December 1994

TOSS - UP

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NEWSLETTER

EDITOR / PUBLISHER: Bob Swet, 2600 E. Ponderosa Drive #15, Camarillo, CA 93010 -4737, (805) 388 - 9619

UPCOMING EVENTS

MONTHLY MEETING: Wednesday, December 21st, 7:30 PM, Cameron Center, Thousand Oaks, CA
Topics: 1) Nominations / Elections of new club officers.

MONTHLY CONTEST: January 8th, 9:00 AM, Redwood School, Thousand Oaks, CA
CONTEST DIRECTOR: To be selected.

NOVEMBER MEETING NOTES:

OLD BUSINESS

1) Larry Jimenez has still not found a free checking account for the club. He will continue looking.

NEW BUSINESS

1) We were looking for volunteers to help with the Delta Cub Workshop to be held at Paramount Ranch. More to follow in January's newsletter concerning the results.

2) As reminded by Carles Babcock, the new retriever purchase was initially recomended by and procured by Myles Moran. Many thanks Myles. It's a winner.

3) A vote of approval for an increase to the club dues to cover additional expenses to be incurred next year and to increase our year end assets was held. Effective on January 1, 1995 the club annual dues will be: Family = $27, Adult = $22, Half Year Adult = $11. No change was made to Juniors. All members paying their 1995 dues prior to January 1 may do so at the 1994 rates.

4) Election of new Club Officers will take place during the December meeting. We are looking for a few good volunteers to fill any of the positions. You need not be present to be nominated or elected. But you must be present to vote or decline being nominated.

RAFFLE WINNERS

The big raffle prize for month was a ....well, I forget what it was and who won it. Two rolls of Monokote covering donated by Marty's were all given away. As a reminder, we are always looking new participants.

TREASURER'S REPORT

According to Larry, we have $440 in our bank account with approximately $210 in liabilities.

DECEMBER MONTHLY CONTEST

A 20 minute add-em up, three round, 8 and one half minute maximum per round format was selected by our 1994 SC^2 Overall Winner and December Monthly Contest Dirctor Mike Reagan. Landings were in a 25 foot circle using a 100 point tape. Your landing score was one tenth of the value shown on the tape.

For the first round, thermals seemed to be a little skimpy. But during the following rounds, nearly everyone scored at least one maximum. The most impressive plane during these light conditions would be Myles' new Prism. It could hang up there as if the wings were filled with helium.

Our expert pilots in Open and 2 Meter classes learned that two seconds and their landing scores could make a big difference in where you finished. To the rest of us, it was an excellent lesson in humbleness.

TOSS WELCOMES OUR NEWEST MEMBER

Christopher Fenny
of Camarillo

MANY THANKS

We owe many thanks to all those leaders of OUR club who faithfully served for YOUR benefit during this past year. Our hats are off (except when we fly) to **EDGAR WEISMAN** who has served as **President** and **Field Manager**. He is the person who quarterly arranges for the meeting room. For each monthly contest we count on his arrival with batteries, winches, retrievers and all the associated paraphernalia. **Mike Reagan** has faithfully served as **Vice-President**, our SC^2 representative and now famous manufacturer of SC^2 sailplane trophies. **Larry Jimenez** who kept our financial records, purchased our monthly contest trophies and with the assistance of club secretary, **Dane Vannett**, have permitted us to hold monthly raffles at the club meetings. And then there is yours truly, **Bob Swet**, the TOSS-UP newsletter editor who slaves each month to bring you articles of interest.

There are many other members who help routinely. Like **Art McNamee** who brings the second set of equipment each month. And **Don Northern**, with his personal back-up equipment. **Mike Stern** who faithfully helps training our beginner pilots. **Jonathan Spoer**, maker of trophies and key chains. Let us not forget such dedicate people like **Charles Babcock**, our tireless grounds keeper and support chairman. There are other contributors not mentioned in this statement of appreciation deserving recognition too. Regrettably, I can not write about them all.

