TOSS -- UP

NEWSLETTER

NOVEMBER 1992 844 CHARLES STREET, MOORPARK, CA. 93021

A.M.A. CHARTERED CLUB # 1943

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Mike Leal	(805) 529 - 7535
Edgar Weisman	(805) 496 - 0611

NEXT CLUB CONTEST:

Date	Saturday, December 12
Place	Paramount Ranch, Agoura
Time	9:00 a.m.
C/D	Edgar Weisman

NEXT CLUB MEETING:

Date	November 24, 1992
Day	** TUESDAY **
Place	Cameron House
Time	7:30 p.m.

TOSS NOTES FOR OCTOBER MEETING

No OLD BUSINESS to discuss.

NEW BUSINESS:

1) Most of the meeting was devoted to the up coming SC^2 contest on November 22nd. And since we only had 9 members present the rest of the meeting was spent nominating officers for next year.

2) The NOMINEES for 1993 are:

PRESIDENT.....MIKE REAGAN
VICE PRESIDENT.....EDGAR WEISMAN
SECRETARY.....THOMAS AKERS
TREASURER.....MIKE LEAL
NEWSLETTER.....LARRY JIMENEZ

IF YOU WOULD LIKE TO NOMINATE SOMEONE ELSE PLEASE COME TO THE NOVEMBER 24TH MEETING! ***LARRY***

NOTES FROM YOUR EDITOR

Last month I wrote an article "Heavier Than Hot Air" in hopes to elicit some responses from all you members that we have not seen from in the past months. I have heard from only three people, so I guess that we won't be losing to many members during the 1993 membership sign-up currently in process. Here are the responses:

Jim Bennett is resigning to pursue his Power Plane flying. We certainly wish him the best of luck. Just remember Jim, when you tired of cleaning up that goo, there are those clean, quiet, relaxing sailplanes to be flownand may all your deadstick landings be with a sailplane.

John VanHamerveld is going to retire from sailplanes and pursue his activities in electric powered flight. During the past few months, John has hooked up with another R/C flier and has been enjoying his latest designs. For the past few years, John has been teaching courses in model airplane construction at the Thousand Oaks Civic Center and has been an instructor at all of the Delta Cub Contests. We certainly hope that you continue to do your fine work with the pilots of tomorrow. TOSS would like to thank you for all of your help in the past. Remember - keep those batteries charged, wings level and "watch the plane". Best of luck to you John.

P.S. Thank your wife for all the help that she too has given over the years.

One of the members commented on the fact that they live some distance away and should not be expected to show up at every activity. My response is that he is correct. We don't! The article was written for those "locals" who haven't shown up for any activities. If you do live far away, try car-pooling with another member. The roster is published so that you can contact other members for such purposes.

TOSS is committed to a couple of activites each year such as the SC^2 Contest and the Delta Cub Contests. All members should make attempts to assist in the operation of these functions. Without these contests, OUR club will be forced to increase dues and to seek a new flying sight. So come on out, it is for your own benefit.

DELTA CUB CONTEST

It was a great way to spend a morning. The weatherman allowed us perfect conditions for the event. The Park event fliers yielded the contestants, approximately 35 to 40 kids ranging in age from 7 to 14. Our donors provided us with Delta Cubs, building materials, and prizes. Speaking of prizes, we gave away four rubber band (stage two) kits, 7 gift certificates worth a total of $50 dollars and a R/C BEDE-6 power plane kit. The DAILY NEWS provided us with media coverage (see the Sunday, Nov 15, Agoura edition).

Each time we do this event, it gets better and better. This was certainly the best one so far. We had just enough instructors/assistants to cover the group. Plane damage and roof landings were minimal. In general, fun was had by all.

Flyoffs were conducted in ten rounds with all contestants participating in each round until they had won two rounds. This gave everyone a good chance to win a prize. In the event of a tie, a flyoff was used to determine the winner. After the ten rounds, we had 8 winners and a flyoff was held among these contestants for the grand prize (the BEDE-6). Alot of kids went away happy and promising to return for the next event.

TOSS would like to thank all the hobby stores (MARTY'S, RADIOWAVE and the RED BARON) for their generous donations for without you, this event could not exist. I, on behalf of the rest of TOSS, would like to thank the NPS for allowing us to use Paramount Ranch to hold the contest. Lastly, we all should thank the members who made it happen. -Bob Swet-

