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D I G E S T

Vol. 3 No. 8 August 1986



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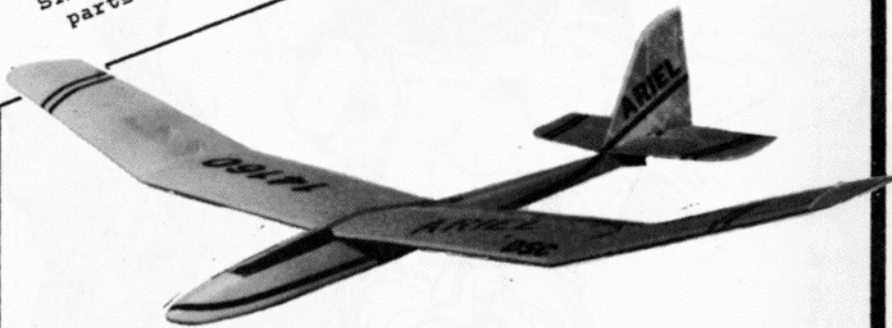
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## IN MEMORY OF DAN PRUSS

Dan Pruss, well-known columnist, soaring pilot, and friend died recently after a short illness. The following memoriam appeared in SOARING FLIGHT, newsletter of S.O.A.R. Dan's club, in their July 1986 issue.

It is a sad heart that speaks to you now, of the passing of Dan Pruss, a pioneer in our sport of Radio Controlled Sailplanes. Dan has been a great advocate of soaring, and made his mark on the hobby through his intimate involvement with soaring in its infancy. A founding member of our own club, S.O.A.R., Dan was also contest director of the "SOAR NATS", a national soaring meet that drew over 200 entries at its peak in 1976. His efforts resulted in annual contests that are still discussed with admiration for smooth operation and daring in the testing of new events and formats. As contest director of the GREAT RACE contests, Dan helped mold R/C Cross-Country racing into the competitive sport it is today. The list goes on, including many-time representative of the AMA to the FAI/CIAM council for international R/C Soaring competition, Team Manager to several U.S. FAI Soaring Teams, Model Aviation Magazine's monthly Soaring columnist and holder of the AMA Distinguished Service Award. Most recently, in June of 1986, Dan was inducted into the Academy of Model Aeronautics' Hall of Fame.

In all that Dan has accomplished, he always acted with a professionalism and care to detail that earned him the admiration of those who had the opportunity to know him and work with him. He was concerned for the enthusiast, always ready to help as he could with advice, experience or just a word of encouragement. His dedication to the beginners, Juniors and seasoned veterans alike is renowned. Dan encouraged the new, always willing to push at the edges of the hobby, testing unknown ground.

But of all these remembrances, I personally remember Dan, the modeler, whose good humor and laughter could bring a smile at the worst of times. I can recall his encouraging words as I learned the sport of soaring, and the discussions of new techniques to try in building and competing at the field. The sparkle and laughter in his eyes when an occurrence struck the right chord said more than any words.

When we mourn Dan's passing, remember that he has left us both an example by which to pursue our chosen pass-time and a legacy for our enjoyment in the sport of Radio Controlled Soaring. We should all measure ourselves by the standards set by Dan Pruss. Such standards are a model one can point to with pride. Dan, we honor you.

What do YOU do on a raw, rainy Sunday morning when there's no chance of flying and when the local airshow has been cancelled? Well, some of you will probably answer "sleep" ... and that's one heck of a good idea. If I didn't have this editorial to write, I'd probably do the same thing. It's still not too late to think about that -- or about taking my business manager to brunch at the local Jake Copley's. Hmmm...eggs Benedict, but I digress. Oh yes, in case you are wondering, my business manager is Peggy, my wife of - let me see - 33 years last May 22nd.

Truth of the matter is - I could get up on the soap box and raise all kinds of issues that need addressing, but I don't feel like it this morning. I'd rather just sit and do a bit of 'hangar flying' with you today and let all the issues go by with nary a nod in their direction. What better on a rainy and rotten day than to just sit and chat amiably with your friends about soaring? Right; that's how I feel, too.

I could go out to the workshop where the GNOME awaits its final covering of the repair I had to make after a crash last week. The structure has been fixed (after I tore off the outer panel when it tip-stalled on launch and struck the turf) but the magnificent covering job done by friend Bob Gracey has to be patched, and I don't quite feel up to it just yet. However, if I want to fly it, then I'd better fix it ... right? Yup.

The GNOME is a wonderful flier, and a superb handling 2-meter. The only problem is that in my Klutzy hands it became smashed. How? Simple - the tow hook was too far aft. I didn't want to go to the trouble of moving it -- figuring I could overcome any tendency to tip-stall by quick and judicious application of forward trim on launch. Great idea, but it didn't work. The problem was a sudden wind shift just at the moment of launch which weathercocked the GNOME and exacerbated a lurking problem. The c.g. was placed correctly...but the darned hook was just too far back for my ability and the prevailing conditions. I've had about a dozen flights on the GNOME, and another dozen or two on the PROPHET. I'd have to say that both are absolutely great little 2-meter machines. The GNOME is a bit more suited to beginner flying (in spite of the above - which is my fault) while the PROPHET is more suited to contest work and advanced fun flying...but that's not to say that either wouldn't be good in reversed roles, because they would.

Well, better get off to the shop...let's see, where did I put that MONOKOTE iron? What's that, Peg? Nope, sorry, don't have time just now...gotta do an important chore out in the workshop.

#### MORE ON ELECTROSTATIC AUTOPILOTS.....Maynard Hill\*

Maynard Hill's name is synonymous with electrostatic autopilot, as he is generally considered to be the inventor and father of this device. Many soaring enthusiasts have written to him in recent months about his invention; enough, in fact, that Maynard has prepared an open letter to them. This is reproduced below. (JHG). The letter is in response to Dan Pruss' MA column.

\* 2001 Norvale Road, Silver Spring, Maryland 20906; (301)598-6264.