These [illegible]he people who make your club what it is. The[illegible]e backbone and the heart. Without their dedi[illegible]on, our club would be hardly more than a collection of R/C sailplane flyers. We thank them and we should our appreciation through our participation in all club events.

For Sale

SAILPLANES for Sale:

Contact Bill Council (805) 499-6561 if you are interested in the sail planes listed below.

SUPER DRAGON FLY Slope Plane. New, just built. Just add radio. 70" wing span with Eppler 374 airfoil. Weighs 42 ounces..... $75

DOVE 2 Meter kit by Northeast Sailplane. For Slope or thermal. 23 ounces. $80

SAILPLANE for Sale:

Contact Ed Oldenburg at (805) 499-6354 if you are interested in the sailplane listed below.

PIXIE by Dodgson $200

FOCUS ON SAFETY

by Steve Fink
from SULA "NEWS" 3/92

Some might argue that the weariest muscles are located between the ears. However the very strongest muscle group in one's body is the jaws (there might be an argument there, too). Next strongest are the complex muscle groups in your legs. And they're there for a reason: TO SAVE YOUR BACK.

As soaring pilots we have been saddle with an equipment system unlike any other in R/C modeling: winches, retrievers and batteries. Heavy stuff. Transfer this stuff from your trunk to the ground and back again in one day and you've gotten your exercise for the week. Then take it home, transfer to your garage floor, and you're ready for a hot bath and the heating pad.

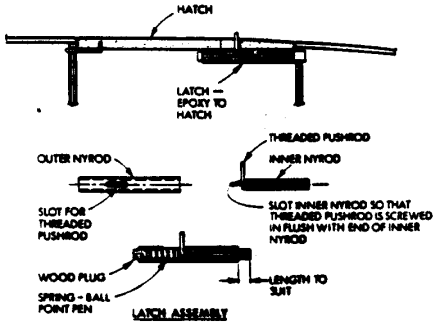
Most of us have had that excruciating lower back pain at some point. It doesn't have to happen if a little caution and care are taken. Instead of bending at the waist to set down a battery, **SQUAT AT THE KNEES** and lower the weight into place. It might look a little odd but who cares - its nearly impossible to stand and look at your thermalling sailplane if your lower back is complaining, which is the point of all the equipment. After all, remember that other worn-out cliché: BEND AT YOUR KNEES, SAVE YOUR BACK.

From SULA "NEWS" 4/91

Ever had the need for a simple latch to hold down a canopy or hatch cover? Mark Chaffin, Jonesboro, Arkansas, has designed a simple but effective latch. The best part of all is that it can be made with material you, the modeler, generally have on hand. It is made with the inner and outer sections of NyRod, a small spring, a short piece of threaded wire pushrod, and a wooden plug. See Sketch.

To Assemble:

1. **Slot outer NyRod for threaded pushrod.**
2. **Insert right angle piece of threaded wire pushrod into slot. Slide inner piece of NyRod in place and screw into threaded pushrod. Assembly should slide back and forth freely.**
3. **A small spring is inserted in the opposite end and held in place with a wooden plug. The plug is held in place with CA glue.**
4. **Epoxy the assembly in place where desired.**



LATCH ASSEMBLY

NEW FLYER CHECKLIST

TASKS	CHECK	DATE

1. Overall check of the aircraft construction, balance, alignment, structural integrity, warps, wash-in, wash-out, wing incident.

2. Radio Installation:
   a. Servo pushrod connections
   b. Receiver secureness and protection
   c. Battery placement and protection
   d. Servo secureness

3. Controls:
   a. Freedom of movement on the hinge
   b. Control horn freedom, and connections
   c. Adequate control movement: Rudder _____
      Elevator_____
      Other_____
   d. Pushrod/Nyrod integrity, and flexibility

4. Radio Check:
   a. RADIO FREQUENCY PIN IN YOUR POSSESSION ?? !!
   b. When was the battery charged? For how long?
      Receiver: Transmitter:
   c. Turn on the Transmitter, then the Receiver!
      Check for proper control response in relation to control stick movement: Right Stick
      Stick - Left = Rudder - Left
      Stick - Back = Elevator - Up
      Left Stick - check as needed for options used
   d. Follow the radio manufactures recommended range check with/without the antenna, for proper radio response. IF IT DOESN'T ACT RIGHT, DON,T FLY IT!!!! HAVE ONE OF THE CLUB MEMBERS CHECK IT OUT!!!!

