

MARCH, 1992

The Harbor Soaring Society Newsletter

Vol. 29 No. 3

FROM THE PREZ

Our first contest of the season went smoothly, thanks to Ross Thomas who directed it. We still need volunteers to help run retrievers and judge landings to insure that our contests continue to run smoothly, particularly since future events may require even more labor (man-on-man and multi-task events). Likewise, keep bringing the equipment out to the field - the last contest was delayed slightly as we rounded up another winch and batteries.

On the topic of safety: a little common sense goes a long way. Don't turn on your transmitter until you have the frequency pin! This includes checking your radio in the parking lot - make sure you've got the pin! The accident rate is up and we need to reverse the trend. I also crosscheck the frequency module in the back of the transmitter. With all these transmitters that look alike, coupled with the ability to change frequency modules, it's possible to turn on the wrong transmitter or transmit on a frequency other than what you think you're on. Its happened before and it'll happen again.

Anyone interested in completing LSF requirements, give me a call. We'll try to get some "LSF Parties" going and nail down those slope an cross country flights. In the meantime, FLY SAFE!

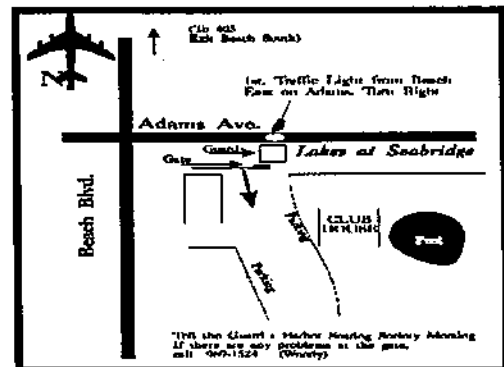
H.S.S. BOARD MEMBERS

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The Harbor Soaring Society newsletter is published monthly. Editorial comments and articles are welcomed. Please provide all material for consideration by the 15th of the month prior to publication. Wordprocessed material is appreciated (any major IBM compatible disk format and program). Handwritten material must be clear and legible. The editor reserves the right to edit all material. Submissions should be made to John Ostrowski in person or by mail to: 8902 Lawrence Ave, Westminster, CA 92683

MEETING LOCATION

You will need to check in at the gate. Tell the guard you are there for the HSS meeting. If there are any problems, call 969-1524



Printing Courtesy of OCB Reprographics
Irvine, CA (714) 660-1150

Dick Johnson called the meeting to order at 7:45PM. The previous month's minutes were approved as written. Three visitors were in attendance: Marvin Pass, whose main interest is electric gliders; and John Robinson and John Quintus who have been flying with club members at the field.

The Treasurer's Report was read by Frank Chasteler with a summary of income and outlays for the month. The report was accepted as read.

Dick Johnson announced that he will issue video tapes as requested. John Ostrowski said that he will bring a laptop computer and a printer to the next meeting to demonstrate airfoil plotting. Dave Nemecek suggested a demo on cutting and covering foam wings for a future meeting. Ben Clerx commented that it would be nice, on a regular basis, to bring out kits and talk about modifications. Curt Nehring is finishing up a Spirit 100 and it should be ready to fly soon. (Editor's note - Curt's Spirit climbed into cloud base on its first flight!).

John Ostrowski asked that any writers or picture takers should feel free to submit material to the Editor. Kit reviews with pictures would be especially helpful.

Winch batteries were discussed and different brands reviewed - Sears Die Hard, Delco, Interstate, etc. Batteries with 18 months full warranty were considered to be the best. Marine type batteries are definitely superior to auto type batteries since they are designed for deep discharges.

It was reported that an electrical outlet exists by the bike trail. Dick Johnson will check out the outlet and possible use.

Dick Pantzer has 8 winch shaft setups available. After discussion, it was decided to pay Dick for the work completed.

