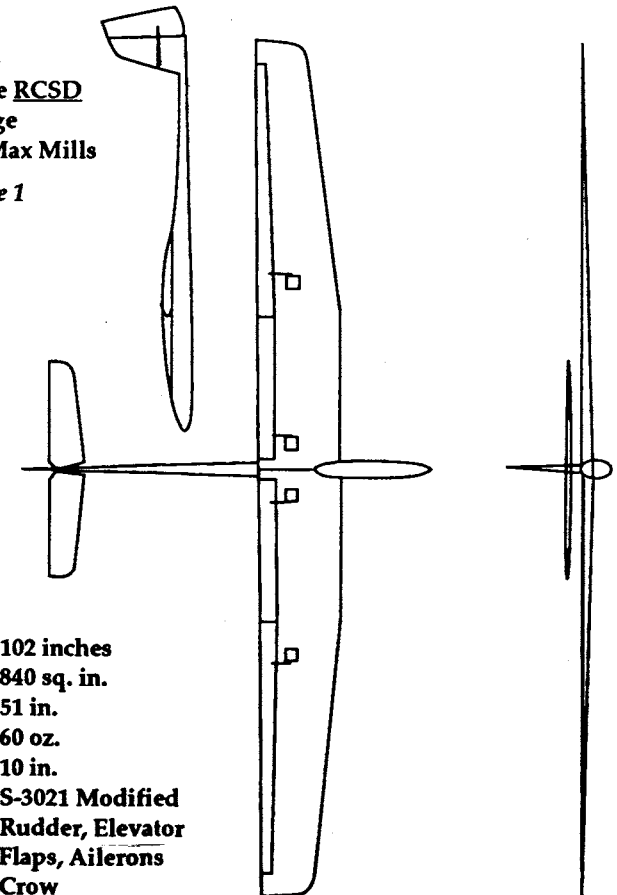
Vol. 6

No. 8

August, 1989

# WESTWIND

An entry in the RCSD  
Challenge  
...designed by Max Mills  
Photo on page 1



Wingspan: 102 inches  
Area: 840 sq. in.  
Length: 51 in.  
Weight: 60 oz.  
Root Chord: 10 in.  
Airfoil: S-3021 Modified  
Functions: Rudder, Elevator  
Flaps, Ailerons  
Crow

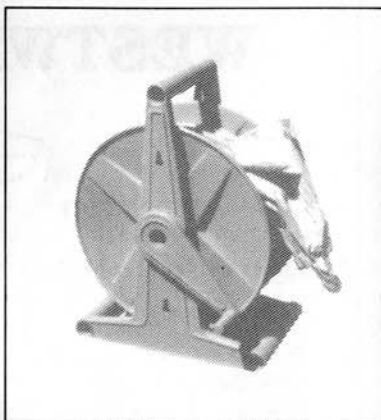
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## High Start

"Sportsman MTS" (Sportsman Multi-Task Soaring) is making good progress in the US, and several contests around the country are either planned or have already been staged. Later in this issue you'll see a report about the proposed rules for this type of contest that have come about through a questionnaire submitted to individuals and clubs around the country by Byron Blakeslee. A consensus has been reached, and I think you'll find the results most interesting.

Likewise, the **RCSD** Challenge sailplane entries have been received (8 of them) and the judges are in the process of choosing a winner — which may happen in time for the results to be included in this issue. Response was brisk, and any one of the designs submitted is a potential winner. This month's cover three-view depicts one of the Challenge entries — a sailplane that should be in production by the time you receive this issue.

The subject of **SCALE** has crossed the **RCSD** desk recently in the form of letters asking about when the next "Scale Issue" will be published. In answer, I am planning to make it the September issue...our third issue devoted to scale, and the first in two years.

Our articles about "electrics" have brought in many letters, both pro and con. Not everyone likes the idea of "power and propellers" because there is concern that **RCSD** will lose its "purist" approach to soaring, or that the sport will be "contaminated". I think those fears can be answered by stating that **RCSD** is and always will be a magazine devoted to pure soaring flight... BUT, the means of achieving enough altitude to begin soaring should be flexible enough to include such diverse methods as winch, hi-start, airplane tow, "piggy back" tow, hand-launch, slope launching, or even on-board electric motor with a propeller. Frankly, I don't really care how a sailplane arrives at soaring altitude as long as it becomes a true, pure soaring machine after it gets there. This means to me that the motor will be used primarily for launching, but also may be used as a means of saving the ship should it get into a position where it might otherwise be damaged or lost. Here lies the tricky part and perhaps the primary objection to having on-board power: isn't it "unfair" to have power on board that can be used to prolong a soaring flight? The answer to that is both yes and no; yes, if it is used in a contest where no one else has the same advantage, but NO if everyone else has the same advantage, or if it is used for the sole purpose of non-contest

"fun" soaring. Electrics are still too young to make a definite judgement about whether or not electric motors will destroy "purist" soaring, but I can sure recall many occasions when I wished I had one! To be honest, I don't think electrics will stifle pure soaring, but will enhance it! However, as with all such matters pertaining to soaring — YOU, collectively, will have to be the judges. I'd like to know how you feel — so please let me know. Read and enjoy.

**Happy Soaring,**  
**Jim Gray**



Designed by Max Mills, 3820 Cheraz N.E., Albuquerque, NM 87111, (505) 292-3510. The **WESTWIND** will be available in the full production version sometime this summer. For information on the kit, contact Hobbies 'N' Stuff, 9577 Osuna Road NE, Albuquerque, NM 87111, (505) 293-1217.

## Electric Currents

...by Felix Vivas

I want to thank all of you soaring enthusiasts for your letters of positive response to my new column "Electric Currents". It's reassuring to know that there are a lot of you who want to try your hands at

flying "electric", so I have telephoned and chatted with the writers of most of those letters. In my next column, I am going to touch upon some of your inquiries.

A handful of inquiries touched on competition or club-level fun competition, and — of course — since my main interest is FAI/F3E competition, I am pleased to answer your questions which raise some interesting points related to flying electrics.

Just a few weeks ago a large group of contestants turned out for the 14th Annual ASTRO FLIGHT electric contest which was held at the Harbor Soaring Society field in Costa Mesa, California — my "home field", incidentally. The ASTRO contest includes four classes: seven-cell and unlimited sailplanes, and seven-cell and unlimited old timers. The rules called for four rounds of five and seven minute thermal duration with precision landing; each round permitting progressively less time to climb under power. Believe me, this type of contest is really fun and "electrifying"! For example, the last round of four in the unlimited sailplane category allowed only a 10-second climb under power, yet required a seven minute duration and precision landing! 'Tain't easy!

Last August (a year ago) I organized a Novice/Sportsman 7-cell FAI/F3E electric contest with the help and support of my club — the Harbor Soaring Society. \$2,000 in cash prizes were offered: from first place at \$1,000 down to fourth place at \$150. Airtronics and House of Batteries contributed most of the funds.

Readers unfamiliar with FAI/F3E flying will find it extremely challenging: you have three minutes from launch in which to climb twice from minimum altitude under power and then, without power, make as many laps as possible over a 150-meter course. Then, using the motor for one minute to regain lost altitude, you shut off the motor and make a dive (as steep or shallow as you choose) to fly under an imaginary "limbo bar" 3 meters high by 20 meters wide; then begin a climb, still without power, as high as you can and start a five-minute duration glide to a spot landing within a double circle having a 15-meter and a 30-meter diameter ring. Any use of your motor during the power-off phases of the flight will result in penalty points. All of the foregoing in a single flight! There are eight rounds with a single "throwaway" round.

I limited the contest to Novices and allowed no one to enter who had either tried for, or made, last year's AMA-sponsored USFAI/F3E World Championship Team. The contest was so successful that we're having another this year on August 19th and 20th...again with a \$2000 prize purse. Added to our "may not enter" category this year are the first and second prize winners of last year's contest. Remember, this contest is for beginners and NOVICES. Except for those persons mentioned above, any AMA member may enter this contest. What I am attempting to do is expose as many beginners to electric flight and interest them in FAI/F3E electric competition. In turn, this will produce more flyers to raise the level of competition in the sport here in the USA, and it will also raise the level of development of multi-task gliders, electric power and components. Hopefully, within a few years, we will be able to field a US team of World Class competition pilots who will win the FAI/F3E World Championships.