11/19/92	1992 THOUSAND OAKS SOARING SOCIETY ROSTER								23:11:00
1993 DUES	LAST	FIRST	PHONE NO	STREET	CITY	ST	ZIP	AMA #	
	AKERS	THOMAS	(805) 496-6655	1583 WAKEFIELD AVE	THOUSAND OAKS	CA	91360	385783	
	ARNOLD	DENNIS	(818) 988-4354	6535 HASKELL AVENUE	VAN NUYS	CA	91406	249690	
Resigned	BENNETT	JIM	(805) 373-1480	1478 OBERLIN AVE.	THOUSAND OAKS	CA	91360	72810	
	BOYNTON	JIM	(818) 347-0982	6953 MINSTREL AVE.	WEST HILLS	CA	91307	411517	
	BUZOLICH	NICK	(714) 854-3689	19366 SIERRA BELLO RD.	IRVINE	CA	92715	147697	
	DEVLIN	ED	(818) 848-9520	839 E VERDUGO AVE.	BURBANK	CA	91501	14094	
	ELLIAS	JOHN	(805) 388-5674	1961 VIA MONTECITO	CAMARILLO	CA	93012	304647	
	GEOHAGAN	JIM	(805) 388-1130	5643 E. WILLOW VIEW DRIVE	CAMARILLO	CA	93012	143567	
	GOLDFIELD	JOSH	(805) 497-9937	1849 MARVIEW DRIVE	THOUSAND OAKS	CA	91362		
	GRISWOLD	CHUCK	(805) 495-1409	1646 LA JOLLA DR.	THOUSAND OAKS	CA	91362	12108	
	HARTMAN	RICHARD	(805) 488-6136	1852 SANFORD ST	OXNARD	CA	93033	111039	
	HINMAN	STAN & BILL	(805) 484-1149	5260 HIDALGO ST.	CAMARILLO	CA	93010	15233	
	JIMENEZ	LARRY	(805) 652-1937	1943 CHANNEL DR.	VENTURA	CA	93003	378742	
	KIM	SONNY	(805) 523-3436	15266 #A CAMPUS PARK DRIVE	MOORPARK	CA	93021	437956	
	KIRBY	FRANK & KYLE	(805) 495-1997	1967 CAMPBELL AVE	THOUSAND OAKS	CA	91360	419022	
	KLUSS	BILL	(805) 497-2120	1368 MORROW CIRCLE	THOUSAND OAKS	CA	91362	15036	
	KOPLAN	TERRY	(818) 889-6984	30434 W. RAINBOW CREST DR.	AGOURA HILLS	CA	91301	71615	
	LEAL	MICHAEL	(805) 529-7535	844 CHARLES ST.	MOORPARK	CA	93021	334482	
	LUERA	FRANK	(805) 684-1384	5956 VIA REAL #2	CARPINTERIA	CA	93013	392617	
	MICHITSCH	ROBERT	(818) 991-0666	6012 COLODNY DR.	AGOURA HILLS	CA	91301	222852	
	MORAN	MYLES	(818) 882-4687	10428 OSO AVE.	CHATSWORTH	CA	91311	18426	
	MORGAN	RALPH	(805) 484-7728	2120 GORMAN STREET	CAMARILLO	CA	93010	11074	
PAID	McNAMEE	ART	(805) 526-6292	2645 PLACERVILLE CT.	SIMI VALLEY	CA	93063	7417	
PAID	McNAMEE	DON	(805) 526-3145	2291 NORTH HIETTER	SIMI VALLEY	CA	93063	48996	
	NORTHERN	DON	(805) 523-1018	3977 WILLOWCREEK Ln.	MOORPARK	CA	93021	28279	
	OLDENBURG	ED	(805) 497-7463	951 WARWICK AVE. #A2	THOUSAND OAKS	CA	91360	106776	
	PERSON	DAVID	(805) 373-8797	843 DORCHESTER ST.	THOUSAND OAKS	CA	91360	398962	
	RAKE	GARY	(805) 498-2613	947 DRIFTWOOD CIRCLE	NEWBURY PARK	CA	91320	437635	
	RATNER	MICHAEL	(818) 760-2770	4332 COLDWATER CYN.	STUDIO CITY	CA	91604	1227	
	REAGAN	MIKE	(805) 529-5513	14705 LOYOLA ST.	MOORPARK	CA	90321	93756	
	ST. LAWRENCE	DON	(805) 497-9681	207 SOMERSET CIRCLE	THOUSAND OAKS	CA	91360	409441	
	STERN	MICHAEL	(805) 492-8452	745 LYNNMERE DR.	THOUSAND OAKS	CA	91360	131478	
	SUTTON	ROBERT & BOB JR.	(805) 498-4342	3415 CRESTWOOD CT.	NEWBURY PARK	CA	91320	81773	
	SWET	BOB	(805) 388-9619	2600 PONDEROSA DR. APT.15	CAMARILLO	CA	93010	83283	
Resigned	VAN HAMERSVELD	JOHN	(805) 492-5904	2826 N MARIETTA CIRCLE	THOUSAND OAKS	CA	91360	136313	
PAID	VANNETT	DANE	(805) 494-4520	689 MC CLOUD AVENUE APT #202	THOUSAND OAKS	CA	91360	433610	
	WALANCE	BOB	(805) 499-4635	142 DEWEY AVE.	NEWBURY PARK	CA	91320	359661	
	WARREN	JIM	(805) 494-3031	1694 EL DORADO	THOUSAND OAKS	CA	91362	404518	
	WEISMAN	EDGAR and B.J.	(805) 496-0611	752 CAMINO VALLES	THOUSAND OAKS	CA	91360	67651	
	WILLIS	BEN	(805) 496-7404	196 QUAILS TRAIL	THOUSAND OAKS	CA	91361	317876•	

11/15/92		OPEN CLASS STANDINGS								HIGH SCORE = 2821			
POS	NAME	CLUB	TOTAL PTS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV
1	MIKE REAGAN	TOSS	8777	1000	980	1000	1000	872	1000		1000	941		984
2	DON McNAMEE	TOSS	8237	920		958	736	1000	960		953	999	999	712
3	EDGAR WEISMAN	TOSS	8161	955	882	962		604	948		890	1000	900	1000
4	BOB SWET	TOSS	7637	935	943	757	175	695	987		396	883	891	975
5	DON NORTHERN	TOSS	6753	980		985	994	957			998		1000	839
6	THOMAS AKERS	TOSS	6652	917	944	170	997	902			938	881		903
7	ART McNAMEE	TOSS	4286	923	963	979	987							434
8	MYLES MORAN	TOSS	3792	837	1000	975					980			
9	B.J. WEISMAN	TOSS	2843		994	990								859
10	MIKE LEAL	TOSS	1861		953	908								
11	PETER STAIRS	????	1770			940					830			
12	LARRY JIMENEZ	TOSS	1758	602							333	823		
13	JOHN ELLIAS	TOSS	1572			881								691
14	BILL HINMAN	TOSS	884									884		
15	HERB JULIAN	MRCSS	809		809									
16	BILL KARP	MRCSS	566						566					