Dave Nemecek asked if anything was being done about the flying field as far as future use, what was going to change, grass in the landing area, etc. Frank Chasteler mentioned that the flying area may be moved to another section of the park. A storage area for club storage of winches was discussed, and this may also become part of the park's future plans. A suggestion was made that it may be smart to attend City meetings and to investigate future changes.

The meeting closed at 8:40PM with show and tell following.

George Siposs demonstrated a concealed control surface actuator that he had constructed. John Ostrowski brought in a new Falcon 880 kit, and Ben Clerx gave a talk on construction, mods, and covering of his Falcon.

- Woody Grosvenor, Secretary

PILOT OF THE MONTH

Our P.O.M. is Brett Young, the youngest regular flier in the club. He likes to fly both for sport and for competition. Brett currently flies a mean-looking Sealy Ultima, and has recently been spotted getting lots of slope flying time in York Linda.

Occupation: 8th grader at Bell Jr High, Garden Grove.

Started Flying R/C sailplanes: ...in 1985 when my dad was stationed in Montgomery, Alabama.

Reason for Interest: My dad was flying R/C and free flight, and it seemed interesting.

First R/C Sailplane: A Larry Jolly 2M Prelude.

Favorite part of the hobby: Flying in competition, flying at different flying fields, and learning from other fliers.

Goal for 1992: To place higher in the monthly tournaments and SC2 contests, and to gain more landing experience.

Current R/C sailplanes: Bob Sealy Ultima, Gnome 2M, and Spirit 100.

Greatest flying strength: Carbon fiber on the bottom of my spars? An overwhelming desire to place higher against my elders? (who isn't my elder?).

Advice for beginning pilots: Know your plane and don't be afraid of competition.



HSS February Monthly Tournament

On February 9th, we gathered at Fairview Park for the first monthly tournament for 1992. The day was looking good but the weather man was predicting wind and rain. The weather forecast and equipment problems seemed to blacken the morning. Only two winches were brought out and one was malfunctioning. Although the problem was fixed before the rounds started, it magnified a painful problem: the HSS is very dependent on the generosity and willingness of members to supply winches, and we should be grateful to those who do! Ross Thomas was the CD and he called a standard 3-5-7 rounds with a runway landing.

The day proceeded with minimal problems. Throughout the day, the Thermal Gods eluded me and several others. My flights were very short and off-the-mark. Towards the end the Wind Gods showed their presence and complicated matters.

Although my flights were dismal, others seemed to shine through. Larry White won Two-Meter followed by Bill Duncan and Pat Stoker. Sportsman was won by Curt Nehring with Pat Scheer coming in next. Advanced was taken by Bill Duncan with Jim Boise following. Ben Clerx won Expert with a score that was hardly believable. He was followed by Bob Gerbin, Jr. who decided to make an appearance, and by Pete Richardson. A good job by everyone who flew and for all those who helped out, and perhaps laugh at those of us who did fly.

- reported by Brett Young

SWAP SHOP

FOR SALE: Two Airtronics Vanguard 6 channel FM transmitters (1991 Gold) with dual-rate settings. Includes matching receiver crystals. No receivers or servos. \$65 each OBO. Call John (714) 847-4871.

WANTED: Used Pantera, Cumic+, or Sagitta 900 (polyhedral version), less radios. FOR SALE OR TRADE: Partially built Bob Martin Coyote slope plane. \$50 or trade for used 2M Gnome or Sagitta 600. Call Curt at (714) 592-2105.

FOR SALE: 14 foot original-design sailplane, rudder/elevator/ wingeron controlled. \$240 complete, ready-to-fly with Futaba 4 channel Conquest TX (1991 specs), RCD receiver; \$150 less radio. Contact Pete at (714) 892-3473.

Place your ad in Swap Shop for the low, low price of FREE to H.S.S. members. Send your written ad to the editor at 8902 Lawrence Ave. Westminster, CA 92683 by the 15th. of the month. Ads must be renewed on a monthly basis.

MARCH CONTEST

Contest Director: Pete Young
Location: Fairview Park, Costa Mesa
Date: March 8, 1992

Format: 3 rounds, 15 minute add-em-up, 9 minutes max, 2 minutes min per flight. Flight order will be determined by the CD at the contest. Landings - runway-centerline scored @ 100 points.

