

The Harbor Soaring Society Newsletter

JUNE 1993, VOL. 30 NO. 6



MAY MEETING MINUTES

The May meeting started at 7:45PM with Andy Sanders presiding. No new faces or visitors were noted. The April minutes were accepted as written. Frank Chasteler gave the treasurer's report covering such items as checking and savings account balances, expenditures, sales of club shirts, and memberships; the treasurer's report was accepted as read.

Ross Thomas gave a report on future contests. The SC2 contest will be CDED by Ben Clerx on Sunday May 23. The Astro Champs will be held the 29th and 30th. June 19th and 20th will be the North/South Challenge at Visalia; teams will be made up of the 12 highest scores from each area. The winners will be competing for a new Thermal Eagle glider.

Pete Young thanked all those who help in making the Newsletter and described two articles on foam cutting and wing bagging (refer to last month's Newsletter for specifics).

Frank gave a report on the HSS hats on order; they should be here in 2

weeks and will sell for approximately \$10. They will be white corduroy with the standard club logo.

Dave Nemecek asked about the status of the flying field digging and its estimated completion date. Frank said that the digging underway had an expected completion in 6 months to a year.

A general discussion followed about people landing their aircraft, and then loitering around, making it difficult for others to land safely. Ross talked about
(continued, page 2)

H.S.S. BOARD MEMBERS

President: Andy Sanders	(714)751-9235
Vice President: Pat Scheer	(714)744-3375
Secretary: Woody Grosvenor	(714)969-1524
Treasurer: Frank Chasteler	(714)545-2185
Contest Coord: Curt Nehring	(714)592-2105
General Dir: Ross Thomas	(714)638-0705
Newsletter Ed: Pete Young	(714)892-3473

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 Pete Young in person or by mail to: 6592 Belgrave Ave., Garden Grove, CA 92645.

MEETING LOCATION

Lakes at Seabridge Condos. On Adams Ave. in Huntington Beach. Turn right at the first traffic light heading East from Beach Boulevard. 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

May Meeting Minutes, continued

more and more people landing near the winches. A little common sense, courtesy, and safety consciousness will go a long way to relieve these problems.

Marvin Pass thanked everyone for the help and courtesy shown to him by all the club members.

The business meeting closed at 8:05PM. Andy Sanders introduced Greg Chun of GRECO Technologies. Manny Tau had contacted Greg and asked him to show his products and let the members know more about his business.

Greg began with the history of composite molding for glider wings. The Europeans have considerable experience on the molding processes, materials, etc. The process of painting and molding complete composite wings was explained in detail. A large carbon fiber, Kevlar, and Rohacell laminated spar was shown - this is used for F3B applications. Molded planes are task oriented, so each type has its own strengths depending on the weight, shape, airfoil, etc. depending on the flight tasks. One of the problems encountered with fast gliders is flutter and Greg talked about ways to avoid flutter. He recommends light weight extremities (front, rear, and wing) to offset tip stalls and make for crisper turns.

Different materials were discussed with their advantages, such as obechi versus balsa. Balsa wood is getting very difficult to purchase in the high qualities demanded by competitive gliders. European companies send experts to Ecuador to select the premium logs, a strategy that American companies cannot justify.

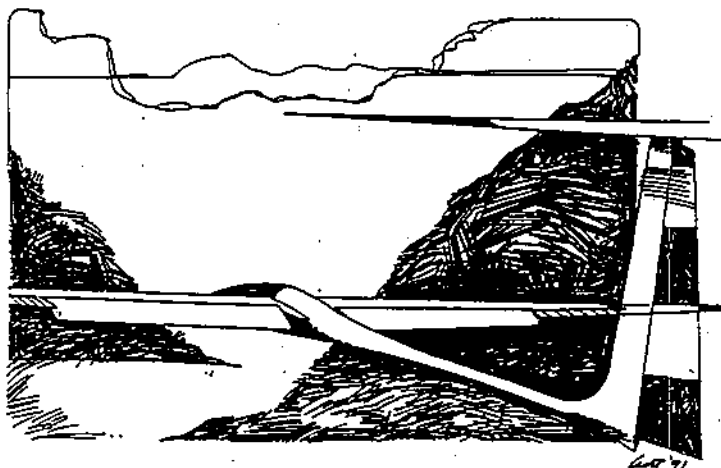
GRECO will be importing a series of specialized glider servos from Germany

which have fiberglass cases and very robust gear trains. Availability will be later this summer.

Greg provided a "show and tell" of his molded MODI, thermal MODI, and duration MODI. He also brought a 15 oz hand launch glider with flaperons driven by a computer radio.

Don Edberg brought along a Futaba 9ZAP radio system for which he is producing the operating instructions. The 9ZAP is designed from the very beginning for glider pilots and has a multitude of user assignable mixes, switches, knobs, and functions. Memory is available for 10 models, storable on a removable module. Frequencies are changeable via synthesizer. Outputs can be programmed with ramps, break points, and time delays. Built-in timers can count up or down. The TX run time is approximately 3 1/2 hours per charge. The 9ZAP radio system is available now from Futaba or from distributors.

- Woody Grosvenor, Secretary



FYI

... at the April SC2 hosted by North County Clouds, Don Edberg, first overall! Other HSSers doing well were Bob Sliff, Duane Gibbs, Mike Aguirre, Ross Thomas, and Jim Parsons... at this point in the season, HSS is battling it out with PSS, TPG, and EDSF in a tight season points race...new planes at the field: Al Cron's Falcon 880, Pete Young's NSP Alcyone (second one!)... Manny Tau will be selling "rubber ducky" antennas, price about \$25, more details forthcoming... ...FLASH: at the May 16 HSS Monthly for 2 Meter ships, Nick Buzolich with his Shadow 2M scores one of the day's few long flights and buries his competition - attaboy, Nick! Overall, Mike Aguirre tops a tough 2M field and places first with his Agnew Banshee - read Mike's summary comments on the Banshee below...

THE AGNEW BANSHEE

by Mike Aguirre

When I decided to retire my 2M Gnome, the question came up - what should I fly in 2 meter as a replacement? Several designs came to mind - Falcon 600, Shadow 2M, Accipiter, and many more. But the one that stuck in my mind was Brian Agnew's Banshee. This plane won 2 meter and Standard class, and placed third in Unlimited at the 1992 LSF Nats. But I had yet to see a Banshee flying!

