

THE VINTAGE SAILPLANE ASSOCIATION

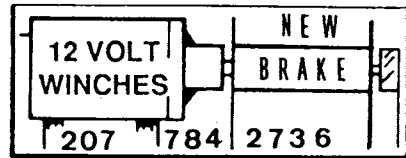
VSA is a very dedicated group of soaring enthusiasts who are keeping our gliding history and heritage alive by building, restoring and flying military and civilian gliders from the past, some more than fifty years old. Several vintage glider meets are held each year. Members include modellers, pilot veterans, aviation historians and other aviation enthusiasts from all continents of the world. VSA publishes the quarterly magazine BUNGEE CORD. Sample issue \$ 1.-. Membership \$ 10.- per year.

For more information write:

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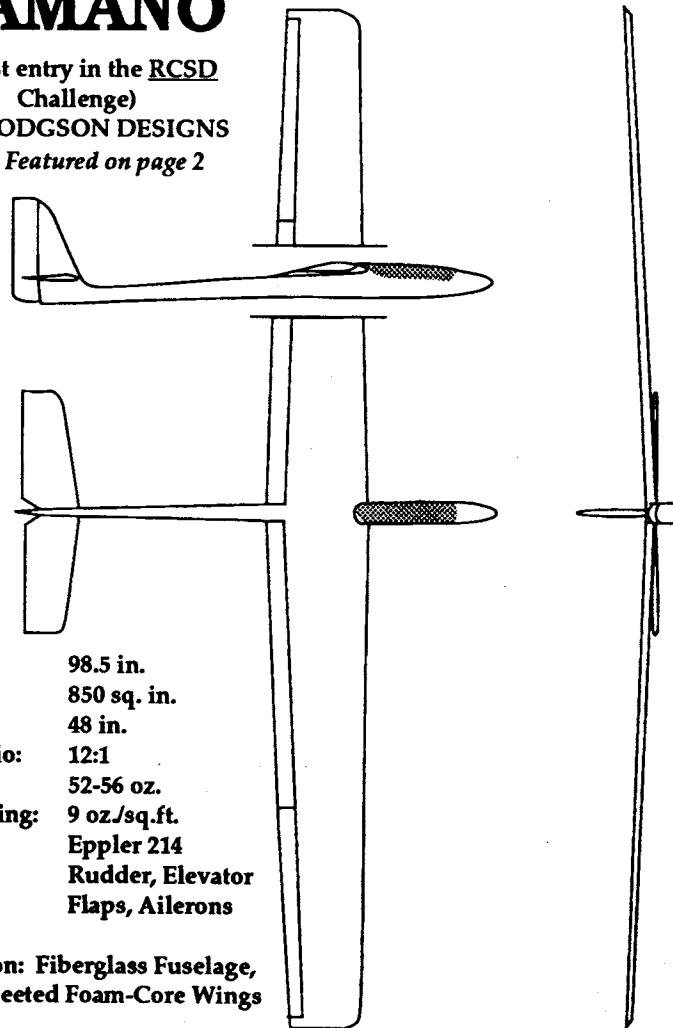
Vol. 6

No. 7

July, 1989

CAMANO

(Latest entry in the RCSD
Challenge)
...by **DODGSON DESIGNS**
Featured on page 2



Span: 98.5 in.
Area: 850 sq. in.
Length: 48 in.
Aspect Ratio: 12:1
Empty Wt.: 52-56 oz.
Wing Loading: 9 oz./sq.ft.
Airfoil: Eppler 214
Controls: Rudder, Elevator
Flaps, Ailerons

Construction: Fiberglass Fuselage,
Sheeted Foam-Core Wings

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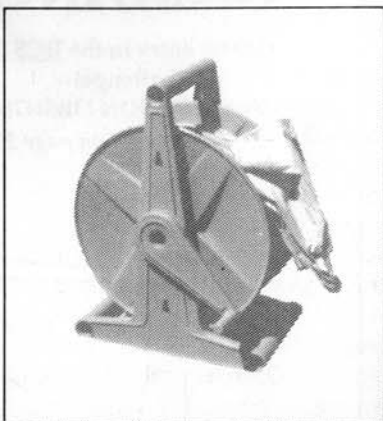
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High Start

Lots to talk about this month, and the thing that is freshest in my mind is our recent trip to Pasco-Richland-Kennewick, Washington for the Scale Slope Fun Fly sponsored by the Tri-Cities club and, most notably, Wil Byers. I can truthfully say that we (Peggy and I) had more fun at this meet than at any I can remember...and we didn't even fly! Over 80 pilots and 110 sailplanes of every description, color and size graced the skies of Richland over the Memorial Day Weekend. Truly a "fun fly", there were few rules (the basic one was limiting the number of sailplanes on the slope to eight at one time, and you had to have the frequency pin) no early-morning pilot's meetings, and plenty of things to do and people to talk to about their sailplanes. With no pressure, everyone was relaxed and talkative - pleased to "show and tell" their scale creations. The weather was partly co-operative, meaning that there were a few hours over the four-day period when flying wasn't possible...or at least very good...but these were few and far between. You'll read more about this meet later on in this issue.

The multi-task soaring movement keeps on rolling along. The **RCSD** Challenge has received several "official" entries, and a number of "unofficial" suggestions, all of which will also be considered for the one-design sailplane that best meets the Challenge. The end of June marked the close of official entries, and judging will commence in July. So far, "official" entries include Don Chancey's CONQUEST, Mark Triebes' EXCALIBUR, Bob Dodgson's CAMANO, Bob Sealy's PULSAR, and Mark Allen's FALCON 880.

Other, as yet unofficial entries include Don Edberg's HUSTLER, ACE R/C's QUASOAR as modified by John Dvorak, Ed Slobod's GEMINI MTS, Airtronics' SAGITTA 900, Earl Levin's modified Airtronics' CUMIC, Dick Edmonds' ALGEBRA 2.5M, and several others. The difference between "official" and "unofficial" entries is one of stated intent in writing and submission of a three-view and spec's for the sailplane to be entered.

The "rules" to be followed are simple: a maximum ballasted gross weight of 80 oz., and a maximum ballasted wing loading of 12 oz. per square foot. The contender should be readily available as a kit not to exceed \$150, and plans should be available for a "scratch" builder. Although a "Challenger" winner will be chosen by the committee (Randy Reynolds, Byron Blakeslee, Gus Peleuses, John Dvorak, Don Edberg, and myself) it is intended that for multi-task soaring contests ANY sailplane up to and including the stated criteria may be used. The whole idea is to have FUN and impose as few limitations as possible while enjoying the challenge of multi-task soaring events.

The "one-design" idea originally proposed in **RCSD** as a single sailplane to be used by all competitors in any multi-task contest has fallen flat on its face — being unpopular and not even marginally acceptable by anyone—as far as I can tell from responses received to date. So, while the "one-design" selected by the committee will not be FORCED on anyone, we feel reasonably sure that there will be many multi-task soaring pilots who will WANT to use it.

Oh, one more thing: by the time you read this, several multi-task soaring contests will have been held, and I would like to have the CD's let me know how it was received by average thermal-duration soaring pilots.

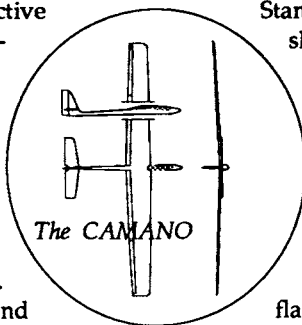
Happy Soaring,
Jim Gray ✉

ALL ELECTRIC FLY-IN: September 30 and October 1, 1989 for Fun Flying (anything electric goes); Scale: AMA Electric rules apply (held on Saturday, September 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.

Bob Dodgson and Dodgson Designs scarcely need an introduction, for they have been in the forefront of R/C soaring for over 15 years! This month's cover three-view features Bob's CAMANO, an attractive Standard Class sailplane featuring a fiberglass fuselage and balsa-sheathed foam-core wings using the Eppler 214 airfoil. The area is 850 square inches.

Bob has officially entered Challenge, and although the what above the target price of complete and readily available.

At an unballasted weight of wing loading is a modest 9 oz. rudder, elevator, aileron, and four-channel radio with small to mid-size servos. CAMANO has been built and flown in sufficient numbers to prove its worth and winning ways. There is little doubt that it would also perform well in multi-task competition.



Standard Class sailplane featuring sheeted foam-core wings using span is 98.5 inches and wing

the CAMANO in the RCSD kit price at \$169.95 is some-\$150, it is exceptionally complete

between 52 and 56 ounces, per sq.ft. Control functions are flap...using any simple three-to-

four-channel radio with small to mid-size servos. CAMANO has been built and flown in sufficient numbers to prove its worth and winning ways. There is little doubt that it would also perform well in multi-task competition.

TWITT (The Wing Is The Thing) NEWSLETTER.