Time: Pilot's meeting at 8:45 AM. First round at 9:00 AM.

VIDEO LIBRARY

RC Video Magazine (Vol 7 - 1986)
Striking Back ****
Foam, Fiberglass, Flight ****
Tournament of Champions (1988)
Monokote 1 and 2 ***
MIG Killers ***
Hook Down, Wheels Down, Naval aviation history ****
F3E - Bridgeman's Plane
Electric Flight
Dawn Patrol, WWI Movie ****
Thunderbolt, Fight for the Skies, WWI air combat *****
F3E USA Finals, June 1988

Number of *'s indicates reviewer's opinion of the tape. More tapes are being added all the time (and will be publicized when obtained). Tapes are VHS format. Ask at the club meeting for information on borrowing a tape.

SAFETY NOTE

Club safety rules require all transmitters used at the HSS field at Fairview Park to conform to current AMA regulations. This means a GOLD STICKER, narrow-band transmitter. This rule applies during both contests and sport flying days. Violation of this rule voids your AMA insurance coverage in the event of an accident!

MARCH MEETING

Don Edberg will give a talk on flutter (with videotapes), recently released retriever systems, and other topics. This will be a terrific opportunity to listen to, and learn from, a world-class designer and competitor!

"Now It Can Be Told" Department
By Pete Young

The morning is clear and windless as the Space Shuttle sits on Launch Complex 39 at Kennedy Space Center, poised for flight. Mission Control counts down the final seconds: "TEN..NINE..EIGHT..SEVEN..SIX..FIVE..FOUR.. we have main engine start ... THREE..TWO..ONE..ZERO.. SRM ignition and liftoff, we have liftoff!" Ever so slowly, yet with increasing speed, the Shuttle clears the launch tower and climbs into orbit on a tail of fire, carrying a complex scientific payload - and a glider experiment originated by two Harbor Soaring Society members!! (!)(?)

The origin of this story really started several months prior to the flight during a long series of planning meetings at Johnson Space Center. Chatting with the astronauts designated for this flight, conversation turned to the effects of weightlessness on the human body, behavior of liquids in zero gravity, and on-orbit experiments conducted to date. This is a fascinating subject which is difficult to accurately simulate on the ground, of course. Zero gravity flights on NASA's KC-135 are helpful although relatively short-duration, 30 to 40 seconds per attempt. I took some rides on the "Vomit Comet" several years ago, and the plane is aptly named!

Anyway, our conversation shifted to how a normally designed airplane would behave in zero gravity. If air was present, then the airplane would start out "thinking" that everything was normal, yet - no gravity! What would the resulting flight path be like? Why?

THIS IS A TEST! THIS IS A TEST!
REFERENCE MATERIAL MAY BE USED!

A. FOR 25% CREDIT, the student will describe, in words, how an airplane will fly in air, but with gravity absent. Full credit for this section will be given for a clear, concise, and carefully reasoned response.

B. FOR 75% CREDIT, the student will derive the two-dimensional equations of motion for the situation described above. Full credit will be given for correct and complete solutions. Show all work.

C. FOR 15% EXTRA CREDIT, the student has the option of describing, in words, the "zero-G" airplane's resulting flight path in three dimensions if launched in a climb attitude with a yaw offset.

YOU MAY BEGIN!

Around the coffeepot, our discussions didn't get much beyond "well it oughta go like this" hands-in-air phases. Even with many hours of high performance aircraft flying time, the astronauts were clearly intrigued by the theoretical aspects of this question. We agreed to do some homework and reconvene at a later time.