Being one to try new things, I called Brian to determine the kit's availability. He explained that the kit could be delivered in ten days. Well, that sounded good so the deal was made. Ten days later the kit arrived. Everything in the kit was of the highest quality. The

wings are pre-sheathed obechi over foam with the dihedral pressed in. The fuselage was virtually free of any pinholes which made finishing a snap. All the hardware was top grade and even includes the wiring for the wing servos, a small but nice feature. Building time is minimal due to the manufacturer's labor. It took me about 3 weeks part time effort to get the plane finished the way I wanted it to come out.

After one hand launch it was time for the winch test. According to Brian this plane can handle big zooms with its Dave Squire's 9/32" wing rod. So with the pedal to the metal, my Banshee climbed right out to the top of the line and zoomed off the top in a climb that I could not believe - it was quite impressive. Approximately 2 trim flights were needed then it was 20 minute air time on a beautiful morning with only Steve Fink's Tango and my Banshee sharing the early morning lift. The plane's airfoil is an E387 which really covers the sky in a hurry and can carry a lot of ballast on those windy days - it slopes well, too! My plane weighs approx. 44 ozs and that gives a wing loading of 11.02 ozs/ft². At the recent Rose Bowl Soaring Festival, Banshees outnumbered all other designs in the 2 meter class, and I believe 2 of them placed in the top 5.

Overall I have found my Banshee a joy to fly with its ability to cover sky quickly, thermal even in the smallest bumps, sky out, and come down in a blistering hurry to slow down to a snail's pace for those crucial spot landings! Please give Brian a call if interested in the plane, he advertises in RCSD and other publications. Or ask me for any info I can help you with, the pleasure would be mine.

IMPROVING CONTEST PERFORMANCE BY LIMITING YOUR HANDICAPS

by Roger Lackey

Every contest flier has at one time or another asked other fliers questions regarding improving contest performance and has no doubt received a greater variety of answers than you could imagine. A theory that I have developed over the last couple of years deals with removing the barriers that may inhibit our potential or gives an advantage to the opposition. Below are several tips that will assist you in "being on the same page" as many of the expert pilots and hopefully will contribute to improving your contest standings.

*** PROGRESS TO AN OPEN CLASS AILERON PLANE.** If the competition is flying "high-tech" planes and you are not, you are giving up a lot of speed, distance, and landing accuracy potential. An aileron plane with its responsiveness gives you the ability to go WHERE you want to WHEN you want to, unlike most polyhedral planes.

*** DON'T FLY A 2 METER PLANE IN AN OPEN CONTEST.** Although it may be fun to fly a 2 meter in a contest, when pitted against open class planes, the disadvantages are just too great. Big planes fly better, and while it may not matter when the lift is great, when the conditions get bad you need to be able to search as far as possible for lift and be as unaffected by sink as possible by utilizing a superior L/D and speed potential.

*** HAVE YOUR EYES CHECKED.** This is something I feel is easily overlooked. I

had a friend with a Falcon 880 who just wouldn't let the plane travel in search of lift like it could, creating a huge handicap. Despite the Falcon's performance potential, he would continually search the same air even though it wasn't going up. It turned out that while he wasn't flying the plane to its limits, he was flying to the limit of his vision! Once he began wearing glasses he was able to fly it out of MY vision range. Test your eyes against those you fly with and if there is any doubt, have them checked (your eyes, not your fellow fliers), and get glasses if necessary. You may want to experiment with different tints for sunglasses as well. Different colors seem to work better for different people.

***COLOR YOUR PLANE FOR VISIBILITY.** Again this deals with seeing your plane as far away as possible. A natural wood finish may look great on the ground but if it disappears in the sky, it's hurting your performance potential. If another pilot can see his plane a mile away and you only a half mile, he has a definite advantage. You may never be able to fly as far away from yourself as someone else, but do as many things as possible to limit your handicaps. Being able to see your plane well will increase your confidence in marginal situations as well.

***FLY A PLANE THAT WILL PERFORM WELL AT A LIGHT WING LOADING.** While using the latest composites are fun and have their benefits, if it creates wing loadings over 12 oz/ft², you are at a disadvantage. Even if you subscribe to the philosophy that weight doesn't matter, you won't have the advantage in light lift, and especially in slowing the plane down for landings when there is little or no breeze. If conditions change

such that the heavier ships come into their own, ballast up. But for those early morning flights, it's nice to be light.

***FIND A PLANE THAT IS EASY TO FLY.** The best plane to fly is the easiest plane to fly. What that means is that you don't have to worry about what the plane is doing. It basically flies itself. A plane that flies predictably and calmly will require minimum inputs, minimizes drag, and maximizes the plane's performance in all conditions. It also gives you the opportunity to concentrate on strategy instead of worrying about flying the plane. Trimming out your plane has a big effect also, so get your plane trimmed as well as possible.

***FLY WHEN THE EXPERTS FLY.** Regardless of whether they call it sandbagging or not, when you are trying to figure out when to fly in an open order contest, the burden is on you to choose the right time to fly. When considering all the factors like birds, dust devils, and less obvious details, keep your eye on the experts who consistently max their flights. It's very probable that not only is it their good flying skills, but also their good observation skills that causes them to always find lift. Notice their patterns and fly when they fly if possible. They may fool you occasionally but chances are good that if you have comparable equipment and eyesight that you will find lift with them.

***USE LANDING DEVICES.** As ugly as they may look, if landing devices are allowed, USE THEM, the opposition does. Not only can they improve your scoring consistency but they keep you from sliding as far. This may not be important if you fly on a sod farm. But if you fly on rough dirt, the shortened

slides keeps your wings from getting so roughed up. If you fly in a fenced area it may keep your plane from sliding into a fence on a poor landing. Landing devices may even keep your plane from hitting you in the shins occasionally.