5. If the aircraft and the radio check O.K. to this point again - check the balance. Now it will be time to HAND LAUNCH the aircraft to check the flying trim. Make the necessary trim and control adjustments, until you get a nice smooth straight ahead flat glide, without having to make any control inputs.

6. Check the integrity of the Tow Hook. The aircraft should balance with the bottom of the wing level, when hung upside down by the tow hook. If it doesn't, make the necessary changes so that it does. At this point you are ready to have the aircraft launched, either by a high start or winch. Have you ever launched an aircraft before? If not, GET HELP.

First of a series on new plane check-lists and other related topics.

From Sula "NEWS" 4/91

LONGITUDINAL (PITCH) TRIM

by Ben Clerx

Talk about how to trim a sailplane and you'll wind up with numerous articles (like this one), hours of conversation (or debate) and perhaps a few really good ideas. so many good articles have been written about how to trim a plane that I won't go into too much detail here, except to clear up a few myths and misunderstandings (if you find a good article, share it with the new pilots on the field and clue them in on all this talk about *aft CG* and *dive tests*).

There are two things you can do to change the pitch trim of your plane: move the center of gravity (CG) by changing nose weight and varying the decalage angle (angle between the wing and horizontal tail). Both must be considered when trimming (which the *dive test* does). Know what you are trimming for. Are you a novice trimming for more max stability or an expert going after performance? Also, know that trimming is not a do it once and forget it process. It takes me months to fine tune a plane -- one change will usually affect something else (another reason to stick to one plane for competition flying).

Think of the decalage angle or angle between the wing and the horizontal stab as longitudinal dihedral (to borrow a phrase from Martin Simons). More dihedral means more stability along with more nose weight (forward CG) and stabilizer drag. Reduce decalage angles to increase performance. Center of gravity will move aft, stab drag is reduced and the plane is more responsive to control inputs, thermals and wind gusts (i.e. more difficult to fly for a novice but just fine for a more experienced pilot).

The dive test will give you an idea of how much decalage you have by letting you see the plane's response to increasing airspeeds. dive the plane to 45° nose down from sufficient altitude, release the transmitter sticks and see what the plane does. If it recovers and pulls out of the dive rapidly by itself the plane has a high degree of pitch stability -- the horizontal stabilizer is set at a relatively large nose up angle to the wing and, thus, a forward CG to counteract the large downforce exerted by the stab. Perfect for the novice. If he gets into a dive the increasing airspeed forces the tail down and the nose up. If he gets the nose up by mistake, decreasing airspeed will allow the tail to come up and the nose down. An expert flyer will want a trim setting that produces a gradual dive recovery or even no recovery. If the dive angle increases by itself (tuck under), you've gone too far.

Changing the decalage angle is easy for full flying stabilators -- just move your trim lever, servo arm clevis, or reset the neutral position for computer radios such as the Airtronics Vision/Infinity. with a fixed stabilizer and movable elevator, try shims under the leading edge or trailing edge of the wing or stabilizer. As a last resort, just move the neutral position of the movable elevator with the transmitter trim lever, or turns of the elevator pushrod clevis. The next time you see the tail of your plane dragging, don't assume it is tail heavy. There's more to trimming than just adding weight to the nose.

BASIC TECH TALK, Part III

by George Siposs

Don't be a drag, man...

Gravity and lift provide a forward motive force for the glider. This force is opposed by drag forces: turbulence, skin friction, and the forces necessary to separate the molecules as the model bores a hole into the air. This force can be minimized by making the fuselage cross section as small as possible and making the plane as small as practicable. The shape of the fuselage is streamlined to minimize drag.