"Thanks for your inquiry about electrostatic stabilizers. Please forgive me for responding with a form letter. There were an overwhelming number of responses to Dan Pruss' column.

"Electrostatic stabilization of R.C. models involves a fascinating bunch of physics, aerodynamics and meteorology. There's no 'in a nutshell' explanation. Everybody knows that the earth has a magnetic field, but very few people have ever heard about earth's atmospheric electric field. A description of this electric field and electrostatic autopilots is contained in the enclosed paper that was published in the Proceedings of the VII International Conference on Atmospheric Electricity, Albany, NY, 1983. I recommend you stick to building gliders and having fun as opposed to getting hung up trying to make this device. But, if you really like to tinker with perplexing things, there's more information in the references: the 1972 AIAA paper is probably the most complete. Also, Flying Models, February 1973, contains an article that was aimed at modelers who might want to try to build it. I'm all out of reprints and, besides, my wife informs me that I can only put 4 pieces of paper in a 22¢ SASE. Her reason for telling me is that she knows I'm a dumb business man in the predicament of holding all positions ranging from President to Janitor of Aeroprobe - which is what I call a hobby company that has toyed with the idea of selling electrostatic autopilots for a long time.

"anyway, the first half of the enclosed paper (not provided in my copy of Maynard's letter - JHG) explains why and how electrostatic autopilots make airplanes fly level in fair weather. The last half makes it obvious that the gadget causes aeromodels to behave weirdly and violently near thunderstorms. ESAP's aren't much good in rain, snow, sleet and dust storms, either. Mother Nature's laws dictate that the system just cannot be guaranteed to work properly all the time. Therein lies the reason I have yet to make the thing for hobby use. When the atmospheric field is vertical, which is likely to be the case in most all weather that is suitable for R.C. soaring, the device is remarkable in how it smooths out a model's flight in windy, bumpy air, and how it lets you fly to much greater distances from your eyeballs. But, mind you, after thousands of solidly stabilized flights, I still include a switch to turn the thing off in case something funny happens. I like aeromodelling mostly because of the friends I've made. I doubt you'd feel friendly towards me if you were 8-1/2 hours into a 9-hour LSF attempt and your switch didn't work when a thunderstorm came along! I've postponed from selling the thing for a long time out of fear that my phone will jangle every Monday with angry complaints about its not working properly during a drizzled contest in Alabama, etc., etc.

"The response to Helmut Lelke's success and Dan's subsequent column suggests I ought to do something for soaring gliders. I am presently looking into having a batch of units made for sale. Right now, I am trying to determine who will build them and for how much money. By the end of March, I expect to have reached a decision whether or not to proceed. If the decision is yes, I'll send you a brochure describing the thing and how much it will cost. If I decide not to proceed, I'll probably assign the rights to the patent to somebody who wants to put the thing on the market. Truly, I'd like to see great bunches of these things out in aeromodellers' hands because I think we'd be doing some of the greatest