Here is a golden opportunity to join the growing ranks of Flying Wing enthusiasts. The goals of TWITT are to promote the design and construction of tailless and all-wing sailplanes; to provide a forum for speakers who have valuable ideas and experience to contribute; to assemble a technical library devoted especially to the problems of tailless aeronautics; to disseminate through the newsletter as much information as time and budget allow; and to build at least one powered tailless airplane and one high-performance tailless sailplane.

Beginning in 1986, most of these goals have become reality. The library has been built on a core collection of material from the private holdings of Bruce Carmichael, F. Marc de Pilolenc, and Bob Fronius. The wing molds for the high-performance sailplane have been made, and TWITT shamelessly exploits a large reservoir of talented aeronautical talent including Irv Culver, Karl Sanders, Henry Jex, Bruce Carmichael and many more.

Membership as such is limited to those who can actively help with the group's work...it costs only the time, effort and money invested...but we're pretty choosy about who gets to be a TWITT. If you can't be a "member" but wish to keep abreast of the TWITT doings, the newsletter subscription is only \$15 per year, mailed First Class to North American addresses. Back issues cost only \$.75 each, postpaid in North America.

TWITT is constantly looking for technical and historical information on tailless sailplanes: both full-size and models. A large and active group of model "wing" enthusiasts already take part as members as well as subscribers. Speakers and correspondents contribute papers, 3-views, photographs, and the like...but remember it is a two-way street: TWITT will furnish information merely for a SASE. For more information, a subscription form, and a sample copy write to F. Marc de Piolenc, Editor, TWITT Newsletter, P.O. Box 20430, El Cajon, CA 92021.

RCSD's columnists, B² Kuhlman, have mentioned TWITT several times in their columns in RCSD, and you, too, are encouraged to subscribe. Please tell Marc when you write that RCSD sent you.

ANNOUNCEMENT

LSF officers for this year are: Bob Steele, President; Ray Hayes, Vice President; Jim Martin (Ohio), Secretary; and Susie Lipp, Treasurer. The NEW ADDRESS for LSF is: League of Silent Flight, P.O. Box 517, Winfield, IL 60190.

LSF Level V Members

Name	LSF #	Date***	Name	LSF #	Date***
1. John Baxter	24	July 3, 1975	36. John Hoover	592	July 8, 1984
2. Steve Work	571	Dec 15, 1975	37. Mike Kozumplik	2497	July 22, 1984
3. Fred Weaver	283	Sept 17, 1976	38. Cal Posthuma	2997	Aug 11, 1984
4. Neil Nolte	586	May 30, 1977	39. Tim McDow	2764	Sept 22, 1984
5. Marvin Qualls	1639	Feb 19, 1978	40. Earle Latimer	3119	June 30, 1985
6. John Newman	1632	Aug 17, 1978	41. Terry Edmonds	463	July 14, 1985
7. Don Harris	810	Aug 27, 1978	42. Dale Harber	1880	July 18, 1985
8. Chris Adams	348	Oct 15, 1978	43. C.J. Smith	4043	Aug 11, 1985
9. Tom Christian	74	June 24, 1979	44. Richard Ransom	4747	Aug 15, 1985
10. Dwight Holly	2259	July 8, 1979	45. Tom Dickey	3816	Aug 31, 1985
11. Howard Sears	294	July 12, 1979	46. Skip Schow	166	Aug 31, 1985
12. Ken Bates	604	Aug 26, 1979	47. John Brown	1720	Sept 2, 1985
13. Paul Wedeking	2540	Nov 4, 1979	48. John H. McMillan	1987*	May 11, 1986
14. Craig Foxgord	882	Jan 27, 1980	49. Terry Luckenbach	2954	May 25, 1986
15. Pat Flinn	2160	Aug 8, 1980	50. Joe Bedford	3356*	June 21, 1986
16. Jack Hiner	383	Oct 12, 1980	51. John Vennerholm	1291	Aug 24, 1986
17. Kieth Kindrick	1693	May 17, 1981	52. Mike Hickman	4755	Aug 31, 1986
18. Gerald Zeigenfuse	944	June 13, 1981	53. Charles E. Wells	3544	April 26, 1987
19. Don Clark	82	June 28, 1981	54. F. Alden Shipp	3437	May 16, 1987
20. Don Gaughnour	595	June 28, 1981	55. James R. Smith	1423	May 16, 1987
21. Jim Porter	194	July 12, 1981	56. Don Vickers	3749	May 23, 1987
22. Don Patterson	1365	Aug 23, 1981	57. Dennis K. Chall	3833	Aug 8, 1987
23. William Meleske	1227	Mar 4, 1982	58. Guy Dickes	3360	Oct 13, 1987
24. Otto Heitecker	170	July 4, 1982	59. Robert McGowan	2286	Oct 24, 1987
25. James Bohmer	1460	Aug 8, 1982	60. Bob Sowder	3795	Nov 7, 1987
26. Warren Plohr	334	Aug 8, 1982	61. Brian Agnew	3140	Dec 16, 1987
27. Robert Steele	800	Aug 15, 1982	62. Mal Pring	3864**	Jan 15, 1988
28. Walt Good	63	Mar 22, 1983	63. Douglas Barry	1644	Apr 30, 1988
29. Mike Reagan	173	July 3, 1983	64. L.D. Stowers	641	June 9, 1988
30. Bob Robinson	402	Aug 14, 1983	65. A. Neil Tinker	3572*	July 3, 1988
31. John Humphreys	3064	Sept 3, 1983	66. Austin Leftwich	2650	July 7, 1988
32. Larry Jolly	3579	Nov 16, 1983	67. Bob Champine	5503,	Aug 13, 1988
33. Stanley Watson	2542	Feb 19, 1984		3128	
34. Bob Champine	3128	May 15, 1984	68. Jim Thomas	4629	Aug 14, 1988
35. Chuck Beeman	293	June 10, 1984	* Canada **Australia ***Achievement		

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From TWITT (The Wing Is The Thing) Newsletter #28, October, 1988:

NOT A TAILLESS FAN

Victor Mead Saudek of Los Angeles writes:

...I shall make a few comments on your TWITT movement at this point: It has been very well established that nothing in the way of sailplanes can be cleaner than the conventional tail-in-the-rear configuration. To claim otherwise is to allow emotions to overcome hard won knowledge. With the prospect of making even incremental gains in performance giving one manufacturer great increases in sales you can bet the farm and your family that G. Weibel, Klaus Holighaus and others have examined this field very diligently. It is true that some features have recently been discovered — such as Les (?) Schueman (?) who figured out the double sweep back near the wing tip — and Holighaus now builds the Discus, but this is a small advantage. You should realize that when racing sailplanes are costing \$45,000 in the US, there are great incentives to examine every possible detail to get an advantage.

Recall the idea of tail-first concepts by Burt Rutan and how they were advertised as being “stable” and “clean”. Well, it isn’t so and Technical Soaring for July 1988 has an article on the subject: “Canards: the Myths and the Realities” by Albert W. Blackburn. Any way you cut it, the forward surface should be several times the aft surface area for performance. The reasons for this have long been known. And the tailless designs are inherently poorer than tailfirst! All-wing aircraft have tails — the reflexed trailing edge of the airfoil — but this is too close to the lifting part of the wing and must always reduce that lift. With a smaller surface further aft, the tail can balance the overturning (tendency to dive) moment of the airfoil with a light downward load and little drag while the wing can have an optimum low drag airfoil.

To increase L/D of sailplanes one can reduce the waviness of airfoil surfaces (see Soaring, Dec. 1987), use endplates on wingtips (carefully) and minimize interference drag at the intersections (wing-to-fuselage). The next big step will be active boundary layer control (using solar cells?) which should give L/D of 100 or so. If I haven’t convinced you, I am not surprised or sad unless you invest too much money in the chasing of the tailless “Will of the Wisp”.

Vic Saudek

(TWITT Editor’s Comments: It seems naive to advance non-use as proof of lack of merit. I must candidly confess my ignorance of the intricacies of sailplane design, but areas of technology with which I am familiar — and there are a few of those — are littered with meritorious ideas which are simply left unused. Some are very complicated to analyze (e.g. free-piston engines) while others cannot leap the retooling barrier; others are neglected out of sheer ignorance. In this connection, the high cost and low sales volume of high performance sailplanes would seem to provide a disincentive to innovation; I know of no practical way to squeeze “great increases in sales” from a miniscule market. There is no technical reason to discount tailless sailplanes a priori; the induced drag argument fails to consider the aircraft as a whole when considering the conventional layout. It is the downwash distribution in the wake of the aircraft — due to the entire aircraft — which determines whether the aircraft will have minimum induced drag. Optimum downwash gives optimum induced drag, regardless of how it is achieved. There is good reason to believe that a tailless design could have better induced drag, at equal span, than a conventional machine. If a wake displacement is taken into account, the advantage of the

tailless airplane would seem to increase at off-design lift coefficients. The lower skin-friction drag of the tailless, and the near absence of crossflow drag in curvilinear flight, seem to favor it even more. It is not clear to me why Mr. Saudek mentions canards in connection with flying wings, as they have little in common. The basis for his claim that flying wings are somehow “worse” is equally obscure. The record of the Horten machines in international and national competition suggests very strongly that the big problem of tailless sailplanes is not aerodynamic at all — they have atrocious ground handling qualities and are vulnerable to damage during out-landings. It would actually be easier to apply boundary layer control to a tailless machine, and the availability of power for suction raises the intriguing possibility (which certain TWITTs are investigating) of using active stabilization as well, allowing operation with the cg behind the neutral point of the aircraft.)