Back in Orange County, I happened to mention the problem to OFB Bud Mears - fellow HSSer, R/C and full-scale sailplane pilot, and blessed with extraordinary analytical skills. Starting from first principles, Bud concisely answered all three test questions in elegant fashion. His approach and assumptions were sound and

reasonable and the conclusions appeared intuitively correct. Armed with Bud's analyses, I returned to Houston and gave a short presentation to the crew at the next Flight Operations working group. The analyses and conclusions were well received, and clearly the next step was to propose an on-orbit experiment to verify the theoretical results. An experiment proposal and test plan was prepared and coordinated with NASA mission management who - after careful review - "signed off" on the proposed tests. I bought two North Pacific balsa wood gliders which were carefully stowed with the crew's personal effects.

Finally, launch day arrived! As viewed from my position in Mission Control, the flight into orbit was flawless with all major ascent sequences completed normally and on time. For the North Pacific gliders, it was the "mother of all zoom launches!"

On the third day in orbit, the two gliders were unstowed and flight tests commenced! Could this be a world record for hand launch gliders - 18,000.01 miles per hour? What were the results? The flight videos clearly verified Bud's predictions and the crew enjoyed running the tests. Readers are invited to submit their solutions to the Editor, and the best solutions will be published in a later issue!

Tests completed, the gliders were restowed for the reentry phase and an uneventful landing at Edwards AFB. Sure got a lot of mileage out of those 89 cent gliders!

Postscript: the gliders were returned to me several weeks later and are now hanging over my workbench, no doubt dreaming about when they truly "...slipped the surly bonds of earth...". What's next? Well, let's see...is V-dihedral superior to polyhedral in zero gravity? How about a test?

original Soartoon by
Curt Nehring



TIPS FOR BUILDING A STRONG PARAGON

John Ostrowski

I folded the wing on my Paragon. Is there a Paragon flyer out there who hasn't uttered those words at some time? Chances are, if you are a novice flyer who built a Paragon according to plans, you will fold the wing on launch sooner or later. While the Paragon is an excellent training sailplane with very docile and forgiving flight characteristics, the plane was designed long ago, before winch launching was common. Built per plan, there are several inherent weaknesses in both the Paragon's wings and fuselage. With a little effort, however, these weaknesses can be substantially strengthened. The following building suggestions are designed to significantly increase the strength of the Paragon and make it more resistant to the launch and landing incidents that are part and parcel of learning how to fly R/C sailplanes.

THE WING

1. The center wing-joiner is a stout piece of wood shaped in a shallow V. Note that when placed between the spars, there is some empty space between the top of the joiner and the top spar. The space should be filled in with a mixture of micro-balloons and epoxy. Micro-balloons are a filler used to thicken epoxy, creating a thick paste with a strong resemblance to chocolate icing. Make sure this empty space is completely filled, otherwise the strength of the center section will be compromised.
2. The shear webs in the wing center panels are lite-ply at the center, transitioning to vertical-grain balsa as you move out the wing. The transition point between the ply and balsa is probably the weakest part of the wing and the most likely area to fail. The best fix for this problem is to simply replace all of the balsa shear webs with ply webs. Make sure that the webs are cut precisely and fit with no gaps between the ribs. All shear webs should be clamped in place when gluing to assure a complete and tight bond with both spars. Make sure the ply webs are vertically grained when you install them.
3. The 1/8 x 3/8 spruce spars used in the wing center panels are only marginally strong enough for the wing size when winch launching. Adding a strip of carbon fiber to the bottom of both spars will dramatically improve their strength and resistance to launch loads. Most novice builders are reluctant to get involved with exotic materials such as carbon fiber, but there is really nothing difficult about using it. For this application, .007 unidirectional carbon fiber laminate (available from Aerospace Composites in Irvine) is quite sufficient. To use the carbon fiber, cut it to the length of the spar (before building the wing) and strip it to the appropriate width -- this doesn't even require cutting since the unidirectional laminate will strip very easily. (NOTE: ALWAYS wear gloves when working with composite materials, the fibers used are extremely fine and penetrate the skin very easily.) Using a relatively slow epoxy, coat one side of each spar, then scrape off the excess (it just adds weight not strength). Place the spars on a flat surface over a sheet of wax paper, lay the carbon fiber strips on each spar and use a flat tool to smooth the carbon fiber in place. This is critical, if there are any areas where complete contact is not made, the strength gain is nullified. Place another sheet of wax paper over the spars and place a flat board on top. Weight the board down with as much weight as your building table will take and allow to cure. When assembling the wing, make sure the carbon fiber side of the spar is on the bottom on both the top and bottom spars. This procedure will vastly increase the strength of the wing.
4. The leading edge provided with the Paragon is balsa, replacing this with spruce or another hardwood will help improve the strength of the wing and may reduce landing dings. The balsa spars on the tip panels should also be replaced with spruce (No carbon fiber is needed here).
5. The polyhedral tip joiner boxes are another very weak point of the Paragon wing. The wooden joiners usually require much fiddling, tend to wear and loosen with time, and may also break the top spar on the wing center panel if it is not reinforced. To solve these problems, replace the wooden joiners with stout music wire and brass tubing. Cut the music wire to fit diagonally across the two joiner bays, cut

