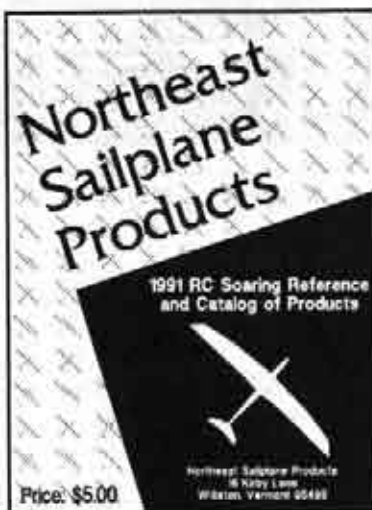


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March, 1991
Vol. 8, No. 3

R/C Soaring
D I G E S T

Behind the Scenes
with

Bob Pairman

...Story by
John Dvorak

Featured
on page 6



Schedule of Special Events

Date	Event	Location	Contact
Mar. 10**	F3B Fundraiser Thermal Duration	Riverside, CA	Harvey Jenkins (714) 980-5732
Mar. 16	Slope Race	Los Banos, CA	Rich Beardsley (805) 934-3191
Mar. 16-17	3RD Annual Masters of Soaring	Covina, CA	P. Olsen (714) 597-2095
Mar. 17	Thermal Unlimited	Morgan Hill, CA	T. Simoni (408) 733-7701
Apr. 6	4TH Annual Model Airplane Show	Oshkosh, WI — EAA Avia. Ctr.	Carl Sewickley (414) 426-4800
Apr. 6-7	2 Meter & Open Fresno Classic	Fresno, CA	David Bean (209) 264-2535
Apr. 13	Slope Race	Santa Maria, CA	Rich Beardsley (805) 934-3191
Apr. 27-28	2 Meter & Unlimited - Spring Soaring Festival	Pasadena, CA	B. Matsumoto (818) 798-1662
May 5	F3b Contest	Denver, CO	Jack Sasson (303) 447-0813
May 24-26	Slope Race Mid Columbia Cup	Richland, WA	Wil Byers (509) 627-5224
June 1-2	International Slope Race	Santa Maria, CA	Rich Beardsley (805) 934-3191
June 2	Hand Launch 8TH Annual	Riverside, CA (Call after 6:00)	Ian Douglas (714) 621-2522
June 8-9	Western Soaring Championships	Farmington, CA	A. Stonner (209) 878-3462 Day 878-3078 Eve
July 6-7	Unlimited Thermal	Seattle, WA	Waid Reynolds (206) 772-0291
July 13	Slope Race	L.A. Area, CA	Rich Beardsley (805) 934-3191
July 13-21	AMA NATS	Vincennes, IN	Gil Gauger
Aug. 10	Slope Race	Davenport, CA	Rich Beardsley (805) 934-3191
Aug. 10-11	Unlimited Thermal	Seattle, WA	Waid Reynolds (206) 772-0291
Sept. 14	Slope Race	L.A. Area, CA	Rich Beardsley (805) 934-3191
Sept. 14-15	TNT 2 Meter & Open	San Antonio, TX	A. Coher (512) 599-4031
Sept. 15	F3b Speed Trials	Denver, CO	John Wyss (303) 494-0363
Oct. 5-6	Visalia Fall Soaring Festival	Visalia, CA	Ed Hipp (209) 625-2352
Oct. 6	SMT Contest	Denver, CO	Lenny Keer (303) 737-2165
Oct. 12	Slope Race California State Champs	Santa Maria, CA	Rich Beardsley (805) 934-3191

About RCSD...

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Martin Simons, Bill & Bunny Kuhlman (B²),
Gordon Jones, Wil Byers

The Soaring Site

This month, we would appreciate it if you would take a few minutes to read over and answer the survey we have included in this issue. The key word in the survey is "INTEREST". Please check the boxes based upon what you want to read about as opposed to the type of flying that you currently do.

And, in the February issue, we ran a test where 8 pages contained 2 color separation. We plan to continue based upon the input we have received to-date. The cost for color is included in the advertising costs of those advertisers who wish to add color to their ad.

We have added another person to our list of people who do vacuum bagging. Julian Tamez can be reached at Channel 1 Productions, 19827 Bishops Gate Suite #1, Humble, TX 77338; (713) 540-3944.

Happy Flying — J²

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Jer's Workbench

I received an interesting letter from Frank Foster of Lexington, Kentucky, along with a news clipping outlining the PERSEUS, "an unmanned aircraft specifically designed for high-altitude atmospheric research".

I was so intrigued with the article that I called the Aurora Flight Sciences Corporation and they were kind enough to send me their press release package.

Of course, as Frank said in his letter, "The PERSEUS may be slightly heavy for F3E, but it looks like there may be several good ideas." Indeed, my first thoughts were similar to Frank's.

Much of the information here has been extracted from Aurora's media package.

In April, 1988 the DAEDALUS 88 set three world records as it flew between the Islands of Crete and Santorini. The DAEDALUS flew at low speeds and at a low altitude which created Reynolds numbers similar to those seen at the higher altitudes, thereby making the aerodynamic designs and the design tools that could be applied to the PERSEUS. Dr. John S. Langford, Aurora's founder, was the project manager for DAEDALUS. He conceived the program while at MIT.

The PERSEUS

What I found so interesting about this project is that this platform looks like a glider, or a motor glider. PERSEUS uses many of the new space-age light weight

composites (i.e., foam core wings with carbon fiber and epoxy), like we use in our models, today.

The PERSEUS has a 17.9 meter wingspan and a gross weight of 399K of which 50K will be instruments. This is all within the parameters of a full size glider. One model of the PERSEUS will be powered by a Honda Hurricane motor modified with two stages of turbocharging and carrying its own oxygen and cooled by a radiator from an old Cadillac. The other model will have an Electric Propulsion System using a 20K brushless motor and a set of 32Kw-hour Lithium Thionyl Chloride Batteries.

These high flying drones will be used to

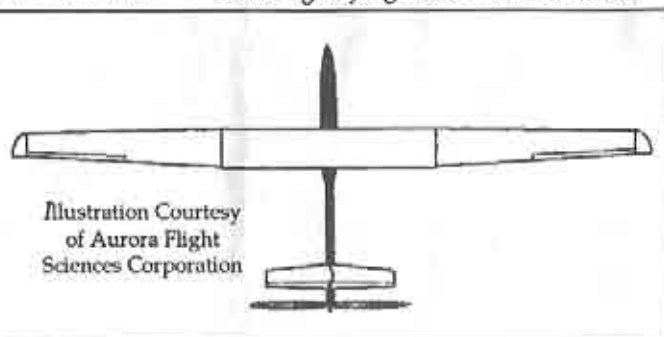


Illustration Courtesy of Aurora Flight Sciences Corporation

study the ozone above the poles. In 1992, three models of the PERSEUS will be transported to Antarctica where Gregory Zack, former DAEDALUS pilot, will be the pilot in command of the project.

The 6 hour flight will start with a winch launch; the over-sized 16 foot diameter propeller will be locked in a horizontal position to prevent damage on take-off. At about 100 foot altitude via radio control, although most of the flight will be computer controlled, the propeller will be engaged and, under its own power, will start climbing at the rate of 1000 feet per minute. At about 33,000 foot altitude, another computer is activated and the scientific study of the ozone will begin. At 85,000 feet, the PERSEUS will maintain an hour long flight taking air samples and transmitting data back.

Specifications

Wingspan	58.7 Ft.	17.9 Meters
Wing Area	172 Sq. Ft.	16.0 Sq. Meters
Take-off Weight	880 Lbs.	399 Kilograms
Payload Weight	110 Lbs.	50 Kilograms
Altitude Capability	>82,000 Ft.	>25 Kilometers
Flight Duration	6 Hours Total	1 Hour at Altitude

After the fuel is exhausted, the propeller will be locked into a horizontal position again and, via computer control and autopilot, will glide back to the hands of Gregory Zack who will land the PERSEUS via radio control.

This could make an interesting scale project.

Planes Without Pilots

And, then, a book arrived (coincidence?) on the subject of RPVs (Remotely Piloted Vehicles), drones, and UAVs (unmanned aerial vehicles). *Planes without Pilots Advances in Unmanned Flight*, by Bill Siuru, is an 81 page book containing many pictures and bits of history dating back as far back as 1913.

Most of the book covers military subjects and some civilian, but in all I found it most interesting. There were several words that came up like FOX, FUTABA, TARTAN and KRAFT. These off-the-shelf components are just like the ones we use in our models, today.

Remotely Piloted Vehicles (RPVs) come in many shapes and sizes. The test vehicle that I found the most interesting was the one of a 3/8's scale model of the F-15 EAGLE. This 3/8's scale model was carried aloft under the wing of a B-52 and then dropped. This drop test was to find out what its stall and post-stall characteristics were. Also, the ground-based pilot, via radio control, flew this model aircraft through all of the desired maneuvers.

The book is available from Tab Books, Blue Ridge Summit, PA 17294-0840.

Southeast Louisiana Soaring Society

There is a new glider club in Louisiana. We received a letter from Robert Galiano who says, "We have, at this time, 6 dedicated members, 27 acres of mowed lawn to fly on, and a new Rahm's winch & line retriever. We are from the New Orleans - Slidell area. Hopefully, other RCSD readers will give us a call when visiting, or join us for some good flying if living in our area."

Robert Galiano, 507 Giuffrias Avenue Metairie, LA 70001
(504) 831-1423, (504) 392-5504, or Bill Smith, 119 Crescentwood Loop Slidell, LA 70458, (504) 649-5623

B² Streamlines

Are you interested in plans? Well, the last catalog we received from B² contained 114 plans, with most costing well under \$15. The categories include: Conventional Sailplanes for RC, Canards & Flying Wings for RC, Scale Sailplanes for RC, Power Scale Soaring Association Plans, Sport RC, Electrics for RC, Cabin Electrics for RC, Scale Towline Gliders for Free Flight & RC, Towline Gliders for Free Flight & Mini RC, Towline Gliders for SAM Events, Towline Gliders for NFFS Nostalgia Events, Sport Free Flight, Free Flight Scale (Rubber, Electric, CO-2), Earl Stahl Scale Rubber, Free Flight Non-scale (Rubber, Electric, CO-2), Powered Free Flight for SAM Events, Wakefields for NFFS Events, Wakefields for SAM Events, Peanuts! Peanuts! Peanuts!, Powered Scale for RC, Eric Marsden's Flying Circus.



On The Wing

...by B²

Last month we suggested Dave Jones' Raven for those used to flying sailplanes with rudder and elevator. This month we'll cover Dave's Blackbird 2M, our suggestion for a first 'wing for those flyers with aileron experience.