Skin friction can be minimized by using smooth materials to cover the glider, e.g. Monokote. Even doped fabric is not as smooth as the drum-tight Mylar. Turbulence can be caused by many things that stick out in the airflow: ripples in the covering, torn covering, grass caught in the skid from the previous landing, antenna wire that dangles in the air or trails behind the model, control horns, protruding switch levers, ill-fitting canopies, even twisted wing-holding rubber bands.

A lot of turbulence is caused at the point where the wing joins the fuselage. Mid-winged models should have a smoothly radiused transition. All airgaps between the wing and fuselage should be taped. Gaps between the stabilizer and elevator (also the rudder and fin) should be covered as much as possible.

Think of your plane as a fish swimming in the air. Any turbulence causes flutters which announces its presence. The plane should slip through the air like a fish. The cleaner your plane is, the faster it will fly. Fast flight generates high lift and good control response. If the plane flies fast it will stay up longer, even in marginal air. The ultimate in slow flight is dead stop and at that point no lift is generated: your glider is not an airplane, it is a collection of balsa and plastic.

Another way to generate more forward force is to add weight to the plane. Weight must be added exactly under the Center if Gravity or balance point so that balance of the plane will not be destroyed. Perhaps you remember your childhood days with Pinewood Derby racers. The heaviest model usually ran fastest! Many airplanes fly better when ballasted to be heavy. The idea is to build the model strong but light and then add weight to it, especially for windy day flying.

Another thing you should keep in mind is this: any weight you add in the tail of the model will have to counterbalanced by about three time that weight in the nose. Thus, the plane's weight is increased four times for every unit of weight added in the tail.

One final thought: the higher the angle of incidence, the more forward the CG will be. This makes the plane better balanced as it will be aerodynamically tighter. The further backwards the CG is, the twitchier the model is to fly. (Freeflight models are balanced far back in the wing, but the purpose there is to make the plane turn easily and automatically into thermals.) You will find that a forward weight bias increases the weight of the model but will require less corrective action during normal flight.