a piece of brass tubing that fits snugly over the music wire to the same length then cut it in two. Drill matching holes in the facing wing center section and tip ribs. Set the appropriate polyhedral angle by propping up the wing tip. With one brass tube in the center section and one in the tip, insert the music wire. Glue the front shear webs on (Note they are slightly angled to help set the polyhedral angle). Now tack glue the brass tubes in place, making sure the angle does not change. Remove the music wire. Place a small piece of masking tape over the open inside ends of the tubing. Tip the wing panels on their leading edge and fill the entire end bay on both center and tip panels with a mix of microballoons and epoxy. Glue the rear shear web in place and clamp until cured. This greatly strengthens the tip joiner and should reduce slop and misalignment that occurs over time with the wood joiners.

6. Once the wing has been completely built, but not covered, the center section of the wing should be fiberglassed. Again, while this may seem to be another exotic modification, it is very simple and straightforward (besides, you might as well get used to using fiberglass since it is an integral part of virtually any performance sailplane. For this purpose, you will need 2 oz. fiberglass cloth (available at Crystaliner Boats on Placentia, Aerospace Composites or Hobby Shack, you might also ask some of the advanced builders in the club if they have any scraps). I use the KB polyester resin from Hobby Shack rather than epoxy because it is fast and sands easily. The trick with KB is to use 18-19 drops of hardener rather than the 8-10 called for. This reduces working time but sets up in just an hour or two. To glass the wing, cut two strips of the fiberglass cloth just slightly narrower than the sheeted center section of the wing and long enough to wrap completely around the wing (chordwise). Spray the center section with 3M-77 spray glue (Home Club has this much cheaper than Hobby Shack). Allow to dry to a tacky feel and carefully place the first 'glass cloth on the wing. Smooth it out to avoid wrinkles. Mix up 1 oz. of the resin and use a paint brush to work the resin into the cloth. Do not use an excess of resin and work quickly. Lay the second layer of cloth on and use the brush to work the resin into the cloth. Now use a squeegee to scrape off the excess resin. Remember, excess resin only adds weight, not strength. When the resin has cured, sand the center section smooth. This should produce a smooth, very hard surface on the center section. Remember: always use gloves when working with fiberglass and make sure you are working in a well-ventilated area.

