

# FLYING LINES

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May, 1983 NEWS OF NORTHWEST CONTROL LINE MODEL AVIATION Number 45

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## FOURTH ANNIVERSARY ISSUE

Northwest control-line model aviators, salute yourselves!

You hold in your hands the only publication of its kind -- a completely independent newsletter devoted entirely to the control-line model aviation hobby of a particular region. It is Flying Lines, the communications network of the Great Northwest, with the world's greatest modelers.

This group of modelers came together in the spring of 1979 with the common purpose of revitalizing a hobby and sport that was troubled by its fragmentation and disorganization. A staff of volunteers assembled to begin regular publication of an organ that would make sure that all Northwest modelers had the same schedule, the same information, the same continuity of involvement.

Seeing the vital need for some kind of joint effort to ensure the hobby's survival, Northwest modelers quickly jumped on board to make FL a truly all-encompassing and cooperative venture. As readers of the national publications know, FL is now one of the most influential publications in the control-line modeling press.

And the Northwest is on the way to meeting others of those early goals. Contest attendance is rising, club memberships are growing, and the Northwest is beginning to get the national recognition it has long deserved.

Flying Lines itself still skims along on the verge of financial ruin, but manages somehow to survive by the good will and hard work of the Northwest's modelers.

This publication has never been intended to be the personal vehicle of a couple of editors, which is why you see very little of the editors' personal ramblings and lots of material contributed by the real owners of the newsletter, the readers. FL has always been intended as a news and technical journal, not a soap box for one or two writers. It's a soapbox for the whole Northwest, and its pages are open to all with something to say.

Again, congratulations to Northwest modelers for doing what control-liners nationwide need to do -- standing up, speaking clearly and articulately, and being counted.

On to Year No. 5.

## MEET THE CHAMPIONS -- GREG BEERS AND DAVE GREEN

Northwest Sport Race Drizzle Circuit No. 5 came to an end April 10 under reasonably pleasant weather conditions at Contest No. 5 and an excellent day of racing that was a fitting end to one of the best seasons of racing yet.

Championships were in doubt right up to the end but the leaders managed to hold off their challengers in the final contest and capture their respective crowns. Neither champ was new to Northwest racing but both were in the series overall winner's circle for the first time.

Greg Beers of Vancouver, Wash., assisted by the able Roy Beers/Loren Howard pit crew, finished the season with a win in contest No. 5 and the circuit championship for Northwest Sport Race. In his first full year of running the circuit, Beers had a brilliant record and had the rest of the circuit riders chasing his tailfeathers from day one back in December.

Beers won four out of the five races, the best NWSR performance in circuit history, and finished second once. He held the fast heat time, established at 4:27 in December, and the fast feature race at 8:48, also set in December. His first place finishes were in December, January, February and April. He also either led or tied for the lead in the categories of heats won, finished and times made feature race.

The Beers team used a rather unorthodox pitting procedure that worked out well. After the initial start, Roy Beers and Howard would fan out to two separate locations on the circle. When the Fox .35 would shut down (remember, no shutoffs to predict the shutdown point), Greg would pick the spot he could set down easiest -- and the nearest pit man would do the fueling and restarting.

Congratulations to Greg, Roy and Loren for one fine season with the red Yak-9. Second place in NWSR went to Dave Green of Astoria, Ore., who won the March contest with his Yak-9 and was within striking distance until the end. Dave, with pilot Bill Varner, used the old "Wing-flapper" Yak-9 which finally folded up in Contest No. 5. Third place went to John Thompson using a Ringmaster backup plane after the brand new Flying Lines Special met an untimely end in Contest No. 1.

## DRIZZLE CIRCUIT, continued

Then there was super sport. And, as the TV announcers say, it was Some Kind of Racing! Northwest Super Sport Race has developed into a fine sport. Racers are fast, pilots proficient and the pitting very quick. After a year or two of sorting out, NWSS is now extremely consistent, with failures to finish, crashes and mishaps almost unheard of. Yet most of the competitors were not long ago beginners in Northwest Sport Race.

