TOSS-UP

NEWSLETTER

THOUSAND OAKS SOARING SOCIETY A.M.A. CHARTERED CLUB #1493

MAY 1995

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NEXT CLUB CONTEST:

DATE:	June 11th., 1995
PLACE:	Redwood School
TIME:	9:00 a.m.
C/D	Don McNamee

NEXT CLUB MEETNG:

DATE:	May 31st.,1995
DAY:	Wednesday
PLACE:	Cameron Center
TIME:	7:30p.m.

APRIL MEETING NOTES:

OLD BUSINESS:

1) The TOSS Monthly Contest has been canceled after inclimate weather has caused postponement twice. There will be no make-up for this contest.

NEW BUSINESS:

1) We would like to get as many members attending the next SCSC contest as possible.

2) Plans for Mike Reagan's catapult launched glider are now available. If you are interested, contact:
Mike at (805) 529-5513

TREASURER'S REPORT:

TOSS has $ to its name along with approximately $ plus in debts.

RAFFLE REPORT:

Sorry, but I lost my notes on the winners. Will update you all next month when Charles Babcock returns.

-- SORRY --

We appologize to all members for the format of this month's newsletter. My computer has taken a severe dork at the last moment and is no longer functional. This has resulted in the loss of all originals. With the help of Bob Swet, we managed to do the best we could during our limited time available. Needless to say, TOSS is looking for a newsletter immediately, and I would certainly appreciate any volunteers.

Larry Jimenez

For Sale

SYNERGY 91, ready to fly, new with Airtonics servos. $550.00

2 METER BANSHEE, built and in like new condition with Aitronic servos. $350.00

2 METER SHADOW, built , like new condition with Airtronic Servos. $325.00

CALL - Don McNamee (805) 531-9442

Sig RISER 100 with Futaba 4 channel radio, good condition, good first sailplane. $200.00 CALL - Larry Jimenez (805) 625-1937

WANTED - Hot Wheels die-cast cars.
CALL - Larry Jimenez (805) 625-1937

TOSS MONTHLY CONTEST RESULTS

5/14/95	OPEN CLASS STANDINGS					HIGH SCORE = 2451.6		
pos	**NAME**	**CLUB**	**TOTAL**	**JAN**	**FEB**	**MAR**	**APR**	**MAY**
1	ART McNAMEE	TOSS	3847	897	991	**1000**	0	959
2	DON McNAMEE	TOSS	3717	953	993	817	0	954
3	BOB SWET	TOSS	3269	790	665	844	0	970
4	MIKE REAGAN	TOSS	2966	972	999	0	0	995
5	HANK SCHORZ	SCSA	2909	996	953	960	0	0
6	DEVIN HOLZER	TOSS	2776	975	992	809	0	0
7	GREG NIKOLA	SCSA	2776	**1000**	893	883	0	0
8	B.J. WEISMAN	TOSS	2653	653	**1000**	0	0	**1000**
9	MYLES MORAN	TOSS	2452	875	996	581	0	0
10	LOWELL NORENBERG	SCSA	1914	955	959	0	0	0
11	EDGAR WEISMAN	TOSS	1831	0	996	0	0	835
12	DON NORTHERN	TOSS	1761	865	0	896	0	0
13	ED OLDENBERG	TOSS	1688	0	798	0	0	890
14	PAUL TRIST	TOSS	1000	0	1000	0	0	0
15	DANE VANNETT	TOSS	836	836	0	0	0	0

5/14/95	2 METER CLASS STANDINGS					HIGH SCORE = 2422.3		
pos	**NAME**	**CLUB**	**TOTAL**	**JAN**	**FEB**	**MAR**	**APR**	**MAY**
1	DON McNAMEE	TOSS	2948	0	948	**1000**	0	**1000**
2	EDGAR WEISMAN	TOSS	2676	**1000**	750	0	0	926
3	ART McNAMEE	TOSS	1971	0	**1000**	971	0	0
4	JONATHAN SPOER	TOSS	882	882	0	0	0	0
5	B.J. WEISMAN	TOSS	718	718	0	0	0	0

5/14/95	SPORT CLASS STANDINGS					HIGH SCORE = 2435.4		
pos	**NAME**	**CLUB**	**TOTAL**	**JAN**	**FEB**	**MAR**	**APR**	**MAY**
1	DON NORTHERN	TOSS	4000	**1000**	**1000**	**1000**	0	**1000**
2	BOB SWET	TOSS	3708	847	994	923	0	944
3	DEVIN HOLZER	TOSS	1272	0	985	0	0	287
4	MIKE PUCKETT	TOSS	968	0	968	0	0	0
5	ED SKOW	TOSS	811	0	811	0	0	0

Glue

by Leigh Jezorik

West Jersey Radio Flyers

I was working on a model the other day and started to think about all of the different types of adhesives we now use and what it was like before the advent of the cyanoacrylate glues. Before I went into business for myself, I was a chemist, specifically a polymer chemist, for National Starch and Chemical.