Questions? Call or Write:  
Felix Vivas  
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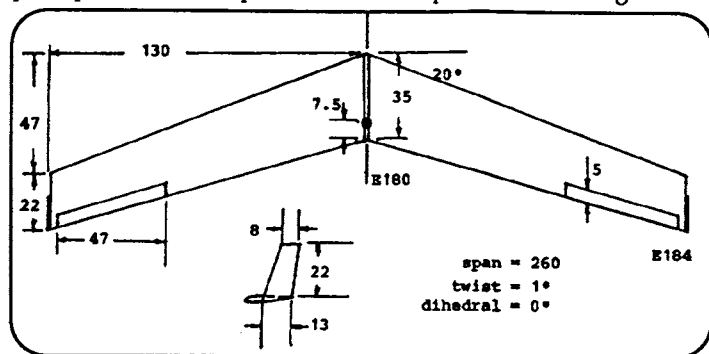
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Our own interest in flying wings is now five years old. (But our piles of accumulated information would make it appear that we've held this interest for a substantially longer period of time.) While going through our files recently, we marveled at the improvements in flying wing design that we've seen over this relatively short period, and thought that perhaps a brief description of several representative 'wings would be of interest.



## ELFE II, 1984

Curt Weller's Elfe II has most probably had a greater effect on flying wing advocates than any other design, for it announced to the world that high performance swept wings are possible.

Some of its performance characteristics are no doubt due to the fact that Curt is a former Austrian F3B champion.

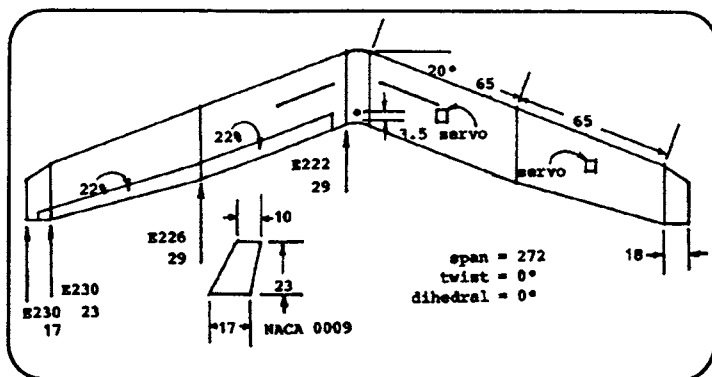
The Elfe II is easily constructed of foam/balsa/fiberglass using the dimensions shown here. Elevons are used as control surfaces and the speed range is quite broad even though there are no flaps. The elevon servos are mounted in the wings. No bridle is necessary and so only one tow hook is used. The plywood keel serves the dual purpose of mounting surface for the tow hook and hand hold during launch. We have seen the fins both glued securely to the wing and mounted with flat head screws. The screw mounting technique allows removal for transport and easy replacement in case of damage.

Take note of the airfoils used: the Eppler 180 at the root and the 184 at the tip. These are good choices as they are both relatively low drag sections; the E 180 has a good lift coefficient, and the E 184 does not have excessive reflex. The use of these two sections also allowed Curt to use a minimum of wing twist to assure stability — just one degree. The Elfe II needs to be flown at all times, as it will not search out thermals like many plank designs. It is maneuverable and fast, but is also a very capable floater when the need arises. It does well in F3B and thermal duration contests, and at least one flyer has entered an Elfe II in a slope race.

## NURFLUGEL

1986

"Nurflugel" is German for "only wing", and it's never been clear to us whether this is the actual name of this design or just a generic term applied to it. Designed by Klaus Brunswicker, this 'wing features flaps, spoilers, and pseudo-Scheumann tips, and seems well



suited to thermal-duration tasks.

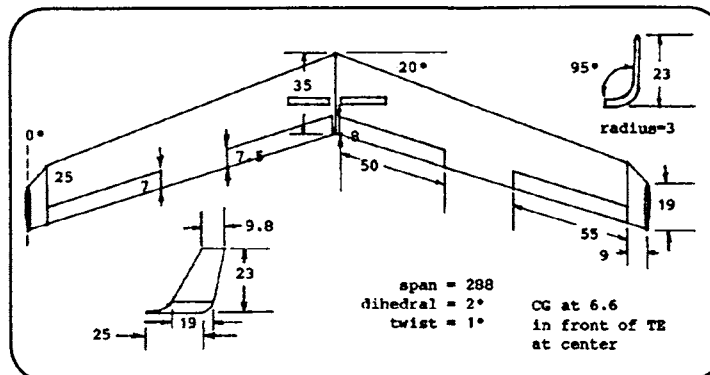
Significant is the use of the Eppler 222 - 230 series of airfoils. These sections were designed specifically for swept flying wings, and the use of the E 222, 226 and 230 on this design are an indication of what can be done with these airfoils. The E 222 is an undercambered section with good lift, and the E 230 can provide sufficient stability for the design without the necessity of twist.

The separate fuselage provides adequate room for batteries and receiver, and is shaped to promote a smooth connection between the quarter chord lines of the two wings. This is beneficial to the lift distribution and improves thermal performance.

## JUST IN TIME

1987

Hans-Jurgen Unverferth writes the F3B column for the German magazine Flug- und Modelltechnik (FMT). He is a proponent of flying wings for F3B, and over the past few years has developed several designs, each a better performer than the previous. Following the evolution of Hans-Jurgen's designs is rather interesting, and demonstrates quantum leaps in design strategy.



"Pirx" (1985), an earlier design, used the Eppler 224 section at the root and the E 230 at the tip, with 15.5° of leading edge sweep and no twist. Elevons were the only control surfaces used.

"Just In Time" is nearly a complete departure from "Pirx", retaining only similar overall dimensions and wing sweep. Using a symmetrical Quabeck section of 9% thickness, and one degree of twist, Hans-Jurgen turns to flaps and airbrakes for speed and glide path control. We see pseudo-Scheumann tips, but in a slightly different form than "Nurflugel".

"Just In Time" sports curved tips which blend the wing into winglets. The winglets are mounted at 95°, maintaining a good lift distribution and minimizing tip losses.

"Ceozwo" ("CO<sup>2</sup>"), Hans-Jurgen's newest endeavor, uses a constant chord wing and a pod fuselage. Elevons and flaps, like those on "Just In Time", are retained. We don't have much more physical information on "Ceozwo", but its performance at the 17th Ludwig-Kramer-Cup (F3B) held in Dortmund, FRG, allowed Hans-Jurgen to score 8274 points. The top flyer in the contest, with a tailed "Albatros", scored 8777.

The above information was compiled from: Model Aviation: DELTA, the magazine of FSV Versmold, #5 and #7; Flug- und Modelltechnik (FMT), published by Verlag fur Technik und Handwerk GmbH; and The White Sheet (White Sheet Radio Flying Club, England) FW Special #2.

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## The Good, The Bad, The Unusual

...by Doug Klassen & Chris Hanzlik

Kit Review: Future Flight  
Klingberg Wing  
Designed by Roland Klingberg

appearance of the B-2. If you like to attract attention at the hill or just have a taste for things different, the Klingberg Wing should be irresistible.

I could hardly wait to get my hands on the kit when the first pictures showed up in the general interest model monthlies. And when Jim Gray called and said Future Flight had sent a kit for review, I knew I had just saved myself \$39.95. Now, how do I say this... I uh, didn't build the kit. Not completely anyway. Frankly, it sat for quite a while as I completed some other projects (I have a personal rule about starting only one project at a time) and when I finally got started on the Klingberg Wing, I quickly became so frustrated with the kit I walked out of the work shop and let it sit for some time longer.

Some years back I was told by a modeler who did kit reviews for a large well-known RC magazine that the magazine didn't publish harsh reviews because it didn't want to "hurt" smaller model product companies. He said that when poor kits were received by the magazine a review was not published but a letter was sent to the manufacturer addressing the poor performance of the product. I pointed out then (and it's still true now) that the magazine continued to accept advertising for poor quality products that it so thoughtfully refused to review. Accepting the advertising could be allowed if the magazine showed the editorial courage to inform its readers of the exact nature of the product, "warts and all". So friends, I'm determined to call 'em as I see 'em even if a few feelings get hurt (and I've hurt a few in the past). Onward...

The fact is I disliked the Klingberg kit so much I talked my friend in California, Chris Hanzlik, into finishing the construction after the wings were about 75% done (I know, if I was his friend I wouldn't have done that. There, I said it before you did.) Klingberg has a most unusual way of having you build the wing(s). That is you take one sheet of the plans and cut out an assortment of templates that are used to fabricate various pieces of wing sheeting along with radically tapered "fence" that is used as a jig for the wing twist. The written instructions tell you that the wing MUST be built a certain way or the plane will not fly. So, I did it their way. First problem is the plans that the templates are cut from are crooked. Leading edge lines bow as much as 1/8 inch along their length. Happily and without solicitation by RCS, Future Flight sent a second set of plans having discovered some problem or another with their original printing. Unfortunately, the second set were no truer than the first.