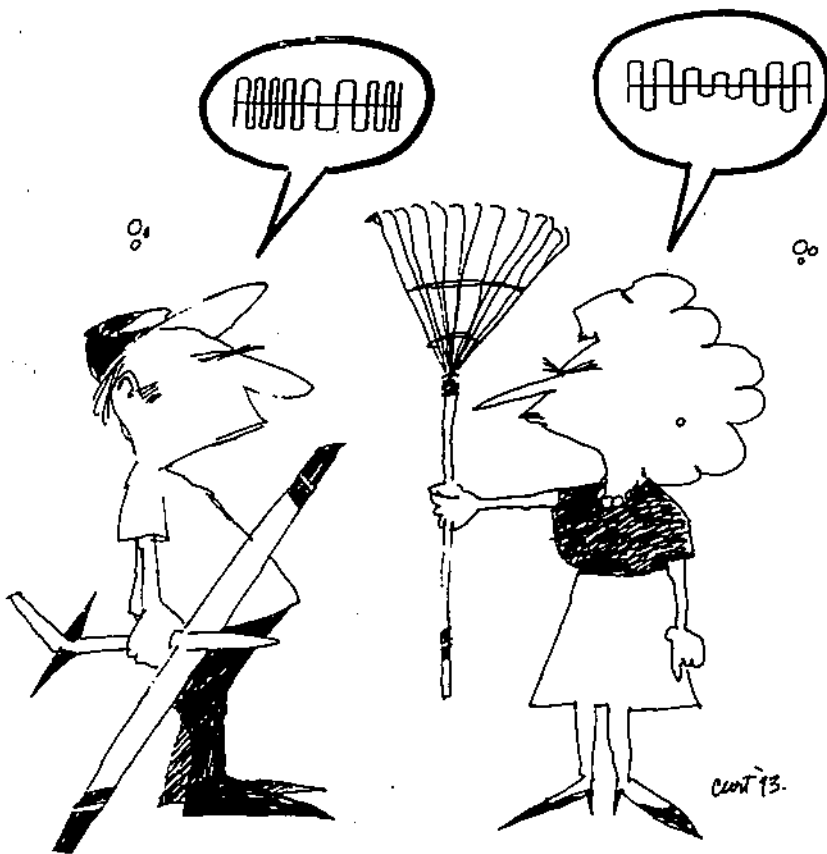
***FIND "USER FRIENDLY" TIMERS.** This is like having an easy plane to fly. I'm sure you have noticed when you haven't had a good timer. He/she may not keep you posted on time well, leading to anxiety and/or lack of rhythm. The timer may talk excessively to bystanders, distracting from your concentration. He/she may talk in such a manner that is irritating to you. Whatever the reasons why not to use certain people, strive to find several that read lift well, keep you posted of your times, and have mannerisms that put you at ease and allow you to concentrate on flying.

***BUILD A LIGHT YET STRONG PLANE THAT WILL LAUNCH HIGH.** High launches feel great, look great, and give you a definite advantage. It may take a little bit of work and knowledge, but with the right amount of weight and structure in the right places, you can build a light yet strong plane. It is advisable to start with a kit or project that has the potential to be both light and strong. There are a lot of Open class planes out there that meet these criteria so stick around 10 oz/ft² if possible. It seems like planes rarely come in at or less than the advertised weights.

***LEARN TO BALLAST.** Finally, since several of my topics dealt with keeping the weight down, it is important that you learn to overcome any disadvantage created by light weight when the conditions change. Heavy planes at times have the advantage. If the wind

picks up yet there is still lift to be found, you should be able to match heavier aircrafts' performance in these conditions. Learning how to ballast will put you in the same ballpark, so learn when and how much to ballast, and do it.

In closing, I hope these tips are helpful to you. In my observations over the years I have been contest flying, they seem to be true more often than not. Anything you can do to give yourself an edge or to neutralize the oppositions - DO IT. While it almost always comes down to the pilot and not the plane, removing as many handicaps as possible will go a long way towards improving your ultimate contest performance.



FOR SALE

- Harbor Soaring Society shirts and vinyl patches - contact Frank Chasteler at (714) 545-2185

- SELLING OUT! LJMP Cheetah ready-to-soar + Vision 8SP radio system, all servos, new RX 600 mah pack + 5 extra new Airtronics servos + new Cronus digital stopwatch (count up/down) + more extras - \$575 takes it all, no serious offers refused!

Sealy Pulsar, S3021 airfoil, 95% constructed, wings covered, fuselage ready to paint, reduced to sell at \$175. Call Rich at 714 528-4984.

- Falcon 800, like new condition, with integral wiring harness and carbon fiber skegs, \$350, call Ben at (714) 721-8848.

- 2M (78" span) Sealy Lumina, glass fuse, T-tail, NEW polyhedral wing with flaps. Buyer needs to cut out flaps and cover wing. Price includes a wing bag. \$125 - firm. LJMP Cheetah, ready to fly, less RX, includes wing bag, \$265. Gnome 2M ready to fly, less RX, includes wing bag, \$100. Gnome HLG, less radio, ready to fly, \$50. LJMP Pantera ready to fly, less RX, includes wing bag, \$175. 2 Airtronics Vanguard radio systems, less servos, includes TX bag, channels 28 and 56, each \$125. NEW, never used: 5/16" wing rod, 8 3/4" long. Contact Curt @ (714) 592-2105.