During those years, prior to 1976, National was one of the foremost producers of polymers based on vinyl acetate. As it happens, the white and yellow glues we use are based on polyvinyl acetate emulsions. I thought I'd tell you a little about the chemistry of these adhesives for your newsletter.

A polymer is a molecule made up of many individual units. The base unit is called a monomer. Monomers by definition are reactive molecules that have the ability to react with themselves or other types of monomers to form longer chains (polymers). These polymer chains can be prepared in an aqueous medium (hence the name water based) or in a solvent. Polymer adhesives made in a solvent are similar to Ambroid or Duco. While these two familiar modeling adhesives are in fact polymers, they were not polymerized in a solvent solution. They were prepared in a different way and then dissolved in a solvent. However, many familiar adhesives, such as contact adhesives, are true solution polymers.

Water based polymers differ from their solvent based counterparts in that they are not dissolved in the continuous medium (water) but rather suspended in the water. The polymer chains grow to a significant size as the reaction proceeds. During the course of the polymerization, materials are added to the reaction medium to coat the polymer particles to keep them from sticking to each other and keep them from settling out. These materials are called emulsifying agents and/or surfactants. The major emulsifying agent added to polyvinyl acetate emulsions is polyvinyl alcohol. Polyvinyl alcohol is itself a polymer which is completely water soluble. One other use for polyvinyl alcohol in our hobby is that of a release agent for fiberglass molding. A solution of polyvinyl alcohol painted on a master plug or mold leaves a smooth, transparent film with very low adhesion to fiberglass. When additional resin and cloth is applied to the mold and the resin hardens, a sharp rap or twist breaks the polyvinyl alcohol film free and the finished product can be stripped from the mold.

A finished, well prepared polyvinyl acetate emulsion consists of little (about 50-80 microns) spheres of polymer protected by a surrounding envelope of polyvinyl alcohol.

So now you ask, what happens when I try to glue something together and why should it make things stick together? Well, the first thing to happen when you squeeze out some glue, is that the water starts to evaporate. As the water evaporates, the little polymer spheres get closer and closer together. Eventually they begin to come into contact. When this happens they start to fuse together. When all of the water is gone, the particles are totally coalesced and a film is formed. Once film formation occurs, the polymer film is no longer water soluble. This is essentially the mechanism for film formation of all water based polymers including such things as latex house paints, tile adhesives, etc. This same mechanism accounts for some undesirable side effects. When a water based polymer emulsion freezes, the water is excluded from the polymer and the particles stick together never to be useful again. This is why a can of latex paint looks like a can of cottage cheese after it freezes.

Polyvinyl acetate based glues are good at sticking things like wood together primarily because the wood, chemically, looks a lot like polyvinyl acetate. We saw in the film formation and freezing example that when the water is gone, the polymer molecules coalesce and stick together. These are active sites on wood surfaces that attract and hold the polymer film. Since in the act of gluing we essentially make a wood-glue-wood sandwich, everything sticks together. The bond is quite strong. Stronger in fact than the bond holding the wood fibers together.

Glue joints are typically measured on a testing machine called an Inston Tester. This device has two sets of opposed jaws that can be moved apart at a controlled weight. Each part of a glued up sample is gripped in the jaws and the machine starts to move the jaws apart. The rate of movement and the force applied are recorded. From this data, both shear and tensile strengths of the joints can be generated. In a properly glued joint, wood fiber joints will fail before the glue to wood joint fails.

Have you ever noticed that white glue doesn't sand well? This is because the polyvinyl acetate is soft and gummy. The amount of softness can be controlled by adding other types of monomers during the polymerization. Monomers like butyl or octyl acrylate can soften the film to the extent that they remain sticky all of the time. This is in fact what was done to create Southern Sourgum which is a water based contact adhesive. Adding monomers to make the polyvinyl acetate harder and therefore more sandable is possible but reduces the bonding efficiency. A little talcum powder added to your white glue will make it sand well without sacrificing bond strength. A cheaper ingredient is dextrin. Dextrin is a yellowish powder which is made by heating certain types of starches to high temperatures. The trouble with adding dextrin to white glue is that it turns yellow. Now you have to call it yellow glue. Some people call it Titebond. Since the dextrin causes the glue to thicken somewhat, and since the solids content goes up, Titebond has good bridging and gap filling qualities. And since dextrin is harder than polyvinyl acetate, it sands better too.

National is the supplier of cyanoacrylate glues for Hot Stuff. I worked on these polymers before they were introduced into the hobby market. I may be the first modeler to have glued his fingers together!

Building a Gentle Lady

The Gentle Lady from Bethal By James Martin

Back a few years a long distance phone call from Bethal Alaska. To my surprise it was George Walters whom I had met at the Waipoli Road flying site flying an Oly 650 that was a easily disassembled and put into a small box for the trek from Alaska to Hawaii.

What was this phone call about? "Jim can you build me a super light Gentle Lady". This was a challenge. In a few days the kit was here from Tower Hobbies. The follow narration tells how to build a "George Walters Special", or "The Gentle Lady from Bethal Alaska" who is a thermal catcher.