And a comment from Klaus Savier, as well, in TWITT #29

In engineering it is simply performance and cost which rule. If one configuration consistently shows better performance than others, it is wise to accept the fact that this configuration is better. Aerodynamic performance cannot be evaluated adequately by looking at skin friction drag and induced drag alone; there is more to the story.

Most canard configured airplanes generate a drag problem during turning flight, and thus are not a good choice for an airplane which is required to turn 80% of the time, i.e. sailplanes. This problem does not disqualify canards when they are evaluated on a broader spectrum. For the past seven years, general aviation aircraft performance has been meticulously measured and evaluated at the CAFE race in Santa Rosa, CA. CAFE stands for Comparative Aircraft Flight Efficiency, and we score: $\text{mph}^{1.25} \times \text{payload}^{0.75} \times \text{mpg}$, which can also be written $\text{mph}^{2.25} \times \text{payload}^{0.75} / \text{gph}$. As you can see, speed and efficiency are of greatest value. The airplanes are flown at or near gross weight around a 400 km course — climbing, descending and turning around pylons. There is no doubt that low drag is highly desirable in this event, yet it has always been won by canard configured airplanes.

I entered the CAFE race four years ago. Since then the three top places in the two-seat category have always been taken by canards! This year, Gary Hertzler (VariEze), Gene Sheehan (Q200) and I scored within 3% of each other. Fourth place went to Mike Maxwell and co-pilot Ray Cote in Mike’s meticulously race-prepared Lancair. Its score was 25% lower!

I would like to invite all believers in the “old configuration” to perform in the CAFE race or fly your old configuration nonstop, unrefueled around the world. My hat and goggles to you if you win. Until then: put up or shut up.

Klaus Savier

All of the above information concerns full sized aircraft, particularly the powered type. We feel, however, that much of what is said is applicable to the improvement of our R/C sailplanes. Of particular note are the topics of boundary layer control, drag measurement, and CG location. We’re hoping that you will be able to pick up a few other enticing tidbits and incorporate something new in your next project.

The editor of the TWITT Newsletter is Marc de Piolenc; contact Marc at TWITT, The Wing Is The Thing, P.O. Box 10430, El Cajon, CA 92021.

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Plug-In Torque-Tube Drive A Novel Spoiler Linkage

...by James Thomas

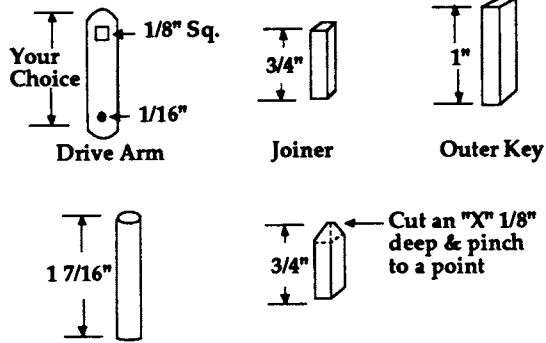
Materials

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- 1/8" Square Brass Tube
- 1/4" OD Brass Tube

Use

- Drive Arm
- Outer Keys
- Inner Keys & Joiner
- Outer Bearing

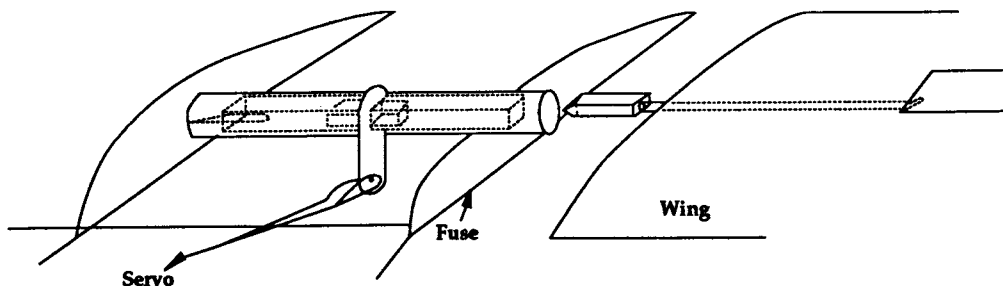
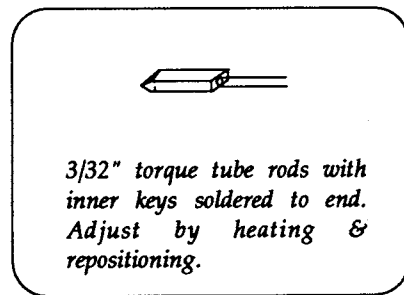
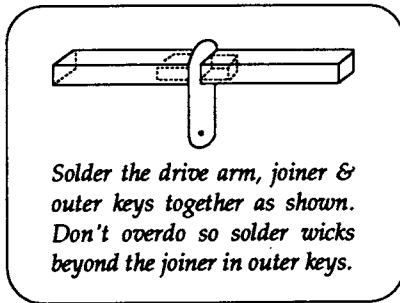
Comment: The linkage described here was used on Jim's CONSTELLATION (Bob Sealy kit). But, it is applicable to ANY situation where a linkage must be installed deep within a closed (pre-molded) fuselage...and you don't want to cut out a hatch. The linkage will be used on Jim's PULSAR (also a Bob Sealy kit). Note that the linkage self-engages when the wings are installed, and it is adjustable by re-soldering one of the two inner keys. By the way, I threw in my design for top and bottom dive (speed) brakes. JHG



Outer Bearing

Inner Key

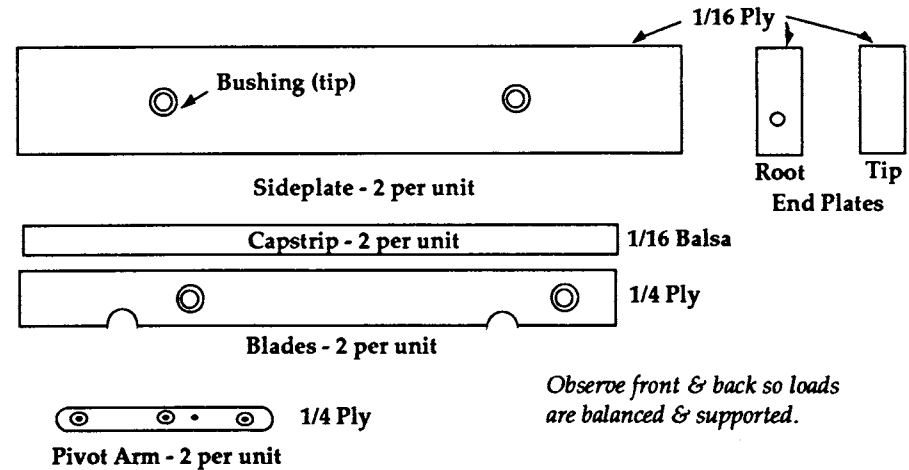
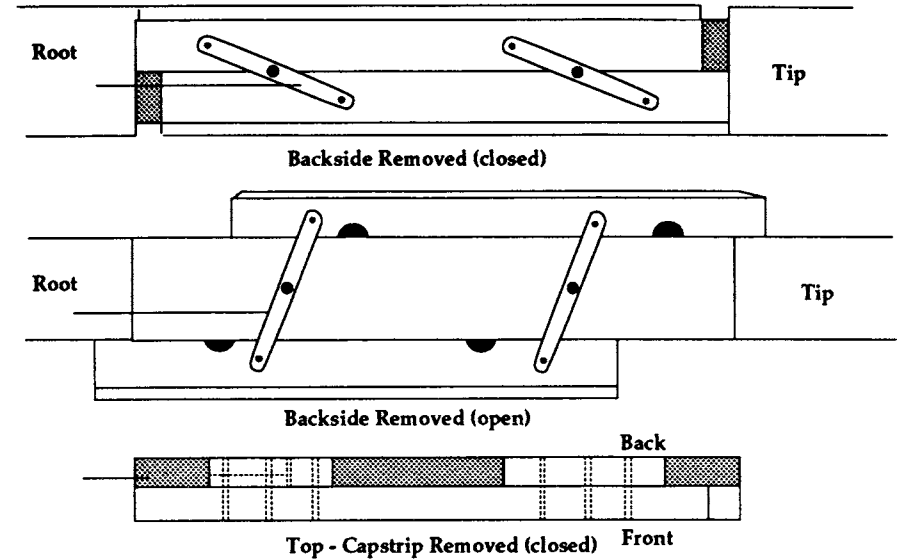
Note: These sizes are for a 3" wide fuse. For other widths, adjust size of outer bearings & outer keys. You can also offset from center to some degree.