The Blackbird 2M, as the name implies, is a two meter tailless sailplane. It bears only a slight resemblance to other "plank" designs as it has a lower aspect ratio (about 5:1), and a sleek fin but no rudder. Control is by elevons. Performance is noticeably better than that of the Raven; it is also faster than the Raven, and does extremely well on the slope as well as in thermals.

The Blackbird 2M can be built with detachable wings, or as a one piece airframe. Detachable wings make transportation easier, and some builders may want to add ballast tubes in the wing roots during construction. A one piece airframe means less overall weight, but the addition of ballast may be kind of tricky. Overall airframe strength for the two versions should be about equal.

Like the Raven plans, these show the CJ-3309 airfoil. Our recommendation, followed by at least two other builders, has been to use the CJ-25²09 instead. This provides better penetration qualities with no loss of thermalling performance. Construction is not affected as both airfoils have flat bottoms and there is no twist built into the wings.

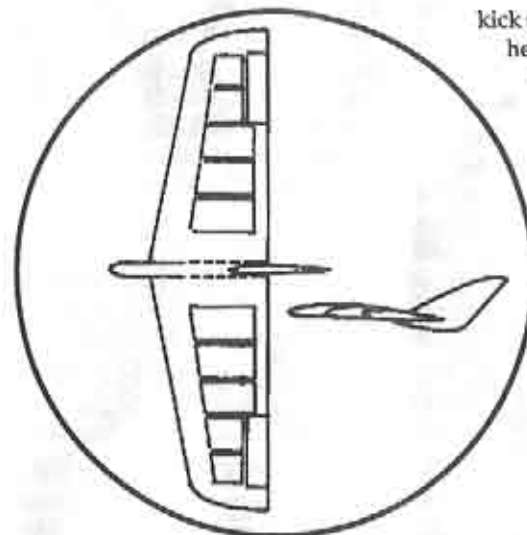
For best performance, the elevon servos should be placed in the wings with direct connections to the control surfaces. This means running cables through conduits, but with the servos moved out to the inner edge of the elevons the fuselage becomes rather cavernous. We placed an antenna tube right behind the leading edge of the wing. Linkage ad-

justments are a breeze with this configuration, and all of the play resulting from snaked push-pull cables is eliminated. Our XC Blackbird 2M has its standard size servos in its wings, while our two meter, built before we knew better, has its two micro servos in its fuselage. We've intended to move them for some time but have just not done so, and we curse ourselves each time we go out to fly her. We've never had a bit of problem with glitches caused by the antenna being close to the servo leads.

The most astounding part of flying the Blackbird 2M is the zoom at the end of tow, and in general the stiffer the breeze the higher the zoom. We enlarged the width of the spars to 3/4" at the root, but left their thickness as noted on the plans. The wing rods are as specified. We consistently launch our two meter version without pulsing the winch at all, and the zoom can double the height achieved. We could probably get even more height if we installed flaps on the beast! We're not sure that an unmodified spar system could take these sorts of loads. What's so impressive about the Blackbird 2M is the fact that it uses no exotic materials; balsa, plywood, and spruce make up the entire airframe.

Our Blackbird 2M, which we've called Candide ever since her first flight, is still going strong after more than five years. Why the name Candide? Because that first flight was our first ever with an aileron equipped sailplane. (We were flying our Ravens exclusively until then.) It was at a Northwest Soaring Society contest in Burlington, Washington, and took place after a single hand toss over tall grass. Actually, she was trimmed out perfectly but the pilot wasn't up to her capabilities. Those of you who have heard the late Leonard Bernstein's "Overture to Candide" have the idea.

We fly in a county park which is relatively long and narrow. Luckily the wind usually comes out of the right direction. One of our favorite flight patterns is to



launch to the west, then fly east and downwind over the roadway and trees at the north boundary of the field. Sometimes we get some lift from the line of trees, sometimes from the road. We keep travelling east until we're past the eastern border of the park and well over a quarter mile away. Visibility, even at that distance, has not been a problem. After circling the trees, parking lots and road at that end for a while, we most likely will get impatient and a bit carried away by the capabilities of the Blackbird 2M and head her back toward us, travelling west again. Our usual goal is to apply just enough down elevator that Candide comes directly back, always in the same spot in the sky, about 30 degrees above the horizon, but getting larger all the time. The gain in speed is fantastic, and we thoroughly enjoy peeling off at the last moment and watching her swoosh past and go into a graceful climbing arc while bleeding off airspeed. There is very little noise, and what there is most likely comes from the finger holes under the wing roots.

As those who have built the Blackbird 2M can attest, its performance is very good and it's extremely maneuverable. In as few words as possible, it's a real

kick to fly. At the risk of being branded heretics, we'd like to see someone build an electric version!

Plans for the Blackbird 2M are available from Dave Jones, Western Plan Service, 5621 Michelle Drive, Torrance CA 90503. Price is \$6.00 plus \$3.00 shipping and handling. California residents need to add 6% or 6 1/2% sales tax. Please let Dave know that you read about the Blackbird 2M in RCSD!

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

1991 LSF Contests From Shortlines...by Bob Steele

It is time again to ask for your club's help in co-sponsoring a Regional LSF contest for 1991. Regionals were held in all areas of the country last year and two were held in Canada. You may co-sponsor either a one day or two day contest. LSF provides the crystal beer mugs for prizes and your club sends LSF \$5.00 for each contestant. It's that simple. For a two day contest, the awards are LSF plaques and the money involved is \$12.00 per contestant. LSF will have publicity in *Shortlines* in the spring and will protect your territory as much as possible. We are also looking for a large Midwestern club to host a two day National Championship Tournament. We have had large turn-outs on the West Coast and in the East, and now it's time for the Midwestern fliers to have a chance. Please contact me directly on these contests. Either write or call Bob Steele, 10173 St. Joe Rd., Ft. Wayne, IN 46835. My phone number either during the day or in the evening is AC (219) 485-1145.

About the Cover
Bob Pairman
South Bay's
Good Samaritan

...by John Dvorak

Every Friday and Sunday you'll find Bob Pairman helping beginners construct and fly their gliders. For the advanced pilots, he sets up a South Bay Soaring Society winch. When Bob is not instructing he's flying...aero-towing a quarter scale Schweizer I-26, slope soaring, competing in contests and flying a variety of thermal planes. If you closely look at his I-26 you will see the work of a perfectionist - scale, down to the nuts and bolts. All of his planes are like this.

All of this started with U-Control back in 1957. Bob held three records, over three

years, in the Western Association of Modelers: Class A, Class B, and Carrier.

In conjunction with flying, Pairman is a ham radio operator: WD6HEW. After the earthquake, he was in the mountains providing emergency communication.

Wife, Bettyanne, has put up with all of this for forty-four years. She even donated her pantyhose for the mold that made the I-26 nose cone. Bob recently reciprocated by buying her a new Mercedes van for all of her gliders.

For more information about the Schweizer I-26, aero-towing or the instruction program, contact Bob Pairman at (408) 377-2115, 3274 Kathleen St., San Jose, CA 95124.



John Dvorak
 1638 Farrington Ct.
 San Jose, CA 95127



The Schweizer I-26 on the cover of the February issue was Bob Pairman's and not Bob Bayard's. Bob Bayard brought it to our attention! Thanks! We apologize for the error. The photo on the cover was provided by John Dvorak.

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Crow with the
Airtronics
Championship 7

...by Pancho Morris

My EHECATL series of sailplanes is what I call a "MEDIUM TECH" series of sailplanes built with budgetary constraints in mind. My latest, EHECATL THE SEQUEL, is a full function rudder, elevator, flap, aileron, tow-hook and spoiler configuration at 100 inches.

I wanted to try and get as much potential out of the functions as I could but, because of the same budgetary constraints which led to its construction, I could not afford a new whiz-bang MODULE or VISION radio.

My old trusty Airtronics Championship 7 was called into service. The Champ series has several available modules that can be plugged inside the transmitter. These are V-tail or elevon, elevator-flap, elevator-spoiler or flaperon. I had tried the elevator-spoiler module and it worked well. For this latest plane, I chose to use the #96403 flaperon module. This couples the aileron function with Aux. II. I have two servos in each wing...one for each control surface. The ailerons are plugged in...one to the aileron output and one to Aux. II. The aileron stick then causes them to function as ailerons and the Aux. control causes them to move up and down together.

The Aux. I and Aux. II controls are slide levers identical to the trim tabs on the sticks and are located on the top of the transmitter close to each side and move fore to aft. The Aux. I is on the right and the Aux. II is on the left. The flaps are plugged, via Y harness, into Aux. I. I have set the throws up so that by pulling both sliders forward, the ailerons go up and the flaps go down. I use most of the

throw for full deflection, but I left a little flap throw for a slight amount of reflex and a little aileron throw in order to droop the ailerons slightly for full span camber change. The neutral points are marked on top of the transmitter with small pieces of Plastruct so that I can set my surfaces by feel.

This system has been working very well. I can use flap for launch and can use flap or crow for landing. I can even use spoilers which I have on the left stick. The combination of crow and spoilers REALLY BRINGS IT DOWN!!

The Champ 7 radio is a great system and I have had it upgraded to the new FM system. There are probably many of them out there in use and with the modules available, they have great potential.

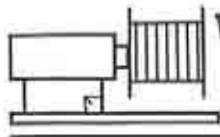


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Winch Line ...by Gordon Jones

Model Design Software

Model Design Software is an upgrade of Chuck Anderson's earlier programs with many refinements in version 2.0. The Model Design Program combines the Airfoil Plot and the Wing Design programs with new routines for drawing wing plans and plotting basic shapes to aid in designing fuselages. The program provides the user with the ability to plot a variety of airfoils from either coordinates saved to disk, or from built-in equations. This allows you to plot airfoils for foam cutting templates (the biggest use) with station lines and skin thickness to attain the exact size for your project. If you are using the program to cut templates for balsa ribs, you are afforded the opportunity to print a set of ribs for a tapered wing, as well.

The Design program contains all the modules of the Airfoil Plot programs along with additional modules for plotting ribs and plans for wings with up to 9 spars as well as leading and trailing edges. You can plot with a transition from one airfoil to another over the wing span, and it will incorporate up to 5 degrees of washout over the span. This is a handy feature if you are building balsa wings. The size limitations of this feature are great, with chords up to 45 inches (22 inches for Commodore) with no limit to wing span.

The basic requirements computer wise are an IBM Compatible computer with MS-DOS version 2.0 or later and 256K of memory. The program uses no graphics so a graphics card is not required. The printer set-up is straight forward and any dot-matrix printer will work. (Remember that most printers use either Epson or IBM control codes, so just check out your owner's manual.) If you have a

Hewlett-Packard Desk Jet printer, this will work too, but you will need an Epson emulator cartridge. Plotters and Laser printers are not supported at this time. The Macintosh version of the program requires an Imagewriter or equivalent.