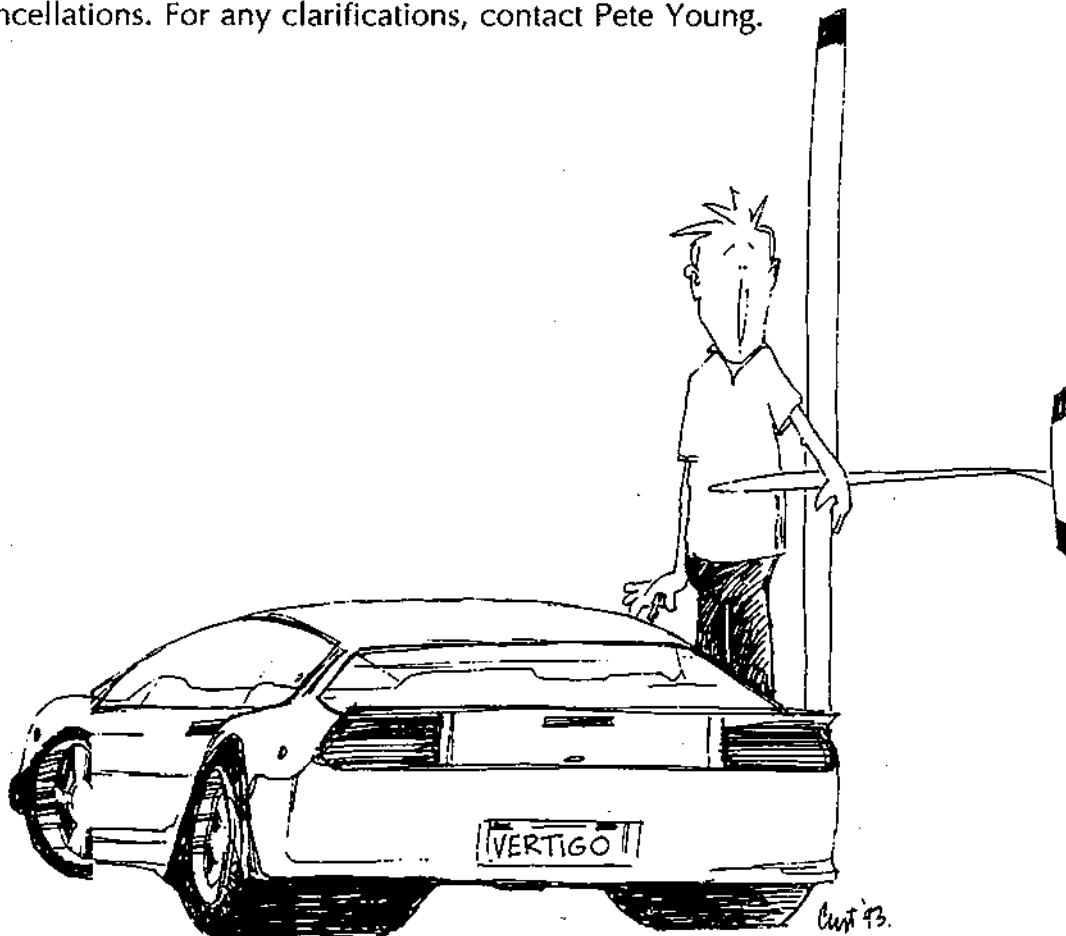
- Sealy Laser - kit new-in-box. For price, call Mike at (310) 439-4173

- Modified Kincaid Scooter, with Airtronics Module 7SP radio system, completely ready to fly, excellent condition, \$600. Call Ed Hawley at (714) 821-8768.

CONTEST LISTINGS

<u>Date/Location</u>	<u>Event</u>	<u>Point of Contact</u>	
6/5 Riverside	10th Annual H/L	Ian Douglas	714 621-2522
6/5 El Dorado	EDSF Monthly	Mark Child	
6/6 San Diego	Menard 2M 6th Annual	P. Hoffman	619 276-6335
6/6 Costa Mesa	HSS June Monthly	Curt Nehring	
6/12 Carson	SULA 2M/SULABird	J. Smith	
6/12-13 Taft	TOSS Cross Country	E. Weisman	805 498-8878
6/13 Riverside	F3B Benefit/Open-2M	Joe Rodriguez	714 924-9537
6/19 San Bernardino	Watts-Up 2nd Annual Electric	B. Boies	714 883-3145
6/19-20 Visalia	North/South Challenge	CVRC	209 733-3390
6/27 Carson	SC2 @ SULA	E. Kennedy	310 519-7628
7/10-11 Riverside	La Sierra 2nd Annual Slope	W. Gunther	909 943-3198
7/11 San Diego	Anderson 2M Contest	H. Merrifield	619 578-7942
8/14-15 Carson	1st Annual Summer Soaring Festival	S. Addis	310 320-2708
8/21-22 Morgan Hill	SBSS Summer Classic	G. Paige	916 273-0415

Note: for detailed information, contact the individuals listed. Not responsible for changes or cancellations. For any clarifications, contact Pete Young.





Official 1993 U.S. F3B Soaring Team Merchandise Order form

1993 USA F3B Team • 15781 Empire Ln • Westminster • CA • 92683 • (714) 839-4166

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

Quantity	Item Description	Cost	Extension
	Raffle Entry Ticket	\$5.00	
	Official Team T-Shirts emblazoned on the front in full color with 1993 Team Logo & USA F3B Team on sleeve. Shirts are 100% preshrunk Cotton.		
	Medium T-Shirt	\$15.00	
	Large T-Shirt	\$15.00	
	Extra-Large T-Shirt	\$15.00	
	XXL T-Shirt	\$15.00	
	Official U.S. Team Pin	\$3.00	
	Official U.S. Team Patch	\$5.00	
	Official U.S. Team Sticker	\$2.00	
	SUBTOTAL*		
	Shipping/Handling (Add 10% of Subtotal)		
	Donation (Optional)		
	GRAND TOTAL		

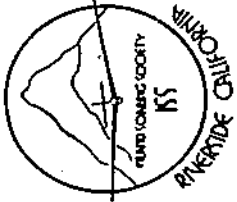
***If your merchandise total (not including S/H) equals \$25 or more we'll send you a free team pin!**

Please fill out your name and address below, and send your check or money order payable to 1993 USA F3B Soaring Team, 15781 Empire Lane, Westminster, CA 92683. Please allow two to three weeks for delivery.

NAME _____
 ADDRESS _____
 CITY _____ STATE _____ ZIP _____

INLAND SOARING SOCIETY PRESENTS THE 10TH ANNUAL

R/C Hand Launched Glider Contest



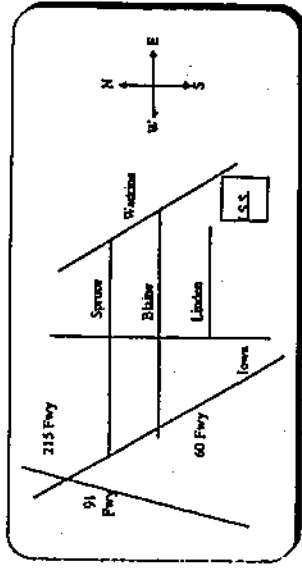
The Inland Soaring Society's Tenth Annual R/C Hand Launched glider contest is coming this June. There will be a raffle, and some major prizes, (glue, hand launch plans, kits, even radios), so don't miss it!