After doing some careful cutting of templates, I set about the first steps of construction. I've been building models of one sort or another all my life and by now have developed my own order of construction that may not exactly match the kit instructions. However, with the products I review for RCS, I do my best to follow the instructions to the letter so that if something goes awry it's probably with the kit and not me (notice I said "probably"). The Klingberg Wing is radically tapered both in chord width and airfoil thickness. Traditionally, wings of this type are built with the spar flat on the table and the trailing edge of each rib shimmed up an appropriate amount. Future Flight takes a completely different tack and uses the aforementioned tapered "fence" (cut from the kit box at their recommendation)

to support the spar and allow the rib T.E.'s to touch the building surface without shims. The "fence" is roughly 3" high on the root end and about 3/8" high at the tip end. It looks great on the plans but when you set about doing it in 3D balsa spruce and cardboard it doesn't work worth diddly. In discussing and showing the problem to a fellow modeler he said a friend of his in Riverside, California had build the "fence" out of light ply and it worked out better, but to me the whole concept of setting up the spar on a tapered jig is flawed. Future Flight would have been much better off to provide the wing washout dimensions and let the modeler devise his or her own methods. If you decide to build a Klingberg Wing, I'd say ignore the instructions and invent your own way; only be advised that if you get the wing twist wrong you'll not be happy with the short duration of your first test flight.

Beyond the above noted problems the plans lack detail and the fit of parts cut very carefully from the plans templates is poor. Chris Hanzlik, in discussing his portion of the building, concurs with me in this. Some good isometric drawings and more dimensions shown would make the plans 100% better.

Lest you think that the Klingberg Wing is a turkey let me now say that it is not. The kit has problems to be sure but the finished airplane is, according to the test pilots, very good. Since I



Chris Hanzlik launching the Klingberg Wing  
...photo by Keith R. Smith III

I live in Arizona and Chris Hanzlik and Keith Smith live in the L.A., California area, I couldn't be present for the test flight. The following comments regarding flying are based upon rather long telephone conversations with both Chris and Keith. Hanzlik by the way has been flying slope for about 10 years now as has Keith Smith. Hanzlik has built more kinds of strange slope gliders than most folks including a variety of his own design flying wings and I consider him to be one of the best slope pilots I've had the pleasure to fly with. Keith Smith is a top notch designer of sailplanes though he and I have actually flown together very little since he usually mid-airs me in about the first 10 minutes of flying.

The Klingberg Wing was finished in monokote and a Futaba radio installed. On the day of test flying the wind at our favorite flying site was blowing about 20 mph. The Klingberg Wing is very light and it was thought at first it may not penetrate well but that proved not to be the case. The plane won't win any slope races (at least not stock), but the penetration is still surprisingly good for so light a model. Some flying wings have a pronounced adverse yaw problem and while the yaw is noticeable with the Klingberg Wing it is not unacceptable and in light of the fact the plane has no vertical stabilizer whatsoever (I don't count the bottom skid even though it is quite large). The yaw ...continued on page 8

## The Good, The Bad...Continued

becomes much more apparent as you roll into a turn but Chris felt that playing with the amount of elevon differential would help.

Chris and Keith both noted that the plane tracked pretty well overall but turns had to be entered precisely and exited precisely if you wanted to come out on a specific heading. This could be a function of CG placement. "Gryphons" that I've flown over the years would track beautifully with the CG slightly forward and wander all over the sky with it slightly aft. This is another way of saying that flying wings are more CG sensitive than conventional designs, so pay attention when you balance the model.

The roll rate is not spectacular by any means but it's acceptable; the stall characteristics very mild, even down wind. Hanzlik rated it as very forgiving even when stalled in a turn. The plane has a natural tendency to return to level flight even when stalled in a radically banked turn. I don't know what airfoil Klingberg used on the plane but it works well and according to Hanzlik also works quite well for inverted flight. When encountering lift, rather than circling or S-turning back and forth, you need only pull back on the stick and watch the glider climb. The light wing loading and gentle stall serve well here and this escalator like climb is not uncommon with flying wings and is one of the Klingberg Wings more entertaining attributes. Loops are smooth and graceful and one has the overall impression of flying a radio control boomerang.

If, or when, you decide to build a flying wing, make sure you give some thought to the color scheme. Our Klingberg Wing was done mostly in transparent blue and was quite difficult to see and to keep oriented. With no vertical surfaces the top and bottom of the wing have little to distinguish them in flight and it would be very easy to get confused and perform a re-kitment procedure.

Landings are straight forward until the glider touches the ground. The large skid holds the nose off the ground at a very high angle of attack which allows the wind to flip the plane over almost immediately upon landing. Rather than the landing skid, a better solution might be to leave the skid off and cover the bottom of the wing with something tough like Coverite. You will then, of course, have to put some sort of finger hold in the bottom of the plane to aid launching.

In summary, the Klingberg Wing flies well and, in the opinion of our test pilots, flies better than most flying wings. The only problem lies in the plans and instructions. If you've got the hots for a flying wing but have no experience with tailless gliders, I'd suggest Bob Martin's "Super Gryphon" or Sunfair Models "Slope Master". If you've built and flown a flying wing or two and want to continue exploring this type of flying machine, the Klingberg Wing is worth a look. The overall design shows a lot of thought. It just needs some refinement in technique.

by  
Doug Klassen  
&  
Chris Hanzlik

**Tenth Annual KRC Electric Fly:** September 16-17 for fun flying (open to all electric R/C models); informal field use available on the 15th; AMA license required; frequency control/impound; raffle (includes 2 custom built, fully equipped, ready to fly electric airplanes); limited primitive camping on site; informal Sat. night dinner buffet - social. Optional challenges (Ni Cd power, only): most rolls, all up last down, most loops and maxi-flight. Prizes include plaques & cash. Sponsored by the Keystone Radio Control Club and held at the Buc-Le Aerosportsmen Flying Field, Heller Rd., Quakertown, PA. Contact Bob Kopski, 25 West End Drive, Lansdale, PA 19446.

## The Clovis Point

The Clovis Point is a second generation flying wing designed by Alan Halleck and named after a type of This new plane dif-

...by Alan Halleck  
generation flying wing designed by Alan Halleck arrow head produced by the Northwest Indians. fers from the first generation Halleck design in the following areas: New airfoil, swept wing planform, larger, no fuselage, blue foam with hand laid 4 oz. glass & carbon fiber & silicon hinges. It retains the elongated cord center section with a separate control surface.

The radio system is an Airtronics / Atracs system configured to allow the following control features: In-flight CG adjustment, choice of elevons / flap or ailerons / elevator. The safety mode puts the CG all the way forward, and hangs the flap down with the ons up for the slowest possible approach. Servos are perma-mounted in the wing, with diage to the control surfaces. means there are no torque tubes, etc. to create Elina airfoil is a 10% metrical plotted on the NACA 23112-75. This is reputed fastest airfoils available.

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potential. All Con-  
was a bit forward of  
plane is VERY fast, and does nice axial rolls and  
good clean loops. There was no evidence of  
yaw problems that have been experienced with  
some other flying wing designs.

After exploring the adjustments and testing  
the flight characteristics thoroughly, I plan to  
build the 3rd generation using vacuum bag-  
ging techniques to reduce  
the overall weight by ap-  
proximately one pound.  
This will allow me to fly in  
light lift, and to add ballast  
as the conditions require.

Alan Halleck  
3826 NW Craig Dr.  
Beaverton, OR  
97006

Wing Area	780 sq. in.
Total weight	85 oz.
Wing loading	15.7 oz./sq. ft.
CG	8 & 3/8 to 8 & 1/2 inches from leading edge at center
Washout	None
Dihedral	None
Mean Sweep	15 degrees
Angle	
Airfoil	Elina

LJM Associates, 1300 Bay Ridge Road, Appleton, Wisconsin 54915-2854; tel. (414) 731-4848, has available a comprehensive index of RCSD articles from the first issue of January 1984, accurate through the June 1989 issue. This RCSD database is available on disc or by printout from LJM. Subject matter is arranged by key words for articles of interest, and also by key words for advertisers and sources of supplies. Too extensive to print in RCSD, the database is available directly from LJM Associates. Call or write for price.



## The Lovesong ...by Chip Gibbs

I've been flying sailplanes now for three years. The first two were spent learning, orienting and understanding. The third year (last year) was spent competing, and this year will be spent winning.