Let's get on to the program. The first step is to print a copy of the instruction manual and sit down and read it carefully. I even went so far as to mark each main menu item with a tag for easy reference. You will find that each option is discussed with some of the background data on the why of things which is a nice feature. It also shows what you will see along the way and what pitfalls you can expect.

The entry into the program is simple enough. Just type MENU and the menu appears. From this menu you can reach any of the program functions desired by entering the number of the item desired and pressing ENTER. Each main menu item contains sub-menus or instructions to follow through each of the processes. While traversing the sub-menus and instructions be sure to read what you are about to select. This can really goof up your day if you get lost at some point. But, at various points along the way, there are ways to escape and return to the sub-menu or the main menu which makes things real easy if you become confused. Lets walk through each of the main menu options for an overview of each.

Airfoil

The Airfoil option is used to plot airfoils from four basic sources: T - a list of airfoils from coordinates saved to disk, or Quabeck, NACA 4-digit, and NACA 5-digit airfoils from equations and stored constants. Select the airfoil that you wish to plot and enter the number. You then enter the cord length and select the skin thickness, vertical station lines, or indicated foam template. You are now afforded the opportunity to print a mirror image of the airfoil plot which makes it easy for making templates. You don't have to print a second airfoil. In addi-

tion, you can print out airfoils in millimeters or print multiple copies of each airfoil.

Quabeck airfoils are printed from equations built-in to the system. Enter the percent of undercamber and then the percent thickness. Then, complete the options and wahla you have a Quabeck airfoil printed out. The NACA airfoils are plotted by entering the number of the airfoil in either the 4-digit or 5-digit number sequence.

trailing edge data and use the template to mark spar locations accurately rather than guessing or mis-measuring.

Plot

The PLOT option is used to plot single airfoils or a complete set of airfoils for a wing panel. All AIRFOIL and SPEC files are used as the basis for the PLOT program. After designating a file to use, you can print out or look at the airfoil specification to ensure you have the right one. Plus, you can print out the specification

MODEL DESIGN PROGRAM

1. AIRFOIL..... Standard airfoil plot program
2. SPEC Input model design criteria
3. PLOT Design program airfoil plot
4. PLAN Design program wing plan plot
5. BODY Plot basic body station shapes
6. DATA Enter or edit airfoil data files
7. UTILITY Normalize or modify airfoil data files
8. PRINTER Change printer
9. EXIT Return to DOS

Select a number and press the ENTER key.

Spec

The SPEC option is used to enter the information needed by the Design PLOT and PLAN options. The information is saved to a disk file and is loaded as required by PLOT and PLAN. SPEC files can be modified to make corrections or modified to make new SPEC files. This option is used to set up and store the standard configurations that you use most often. It allows you to configure the leading edge, spars, and trailing edges that will be used for this configuration. And, for foam wings, you can omit the

set for an easy reference. PLOT allows you to print from any rib starting point if for some reason the program is interrupted. This is a handy feature if you have company drop in during the middle of printing.

Plan

The PLAN option is used to design and print full scale or sub-scale plans for a wing panel. Only the SPEC files are used for this function, so these must be established prior to using this option. One handy feature of this option is that you

can scale the wing panel down. For example, a 50 inch span printed to a scale of 7/50 (or .14) would fit on a standard 11 inch page. Other scales that could be useful are 1/10 and 1/8 scale to facilitate measuring of dimensions or layouts.

Body

The BODY option is used to construct shapes to be put together to design a fuselage. Most modelers do not have the tools to construct the intricate shapes used to design a fuselage, so Chuck has been kind enough to let you really have some fun here. You can make circles, circle-rectangles, an ellipse, or a ellipse-rectangle. The program prints out only the right half of the shape, but this is more than adequate for design purposes. While this a neat feature, it takes some getting used to. In this case, the program won the battle with me at first, but it gets easier with experience.

Data

The DATA option is the option that many people will use a great deal. It is used to enter or edit airfoil coordinates and save them in a data file for use with the AIR-FOIL option. The data file can be normalized with the UTILITY program and used with the PLOT option. You can enter new airfoil coordinates, edit airfoil coordinates, save airfoil coordinates that you have entered, load coordinates from disk, and print airfoil coordinates with this option. This option allows you to enter Selig and Eppler airfoils and then normalize them with the UTILITY pro-

gram. Most of the airfoil coordinates that are used today are available in Soartech 8 just to make things easy.

Utility

The UTILITY option is used to perform modifications to airfoil data files. The most important function of this program is to normalize airfoils for use with the Design programs. Utility also allows you to really get into trouble with the combine airfoils, change thickness, and change camber options. The combine airfoils option allows you to take the top of one airfoil and use the bottom of another airfoil to create your very own airfoil from the designs of others. You can get some really interesting airfoils with this option.

In Conclusion

I found that Chuck has done a great job in fixing some of the "bugs" from his earlier program and that he has added some very nice features to help the user. From a functionality standpoint I think that anyone interested in sailplanes, and contemplating doing some designing in the future, should have a copy of this program. The price is well worth it and, with the available options, you can look at some of those airfoils you have been wanting to try very easily.

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R/C Soaring Digest

We received an update on the F3B fund raising efforts from Don Edberg, Chairman of the 1991 F3B Team Fund Raising. Don says, "This year the U.S. Team will be competing for the Dan Pruss Memorial Team Trophy at the F3B World Championships in Holland. As far as the cost of attending the competition goes, limited funding comes from the Academy of Model Aeronautics to cover air transportation and entry fees, but the remainder of the costs must be covered by donations. These costs include overseas car rental expenses, model airplane box shipping costs, uniforms, on-site shelter, and other related expenses."

"This year, the F3B Team is holding a raffle for prizes that are donated by the hobby industry. The winners will be chosen randomly at the 1991 AMA Nationals in Illinois this July. Prizes have been requested from over 150 donors, including virtually the entire hobby spectrum: R/C system manufacturers, batteries and accessories, kits, construction and finishing accessories, adhesives, newsletter and magazine subscriptions, and other merchandise. We plan to give away a round-trip airline ticket to the 1991 Worlds in Holland as a Grand Prize. Also, the Team is selling merchandise, including hats, tee-shirts, pins, & patches."

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YES! I'D LIKE TO HELP SUPPORT OUR US SOARING TEAM. PLEASE SEND ME THE FOLLOWING ITEMS OR MERCHANDISE:

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	Official Hat (one size fits all)	\$10.00	\$
	Official Pin	\$3.00	\$
	Official Patch	\$5.00	\$
		TOTAL	\$
Shipping/Handling		Add 10% of total	\$
Donation		(Optional)	
		GRAND	\$
		TOTAL	

Please fill out your name and address below, and send your check or money order payable to 1991 USA F3B Soaring Team, P.O. Box 3242, Lakewood, CA 90711-3242. Please allow two to three weeks for delivery.

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CITY _____ STATE _____ ZIP _____

YES NO Please send me free information on the F3B/USA Newsletter (circle one)

91 team merch order form DLE

Eastern Slope Soaring with NSP or Dudes of the East Coast Crash Knarly Site at Cape Cod

...by Stan Eames

It's 1:00 in the afternoon on a Tuesday in October, two days before the annual NSP trek to Truro, Mass. for some serious flying on the dunes of Cape Cod.

I'm sitting at my desk in my "real" job, outside the realm of NSP and dreaming of axial rolls down a wind blown dune. Suddenly the phone rings, and it's Sal. "Stan, the latest weather doesn't look good. I just downloaded the data from the Coast Guard Database (Sal always tries to impress me with some sort of technical wizardry...being in the computer business myself I try to look impressed), and they are saying rain and Southeast winds." "Darn," I think to myself, I wanted to go this weekend. "Looks like we go to plan B Salvatore." Sal concurs, and we decide to put off the trip until the following weekend. Actually, there is a good side to every story, and this extra time gave me the opportunity to finish building one last kit to take with us.

It's 1:00 in the afternoon on another Tuesday in October, two days before plan B kicks into gear. Sal calls me again to give me the latest news on weather and winds aloft in the Cape Cod area. "Stan, they are saying rain and..." "I don't care WHAT they are saying Sal, this is it. It's the last weekend that we can go and we are going. Frankly, I don't care if it is going to rain and be dead. We'll bring a couple of electricians and pre-

tend that we are flying in 30 knot winds." "OK, I see your point," he says, "Let's do it." I hang up the phone and say a little prayer for good measure. (Hey, when you live inland and get to a great coastal slope site once a year you do anything for good conditions! You Point Fermin guys are spoiled.)

I arrive at Sal's house on Thursday night, and find Sal on the phone as usual. "Sal, GET OFF THE PHONE...LET'S GO." "It's a customer!" "I don't care if it's George Bush. We've got a 6 hour drive ahead of us and a car to load. Give the man a deal and let's go." Sal, true to form, sells one last kit to a happy customer before he gets off his frequent appendage (the phone). After wrapping tails and wings with as much protective material as we could muster, we carefully load seventeen slope machines into the rear of my trusty SAAB. With the rear seat down it can fit a two meter wing easily. "Great, we got all of the gliders in, now where do we put the radios?" We manage to squeeze 10 transmitters under the seats and all of our other gear in various nooks and crannies. As a final precaution, we scan the basement of Sal's house looking for perhaps one last thing that we can fit in my car. "How about some lead," says Sal as he hefts an 8 pound sheet of the stuff. "Sure, we may get lucky and need the ballast," I say as I try to figure out where in the heck it will fit in the car. Finally, after cramming the lead under the front seat, we hang a "Cape Cod or Bust" sign in the window and leave our humble town of Williston, Vermont. Wing tips stick up like arrows in a quiver, and I cringe with every bump. "Don't worry, I packed plenty of CA and 5-minute," Sal says encouragingly. 6 hours later, at 2 AM, we find ourselves at the Seascape Motor Inn in Truro Mass. The flag above the site is out straight, and the direction indicates that it is blasting into the slope. If it keeps up, in the morning we would walk out the back



Stan (left) and Sal pose with their trusty Chuperosas. Photo by Dave Garwood.

door of the hotel, take 20 steps, and toss our ships off an 80 foot dune into slope heaven. It's not high, but it's smooth, fast, and wide. For the next hour we unloaded our gliders and put them together (we were too excited to sleep). After gluing back together six broken tails, gliders littered the floor and every outlet in the place held an overnight charger. Exhausted, we decided to go to sleep. "Good night Sal-boy." "Good night Stan-boy."

I'm awakened by the sound of the flag pole being struck by its hoisting line coupled with the whistle of the wind. Stumbling over a Snipe I manage to find my way to the window and gasp as I gaze beyond the foggy pane. The wind was in a perfect direction, and it was strong, in fact, you might say ridiculously strong. The flag pole looked as though it might snap at any minute and the grey clouds above flowed across the sky like a leaf in a river. It was also cold and damp, but heck, we're REAL MEN, and REAL MEN fly in anything. Sal, clad in his Teenage Mutant Ninja Turtle pajamas asked, "Wanna'try

theShadow?" "Sure," I say, "What the heck, lets be REAL MEN."