11/15/92		2 METER CLASS STANDINGS								HIGH SCORE = 2581			
POS	NAME	CLUB	TOTAL PTS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV
1	BOB SWET	TOSS	7314	1000	860	724	188	331	490		1000	837	1000	884
2	DON McNAMEE	TOSS	6654			977	999		1000		888	837	953	1000
3	MIKE REAGAN	TOSS	5742		1000	1000	1000		912			1000		830
4	EDGAR WEISMAN	TOSS	5167	841	485			575	942		636	705	983	
5	LARRY JIMENEZ	TOSS	2930		741	563			531			614		481
6	THOMAS AKERS	TOSS	2682		343	696	712		522			409		
7	MIKE LEAL	TOSS	2234					1000	10		643			581
8	ART McNAMEE	TOSS	1840		898	942								
9	B.J. WEISMAN	TOSS	1802	877	925									
10	SONNY KIM	TOSS	951										713	238
11	ED DEVLIN	MRCSS	866		703		163							
12	DANE VANNETT	TOSS	756						756					
13	MIKE PUCKETT		629			629								

11/15/92		SPORTSMAN CLASS STANDINGS								HIGH SCORE = 2047			
POS	NAME	CLUB	TOTAL PTS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV
1	LARRY JIMENEZ	TOSS	4288	703	752	886	1000		379					568
2	JOHN ELLIAS	TOSS	3640	824		946						870		1000
3	SONNY KIM	TOSS	2547									738	1000	809
4	ED DEVLIN	TOSS	2000		1000						1000			
5	PETER STAIRS	????	1891	1000	891									
6	JIM GEOHAGAN	TOSS	1000					1000						
7	BOB SUTTON	TOSS	1000									1000		
8	DANE VANNETT	TOSS	1000			1000								
9	BEN WILLIS	TOSS	1000						1000					
10	B.J. WEISMAN	TOSS	807	807										
11	JOSH GOLDFIELD	TOSS	246									246		
12	BILL KLUSS	TOSS	246									246		
13	DON ST LAWRENCE	TOSS	110								110			
14	BROWNIE GOODWIN	MRCSS	0											
15	JOHN VAN HAMERSVELD	TOSS	0											

HOW TO TRIM YOUR SAILPLANE

by Herb Stokely
SBSS *Silent Flyer*
Rewritten by Ron Kucera

I had a letter from a reader who questioned a statement that I made in a recent column. The note that he referred to mentioned that a nose heavy model will tend to porpoise and stall. I brought it up because it's not intuitive that it would work that way and newer fliers are likely to try to correct that condition by adding weight to the nose rather than removing it.

Longitudinal Stability

A plane uses dihedral in the wings to get lateral (or turning) stability. There is a dihedral effect for the longitudinal (diving/climbing) stability as well. This "longitudinal dihedral" comes from the relationship between the wing incidence, the horizontal stabilizer incidence, and the location of the center of gravity. Very simply, if the wing is set with its leading edge raised slightly, and the planes trims out in flight with the stab leading edge slightly lowered, you can visualize a kind of dihedral between the two surfaces that will stabilize the plane by making the nose come back up if the plane is tipped into a dive, thus longitudinal dihedral. It's not a correct technical term, but it does give the idea.

When the plane is too nose heavy, it takes a big, inefficient, down load on the tail to balance out the nose heaviness in trimmed flight. That equates to too much longitudinal dihedral, and the plane is too stable in pitch. All of that down load comes from a downward lift on the stabilizer that produces unnecessary drag, and subtracts from the lift of the wing so that it has to lift more to hold up the weight of the model and counter the down load on the tail. That's why most sailplanes fliers like to get the plane on the verge of tail-heaviness at thermalling speeds. If the plane is balanced perfectly, there's sometimes almost no down load on the tail at all during slow speed flight. That means that the drag of the tail is at an absolute minimum, and the plane's aerodynamic efficiency benefits.

Balancing Isn't Always Easy

The problem of finding the best starting balance point for a new model is not always simple. Even kit planes or models built from plans don't always work well when balanced according to the directions. I've seen magazine plans that don't even show the balance point. Probably the construction article told in detail how to locate the C.G., so the author didn't bother to show it on the plans. Of course, when you later order the plans, the article probably doesn't come with them so you're on your own to find the right C.G. to start flying with. Likewise, if you're designing your own model, obviously you have to decide where to set up the initial balance point.

You can use one of the excellent computer programs available that propose a starting point, or you can use one of the textbook or graphic methods available, or you can even just use your own experience to estimate it intuitively. However you find that starting C.G. position, you will find that it has to be further refined in flight if you want to get it just right for your specific plane, your flying conditions, and for your flying style. Those first few hand launches can be scary, though, if you're not confident that the balance point is in a safe place. Try the free flight method. Make those first couple of hand launches over deep grass or weeds. Find something to cushion the landing enough to be safe.

Fine Tuning - In Flight

Once the plane is safe to fly, here is how to get the C.G. in the right place for you. With smooth air conditions, get the airplane trimmed for slow minimum sink flight. Fly it around a bit and tweak the elevator trim till you are sure that the plane is flying just about as you'd like for thermalling flight. Now use forward elevator to tip the plane into a shallow dive and ease the stick back to neutral. If the plane immediately pulls out of the dive and quickly zooms into a stall, it is *nose heavy*. That's right, the excess up (elevator trailing edge up) trim needed to hold up the excess nose weight becomes more powerful as speed builds up in a dive and lifts the nose further than it should for a smooth recovery, and the nose pitches up into a stall or porpoising maneuver.

If the plane continues to dive without pulling up, perhaps even steepening the dive - even though the stick has been brought back to what was neutral - the plane is *tail heavy*. In this case, the elevator trim needed for stable slow speed flight was too much down (elevator trailing edge down). The excess lift on the tail is needed to hold up or balance the tail heaviness. When the speed builds up in a dive, the lift on the tail becomes much stronger, and it causes the dive to continue steepening.