Dave Green, with pitman Bill Varner, have showed that practice and dedication pays off by coming up with a clean and fast airplane called the Minotaur that cruised to first place in the circuit. But NWSS is a closely grouped race and there were no blowouts. Rich Schaper's Bobcat was close on Green's tail until the final contest, when neither made the feature.

Green won the December and February contests, finished second in March and third in January. He established the fast heat time at 3:24 in December and the fast feature time of 7:17 in February -- a Northwest NWSS record. The FL statistician did a little calculating and determined that the K&B .35-powered Minotaur averaged 88.2 mph in that 3:24 heat and 82.35 mph in the 7:17 feature, including pit stops (1 in the heat, 3 in the feature).

Second place in NWSS went to Rich Schaper of Kelso, Wash., with a Bobcat/K&B combination that pulled like a truck on the pilots' arms but showed the standard Shaper consistency. In fact -- and beginning racers should take note -- all of the top circuit racers demonstrated an ability not just to go fast but to turn times in the same range race after race, always finishing. The key is practice. See the individual statistics below for more evidence.

Third place went to Mike Hazel of Salem, Ore., using the original Cro-Magnon Super Sport, the first plane ever designed for the event, powered by a K&B .35.

In contest No. 5, Beers returned to the NWSR winner circle with a respectable 8:53 time on a day not characterized by any particularly blazing speeds. Seattle's SKARE Team (Dick Salter and Tom Knoppi), last year's champs, managed second place.

Super sport's last DC race went to Hazel with a personal best 7:41, followed by Dick Peterson and John Thompson. Peterson won his first heat in two years of trying and turned a respectable 8:38 in his first SS feature. And boy, was that Flying Tiger beaming! Watch out, racers, Dick has paid his dues and is getting ready to collect!

The secondary event for the day was AMA slow rat race, which drew five entries, all but one of which were super sports doing double duty. Hazel's SS won with a new Northwest record 7:49.88, SKARE was second and Green's old SS with a K&B 5.8 engine was third.

With the completion of the 1982-83 Drizzle Circuit, it is time to start planning for year No. 6. Among questions to be answered: Will it be centralized in Portland again next year or held in different locations around the Northwest as in previous years? Which clubs will sponsor contests next year? Are there any other changes to be made? If you have individual or collective opinions on those questions, please contact Flying Lines. Firm planning will

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DRIZZLE CIRCUIT, continued

start for the 1983-84 circuit in September, with the countdown for the first "Go!" starting in December.

Here are the complete results of contest No. 5 and the final circuit statistics:

AMA SLOW RAT RACE (5 entries)

1. Mike Hazel, Salem, Ore. -- 7:49.88. Cro-Magnon Super Sport, Hazel design, 36" span, 27 oz., balsa-ply, Monokote-Superpoxy, K&B .35, Garner 8½x7 fiberglass prop, GloBee short racing plug, bored intake restrictor, Sheldon's 40% nitro fuel, fastfill, shutoff, Fox 3½-oz. tank, Fox handle. Plane has logged over 400 racing miles.
2. SKARE Team, Seattle, Wash. -- 8:20.
3. Dave Green, Astoria, Ore. -- 9:01.89.
4. Dick Peterson, Renton, Wash. -- 11:57 combined 2 heats.

NORTHWEST SPORT RACE (8 entries)

1. Greg Beers, Vancouver, Wash. -- 8:53. Sterling Yak-9, 38" span, balsa, Super Poxy, Fox .35, Grish 9x8 nylon prop, K&B standard long plug, Sheldon's 12½% nitro fuel, Fox tank.
2. SKARE Team -- 9:13.
3. John Thompson, Cottage Grove, Ore. -- 10:07.
4. Glenn Salter, Seattle, Wash. -- 10:16.