Install by using thick CA where outer bearing passes through wing-fuse shoulder. Allow outer key unit minimum side play.

Top/Bottom Speed Brakes

...by James Thomas



Observe front & back so loads are balanced & supported.

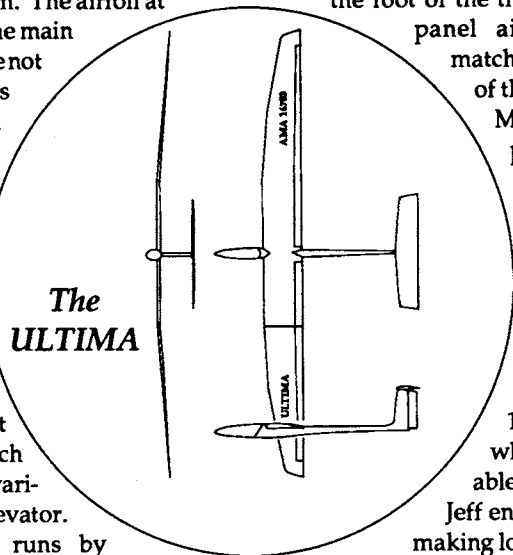
For main axles, jet the pins to bushing outside of sideplate. Hit w/kicker immediately to prevent too much penetration. Use a stand-off bushing the thickness of the blade ahead of pivot arm and allow for washers immediately ahead and behind pivot arm. For blade axles, solder a washer to pin. Insert from back through pivot arm to blade. Jet & kick on front of blade. File & sand flush as required.

James Thomas
740 College Ave.
Holland, MI 49423

The ULTIMA

...by Ed Devlin

Jeff (Morton) and I finally were able to get the ULTIMA a-flyin' on the 11th of February. It is a good ship, but there were some things that Jeff wanted to re-engineer to get things working to his satisfaction. As an example, there were NO scribe lines anywhere on the body to indicate the wing saddle location. The T tail was a bit wobbly, so we made up a new close-fitting mechanism. The airfoil at the root of the tip panels was not matched precisely to the main panel airfoil so, when sheeted, the wings were not filled about five inches the root of the tip panels was not matched smoothly. We of the trailing edge of Model Magic and plete match in 'foil tions have now smoothed out, darned good on even better!!!



The board. I've been having a when I take over the thing I do is gain about slope, flip the gear switch Elev/Camber VTR (vari- then punch in down elevator. simulate F3B speed runs by back and forth with sweeping gentle turns, then another "run" pass. I do this until I'm down to about 100 feet above us, pop in 3 to 4 notches of "down" flaps, and ride the exact center of the ridge lift back up again. The Selig 4061 is a good-performing 'foil.

On the 18th of February, at about 3 PM, the wind died down for about a half hour, so I set out the high start and up went the ULTIMA straight and true: six pounds and 129 inches span worth of plane went up beautifully.

She floats very well on dead air, and Jeff is still getting used to the "goodies" on ATRCS, so he really didn't use flaps and camber to extend the flight time. We are still adjusting the C.G. for perfect position, and have maybe one or two movements to go. We're being very careful about it, especially with a new radio and a new sailplane, but can't complain about that!

On another subject, but relevant, the Schueman planform seems to suffer due to very narrow tip chords and low Reynolds Number. The way Jeff and I did the ULTIMA was to add about one-quarter inch washout to the tips while sheeting the outboard panels...and we've not seen any sign of tip stall in our flying, even in dead air...but my philosophy is that adding washout negates any advantage this planform affords us model-size pilots.

Jeff's particular ULTIMA is a good surprise: it came out heavy at 84 oz. compared to Bob's claimed 75 - 80 oz. (dry) weight, and it's loaded to over 11.5 oz. per sq. ft.

ULTIMA is a minimum frontal area bird, and there are spots where it will disappear in the flash of an eye, so Jeff made it all white on the upper surface and bright red on the lower surface; but, in a turn at distance, or coming at you it can "evaporate" into thin air! It is a very "solid" plane, yet "on the wing" it does not perform like a heavy ship. The Selig 4061 is a high-cambered 'foil at a bit over 2.5% , and the root is something over 11+ inches if I remember right. With Schueman planform and straight trailing edge, the MAC is 9-3/4"

and the aspect ratio is 13.3. Jeff uses 1200 SCE Sanyo's in the nose, receiver, and two 732 servos, but it still needed 10 oz. of lead to balance on the plan C.G.

We've brought the C.G. back to 4-3/8" from the leading edge at the root, whereas plans call for 4-1/16" at the root. The T-tail elevator is a thick one—looks to be about 5/8" or better at the root. With the plans C.G., called-out elevator travel is okay for me. We had the elevator dual rate down to 50%, and Jeff flew two flights on low. High rate is just too pitchy and active, but Jeff likes weak stick tension, so I just flew the ship and didn't pay much attention to such loose springs and active elevator—flying on "high" rate all the time. As we moved the C.G. back, elevator travel has been cut down to comfortable values for me.

Landing is rock-solid even in gusty winds over 18 knots: we just hang out the "crow" and nary a wing drops. It has about 65 degrees aileron up travel and 90 degrees flap down travel. The only thing we need to do is retract the crow just before touch-down in the circle. If we misjudge the approach and find I'm going to be short, I just streamline the ailerons, leave in about 40 degrees or so of flaps, and the ship pops up about 6 feet without losing any speed or stalling off. I catch any possible stall with a touch of down elevator, keeping the height gained. When the shorted ground is back, I pop "Crow" again and the ship is back on target for a good points landing.

It is interesting that the ailerons are long and skinny, which I prefer, and I was expecting somewhat sluggish response, but they are just perfect: reaction rate couldn't be better. Never-the-less, I'm not going to ask this 130-inch span ship to do aileron rolls...at least not right away! We have been practicing landing in a 25-foot circle equipped with measuring tape. Jeff has been as good as 96 and as bad as 80. I think the Selig 4061 'foil is far better than the Eppler 214 on the Windsong, but performance seems to be exactly dictated by C.G. position. With about 6 to 8 degrees of full-span reflexed camber, ULTIMA seems to punch out at about 25-30 mph into an 18-knot wind as a rough guess...without any added ballast...at its six-pound unloaded weight.

Ed Devlin
839 Verdugo Ave.
Burbank, CA 91501

Comments: Ed Devlin is a perfectionist, which by now I'm sure you have noticed! His vast experience with soaring and great love of all things airborne stands him in good stead as a reporter for RCSD on any new sailplane. He finished, trimmed and test-flew my own 2-Meter ACCIPITER CCT for me, and I can truthfully say that I've never seen better workmanship.

When Ed tells you how something flies, believe it. He is meticulous. Thanks for the fine report, ED, and — believe it or not — just the other day one of our subscribers called to ask me if I had "heard" anything about the ULTIMA and its performance. Now I can say "yes". JHG



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Tom Culmsee
Soaring Events Director
2190 S.W. 8th Drive
Gresham, Oregon 97030

A review of The Falcon 880

...by Ray McGowan

Ray McGowan has been a subscriber to *RC Soaring Digest* from the beginning. He has built and flown the FALCON 880 (subject of the May *RCSD* cover) and told me that he "wanted to do my part" for the magazine. He states that Mark Allen's FALCON 880 is not a "beginner's" kit, but is not hard to build, and even after a couple of kits under his belt a beginner would know things that might not show up on the plan.

Ray has been involved with R/C soaring since 1975. He has been the President of his club, Silverado Soaring Society, for many years, and the President of the Northern California Soaring League for 9 years. He has flown F3B sailplanes in the U.S. Finals, has a quarter-scale ship, has flown slope sailplanes and even an unusual noseless sailplane of his own design (1979). Ray currently flies in F3B competition, scale competition, and thermal competition, and he holds LSF Level 4 with only the cross-country and one more win for his Level V. By the time you read this, he will probably have his Level V in the bag. *RCSD* considers Ray McGowan to be eminently qualified to bring you this report on a sailplane that is a viable contender in the *RCSD* Challenge. Mark Allen's FALCON 880 has a wingspan of 112 inches with a Selig 3021 root airfoil changing to a Selig 3014 at the tip, making it a very versatile sailplane. The kit is designed and produced by Mark Allen (Flite Lite Composites) of Petaluma, California.

It is not a beginner's kit, and it is available in several versions: full kit with all materials including glass and resin, raw foam wing cores, sheeted wings with wiring installed, etc. The fuselage is fiberglass with Kevlar™ ready to sand and paint.

I built my kit over a two-month period, starting with unsheeted wing cores using carbon fiber-reinforced spruce spars sheeted with balsa using resin to adhere the skin to the foam. I reinforced the trailing edge with glass cloth and built a servo wiring manifold into the wing for flap and aileron servos, ending with plug-in, 6-pin gang Molex connectors in the root so the wing can be just plugged in to automatically hook up the servo control leads.