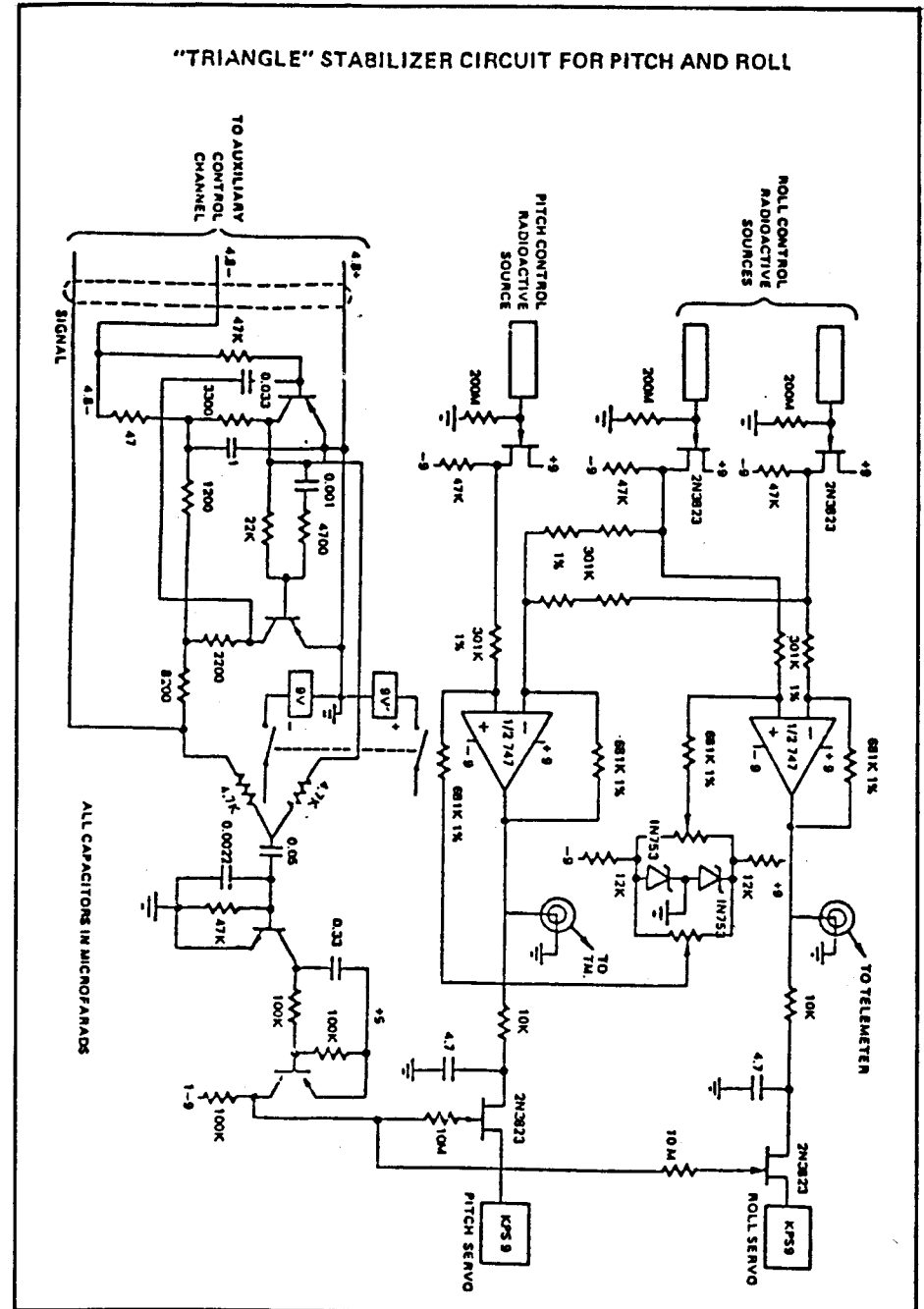
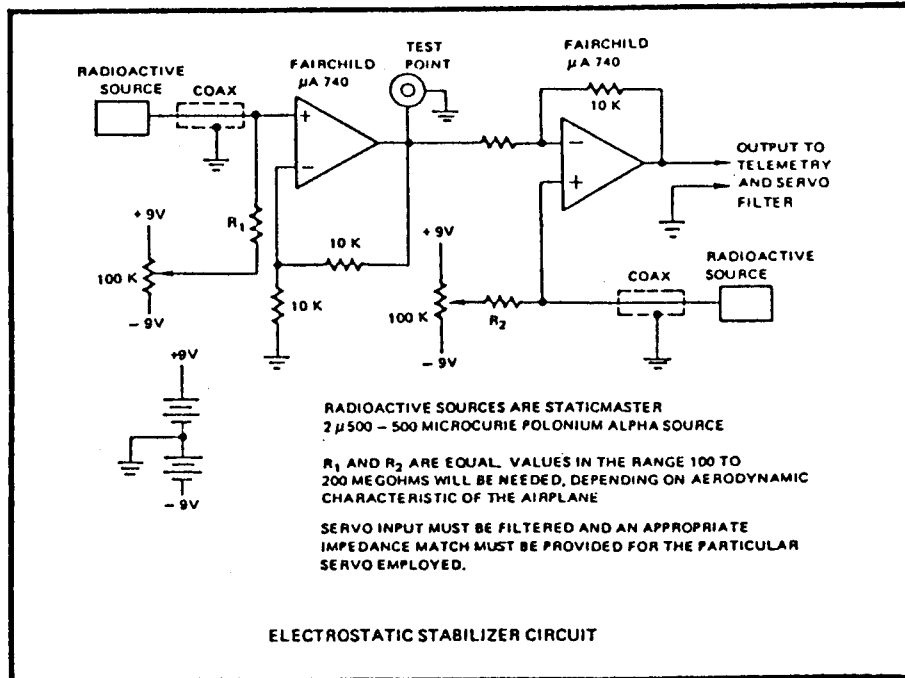
atmospheric electric research ever. I keep trying to get funds from the National Science Foundation, Army Research Office, etc., etc., to study the extent of fair weather fields, but they always have better things to do with their money - like studying the love life of penguins in the Antarctic. If you do get one of these devices from me, the package will probably contain a 22¢ SASE and a questionnaire to report back. What fun it would be to publish a scientific paper that lists hundreds of voluntary contributors!

"Some of the inquiries asked for more information so they could build this device. I'd like to respond, but it's not just a matter of sending a circuit diagram. There's some fussy stuff dealing with sensor installation, gain and trim adjustments, ground paths, servo feedback and others. I don't have that stuff boiled down to a set of concise instructions. Obviously, I'll have to do that before the end of March. Meanwhile, I'll do my best to answer 'phone calls at my home...but please don't call me at the Applied Physics Laboratory. I'm intensely busy all day, and don't like to stop during working hours.

"Thanks again for your interest. Sincerely, (signed) Maynard Hill."

\*\*\*

Well, there you have it; except for the explanation paper describing how the device does (or doesn't) work. The circuit diagrams are here, but the quality suffers because I am working from a very much repeated copy which is not good to begin with. (JHG).



It was nearly three years ago that I acquired my WINDSONG kit from Bob Dodgson. The fuselage and radio installation (ACE Silver Seven) was done by Rich Bonnell of St. Petersburg, Florida, and the wings were done by Bob Rondeau of Brattleboro, Vermont. As many of you know, Rich does some of the most beautiful building available, and my fuselage was no exception...a true work of art! Bob covered the wings with SOLARTEX, and the only problem here was with the material itself...it tends to "bleed" the color when heated...and considerable red turned the white sort of pinkish in contiguous areas. Nothing harmful to aerodynamics, of course, but not exactly show quality, either. The wings are straight and true, having been lined up exactly on Bob's bench. "Full-house" control functions were installed: Flaps (reflexing), ailerons (which could act as spoilers), compensated elevators, rudder-aileron coupling as desired. The installation was complex - very!

The first flight from hand launch was an absolute disaster -- and it WAS ALL MY OWN FAULT! Here's a warning to you: BE SURE TO FOLLOW DODGSON'S DIRECTIONS TO THE LETTER. I didn't, and nearly ruined the plane. Bob had set up the wing-stab angles according to the instructions, but they looked wrong to me ... so I asked him to change the decalage angle. Bad decision. The inevitable nose-up at low altitude followed by a stall and CRASH! Slight damage done, and a lesson learned. Follow the directions exactly, and you'll be okay. After repairs, we got some very nice hand launches and a few flights from the high start. I was amazed by the flat, flat glide and the absolute willingness of the sailplane to circle in the slightest lift - gaining altitude!

The WINDSONG needs practice; or, better said - the PILOT needs practice. It is not a difficult machine to fly, but it IS a difficult machine to fly WELL. You have to work at it, and the trim/balance adjustments have to be made carefully. Rigging of the control surfaces and their adjustment takes time. This isn't the kind of sailplane that you take out of the trunk and heave into the air; at least not until you've done your homework. I have found that the WINDSONG really needs experienced and gentle hands to perform its best, and with some 50 flights or so on it at present, I am just beginning to learn how to fly it.

