

# TOSSUP 97

## May Competition Report

This contest was a bit of a phantom because it wasn't included in the published schedule. (The May contest was listed as the SC<sup>2</sup> round to be held on 5/25 but since practically everyone is so used to having a contest on the second Sunday of the month we got a contest "by reflex"!)

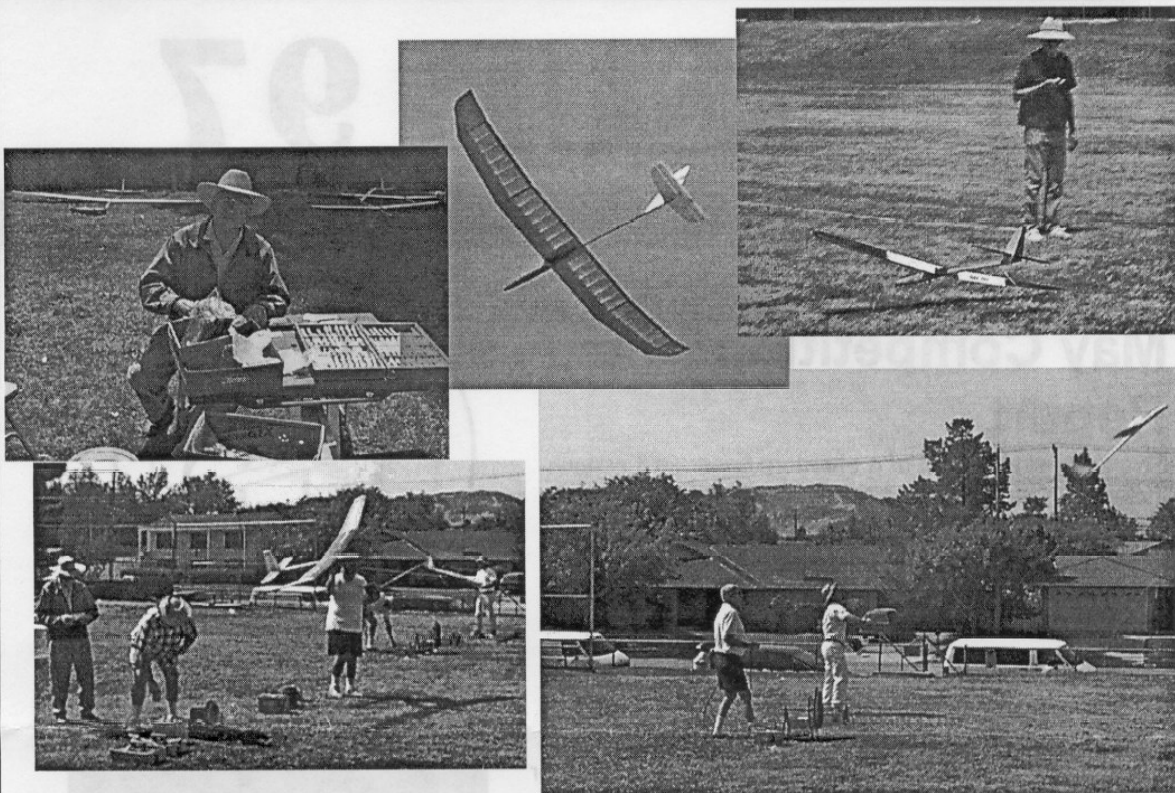
The weather for the contest was typical Spring weather, starting with low clouds and some mist with light winds from the East and clearing to high clouds and a sea breeze during the morning. With this weather lift starts poor and builds as the sky clears. Patches of very strong sink were present while the lift was building. These show up in the results table as some very short flight times.



The tasks for the contest were three 7 minute rounds with landing scored as 100 points on the usual tape.

### May 1997 Monthly Competition Results

Name	Plane	R1			R2			R3			Total	Norm	Year
Mike Reagan	Addiction	7:00	96	996.0	7:00	91	991.0	7:00	72	972.0	2959.0	1000.0	1000.0
Don McNamee	Addiction	6:57	93	986.6	7:00	50	950.0	6:40	65	922.1	2858.7	966.1	966.1
Bob Swet	Condor	7:05	0	889.3	7:01	99	996.9	5:03	6	655.3	2541.4	858.9	858.9
Art McNamee	Addiction	7:01	91	988.9	7:04	78	969.4	3:36	0	462.9	2421.1	818.2	818.2
Larry Jimenez	Paragon	6:55	52	941.3	6:58	54	949.7	2:40	80	422.9	2313.9	782.0	782.0
Edgar Weisman	Saphire	6:59	23	920.9	7:02	98	993.7	3:04	0	394.3	2308.9	780.3	780.3
Don Northern	Paragon	3:20	87	515.6	7:02	94	989.7	3:03	90	482.1	1987.4	671.7	671.7
Gary Filice	Mako	4:41	0	602.1	6:56	0	891.4	0:00	0	0.0	1493.6	504.8	504.8
Don McNamee	Super-V	7:02	93	988.7	7:01	79	976.9	2:58	57	438.4	2404.0	1000.0	812.4
Art McNamee	RG-15	7:00	68	968.0	7:00	86	986.0	2:15	50	339.3	2293.3	953.9	775.0
Larry Jimenez	Paragon	6:58	95	990.7	6:58	68	963.7	5:22	0	690.0	2644.4	1000.0	893.7
Bob Swet	Oly 650	7:07	91	976.0	7:02	72	967.7	3:24	82	519.1	2462.9	931.3	832.3
Don Northern	Paragon	7:03	84	977.6	7:01	60	957.9	2:43	94	443.3	2378.7	899.5	803.9
Martin Usher	GL	3:18	0	424.3	1:06	0	141.4	7:02	10	905.7	1471.4	556.4	497.3