Carl Golderg certainly did his home work.. A fine design in my book. It is functional, simple and streamlined. The wing mounting on the center line, using rubber bands to the fuselage center line is a fine example of streamlining. Not to be over looked is the arrangement of the vertical stabilizer ahead of horizontal stabilizer. This arrangement has little interference drag. The use of monokote hinges is simple, with on gaps between surfaces and thus, less drag.

Now for the modifications to make a superb Gentle Lady. There is enough balsa in the kit for the modifications. A little more building time may be necessary, 17 to 20 hours should complete the project from kit to fly this air machine.

-First: When building the fuselage move the second and third bulkheads back 3/4 inch. These are the bulkheads that support the wing, and thus the wing will be set back 3/4 inch. (See figure A) Use 1/4" triangle balsa stock glued to both sides of the bulkheads where it attaches to the fuselage side for extra strength. Make the 1/4" triangle stock out of the 1/4" square that came with the kit. Use Gold-N push Rod (flexible type Red) from the servos to control surfaces in place of the 1/4" square balsa push pull rods.

Moving the wing back 3/4" allows for the installation of small radio equipment ahead of the wing makes for a lighter glider for no nose weight may be necessary. You may be able to squeeze in standard size radio equipment. Check it out first.

Secondly: When building the vertical stabilizer add more depth to the bottom piece. (See figure B) Like wise add more width to the center piece of the horizontal stabilizer by adding additional balsa. (See figure C) This additional width gives more strength and more material for covering and also gluing area for 1/4" triangle stock bracing on the underside of the horizontal stabilizer to the fuselage as well as the junction of vertical and horizontal stabilizer on the right side. (See figure D)

Thirdly: When building the wing, use the trailing edge as the reference point and build forward. This way the wing builds faster and part fit better. The next is a painstaking job. Take the excess balsa after the wing ribs are pushed and cut out rip the excess into 3/32 square stock. Now glue four pieces of square stock to the intersection of the front spar goes through each rib at all four corners. For the intersection of the rib and the rear spar, one piece square stock in the front and one piece square stock on the opposite side of the rear at the back. The same can be done where the ribs meet the leading edge. An hour and a half job, but one strong wing that will not flutter at high speeds.

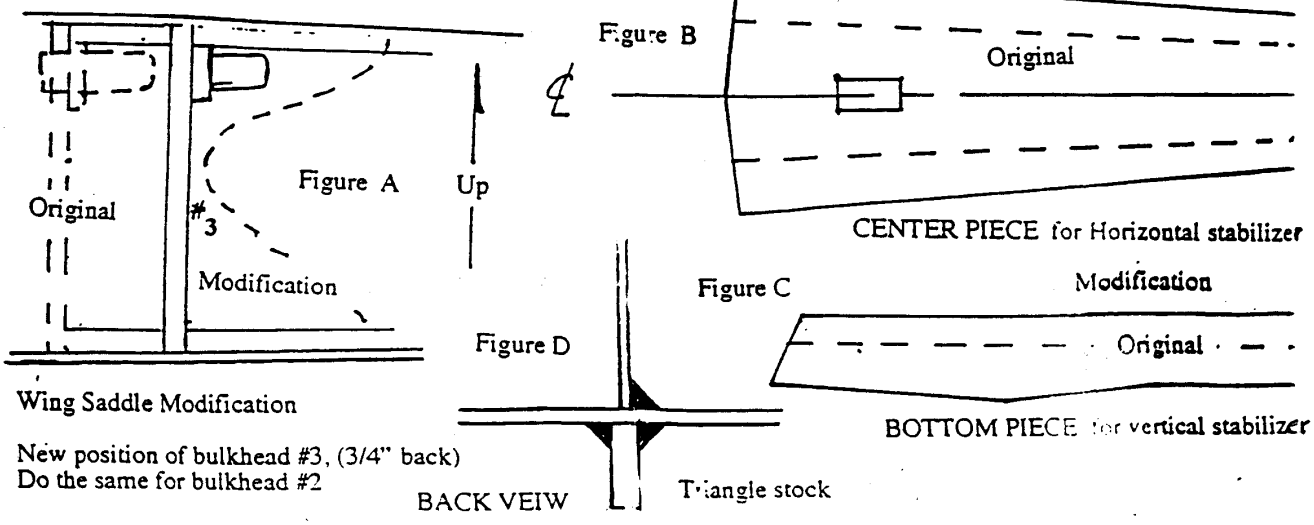
You now have a lighter and stronger glider. And does it fly.

Remember the wing and horizontal stabilizer angles set are 0° and 0°. No decalage.

And, by the way, this "Gentle Lady from Bethel" was inherited and flown by Jim Martin who the got the high annual score for 1994 at the Waipoli Road "Fun Flys". Thanks George!

Modesto R/C Club Newsletter

From the MISO newsletter, Jim Martin, Editor.



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 CASL WINGTIPS 5/95