FUSELAGE

1. There are two weak points in the Paragon fuselage: at the rear of the wing attachment point and just in front of the stab. To reinforce these areas, cut 1/32 or 1/64 plywood to fit the fuse sides before assembly. Each ply reinforcement should extend about 2 inches on either side of the noted stress points. Use the ply with a horizontal grain to resist the upward flex of the fuse. Epoxy the ply pieces to the fuse sides. Be careful not to use too much epoxy, it just adds weight. For extra strength, use two strips of kevlar cloth (ask some of the experienced builders for scraps) on each fuse side at the same stress points as the ply. Bond the kevlar cloth to the fuse sides with epoxy resin or even thin CA glue flowed throughout the cloth. Used in this way, the kevlar will resist the flexing of the fuse and, should the wood break, will likely hold the pieces together, facilitating repair.
2. Perhaps the best way to protect your Paragon fuse is to fiberglass it. To do this, use the 2 oz. cloth and KB resin mentioned above. Once the fuse has been completed and sanded, spray the entire surface with 3M 77 and allow to tack-dry. Carefully lay the glass cloth over the fuse. This can be done with one piece, with the hatch and wing areas cut out later. It is a good idea to wrap the bottom of the fuse twice since this takes a lot of abuse at a rock and dirt landing field. Once the cloth has been smoothed into place and the glue allowed to dry (give it 2 or 3 hours) brush a coat of resin over the entire fuse and then scrape off the excess. When done right, the fuse should look almost dry. When the resin has set up, lightly sand the fuse smooth. I've found the quickest and easiest paint to use for the fuse (do not monokote a glassed fuse) is Duplicolor auto spray lacquer. It is light, fast, and provides a good finish. Don't go overboard with the paint, it just adds weight.

Editor's note: the following article is reprinted, with permission, from the 1991 catalog of Northeast Sailplane Products, 16 Kirby Lane, Williston VT 05495. The NSP catalog is truly original and loaded with lots of informative tips, such as Tim's article.

SETTING UP THE AIRTRONICS VISION 8SP

By Tim Renaud

Since its introduction at the end of 1988, the Airtronics Vision has become the radio of choice for the majority of people flying high performance radio controlled sailplanes. Taking advantage of the ATRCS technology developed by CSys Labs in Northern California, the Vision has proven to be the perfect match for planes which are designed to take advantage of camber changing airfoil technology.

The instruction manual included with the Vision is the most extensive and in-depth manual ever offered with a radio system in the United States, and goes into great detail about how all of the various capabilities of the Vision can be used and the effect they will have on the performance of the sailplane. But, hindsight being a perfect 20/20, I now realize that a step-by-step sequence to follow would make it easier for the Vision owner to set up his plane. Which brings us to this article.

The following paragraphs outline the sequence I follow when first setting up a new plane with the Vision transmitter. The order of the steps is not graven in stone, but by following the basic outline you will avoid some of the frustrating little problems that always seem to crop up in the wee hours of the morning when you are racing to get your plane finished for that first flight the following morning.

The first thing to do is make sure that your transmitter is configured properly. Use the Stick Function Test to be sure that you are set up for Mode I or Mode II, whichever you prefer. If you haven't already done so, calibrate the Zero Points, making sure all of the trims and the flap stick are in the proper positions when you do so. Check to be sure that the Setup number you want to use for the plane is loaded into the transmitter and that the Access Level is set to level 3. Now you are ready to begin actually setting up the plane itself.

Select the appropriate Template for your plane and load it into the transmitter. Go through the items of the Basic Configuration Group and answer each one appropriately. The majority of problems people encounter when they are setting up their Visions can be traced back to one of the settings in this group. If you aren't sure what a particular Menu Item does, go back into the manual and read about its function and the effects it will have on the rest of the program.

In particular, be sure that the Flight Mode Switch is set to the side you prefer and that the Side Lever is controlling the function you want it to. If you plan to use the Side Lever to control Camber, always double check the Lever's position before making any centering adjustments. If you do not intend to use the Lever to control camber, use the Side Lever Function Menu item to set the Lever to control the spoiler channel. Doing this ensures that the position of the Lever will not affect the wing surfaces. More than one person has spent hours trying to figure why the neutral position on his flaps is

constantly changing without realizing that the unused Side Lever is being bumped in the transmitter impound.

The Landing Threshold controls many of the automatic functions in the Basic Configuration Group, so it pays to know where the Threshold is and when the stick is past it. I set the Threshold 4 clicks down from the top of the stick's travel to reduce the chances of inadvertently being across the Threshold when the stick appears to be fully up. If you are having difficulty with getting either Aileron/Rudder Coupling, Differential or Camber Mixing to work properly, check to be sure that the flap stick is above the Landing Threshold. The Flight Mode Switch also can cause some functions to change automatically, so remember to check its position if you run into any snags.