The Shadow is a sloper made by Fly By Night Models. Although it is not the prettiest thing in the world, it does nicely in heavy winds and is just about as durable as you can get. We get everything ready, and I set my video camera on top of a table facing out the window to record this ridiculous act we were about to take part in.

After seeing the video, I can recount pretty accurately what transpired. First, we walk out the door and the wind is blowing so hard the glider is pinned to my body. Any attempt to move to either side would surely cause it to become a permanent part of the hotel siding. Well, we make it to the slope, but just as we do it begins to pour (I mean sheets). So, we scramble back into the room and wait for the rain to stop. The rain stops a few minutes later, but the wind picks up. We didn't have a wind gauge, but the weather service was saying 40 knots with gusts to 50. Color us foolish. We exit the rear of the building and walk to the slope. I decide to let Sal fly while I launch because when watching the video I can always say that the impending crash was due to pilot error. Gripping the fuselage tightly I hold the quivering ship over my head and creep to the edge of the slope. "ok?" (the wind is loud and I don't hear anything), "OK?" (still nothing), "OK!?!?", and I hear a muffled "GO AHEAD." I push the glider forward and release it into the wind. In a matter of three seconds it is up 100 feet and about 200 feet BEHIND us. Sal's excellent recovery flying managed to stop the glider from going further behind us by smacking it into the motel chimney and having it rest on the roof. "How do we get it down," he says. "Give it a few minutes and it'll blow down," I reply. (It did.)

Believe it or not, we managed to glue and tape the Shadow back together in about 30 minutes. The wind had died down to a 35 knot pace and we went back to it. The Shadow flew fine until Sal decided to try a loop. As soon as the belly of the plane was exposed to the brunt of the wind it literally pushed the glider over the roof of the motel behind us, smacking it into the driveway and almost becoming a hood ornament for a gentleman from New Jersey. Luckily, Sal had more glue and tape, and in 15 minutes that Shadow was flying again. I went back to the room and fetched my QuickSilver. We flew our brains out for an hour, joined by Dave Garwood and Bob Powers. The four of us experienced jet-speed passes and the excitement of gliders whistling by at heart-stopping rates of speed. Everything was great until we remembered that we had to eventually land. You see, the landing area at this slope is small and features a permanent volleyball net. After several passes, we all decided that the easiest thing to do would be to land on the side of the slope where heavy brush could cushion the resulting blow. As it turned out, this technique worked fine and we left the normal landing spot for more gentle breezes.

Day two of the hostage crisis. The storm of yesterday gave way to a beautiful sunny day. Gulls cruised up and down the slope as the wind continued to blow in a direction to our favor. The light breeze of 10 knots made for perfect Chuperosa conditions. Sal and I pulled out our trusty "Chups" and flew for an hour non-stop. The landing area was now quite do-able but, unfortunately, I had forgotten about the dreaded rotor area. As my Chup was 2 feet off the ground and coming in for a seemingly gentle landing it suddenly was snatched from its glide path and slammed against the side of the motel. It was as though an invisible hand grabbed the plane and

threw it like a dart would be thrown to a dart board. Luckily, the owner of the motel knows us well and is used to such happenings. Hang gliders also use the spot and there have been a few of them slammed against the motel side, so I guess a one-pound airplane is OK. The damage was minor, and a few drops of CA later she was ready to fly again. As all slope pilots know, turbulence on the top of a slope can be disastrous. I would not let the rotor bite me again. On and off we flew many different planes this day. We also broke a few, but what the heck, we brought 17 with us.

One of the 17 kits brought happened to be an Alpina. Sal thought that it would be a great idea to fly this beautiful three-meter German plane off the majestic coast of the Cape, so we strapped the sucker to the top of the car, wrapped it in plastic, and hoped for the right conditions. In the afternoon of day two we decided that the conditions were right. We assembled the beast and had Bob Powers walk it carefully to the slope edge while Sal waited with transmitter in hand. I watched the event through the black and white monitor of my video camera. It was a beautiful clear day, and the breeze was enough to lift the hang gliders that shared the site with us. "Go for it," says Sal, and Bob launches the ship over the ocean. Immediately it rises and I say to myself, "Hey, this thing will do just fine." As it reaches the apex of its rise it does a wing-over and I look in horror as this eight pound airplane with a nose that would make an AMA safety officer vomit coming straight at me. Stepping out of the way, but still maintaining my camera coverage, I video the crash of the Alpina. The eight-second flight resulted in a broken tailboom, smashed wingtip, and a very somber looking Sal DeFrancesco. We packed the plane back into the box and tried to forget about it. Later in the day, though, we all laughed hysterically as we watched the video of the crash. It



Stan taunts Sal before the Talon fight to the death. Photo by Dave Garwood.

is interesting seeing the point of view of a man who thinks that he is about to be impaled by a fiberglass fuselage.

On day three the winds continued to blow, but lightened and shifted to the North. Not knowing of any North sites on the Cape, but also not fearing failure to find one, we piled in our car and began a quest for the wild, woolly, North slope. Fellow pilots who had met us at the motel earlier joined our search and we proceeded the hunt with a caravan of anxious glider pilots. After flying several knobs and shaky hills we finally discovered a perfectly North facing slope that was wide enough and smooth enough to enjoy. By this time the winds had lightened to under 5 knots, and our compadres looked discouraged. Sal and I pulled our trusty Culpepper Chuperosas from our car and launched with confidence into the near-dead breeze. The spectators looked on with wide eyes as the Chups slowly climbed, aided by careful turns, of course. "I LOVE this plane!" shouted Sal as I laughed in response. You cannot beat a Chuperosa for light wind flying. Our flight turned into a demonstration of airfoil performance differences for Dave

Garwood. Dave had earlier argued that "All airfoils are like a Clark-Y," to which Sal and I poo-pooed with a snicker. "Dave, check out the difference between our two planes. Notice how Sal can't keep up with my passes, but his ship reacts to lift much better? Same airplane, but Sal's has a E214 while mine sports a S4061. Are you convinced now?" Dave acknowledged the findings of the demonstration, but I still think

that he is skeptical. After a couple of hours of light flight we retired to our rooms for refreshments and discussion.

The next and final day climaxed in rock throwing. Everyone that flies slopes has a "rock" plane. That's the one that flies well, but is cheap and you don't care what happens to it. Our rock planes happen to be Bob Martin Talons. Well, as I was flying mine up and down the slope in a brisk wind on the final day, Sal walked up to me, pulled a glove from his pocket, slapped me with it, then threw it down on the ground shouting, "I challenge you to a duel to the death!" Bob and Dave laughed. I asked them to get my video camera because I wanted this to be recorded forever. I landed my Talon, which at this point had more CA and epoxy on it than balsa, and took it inside to prepare for the duel. Opening the ship, I inserted two pounds of lead sheet in the belly. After closing, I wrapped the fuse with electrical tape, and topped it off by spelling the message "KILL" on the wing bottom. I take my challenges to the death seriously.

The rules are simple: there are none. Anything goes, and the objective is to get your opponent's plane to the point where

it can no longer be flown. After some ground theatrics, we launched for the first volley. Several touches were made but none doing damage. We decided then to joust, and this resulted in a broken tail for Sal. The damage was repairable, however, and soon he was back in the air. Diving and looping, Sal nicked my wing and forced a stall that I could not recover from. I landed one foot from a cement bench with no damage (Whew). Sal was chuckling, but I was to have the last laugh. I launched and immediately he dove on me. Working to gain the altitude that he just lost, I got about ten feet above him and hovered. Sal finally reached my altitude and made a move for my tail. I pulled back on the stick, moving my killer Talon above and behind his soon to be dead glider. Then I dove. As I reached his plane I rotated my wings to be perpendicular to his. A sound like that of a sudden clap was heard shortly after and Sal was suddenly flying (not too well) with one wing. The severed component was hanging by the monokote, and Sal was doomed. Turning away and laughing, I dove and did a victory roll. Just as I finished this display of smugness, Sal ran over and managed to get his grubby hands on my transmitter long enough to force my ship down. The plane landed and shattered. (What three pound Talon flying in 20 knot winds wouldn't?) I didn't care...victory was sweet, and it was probably the most fun we had on the trip. We plan on doing it again next year, too. Watch your six, Sal.

We left the Cape feeling that things could not have gone much better (except maybe not crashing the Alpina). We flew every day, and experienced a wide range of conditions. Also, we met up with some great guys, and had a fantastic time. Although it's not like the towering cliffs on the California coast, Cape Cod offers some excellent slope soaring. When the wind is blowing in the right direction, the slopes provide very smooth air

and the width of the lift band is typically astounding. If anyone is interested in joining us each year at the end of October, let us know. The only requirements we have are that you have a good sense of humor, love to fly, and...build a combat ship...I'd like to have a frenzy next time.

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Readers: Sal tells us that some artistic license, on the part of Stan, was used in the writing of this article. We're all concerned with the safety aspects of flying, of course. But, if you're looking for the "true" facts, well you'll just have to ask Sal or Stan! Or, maybe, join them!

Some Tips

...from Gordon Jones

If you are thinking of making a tow-line for hand towing, while you are at the fishing store getting your line ask if they have any of the large spools that come with large quantities of fishing line. They will usually just give them to you at no cost. They also work well for mini-starts for hand launches, as well.

For those using fiberglass resin a lot, some of the Wal-Mart stores offer latex gloves in large quantities at a good price. They come in bags of 50 pair.

The next time you run out of microballoons reach in the back of the refrigerator and get the box of baking soda your wife has been saving for you. Be sure to break up the chunks and apply just like microballoons. Plus it is a whole bunch cheaper.

Video Review

Top Eight Slope Sites of the West

...by Gregory Vasgerdsian

Lousy weather keeping you out of the air? Need inspiration to finish that 2 year project? A sailplane video might just be what you need!

It took about two weeks from the time I dropped my check in the mail to receive it. The video starts out by saying, "Sit back, relax and enjoy..." then proceeds to run through over eight slope sites in the West, highlighting those that the producers felt were the top eight. The video is a good 50 minutes and covers sites in California, Oregon, Washington, Colorado, Hawaii, and Australia. Each site is shown on a map, and then described by a flier on location, giving information about the slope angle, lift band, and the best wind conditions.

The main punch of the video is on watching the models fly, and a number of beautiful scale ships (ASW-20, Libelle, Schwiezer TG-2, plus others) cruise the slopes. One particular model has the misfortune of flying through a fence, though I won't give away the details and ruin the fun! I would have liked to see more footage of flying at the top site, Richland Washington, as it is a wonderful place to fly.