After absorbing all the sail plane information I could get my hands on, I decided to find the Cadillac of RC Gliders. I counted all the like types at various contests and watched to see if those models showed up in the winners circle.

The Dodgson Designs Lovesong (second generation Windsong) was finally chosen for its ability to do a number of score boosting things. Its landing capabilities are unmatched. Its variable-camber trailing edge wing allows super up wind flight for landing at the right time, and the flaps make dead air launches a great deal higher. It's also a great looker.

I was nervous about building this plane as all my previous kits have been of the built up variety. Two things were done to help with my fear of constructing the Lovesong. First, I ordered two video tapes. One was the Dodgson promo, and the second was on wing construction. The second step was ordering the fuselage pre-built. I don't feel that the pre-built fuse is worth \$45.00. The ad also may have been a little misleading. It states "all

plywood form-  
(stab), etc., are  
jig for align-  
don't know  
in building a  
fuse, you might  
be of great

The installation included 14 ply pieces. The stab pivot bearings do not come drilled, nor do the wing rod holes. Therefore, no alignment is benefitted from the jig use. The control system is not difficult to construct. Some feel that push rods and bellcranks add to the slop in a control system — they can.

One thing I noticed about Windsongs before I ever built one, is that on landing, you can hear the push rods rattle both in the wings and in the fuse. So, when I built the Lovesong I paid close attention to this. The wing plan calls for three push rod bearings between the bell crank and the wing root (nylon tubing about one inch long). I put in five and made sure they were a tight but smooth fit.

In the tail (wing trailing edge to fin) I added these nylon bearings to the wooden cross braces. The plan calls for a hole in these braces for the control rods to pass through. By adding the nylon tubing inside the hole, I eliminated the wood to steel contact, lessened vibration and added lubricity.

The instructions for fibreglassing of the fuselage wooden areas recommend using slow cure epoxy. I am too impatient and opted for five minutes (you must be sure of the fuselage resin type epoxy or polyester). The only way to do this is by using 3M 77 spray contact cement. This step holds the glass cloth in place so there is one less thing to worry about while you are rushing with the epoxy.

Knowing this epoxy will go off fast, a small amount is mixed at a time, spread on the cloth (already adhered to the surface with 3M 77) and worked in as well as possible with a popsicle stick. Last, I use a heat gun to liquify the epoxy a bit. This allows it to penetrate into the weave and also allows you to soak up excess resin with wadded toilet paper. If done right, the glass job will be completely hardened about two minutes after the last step. I think heating the epoxy in the final minutes quickens its curing time. When using five minute epoxy, you must wipe down the first layer of epoxy with alcohol or thinner to remove the

ers, bearings  
installed using a  
ment". If you  
what is involved  
Dodgson style  
think this would  
benefit. It isn't.

I liked:

The quality of all components.

The fact that it flew for six minutes on a first flight.

Looks.

Controls.

oily residue before another coat can be applied.

The wings were not difficult for a builder with a few kits under his belt. The spar system of the Lovesong extends out to the tip. I really like this improvement as one of my previous foam core planes collapsed a wing at the spar end in mid-flight. Needless to say, the spar did not extend to the tip.

Dodgson recommends wrapping the wing rod receiver tube end with Dacron thread and C.A.ing over it. However, the kit does not contain enough thread to wrap this area with a close pattern. Either wrap it with some spacing between the thread or buy some additional thread before you get to this point. The video on wing construction was made during Windsongs' construction. The Lovesong has some minor changes that were not dealt with, both in procedure and design, i.e., spar extended to tip, sub-spar installation, fibreglassing of flap/aileron area.

Wing sheeting is assembled using wood supplied in the kit. Note, there is only enough wood to do it. The planning must be thorough and with no mistakes. Count the pieces, weight them, separate them and use the tape/splicing method. Working with a six foot sheet of ten inch wide balsa takes some time before you are ready to use it. Also, if using the adhesive transfer try. If you misalign it up in one piece, so you've ruined the sheet and the foam core.

The rudder and elevator are built the same way as the wing with the exception of 1/3" balsa sheeting on the rudder (1/16" everywhere else). The only problems I had with the construction were:

Push rod rattle (slop) cured with the addition of more bearings in wings and boom section.

The rudder push rod, from aileron/rudder servo to rudder throw reducer, has no adjustment. I added a clevis at the servo end and a Z-bend at the reducer.

Although the kit is a little overwhelming when it is opened, the steps aren't difficult. Rather than looking at the whole project and thinking this is too difficult, look at the individual steps, i.e., building the main spar is not difficult, putting the spar into the foam core is not difficult and so on. This way the kit appears to be a lot of work, but not difficult.

Rather than sanding for days and painting the fuse, I decided to fly it bare. At the field I checked all controls, range check, etc., and readied myself mentally. The first hand launch was great — about two clicks out of trim. I was amazed at how high and far this plane could be thrown (remember it is 134 inches and about four pounds). After two hand launches, I decided to roll out the high start for some mid-altitude trials. On the second launch I enjoyed a six minute flight. Talk about the BIG HEAD! The winch should have been next. Unfortunately, on my last day of flying, I left the turn-around in the field.

Overall, the Lovesong is not a hard kit to build. It is time consuming. I received my kit the last week in February and finished it the first week in April — all at about two or three hours per night and six hours on rainy weekends.

On April 23, in twenty to twenty-five mph winds, my newest plane, piloted by myself, won the first contest of the year at the New M.A.S.S. (Memphis Area Soaring Society) field.

Chip Gibbs  
6300 Old Canton Rd.  
#13-207  
Jackson, MS 39211

## Proposed

The striking thing about both the committee member votes and comments from interested others is the wide diversity of opinion. Many are keen on doing something, but few agree on all issues. This can be a strength — but it could turn out to be a weakness. The strength is knowing there is strong interest. It will be a weakness if Sportsman Multi-Task Soaring or "SMTS" isn't promoted in a unified way, and flyers get confused and frustrated. If everybody argues for their own set of rules, the SMTS program is doomed.

The consensus was for a maximum weight of 75 ounces — no other aircraft limitations or parameters. This is easy for competitors to understand and for CD's to administer. It probably won't be necessary at local events to weigh every plane at check-in; maybe just do spot checks or weigh the winners. The intent is to keep the planes from being so big, heavy and fast that they intimidate the average flier. Maybe a Mueller COMET is no big deal for Rich Spicer or Don Edberg, but it does intimidate the Sportsman Flier — and it costs \$600!

Recommended tasks were a mixed bag, but also recommended was a "CD Option". Therefore we could have contests Duration and Distance only or Duration and Speed only — whatever it takes to keep interest up and get the program going. (Note the emphasis on duration rather than distance or speed. JHG)

Contest organization is pretty much what clubs feel comfortable with. After a year or so of experience, we should have enough feedback to make definite recommendations on rules that could be used for regional and/or National contests.

An important issue that surfaced is that pilots should be ranked into skill levels such as Beginner, Intermediate or Expert (akin to our Novice, Sportsman and Expert). But, how do you make that differentiation? Offhand, the only solution Byron sees is some absolute measure — something like if it takes a pilot longer than 40 seconds to fly the four-lap AMA speed task in competition, he's a Beginner; 30 to 40, Intermediate; and less than 30, Expert. This is not resolved. We need ideas and input.

### A Balsa Weight Tip

Those of us who are trying to cut the weight of our sailplanes (especially hand-launch machines) are conscious of its importance. Tom Pipic, 9065 Concord Road, Powell, Ohio 43065, gives us a very handy means of determining in advance how to proceed. "...I have included a sheet containing a simplified weight conversion formula and a 'handy reference chart'. While building HL gliders, I finally tired of doing a long calculation for each piece of balsa. Only one word of caution: on very thin stock (1/32") a small deviation in thickness can mean a significant error in weight calculation, so a 'fudge factor' may be necessary. I use a triple-beam balance, but a postal scale is accurate enough to do a good job."

**ALL ELECTRIC FLY-IN:** September 30 and October 1, 1989 for Fun Flying (anything electric goes); Scale: AMA Electric rules apply (held on Saturday, October 1st); Demonstrations; Workshops; Swapshop; Concessions, and Cajun Cookout. Sponsored by the Tammany Aero Club of Goodbee, Louisiana, and held at the club field just a short ride across Lake Pontchartrain from New Orleans. Contact Boyd O'Brien, P.O. Box 7153, Metairie, LA 70010, Tel.: (504) 835-5212; or Ben Matthews, 101 Mulberry Dr., Metairie, LA 70005, Tel.: (504) 833-5589.