Before you attempt any centering or throw adjustments, make certain that the servo will move in the correct direction by using the Servo Reversing. If you adjust centering before checking for the proper direction of travel, you run the risk of actually moving the servo in the wrong direction. Once the servos are moving in the right directions, adjust your linkages to bring the control surfaces as close to neutral as possible. The Electronic Centering feature of the Vision makes it very easy to become lazy when setting up your linkages, but it's preferable to have the mechanical setup as close as possible before you use the Centering Adjustments. Double check to be sure that all of your trim levers and switches are in the correct positions for normal flight, and center all of your control surfaces.

Once the surfaces are properly centered, use the throw adjustments to bring your control throw to the desired amounts. Again I'd like to remind you to avoid having any of the throw adjustments set to 100%, since it leaves you no room for adjustment if you need more throw later on. I use a ruler to measure all of my throws and to be sure that the left side of the wing matches the right side of the wing. When I first started using the Vision, I was in the habit of eyeballing the amount of throw and letting it go at that, but the newer designs and airfoils are too responsive to small differences to tolerate the "looks about right" approach.

After the controls are centered and the amount of throw dialed in, I set up my mixing. Aileron/Rudder coupling is done first, followed by Aileron/Flap mixing. If you are planning to use Aileron/Flap mixing, do not adjust your Camber mixing until after you are satisfied with the Aileron/Flap mixing. Because of differences in control horn location or servo arm length, it is not unusual to have a different percentage of mixing between one side of the wing and the other. Again, the key is to rely on a ruler and not your eye to get the same amount of movement. Camber is the most difficult mixing to set up. I do not use the Lever on the side of the transmitter to change Camber, so my concern is only with the Flight Mode Switch presets and the Elevator/Camber mixing. To start, I enter a value of 50% into each Menu item which mixes Camber into the ailerons and flaps. Then I go to the Camber Reflex adjustment under the Presets/Dual Rates Group.

(to be continued next month)

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RESULTS OF HARBOR SOARING SOCIETY FEBRUARY CONTEST

OPEN CLASS

PLACE	NAME	CLASS	SCORE	NORMALIZED	TROPHY
1	CLERX BEN	EXPERT	2915.0	1000.0	1ST. EXP.
2	GERBIN ROBERT Jr	EXPERT	2811.0	964.3	2ND. EXP.
3	RICHARDSON PETE	EXPERT	2719.0	932.8	3RD. EXP.
4	CRON AL	EXPERT	2687.0	921.8	
5	SLIFF BOB	EXPERT	2528.0	867.6	
6	MARKLE JIM	GUEST	2515.0	862.8	
7	FINK DAN	GUEST	2417.0	829.2	
8	WHITE LARRY	EXPERT	2317.0	784.9	
9	THOMAS ROSS	EXPERT	2265.0	777.0	
10	RITSCHKE GORDON	EXPERT	2231.0	765.4	
11	HENDRY STEVE	EXPERT	2221.0	761.9	
12	DUNCAN BILL	ADVANCED	2104.0	721.8	1ST. ADV.
13	LACKEY ROGER	EXPERT	2067.0	709.1	
14	*BOESE JIM	SPORTSMAN	2058.0	706.0	2ND. ADV.
15	NEMECEK DAVID	EXPERT	2048.0	702.6	
16	POPE BOB	GUEST	2003.0	687.1	
17	STOKER PAT	EXPERT	1788.0	613.4	
18	POULSEN GORDON	EXPERT	1787.0	613.0	
19	KLATSKIN BILL	GUEST	1783.0	611.7	
20	KUTCH NORM	EXPERT	1740.0	596.9	
21	PUCHALSKI MARK	GUEST	1643.0	563.6	
22	NEHRING CURT	SPORTSMAN	1613.0	553.3	1ST. SPTS.
23	SCHER PAT	SPORTSMAN	1508.0	517.3	2ND. SPTS.
24	PARSONS JIM	ADVANCED	1494.0	512.5	
25	YOUNG BRETT	SPORTSMAN	1488.0	503.6	
26	BRANDT DENNIS	EXPERT	1444.0	495.4	
27	DURHAM JACK	EXPERT	1409.0	483.4	
28	ROWELL WAYNE	SPORTSMAN	1323.0	453.9	
29	GROSVENOR WOODY	SPORTSMAN	1140.0	391.1	
30	FINK STEVE	EXPERT	726.0	249.1	
31	ZINK DON	EXPERT	640.0	219.6	
32	KIELTYKA MAC	SPORTSMAN	0.0	0.0	