Though it can easily be debated what the top eight sites really are, the video is terrific, with a good sound track, filming, and editing. At \$25.00, I felt the video to be a good value. It's available from Mark Foster, 826 Oneonta Dr. So. Pasadena, CA 91030.

Slope Race

...by Gregory Vasgerdsian
© 1990

One, then two
One, then two, three and four
They leap from the cliff
To the wind on the shore

Fighting for altitude
As the clock ticks
To gain an inch and an edge
On all the rest

The signal sounds
Their noses drop
The pack streaks like an eagle
After prey on the ground

To the opposite flag
Tip to tip, nose to tail
Concentrate...
The straightest path will prevail

Roll up, pull back
Streak through the turn
Don't give an inch
And take what you can grab

From flag to flag
Across and back
Efficiency will win
Mistakes set you back

The last turn approaches
Two in one spot
With a small clap of thunder
They drop to the rocks

Straight as an arrow
Keen on the sticks
Across the finish line
The winner has been picked.

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Understanding Thermal Soaring Sailplanes

Part 4

...by Martin Simons

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Previous articles have examined the sailplane polar, the advantages of large models, and the choice of wing profile. Discussion of flaps and turbulators to modify the profile was postponed and will now be considered.

Flaps?

The purpose of fitting simple trailing edge flaps to a sailplane wing is to allow an increase of camber when circling in thermals and for the towline launch. Camber is reduced by raising the flaps for penetration. Whether the gains are sufficient to justify the additional complication in construction and control is not entirely clear.

A serious difficulty is that flaps need to be very carefully designed and fitted in such a way that they do not cause flow separations at the hinge line, or let air leak through gaps. Even in the neutral position, badly fitting or leaky flaps can upset the performance of the wing, leaving things in a worse situation all round than the plain aerofoil. Even the best flap creates small surface irregularities at the hinge line and some wing profiles are sensitive to such defects. The same, of course, can occur with aileron and other control surfaces, but since the intention of the flaps is to improve performance, anything that actually has the opposite effect is particularly deplorable. A possible solution may be to use a flexible wing skin, instead of a hinge, to allow the flaps to be varied without

breaking the continuity of the surface. This has been done on some full-sized sailplanes, notably the Jantar 2 and the Speed Astir. Alternatively, flexible hinges may be devised using silicone sealants, the idea being to prevent any sharp change of flow direction at the forward edge of the flaps.

It must be emphasised strongly that camber flaps, if used at all, must run across the whole wing. Flaps which extend only over the inner part of the span are worse than none at all, since when they are either up or down there is a considerable increase of vortex drag at the outer end of the deflected flap. Ailerons, if any, must be coupled with the flaps, changing the camber of the entire wing from tip to tip. This usually has some adverse effect on lateral control but is acceptable if the desired improvement in performance is achieved. If there are no ailerons, the flap still should run from tip to tip of the entire wing.

Wind tunnel tests on flapped wing sections are few and results emerging are sometimes disappointing.

Figure 35 shows what may be possible. All wing dimensions used in computing the polar are the same as before and the wing loading is again 3.0 kg/sq m (9.8 oz/sq ft). The basic wing section is SD 7032, with flaps 21% of the chord in width, as tested at Princeton. The diagram indicates the performance with flaps in two different positions, down 6 degrees for thermalling and raised 6 degrees for penetration. These flap angles have been chosen deliberately to show the maximum effects. In practice the pilot is supposed to adjust the flaps proportionally between these limits, according to the flight speed and trim required.

On a wing chord of 35 cm (13.75 ins) such as that supposed here at the wing root, a 21% flap is deflected 6 degrees when the trailing edge is up or down 8 mm (0.3 inches) from neutral. To arrange for more movement than this is to invite

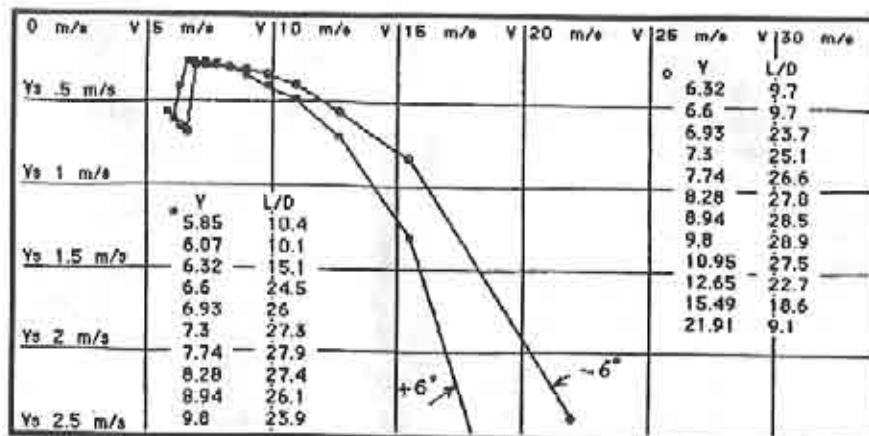


Figure 35

Performance Polar for Wing

Velocity Metres/Sec	SD 7032 Flap + 6°		SD 7032 Flap - 6°	
	Sink M/Sec	L/D Ratio	Sink M/Sec	L/D Ratio
21.92	4.317	5.08	2.394	9.16
15.50	1.302	11.90	0.831	18.64
12.65	0.707	17.91	0.556	22.74
10.96	0.486	22.53	0.398	27.56
9.80	0.409	23.96	0.339	28.94 MAX
8.95	0.342	26.14	0.313	28.59
8.28	0.302	27.44	0.297	27.85
7.75	0.278	27.92 MAX	0.291	26.62
7.31	0.267	27.39	0.291 MIN	25.10
6.93	0.266 MIN	26.07	0.292	23.74
6.61	0.270	24.50	0.678	9.75
6.33	0.418	15.13	0.651	9.72
6.08	0.602	10.11		
5.86	0.561	10.44		

flow separation. If the flap driving mechanism is a little sloppy, it is quite possible to get six degrees of movement on either side of neutral without control from the transmitter at all. Flaps also can flutter at high speeds and mass balancing to prevent this may be required. Once again, the importance of good engineering for flaps is emphasised.

Lowering the flaps 6 degrees, as the chart shows, makes a small improvement in minimum rate of sink and the stalling speed is less, so thermalling circles might be made tighter. This could be useful sometimes but the improvement is not

really very great. Note how 6 degrees down flap ruins the high speed part of the polar. Obviously it is very important that flaps should be neutral or raised unless the model is actually in lift. To fly fast with the flaps down is a serious error, much more serious than flying slowly with the flaps up.

Launching with flaps down, reducing the stalling speed, may be an advantage since the towline runner may not have to run so hard.

With flaps up, the high speed performance is improved greatly. There is, therefore, some gain in useful speed range

with this profile, which is fairly strongly cambered in the plain form.

The SD 8000 profile, which the earlier study indicated as promising for thermal soarers, has not yet been tested with flaps. Since it has only small camber to start with (1.71%), little improvement should be expected by raising flaps at high speeds but lowering them a few degrees would reduce the stalling speed and possibly improve the minimum sink rate slightly too.

Other possibilities, such as slotted flaps, which encourage and direct flow leakage through the hinge to control the boundary layer over the flap itself, are worth investigating. Little has ever been done along these lines with models and no wind tunnel tests at suitably low values of Reynolds number relevant have been done, so far as can be discovered. The option of Fowler type flaps which increase the wing area when extended, is also worth consideration though if, as recommended in the earlier articles, the model is to be built up to the maximum permitted area, the flaps will have to be at their fullest extension when the area of the wing is calculated. (The international rules require any such device to be operable remotely via the radio control system.)

It may be concluded that there are some aerodynamic advantages to be gained by using full-span camber flaps, coupled with ailerons, on a large thermal soarer, if the engineering complications can be dealt with. Whether the potential advantages of such devices are worth the extra trouble, and can be correctly used in flight, must be decided by the model flier personally.

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California Slope Racers

...by Rich Beardsley

California Slope Racers is now an official AMA club, #2804, and we are looking forward to an exciting inaugural year.

To bring those of you not familiar with C.S.R. up to date, last year in July the International Slope Race was held at Davenport, CA after a period of not holding the race. The race was put together by Ray Kuntz (C.D.), with lots of support and leg work from John Dvorak. The race attracted over 50 pilots from all over the west coast and, needless to say, the I.S.R. was a great success.

It was then decided that a sanctioning body should be formed to insure the continued success of the I.S.R., as well as hold a series of races along the California Coast.

At the next race held by the yet unorganized club, held at the Migellito Canyon site near Lompoc, California, an election was held by the participating pilots to decide who would serve as the Director of C.S.R. and formulate the club rules and guidelines. After a very close count, I (Richard Beardsley) edged out Ray Kuntz by one vote. I would like to thank everyone who supported me and hope I will give the club a good racing start.

C.S.R. held their first board meeting in the form of a fun fly at Los Banos Reservoir in December. There, I presented my thoughts on the direction the club should take. I also presented some basic rules. (The club rules will be published at a later date or can be obtained by sending me a self-addressed stamped envelope.) C.S.R. will adhere to A.M.A. unlimited

Scheduled Events

March 16:	Los Banos
April 13:	Migellito Canyon
June 1 & 2:	International Slope Race Migellito Canyon
July 13:	L.A. Area Site to be announced
August 10:	Davenport
September 14:	L.A. Area Site to be announced
October 12:	California State Champs. Migellito Canyon

slope racing rules. We also decided that there will be two separate classes — Division One Pilots, consisting of the top 28 points earning pilots; racing for cash prizes. Division Two Pilots will be made up of the rest of the registered club members, and they will race for Trophies. Division Two pilots will be able to displace the Division One Pilots with consistent top placing in their races.

The 1991 International Slope Race is scheduled for June 1 and 2, to be held at the Migellito Canyon site near Lompoc, CA. We presently have commitments from 3 pilots that will be coming from England, with a rumor that Nick Wright will attend. I have included the races scheduled for this year at the top of this article.

It looks like an exciting year on the slopes of California. If you did not attend the I.S.R. at Davenport in July and would like to be a member of C.S.R. please send me your name, address, and A.M.A. number with a self-addressed stamped envelope, and I will send you the current schedule and rules package. C.S.R. will not charge yearly dues as the club will be supported by the race entry fees.

In order to conflict as little as possible with other club contests, we have decided to hold our races on Saturdays. The exception being the International

Slope Race, which will be a two day event.

I will try to keep everyone informed of events and changes through this publication, the A.M.A. magazine, and local newsletters. The season will open on March 16 with a race held at Los Banos Res. near Los Banos, CA. Sign-up will start at 9 AM, pilots meeting at 10 AM, first heat at 10:30 AM. Pre-registration should be sent to me with your frequency and the area in square feet of your

racer—this should include the horizontal tail area or shadow area in the case of V-tails. Entry fees will be collected at the race, and will be \$5.00 for Division Two and \$15.00 for Division One.