The ACE radio installation works fine, except that I made the mistake of using servos that did not have the torque necessary to handle the mechanical coupling requirements. This caused the control surfaces to be a bit sluggish. That, plus friction in the system, resulted in excessive servo drain and somewhat less than desired response. Lesson learned: make those controls as frictionless as you can, and use servos with at least 35 inch-pounds of torque.

Eventually, we disconnected the up-aileron -spoiler feature, and even the flap/elevator compensation. This helped a little as far as my servos were concerned. I also used electronic mixing in the Silver Seven where possible, rather than mechanical mixing - to reduce friction. Now, the WINDSONG flies as it should, but still takes getting used to. I would say that you should plan to spend one season at least learning to fly the WINDSONG well. In educated hands it almost seems to perform miracles of flight, and its appearance in the sky is much like that of a full-size sailplane. I've heard the word 'majestic' used, and I would have to agree with that.

The kits are expensive, and they are not for everybody because of the skills required to build them straight and true, yet light and strong. Bob Dodgson has a video tape you can rent to get you over the tough parts quickly and without pain. Plan to spend a lot of time getting everything lined up accurately before you glue the parts together. Don't try to build it as fast as you can but, rather, as neatly and accurately as you can.

The WINDSONG is a dynamic work of art and beautiful to behold in its natural element - the sky. Build it with this in mind, and learn to fly it as smoothly and precisely as you know how. You will certainly bring home trophies from contests, and one heck of a lot of satisfaction from fun flying. You will find yourself staying up after others have landed, and you'll also find yourself coming back from downwind areas while others land out. How your own WINDSONG performs is up to you. Bob Dodgson has given you the best tool for the job that he can find, so plan to give your best effort in the flying department.

There's no reason to suppose that a carefully-built WINDSONG won't last for years of flying, if you handle it properly. Likewise, there's no reason to suppose that anything much better is going to come along, either. It is an investment - not an expense. Treat it so.

SUPPLEMENTARY COMMENTS-----use of an autopilot

A single-axis (pitch) electrostatic autopilot was installed in my WINDSONG. This is one of the units made by Ben Thomas. Unfortunately, I was never able to get the unit working properly... or at least as smoothly as I would have liked. Adjustments were very finicky, and did not seem to hold for any length of time. I believe that this was due primarily to being flown in the winter under very dry atmospheric conditions, and in a cold, snowy environment. The Polonium sensors are very sensitive to electrostatic fields - their working depends on this - and I believe that I was trying to make them work under conditions that were unfavorable. Besides this, the Polonium itself was quite old and not fresh. You should change the Polonium every six months for best results. Although the autopilot did not work for me as well as I would have liked, it was my fault. Others have expressed satisfaction with

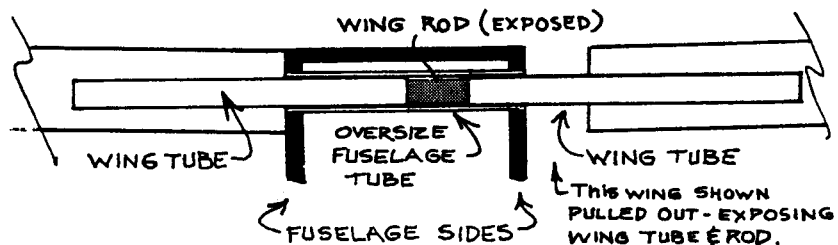
Ben's units, and have used them successfully. Incidentally, Ben is not able to furnish these units any longer, as his 18-hour-per-day work schedule has him out straight; and this is expected to last well into 1987.

#### WINDSONG MODIFICATIONS

First, let me say that the WINDSONG as received from Dodgson Designs needs no modification. However, as we all know, there are individuals who must change things according to their own whims and experience...possibly to make a machine do something that it may not have been intended to do, or to add a personal feature that may not have been included in the original design. Such modifications to the WINDSONG (or any of his other designs) are discouraged by Bob Dodgson -- yet there will inevitably be builders and fliers who will modify for reasons best known to themselves.

Eric Jackson wrote me recently describing some of his 'mods' to the WINDSONG, and I pass them along for what they may be worth. Here's Eric:

"I acquired a WINDSONG kit and have spent the last six weeks building it. Quite enjoyable. I have to confess that I modified it some in the structural area, and the mods include: 1-1/8" wide carbon fiber ribbon full span on the wings, top and bottom; ballast tubes; top spar extended to four feet (past aileron bellcrank); wing tubes extend to the centerline of the fuselage (see sketch)



requiring a bigger tube in the fuselage. Result: I can stall on our field, and I have WINDSONG wings that flex only a small amount. High-speed dives produce no flutter in the wings or controls. Total weight gain due to the mods was about 3 ounces! My WINDSONG is a little heavy at 72 ounces, but it still goes up as fast as anybody's and will work the same lift. The advantage to the extra weight seems to be that the airplane just flies better, and it's not so skittish. I'm not the only one to make this observation, either. Who knows, maybe heavy is better!"

Eric has a flying style, and flies under conditions, that may

require a heavier sailplane (i.e., higher wing loading) and a stronger wing. He is an excellent pilot and a good competitor, and obviously prefers a heavier, stronger machine. In all fairness, there are those who prefer a lighter sailplane of adequate strength. This is a SUBJECTIVE matter. Some people like cookies, while others like cake; and I suppose there are some who like both -- and pie, too. In my view, modifications that provide a stronger sailplane without much weight increase are worthwhile, but ought not to be undertaken without a clear idea of what it is you are trying to accomplish. In other words, mods just for the sake of changing something are worthless. However, if you have a clear idea of ALL the possible effects of the modifications you propose, then do so. MODIFIER BEWARE. (JHG).