Fuselage and tail feathers are of conventional construction, and I used K&B primer and epoxy paint for the fiberglass fuselage. The wings, elevator and rudder were covered with Monokote, but other builders may wish to use Black Baron covering, for example, to eliminate re-occurring wrinkles.

The radio is an Airtronics Module which is great, but I couldn't get any 401 servos so I substituted another brand, which was a mistake. You must be sure to use strong servos for the flaps, and make sure all servos center correctly and accurately.

The FALCON 880 flew great the first time, and after the third flight I had fine-tuned the flap/elevator compensation and the elevator/flap compensation. Falcon is a fine aileron ship, accelerating quickly out of sink, and with it I out-thermalled some good pilots and sailplanes in a recent contest. The Falcon is very responsive to the controls, yet is very docile...and could be flown the first time without any problem by pilots graduating from polyhedral ships. It can be trimmed to go fast, too.

My son, Bob McGowan, won the 1989 LSF International Meet and several other major meets with his Falcon 880. Fred Weaver took second place in the Masters this year with a Falcon.

In my opinion, the Falcon 880 is a good candidate for the *RCSD* Challenge, and its track record since being designed and built this year has been impressive. I think there is something about the tip panel design that allows quick acceleration yet an ability to easily reduce speed for the landing approach. When ballasted, it goes FAST and QUIET — the quietest sailplane I have seen — a recommended buy!

Ray McGowan
2661 Adrian Street
Napa, CA 94558



Ray McGowan squints into the sun as he shows his new Falcon 880. The Falcon is white with red, and blue trim.

News Flash!!!

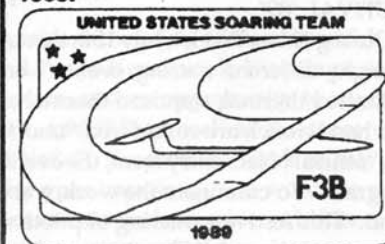
"How to Build an HP Cell Wing"

Among the many things that one can learn from this video tape is THE way to create a simple, yet effective vacuum bag...how easy it is to sand the HP Cell foam (a better balsa substitute)...a technique for using Mylar film to achieve a flawless finished surface...and many hints to make the work easy and quick. For example: what you can be doing while waiting for epoxy to cure...and how to speed up the whole process.

The tape clearly shows the advantage of having a helper work with you, although you can do most operations alone. Having an assistant is part of the teaching/learning process and a good means for passing on information to others by direct hands-on instruction.

The tape bears watching several times, and is ideally suited for showing at a club meeting. In case you wonder where you can get the materials to carry out the Hi Performance Sailplanes' methods, you can get them from HPS, too...everything you will need! Not only that, Ron and Karen Wagner provide a full-service business and can do some or all of a custom vacuum-bagging process...at a price, of course. They are set up to do custom work, and I have seen the excellent results. Why not contact them at 17902 N.E. 156th St., Woodinville, WA 98072; Tel.: (206) 487-1721.

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R/C Soaring At The AMA Nationals

...by Tom Culmsee

As many of you have undoubtedly heard by now, the Academy of Model Aeronautics has selected the Richland/Kennewick/Pasco, Washington (Tri-Cities) area as the site of this year's national model airplane championships. This is a fantastic opportunity for those of you in the rest of the country to see the beauty of the Northwest and attend this spectacular contest. Soaring enthusiasts in particular will be presented with an outstanding array of flying events to choose from, all centrally organized under the heading "NATS SOARING FESTIVAL '89".

During "Nats Week", July 15th through 22nd, pilots will have the choice of flying in a total of eight different soaring events: cross country, slope, handlaunch, sport scale, F3B, unlimited thermal, standard thermal and 2-meter thermal. Although cross country, slope and handlaunch are considered "unofficial events", which means that they are not listed in the "official" Nats entry form, the events will still be an important part of the overall soaring program. To culminate the week, a soaring banquet will be held on Saturday evening the 22nd. This festive gathering of pilots will gorge on plentiful food and drink, listen to each others exploits and, then, witness the distribution of the many awards to those deserving few.

We expect a large turn-out for all the soaring events. Due to limitations in resources, there will be a cap placed on the number of pilots entering each event. To assure yourself a place in the events you desire, please send for your information packet and pre-register as soon as possible.

Of course, running an event as large as the Nats involves the help of literally hundreds of volunteer workers. Those persons wanting to do more than fly can help by filling out the Nats Volunteer Application Form and sending it in to AMA headquarters. You will then be assured of an important part in putting on what we hope to be the best Nats ever held!

Tom Culmsee
2190 S.W. 8th Dr.
Gresham, OR
97080

Corrections & Additions (May 22, 1989)

To the soaring enthusiast:

The following sheet contains late information on the soaring events which will be held at the upcoming '89 AMA National Model Airplane Championships — THE NATS. This information supercedes information that may be present on the other forms.

- 1) There is an error on the Nats entry form leaving off F3B as an official event. If you wish to enter this event, you may do so by writing on the form Event #445 F3B and circling it. List the frequency you would like to use and remember to include the extra \$20 entry fee.
- 2) Although transmitter verification for soaring is normally scheduled to take place on Tuesday, July 18 (F3B and scale) and 19 (unlimited, standard & 2-meter) from 1-5 p.m., persons with conflicts due to participation in other events can process transmitters on Saturday, Sunday or Monday.
- 3) Persons competing in the scale event should note that static points judging is to take place on Tuesday, July 18, starting at 9:00 a.m. at the Rivershore (Shilo Inn, AMA HQ) hotel. Flying only will be done on Wednesday. Although registration for the event is scheduled to start at 1 p.m. on the 18th, it is necessary to drop off the plane at the Shilo Inn by 9:00 a.m. for the static points judging. Label the plane with your name and AMA number so that proper credit is given.
- 4) Scale pilots will be using the standard Nats thermal winches, beefed up with 200 lb. test line, to launch for the duration task. This winch is a typical Ford starter motor direct drive type unit. No other winches may be used.
- 5) Although F3B pilots may elect to bring and use their own FAI legal winches to launch, we

will be supplying winches for those that desire to use them.

6) Remember that there will be a team competition encompassing the three thermal events: unlimited, standard & 2-meter. This is for the Dan Pruss Memorial award. Any three pilots may register at check-in during Nats week, so long as they are a member of the same AMA chartered club.

FLASH!!! The guest speaker at the NSS banquet on Saturday night will be Dr. Paul MacCready of man powered flight fame. Plan on attending this soaring Nats tradition, made even more special this year by Dr. MacCready's presence.

Somehow, RCSD has failed to properly emphasize the soaring Nationals which will be held at (aw shucks, you already knew) Richland-Pasco-Kennewick, Washington! The magnificent slope site, equally grand flat-field sites, and an opportunity to try cross-country soaring, slope racing, scale, hand-launch, and F3B, as well as the more usual thermal duration, will make this a memorable "Nat's". Reserve the week of July 15th (Saturday) through July 22nd (also, Saturday) for your vacation. You won't be sorry, either, because there is plenty to do for non-contestants such as wives, children, and others who may not be quite as dedicated to soaring as you. Sight-seeing, museums, Columbia River scenic trips, and much more await your pleasure. The Tri-Cities area is "wide-open" countryside with gently rolling hills, a beautiful river, and one of the best soaring slopes in North America. You really "owe it to yourself" to attend! JHG

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For the modeller who wants to experiment with different wing shape, size and airfoil modifications, as well as method of wing attachment (bolt-on, plug-in or what-ever). Kit Contents: Generic fiberglass fuselage, bulkheads & specialized plans/instructions for the various wing attachment & tail configurations, including a proportion table for increasing or decreasing glider dimensions.

Introductory Price: \$45

Ol' Buzzard For the spare parts collector who wishes to build a large forgiving glider with state-of-the-art airfoils. Kit Contents: Generic fiberglass fuselage, bulkheads, generic foam cores & plans for your favorite wing attachment (140" wing; E193, E205, S3021, S4061). Introductory Price: \$80

Slope Scale Fun Fly

...by Jim Gray



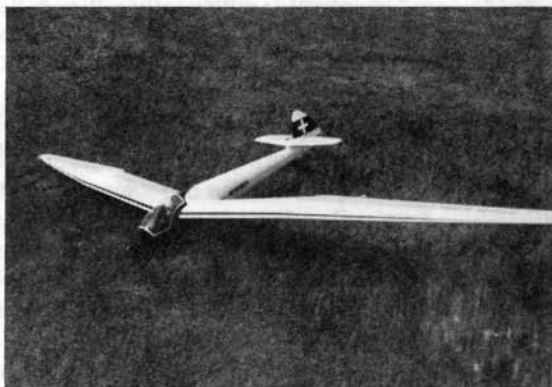
*Fun Fly Organizer & CD
Wil Byers*

There's NO WAY to have more fun in the daylight before a crowd of people!!! I can say without hesitation that this meet was the best I've ever attended from the standpoint of relaxation and FUN in a spectacularly beautiful part of the United States...in addition to which, everything connected with the meet was "up beat", interesting and well organized. Of course, Wil Byers and his staff from the Tri-Cities club made everything look so easy, yet you know that this is because so much effort has gone into the organization and preparation.