Please direct any correspondence to me at:

Richard Beardsley
2401 Country Lane
Santa Maria, CA 93455
(805) 934-3191

See you at the start gate!

A Workshop

Tip

...from Gordon Jones

When sanding the leading edges on a sheeted foam wing, it is a good idea to put masking tape along the sheeting line so that you don't sand the sheeting. When you start scuffing up the masking tape, you know that you are getting close to the sheeting and from that point on more care is required.

**International Modeler Show
Pasadena, California
January 11-13, 1991**

...by Jerry Slates

We arrived at the Pasadena Center on Friday morning and began working our way down each aisle in search of glider and glider accessories. On occasion, we stopped to admire the boats or the trains, but always came back to the subject of gliders, looking for something new or something to share.

Composite Structures Technology

This was the first booth we stopped at after we entered the center. They carry vacuum bagging systems from the Deluxe to the new Mini-Vac along with everything that goes into the bag except the cores, of course. The new Mini-Vac is a complete kit to get you started and, with a show price of \$74.95, I couldn't resist. The kit gives you an easy to use, continuous running pump (quiet), miscellaneous tubing with fitting, nylon bag, bag sealant and breather felt. Gail says they are carrying 1 oz. kevlar, now. The new products list includes fittings, carbon fiber strips, tapered carbon strips, uni-directional carbon fabric, etc. (Gail Gewain, Composite Structures Technology, Dept. M1, P.O. Box 4615, Lancaster, CA 93539; (805) 723-3783.)

Model Research Labs

Curt Stevens always has something of interest for just about everyone. He carries a number of things such as carbon products, fiberglass, mylar, kevlar, kevlar shears, etc. His catalog includes some methods with diagrams for incorporating these composites in construction projects. (Curt Stevens, Model Research Labs, 25108 Marguerita #160, Mission Viejo, CA 92692; (714) 240-8433 after 8:00 P.M. PST.)



Gail Gewain, Composite Structures Technology (CST)



Mini-Vac by CST



Curt Stevens, Model Research Labs (MRL)



Arnold Wratschko, AMS, with a semi-scale Piper J-3 Cub from Austria. Could be used for aero-towing.



VS Sailplanes 2 Meter SALTO



Sheryl Hamblton holding the WIND WEASEL hand toss glider by DCU.

Bob Holman Plans

I knew that Bob was into power, but he also carries a line of imported glider plans from England and Germany. For more information or to obtain his catalog, write to Bob Holman Plans, P.O. Box 741, San Bernardino, CA 92402; (714) 885-3959.

AMS Imports/Exports, Inc. Arnold Wratschko has something new every year. This year he displayed a scale Pilatus B-4, fiberglass fuselage w/sheeted wings. Also, he carries a clipped wing Cub with a 111" wingspan that should work well for aero-tow. (Arnold Wratschko, AMS Imports/Exports, Inc., 1110 S. Wells Ave., Reno, NV 89502; (702) 786-7733.) With Arnold was Rainar Wiebalck of High Sky. Rainar carries an easy to install Electric Flight On/Off Controller. (Rainar Wiebalck, High Sky, 3929 Kansas St. #9, San Diego, CA 92104; (619) 297-5792.)

VS Sailplanes

Although I didn't see Ken, I did see his new, very good-looking SALTO. According to the brochure, it has a loading of 12 oz./ft² and an E374 wing section. It comes with a glass fuse, balsa/blue foam wings, clear canopy, wheel & all structural materials and full-size drawings w/ instructions for \$129.95 & S&H. Contact Ken for additional information or to obtain his catalog which includes ROTOR, VMAX, VMAX-PLUS, XICA, ZULU, RANGER, and my pick — the KOMET. (Ken Stuhr, VS Sailplanes, 2317 N. 63rd, Seattle, WA 98103; (206) 525-5776.)

DCU

Mark Hamblton is the fellow who built and flew that huge A-6 Intruder up in Richland, Washington at the Scale Fun Fly. He also carries a fine line of smaller gliders like the DRAGONFLY, SUPER DRAGONFLY, STRYKER and, coming soon, the F14 (\$109.99). Also, there is a European style slope racer called the WIND WARRIOR. For thermals, there's the WINDSTAR II which is a 2 meter with a 70" wingspan. The WINDSTAR 100 has a 100" wingspan. (Mark Hamblton, 1556 S. Anaheim, Unit C, Anaheim, CA 92805; (714) 535-6969.)

Hobby Lobby

They only brought 1 glider, a DG-300 by Graupner. However, they had a SKY PATROL Elektro Jet semi-scale power model with a 10'3" wingspan, 6'3" fuselage length, Wortman airfoil, and 4-5 channel flaps (optional). It has a very light-weight epoxy fuselage; the foam wings are covered with obechi veneer. It kinda looked like a U-2. This model would look fantastic on the slope! (Cost: \$759.00+) You know how to call Hobby Lobby.

Cheetah Models

Bob Pettyjohn has a new model called the LYNX. It has a 50 inch wingspan, SD6060 modified airfoil, flies in 40 MPH with a roll rate that "is quicker than the eye"! (Bob Pettyjohn, Cheetah Models, 14725 Bussemer St., Unit B, Van Nuys, CA 91411; (818) 781-4544.)

Slope Scale

Slope Scale carries high performance slope gliders: ME-109, FW-190, ZERO, KING COBRA, P-51 MUSTANG, SPITFIRE, and HELLCAT. All the kits come with fiberglass fuselages, foam cores, all the wood & linkages required, and a complete set of plans and instructions. P.S.: Brian indicated he might keep his show prices for awhile. Give him a call if you're interested. (Brian Laird, Slope Scale, 12935 Lasselle St., Moreno Valley, CA 92388; (714) 924-8409.)



David J. Martin of Hobby Lobby holding SKY PATROL Elektro-jet.



CHEETAH & LYNX by Cheetah Models

American Sailplane Designs

Are you looking for a SAILAIRE, 1/3 Scale ASW-20, GATES LEARJET 1/8 Scale or a POCKET SCALE LS-3? Gary Anderson carries all of these and more. Need a fieldbox, glider hat pin or tie tac? (Gary Anderson, American Sailplane Designs, 2626 Coronado Ave., #89, San Diego, CA 92154; (619) 575-5133.)



Slope Scale P-38 Coming Soon



LEARJET from Gary Anderson, American Sailplane Designs



MGA Pilots, full figure. The photos don't do them justice

MGA

Enterprises

Pilots are their only business and they carry a line of 11 full figure (1/6 scale) or bust (1/4, 1/5, 1/8, & 1/9 scale). They have one in which you can install a servo so that it's head can turn and look at you. The prices range from \$19.95 - \$37.50. (Mary Gregory, MGA Enterprises, P.O. Box 5631, Fresno, CA 93755; (209) 224-4170.)

Davey Systems Corporation

Ted Davey has, I believe, 27 models in his line. Most of them are Electrics. However, there are three gliders. ARIEL is designed for AMA Class A hand-launch com-

petition, PROPHET 941 is a 2 Meter, and PROPHET is a 2 Meter high performance. See your local hobby shop for more information or contact Ted Davey, Davey Systems Corporation, 675 Tower Lane, West Chester, PA 19380; (215) 430-8645.)

Vortech Models

Jeff Fukushima carries the P-51, ZERO, & FOCKE-WULF. In 1991, coming soon, are a V-1 VIPER, and an F-15 SUPER EAGLE. (Vortech Models, 2032 San Anselme Ave., Long Beach, CA 90815; (213) 594-9365.)

Bob Martin RC Models

They carry the 2 meter, easy to fly PUSSYCAT with a 78" wingspan. If you're looking for something a little hotter, the BOBCAT is a high performance 2 meter with a T-tail and ailerons. Come about April, Bob said that the KATIE will have a new fuselage. I saw it and it looks good. For Bob Martin RC Model Products, check out your local hobby shop.

ACE R/C

They have the new EASY EAGLE, a 2 meter glider kit with the SD-7032 airfoil and flaps. They also carry an ACE Micropro 8000 8 channel radio with unlimited mixing. For more information, their order desk is (800) 322-7121.

Scale Model Research

Need documentation for a scale project? Bob Banka carries over 3000 full color foto-paaks and over 10,000 3-view drawings. Bob shared with me two beautifully done plans from Poland: M-3 PLISZKA & ZEFIR-2. Bob says that these are not the norm for the plans he carries. Indeed, these two are so well done, I think I'm going to have them framed. (Bob Banka, Scale Model Research, 2334 Ticonderoga Way, Costa Mesa, CA 92626; (714) 979-8058.)

Swap

I don't know where they found their "treasures", but I saw things I haven't seen for many years. The Swap was in the process of being set up as we left. I took a quick tour through the Swap area and found myself wondering if I should clean out my closets when we got home.

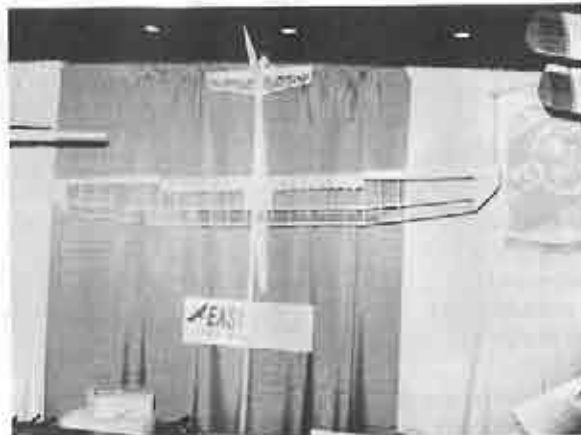
COYOTE (left), SR-7 (right) by Bob Martin RC Models



V-1 VIPER (Top), F-15 SUPER EAGLE (Coming Soon) from Vortech Models



KATIE II with new fuselage. Look for it around April. Bob Martin RC Models



EASY EAGLE by ACE R/C. 2 meter with SD 7032 airfoil & flaps. Three channels required.



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Bob Banka of Scale Model Research

Ridge Writer

...by Wil Byers

A Picture is Worth a Thousand Words!

That simple statement is so true, isn't it. This month I am going to dedicate more space to pictures and less to words.

Hopefully, you will enjoy the pictures and the details that go with them.

The first set of pictures are from Mr. Erick Eiche. Erik is mostly a thermal soaring buff. Some of you will recognize his name as the past northwest soaring champion. He is an excellent pilot and an absolutely outstanding builder...a builder who loves to build scale vintage models.

Because of his passion for scale models of quite large size, he has turned to the slope as a way of easily flying these beautiful crafts. It should be noted that in the early days of soaring, most sustained flights were performed with the aid of the wind and a slope. Therefore, the sight of one of Erik's scale models, flying out in front of a slope, adds a touch of nostalgia to the scene, as well as excitement.