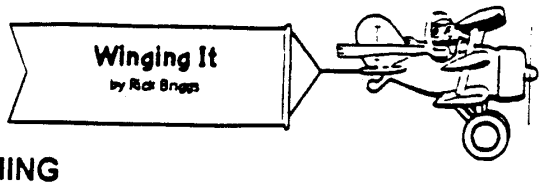
From CVRC "THE ZOOMIE" 11/91

1994 TOSS MONTHLY CONTEST FINAL RESULTS

12/11/94		OPEN CLASS STANDINGS								HIGH SCORE =				2997.0
pos	NAME	CLUB	TOTAL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	DON NORTHERN	TOSS	9924	703	914	994	840	973	961	0	857	893	971	824	994
2	EDGAR WEISMAN	TOSS	9132	702	611	982	1000	825	292	0	992	952	960	818	998
3	MIKE REAGAN	TOSS	8984	1000	0	998	0	1000	989	0	1000	997	1000	1000	1000
4	BOB SWET	TOSS	8259	901	602	978	728	0	785	0	889	697	915	846	918
5	PAUL TRIST	TOSS	6513	988	1000	0	0	0	1000	0	0	902	970	880	773
6	ART McNAMEE	TOSS	6390	716	0	0	902	968	967	0	844	997	0	0	996
7	DANE VANNETT	TOSS	5338	610	801	955	980	996	0	0	0	0	0	0	996
8	DON McNAMEE	TOSS	5072	638	0	568	0	977	904	0	996	989	0	0	0
9	B.J. WEISMAN	TOSS	4608	739	0	1000	0	1000	0	0	0	1000	0	869	0
10	BILL KARP	TOSS	4192	653	0	919	878	833	0	0	0	0	0	909	0
11	LARRY JIMENEZ	TOSS	3834	632	0	948	0	725	217	0	528	0	784	0	0
12	BEN MATSUMOTO	PSS	3420	464	969	0	0	0	0	0	0	990	0	0	997
13	MYLES MORAN	TOSS	2936	0	0	0	0	0	0	0	350	982	606	0	998
14	GREG JOHNS	PSS	1863	0	866	0	0	0	0	0	0	997	0	0	0
15	DAVID BUTKOVICH	TOSS	1830	0	0	0	0	0	0	0	0	957	873	0	0
16	MIKE LEAL	TOSS	1819	0	0	0	919	900	0	0	0	0	0	0	0
17	HANK SCHORZ	SCSA	1806	0	0	0	0	0	0	0	839	967	0	0	0
18	MIKE RATNER	PSS	1774	896	878	0	0	0	0	0	0	0	0	0	0
19	LOWELL NORENBERG	SFVS	1760	0	0	0	0	0	0	0	764	0	0	996	0
20	KARLTON SPINDLE	PSS	1573	0	0	0	0	0	0	0	0	0	785	788	0
21	GREG NIKOLA	SCSA	1568	0	0	0	0	0	0	0	633	935	0	0	0
22	TONI STARK	PSS	957	0	0	0	0	0	0	0	0	957	0	0	0
23	J. RODGERS	PSS	799	799	0	0	0	0	0	0	0	0	0	0	0
24	FRANK CHASTLER	AMTS	746	0	0	0	0	0	0	0	0	0	0	746	0
25	CHASE KEIGHTLEY	TOSS	736	0	0	0	0	0	0	0	0	736	0	0	0
26	ROBIN RIGGS	PSS	723	0	0	0	0	0	0	0	0	0	723	0	0
27	MICHAEL STERN	TOSS	659	0	0	0	0	0	0	0	0	0	659	0	0
28	ED DEVLIN	PSS	656	656	0	0	0	0	0	0	0	0	0	0	0
29	W. HIGHFIELD	SCSS	630	0	0	0	0	0	0	0	0	0	0	0	630
30	FRANK LEPPLA	PSS	615	615	0	0	0	0	0	0	0	0	0	0	0
31	PHILIP HALLFORD	PSS	610	0	610	0	0	0	0	0	0	0	0	0	0

12/11/94		2 METER CLASS STANDINGS								HIGH SCORE =				2985.6
pos	NAME	CLUB	TOTAL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	EDGAR WEISMAN	TOSS	9068	683	0	963	1000	907	897	0	1000	994	774	862	988
2	DON McNAMEE	TOSS	6948	1000	0	976	0	980	991	0	980	998	0	791	232
3	ART McNAMEE	TOSS	6756	0	0	0	911	1000	0	0	887	1000	958	1000	1000
4	B.J. WEISMAN	TOSS	4741	870	0	1000	0	985	0	0	0	971	0	915	0
5	MIKE REAGAN	TOSS	3705	722	0	987	0	996	1000	0	0	0	0	0	0
6	LARRY JIMENEZ	TOSS	2172	0	889	0	682	0	0	0	0	0	0	0	601
7	DAVID BUTKOVICH	TOSS	1986	0	0	0	0	0	0	0	0	986	1000	0	0
8	MIKE STERN	TOSS	1211	0	0	0	0	0	0	0	0	0	0	721	490
9	JONATHAN SPOER	TOSS	1030	0	0	813	0	0	0	0	0	217	0	0	0
10	PHILIP HALLFORD	PSS	1000	0	1000	0	0	0	0	0	0	0	0	0	0
11	TONI STARK	PSS	986	0	0	0	0	0	0	0	0	986	0	0	0
12	GREG JOHNS	PSS	985	0	985	0	0	0	0	0	0	0	0	0	0
13	KARLTON SPINDLE	PSS	902	0	0	0	0	0	0	0	0	0	0	902	0
14	ED DEVLIN	PSS	893	893	0	0	0	0	0	0	0	0	0	0	0
15	KARTON SPINDLE	PSS	831	0	0	0	0	0	0	0	0	0	831	0	0
16	PAUL TRIST	TOSS	547	547	0	0	0	0	0	0	0	0	0	0	0