The rules and tasks will be very simple. Any glider with a projected span of sixty inches or less, no matter how many functions, will qualify. Anyone may throw your glider for you. Three rounds will be flown. Round one will be a ten minute slot in which each pilot may launch as many times as possible with your three longest flights counting. The pilot with the longest flights will receive 1000 points and all other scoring will be man-on-man. Round two will be a ten minute slot with unlimited launches to attempt a five minute precision/duration flight. If no one makes five minutes, the pilot with the longest flight will receive 1000 points and all other scoring will be man-on-man. Round three will be a ten minute slot with six launches, best five count with a two minute maximum. The pilot with the highest total time will receive 1000 points and all other scoring will be man-on-man. All flights must end before the slot is over to count, any flight that ends after the slot will be scored as a zero.

Entry fee is \$ 7.00. Registration starts at 8:00 AM and the pilot's meeting will be at 9:00AM sharp. Mark your calendars for Saturday, June 5, 1993 and make your way to Riverside, CA for fun, excitement and big prizes.

AMA SANCTIONED
 AMA LICENSE REQUIRED
 UNIVERSITY OF CALIFORNIA
 RIVERSIDE

FOR MORE INFORMATION CALL:
 IAN DOUGLAS (909) 621-2522
 HARVEY JENKINS (909) 980-5732



SOARING UNION OF LOS ANGELES JUNE SC2 CONTEST ANNOUNCEMENT

WHERE: SULA field, CSUDH, Carson, CA. Intersection of Avalon Blvd. and Victoria St. Enter at Tamcliff entrance. (Map on Back)

WHEN: June 27, 1993. Registration begins at 8:00 AM. Pilots meeting at 8:45 AM. First flight 9:00 AM.

EVENTS: ● THREE ROUNDS OF THERMAL PRECISION DURATION.

● ROUND ONE: 4 MINUTE TARGET TIME PRECISION DURATION. Scoring: Max 960 Fil. Pts., Max. 40 Lndg. Pts.

● ROUND TWO: 7 MINUTE TARGET TIME PRECISION DURATION. Scoring: Max 960 Fil. Pts., Max 40 Lndg. Pts.

● ROUND THREE: 5 MINUTE TARGET TIME PRECISION DURATION. Scoring: Max 960 Fil. Pts., Max 40 Lndg Pts.

● FLIGHT POINTS: 960 - 4 POINTS PER SECOND PENALTY OVER OR UNDER TARGET TIME. All flight times rounded to nearest second(down for less than 0.5 sec.)

● LANDINGS: 20 FT., 4 ZONE TAPE (OUT, 10, 20, 30, & 40 Pts.); All approaches from the east; Landing surface mowed, dried weeds.

● RAHM 12 V WINCHES, 900 FT. LINES. All launches to the west.

DETAILS: Open flight order, round one, with cut-off time. Crowded frequencies subject to call up. Called flight order by random group, rounds two and three. SULA field safety rules enforced. All SC2 rules apply. All 72 Mhz. transmitters gold stickered. Entry fee \$6.00 Open to all AMA members.

CD: Ed Kennedy (310) 519-7628
SULA President: Kevin Andersen (310) 372-2585

HOBBY HORN

15173 MORAN ST. // P.O. BOX 2212
WESTMINSTER, CA 92683
(714) 893-8311 PHONE // (714) 895-6629 FAX

MONTHLY SPECIALS ON RADIOS, PARTS AND ACCESSORIES

(Specials listed below are only good for the month of this special flyer.)

MAY, 1993

JR RADIOS

	LIST PRICE	HH PRICE
X-347 FM W/4-507 SERVICES	\$329.95	\$338.99
X-347 FM W/4-517 SERVICES	\$589.95	\$377.99
X-347 FM GLIDER W/2-341 SERVICES	\$609.95	\$379.99
X-347 PCM W/4-507 SERVICES	\$619.95	\$389.99
X-347 PCM W/4-517 SERVICES	\$629.95	\$418.99
X-386S* FM AC W/4-507 SERVICES	\$629.95	\$399.99
X-386S* FM AC W/4-517 SERVICES	\$679.95	\$428.99
X-386S* PCM AC W/4-517 SERVICES	\$749.95	\$469.99
X-386S* PCM AC W/4-4131 SERVICES	\$939.95	\$579.99
X-386S* FM GLIDER W/2-341 SERVICES	\$669.95	\$428.99
X-386S* PCM GLIDER W/2-341 SERVICES	\$759.95	\$469.99
MAX 4 AM W/5 507 SERVICES	\$199.95	\$119.99
MAX 4 FM GLIDER W/2-341S +270 PK	\$249.95	\$164.99
MAX 4 FM W/2-507 SERVICES/226RX**	\$249.95	\$149.99**
MAX 6 FM W/4-507 SERVICES/226RX**	\$319.95	\$189.99**

*Newly increased capability radio based upon the X347. Now has 6 channels and 16 more glider features. Four pairs of batteries included. All will be sent upon request.

**THE #226* IS THE "Credit Card" RX

JR RECEIVERS

507 Standard servo	\$29.95	\$15.99
517 Standard W/8B	\$39.95	\$24.99
4131 Ultra precision/coreless	\$69.95	\$32.99
4721 Ultra torque/coreless	\$69.95	\$57.99
4735 Ultra speed/coreless	\$99.95	\$64.99
901 Mid size	\$39.95	\$36.99
0021 Mid size/coreless	\$79.95	\$48.99
321 Mini	\$39.95	\$39.99
341 Micro	\$39.95	\$34.99***
3025 Mini high speed/coreless	\$79.95	\$49.99
3321 Glider wing/coreless	\$89.95	\$54.99
605 FET high power	\$109.95	\$64.99
7005 Low profile/coreless	\$109.95	\$64.99
*** BULK OFFER ON 341-BUY 6 OR MORE AND TAKE OFF AN EXTRA 10%!		
JR ACCESSORIES		
001 DELUXE SWITCH HARNESS, GOLD	\$14.95	\$12.99
003 SMALL SW HARNESS	\$8.95	\$8.06
004 CHARGE SWITCH HARNESS	\$19.95	\$16.75
023 JR NECK STRAP	\$13.95	\$11.99
100 ALLERON EXTENSION 12" GOLD	\$9.95	\$4.99
270 RX 270 MAH PACK	\$18.95	\$17.99
5001 RX 550 MAH SO PACK	\$19.95	\$17.99
FM RF PACK/357 RX AND TX MODULE	\$169.95	\$114.99
PCM RF PACK/910 RX AND TX MOD.	\$239.95	\$164.99
S-PCM RF PACK/940 RX	\$269.95	\$184.99