There are lots of other things happening besides just the speed build-up that affects what happens when you're dive-trimming a model. First, there is downwash on the tail caused by the lift on the wing. The wing makes lift by accelerating the air in a downward direction. The tail has to fly in this downflow behind the wing, and when the plane is flying at high lift (slow speed), the downwash is at its strongest and it helps hold the tail down (or the nose up, depending on how you think about it). When you put the plane into the dive, the downwash decreases, and some of the nose-up effect goes away. Also, the effective aerodynamic center (or neutral point) of the plane moves toward the rear, changing the stability characteristics of the plane.

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Flying Speed² Is The Biggest Factor

All in all, though, the speed increase is the big effect. The lift on the tail (in an up or down direction) increases with the square of the speed, so a relatively small speed increase makes for a big change in the forces being produced by the tail. That means that trim on any reasonably normal plane will be dominated by the "longitudinal dihederal", or the slow speed trim position of the elevator.

Suppose that the planes porpoises when you try the dive trim maneuver. Since I said that means the plane is nose heavy, you should take some weight out of the nose, and retrim the elevator with a couple of hand tosses. When it seems to be trimmed right, launch again, fly around a bit to get the best thermalling trim, and try the dive maneuver again. This time it should pull out more gradually. The *ideal balance* is set when the pull out is smooth and gradual, and no stall occurs when the plane recovers; though all stable planes will go through some continuing oscillations.

Don't Push To Far

Try to be reasonable about this. Pushing the C.G. back is good - to a point! It unloads the horizontal tail during thermalling, and makes the plane more efficient aerodynamically. It also makes the model more responsive, or even touchy on the elevator control, and generally gives a feeling of lightness and better handling to the pilot. If however, you go a bit too far, bad things can happen when you retrim the plane for higher speed flying. Perhaps you are trying to penetrate on a windy day, or maybe you're working a cross country task where higher cruising speed is needed. Now your plane that pulled slowly out of the test dive on your earlier trim testing, becomes very touchy on the elevator, and may even want to tuck under or dive uncontrollably when you get it moving fairly fast.

What that means is that the "longitudinal dihederal" has become very small, and those other factors are taking over. Both of them tend to make the plane dive. The loss of downwash on the tail is the same as putting in just a bit of down elevator trim, and the aft movement of the neutral point makes the plane seem to be more nose heavy than it was. The result is that a plane that has its C.G. too far to the rear is very unpleasant to fly. So, test this too. After you get the plane balanced and flying just the way you like it at thermalling speed, feed in just enough down trim to pick up the speed to the point of good efficient penetration or cross country flight. Fly it around a bit to make sure you have it trimmed the way you want it and then do the dive trim maneuver again. It should still pull out smoothly, though perhaps a bit more slowly than before. If it wants to keep diving, or tries to tuck under, put back some of the weight in the nose. It's not worth it to have a plane that flies on the ragged edge of instability all of the time, even if there is a tiny theoretical performance advantage. To me, good handling is half of the enjoyment of the model, and bad flying planes are no fun!

Obviously, none of this will work if you have limp control rods, loose linkages, or poor servos that don't come to the same neutral every time. You can fly and enjoy models like this, but Fine Tuning is out of the question. For really precision flying, you need excellent equipment and a very precise, careful installation.

C.G. Effects On Tow Are Surprising Too

While I'm talking about locating the C.G. of a model, I might as well go on and mention that changing the C.G. location has an unexpected effect on the way a model behaves during a winch type launch. I've seen people try to improve the way a plane acts on the winch by changing the C.G. and the effect here is intuitively backwards too.

What happens on tow during a winch launch is that as line is taken in, it accelerates the plane towards the turn-around pulley on the other end of the field. The plane meanwhile is trying to climb on a circular path with the turnaround pulley near its center, so there is a big angle between the fuselage and the tow line during most of the launch. As the towline pulls the plane toward the turnaround, the heavier parts of the plane tend to stay on the path that they are following and the lighter parts tend more to be pulled in the direction of the line. If you can visualize that action, on an extremely nose heavy model, you can see that the nose will tend to stay on its upward path, while the lighter tail will be pulled toward the turnaround. That gives a strong nose-up movement, as far as the flight path is concerned, and the plane will tend to stall. A tail heavy plane obviously will behave just the opposite, tending to drop its nose as the winch line pulls in.

Move The Tow Hook

Trim the plane for flight first, and then fix the launch problems by moving the hook. It's the only way. Start with the hook a bit forward, and slowly move it to the rear on successive launches, until you get maximum height and a good straight tow with no elevator input. Hauling back on the elevator during the launch should cause a properly set-up model to stall. If it doesn't, move the towhook back until it does, and then leave the elevator alone during launch. Actually, maximum launch height comes from having the hook so far back that you *need* down elevator trim on tow, but if you get distracted, and forget to retrim before launch, the plane will stall and you might not catch it in time.