12/11/94		SPORT CLASS STANDINGS								HIGH SCORE =				2991.6
pos	NAME	CLUB	TOTAL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	DON NORTHERN	TOSS	10771	997	991	1000	938	1000	883	0	1000	1000	982	1000	1000
2	LARRY JIMENEZ	TOSS	8593	910	1000	946	996	655	1000	0	779	912	714	0	681
3	BOB SWET	TOSS	7143	648	687	987	1000	0	851	0	670	945	0	566	789
4	PAUL TRIST	TOSS	4457	1000	723	0	0	0	898	0	0	982	854	0	0
5	MIKE REAGAN	TOSS	1985	985	0	0	0	0	0	0	0	0	1000	0	0
6	SONNY KIM	TOSS	1619	648	283	0	0	0	688	0	0	0	0	0	0
7	DEVIN HOLZER	TOSS	1388	0	0	0	0	0	0	0	0	876	0	0	512
8	WYATT SADLER	AV	1052	0	0	0	0	0	0	0	328	0	724	0	0
9	JONATHAN SPOER	TOSS	990	0	0	990	0	0	0	0	0	0	0	0	0
10	MIKE LEAL	TOSS	985	0	0	0	0	985	0	0	0	0	0	0	0
11	BOB GRAY	TOSS	938	0	0	0	0	0	0	0	0	938	0	0	0
12	BILL KARP	TOSS	866	0	0	0	0	866	0	0	0	0	0	0	0
13	KARLTON SPINDLE	PSS	827	0	0	0	0	0	0	0	0	827	0	0	0
14	ED SKOW	TOSS	706	0	0	0	0	0	0	0	0	0	0	0	706
15	CHASE KEIGHTLEY	TOSS	685	0	0	0	0	0	0	0	0	0	685	0	0
16	FRANK CHASTLER	AMTS	673	0	0	0	0	0	0	0	0	0	0	673	0



OBECHE WING FINISHING

First, I would like to say thank you to all the H.S.S. club members for all your encouragement and help with building my new "MACO" V tail. It's been a long time since I have had so much fun with model building, especially with the new composites and current building methods.

A few of you have asked how I finished my Obeche Wings. At the request of Pete Young, I will attempt to explain the process. I basically followed Ben Clerx' instructions in the kit, for finishing the wings, with a few modifications.

1. After prepping the skins for laying up or vacuum bagging, I evenly brushed 1 liberal coat of "FLECTO" diamond finish varathane on the inside of the skins, (I used a throw away 2" foam brush) and let dry over night. The next evening, I lightly sanded with 320 grit no-fill just to knock down the fuzz, then brushed on a 2nd and final coat and let dry or 48 hours. This will stop bleeding of the epoxy through the Obeche, when bagging the wings.

2. When you are done bagging and get the wing ready for finishing, lightly sand the surface with 320 no-fill sand paper . Remember, **Obeche is thin** so be careful not to sand too much, just enough to get the surface smooth to the touch.

3. This next step is where the pores of the skin are filled. I work with West System 105 Epoxy Resin and 206 Hardener @ 5:1 mix. Purchase a plastic 4" squeegee, you can obtain a pack of mixed sizes from Home Depot, or an auto paint store. I mix a slow cure batch of West Systems using the premeasured pumps which batch about 2 oz. This will cover one side of both wings. When coating, place the wings on newspaper and proceed to spread the epoxy by pouring small amounts and then spread evenly with the squeegee. You will find that a little will go a long way. Take your time and keep the epoxy as thin as possible as you work it into the pores. When you have done both wings, use paper towels to remove any excess epoxy. When you are done, the surface should have an even sheen to it. Let dry over night.

4. Repeat the process until you have applied 2 coats to each side of the wings. Sand between coats with 320 no-fill paper, being careful not to sand through the epoxy (this will produce a blotchy effect). After you have applied 2 coats and sanded the final coat again with 320 no-fill, then sand the surface with #0000 fine steel wool, sanding in a length wise direction. This will give the surface an even finish.