Fun Fly HQ was at the Clover Island Inn, located on (guess what — yep) Clover Island in the middle of the Columbia River at Port Kennewick. Accommodations were splendid: comfortable, convenient and pleasant, with a dedicated staff. The cuisine was superb — in spite of the fact that each morning a visiting girl's softball team quickly did away with the breakfast buffet until the kitchen discovered that twice or three times as much food had to be prepared! For the evening meal a good selection was available for almost any taste and palate.



*Howard Cameron of Canada brought this Schweizer 1-26.
Flies as well as it looks...trimmed in red on white.*



*Brokaw MINIMOA...modelled after the one owned by
Werner von Arx of Switzerland. White with red trim.*



*Neat Schweizer TG-3 in its 1942-1943 Army Air Corps
training colors.*



*Eric Eiche poses with his Baby
ALBATROSS -- REAL plywood skin on
fuselage. All hinges & fittings are SCALE!*



*Jerry Slates poses with a DG 100 which
was built by Master Sgt. Gene Cope..*

Peggy and I arrived at the Pasco (one of the Tri-Cities) airport and rented a small compact car for the trip to the Inn and flying site. Whereas the trip to the Island was uneventful, the subsequent trips to Eagle Butte flying site were a bit adventurous...as the last mile of road to the top of the butte was hub-deep in dust! That's because this area of Washington is east of the Cascades and almost desert-dry! The lush countryside belies the general lack of rainfall because it is so green and fertile...due, of course, to irrigation from the Columbia River. Did you realize (I didn't) that the Columbia is the largest river in the United States? That is, in terms of VOLUME of water carried. The Hanford atomic works is not far from Richland, and offers guided tours of the Fast Flux facility and other interesting areas.

Eagle Butte is several hundred feet high and about a mile long, with a 40-degree slope facing the prevailing wind. When we arrived on early Friday afternoon, we could see half a dozen sailplanes in the air making use of the magnificent lift — the direction of the wind being almost perpendicular to the main line of the ridge. We looked at the "pit" area where the sailplanes rested on tarps or blankets side by side in a long row, terminating in the transmitter "impound" area and frequency-measuring/confirming table.

Over 80 fliers and 120 sailplanes attended this meet, and I'd have to say that the SCALE aspects of vintage and contemporary sailplanes were outstanding, including some remarkably near "museum scale" efforts. Among these were notably Canadian Eric Eiche's Bowlus Baby Albatross and Grunau Baby II, and Gary Brokaw's incomparable Minimoa which flew every bit as impressively as it looked in gleaming red and white. Other machines in profusion boggled the mind, but among them some unusual flying wings made the scene. Among these were a Polish Nietopercz and Marske Pioneer by the B² Kuhlman's, and a Messerschmitt Me-163 rocket fighter and Horten IX by Ken Stuhr. Al Halleck's flying wing in German Luftwaffe camouflage flew impressively: fast, maneuverable, and steady.

The weather was good and bad and in-between. Friday was considered to be the best day, although the others were flyable, too. Some rain showers that came through on Saturday and Sunday didn't seem to dampen spirits excessively, and although the site was moved just once (Sunday) to compensate for a wind change, Eagle Butte was the favored spot. The wind was very light on a couple of ...continued on page 17

...by Peggy Jones

It was last October that I first became brave enough and interested enough to attempt flying a model sailplane. My husband, Gordon, has flown them for years and I thought it would be fun for me to learn so we could enjoy more time together. However, he was not willing to be my instructor; his explanation was -- it's kind of like trying to teach your wife to drive. I was lucky there; our friend and fellow flying enthusiast, Kirk Phillips, volunteered to teach me. He let me use his Gentle Lady, a small and fairly light-weight sailplane, and ideal for a beginner like me. We would all go to the grounds of The University of Texas at Dallas for a few hours every weekend when the Texas weather would cooperate. This simply means to an avid flyer, wind with gusts of less than 25 mph, no rain, snow, or ice. Anything else is bearable when you enjoy a sport or hobby. I could relate to that theory, so I went along.

Now, I don't want to tell you ladies that I spend all my weekends flying sailplanes, because that would certainly be a lie. I love the outdoors, but I also LOVE the malls, and believe me you can do both with this sport. You get exercise retrieving the line and your plane, and you wear shorts so you can work on your tan all at the same time. You feel good about spending that extra time with your husband, exercising and keeping fit, so you tell yourself you surely deserve a reward. Here is where the mall part comes in. Now this is woman's logic!

The object is to launch your sailplane and keep it up for as long as possible, working with nature. The hardest thing I found in learning to fly was watching the plane move around in the sky and trying to figure out if it was moving to my commands on the "stick" or if it was moving more because of the nature of the air it was in. To have perfect weather, with thermals, so that you can keep your plane up for any length of time, and give you time to learn to use the controls does not come easily. My first 4 or 5 flights were 1 and 2 minute duration. It was difficult for me to tell what I was doing in that short span of time. It did help to get over the initial nervousness. I finally managed to get a 5-8 minute flight and this gave me a chance to see what I was or was not learning.

It felt great to watch the Gentle Lady turn at my command. Flying away from the wind makes the plane go much too fast. I learned that lesson in a hurry; to keep it facing the oncoming wind as much as possible, or to move (in this case) from east to west and back again. I would let it move on its own a little too much and Kirk would tell me to take command of the plane and for "me" to fly, not allow the plane to fly itself. I needed to be firm and use the controls in order to make it go where I wanted it to go. With the Gentle Lady being such a light weight-plane, it would probably fly itself for awhile without any help, but that isn't the way it works. The plane could possibly go completely out of sight in a good thermal.

Learning the plane's reaction time is also difficult at first. You make your move and then wait for the plane to respond. I found out the reaction time is varied according to air movement, temperature, and other various conditions, and those conditions are never the same from flight to flight, much less from day to day. Lots of variables! This is what makes it so interesting and so much fun, to work with nature.

I did manage to crash Kirk's Gentle Lady on my second landing attempt, but he assured me that it was repairable. I have seen some pretty bad crashes at many contests, and know that they can be repaired, so I tried to believe him. During this winter Gordon bought me my own plane -- an Olympic II, which is much bigger and heavier than the Gentle Lady, and a little easier to maneuver in the wind (an almost sure thing in North Texas). With the

beginning of Spring, we are attempting to get some flying time in every weekend, but mother nature has not cooperated, so I am waiting for my next lessons. Hopefully, I won't have forgotten everything I have already learned. This really is lots of fun and I would like to encourage wives to go to a contest or two and watch the grace and beauty of these planes. Personally, I am not planning on entering any contests; I simply fly for the relaxation and fun of it, and that is the way many people feel. I have met so many nice people both at contests and just out practicing in and around the Dallas area. It is a great way to enjoy the out of doors, meet new people, have fun, and to spend time with your spouse. It can't hurt!

Peggy Jones
214 Sunflower Drive
Garland, TX 75041

Fun Fly...continued

occasions and the brave souls who ventured too far out seeking lift managed to descend into the valley for difficult retrieves down the rocky 40-degree slope.

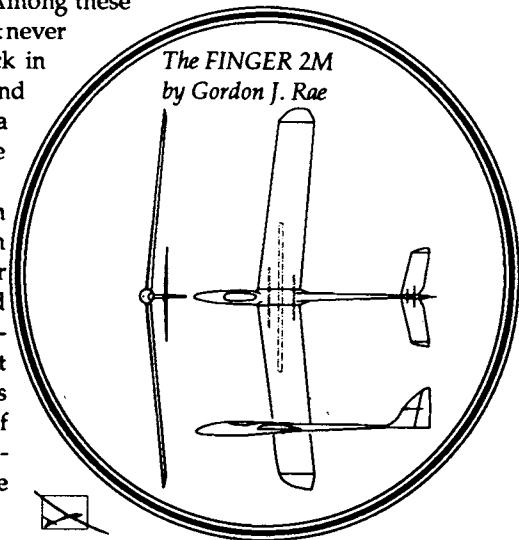
Fortunately, the "out" landings were good and damage free. By watching the sailplane's shadow on the ground a pilot could neatly estimate the height -- even at a distance of 1,000 feet.

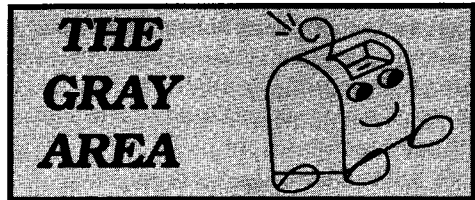
Among the pilots from afar were Andreas von Schoenebeck (Germany) and Pete Bechtel (Hawaii) along with a good sprinkling of visitors from Canada and the U.S. When asked at the banquet and awards presentation on Saturday night if there should be another Scale Slope Fun Fly next year, a resounding chorus of cheers and applause left no doubt as to the feelings of the crowd.