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SOUTHERN CALIFORNIA SOARING CLUBS
RESULTS OF SWSA (SC)2 CONTEST OF 10/25/92
CONTEST DIRECTOR - IAN DOUGLAS

PLACE	NAME	CLUB	CLASS	SCORE	NORMAL	TROPHY
1	KINDRICK, KEITH	PSS	EXPERT	2970.9	1000.0	E - 1
2	WILSON, DAN XX	EDSF	SPORTSMAN	2969.9	999.7	E - 2
3	EDBERG, DON	HSS	EXPERT	2968.6	999.2	E - 3
4	JOY, GEORGE	TPG	EXPERT	2967.7	998.9	E - 4
5	LACKEY, ROGER	HSS	EXPERT	2963.7	997.6	E - 5
6	FOXGORD, CRAIG	PSS	EXPERT	2959.4	996.1	
7	CLERX, BEN	HSS	EXPERT	2958.7	995.9	
8	STARK, TONI	PSS	EXPERT	2958.5	995.8	
9	ATWELL, BLAIR	NONE	EXPERT	2956.4	995.1	
10	MacKENZIE, SCOTT	SFVF	EXPERT	2954.4	994.4	
11	BURNS, RICHARD	PSS	EXPERT	2953.9	994.3	
12	CONDON, STEPHEN	TPG	EXPERT	2953.5	994.1	
13	GATTI, MARK	PSS	EXPERT	2951.4	993.4	
14	FINKENBINER, KEITH	NCC	EXPERT	2947.0	992.0	
15	MATSUMOTO, BEN	PSS	EXPERT	2946.4	991.8	
16	AKERS, THOMAS	TOSS	EXPERT	2942.5	990.4	
17	VALDES, AARON	TPG	EXPERT	2936.5	988.4	
18	SADORF, STAN	ISS	EXPERT	2925.2	984.6	
*19	MARKIEWICZ, ARTHUR XX	TPG	SPORTSMAN	2923.8	984.1	S - 1
*20	HALLFORD, PHILIP XX	PSS	SPORTSMAN	2923.3	984.0	S - 2
21	BRANDT, DENNIS	HSS	EXPERT	2906.2	978.2	
22	KUTCH, NORM	HSS	EXPERT	2903.2	977.2	
23	WEISMAN, EDGAR	TOSS	EXPERT	2898.4	975.6	
24	LEVOE, MARK	PSS	EXPERT	2896.2	974.9	
25	BAGGERLY, GREG	ISS	SPORTSMAN	2875.3	967.8	S - 3
26	CHASTELER, FRANK	HSS	EXPERT	2873.5	967.2	
27	JENKINS, HARVEY	ISS	EXPERT	2871.1	966.4	
28	REAGAN, MIKE	TOSS	EXPERT	2870.1	966.1	
29	VINCENT, TOM	HSS	SPORTSMAN	2859.8	962.6	
30	DECKMAN, MIKE	SWSA	SPORTSMAN	2855.9	961.3	
31	STAIRS, PETER XX	TOSS	SPORTSMAN	2848.4	958.8	
32	NORENBERG, LOWELL	SFVF	EXPERT	2837.1	955.0	
33	McNAMEE, DON	TOSS	EXPERT	2831.1	952.9	
34	HIGGINBOTHAM, MARC	ISS	EXPERT	2823.4	950.4	
35	LEPPLA, F	PSS	EXPERT	2822.1	949.9	
36	JOY, BRYAN XX	TPG	SPORTSMAN	2816.9	948.2	
37	MORTON, RICHARD XX	TPG	SPORTSMAN	2815.9	947.8	
38	PARSONS, JIM XX	HSS	SPORTSMAN	2813.4	947.0	
39	SWANSON, NORM	NCC	SPORTSMAN	2811.3	946.3	
40	YEE, JOHN	SWSA	SPORTSMAN	2810.6	946.0	
41	SANDRONI, HUGO	DUST	EXPERT	2802.7	943.4	
42	SHELBY, RICK	NCC	SPORTSMAN	2800.3	942.6	
43	ANDERSON, GARY	TPG	EXPERT	2777.8	935.0	
44	RODRIGUEZ, JOE	ISS	EXPERT	2772.1	933.1	
45	MORAN, MYLES	TOSS	EXPERT	2767.8	931.6	
46	TAU, MANNY	HSS	SPORTSMAN	2767.7	931.6	
47	POPE, BOB	EDSF	SPORTSMAN	2762.2	929.8	
48	CRON, AL	HSS	EXPERT	2762.1	929.7	
49	STROBEL, RICH	TPG	EXPERT	2750.4	925.8	
50	DUNCAN, BILL XX	EDSF	SPORTSMAN	2733.2	920.0	
51	FAULKENHAM, RON	ISS	EXPERT	2727.1	917.9	
52	VAN GUNDY, SUE	TPG	SPORTSMAN	2675.2	900.5	
53	YOUNG, BRETT	HSS	SPORTSMAN	2652.0	892.7	
54	NEHRING, CURT	HSS	SPORTSMAN	2628.5	884.7	
55	FINK, DAN	SULA	EXPERT	2617.3	881.0	