#### BALSA STRIPPER.....Dave Andrew

Some time ago my friend Ernie Currington sent me some nice sketches and a description of a balsa stripper used by his friend Dave Andrew - a fellow member of their free-flight club. Although most of us are not into balsa stripping these days, I have to admit that it can be a time and money saving process. When you need one, there is absolutely no substitute, and what's the harm if you keep it on your modelling bench ready for use when needed? Besides all that, it's simple to build and very inexpensive. Try it. (JHG).

#### **Everything You Always Wanted to Know About Strippers**

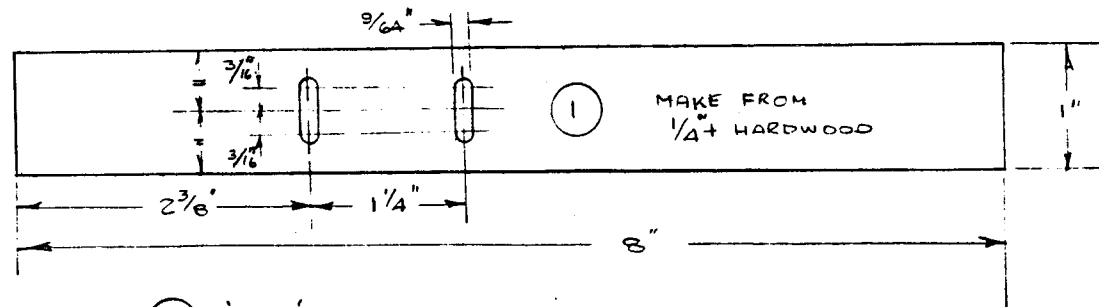
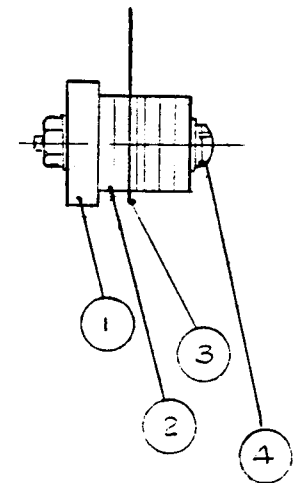
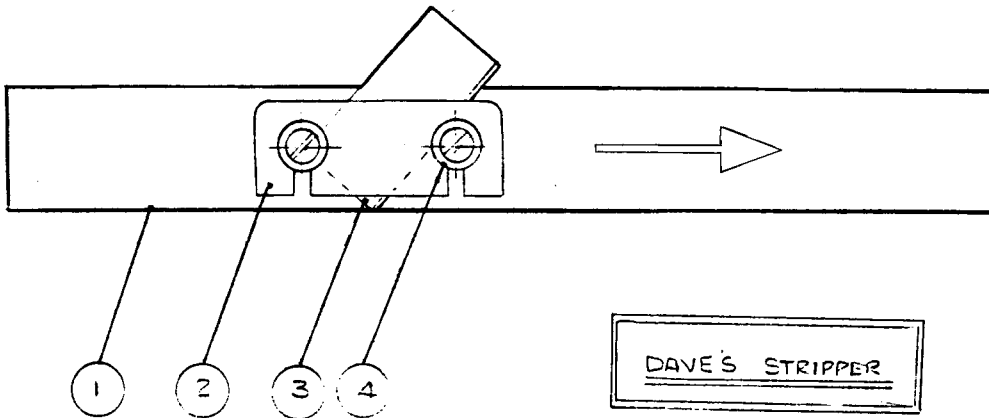
(But Were Afraid to Ask)

There are many advantages to being able to strip your own balsa: economy, consistency and ability to produce numerous different sizes of strip from just a few stock sizes of sheet. Many of the strippers I have seen have one or two weaknesses:

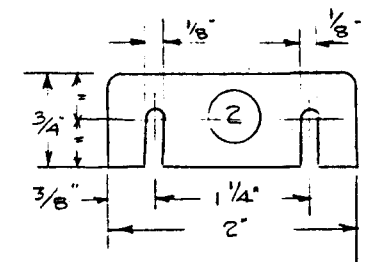
- 1) they presume that the strip can be cut in one stroke of the blade, and
- 2) they presume that there must be an infinite degree of adjustability in the width of the strips they can cut.

Attached is a sketch for an extremely simple stripper which can be made by anyone, for a cost of cents. Despite its simplicity, this stripper is the most effective I have seen. 9

It consists of a guide or "fence" and a number of spacers, all bolted together, with a blade clamped between any two adjacent spacers. I make no claims for originality; it is a development of one I bought from America's Hobby Centre for 25¢ over thirty years ago!



- ③ 'GEM' SINGLE EDGE BLADE - BACK REMOVED
- ④ 1/8" NUTS, SCREWS, WASHERS, (2 EA)



MAKE FROM PLY  
1/8, 1/16, 1/32, 1/16, 1/8  
AS REQ'D  
NOTE: 1/8" DRILLED BUT NOT SLOTTED  
EG CURRINGTON 21/2/86

together and the two 1/8" holes drilled through them. So much for the spacers. Next is the fence. It measures 1" X 8" and can be cut from 3/16" or 1/4" hardwood or plywood. It should be smooth and dead flat. Using one of the spacers as a template about 2" from one end of the fence, mark the centres of two 1/8" holes with the spacers flush with one edge of the fence, and two more with the spacer flush with the opposite edge of the fence. Now drill the four 1/8" holes in the fence. Each pair of closely spaced holes is joined with jig saw cuts to make two slots approximately 3/8" X 1/8". The spacers are now assembled to the fence with two 6-32 X 1 1/2" bolts and nuts (1/8" stove bolts are the same as 6-32). The set-up that I find most useful is: fence, 1/16" spacer, the two 1/32" spacers, then all six 1/8" spacers.