## The TG-3 Foam Trainer

This plane's been attracting a lot of interest since its introduction a few months ago. Its a 2m trainer somewhat based on the Schweizer TG-3 made from Expanded Polypropylene foam. This foam is used in packaging and in products such as boogie boards where the product has to be able to be stressed without the foam deforming. It was first used to make crash-proof slope combat planes. Dave's Aircraft Works used the experience gained from making combat planes to make the TG-3, the first truly crash-proof novice trainer.

Although EPP foam is quite common it hasn't been used in aircraft until recently because it is rather difficult to work with. It cannot be cut easily with a hot wire cutter (it gives off noxious fumes in the process) and it is difficult to find adhesives that will stick to it. The usual way of attaching tape or covering is to first spray the surface with a contact adhesive such as 3M77. The only glues that can be used to stick parts together are massive, solvent based goops such as "Shoo-Goo".

The May edition of "Plane Rap", Harbor Soaring Society's Newsletter, has a long article by their Training Coordinator (Roger Saville) on this plane. His initial reaction to the kit was:-

*"I was amazed when I opened the box. There are only a few parts and pieces, not a stack of balsa. The manual was extremely well thought out. The kit contained all the parts needed except for glue, spray adhesive, filament tape and covering."*

He built the plane in about four evenings of 2 to 3 hours work. He found the manual "the best I've seen" because it was detailed and had numerous building and flying tips. He did get a couple of things wrong with the construction:-

*"First I was too lazy to find my soldering iron to 'cut' the foam, spending at least an extra hour with a saw and knife, making holes for the radio gear and trenches for the control rods. Second, I did not align the stabilizer when goo-ing on the tail, and not having the top of the fuselage level with the top of the stab altered the incidence which caused initial erratic behavior. In addition I was overly generous with the goo and tape since this was to be used for training."*

Neither of these problems were fatal. His finished plane weighed 37 ounces.

He found it to be an extremely agile flier.

*"The maneuverability was first rate. In thermals it will stand on a wing tip and pull tight circles. Loops are easy. It has been flown inverted all around the field. I hand catch it or grab it even when it is going too fast since the nose is soft and the wings are strong. Rolls are not very aerobatic but we have done a few."*

He finally described the plane's durability.

*"On its first day at the HSS flying field I boldly did a mighty hand launch of the TG-3. It ballooned up into the wind to an altitude of about 15 feet, then did the predictable stall and dove straight down into the ground. Many negative thoughts rushed through my mind as I awaited the usual sounds and debris resulting from such a maneuver. To my amazement the TG-3 bounced up about 6 inches from the point of impact. The nose covering was wrinkled and the wing was askew. I adjusted the wing and gave it a level toss, and it flew well. I was shocked and amazed"*

His description was outshone by a recent posting to RCSE by Steve Hendry which I'll quote in full.

*"I spent a great day flying at Southern Cal's #1 site, Harbor Soaring Society. Roger MacGregor brought his 8 year old granddaughter to the field to learn to fly on our TG-3. The TG-3 in our club trainer and has been used by beginners for about 3 months now. She went through 2 battery charges in the course of 3 hours. I lost track of how many times she crashed. The plane was unscathed. If she was flying a stick plane it would have needed hundreds of hours of repair work."*

*"A newbie to our club came to the field today with his freshly built TG-3. He lost orientation at about 150' and dove the plane straight in to our parking lot. It bounced back up 4'. Two minutes later he put the plane on the winch and launched it again."*

*"This plane never ceases to amaze me"*

This type of construction - tape over foam - has been used for many years to build slope planes. Planes built using these methods have been light, fly well and are durable. They are durable even when the foam used was the cheap, large bead polystyrene foam typically found in packaging. This durability came from a combination of the foam (which deformed, absorbing impact energy), the tape (which prevents the foam from bursting) and some spars (to give basic structural integrity). EPP foam adds to this by absorbing more impact energy and by refusing to tear.