SOUTHERN CALIFORNIA SOARING CLUBS
RESULTS OF SWSA (SC)2 CONTEST OF 10/25/92
CONTEST DIRECTOR - IAN DOUGLAS

PLACE	NAME	CLUB	CLASS	SCORE	NORMAL	TROPHY
56	VAN GUNDY, DON	TPG	EXPERT	2589.2	871.5	
57	YOUNG, PETER	HSS	SPORTSMAN	2589.0	871.5	
58	CHILD, MARK XX	EDSF	SPORTSMAN	2586.8	870.7	
59	RATNER, MIKE	PSS	EXPERT	2563.9	863.0	
60	PAQUETTE, R	SWSA	SPORTSMAN	2555.1	860.0	
61	BIKLE, JOHN XX	EDSF	SPORTSMAN	2554.1	859.7	
62	SCHAT, DAVID	SULA	SPORTSMAN	2541.0	855.3	
63	HALL, DAVID	DUST	SPORTSMAN	2499.6	841.4	
64	TRIST, PAUL JR	SWSA	SPORTSMAN	2487.4	837.3	
65	BLANKE, ERIC	SWSA	SPORTSMAN	2481.0	835.1	
66	RIGGS, ROBIN	PSS	SPORTSMAN	2397.8	807.1	
67	DOUGLAS, IAN	SWSA	EXPERT	2348.1	790.4	
68	HAMMERS, MICHAEL	SWSA	SPORTSMAN	2334.7	785.9	
69	GABRIEL, PINA	PSS	SPORTSMAN	2313.9	778.9	
70	WALDEN, WILLIAM	PSS	SPORTSMAN	2273.3	765.2	
71	SMITH, STEVE	DUST	SPORTSMAN	2238.6	753.5	
72	AVESON, BRUCE	SWSA	SPORTSMAN	2232.6	751.5	
73	DEVLIN, ED	PSS	SPORTSMAN	2172.5	731.3	
74	SCHULTZ, STEVEN	EDSF	SPORTSMAN	2019.6	679.8	
75	SAGE, FRED	NCC	EXPERT	1983.8	667.7	
76	WILLIAMS, JIM	SWSA	SPORTSMAN	1937.8	652.3	
77	BUZOLICH, NICK	HSS	SPORTSMAN	1916.4	645.1	
78	SPITZER, GEORGE	PSS	EXPERT	1857.5	625.2	
78	SMITH, JAMES	SULA	EXPERT	1857.5	625.2	
80	MARKLE, JIM	SULA	EXPERT	1793.5	603.7	
81	WOLCOTT, CHARLES	SWSA	SPORTSMAN	1490.1	501.6	
82	IKONA, PAUL	SWSA	SPORTSMAN	1455.4	489.9	
83	OLSEN, PETER	SWSA	EXPERT	977.7	329.1	
84	HENSLEY, WILLIAM	ISS	SPORTSMAN	915.8	308.3	
85	AVESON, DAVID	SWSA	EXPERT	0.0	0.0	
85	DROUGHT, GEOFF	EDSF	SPORTSMAN	0.0	0.0	

* ARTHUR MARKIEWICZ MOVES TO EXPERT
* PHILLIP HALLFORD MOVES TO EXPERT

Southern California Soaring Clubs
RESULTS OF SWSA (SC)2 CONTEST OF 10/25/92
TEAM SCORES

PSS 15	HSS 14	TPG 10	TOSS 6	ISS 7	EDSF 7	SWSA 13	NCC 4	SULA 4	DUST 3	SFVF 2	NRCS 0
1000.0	999.2	998.9	990.4	984.6	999.7	961.3	992.0	881.0	943.4	994.4	
996.1	997.6	994.1	975.6	967.8	929.8	946.0	946.3	855.3	841.4	955.0	
995.8	995.9	988.4	966.1	966.4	920.0	860.0	942.6	625.2	753.5		
994.3	978.2	986.1	958.8	950.4	870.7	837.3	667.7	603.7			
3986.2	3970.9	3965.5	3890.9	3869.2	3720.2	3604.6	3548.6	2965.2	2538.3	1949.4	0.0

SOUTHERN CALIFORNIA SOARING CLUBS
Annual Standings
Best 6 of 9

	Name	Class	Club	Score	Contests
1	ATWELL, B	EXPERT	NONE	5925.7	6
2	LACKEY, R	EXPERT	HSS	5922.8	6
3	JOY, G	EXPERT	TPG	5889.9	6
4	REAGAN, M	EXPERT	TOSS	5879.2	6
5	CLERX, B	EXPERT	HSS	5859.3	6
6	ANDERSON, G	EXPERT	TPG	5825.4	6
7	WEISMAN, E	EXPERT	TOSS	5811.3	6
8	CHASTELER, F	EXPERT	HSS	5778.7	6
9	LEVOE, M	EXPERT	PSS	5720.8	6
10	FINKENBINER, K	EXPERT	NCC	5713.8	6
11	SPITZER, G	EXPERT	PSS	5708.4	6
12	VALDES, A	EXPERT	TPG	5702.0	6
13	SADORF, S	EXPERT	ISS	5630.2	6
14	GATTI, M	EXPERT	PSS	5616.4	6
15	RODRIGUEZ, J	EXPERT	ISS	5604.4	6
16	RAYMOND, K	EXPERT	NCC	5589.0	6
17	STROBEL, R	EXPERT	TPG	5471.6	6
18	TAU, M	SPORTSMAN	HSS	5427.9	6
19	CONDON, S	EXPERT	TPG	5383.4	6
20	SAGE, F	EXPERT	NCC	5377.1	6
21	AKERS, T	EXPERT	TOSS	5370.4	6
22	WILSON, D	SPORTSMAN	EDSF	5364.4	6
23	RATNER, M	EXPERT	PSS	5328.5	6
24	MARKLE, J	EXPERT	SULA	5263.2	6
25	SHELBY, R	SPORTSMAN	NCC	5261.4	6
26	THOMAS, R	EXPERT	HSS	5238.5	6
27	DOUGLAS, I	EXPERT	SWSA	5237.0	6
28	FINK, S	EXPERT	SULA	5220.7	6
29	VAN GUNDY, D	EXPERT	TPG	5174.7	6
30	JOY, B	SPORTSMAN	TPG	5159.3	6
31	FINK, D	EXPERT	SULA	5157.3	6
32	HALLFORD, P	SPORTSMAN	PSS	5115.6	6
33	FAULKENHAM, R	EXPERT	ISS	5107.4	6
34	SMITH, S	SPORTSMAN	DUST	5105.7	6
35	EDBERG, D	EXPERT	HSS	4978.0	5
36	DUNCAN, B	SPORTSMAN	EDSF	4962.2	6
37	DOIG, A	EXPERT	NCC	4681.6	6
38	KUTCH, N	EXPERT	HSS	4569.5	6
39	SLIFF, B	EXPERT	HSS	4565.9	5
40	CRON, A	EXPERT	HSS	4432.9	5
41	MONAHAN, S	SPORTSMAN	SULA	4410.1	6
42	MATSUMOTO, B	EXPERT	PSS	4402.9	5
43	VAN GUNDY, S	SPORTSMAN	TPG	4398.8	6
44	NEHRING, C	SPORTSMAN	HSS	4339.8	5
45	YOUNG, B	SPORTSMAN	HSS	4315.6	5
46	YOUNG, P	SPORTSMAN	HSS	4240.3	6
47	CHILD, M	SPORTSMAN	EDSF	4226.9	5
48	FOXGORD, C	EXPERT	PSS	3788.5	4
49	AGUIRRE, M	SPORTSMAN	HSS	3773.1	5
50	NORENBERG, L	EXPERT	SFVF	3765.2	4
51	DEVLIN, E	SPORTSMAN	PSS	3751.7	6
52	BIKLE, J	SPORTSMAN	EDSF	3708.6	4
53	McNAMEE, D	EXPERT	TOSS	3648.1	4