* JIM BOESE MOVES TO ADVANCED

TWO METER CLASS

PLACE	NAME	SCORE	NORMALIZED	TROPHY
1	WHITE LARRY	2712	1000	1ST.
2	DUNCAN BILL	2366	872	2ND.
3	STOKER PAT	2355	868	3RD.
4	MARKLE JIM	2347	865	
5	BRANDT DENNIS	2291	845	
6	SLIFF BOB	2237	825	
7	KUTCH NORM	2236	825	
8	LACKEY ROGER	2208	814	
9	THOMAS ROSS	2128	785	
10	KLATSKIN BILL	1988	733	
11	YOUNG BRETT	1897	700	
12	FINK STEVE	1612	584	
13	PARSONS JIM	1612	584	
14	CONRAD WILL	1442	532	
15	HENDRY STEVE	1277	471	
16	ZINK DON	0	0	



CONTEST CALENDAR

March 8	HSS Club Contest CD: Pete Young
March 29	SC2 S.U.L.A.
April 5	HSS Club Contest CD: Curt Nehring
April 26	SC2 D.U.S.T. (Indio)
May 2 - 3	Astro-Flight Electric Champs HSS Host Club
May 17	HSS Club Contest
May 31	SC2 N.C.C.
June 7	I.S.S. Hand-Launch Contest
June 14	HSS Club Contest
June 28	SC2 T.P.G.
July 5	HSS Club Contest
July 26	SC2 H.S.S.
August 9	HSS Club Contest
August 16	SC2 P.S.S.
September 6	HSS Club Contest
September 27	SC2 I.S.S.
October 3- 4	Visalia Fall Soaring Fest.
October 11	HSS Club Contest
October 25	SC2 S.W.S.A.
November 8	HSS Club Contest
November 22	SC2 T.O.S.S.
December 6	HSS Club Contest

SULA

THE SOARING UNION OF LOS ANGELES

Presents

SC² SAILPLANE COMPETITION

March 29, 1992

3 ROUNDS OF FLYING 1,000 Points Per Round

- 1. 3 Minute Precision, Scored on Bell Curve, with Landing AMA Task T-5**
- 2. 5 Minute Man-on-Man, Called Flight Order Precision-Duration, with Landing**
- 3. Triathlon Duration, Precision, with Landing AMA Task T-6**

**Graphic Display of Tasks T-5 and T-6
Will Be Posted on Contest Day**

Contest Director

Ed Kennedy

2713 Vista Mesa Drive

Rancho Palos Verdes, CA

Zip: 90274-6323

Phone: (310) 519-7628

Contest Coordinator

Jim Markle

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El Segundo, CA 90245

Phone: (310) 615-0489

President

Steven Fink

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Phone: (714) 645-0459



THE OLDEST CHARTERED
SOARING CLUB
IN THE
A.M.A.



CHARTER # 128

MARCH MEETING

WEDNESDAY, MARCH 4, 1992
AT 7:30 P.M.

LOCATION: CLUBHOUSE AT
LAKES AT SEABRIDGE CON-
DOS. SEE MAP AND INSTRUC-
TIONS INSIDE.

SEE INSIDE FOR MEETING
DETAILS.



P.O. Box 1673
Costa Mesa, CA 92628



FIRST CLASS MAIL

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FOUNTAIN VALLEY, CA 92708