First, the construction. Material for the spacers can be plywood, fibre board, etc., but it should be exactly the thickness indicated (1/32", 1/16", 1/8"). All spacers measure 3/4" X 2". Cut two pieces from 1/32", one from 1/16" and six from 1/8" material. The spacers can then be stacked

The heads of the bolts should be on the "fence" side of the stripper, and the two nuts are epoxied to the outside spacer. The blade is a single edge Gem razor type, with the backing removed. This blade is thick enough to be stiff, but not so

thick that it compresses the wood. To remove the backing, clamp the blade in a vice, with about 1/16" gap between the backing of the blade and the top of the vice jaws. Insert the tip of a screwdriver into this gap and pry the backing off the blade.

The bolts holding the stripper together should be unscrewed enough to permit inserting the blade between any two spacers. Insert the blade according to the width of strip you want. The stripper is now ready for action. But wait. There are a few "tricks" to using it, and knowing them can make all the difference in the world.

With the blade inserted, but not protruding below the stack of spacers, slacken the bolts slightly, so that the fence can slide up or down on the spacers. Place the stripper on the sheet of balsa you intend to cut, with the fence over the right edge of the sheet, resting on your building board, and the spacers pushed down firmly against the surface of the sheet. Now tighten the bolts slightly; tight enough so that the blade will not back off while being drawn through the balsa, yet loose enough to permit the blade to be forced down by hand between the spacers.

The front bolt (near the "short end" of the fence) should be a shade tighter than the rear bolt (near the "long end" of the fence). This will tend to prevent the stripper from "running out" from the edge of the sheet being stripped.

Now for the real secret of successful stripping: start with the blade protruding only about 1/32" below the bottom surface of the spacers. This technique minimizes the tendency of the blade to "wander" or follow the grain of the

over the sheet once, making a cut 1/32" deep, push the blade into the stripper an additional 1/16" deeper at a time until the strip is cut free. It may sound slow, but in practice it can be done very quickly. With this method, strips can be cut from 1/4" or thicker sheet, and even basswood, pine or spruce can be stripped. A word of caution: when you first see the results, you'll be so enthusiastic that you'll want to strip up every sheet in your shop! Contain your enthusiasm - you'll need some of that sheet for ribs and leading edge coverings.

Except for spacer thicknesses, the dimensions given are not critical. More spacers can be added if you want strips wider than 3/4", and a different set of spacers could be made for cutting metric widths. Other uses and variations on the basic stripper will suggest themselves.

For example, using this stripper, I've cut 1/32" square rabbets from the corners of 1/8" square balsa:

I've then used these as longerons on open rubber fuselages covered with 1/32" sheet cross grain.

Laminated wing tips are lighter and stronger than those cut from flat sheet. Laminations can be made for two pairs of wings at a time, glued up from 3/4" wide strips of 1/32" sheet. How to cut these curved tips to 3/16" thickness?

Make a stripper in which the "fence" is a piece of 3/8" plywood, approximately 4" X 8". This fence is clamped in a vice in a horizontal position, becoming a small table, with the spacers bolted on top. Instead of moving the stripper across the work, the work in this case is moved across the stripper. Making the first cut only 1/32" deep, and successive cuts 1/16" deeper, the 3/4" bank of wing tip



laminations is cut effortlessly into four pieces of 3/16" thickness.

Compared with the micro screw or sliding type of adjustment which most strippers have, the incremental widths which are inevitable with a spacer system, have a subtle advantage: the strip of 1/8" X 1/4" you cut today will be exactly the same width as the one you cut tomorrow or five years from now!

HARK, THE PROPHET SPEAKS.....Bob Gracey

When friend Jim asked me if I would like to build a PROPHET 2-meter sailplane. I was all for it because I had seen one and read about it -- so my curiosity was at high pitch.

The kit arrived, and like most builders, I dug into it immediately and messed up all that neat packing. One of the things I liked right off was the hardware. It came with an adjustable tow hook, which I liked, and also included the wire cable push rods which sure keep it flying straight in hot weather.

The PROPHET is shipped with two rolled sheets of plans, and when you unroll them you'll really be amazed: there are complete plans for almost any configuration of wing you can think of; complete with location of cables, spoilers, ailerons, etc. You have a choice of polyhedral or straight wing; one-piece, two-piece, or three-piece wing, and there is even a plan showing how to convert your PROPHET to an electric-powered sailplane! Now this is really first class. If you happen to be interested in something that will pack small and fly good, the three-piece wing with spoilers would be great. This time I was in a little hurry, so I built the one-piece wing with nylon bolt hold-down.

This ship does require small servos, and is not really a beginner's plane, but I feel that anyone with several previous sailplanes under his belt could do a good job with the PROPHET. The directions are good, and there are some really great instructions for trimming and flying.

I usually build by starting with the stabilizer to get me warmed up for building the rest of the plane. The PROPHET uses a built-up flying stab which poses no problems at all.

I departed from my usual habits and went for the fuselage instead of the wing as a next step...mainly because I was intrigued with the construction. This is one of the neatest methods of building a straight, strong and sleek fuselages I have yet seen.

It reminds me of the Old Timer free-flight 'crutch' construction. You start by marking the former locations on a pre-cut 3/8"-thick fuselage bottom. This is pinned to the plans and the formers are glued on top. The nose block is added and the sides are then glued in place. Removing this from the plans gives you a 3-sided box. The fin is built up of sheet balsa with the center lamination passing completely through the fuselage and anchored to the bottom piece. The top rear piece of 3/8" balsa is then slipped into the box and the rest of the fin added. You now have a strong, straight fuselage that only needs to be attacked by a sanding block to produce a sleek shape that flows right into the fin. When this is covered with film, it looks almost like fiberglass.

I finally got around to building the wing and found nothing out of the ordinary in the manner of construction. The center section is completely sheeted, and the outboard panels are sheeted forward of the spar on top with cap strips over the ribs, aft. The underside of the wing employs full capstrips the entire length of the rib chord. I added a little stronger ply brace at the center than was called for on the plans (probably because he knew I was going to be flying it! JHG). One important point to be noted is that the wing requires 1/2" built-in (not warped-in) washout at the wing tips to help those quick turns without tip stalling. I used a nylon bolt through the trailing edge, and a 1/4" dowel peg at the leading edge to hold the wing down and securely locked in position on the fuselage. I'm tired of buying rubber bands, and I think that it's hard to get the wing in the same location twice when you use them. This way, the wing snaps into the same location every time.