5. At this point I use "Flecto" varathane, diamond finish satin (spray can) and apply 2 to 3 light coats using the fine steel wool between coats.(Hint: always use a painters tack rag before you spray between coats, this will give you a great dust free looking finish). The final coat may be left alone if you want more gloss to the finish. If you want a flat very smooth finish, I would suggest using the steel wool and some light paste wax for the final finishing. If you are going to use any paint accent's, hold on the wax until you complete the painting.

All the above materials can be purchased at Home Depot. The West System Epoxy can be purchased at West Marine products stores.

I you have any questions feel free to give me call Hm 310 433 6327.

FROM CASL "WING TIPS"
11/94

TOSS - UP NEWSLETTER ARTICLES

MONTH	ARTICLES	HINTS / Other
December	Dear Don (Letter on "Sport Plane" Class)	Tips for using OBECHE
	New Business: "Low Tech Class" from SWASA	Low Tech Stuff
	Dave Thornburg's Rules (for flying)	
	1994	
January	94141 (Servo) Gear Replacement	
	Dave Thornburg's Rules (for flying)	
February	Proposed TOSS Field Rules	TOSS Roster Sorted Geographically
	Contest Program (from RMSA)	1994 Contest Schedule (12 Month Calendar)
	I'm a New Member (form TPG)	
March	What's Happening at AIRTRONICS	Rubber Ducky Antenna's
	TOSS Field Rules	Smooth Out That Epoxy
	Winch Batteries by Don Northern	Joiner Knot
		Patching Glass and Epoxy Fuses
April	The Fledling - Covering and Final Assembly	More on the Rubber Ducky Antenna usage
	Thoughts on the Monthly Club Contests by Jonathan Spoer	3D Art "Why should we worry?"
	Launching a Model Glider Using An Electric Winch	1994 Thermal and Slope Contest Schedule
May	How to Kill a Club (in 12 easy steps)	Rumor Has It (new Airtronics Radio)
	Composite Molding Techniques for Sailplane Fuselages and Control Surfaces	Viewing 3-D Art
	Glue	
	TOSS Pro-Am Contest	
	AIRTRONICS (letter on changes, April 1994)	
June	10 Commandments for Contest Directors	Rubber Band Holder
	The Fledgling - Frequency Conflicts, Flying Safely and	Custom Sanding Blocks
	April's SC2 Contest Result (from TPG)	Get Organized (Knife and razor blade holder)
		Redwood School Permit
		1994 TOSS Roster
July	How to Lauch by Handtow - F3J Style	Removable Wing Servo
	The Fledgling - Building Tips for the Beginner	Transferring photocopied plans to Balsa
	Soaring Corner - Lauching, Zooms, and Sink	
August	Model Sailplane Visibility Against Natural Backgrounds	
	Beginner's Corner	
	Radios For The Beginner	
	Maximum Lift to Drag vs. Minimum Sink For The Everyday Pilot	
	The Fledgling - The First Thermal Contest	
	The Fledgling - Contest Timing	
September	Thermal Hunting - Parts 3 and 4 by Ben Clerx	R/C Aircraft Frequencies and Adjacent Sources
	Soaring: Improving your Contest Performance	Servo Comparison Chart
	The Fledgling - Contest Strategies	
October	The Fledgling - Repairs	
	Soaring Corner - Conversation with Airtronics	
	Rubber Ducky Test Results by G. Steiner	
	Secrets of Speed building	
	Re-Covering a Model	
November	What's New in Sailplanes	Selig's S7012 Airfoil Coordinates
	The Western States Triad Is On	Servo Wiring
	Soaring Corner - Aileron Differential	AeroData Computer Bulletin Board
	A Valuable Lesson	Nose Job
	Launching a Model Glider Using an Electric Winch - Part 1	Single Flap Servo Linkage