NORTHWEST SUPER SPORT RACE (8 entries)

1. Mike Hazel -- 7:41. Airplane data same as slow rat above.
2. Dick Peterson -- 8:38.
3. John Thompson -- 8:53.
4. SKARE Team -- 3:31 heat.

HEAT WINNERS

NW SPORT RACE: Round 1: SKARE Team (4:41), Greg Beers (4:41)  
 Round 2: SKARE (4:29), John Thompson (4:53)  
 NW SUPER SPORT: Round 1: Thompson (3:59), Mike Hazel (3:54), SKARE (3:31)  
 Round 2: Hazel (3:40), Dick Peterson (3:51), Thompson (4:42)

FINAL 1983-84 NORTHWEST SPORT RACE DRIZZLE CIRCUIT STATISTICS

CHAMPIONSHIP POINT STANDINGS

NORTHWEST SPORT RACE		NW SUPER SPORT RACE		FAST HEATS		RACE
1. Greg Beers . . . 37	1. Dave Green . . . 26	NWSR: 4:27 -- Beers	(1)	NWSS: 3:24 -- Green	(1)	
2. Dave Green . . . 24	2. Rich Schaper . . 21	<u>FAST FEATURES</u>				
3. John Thompson . . 22	3. Mike Hazel . . . 19	NWSR: 8:48 -- Beers	(1)	NWSS: 7:17 -- Green	(3)	
4. Glenn Salter . . . 20	4. John Thompson . 18	<u>PRELIMINARY HEATS WON</u>				
5. SKARE Team . . . 16	5. Dick Peterson . 11	NWSR: 6 -- Greg Beers		NWSS: 7 -- Dave Green		
6. Bill Varner . . . 10	6. Alan Stewart . 11	<u>PRELIMINARY HEATS FINISHED</u>				
7. Dick Peterson . . 5	7. Will Naemura . . 8	NWSR: 8 -- Green, G. Salter, Beers		NWSS: 10 -- Thompson, Green, Shaper		
8. Gene Pape . . . . 2	8. SKARE Team . . . 7	<u>TIMES MADE FEATURE RACES</u>				
Dick McConnell . . 2	9. Bruce Guenzler 1	NWSR: 5 -- Greg Beers		NWSS: 4 -- Dave Green		
Rich Schaper . . . 2	Greg Beers . . . 1					
11. Rod Watson . . . 1						
12. Drew DePauli . . 0						
Steve Cole . . . . 0						

INDIVIDUAL STATISTICS

Contestant	Meet	SPORT RACE			SUPER SPORT		
		Heat 1	Heat 2	Final	Heat 1	Heat 2	Final
Greg Beers	1	4:45	4:27	9:48	--	--	--
	2	4:47	4:34	8:54	--	--	--
	3	59 laps	4:56	9:23	--	--	--
	4	5:06	XXX	10:19	6:10	--	--
	5	4:41	4:34	9:53	--	--	--
Steve Cole	4	3 laps	--	--	--	--	
Drew DePauli	1	45 laps	--	--	--	--	--
	2	38 laps	--	--	--	--	--
Dave Green	1	5:25	4:42	9:22	3:24	3:25	7:30
	2	5:26	5:26	9:33	4:19	4:00	9:24
	3	5:19	5:16	14:59	3:36	3:35	7:17
	4	4:53	XXX	9:38	4:21	3:50	9:14
	5	4:45	DR	--	Watch	4:32	--
Bruce Guenzler	1	--	--	--	6:07	17 laps	--
Mike Hazel	1	--	--	--	3:57	3:49	--
	3	--	--	--	3:50	3:43	7:46
	4	--	--	--	Watch	3:51	--
	5	--	--	--	3:54	3:40	7:41
	5	5:39	6:50	--	8:15	5:12	--
Dick McConnell	5	5:39	6:50	--	8:15	5:12	--
Will Naemura	2	--	--	--	5:09	4:39	--
	3	--	--	--	5:41	3:56	--
	4	--	--	--	4:20	8:38	17:53
	3	5:02	9:13	--	--	--	--
Gene Pape	1	46 laps	--	--	--	--	--
	2	10:22	45 laps	--	9:14	4:48	--
	3	5:23	7:43	--	4:39	4:09	--
	4	6:27	3:02	--	5:17	3:51	8:38
	5	6:27	3:02	--	5:17	3:51	8:38