## Along For The Ride

by Bob Swet

"Now take the right strap and pull it through between your legs, then through the loop by your right hip and connect it to the strap at your right shoulder. Good! Now take the other strap and bring it between your legs, through the left loop and connect it to the strap at your left shoulder. Great! Now cinch them down.

Pull them real tight. Turn around. You see this ring, I suggest if you need to use it, pull it with both hands." Memories flooded my mind. Part one was over.



"Now place your left foot here. Step over the side with your right foot and step on the seat, then bring your left foot inside. Good! Slide down the seat. Try to keep your feet off the pedals. Grab the right belt by your hip. Now connect the right shoulder strap to that. OK. Grab that left hip belt, then the left shoulder strap and finally, clip on the strap between your legs. Excellent! Be sure to pull all those straps real tight." Previous experience taught me that last statement is in my best interest. I immediately obey.

There is plenty of leg room but the controls, gauges and windshield are a matter of just a few inches away. There was no way that I could maneuver the video camera as originally suggested. Now I know what it must feel like to be a Indy car driver. Everything is right there next to you. My heart is pounding a bit faster, probably due to anticipation. But from the outside is a calm voice implying "Don't worry, I been doing this for over ten years." I hear what is said, its my sweaty palms that don't believe. "Just one more thing. As an added safety precaution, fasten your seat belt." I followed the instructions and clipped the two end together of what appeared to be from a red Oldsmobile. Without thinking, they too were cinched down. "Here's your camera. I'll be with you in a minute. There are a few things I must check."

Soon George was back and was going over the last item with me. Getting out in case of an emergency. It is one of things that sounds good but ..... "You pull this knob back." Undo the seat belt, then unlatch the five point harness. Climb out onto the 'up' side and jump. Don't forget to pull the ring." From all the film footage I have ever seen, no one has successfully bailed out at low altitude without the aid of an ejection seat. Perhaps that is why I had to sign all those forms that legally stated that I could not hold anyone directly or remotely related to this experience responsible for anything that might occur. No way! No how!

As an aviation photographer's assistant there occasionally a few perks that come along. Today, I am getting a ride with George Kirbyson of the Sierra Aces in a Pitts S2B. The Aces are a precision civilian aerobatic team specializing in precision formation flying. Owner, Steve Brower is to be lead pilot and Al Hauff will be opposite us on the left wing. Between these three, they have logged over fifty five thousand hours of flying time.

Finally, the 260 horsepower Lycoming roars into life and after receiving clearance from the tower, the gaggle of bright red, white and blue biplanes start moving. While weaving our way on the taxi strip, George notices that I am trying to look over the cowling (even though I am sitting on my parachute and a seat cushion) to see where

we are . Quickly he mentions "Don't worry, I can see much better back here than you can up there." I settled for getting an occasional glimpse of the other two planes on my left.

Within a few minutes, we received clearance from the tower for takeoff. George and I were on the right side of the delta formation. There was constant chattering among the three pilots. Brakes were on, engine speed was brought up, brakes are released. In unison, the group accelerates with wings overlapping. There is only a few feet separating each of the planes. Near rotation our plane gets twitchy. For a moment those few feet shrink to what appears to be inches. You trust the pilot. Why not? He is living proof of his skill level.

After climbing to over a thousand feet, I grab my camera and start clicking off pictures. Soon I realize that my roll of film is being rapidly consumed. I try to reach my spare roll in my pant's hip pocket. Within a minute, it is determined to be a hopeless case. There are three layers of straps between me and that film. It would not be wise to undo them at this time.

We continue to climb to thirty five hundred. There are mountains just below us and on both sides. Over the intercom comes an inquiry if I was up to a hammerhead. My response was "sure". The smoke comes on. Then like three cars on the freeway, we are going from horizontal flight to vertical. In perfect synchronization, the group moves. The airspeed continues to bleed off. When we are almost still, a command to rotate is heard. The tails swing around in unison and then we are heading straight downward. The ground below seems to leaping upward toward us. Just as individual bushes become recognizable, we begin our pullout. The G's build. Your body begins to feel heavy, very heavy. Relief comes in the form of level flight which ends abruptly as we start a formation Cuban 8. It still amazes me that all through these maneuvers, the separation has remained only a few feet. I am very glad that I have a wide angle lens on the camera, else I would be shooting portrait pictures of the pilots.

After the Cuban 8, the three planes break off and perform individual aerobatics. George and I did rolls, loops, inverted flight, knife edge circles, snap rolls, humpty bump and a few other maneuvers. Too soon, we are re-grouping and heading back to the field. During this flight, I have experienced being tossed, turned, hung upside down, along with four positive and three quarters negative G's.

When we land, there is a smile from ear to ear which prevents me from talking too much. I thank George for the wonderful, thrilling, "can we do it again" experience. My imagination of formation flying with the Sierra Aces has become a pleasurable memory.