JR RECEIVERS (CONT)

236 PCM RX, 6 CH CREDIT CARD 72	\$194.95	\$119.99
910 PCM RX, 10 CH 50/5372 MHZ	\$199.95	\$129.99
940 PCM DUAL COM, 10 CH 50/5372	\$229.95	\$149.99
JR SERVO GUIDE (28 PAGE GUIDE TO ALL JR SERVICES, GIVES FULL DETAILS ON ALL JR SERVICES, WITH MANY PICTURES AND ALL DATA) FREE WITH ORDER IF YOU REQUEST ONE, OR SEND \$.50 TO COVER POSTAGE.		
AIRTRONICS:		
VGAR VANGUARD FM 4 CH W/3 102z	\$249.95	\$129.99
VGAR VANGUARD FM 4 CH W/2 501 MICRO A, MICRO RX	\$299.95	\$169.99
VG6OR VANGUARD FM 6 CH W/4 102z	\$319.95	\$174.99
150P INFINITY 600 PCM W/4 102z	\$649.95	\$384.99
160P INFINITY 660 PCM W/4 102z	\$679.95	\$376.99
160P INFINITY 660 PCM W/4 102z	\$729.95	\$401.99
V8SSP VISION FM, 72 MHZ	\$999.95	\$629.99
102 STANDARD SERVO	\$1049.95	\$629.99
831 MINI SERVO	\$24.95	\$15.99
141 MINI METAL GEAR SERVO	\$49.95	\$27.99
501 MICRO LITE	\$79.95	\$39.99
745 FM MICRO 4 CH RECEIVER	\$79.95	\$38.99
765 FM STD 6 CH RECEIVER	\$89.95	\$37.99
965 PCM 8 CH RECEIVER	\$189.95	\$133.99
FUTABA		
4N1B AM 4 CH W/3 148 SERVICES	\$244.95	\$119.99
4N1B AM 4 CH ELECTRIC	\$269.95	\$182.99
S-148 STD SERVO	\$39.95	\$18.99
S-133 MICRO SERVO	\$59.95	\$29.99
S-5102 MICRO METAL GEAR SERVO	\$79.95	\$41.99
GENERAL		
SERVO SAVERS (FOR YOUR FLAPS)		
FOR FUTABA SERVICES	\$3.00	\$2.25
FOR AIRTRONICS OR JR SERVICES	\$3.00	\$2.25
HOBBY HORN SUPER DUTY TOW HOOK	\$4.00	\$2.50
HOBBY DYNAMICS DIGITAL MINI TACH (4)	\$40.95	\$30.95
HD EXPANDED SCALE VOX.T METER	\$19.95	\$14.95
FEATHER CUT MACHINE		

NOTE: WE CARRY SOME OF THE ITEMS ABOVE IN STOCK. HOWEVER, THE FREQUENTLY ORDERED ITEMS SUCH AS RADIOS AND RECEIVERS, CLARE SPECIAL ORDER PRICES. IT IS IMPOSSIBLE TO CARRY ALL POSSIBLE FREQUENCIES. WHILE AVAILABILITY CAN BE DEPENDENT ON STOCK, AT OUR DAYS DELIVERY (TO OUR SHOP) JUST GIVE US A CALL WITH YOUR ORDER. WE CAN CHECK AND CALL YOU BACK WITH AVAILABILITY AND DELIVERY TIME. (DELIVERY CONTAINS AND ON SOME AIRTRONICS IS NORMALLY 7 DAYS). ALTERNATELY IF YOU WANT TO USE SPECIALLY ORDERED FREQUENCIES, GIVE ME SOME THUMBS, BOB SUFF, ICARYZ

(Harms. Looking for JR 6 meter stuff? give me a call.)

ANY SPECIAL REQUESTS? GIVE ME A CALL FOR A QUOTE!

COMPOSITE SAILPLANES

by

GRECO TECHNOLOGIES



MOLDED MODI 900

The design goal for the Molded Modis was to build a competition style sailplane that used the latest advances in materials and proven design techniques to create an aerodynamically sound sailplane that excelled in speed, duration, and thermalling, and was strong enough to handle the abuse of competition. This engineering increased a plane that is excellent for F3B, Thermal and Slope Racing Competition. However, this plane is definitely not for everyone. It was created for the RC sailplane pilot who wants to test his own

THERMAL MODI 900

The Thermal Modis was designed to offer the competition pilot a high quality, well constructed multi-purpose sailplane. The most impressive feature of this plane is the wood laminated wings. The finish resembles that of fine furniture.

The plane is available with three different airfoils to accommodate a variety of flying styles: SD1037, SD1037, and RG-15. The SD1037 is excellent for the pilot who wants a basic airfoil for thermalling and landing. The SD1037 is an airfoil for the slightly more advanced pilot who wants a

DURATION MODI KIT

With the popularity of Thermal/Duration and the level of competition at these contests, Greco had many requests for an extremely light version of the Modis. The Duration Modis was constructed extra light to be competitive in spot landings and to be able to stay aloft in dead air. The resulting sailplane, when built right, weighs a mere 60 oz. and has a wing loading of 10 oz./sq. ft.

MODI JAVELIN HAND-LAUNCH KIT

Recently hand-launch sailplanes have become very popular among glider pilots. Greco's design team, like many others, like to just go out and see what kind of thermals they can catch. There is a great sense of accomplishment being able to "sky-out" from a hand-launch.

The Modis Javelin Hand-launch is for the

bearing along with aluminum shaft hinges with Teflon inserts.

The plane requires an Airtronics VESP radio and an 8 channel PCM/FM receiver or better. There needs to be 4 Pro Micro servos in the wings and 2 Standard servos in the fuse, or the equivalent.