SOUTHERN CALIFORNIA SOARING CLUBS
Annual Standings
Best 6 of 9

	Name	Class	Club	Score	Contests
107	RITTER, C	SPORTSMAN	DUST	1520.1	2
108	GABRIEL, P	SPORTSMAN	PSS	1485.2	2
109	DROUGHT, G	SPORTSMAN	EDSF	1445.4	3
110	SMITH, M	EXPERT	NCC	1321.5	2
111	MERENDA, K	SPORTSMAN	DUST	1289.3	2
112	KIELTYKA, M	SPORTSMAN	HSS	1285.8	2
113	ANDREWS, R	SPORTSMAN	ISS	1243.7	2
114	CROOK, J	SPORTSMAN	ISS	1106.7	2
115	WALTZ, B	SPORTSMAN	DUST	1050.0	2
116	SMITH, J	EXPERT	SULA	1004.0	2
117	SPENCER, R	EXPERT	EDSF	998.6	1
118	SLOBOD, E	EXPERT	SFVF	981.1	1
119	JOLLY, L	EXPERT	SULA	975.1	1
120	WHITE, L	EXPERT	HSS	971.0	1
121	PERKINS, D	EXPERT	PSS	966.7	1
122	RICHARDSON, D	SPORTSMAN	SULA	964.5	1
123	VICKERS, D	EXPERT	ISS	963.2	1
124	VINCENT, T	SPORTSMAN	HSS	962.6	1
125	BOSS, G	SPORTSMAN	SULA	953.7	1
126	BONANNO, T	EXPERT	SULA	951.7	1
127	LEPPLA, F	EXPERT	PSS	949.9	1
128	GIBBS, D	SPORTSMAN	HSS	942.9	1
129	SMITH, M	SPORTSMAN	HSS	939.6	1
130	RICHARDS, D	SPORTSMAN	SULA	934.8	1
131	STOWERS, R	EXPERT	SULA	931.7	1
132	BOESE, J	SPORTSMAN	HSS	920.2	1
133	BATES XX, J	SPORTSMAN	NCC	905.6	1
134	SHORT, H	EXPERT	SULA	896.9	1
135	WISEMAN, J	EXPERT		886.8	1
136	SILVA XX, M	SPORTSMAN	ISS	874.8	1
137	RENAUD, T	EXPERT	HSS	867.7	1
138	RITSCHKE, G	SPORTSMAN	HSS	860.9	1
139	PAQUETTE, R	SPORTSMAN	SWSA	860.0	1
140	BARON, M	SPORTSMAN	SULA	841.5	1
141	BROOKS, N	SPORTSMAN	PSS	840.0	1
142	TRIST, P	SPORTSMAN	SWSA	837.3	1
143	PANTZAR, D	EXPERT	HSS	836.3	1
144	BLANKE, E	SPORTSMAN	SWSA	835.1	1
145	PHIPPS, D	SPORTSMAN	EDSF	829.9	1
146	IKOMA, P	SPORTSMAN	SWSA	824.0	2
147	SCHNEIDER, S	SPORTSMAN	TPG	814.8	1
148	FARLESS, D	EXPERT	PSS	814.3	1
149	WIDMAN, D	EXPERT	NCC	812.2	1
150	DEAN, T	SPORTSMAN	NCC	808.5	1
151	RIGGS, R	SPORTSMAN	PSS	807.1	1
152	BIDDLE, F	SPORTSMAN	HSS	797.1	1
153	NEMECEK, D	EXPERT	HSS	793.0	1
154	HAMMERS, M	SPORTSMAN	SWSA	785.9	1
155	JOHNSON, J	SPORTSMAN	EDSF	784.3	1
156	CLARKE, G	SPORTSMAN	HSS	781.8	1
157	BLAKKOLB, B	SPORTSMAN	PSS	781.0	1
158	KEIL, D	SPORTSMAN	NCC	770.7	1
159	OTHON, M	SPORTSMAN	ISS	767.2	1