DRIZZLE CIRCUIT, continued

Gleason Salter	1	6:29	6:17	43 laps	--	--	--
	2	5:41	5:56	--	--	--	--
	3	5:22	6:03	11:19	--	--	--
	4	5:45	XXX	DQ	--	--	--
	5	5:12	47 laps	10:16	6:01	5:10	--
Rich Schaefer	1	--	--	--	4:34	3:48	9:32
	2	--	--	--	5:04	4:21	8:40
	3	--	--	--	3:44	3:58	--
	4	--	--	--	3:44	3:59	8:26
	5	5:59	5:20	--	5:54	4:10	--
SKARE Team	1	43 laps	5:07	--	4:13	4:23	9:52
	2	4 laps	4:34	9:07	--	--	--
	3	53 laps	--	--	61 laps	3:40	--
	5	4:41	4:29	9:13	3:31	DNF	--
Alan Stewart	1	--	--	--	4:50	4:27	--
	2	--	--	--	6:53	4:51	--
	3	--	--	--	4:43	4:10	7:49
John Thompson	1	67 laps	DQ	--	4:39	5:07	--
	2	5:53	5:03	10:04	6:25	4:00	9:18
	3	4:58	4:45	10:23	4:03	4:30	--
	4	5:40	XXX	10:20	4:18	7:35	--
	5	5:01	4:53	10:07	3:59	4:42	8:53
Bill Varner	1	5:06	49 laps	--	--	--	--
	2	5:22	5:41	--	--	--	--
	3	5:50	6:04	--	--	--	--
Rod Watson	2	42 laps	44 laps	--	--	--	--

FOOTNOTES:

XXX - Round canceled, all entries to final.

Watch - Watch malfunction, no time recorded, place determined by finish order.

## NW COMPETITION RECORDS

### RECORD PERFORMANCES ESTABLISHED BETWEEN NORTHWEST MODELERS IN SANCTIONED COMPETITION

Mike Hazel of Salem, Ore., set a new slow rat race feature record of 7:49.88 at the April 10 NWSR Drizzle Circuit contest in Portland, Ore. That is no world-beating time but it replaced the long-standing 9:50 held by John Thompson. The rebirth of the slow rat event in the Northwest appears to be occurring and should wipe away these old records set with Super Sport airplanes. Hazel would hold the preliminary heat record, too, but the records of the April 10 contest were destroyed accidentally and only the combined time for two heats -- 7:38 -- remains.

Flying Lines keeps track of the performances of Northwest residents in sanctioned control-line competition. Here are the records as of May 1:

1/4 A MOUSE CLASS I 50-lap: 2:38 (John Thompson)	100-lap: 5:31 (John Thompson)
1/4 A MOUSE CLASS II 75-lap: 3:54 (John Thompson)	200-lap: 9:21 (Bill Varner)
GOODYEAR 70-lap: 3:28 (Dave Green)	140-lap: 7:42 (John Thompson)
SLOW RAT 70-lap: ---	140-lap: 7:49.88 (Mike Hazel)
RAT RACE 70-lap: 2:29 (Mike Hazel)	140-lap: 4:53 (Mike Hazel)
TEAM RACE 100-lap: 3:51.07 (Knoppi-McCollum)	200-lap: 7:49 (Knoppi-McCollum)
NW SPORT RACE 70-lap: 4:14 (Dick Salter)	140-lap: 8:27 (Dick Salter)
NW SUPER SPORT 70-lap: 3:24 (Dave Green)	140-lap: 7:17 (Dave Green)
1/4 A SPEED: 88.2 mph (Paul Wallace)	FAI SPEED: 155.45 mph (Scott Newkirk)
1/4 A PROTD SPEED: 83.63 (Paul Wallace)	FORMULA 21: ---
A SPEED: 125.82 (Mike Hazel)	FORMULA 40: 152.28 (Scott Newkirk)
B SPEED: 153 (Mike Hazel)	JET SPEED: 192.64 (Chris Sackett)
D SPEED: 154.84 (Mike Hazel)	PROFILE NAVY CARRIER: 208.9 (Marty Phillips)
	CLASS I NAVY CARRIER: 268.98 (Terry Miller)
	CLASS II NAVY CARRIER: 323.7 (Loren Howard)