Specifications:
Wingspan: 112 in; Area: 911 sq in; Weight: 80 oz;
Loading: 14 oz/sq ft; Fuselage: 50 in; Root Chord: 10 in; Airfoil: RG-15; Wing Planform: Triple Taper; Stab: SP441; Aspect Ratio: 13.5:1.

aluminum shaft hinges. This kit is pre-built and all that is left to complete it is to install the radio equipment and linkage. This kit has the same radio set-up as the molded.

Specifications:
Wingspan: 116 in; Wing Area: 949 sq in; Fuselage Length: 50 in; Weight: 82 oz; Wing Loading: 12.4 oz/sq ft; Root Chord: 10 in; Airfoil: SD1037, SD1037, or RG-15; Wing Planform: Triple Taper; Stab Airfoil: SD4020; Aspect Ratio: 14.5:1.

weight in the tail and in turn reduces the weight needed to increase. This plane comes in kit form.

Specifications:
Wingspan: 106 in; Wing Area: 860 sq in; Approx. Weight: 60 oz; Approx. Wing Loading: 10 oz/sq ft; Root Chord: 10 in; Airfoil: SD1037 or SD1037; Wing Planform: Triple Taper; Aspect Ratio: 13.1:1.

or the equivalent.
Specifications:
Wingspan: 98 in; Wing Area: 380 sq in; Approx. Weight: 14 oz; Approx. Wing Loading: 5.3 oz/sq ft; Root Chord: 7.5 in; Airfoil: SD1037; Wing Planform: Polyhedral, Single Taper.

PRICE LIST

MOLD 900 SERIES	PRICE
M9-110	\$900.00
M9-120	\$800.00
M9-121	\$800.00
M9-122	\$800.00
M9-130	\$450.00
M9-131	\$450.00
M9-132	\$450.00

MODI SAILPLANES	PRICE
MS-110	\$1150.00
MS-120	\$350.00
MS-120	\$350.00

IMPORTED SAILPLANES
A variety of imported sailplanes are available upon request.
Call for Quote

REPLACEMENT PARTS	PRICE
RP-300 (Sold only to registered owners of airplanes)	\$115.00
Modis 900 Fuselage with Canopy	\$ 10.00
Molded Modis 900, RG-15 Wings	\$675.00
RP-321	\$600.00
Thermal Modis 900 Almost Ready to Fly, SD1037 Wood Wings	\$600.00
RP-322	\$600.00
Thermal Modis 900 Almost Ready to Fly, SD7037 Wood Wings	\$350.00
RP-323	\$350.00
Thermal Modis 900 Kit, SD1037 Wood Wings	\$350.00
RP-324	\$350.00
Thermal Modis 900 Kit, SD7037 Wood Wings	\$350.00
RP-326	\$350.00
Thermal Modis 900 Kit, RG-15 Wood Wings	\$145.00
RP-330	\$145.00
Modis 900 Vacuum Bagged Competition Stabilizer	\$145.00

SAILPLANE PARTS	PRICE
SP-410 Aluminum Belcrank with Precision Bearing	\$ 20.00
SP-421 Custom Shaft Hinges, Set of 2	Call for Quote
SP-422 Standard Shaft Hinges, 26" length by 5/8" diameter, Set of 2	\$ 25.00
SP-430 Aluminum Control Horns for Ailerons, Flaps or Rudder, Set of 2	\$ 6.00
SP-440 48" long Music Wire Push-Rod	\$ 5.00
SP-441 14 mil. Carbon Fiber Wing Joiner Rod 5" dihedral	\$ 55.00
SP-442 1/4 mil. Hardened Steel Wing Joiner Rod 5" dihedral, used for Ballast	\$ 40.00
SP-450 1/2" Hardened Steel Wing Joiner Rod, used for Ballast	\$ 30.00
SP-451	\$ 20.00

ACCESSORIES	PRICE
AS-911 Greco T-Shirts	\$ 15.00
AS-921 Greco Sun-visor	\$ 6.00
AS-922 Greco Socks	\$ 3.00

Prices effective starting December 1, 1992. Prices subject to change without notice.
See Catalog for more detail, to obtain send SASE to Greco at PO Box 10, So. Pasadena, CA 91030.
MAP Prices not available at time of printing.



GRECO TECHNOLOGIES

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**Southern California Soaring Clubs
Results of the April, 1993 Contest**