I covered the PROPHET with metallic charcoal and white MONO-KOTE...bottom of wings and fuselage charcoal, and leading edges of wing on top, and canopy, white. The fin, rudder and tailplane have charcoal-and-white as well...very attractive, and it shows up good in the air against either blue sky or white clouds, or grey murk. I balanced the plane just as is shown on the plans, and adjusted the towhook as Ted suggests in relation to the C.G. As someone else mentioned, there was no line to set the stab by... let's be honest...I did my usual and eyeballed it in place. Being a white-haired fun flyer these days I usually check the wing for warps, visually line up the wing, stab and rudder...check the balance pint and towhook...and heave that bird into the air! This time I didn't heave it, but - instead - packed it into the car with not even a hand glide, and set out on vacation with wife Irene...the first stop being Old Jim's house. I'll let Jim take the flying story from there.

My personal thoughts on the PROPHET are that it is a very good kit and an enjoyable plane to build and fly. I have another one in the box and am trying to decide what combination of wing and fuselage I will use. Let's see: two-piece...three pieces with spoiler...ailerons...hmmmm! \*\*\*\*\*

TED DAVEY'S PROPHET - a most extraordinary performer.....Jim Gray

At long last I have had the pleasure of flying the PROPHET 2-meter sailplane kitted and sold by DAVEY SYSTEMS.

As you have read in the remarks by Bob Gracey, who built the kit for me, it was extremely easy and straightforward to build, with really good wood. Mine was finished in a combination of charcoal and white, with a red pinstripe separating the two non-colors. What an attractive finish!

You probably will wonder just how easy it is to balance and trim out for the performance you're looking for...and I can tell you now that it's a "snap". It was with a bit of unease (first flights always are for me) that I had Ty Sawyer line the ship up into the slight breeze and run along with it as I fumbled the 2-axis controls on my Futaba radio. We had installed two S-33 servos side-by-side in the slim fuselage, added one of the SR 250 mAh batteries in the nose, and stuffed the receiver and switch harness inside -- with lots of room to spare for added ballast in the front compartment as well as in the totally empty space under the wing. Bob had done a preliminary check-out balance and had put in some epoxy and lead shot mix in the nose to bring it into rough balance. Final trim balance was up to me.

Ty ran with the bird, letting me know that he wouldn't release it until or unless it felt "right" -- that is, would lift itself out of his hand on an even keel without pitching or turning...and so it did. Straight and true, on and on, with a beautiful flat glide. I needed only to add a bit of pressure on the stick to lift the nose in the tiniest flare for a soft, smooth landing way down the field. My guess is that it flew about 200 feet from the head-high launch.

The C.G. had been placed exactly as shown on the plans for initial tune-up, and my feeling was that this might even be satisfactory for all flights, pending the trim tests explained in detail by Ted in the very complete instruction and flight test manual. Time to launch. We stretched the hi start (heavy duty rubber) and let her go. Up, up and away, straight as an arrow...with no tendency to veer or porpoise...and I knew we had a superb machine that would be easy to fly. The first flight was almost anti-climactic in that it presented absolutely no problems. The circle and spot landing was totally uneventful. Now to the final trim flights!

Bob and I waited until the calm, still air of early Sunday morning at the high school athletic field. We launched and followed Ted's manual for final trim flights, gradually removing nose weight until a shallow dive could be maintained without stick pressure after it was initiated. Then, gradual movement of the tow hook back until it started to veer from side to side on launch...and then moving the

the Prophet (continued)

hook forward by 1/8". Finally adjusting clevises until a slight porpoise pitching movement occurred with full back trim. Perfect! Now for soaring. We flew a dozen or so flights in air that was just beginning to lift, and managed to get several 10-minute durations. PROPHET turns extremely well, pivoting on a wing tip when required, and can really move out upwind when urged. She thermals with ease and signals the slightest lift with a very perceptible bobble. I REALLY LIKE IT AND PLAN TO FLY HER IN CANADA AT THE GRAND PRIX.

NOTE: The PROPHET is one of several sailplanes manufactured by Davey Systems Corporation of One Woods Lane, Malvern, PA 19355. Ted Davey's number, in case you'd like to call him and order your PROPHET, ARIEL, LUCIFER, or other 'plane is: (215) 644-0692. By the way, if you want to see a really fine larger sailplane, try the PROPHET 941. Ask the CASA club about that one! (JHG).

ONTARIO GRAND PRIX - July 4, 5 and 6th 1986 - Rockton, Ontario

Fifteenth out of twenty or so isn't really a disgrace, is it? That's the score I turned in at the Ontario Grand Prix held over the Fourth of July weekend in Rockton, Ontario (north of Hamilton and Dundas, and very near the site of the Southern Ontario Soaring Association - full size soaring club). Peggy and I planned to make the trip out to New York State, visiting friends along the way, scoot up to Ontario for the contest, and then swing back through New York State on the way home for more visiting. The total trip was about 1100 miles...and was FUN! On the way home we stopped at Harris Hill and flew my Prophet one evening after the full-scale activity had ceased. Now, back to the contest.

We stayed with Rose and Otto Bandmann of the Country Hobby Supply company, located within about four miles of the contest site, and enjoyed the fine hospitality and fine cooking offered by these good friends of soaring. Otto flies both the large sailplanes as well as the small ones, and is a craftsman of the old-country type in wood, metal, fabric and other building materials. In fact, I flew one of his original designs one evening at the SOSA field, and found it to be as good as any Standard Class machine I've flown. Otto uses Silkspan and dope for wing covering materials and, after I'd seen the excellent results, I decided to cover my next sailplane with this material. It is light, taut, easy to repair, and good looking. Besides all that, it imparts considerable strength to the underlying structure.