Erik picked the Kranich, because of its uniqueness, to build for the Mid-Columbia Scale Fun Fly of 1990. He says, "I like to have scale models that hardly anybody else has. I am looking for one that's

difficult to build and is not kitted." And he adds, "I am very grateful to Martin Simons for his book *The World's Vintage Sailplanes*. I call it the "Scale Bible". The amount of research he must have done was incredible." (Book available from Kookaburra Technical Publications, LTD, P.O. Box 648, Dandenong 3175, Melbourne, Victoria, Australia.) The Kranich certainly fills all of those selection parameters. It also provided Erik with all the challenge he wanted. And Martin's book is everything Erik says it is; one has to see a copy to appreciate the quality, the information, and the pictures.

Erik has a history of building very beautiful models. His previous scale projects included a Reiher, an SG-38 and an absolutely gorgeous Baby Albatross. The Kranich is, however, his best work,



Empennage so accurate in detail, one would have a difficult time distinguishing it from a full-size craft!

Erik's wife holding the model. Note dropable wheels and intricate structure.



Kranich model has 15' span, weighs 18 lbs. and has 2200 sq. in. Uses 25 cell battery packs to drive 8 servos. 1 elevator, 1 rudder, 2 ailerons, 2 airbrakes, 1 aerotow release, and 1 for drop-off wheel.

yet. It displays some fantastic detail, with items such as a canopy fastened to its metal frame using 200 #0-80 screws. Erik machined these screws on his lathe because no supplier stocked them. Other details deserving note are items like a stall horn that can be removed to accommodate the charging jack and the pitot



Look at the cockpit detail. Over 200 #0-80 hand-machined screws. Pilots are proud to ride in this model.

tube that doubles as an on/off switch. Also, the model span is 15' 7", it has 2200 sq. in. of area, weighs 18 pounds and has 8 servos driving the controls.

Erik sent along some history of the Kranich.

Two Seat Kranich:

"The Kranich, of which the prototype was built in 1935, started the era of 2-seater sailplanes. Designed by the famous Hans Jacobs, it was the typical all

wood and fabric construction of the day. A "Gull" bend and a slight sweepback of the wing to get the center of gravity right, made construction rather difficult. To prevent binding at the hinges, the ailerons were divided into sections. The fuselage was the usual semi-monocoque structure of plywood skin over laminated wooden formers. The fuselage was equipped with wheels, which could be dropped off after launching.

The Kranich's performance was outstanding.

Some of the Records achieved were:
German Distance Record - May 31, 1938
397 Km, L. Hofmann/Wilken
Goal and return record - August 10, 1938
258.8 Km, H. Huth/Brandt
Solo altitude record - November 21, 1938
6838 Meters, Erwin Ziller
Duration Record - December 9-11, 1938
50.25 Hours, Boedecker/Zander"

This documentation is an example of how a scale builder will research their design choice before and during construction of a scale model. Then, when it is all finished, they will go out and throw it off a hill; just as if they had good sense. Good sense because, when the right conditions exist, the builder/pilot may be able to fly his creation for as much as an hour or more, all on the first flight. Thus, the builder/pilot will have an opportunity to feel the model out and adjust trims, etc. Also, the model will not be as vulnerable to incident as it might be if it

were to launch from a winch, where a line break could spoil any chance for additional flights.

I hope the pictures and detail can enthruse some of you about building and flying scale. If scale soaring does interest you, drop me a line and I'll try to help you locate some of the documentation as well as suppliers. In future columns we will provide you with some of the companies that exist for the scale buff. If you would like to write Erik, his address is 6080 Tranquille Place, Richmond, BC V7C 2T1, CANADA.

Flying in Michigan

Another letter, from a fellow sloper, tells us that flying in Michigan is quite good. Howard Stearn is a slope enthusiast who lives in the Chicago area. He travels to a site in Indiana to do his slope soaring. The site, a sand dune, is located in Michigan City at the Indiana National Lakeshore. The dune is nicknamed the Smoking Dune apparently because, when the wind blows hard (which he tells us it does often), a misty, smoky layer of sand forms over the summit. Howard says, "Ski-goggles are often required when flying in these extreme conditions to protect your face and eyes from the abrasive impact of the sand. The dune conditions aren't always this harsh, though. Often times, there is a gentle 10 - 15 MPH breeze with an abundance of lake thermals, which makes for a wonderful



Howard Stearn with Alpina. Note the "dune grass" which helps to keep the sand dune stable over time. (DG-300 on ground.)

combination of lift conditions." (I wonder, only because I live in the desert, if a lake thermal is wet?) He also points out, "The dune extends for miles up and down the coast so the lift area is unlimited."

The fantastic thing about Howard's letter is that it points out there is slope soaring in the Mid-West; apparently, good slope soaring too. If any of you are interested in joining in the fun with Howard, and his friend Rick, I'm sure he would not mind if you dropped him a

letter expressing your interest. His address is Howard Stearn, 432 N. Clark Street, Suite 300, Chicago, ILL 60610.

Howard Stearn & Rick Cruz holding their models at dune slope site in Michigan City, Indiana. Rick Cruz (L) w/ Glasflugel Salto/Vision. Howard Stearn (R) w/CHK Modelle "CARAT"/X-347. Both planes have spoiler and crow ailerons for landing in slope winds up to 40 MPH!



Dave Wolf with his Father's "Unlimited" thermal soarer. Flying at Mt. Baldy always seems to have a combination of lake thermals and slope lift — even into Nov. & Dec.! Some day, maybe we'll have a Mt. Baldy fun fly or slope race!



Howard Stearn w/CHK CARAT./JR X-347. Salto & Multiplex DG-300 all glass in background..

tively attempt to get young people participating, again.

I have fond memories of Mark Maze (a past AMA champ) and myself flying control line stunt models when we were young. He

Where are the Kids?

I attended the Northwest Expo in Puyallup, WA this past weekend and enjoyed the show very much, as well as the people. But, one thing I noticed was the distinct absence of kids. Where are they? Are they playing video games or just hanging out somewhere else?

Airplanes have always been a fascination with children and I'm wondering why it isn't as much now? Or is it still, and the children just aren't being helped to participate or encouraged to become involved? I think most of us would have to say we had our ROM programmed to search all directories for anything pertinent to model airplanes at a very young age. So, if the hobby is to grow and survive, maybe we modelers need to ac-

was about 14 and I about 11 or 12 years old, but we were having a great time as junior aviators. His father deeply involved himself and was an inspiration. He would build beautiful models and we would fly them, me a little, Mark a lot. Sometimes we would crash the model(s) and bring home only the pieces. Then, his dad would go back to building for us again. It was all great fun and the memories, of dope and tissue, will long be remembered. Especially the fact that Mark's father did a great deal to give us so much fun and joy.

You most assuredly have similar memories. Wouldn't it be nice if we could help other young people have them, too. Maybe, someday, they would also look back with fond memories of what you

did for them. What do you think can be done now to get more young people inspired? Write me with ideas and suggestions. It will benefit not only the hobby, but most likely all of society.

Our club, the Tri-City Soarers wants to offer an idea that may be one of many options. We are planning to host an informal scale fun fly. The dates will be June 14-15, 1991. We are establishing a minimal cost for a flyer to enter the event. And, any profits we should earn will be given to further model aviation within the youth community. If you have thoughts which will benefit this effort, they are welcomed and encouraged. I want to emphasize the event will be very informal and all attendees will not be paying for anything other than a fun time of flying. What is more important, they will be donating their dollars to kids who may find model soaring as interesting as we did and do. By the way, kids under the age of 14 will be able to fly at no cost, provided they have their AMA membership card. If they don't, maybe our donations can help them in that area. It is just an idea, but maybe your club could do something similar. If you need help getting kids out to participate, you might want to contact your local social service agency. They will help you, and love you for what you and your club might be able to do for some needy kids. Think about what your club can do to

help all junior flyers and let me know of your successes, as well as anything we at RCSD can do to help.

A few days ago, I received a letter from a 12 year old soaring admirer. He said, "I love model gliders and would you please send me anything you have about them." Well, I have a lot of information and I'm sending along a few things. But if you should have some also which may help this young fellow satisfy his glider appetite, I think he would appreciate it. His name is Richard Kauser and his address is 4619 Glastonbury Pl., Mississauga, ONT, CANADA.

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1990 Nationals

...by Mike Stump

The 1990 AMA NATS soaring events were held near Lincoln High School in Vincennes, Indiana.

This year's event was my first NATS, but my guess is that this site is as good as any in recent years. The site was mowed grass and large enough to accommodate set-up in any direction for wind. Behind the pits and winch area were tennis courts and a courtyard next to the school. These areas were restricted to flight lower than approximately 50 feet. Flying over this area below that altitude resulted in a disqualification for the day. The temperature was there at times to slope that end of the school building. To my knowledge, only one flier was disqualified all week.

Weather in Vincennes was almost perfect all week. Temperatures were generally in the mid 90's and winds from lite to non-existent. Good thermal conditions existed all week.

Official competition began on Monday July 16 with Sportsman F3B. 24 entrants put official flights on the board. For

most, this was as much a learning experience as a contest. Last minute CD for the event was former AMA President John Grigg due to the last minute withdrawal of the planned CD due to a family illness. Grigg's choice was somewhat controversial due to the withdrawal of the '89 World Championship site. John did do a good job of running this event on very short notice. This was the first time Sportsman's F3B was run as an official event and some possible revisions became evident:

1) Prep time can be shortened or eliminated. Many times groups were ready to fly and had to wait for prep time to end.

2) Working time and re-launches could be eliminated. These events are man-on-man with equal winches for all.

Terry Edmonds won SF3B flying an IO and 2nd overall went to Sr. competitor Blayne Chastain. Terry and Blayne were the only pilots to post speed times under 30 seconds. Many were posted in the 32-34 second range and, if you were over 40 seconds, you were slow. Twelve to fourteen laps were generally tops in distance. Most competitors indicated

they would fly this event again. Only 2 rounds were flown at Vincennes but, with some streamlining of procedures, 3-5 rounds should be possible. This is also a labor intensive event, and thanks goes to flagmen for the time put in on the speed/distance course.

Tuesday was hand-launch with 38 entries flying. Only four of the intended five rounds were flown due to sharing the schedule with Scale Soaring. All rounds were flown man-on-man with ten minute slots for each round. Each flight group numbered 8-10 pilots. Round 1 task was a three flight cumulative task with a total target task of 5 minutes. (Only three throws were allowed.) Round two task was for a single 5 minute flight with unlimited throws allowed. Round three task was five 2 minute flights allowing 6 throws. Round four was the longest possible flight with unlimited launches. Round five (had it been flown) was an all-up last-down format with launching required within the first 5

seconds of the time slot.