PLACE	NAME	CLUB	CLASS	SCORE	NORMALIZED	TROPHY
1	EDBERG DON	HSS	EXPERT	2980.0	1000.0	1ST. EXP.
2	WURTS JOE	PSS	EXPERT	2979.0	999.7	2ND. EXP.
3	PERKINS DARYL	PSS	EXPERT	2962.0	994.0	3RD. EXP.
4	MARKLE JIM	EDSF	EXPERT	2950.0	989.9	4TH. EXP.
5	VALDES AARON	TPG	EXPERT	2948.0	989.3	5TH. EXP.
6	TILLMAN NORM	NCC	EXPERT	2947.0	988.9	
7	WARNER GARTH	NCC	EXPERT	2946.0	988.6	
8	JOY GEORGE	TPG	EXPERT	2945.0	988.3	
9	CONDON STEPHEN	TPG	EXPERT	2918.0	979.2	
10	SAGE FRED	TPG	EXPERT	2916.0	978.5	
11	REAGAN MIKE	TOSS	EXPERT	2915.0	978.2	
12	SLIFF BOB	HSS	EXPERT	2885.0	968.1	
13	RODRIGUEZ JOE	ISS	EXPERT	2884.0	961.1	
14	CONDON** SCOTT XX	TPG	SPORTSMAN	2851.0	958.7	1ST. SPTS.
15	SKINNER JIM	EDSF	EXPERT	2834.0	951.0	
16	LEVOE MARK	PSS	EXPERT	2822.0	947.0	
17	BAGGERLY** GREG XX	ISS	SPORTSMAN	2819.0	946.0	2ND. SPTS.
17	GATTI MARK	PSS	EXPERT	2819.0	946.0	
19	MARKIEWCZ ARTHUR	TPG	EXPERT	2815.0	944.6	
20	POPE** BOB XX	EDSF	SPORTSMAN	2791.0	936.6	3RD. SPTS.
21	GIBBS DUANE XX	HSS	SPORTSMAN	2764.0	927.5	
22	SADORF STAN	ISS	EXPERT	2759.0	925.8	
23	RAYMOND KEN	NCC	EXPERT	2720.0	912.8	
24	SWET BOB	TOSS	EXPERT	2718.0	912.1	
25	MORTON RICHARD	TPG	EXPERT	2699.0	905.7	
28	WEISMAN B J XX	TOSS	SPORTSMAN	2680.0	899.3	
27	DUNCAN BILL XX	EDSF	SPORTSMAN	2652.0	889.9	
28	DOUGLAS IAN	SWSA	EXPERT	2634.0	883.9	
29	AGUIRRE MIKE XX	HSS	SPORTSMAN	2610.0	875.8	
30	ZINK DON	NONE	EXPERT	2597.0	871.5	
31	THOMAS ROSS	HSS	EXPERT	2581.0	866.1	
32	PARSONS JIM XX	HSS	SPORTSMAN	2566.0	861.1	
33	WEISMAN EDGAR	TOSS	EXPERT	2541.0	852.7	
34	DOIG AL	NCC	EXPERT	2525.0	847.3	
35	VAN GUNDY SUE	TPG	SPORTSMAN	2520.0	845.6	
36	FINKENBINER KEITH	NCC	EXPERT	2507.0	841.3	
37	LACKEY ROGER	HSS	EXPERT	2487.0	834.6	
38	SPITZER GEORGE	PSS	EXPERT	2476.0	830.9	
39	SWANSON NORM	TPG	SPORTSMAN	2464.0	826.8	
40	BLEDLOE RICHARD	TPG	EXPERT	2428.0	814.8	
41	SCHARCK RON	TPG	SPORTSMAN	2420.0	812.1	
42	WAGER MARVIN	TPG	SPORTSMAN	2397.0	804.4	
43	TAU MANNY	HSS	EXPERT	2377.0	797.7	
44	RICHARDSON PETE	HSS	EXPERT	2374.0	796.6	
45	STAFFORD IRV	NCC	EXPERT	2368.0	794.6	
46	DEAN THOMAS	NCC	SPORTSMAN	2356.0	790.6	
47	VINCENT TOM	HSS	SPORTSMAN	2334.0	783.2	
48	LUGO BRENDAN	NCC	SPORTSMAN	2330.0	781.9	
49	NEHRING CURT	HSS	SPORTSMAN	2324.0	779.9	
50	VAN GUNDY DON	TPG	EXPERT	2293.0	769.5	
51	CRON AL	HSS	EXPERT	2278.0	764.4	
52	CHASTELER FRANK	HSS	EXPERT	2259.0	758.1	
53	HALLFORD PHILIP	PSS	EXPERT	2229.0	748.0	
53	KINGSBURY TODD	NCC	EXPERT	2229.0	748.0	
55	FAULKENHAM RON	ISS	EXPERT	2223.0	746.0	
56	AKERS THOMAS	TOSS	EXPERT	2219.0	744.6	
57	THACKER BOB	NONE	EXPERT	2211.0	741.9	
58	SMITH STEVE	LVSC	SPORTSMAN	2207.0	740.6	
59	CONWAY PATRICK	TPG	EXPERT	2148.0	720.1	
60	FINK STEVEN	HSS	EXPERT	2139.0	717.8	
61	RICHMOND DON	TPG	SPORTSMAN	2105.0	706.4	
62	KLATSKIN BILL	EDSF	SPORTSMAN	2025.0	679.5	
63	STROBEL RICH	TPG	EXPERT	1947.0	653.4	
64	HUNTER CLIFF	NCC	SPORTSMAN	1741.0	584.2	
65	SCHULTZ STEVEN	EDSF	SPORTSMAN	1655.0	555.4	
66	STUBB PAUL	NCC	SPORTSMAN	987.0	331.2	
67	BIKLE JOHN	EDSF	EXPERT	900.0	302.0	
68	SHERMAN MORT	NCC	SPORTSMAN	880.0	295.3	

** Scott Condon, Greg Baggerly, and Bob Pope move To EXPERT

Team Standings

CLUB	MEMB	TOTAL
TPG	16	3935.3
PSS	6	3886.7
HSS	14	3771.4
EDSF	7	3787.4
NCC	12	3737.6
TOSS	5	3842.3
ISS	4	3578.9
SWSA	1	883.9
SFV	0	0.0
MRC	0	0.0
SULA	0	0.0
DUST	0	0.0

**HARBOR SOARING SOCIETY
MAY, 1993 CONTEST
TWO-METER DIVISION**

PLACE	NAME	SCORE	NORMALIZED	TROPHY
1	AGUIRRE MIKE	4582.0	1000.0	1ST.
2	EDBERG DON	4384.0	958.8	2ND.
3	PARSONS JIM	4221.0	921.2	3RD.
4	NEHRING CURT	3969.0	866.2	
5	CHASTELER FRANK	3713.0	810.3	
6	BUZOLICH NICK	3539.0	772.4	
7	SLIFF BOB	3473.0	758.0	
8	KUTCH NORM	3370.0	735.5	
9	VINCENT TOM	3206.0	699.7	
10	THOMAS ROSS	2882.0	624.6	
11	RICHARDSON PETE	2720.0	593.6	
12	CRON AL	2576.0	562.2	

JUNE HSS MONTHLY

DATE: Sunday June 6th
LOCATION: Fairview Park
CD: Andy Sanders
EVENTS: 2 Meter and Unlimited
FORMAT: 3 rounds, 20 mins.,
 2400 flight pts possible,
 Add-Em-Up, land on the
 whole minute, 2 points per
 sec penalty. 7 mins. max/
 2 mins. min per flight. Runway
 centerline landings, 25' tape,
 200 pts max per flight.
**PILOTS' MEETING 8:30AM,
 FIRST FLIGHTS AT 8:45AM**

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Designed and Illustrated by Curt Nehring

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A.M.A.



Charter # 128

JUNE HSS MEETING

DATE: Wednesday, June
2, 7:30PM

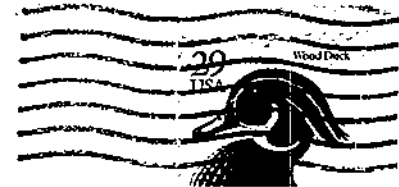
LOCATION: Clubhouse at
Lakes at Seabridge Condos.
Refer to instructions on
page 1.

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wake rake measurements used
to optimize flap settings.



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