#### WHO TURNED OUT THE LIGHTS? Or: The day that ended before the contest

A half dozen Northwest combat fliers trekked to the San Francisco Bay area April 24 for a combat contest that was, well, unusual.

There were several unusual aspects. One was that the contest required either AMA or Western Associated Modelers memberships but was sanctioned by neither. Another was that there were 11 entries in FAI combat and 21 in AMA combat. One thing that probably was not unusual for Northwest fliers was that it rained off and on all day.

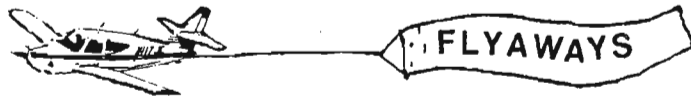
But perhaps the most unusual aspect was that the FAI combat took from 10 a.m. to 4 p.m. and the AMA combat portion -- which most of the competitors came for -- was aborted from double to single elimination after three rounds and ended up in virtually total darkness. Norm McFadden of Lynnwood, Wash., managed to fly to first place but nobody knows quite what happened -- though Norm swears the fliers could see the action, none of the rest could, including the



3xl continued

Here are the complete results:

NAME	SUPER SPORT	STUNT	BALLOON BUST	OVERALL
Cecil Swanson	--	--	--	--
Bob Danielson	9th	8th	4th	7th (tie)
Dick Salter	5th	7th	2nd	4th
Pete Bergstrom	3rd	1st	5th	2nd
Dick Peterson	6th	9th	6th (tie)	7th (tie)
Dave Mullens	7th	2nd	6th (tie)	5th
Glenn Salter	2nd	6th	1st	1st
Max Thue	8th	5th	--	9th
George Mickey	4th	4th	8th	6th
Ray Davis	10th	--	3rd	10th
Dick McConnell	1st	3rd	6th	3rd
JUNIORS				
Lance Cronyn	1st	1st	2nd	1st
Richie Salter	3rd	2nd	1st	2nd
Kent Davis	2nd	3rd	3rd	3rd



### RANDOM TIPS AND RIBS FROM THE FL WORKSHOP FLOOR

====The June issue of Model Airplane News has a reader survey card in it asking what modelers are interested in. Unless we want to have control-line dropped from the magazine again, we'd all be well-advised to get this issue and respond to the survey. One of the deceptive things about surveys of that type is that they produce an unreliable response. Only those who have the time will respond -- and will influence the ultimate decision. No matter how busy we are with our own little building projects, it's up to us to make ourselves heard. Remember, the RC-oriented editors already think we don't exist. Let's not give them any more ammunition to try and shoot us down to make room for their third of the hobby.

====The National Control-Line Coalition is continuing to grow but hasn't yet reached the financial break-even point for its newsletter. If you are interested in the national organization that speaks for control-liners, send \$10 membership fee to Laird Jackson, 2322 Wilson Ave., Bristol, PA 19007. You'll receive the newsletter, NCLC Gazette.