We did not arrive in time to register for the first contest day, and it's just as well, as it was a day of survival in the 30+ m.p.h. winds. A lot of good sailplanes bit the dust on that day. Saturday started a tad better, with somewhat lighter winds and a good measure of sunshine. My original Hy-Bird would have been the best sailplane to fly, but I had not brought it with me. Instead, I

flew a Ted Davey PROPHET built and delivered by Bob Gracey (see report in this issue). Loading all the ballast I could into the ship, I was able to climb well on the winch, but could not really penetrate out to the band of stationary wave lift that the bigger ships could reach. Nevertheless, each round found my performance improving, and the last round was a good in-or-out 50-point landing preceded by a 7-min. 13-second "max". The idea of precision duration had been dropped by C.D. Jack Nunn, so it was straight 7-min. duration... which made the task much easier. Two-meter sailplanes flew in Standard Class with Sagittas and the like, while the Unlimiteds were - well - unlimited. I saw a very pretty Airtronics GRAND ESPRIT, a sailplane that has been around for about 15 years...and no longer available, by the way...and it performed beautifully as always.

There were a considerable number of interesting original sailplanes in both classes, I don't have my photos developed yet, so will have to wait until next month to show them to you. Contestants from virtually all over eastern Canada attended the meet, representing clubs in Ottawa, Toronto, Hamilton, Montreal, and other locations. The usual good-natured banter was much in evidence, and the C.D.'s had everything under firm, but relaxed, control. Jack Nunn, Neil Tinker, Ray Munro and their helpers really did a smashing good job of putting on a splendid meet. We had to leave Sunday, so flew only the one day.

#### PRODUCTS USED AND LIKED.....Jim Gray

Nearly a year ago I was introduced to AEROSPACE COMPOSITES, a company run by George Sparr in Farmington, Connecticut. Since then, I have had the opportunity to use some of the many products sold by AEROSPACE COMPOSITES -- and I will say that I like them a great deal.

For example, I have used the unidirectional carbon fiber tow for spar and fuselage reinforcement. It is about 1/16" wide and so flat when squeezed out with pressure that you can put it on spar caps or on fuselage sides, tops and bottoms without it causing any bulges or bumps whatsoever. The strength that it gives these parts has to be tried to be appreciated!

AEROSPACE has many other materials, as well, including cross-ply, single-ply, double uni-ply, and other carbon and Kevlar products, which can be adapted for your modelling use by themselves, in combination with each other, and in combination with the more usual woods and glasses, to produce unique structures of surpassing lightness and strength. I am convinced that the era of new and useful composite materials for modellers has arrived, and all you need to do to exploit them for your own purpose is to call or write George Sparr at AEROSPACE COMPOSITES (advertisement in RCSD) and try some of the

#### COLUMNIST NEEDED...

The VINTAGE SOARING ASSOCIATION's publication BUNGEE CORD has need of a sailplane model columnist, preferably one who is familiar with classic vintage sailplanes and who actively builds and flies them. I can think of several R/C sailplaners out there who qualify for this job...and would ask you, if interested, to contact editor Jan Scott, Vintage Sailplane Association, Scott Airpark, Lovettsville, VA 22080.

#### PRODUCT RECOMMENDATION...

Bob Sealy's Quality Fiberglass (an RCSD advertiser) would like the opportunity to show you what he can do with fiberglass fuselages and his ROOKIE 2-meter sailplane kit. I've seen his work and can tell you honestly that it is absolutely first rate! Right now, I have two of them (one is for the Top Flite ANTARES) and am waiting for his ROOKIE kit. If it's anything like his fuselages, it will be the best kit you've ever seen! I'm giving Bob a plug because I honestly believe that for price and quality you can't beat his work. Try it and let me know what YOU think.

#### NEW RCSD COLUMNIST...

For a long time, RCSD has needed someone to write a monthly column about slope soaring activities...and now we have one: Harry Finch from Cypress, California. Harry wrote the article about building and flying the Howard Metcalf PHANTOM that was in the July issue of RCSD. Harry will also present some of the most unusual and interesting building tips with composite materials that you've ever seen, along with ideas and tools, jigs and fixtures for doing things like vacuum-forming of fuselages in a very simple and inexpensive way. Next month, I'll present a photo and thumbnail biography of Harry and his modelling background. I'm looking forward to his column, and I know that you will be, too. Watch for it in the September issue.

#### MAPS, ADDRESSES AND 'PHONE NUMBERS NEEDED...

Jerry Slates of Viking Models (an RCSD advertiser) is looking for the names, telephone numbers and addresses of readers who would be interested in having a visitor come to fly with them and/or their club. He would like to print this information in his catalog and, as a matter of fact - space permitting - I would also like to place it in RCSD. If you or your club would like to host visitors from far and near, please write to Jerry or to me. If you can draw a simple map showing the location of your flying site, we will include that as well, to help guide the itinerant pilots to your field. This is one heck of a good idea, and I wish I had thought of it! Write to Jerry c/o Viking Models, 2026 Spring Lake Drive, Martinez, CA 94553. Please help.

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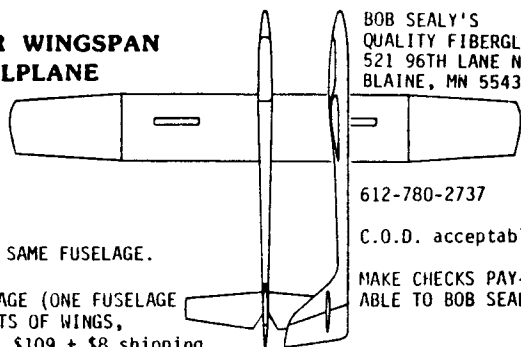
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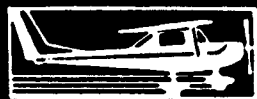
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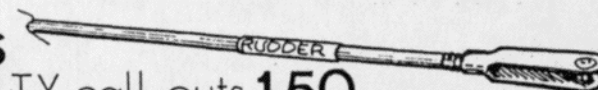
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