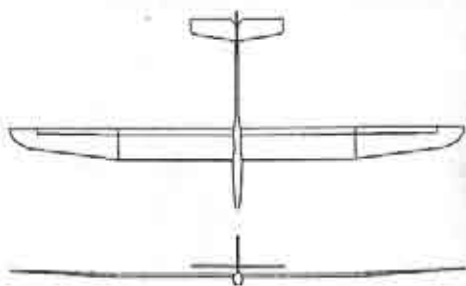
Rusty Shaw (IA) won hand-launch flying a Chuperosa. Brian Agnew was second flying his original "Vertigo" which is now available in kit form. Peter George (MO) was third flying a borrowed Gnome. A good mix of kits and original designs were present this year.

Regular thermal competition began on Wednesday with 2 meter. The 110 pilots were greeted with light wind and great lift for a great soaring day. Mariahs, Pixys, and Sagittas were there in good numbers as well as a wide variety of other kits and many original designs. A new design of interest was the 2 meter Duck designed by 1989 NATS Champion Troy Lawicki. Four Ducks were entered and all four finished in the top 12.

The NATS 2 Meter Champion was Paul Carlson (IL) flying a brand new kit-plane from Great Planes called the Spirit. It's a polyhedral design using a Selig/Donovan airfoil and a triple taper lead-

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ing edge. Paul flew on three channels using spoilers for landing control. The Spirit is as stable and easy to fly as a Gentle Lady, Oly 650, etc., but appears to be able to penetrate better.

The only tie for a trophy position in the thermal events was between Jim Thomas (MI) and Julian Tamez (TX) for fourth. They flew a fly-off the next morning before Standard competition began with Jim winning by the difference in landing points. The L-6 landing task (runway) was used for all three thermal events and drastically reduced the number of ties.

Thursday's Standard competition brought hot, muggy, windless weather. 122 entries flew four rounds with Jim Thomas ending up at the top of the heap at day's end. Jim flew a Falcon 800 which he feels is more fun to fly and easier to land than the Falcon 880. He was followed by Terry Edmonds and Rusty Shaw. Jim's third round flight was the key to his success as he flew through a huge sink area far downwind to find the thermal for his max and the altitude to get home. I launched right after Jim and the same batch of sink ended my flight at four minutes and dropped me from 5th place to 40th.

Camano's, Sagittas, Pulsars and Falcon derivatives were all there in some num-

bers. With the light air, a few older designs were in attendance as well as some original designs.

Friday's Unlimited contest began with cloudy skies but cleared to a beautiful morning with tremendous thermals preceding the front moving into the area. Only 2 rounds were flown as the front produced lightning and thunder that looked as if it was there for the rest of the day. 123 entries flew the 2 rounds. Windsong/Lovesongs, Falcon 880s, and the new Competition Products Phoenix were the prevalent kit designs present. A large number of old style Unlimited Planes were also on hand in this class as well and they too were ideal for the conditions in Vincennes.

John Gunsaulus (FL) is the 1990 Unlimited Champion flying a Leon Kincaid design. He was followed by Pat Sullivan (MI) flying a Standard Duck and Brian Agnew (FL) flying his Phoenix.

C.D. Gauger and his scoring, impound, and call-up crew did an excellent job administrating the entire week. The sponsoring Tri-City Aeromodelers were short on experienced winch and retrieval operators and Wednesday morning Gil approached Troy Lawicki and myself asking if we knew any fliers who could help in the flight line operations. Troy

and I volunteered along with Pat Sullivan and Jim Thomas. Minutes later Al Scidmore (WI) joined the group and the AMA District 7 winch crew took over.

The 5 of us spent the next 3 days tending winches and retrievers as well as flying. We were proud of our efforts and felt it at the end of each day as the four rounds completed in two meter and standard were finished by 4:30 PM each day. Our thanks go to the other pilots that lent a hand when we flew or just needed a break. Jim Thomas' wife Tricia played a vital part keeping us fueled with fluids and food. The winch crew averaged close to 2 gallons of water, gatoraid, and pop each day per person because of the heat and never made a trip to the porta-john.

Friday night's awards banquet was well attended and featured a talk by Michael Selig and John Donovan which was very informative. In addition to winners already mentioned, Jim Thomas won the Hi Johnson Award (Best Single Class Score), The Lee Renaud Trophy (Best Combined Class Score), and was a member of the Dan Pruss Award winning Michigan Soaring League Team with Troy Lawicki and Pat Sullivan. Brian Gill and Ben Pipic flew well in the Junior events and 6 year old Scott Peterson completed his second NATS very well. Blayne Chastain cleaned up in the Senior events as well as coming in second overall in SF3B.

Word is that the NATS will be in Lawrenceville/Vincennes area again in 1991 and if the site is once again Lincoln High School, plan to make it for some great soaring competition and comradery. This has to be one of the best NATS soaring sites available.

Mike Stump
607 Washington St.
Cadillac, MI 49601

An Update on the 1991 AMA NATS

...by Mike Stump

The 1991 R/C Soaring NATS will be flown at the same site as in 1990 which is Lincoln High School in Vincennes, IN. The site is very much superior to the Mid-America Air Center in Lawrenceville and much closer to most available lodging.

I understand that a number of entrants withdrew in 1990 upon finding the site to be a school. In fact, the site is very spacious and through conversation with NATS veterans, as fine as any in recent history.

The most important news is that for 1991, the proposed frequency allocations will not be in effect for R/C Soaring. All frequencies will be available to use at our location. AMA has advised us, however, to plan on these allocations taking effect in 1992 as future NATS will probably run at the same general site for all events. It is important that this information be distributed as soon as possible so potential entrants are not discouraged by the expense of changing over new equipment to fit the allocations. Obviously, Cold Sticker TXs are required and use of highly selective receivers is advised.

Also indicated is the possibility of unofficial XC and F3B at the beginning of the week.

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On the Subject of SMTS

Dear Jim,

...It sounds like I didn't completely get the idea behind the measurement method across to you. So, here's another try at it.

...The microprocessor calculates the area by integration. The chord is measured via the two rollers on the two pivoting arms (connected to a potentiometer). The length is broken up into 0.1" sections. This is done by using one of the rollers as a distance counter via an optical sensor sensing holes in a disc that turns with that roller. The holes are spaced to give 0.1" readings of the rollers' circumference. So every hole sensed, the microprocessor measures the chord and accumulates this value in memory. The numbers stored represent tenths of square inches. (Because it's the chord time the increment of span between sections of 0.1".)

Thanks for your input on resolutions and max chord. I'm going to limit the max chord to 15". This will keep the overall size of the box down as compared to measuring chords of 24". I'm also going to play with getting better resolution, even though your calculations indicate that 0.1" is probably good enough.

I don't know when I can have a prototype up and running. I just moved to California and the dust hasn't settled,

yet. I've got a couple of other projects going, but because this is comparatively simple, I'll start right away on it.

(signed) Tom Paden, 100 N. Whisman Rd. #353, Mountain View, CA 94043

Jim:

Regarding the 'wing area determination' letter in the last issue of RCSD. *Model Aviation* printed an article in August, 1988 entitled "Areas by Computer" by Mark Fineman, page 67. The text is very explicit in guiding a potential user in how this "basic" program is used to determine planform area. (For PC & MS-DOS computers...Apple & other oper. systems require modified code.)

I submit this as an option to SMTS-CD's. It has obvious benefits, and obvious drawbacks in comparison to Mr. Sprenger's method:

- One large sheet of grid paper. Perhaps a simple checkered tablecloth would be enough!
- Printout capabilities. For permanent records to AMA, database use, new data for designers...
- [Big Disadvantage]: You need a computer @ the competition site. (@ large events (NATS...) the process can be part of a pre-event check-in procedure.) Portable PC's would be the tool of choice, here.

(signed) Don Winiacki, P.O. Box 288, Minetto, NY 13115



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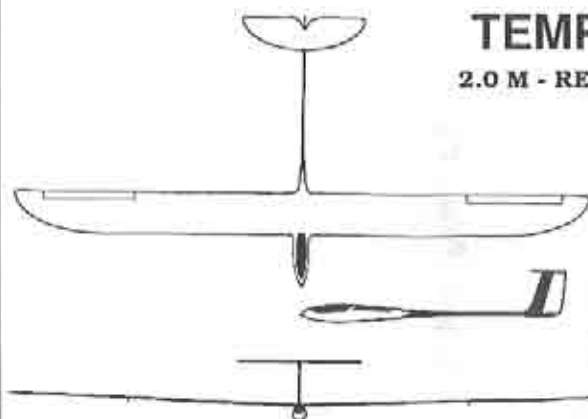
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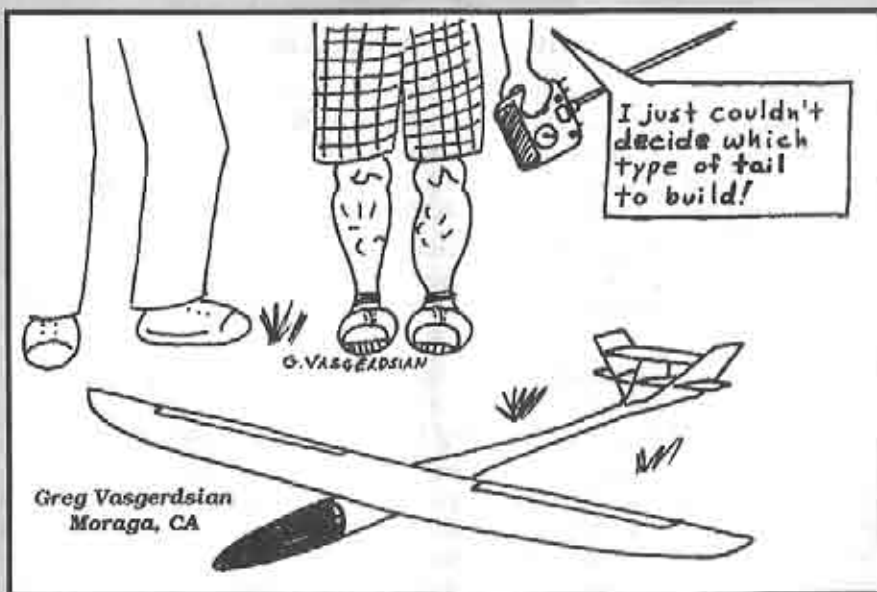
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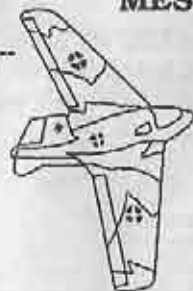


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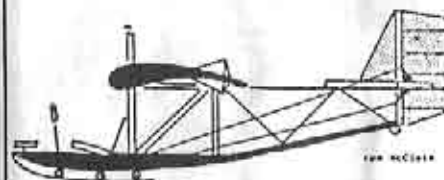


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