====Craving for more FL? Back issues of certain editions are available. Here's your chance to catch up on missing issues in your collection. Price is 75¢ each for the first three selections and 50¢ each for each additional copy. Remember, photocopies of selected articles are available for 50¢ each, too, and you can use the periodically published indexes to pick them out. Following are the issue numbers available. Please give second-choice numbers if possible because some of the extras are single copies. 3, 5, 7, 9, 11, 12, 14, 17, 18, 19, 22, 23, 26, 28, 29, 31, 32, 33, 34, 35, 36, 37, 38, 39, 41, 43.

====Speaking of back issues, if anyone out there has a complete original copy of No. 1 they would like to sell, please contact the editor. Guess who doesn't have an original of that one?

====All of us are familiar with the fine control-line products we have lost in recent years because of suits by the relatives of "modelers" who flew their planes into electric wires -- E-Z Just and U-Reely handles come to mind, not to mention those of the manufacturers who dropped out to avoid such trouble. Now FL receives word that the 30-year-old Omahawks RC club in Nebraska may be killed by a \$50,000 lawsuit by a neighbor a half mile from their field who doesn't like the noise their muffled airplanes make, in spite of restrictive sound limits in the club rules. This club of 160 members has spent \$3,000 and expects up to \$5,000 more in legal expenses. If you want to help our fellow modelers out in their fight against their intolerant neighbors (who doubtless roar around with their lawn mowers, chain saws and motorcycles and think nothing of it), send them a couple of bucks at the following address and tell them you're a control-liner who gives a hoot; maybe some day RCers can return the favor. The Defense Trust Fund, c/o Metropolitan Building & Loan Assoc., 2739 North 61 St., Omaha, NE 68104.

====Carrier fliers have probably heard of the NCAC, their spokesman before the AMA's rules-making committee, the Navy Carrier Advisory Committee. In case you've wondered who's volunteered their time to help you out, here's the list of members: LeRoy Cordes, Chicago, IL; Richard Sobrino, Woodhaven, NY; Richard Perry, Springfield, VA; David Engel, Woodridge, IL; Robert Hawk, Albuquerque, NM; Tony Naccarato, Burbank, CA; Glenn Simpson, Worcester, MA; Joseph Cservenko, Brookpark, OH; Ron Haase, Tampa, FL; Leon Ryktarsyk, Detroit, MI; David Rolley, Bennett, CO; and our own Bill Skelton, Warrenton, OR.

====Should there be winners and losers in competition? Orin Humphries of Spokane, Wash., has suggested that the Regionals profile scale contest not have first, second and third places but rather select best planes for simplicity,



ACTION, continued

Sept. 10-11...KENT, Wash. -- Raider Roundup/Washington State Control Line Championships, sponsored by the Seattle Skyraiders. FAI team race, rat race, Northwest Sport Race, Northwest Super Sport Race, Class I&II Mouse Race, balloon bust, profile carrier, Class I-II carrier, slow, 1/2A and AMA combat, precision aerobatics, sorta scale, sport or precision scale, Formula 40 speed, record-ratio speed. Trophies and Merchandise. Boeing Space Center. Contest Director: Dave Mullens, 15559 Palatine Ave. N., Seattle, Wash., 98133. (206) 365-5436.

October 8.....PORTLAND, Ore. -- Old-timers Fun-Fly, featuring several events to be announced later, 9:30 a.m.-2:30 p.m. Site: Delta Park. Sponsor: Northwest Aeroliners. Information: Frank Macy, 5200 SE Jennings, Milwaukie, Ore., (503) 653-7436. Field available for Stuntathon practice after 2:30 p.m.

October 9.....PORTLAND, Ore. -- Stuntathon '83. Four PAMPA precision aerobatics classes, 9:30 a.m. Site: Delta Park. Sponsor: Seattle Skyraiders. Information: Don McClave, 7719 SE 28th Ave., Portland, OR 97202, (503) 771-8453. Contest Director: Dave Gardner, 8133 184th St. SW, Edmonds, WA 98020 (206) 771-4787.