## S-MTS Rules

...by Byron Blakeslee, Chairman Rules Committee

A summary of the ballot results follows:

- I. Planes: 75 Oz. max ballasted weight, no wing loading rule, no max price, no builder of the model rule, no restrictions on radio, controls or construction. ("Non-legal" planes flown in SMTS contests scored separately.)
- II. Tasks: Duration-F3J percentage slot with CD option for other duration tasks; F3B landings with CD option for other landing bonus points; AMA T8 Speed (with safety line), score better of two tries flown back to back; AMA T7 Distance with CD option; no prep time; no working time for any task.
- III. Contest: Organizer and competitor winches allowed (if all can use); no relaunches (except organizer-winch failure); Duration and Distance flown man-on-man, or rotation if not enough contestants for M-O-M groups; each task normalized to 1000 points; total contest points are sum of normalized task points; equal numbers of each task desired, but not required; aircraft wt. can be changed at any time (not exceeding 75 oz.).

\* \* \*

Well, there we are: a good beginning for people to get out there and begin flying SMTS. Surely, there may be changes needed or desired after the various clubs have tried out these rules, and as Byron says, let's have comments AFTER some contests are under the belt. Classes of PILOT might be something like the ESL has; i.e., Sportsman and Expert, instead of the three suggested. Perhaps standings in seasons contests already flown could be a criterion. Let's hear what CD's have to say, and what others suggest. What ever the case, LET'S GET GOING!



Rick Palmer & his tiny PHOEBUS sailplane obtained from Gary Anderson at American Sailplane Designs. Rick likes SCALE sailplanes and is currently working on a DG 202.

### Great Race 13

Last weekend was Great Race 13 in Plainfield, Illinois, with 20 teams competing. L.O.F.T. (my team) came in second, flying the 42-mile course in just 2 hours. We were beaten by Joe Wurts' team who finished in 1:21 (no surprise & no shame in that). ...from Bob Steele, President, League of Silent Flight, 10173 St. Joe Road, Fort Wayne, IN 46835; tel.: (219) 485-1145



## Why a DEES-charger?

As **RCS** still has not reached the 500 pages per issue, I will be assuming that all readers will know about the importance of properly discharging their NiCd accumulators, at least once in a while, or better as I always do, prior to each charge cycle.

Proper discharge will mean to discharge slowly enough and bringing voltage to roughly 1.1 volts per cell. Going under this threshold could permanently damage your battery, and not discharging completely before a charge could incompletely "fill" your accumulator due to a "memory effect". I have reviewed many methods of attaining both objectives, but most of them were not accurate and/or dependable. I asked Rick Rand if he could help me by designing the circuit with the following specs: Properly discharge a battery pack of 4, 8 or 9 cells of 500 mA-H, and when through, sound a beeper (this in the tuning process has proven to be distressing for my wife, cat and dog, but now that troubleshooting is over, all of you will be spared), stop draining the batteries and wait for someone to hook them on your regular charger. This does automate the process of "manually" draining the batteries with a resistance while having them hooked on an expanded scale voltmeter, and having to manually disconnect your pack when the batteries are discharged. It also will enable you not to stare at the voltmeter for very long, which is annoying, and could impair your eye muscles performance; as well as provides other bonuses which will be explained later.

Rick has turned out a circuit which is very inexpensive (here in Italy it cost me somewhere around 10 bucks and could cost even less abroad), very accurate and simple to operate. You just select with a knob the 4, 8 or 9 cell operation, hook the battery pack to the circuit with the right polarity (anyway you are safeguarded by a providential fuse I managed to blow at least thrice), work on your next flying beauty, and wait for a heart attack that regularly ensues when the buzzer fires. Another bonus: as the load is constant throughout the discharge process, and known (120 mA in my specimen; measure it once to know exactly yours), if you start a stopwatch when starting the whole process, you will know how many mA-H were left in your batteries, so if you perform a full charge and then discharge timing, you will know the real capacity of your pack. Do not be alarmed if it is less than the 500 mA-H rating (not too much less though). Just take note of the discharge time (or capacity) and repeat this process say every 3 months. If you notice a sharp drop, then consider examining your cells singularly, because

one or more of them could have met its inevitable faith.

## Materials and methods

Well, I can almost hear you say "Hey pal, I can buy one of these bugs at Panda Hobby!" Might be true but I like to know exactly how something affecting my batteries works, and what to expect from it. Most commercial devices in this price range are little more than a resistor and a diode (non-constant drain and inaccurate discharge level of 0.7V per cell).

Before going on I must stress that I am a doctor and had no previous electronics experience with anything more complex than my hairdryer. The project was perfect from its real start, and if frantic Trans-Atlantic troubleshooting ensued, it was caused just because Rick had specified a passive sounder whilst I had bought an active one. The difference is that the latter buzzes just when the proper D.C. voltage is applied to its two little feet. On the contrary the former is passive (like a loudspeaker) and Rick had initially built the circuit to make it oscillate and therefore sound.

The apparent problem was that the device always beeped. Also, when it should have stayed quiet, with batteries still charged, it buzzed by itself, and when discharged the circuit helped. Think of my wife's mood!!! So please note that the sounder you get, must now be "active". The components you can glimpse from the sketch are as follows:

**R1-R15** 1/4 Watt, 5% tolerance resistors where not differently specified, as for R6-R9 (1%), R5 is 1/2W, R14 is 1W, R2 a 1K potentiometer.

**CR1-CR3** CR1, CR3 are small signal silicon diodes, such as 1N4148, but CR2 must have at least 1/2A capacity (e.g. 1N4001). The band on the diodes is the cathode and corresponds to the line side on the schematic (the triangle is the anode).

**CI** ceramic capacitor

**Q1** TIP31 transistor. When looking from the front (metal heat sink is the back), the pins from left are Base, Collector and Emitter. On the schematic the collector goes to Vbat through 20 Ohms, the base goes to pin 8 through 470 and the emitter goes through R15 to ground.

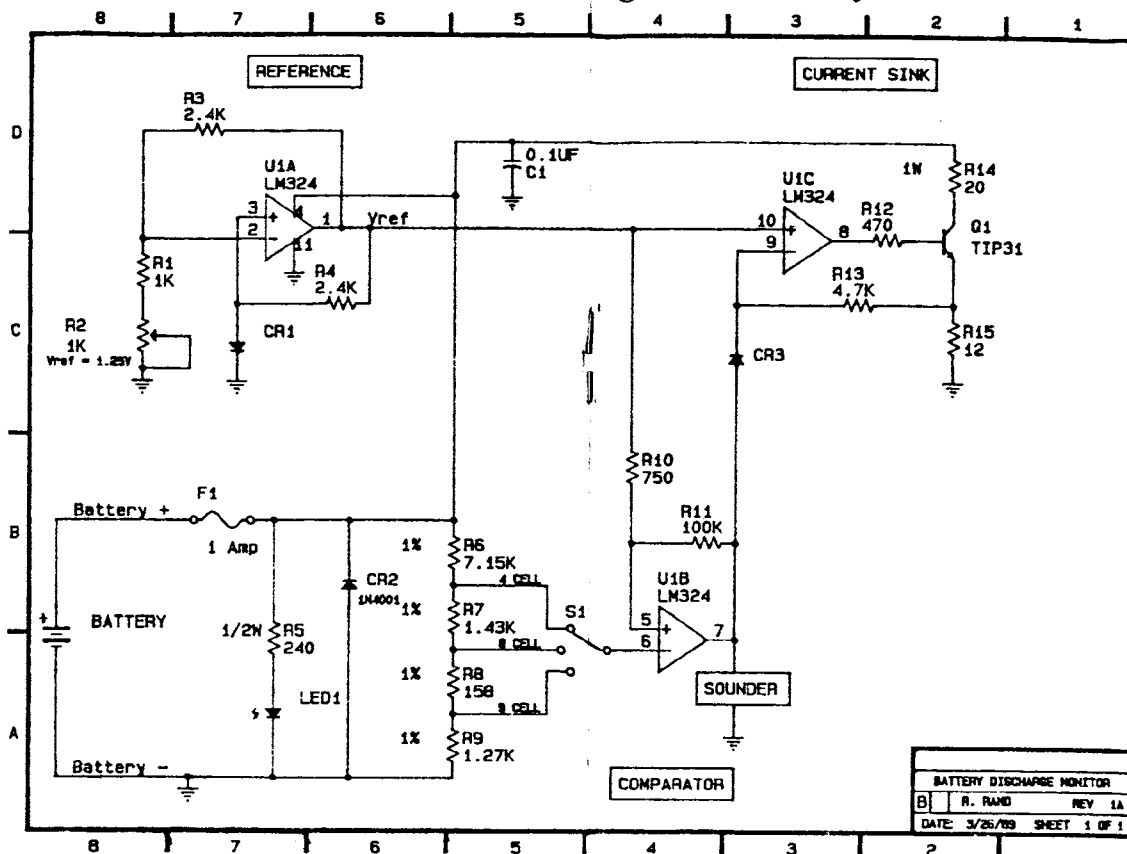
**LED1** I used a beautiful red LED

**F1** A 1 Amp fuse

**S1** A three way switch

**Sounder** Active sounder. Typically a cheap piezo-ceramic device with built-in drive circuit

...continued on page 16



for D.C. operation. Test it by hooking your battery directly to it. It has to beeeeeep (respect polarity).