SOUTHERN CALIFORNIA SOARING CLUBS
Annual Standings
Best 6 of 9

	Name	Class	Club	Score	Contests
54	KLATSKIN, B	SPORTSMAN	EDSF	3612.0	6
55	BUZOLICH, N	SPORTSMAN	HSS	3584.9	6
56	AVESON, B	SPORTSMAN	SWSA	3580.4	5
57	JENKINS, H	EXPERT	ISS	3309.2	4
58	PUCHALSKI, M	EXPERT	SULA	3043.2	4
59	SWANSON, N	SPORTSMAN	NCC	3019.9	4
60	MARTIN, T	EXPERT	HSS	2919.3	3
61	STAFFORD, I	EXPERT	NCC	2915.9	4
62	MARKIEWICZ, A	SPORTSMAN	TPG	2904.2	3
63	BURNS, R	EXPERT	PSS	2863.4	3
64	MacKENZIE, S	EXPERT	SFVF	2794.2	3
65	BILLMAN, T	EXPERT	ISS	2770.4	3
66	ZINK, D	EXPERT	HSS	2713.2	3
67	POPE, B	SPORTSMAN	EDSF	2661.2	3
68	BRANDT, D	EXPERT	HSS	2602.5	3
69	CONWAY, P	EXPERT	TPG	2580.4	3
70	MEIENBERG, K	EXPERT	NCC	2554.5	3
71	MORAN, M	EXPERT	TOSS	2554.3	3
72	CONDON, S	SPORTSMAN	TPG	2518.1	3
73	WAGER, M	SPORTSMAN	TPG	2334.4	4
74	PARSONS, J	SPORTSMAN	HSS	2305.3	3
75	BUTKOVICH, D	SPORTSMAN	PSS	2281.7	3
76	HENDRY, S	EXPERT	HSS	2176.9	3
77	SNEDDEN, J	SPORTSMAN	ISS	2166.6	3
78	HALL, D	SPORTSMAN	DUST	2164.8	3
79	BRISTER, K	SPORTSMAN	TPG	2057.5	3
80	SANDRONI, H	EXPERT	DUST	2015.5	3
81	LUEKEN, J	EXPERT	NCC	1963.1	2
82	STARK, T	EXPERT	PSS	1957.2	2
83	KINDRICK, K	EXPERT	PSS	1926.3	2
84	STAIRS, P	SPORTSMAN	TOSS	1905.8	2
85	MORTON, R	SPORTSMAN	TPG	1893.5	2
86	BAGGERLY, G	SPORTSMAN	ISS	1892.1	2
87	YEE, J	SPORTSMAN	SWSA	1891.9	2
88	OLSEN, P	EXPERT	SWSA	1891.0	3
89	THACKER, B	EXPERT		1872.5	2
90	RICHMOND, D	SPORTSMAN	TPG	1841.8	3
91	HARRIS, P	EXPERT	HSS	1834.6	2
92	BLEDSLOE, R	EXPERT	TPG	1828.2	2
93	EICKENHORST, E	SPORTSMAN	SULA	1811.4	2
94	DECKMAN, M	SPORTSMAN	SWSA	1754.5	2
95	ANDERSON, R	EXPERT	TPG	1753.4	2
96	HENSLEY, W	SPORTSMAN	ISS	1732.7	3
97	WARNER, G	EXPERT	NCC	1731.3	2
98	SCHAT, D	SPORTSMAN	SULA	1721.8	2
99	GERBIN Jr, R	EXPERT	HSS	1694.2	2
100	NIGG, D	EXPERT	SULA	1691.5	2
101	GUSTIN, R	EXPERT	DUST	1629.1	2
102	LEE, M	SPORTSMAN	TPG	1623.4	2
103	HIGGINBOTHAM, M	EXPERT	ISS	1600.8	2
104	SCHULTZ, B	SPORTSMAN	EDSF	1584.8	2
105	RITTER, G	EXPERT	DUST	1564.2	2
106	MEININGER, F	SPORTSMAN	PSS	1559.0	2

SOUTHERN CALIFORNIA SOARING CLUBS
Annual Standings
Best 6 of 9

	Name	Class	Club	Score	Contests
160	BECKER, J	SPORTSMAN	NONE	765.9	1
161	WALDEN, W	SPORTSMAN	PSS	765.2	1
162	ANDERSON, K	SPORTSMAN	SULA	758.0	1
163	LONG, D	SPORTSMAN	DUST	749.5	2
164	HOLLEY, M	EXPERT	ISS	734.9	1
165	LUGO, B	SPORTSMAN	NCC	732.8	1
166	WHITEFORD, A	SPORTSMAN	EDSF	729.2	1
167	COOPER, R	SPORTSMAN		728.1	1
168	ANDERSON, V	SPORTSMAN	HSS	703.9	1
169	BUKSHAN, R	SPORTSMAN	PSS	669.9	1
170	CRANFORD, K	SPORTSMAN	DUST	658.1	1
171	HUNTER, C	SPORTSMAN	NCC	652.8	1
172	WILLIAMS, J	SPORTSMAN	SWSA	652.3	1
173	JULIEN, H	SPORTSMAN	MRCS	643.1	1
174	LARSON, O	EXPERT	DUST	642.1	1
175	CLARK, D	EXPERT		634.4	1
176	THOMAS, J	SPORTSMAN		618.1	1
177	POULSEN, G	EXPERT	HSS	605.8	1
178	CLIFTON, G	EXPERT	SWSA	604.7	1
179	MEJIA, J	SPORTSMAN	DUST	591.2	1
180	KARP, B	SPORTSMAN	MRCS	580.9	1
181	WOLCOTT, C	SPORTSMAN	SWSA	501.6	1
182	WILSON, D	SPORTSMAN	EDSF	493.1	1
183	RODGERS, J	EXPERT	PSS	474.9	1
184	STEPANEK, D	SPORTSMAN	TPG	470.6	1
185	FRASER, R	SPORTSMAN	TPG	434.4	1
186	AVESON, D	EXPERT	SWSA	402.2	2
187	QUAYLE, J	SPORTSMAN	DUST	379.5	1
188	SCHEER, P	SPORTSMAN	HSS	359.3	1
189	ADDIS, S	EXPERT	EDSF	316.0	1
190	MORTON, J	SPORTSMAN	MRCS	243.3	1
191	POWELL, E	SPORTSMAN	DUST	194.5	1
192	OLSEN, R	EXPERT	SWSA	141.7	1
193	FOSTER, W	SPORTSMAN	MRCS	0.0	1
193	OMSOM, A	SPORTSMAN	DUST	0.0	1
193	MERRIFIELD, H	SPORTSMAN	TPG	0.0	1
193	SANDERS, A	SPORTSMAN	HSS	0.0	0