Among the magazine columnists and publishers who attended, I was pleased to meet for the first time Byron Blakeslee (Model Aviation) and Charlie Morey (Slope Soaring News). Both managed to take lots of pic's and do some soaring -- unlike your scribe who did not bring a sailplane to fly! Just wait 'til next year!!!

The Banquet room at the Clover Island Inn contained many unfamiliar faces belonging to people whom I have corresponded with but never met...and it was a great pleasure to connect a name with a face -- at last! Among these was Harley Michaelis who I've known but never met since I started in R/C soaring back in 1972. Wil Byers -- CD, Organizer, and Inspired Director of the Meet has been a friend since the "Scooty" days in the late '70's...but not met in person until now!

As I said, there was more decent fun than it ever seemed possible to have in public...and those of you who have never trekked to Kennewick, Pasco, Richland for one of these Fun Flies OWE it to yourselves and your families to show up next year. Better still, go for the National's there at the end of this month for a week of scale, slope, hand-launch, F3B, cross-country and thermal soaring enjoyment. See you there...





A discovery at the coast

Dear Jim,

I want to share with other sailplaners my discovery of 2 lift conditions to be found at the coast. I call them: 1. "Surface Air Wind Ripples", and 2. "Offshore Standing Air Waves". I don't find these two conditions described in any of the soaring information I have read or studied.

Surface Air Wind Ripples occur in strong winds that blow parallel along unobstructed beaches. The ripples are usually about 800' to 1000' apart, and they lift my sailplane up to approximately 1000' to 1500'. The ripples seem consistently predictable and are a lot of fun to guesstimate and to fly in. One advantage about the conditions the ripples occur in is that the beaches are fairly clear of strollers due to the strong winds.

The Offshore Standing Air Waves are usually located about 300' to 600' offshore at the beach. The waves run parallel to the beach and seem to result from the wind accelerating down a long slope onto the ocean where, apparently, the wind runs into a mass of stationary air which, or course, diverts the on-coming air upwards to considerable heights and at awesome speeds at times. That means your plane can go O.O.S. in a HURRY! **Be careful.** The "slope" that causes the wind to accelerate sufficiently to produce an OSAW rises from the beach upward and inland for some distance, perhaps 2 miles or more, reaching elevations of 500' or more. OSAWs do not need strong winds to be formed. The stronger the wind, and the more perpendicular to the coastline that it blows, results in O.O.S. conditions.

Flying your plane in either one of these 2

conditions is a different experience than slope or thermal flying. I enjoy each condition a lot. These 2 conditions may be located elsewhere than the beach, too.

I have tried different sailplanes in these conditions. The plane that consistently furnishes me the most fun and is predictable and dependable is my ELECTRO UHU. With it I can explore the wind, switch off and soar, switch on and power out of "dangerous" situations. Even without the motor, my UHU can penetrate severe winds and be brought back safely. (Obviously, I favor a column in RCS D about electrics.)

* * *

(a second letter on the subject)

I can see the problem you're having visualizing these "lift ripples", and "why others haven't noticed them".

You have seen the cirrus clouds appearing as horizontal "bars" in the sky. Do you know that the "bars" are actually "ripples" in the sky caused by the jet stream much like sand "ripples" as it is blown along in the wind or, driven by water in a stream? It is not hard to deduce or to calculate that such "ripples" will occur at the surface when the wind is strong enough or the wind is not interfered with by obstructions, etc. The ripples, of course, occur perpendicular to the direction the wind is blowing, just as ripples occur in the cases mentioned above: jet stream and sand ripples.

So far as other sailplaners noticing them is concerned, it takes a motorglider to give me the "courage" to fly in conditions that might blow my plane away, or offer no prospect of "conventional" lift.

In my experience (limited as it is), 99% of sailplaners do not (will not) fly with a motor. They simply do not have the equipment to fly in such conditions. Sure, slope fliers fly in the wind. But, on a flat surface? With no slope? When no hope of lift is known?

No. It would take some beginner sailplaner with a new plane who drove over a 100 miles to fly it at the beach and couldn't stand not to

fly the plane...despite the lousy conditions. ("Besides, it's got a motor, so it can't "stray" too far.") Right? Right. I guess it's logical to conclude that it takes an unconventional pilot to discover "unconventional" anomalies. Maybe there are many who believe they are "unconventional" but, in actuality, they aren't, really. Who else do you know who has a diesel powered sailplane, an electric sailplane, and, also, a glow plug engine sailplane? ...Not to mention a "dieselized glow-plug" engine sailplane. Two of my sailplanes are my own design. One of them has removable landing gear so I can practice shooting landings—just for fun. All but the electric have throttle control (the electric has an "on/off" switch). The removable landing gear cleans up the plane for better penetration on windy days. It is a kind of "sport/motorglider". Handy, too, with only a 60" wing, big enough for some serious soaring, and small enough to pack around easily. Get the idea, Jim?

* * *

(a third letter on the subject)

The author of the "HANDBOOK OF SOARING METEOROLOGY", Charles Lindsay, is the considered "authority" on the subject. I had written to Mr. Lindsay on the matter, and wanted to hear from him before I sent you a reply.

Lindsay admits, in his letter, that his soaring experience is only with the full-sized sailplanes. Many of his soaring club do fly RC sailplanes. For example, he says: Herb Stokely who writes for FLYING MODELS magazine and, "author himself, of several books on aerodynamics of model sailplanes..."

Anyway, Lindsay states that he is not familiar with the two conditions I described. He also makes the statement, "There are many air motions that are yet to be discovered and it is possible that you may have encountered new ones." He then goes on to suggest that I research them further and involve a meteorologist for specific explanations.

I'm not sure I can do this. Mainly, for rea-

sons of time. I live over 100 miles from the coast and only get to the coast about once a month. Since writing you earlier this month, I have, in fact, made special trips to the coast to follow up, as you suggested. Conditions, both times, were right for the lift ripples, and I had no trouble locating them. The winds were not from off-shore, so I couldn't research further the off-shore lift. We plan to move to the coast when I retire. That is some 10 years away, though. Meanwhile, I'll do the best I can researching this lift phenomena, so long as it doesn't get in the way of my soaring fun. I'm not a scientist, but I do enjoy flying. Learning more ways I can stay up is at least half of the fun. I'll keep in touch.

Happy Soaring, (signed) Tom Lexow, 114, 42nd St., Washougal, WA 98671

* * *

Dear Jim,

Have you seen the semi-kit Mark Allen is making called the FALCON? This sailplane is filling the void that has been present in soaring for so long. This last weekend, Bobby McGowan won first in open and overall at the LSF Nats in Morgan Hill using a Falcon. At the Masters Tournament, Fred Weaver took second using a Falcon without, or with very little practice time on it. Needless to say, the FALCON looks promising.

Airtronics is coming out with their version of the FALCON called the LEGEND. Mark Allen is supposed to produce the fuselages. It will have a built-up wing, T-tail, bolt-on wing and the same airfoil. Airtronics had two all-glass prototypes at the LSF Nats and they look great, except for landings (a little too fast). The production version should come out at 75 oz. The glass ship came in at 104 oz., which did not effect their thermalling capabilities.

Hope to hear from you soon.

Sincerely, (signed) Kevin A. Webb, 335 Shockley Road, Auburn, CA 95603

Dear Jim:

I certainly agree with you about the formal F3B contests as we have all read with interest (and some disgust) about the hassles which have occurred over the past few years. As I mentioned, we have had a great deal of enjoyment with our contests with some spectacular plane performances, not so much as to speed, but with wing flutter and other aerodynamic characteristics. One sailplane which showed terrible flutter at high speed was the famous and normally fine performing Dodgson "WINDSONG". She just ain't made for that task.

To digress briefly, I built and completed one of the Klingberg flying wings last fall and have had more fun flying this plane than anything I have with the possible exception of my Leon Kincaid designed "SCOOTER" which, when fully ballasted to about 12 ounces wing loading, does really well in our speed event. It, also, is a dandy flying plane for normal thermal contests, whether the day is windy or not. If you want some real fun though, try the Klingberg wing. It is a little tricky to fly, but thermals like a "Homesick Angel". Since it is quite fast, I may fly it in our F1.5B contest this year if the weather is decent. Mine now has 25 or 30 flights on it with no problems or damage. A couple of my landings would have taken the

tail or fuselage off a normal design sailplane. I am enclosing a couple of photos of the "Wing" in flight.