**U1A-U1C** These three op amps are sections of a single LM324 op amp. On the schematics the pin numbers are shown. To know where they are, put the little black box standing on its legs on the table. Locate a small notch on one of the box ends. Rotate the whole thing until the notch points to your left. Now pin 1 is the lowest on your left and pin 7 the low row, rightmost; Pin 8 is the rightmost of the upper row and pin 14 the leftmost. (Numbering is anti-clockwise from the notch.) Note that the fourth section of the op amp is not used in this implementation of the circuit.

**Battery** now the most obvious: it is your battery pack.

The rest of the shopping list is a perforated epoxy prototype board, wire to make the connections, the proper connectors for your batteries (I don't use them; I left the wire ends live and stick them in my connectors. Purists will faint.), the proper IC socket to plug in your LM324 and fuse holder. The bravest will be able to use the fourth circuit for example to make the led blink on and off, or any other fantasy they can think of. At this point get ready with your low powered pencil solderer and generate your wired monster. You will be delighted by it's perfection and proudly show it to your best friends. Guaranteed!

The only calibration required is to adjust the internal reference voltage to 1.25 Volts. Measure the point designated as Vref (output of U1A) and adjust R2 for the correct value.

## Assumptions

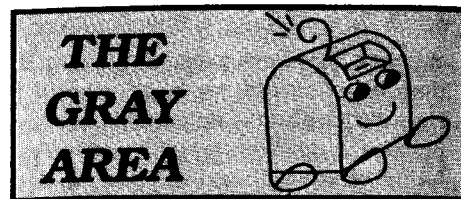
When you use (discharge) a battery pack as a whole, it is rare for all of the cells, to discharge exactly alike. This happens because the storage capacity of each cell cannot be made exactly identical in the building process. Therefore complete discharging could take place much sooner in one cell and slower in the others. This is why you assume that your 8 battery pack is discharged when measuring (UNDER LOAD) 8.8 volts. This keeps you on the safe side. This "statistical" approach does not prevent that, for instance, one of the cells goes to zero volts (thus ruining it) while the others remain fully charged at 1.25 Volts. For 4 cells, very unlikely. The only alternative solution would be to discharge your batteries cell per cell. Is it worth doing?? We assumed that just keeping this in mind would suffice.

## What next???

Well, as soon you will finish building this circuit, and start "rejuvenating" all of your battery packs, please be aware that in a not too distant future, the amazing brain of Prof. Rick, is about to generate another gadget of great interest to most of you (anyone holding shares of Sanyo Ltd. can skip the next section). The next design will be a device that will automatically do a full discharge/charge cycle of the batteries. It will be a dual unit (after all, you do have both transmitter and receiver batteries) which will independently run each battery through discharge, charge, and floating modes to give peak performance.

**Rick Rand - The Electronics Absolute Master.** His address: Wilner Rd. - Somers, New York 10589 USA. He is the right guy for technical queries and generous donations. BTW he is still immune to model gliding delights. A reward for anyone getting him aboard.

**Robert Alexander - The circuit requester, builder, and user.** Address: Via Libetta 23 - 00154 Rome Italy. He is the right guy for rock throwing, since he hopes that having to travel from the USA, they will hit softer (rocks have a strong form and vortex drag). His enthusiasm for model gliding is only rivalled by his ineptitude in keeping them aloft more than 30 sec. (working towards LSF level I).



The following letter was written to Byron Blakeslee of Model Aviation magazine by Ed Waters. Because the subject matter is so relevant to the RCSD Challenge and our efforts to get Sportsman Multi-Task Soaring 'off the ground', I include it here for general interest. It looks as if the Clarence Soaring Society 'F1.5B' program is a huge success and very popular with club members. It's just another way of showing how a club can stage a contest that will be fun — and also more than thermal duration tasking.

Dear Byron:

Back in 1983 when I gathered together about twenty-three sailplane types in our area, including Roman Paryz, John Grigg (former AMA Prexy), et al to found the Clarence Sailplane Society (a small town not far from Buffalo, New York), we had as our objectives:

1. To have a sailplane-oriented group with a flying field on which to pursue our hobby;
2. To promote this activity, which we have done; and
3. To organize competitive events which would attract both our own members as well as those people with like interests in our neighboring Canada and within a couple of hundred mile radius within the United States.

We have accomplished these objectives in a manner beyond our wildest dreams. We have a lovely sod farm on which to fly, and have just completed the first competition of this year on Sunday, April 30th. We had over 30 sailplanes entered, with about 15 or 20 entrants. Not a bad day, all in all.

The foregoing has been a brief review of our club, leading up to my next comments regarding Sportsman F3B contests. We have been

holding our own Sportsman F3B type contests for the past three years, but have chosen to name it F1.5B or half-fast F3B. Any type plane or pilot may fly in this event, and that certainly has been the case. Gentle Ladies have been among those types entered as well as Roman's Sagitta XC which chose to separate its tail in one of our speed runs. Result-disaster! Our tasks have been modified from the F3B format as follows:

1. Speed: Fly two laps (one circuit) of a 150-meter course as fast as possible.
2. Distance: Fly as many laps as possible of the 150-meter course in four minutes. (The time has been varied in some contests.)
3. Duration: Fly six minutes precision duration with 100-point spot landing.

Our rules have been loose and the event has been a lot of fun. Roman may differ a bit with me on the tasks, but that is neither here nor there.

For end markers (pylons) we use a couple of lengths of 10 to 12 foot steel electrical conduit, bolted together at one end to form an "A" frame. This is guyed with two lengths of line on either side of the "A". The conduit members are parallel to the course length and the guy lines are at right angles to the course length to form sighting lines for the lucky individual sitting beneath the pylon. Two of these are made. We have a two-wire cable running the length of the course between the pylons with a push-button momentary switch under control of the far-end spotter. The switch operates a "beeper" powered by a battery at the launch end of the course, enabling the spotter to signal the pilot as to when he can make his turn. It has worked quite adequately for us, and the cable is handy as it is 150 meters long and measures our course length for us. It also takes a minimum of people to run, unless the far-end spotter gets ...continued on page 18

...continued from page 17

lonely or thirsty.

Although Jim Sonnenmeier now has one of Joe Wurts' F3B sailplanes in his possession, I don't think we will let him enter this aircraft in our F1.5B contest scheduled for June 25th.

As you can see by the tone of this letter we are interested in the Sportsman F3B/MTS type contest. I do believe that the rules should set the maximum performance capabilities of the aircraft involved, and that is essentially what you and Jim Gray are proposing. "KISS" — Keep It Simple Stupid and we will have a lot of enjoyable flying and laughing at our antics as we have done.

My very best regards, (signed) Ed Waters, 9330 Tonawanda Creek Road, Clarence Center, NY 14032

**Response:** Ed, that's a very interesting letter. I suppose the switch could operate a set of "traffic signals" as well as a beeper. I'd like to know how the June contest came out, and I'm sure the readers would be interested, too. The rules and system you have been using for three years is essentially the same one we propose, using the KISS principle wherever possible. Great letter, and thanks again. JHG

Dear Jim: \* \* \*

First, I would like to say that the articles about a Sportsman Class of F3B seem to be changing. At first, the thought was to keep it simple using dihedral models, etc. Now, the thrust seems to be the other way, with big no-holds-barred models which would attract only the current supply of hot shots, and not add to the future supply of modelers experienced in F3B. I think the model I have just finished is good for this class: the ANTARES is a moderately complex model that could be built and flown successfully by an experienced modeler. It is a good performer, and complexity such as foam wings, arrow-shaft hinges, flaperons and other modifications that would enhance flying can be added as the modeler gains experience...and at little

expense. This leads me to my other opinion that ballast should not be allowed in this class which should emphasize flying and practice to develop the skills needed to go FAI. Heavily-ballasted ships vaporizing at every control error will soon discourage Sportsman F3B competitors and not give them the needed practice. I think a max wing loading is in order, with no ballast change during the competition.

Second subject: I tried the silicone hinges outlined in the February RCS, installing them on my new WINDSONG which should get its first breath of rising air sometime in July. Tests showed that the silicone I used does not adhere well to smooth surfaces, including epoxy, so I leave bare wood in the area where the silicone is to be placed. Tests show that the surface of the wood will be pulled off before the silicone will fail. My only flub was to get the silicone too thick on the first hinge, so it was a little stiff. I fixed it by making a razor-blade slice in the underside to make the silicone effectively thinner. These hinges are terrific, and this one article was worth the cost of the subscription. Many thanks to Mr. Blettner's genius and the B<sup>2</sup> Kuhlman's effort to publish.

Third subject: I built a METRIC years ago and have flown it several hundred times over the years. It has always been a good flying model: perfect on the tow, will return to the field against 20 mph winds, and is strong and controllable. The one problem I had was that it would not 'groove' in a thermal turn, and had to be constantly corrected, a condition I attributed to the fact that the stabilizer was flopping due to slop in the wire through the brass tubing in the fin...a condition observed on many gliders. I remembered that back in my free-flight days I used to control turn by stab tilt, as most free flighters did. What I felt was happening was that during the high-speed winch phase of launch the floppy stab didn't have a lot of effect (just like the power phase in f.f.) but was effective in slow-speed glide — again just like free flight. In thermals

close to the ground, which tend to be turbulent, the stab would flop back and forth and I would have to constantly adjust the rudder to keep the turn I wanted...unacceptable for contest work and a nuisance at other times.

My solution was to get some centerless-ground hard steel rod of a size that just fits the brass tube with minimum clearance — an expensive option due to minimum cost of the centerless grinding setup: \$200. So, I ordered 200, and hardened one for the METRIC. Boy, groove city! I have taken it to meets and have had 30 or 40 practice flights, and am very happy with the results. This is an instant cure for 'floppy stab syndrome', whether on a new or an old model. I have included a sample for your inspection, and if you can't use it, give it to a friend who has a 2-meter floppy tail sailplane. I have 196 six-inch pieces left, and will sell them for \$3.00 each, including postage, if any RCS readers would like to fix their floppy stabs.

Anyone around Newport, New Hampshire looking for glider practice please give me a call at (603) 863-3733, or write to Walter H. Rady, P.O. Box 282, Newport, NH 03773.

**Response:** Walt, if I were still in New Hampshire, I would gladly fly with you...however, maybe Jim Tyrie in Bedford would fly with you. I know there are quite a few fellows in the Manchester area who are active. Why not call Jim sometime? I appreciate the centerless-ground piece of wire you sent me and plan to use it when and if needed. It will be good to have it among my supplies. Thanks for your interest and helpful hints. By the way, regarding Sportsman F3B/MTS, see this issue for more info. All-up ballasted weight is proposed to be 75 oz. maximum. JHG

\* \* \*  
New winch rules and the proposed Sportsman MTS class are the subject of this letter from Dave Dunlop.

Jim:

Further to my previous letter and opinions, you may be interested in hearing how the

West Germans are approaching the problem. To go back in history a little, there was a lot of criticism of the old rules and the high-power 3.5 to 4.5 HP winches. USA fliers in particular were very active in getting the allowable power reduced. One of the arguments for this change was that models would not have to be so strong and would become lighter and less expensive.

My friends in Germany have built new winches using Boesch (sic) motors with 1.2 HP rating. However, whereas the old motors turned out around 3,000 RPM, the new winches give 8000 to 9000 RPM! The result is that they are getting the strong, heavy F3B models such as my IMPULS just as high, if not higher with 'weaker' winches! Maybe they will look to lighter models after observations at this year's World Championships.

At the risk of being accused of being a 'know it all', in my last letter I did highlight my opinion that winch SPEED would be the thing that counts. It looks as if I was right.

My 'illegal' winch turns around 3000 RPM, and with average drum diameter of 5 inches, this gives me 65 feet-per-second line speed. With 9,000 RPM, the German competition boys must be getting 200 feet-per-second when they 'ping' off the top! Sounds like fun to me — does anyone have a secondhand Boesch starter motor?!

Recently, quite a lot of local TX fliers have arrived at the field with glass-skinned wings produced during the winter. They have gone up on the winch with no problems.

Let's get your F3B Sportsman Class going NOW without further arguments about special rules for the models; let's say:

1. Model must comply with FAI-F3B rules.
2. Launch equipment to FAI-F3B'89 rules.
3. Organize competitions with more flexibility and, say, only 2-3 rounds per task: duration, distance and

...continued on page 20



## The Gray Area

...continued from page 19

speed. This way, a competition can be run in one day, or very comfortably in two days.

This way, the 'fun' F3B boys like myself, and those interested in 'having a go' can participate with serious F3B participants. After a few competitions, the fliers can be split into 2 or 3 categories. In this way, depending upon one's abilities or models, we compete against people of our own level and we all get a hope of taking a little prize home to the wife and kids!

Best regards, (signed) Dave Dunlop, 5118 Green Springs, Houston, TX 77066

**Response:** Dave, we thank you for your input. Please have a look at the proposed rules for SMTS elsewhere in this issue. As I see it, your suggestion would be Phase II of our hoped-for contests. In other words, fliers would start with SMTS and then "graduate" to your proposed system — which seems a logical follow-on. Why not try our proposed SMTS first and see how it goes, and then let me know whether you think Phase II is in order? JHG

Dear Jim:

Finally finished my Accipiter kit, and I must say that I am really delighted with it. Flew it on the slope the first weekend I had it done, and then entered it in a thermal contest the next weekend, and got second in my class! The only unfortunate thing was that during my last launch, we got a little overzealous on the winch and bent the wing rod, which in turn disconnected the tipperons, but I still flew to 4:17/5:00 with rudder only, thanks to the increased dihedral! While I don't think it is optimal for thermal contests, it certainly seems to be a good all-around design, and I feel that it will teach me a lot about multi-channel flying. Right now I am playing with the differential on the tipperons in order to try and optimize the turning, but this is part of the trimming on any new plane. I am currently working on both a Camano and a Pixy to use for competition.

While I'm at it, just wanted to give you my opinion on the current direction of RCSD. As far as RC soaring is concerned, I am a purist. That is, I only fly non-powered aircraft. Therefore, I can not condone Felix Vivas' column on electric flight. So far, he has told us nothing new, and let's face it. There are many other sources in any of the other periodicals where people can read about electric options. To me, the whole beauty of your digest is that it is strictly soaring, and I would like to see it stay that way. You have written from time to time that you have so much good information that you don't know when you will ever get it into print, and then I see space taken up by diversions such as this.

At the same time, I have to say that I do not find any of the writing of "B" to be interesting. Again, if your comments about having too much information are true, I would like to see the emphasis on things of broader appeal. And now I hear that if you send them your ORIGINAL plans, they are willing to reimburse you for the postage?! What an insult to the designer who has taken all of his time and effort to come up with something original and optimize that design, and for what? To get 60 cents each time someone else sells a copy of it? Doesn't seem fair. . .

What do I like to see? My favorite articles are those dealing with how-to techniques, in particular, flying and building tips. I also like to see product reviews, and these need not be limited to airplanes. RC Report frequently reviews tools, videos, etc., to good effect.

I really like the shot in the arm you're trying to give to the F3B program, with your proposed S3B class. I do feel that it will be much more successful if you do not limit it to one design, and instead try for something more general, like limiting overall weight, wingspan, etc. Keep the requirements for the aircraft as simple as possible, and more people will be interested. The South Bay Soaring Society just held their first "S3B" contest, and it was classified strictly by the aircraft weight (maximum 80 oz. ballasted), and not by the pilot's ability. I do think that in order to meet

the goals of the program the tasks must remain identical to F3B, although I like the idea of everyone using the same winches. Please don't take this in the wrong way. My biggest regret about your magazine is that my friends who sprung for the first class mailing get it 2-3 weeks before I do! Sometimes I can't wait, and make them loan theirs to me as soon as they are through with it! It's just that you seem to be interested in what your readers think, and I appreciate the opportunity to have my opinion heard. I have discussed these topics with other readers who are in agreement, but I am hoping they will write you themselves just as I have. Thanks for reading, and good desert lift!

(signed) Keith Love, P.O. Box 361891, Milpitas, CA 95035

Dear Jim,

After reading "A MODEST PROPOSAL" in June's issue I just had to respond!