Liftily Yours, (signed) Ed Waters, 9330 Tonawanda Creek Road, Clarence Center, N.Y. 14032

Jim,

I have been working for several years on a comprehensive telemetry system for model sailplane testing. About three years ago I wanted to study the actual performance of our models but each method I tried to use to measure altitude and airspeed seemed too inaccurate or was logistically prohibitive (too many assistants needed, timing coordination, etc.). I have a couple of electronic gurus as friends and we began investigating ways to measure and transmit accurate information to the ground. The end result is now operational and I expect to be using it soon to determine the polars of several planes. The system consists of a box containing the encoding and RF boards which is about the size of a standard receiver and has leads and connectors for the battery and sensors. The current sensors include airspeed, altimeter, and rate-of-climb. We are working on a magnetic heading sensor, but it isn't operational yet. The total airborne system less battery is about 6 oz. If you add an 8 cell, 500 mA/H battery, the total weight is 14 oz. On the ground, the receiver decodes the channels and drives standard servos to move the pointers for the various scales. Ground system weight is about 6 oz. plus battery or hookup to vehicle battery. We are also investigating a recording device which will allow us to collect a full series of readings without stressing-out a person to try to keep up with the output. The first plane we will be testing is an XC design we hope to be using for the NATS in WA this summer: a 148" design, 11 sq. ft. using a S3021 airfoil. We are using glass on foam vacuum bagging and will build at least 2 sets of wings to do testing on. The other wing will probably use the E374.

That's all for now, (signed) Mike Bamberg, 1059 NW Darnielle, Hillsboro, OR 97124



The Klingberg flying wing

Dear Jim,

There has been considerable material written about your entry level F3B event and the hardware to make it happen. Randy Reynolds has contributed some excellent thoughts and suggestions, as has Don Edberg. Your recent issues have really sparked interest among the aspiring as well as experienced F3B pilots. This is great, as far as it goes, but needs to address a basic problem of F3B.

All the fancy radios, all the exotic laminate construction, blue foam airplanes and advanced tech winches are worth nothing without the pilot behind the sticks. The planes and equipment are fascinating from an intellectual point of view. The people associated with them are not.

Last summer at the Virginia Nats I chatted with Percy Pierce who was running winches while we flew our brains raw in the hot sun. His comment to me was that he hated F3B in all it's forms and was only there to help out the C.D., Herk Stokley. It was very hot and I assumed that the weather was the cause of Percy's ill humor. I was wrong.

A month ago I flew with several F3B team members at the Thermal Championships in Moorpark, CA. I was very impressed at the skill of the pilots and the way they worked quietly and efficiently together. It gave me a good feeling about the upcoming Paris affair and reason to hope for victory for our team.

Then came the latest issue of SAILPLANE and the comments by Don Edberg regarding the history and alleged faults of many California F3B fliers. Having gone through the verbiage about John Grigg and the F3B teams of past years, I was again reminded that perfectly rational people seem to forget their manners at the very mention of F3B. Pilots who would give you the stab off their ship to help you get back in a thermal contest, will sue you in court over winch construction technique! These same individuals who were enjoying themselves at Myles

Moran's contest are the same people who took multiple pages in the NSS magazine to denounce their fellow competitors in F3B.

I enjoy these people's company in thermal activities. I admire their skills and technical advances in airframes and R/C gear. However, none of this is worth the tantrums and poor manners that have been expressed in print. These unpleasant aspects are longstanding and will not disappear. They are also a leading reason for the apathy and indifference of most R/C soaring pilots to F3B. Who has time to argue when, for less effort and much more fun, you can go stand in an open field and watch your nice slow floater play in the clouds?

Here's hoping that the new entry level class F3B bring forth a new breed of pilot who has the same courtesy and respect for his fellows as the thermal duration people. The real future of F3B lies in attracting these true sportsmen and the departure of those who lack those finer qualities.

(signed) Pete Carr, President, The National Soaring Society, 329 Little Ave., Ridgeway, PA 15853

Dear Jim,

I would like to respond to the letter by S. Cole in the March issue about the shortcomings of the computer programs and the conclusions reached in the article "Flyweights VS Lead Sleds". S. Cole doesn't have the programs he is commenting about unless he has a pirated copy. The software used in the original article is much more than a wing analysis program but also less than a flight performance workup which would be given during a full size aircraft development program. The software has evolved with contributions over many years from well known experts including Michael Selig, Ron Van Putte, Chuck Anderson, Alex Strojnik, Eric Lister, Helmut Wehren, Martin Simons, Lynn Cromer, Blaine Beron-Rawdon. The documentation provided ...continued on page 22

with these programs will reference those sources of information. The programs themselves have survived public and our scrutiny for some time before their inclusion into Sailplane Designer and then PC-Soar and MaxSoar.

The programs being offered today leave some aspects of the flight envelope undefined. However, in light of the alternatives, I don't believe the rational person would choose to do hand calculations for what is being handled so easily and reproducibly by these programs. To be sure there are drag contributions from things such as wing and stabilizer fillet design, construction methods, angle of incidence, hinge design and on and on. Add to this the effects of air temperature, altitude and humidity. If the information were incorporated, would it substantially change the conclusions in comparing models of similar designs? With the coming release of the Princeton Wind Tunnel Tests, some information about construction methods will become available which may help the modeler improve the computer comparisons. But don't expect this test or any future tests to end the endless debate between theory and wind tunnel results or for that matter one wind tunnel result vs another.

Regarding Mr. Cole's argument that success in thermal duration is based on sink rate and launch height. This is only true when there is no lift to be found. Also it is true that launch height is related to much more than model weight...especially when using a winch.

Sorry for taking so long to get this response out.

Best Wishes, (signed) Lee Murray, 1300 Bay Ridge Rd., Appleton, WI 54915

Dear Jim,

It is quite interesting to sit back and read some of the recent comments about "light is right" and "heavy is ready". Both sides


have very valid points to put forth and have done so well; but...! It really boils down to the airfoil/weight combination that fits the pilots flying style. I have seen the guy with the heavy airplane and airfoil, that he was well acquainted with, do super in calm conditions when the "floaters" should have by rights beat the pants off him. By the same token, I have seen the guy with the "floater" out last some heavy weights in some breezy air when they shouldn't have.

The real trick (and it really isn't a trick) is to find an airfoil that fits the individuals' flying style and learn to fly it! (There have been several articles giving general descriptions of what particular airfoils are designed for. I think the one in the April issue of RCSD was a good one.) That includes flying it at various weights to find out what weight gives the best performance in what conditions. And, most important is, to fly it for a while (not two weeks) and give it a real evaluation; as opposed to trying the "airfoil of the week".

You hear of the big name pilots doing well in contests consistently (Joe Wurtz, Don Chancey, Larry Jolly, etc.) and all fly a different airfoil because their flying style is different. I know that Don Chancey flies his QB 2.5/10 at 60 or 65 ounces even in calm conditions, and he can really put on a performance in some crummy air. I have watched tapes of Joe Wurtz and Larry Jolly and the same seems to be true of both. The point here is, they have all found an airfoil that fits their particular flying style and they have tried it at various weights and found the one that gives the best performance. And they have stayed with that airfoil for a long period of time; and have learned its' limitations in order to attain maximum performance on a consistent basis.

And sports fans, consistency will win every time out! Enough of my soap box dialogue for now. Keep up the great magazine and happy thermals.

(signed) Gordon K. Jones, 214 Sunflower Drive, Garland, Texas 75041



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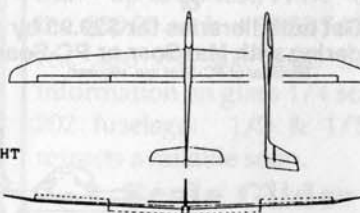
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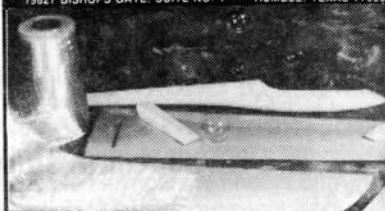
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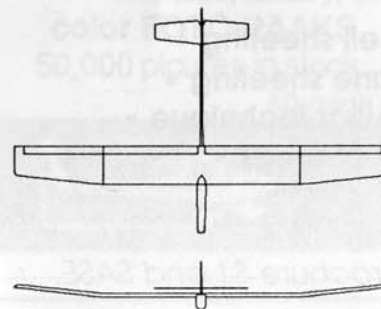
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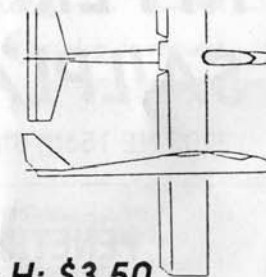
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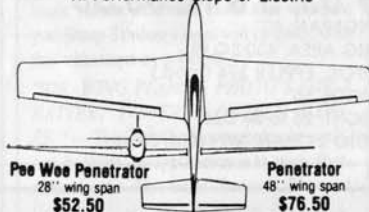
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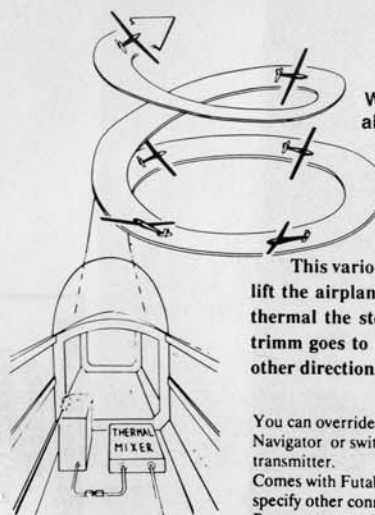
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