COMPETITION is what made our country great! It has caused the growth of industry and to this day causes our technology to push upward and onward! I disagree with John on the division of classes and his thought that this will cause soaring to continue to grow. John cites the Michigan decline of contestants due to domination of a few top pilots. I can cite the decline of Florida contestants with classes of novice, expert, and for the past two years a Masters Class. We are still seeing a non growth pattern. I have flown in glider contests in both Michigan, for four years, and in Florida for the past eight years, and I am not one of those who are in the first or second place runnings. As I look at my Plaque Wall I would say I average about 6th in the state in the expert standings over the past years. I do not feel the making of classes will increase the contestants at contest. The DRIVE to work with the beginner by the expert and the QUALITY of the contest will bring new flyers. If you will study the contest records in your area you will find the winners are those who are at every contest (who practice). This also runs: who (are always the same names) only flies

in part of the contest, and those few who are on the bottom whose names change due to drop out, or due to the fact they are now working though the others to the top. Rather than dividing the flyers causing less competition, and more contest cost, IF YOU MUST, set a handicap system exactly as they do in bowling. Then, all may compete on the same level. This may make all contestants equal but only the individual who will bring others into the sport and the Contest Director who is willing to run a QUALITY CONTEST will cause the sport to grow.

Regards, (signed) Tom Beckman, 19800 SW 180 Street, Unit 149, Miami, FL 33187

\* \* \*

Dear Jim:

A brief note about an old exciting subject: turbulators or 'trip' mechanisms on the wings. With extensive testing and verification of start point, I have increased my SAGITTA 900 glide from 180 feet (level, thrown) to 233 feet, a gain of 53 feet (30%) on the same day in the same air. This amazed me, to say the least, so intend the same test on my LOVES-ONG. My contest observations have turned up only two 'SONGS' with this modification. What are people waiting for...or don't they know?

Good soaring, (signed) Ray Reiffer, 9060 80th Ave., Zeeland, MI 49464

**Response:** Ray, it's good to know that some people haven't forgotten the benefits of turbulation. I'd appreciate you sending us a letter description of exactly how and where you placed the "turbulators" and what size you used. Some people use 1/16" wide striping tape placed back about 10% chord from the leading edge on the top surface of the wing. One other trick I saw used years ago was a 'stepped' upper surface of the wing from about the main spar to the trailing edge...similar to the technique used on free-flight HLG's. This gave the ship an amazing glide from a hand launch. JHG

## The Gray Area

Dear Jim:

...A couple of years ago I tried electric flight with an ARF powered by a Mabuchi 540s and a six-cell car pack. Performance of this combination left much to be desired and cooled my interest somewhat. However, I intend to try again with a more powerful motor such as a geared Astro 05 cobalt and a seven-cell 900 mA pack mounted in a model such as the Astro Flight Challenger. Your news of a regular column on electric flight is very well received, at least by me.

While not an avid fan of F3B multi-task gliding, I enjoy watching the top fliers competing. Your attempts at getting a Sportsman Class going in the USA are to be applauded, as anything to increase the variety in the types of model that are made available to the gliding fraternity must be encouraged.

I note that you have made mention of Southern Sailplanes of Australia — a company owned and operated by a good buddy of mine, Ralph Learmont. Ralph is one of Australia's best model design engineers and constructors. The model kits being produced by Southern Sailplanes are mostly polyester glass fuselage and balsa-sheeted foam-core wing and stabilizer construction. They go together quickly and produce a 'true' airframe. The fuselage moulding is of the highest standard found anywhere and requires no surface finishing of the white gel coat prior to use or painting. I commend the models to any flier wanting a world class model to replace their polyhedral floaters. Ralph can be contacted at Southern Sailplanes, 10 Sturdee Road, Mitcham, Victoria 3132, Australia; tel.: (03) 874-7549.

Yours sincerely, (signed)  
Max Haysom, 17 Milpera Crescent, Wantirna, Victoria 3152, Australia

Jim:


Enclosed are a few B&W pictures of a few of the members of the newly-formed "Silent Flyers of OKC" club. Dave Clarke secured the use of a 40+ acre sod farm approximately 15 miles west of our town OKC! So far, response has been excellent. Between Steve Hudson and myself, we've made no less than 40 contacts. I'm still looking for an Airtronics Championship 7 radio, another CHEAP Dynaflyte SENSOAR, and a PIXY or CAMANO, kit or flyable. By the way, I entered my SENSOAR 117 in the LSF regionals at Tulsa, and came in second in Sportsman...not bad for my first contest in about 13 years! I just picked up a 4-meter ASW 22 from Leroy Satterlee, but I haven't flown it yet. It looks real good. Also, I have the following for sale: HARLEQUIN RTF - \$100; GRANDESPIRIT kit - \$200; AQUILA kit - \$65; and 4-meter ASW 22 fuselage only - \$100. I will consider trades.

Thanks & Thermals, (signed) George Voss, 1403 Lincolnshire Road, Oklahoma City, OK 73159; telephone: (405) 692-1122 or 1200 (recorder)

**Response:** George, it's always good to hear about another club starting, and I congratulate you and the members for your initiative. It's also interesting to hear that your club will be based on sailplanes and electrics. Way to go! Let me know how RCSD can help. (Readers, photo shown on page 3.) JHG

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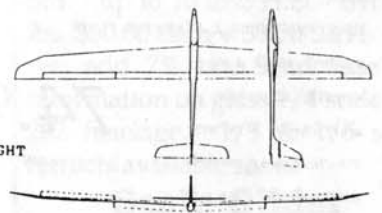
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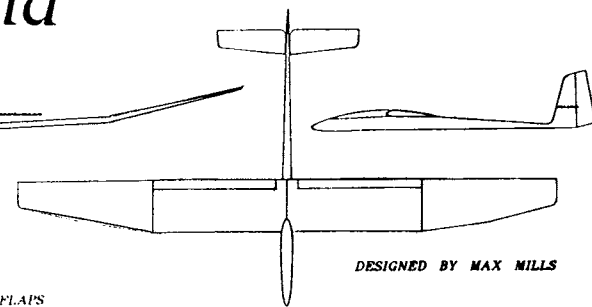
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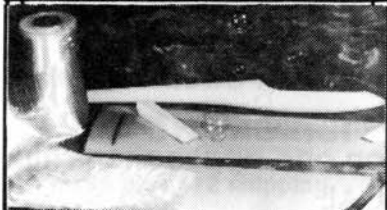
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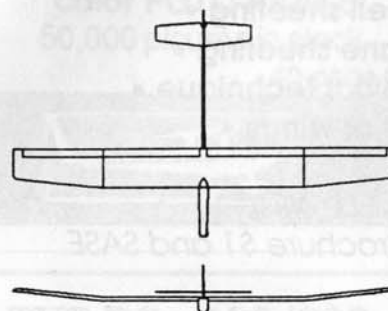
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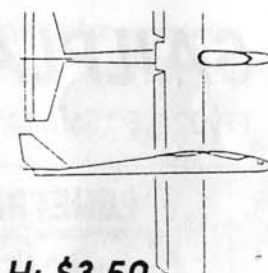
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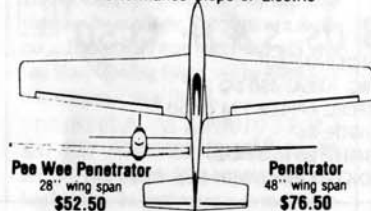
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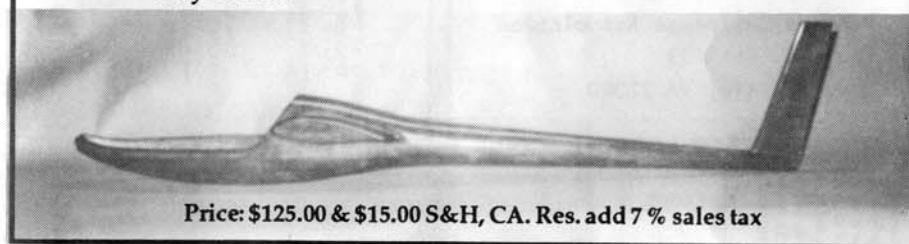
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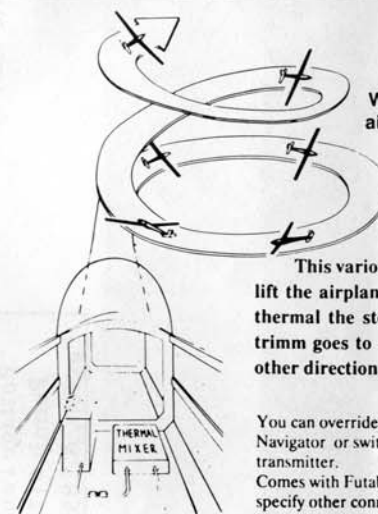
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