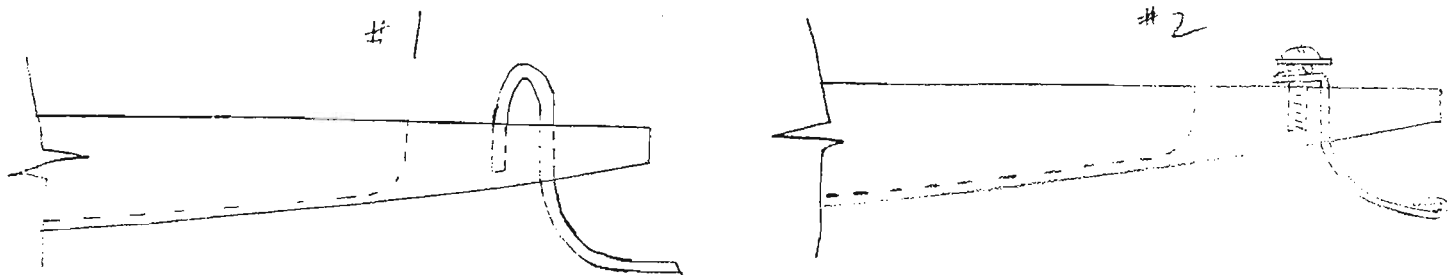
# RACING ROUNDUP

by mike hazel

The topic this month is skid construction and installation on your racing model. There are three types of skids: wing, tail and nose. We won't concern ourselves with the third.

As you know, the main reason for having skids on the plane is so that it won't grind itself away during landings. However, the size and location of skids have some other effects on the total scheme of things. While the tail skid keeps the bottom of the fuselage and perhaps the horizontal from scraping, it also determines the attitude the plane will take off from. That is unless the launcher deliberately holds the plane at some other attitude. Wing tip skids have other functions also. On some models the skid on the outboard wing may serve as a failsafe from slipping out of the slimy pitman's catching hand. Uhh, read that, pitman's slimy hand. Another consideration of the wingtip skid(s) is the plane attitude during refueling. On my super sport plane it is an absolute must to refuel with the inboard wing tip down on the ground to achieve a constant starting sequence. If there was a skid on the inboard side, this would prevent proper refueling on that particular setup. That is, if the skid kept that wingtip from touching the ground. To keep from scraping the finish, a thin flush-type skid can be employed here. Nothing to really lift the wingtip, just to prevent unnecessary wear.

Following are some notes regarding the sketches. The drawings are far from the many various construction methods. There are other variations between those shown and other completely different types, some of which I will explain.



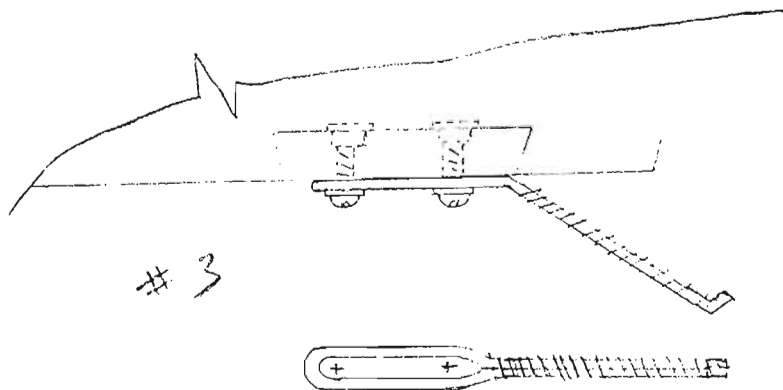
Sketch number one and two are typical installations for tail skids in a rat pan. Number one is my favorite as it is very durable and easy to construct. Wire of 3/32" diameter is used. First drill one hole of 3/32" all the way through the pan. Insert a piece of wire that has been bent as shown into the hole, pushing the short length all the way to the pan, and inscribing a mark. The mark will locate the blind hole. After drilling the blind hole, tap the skid down into the pan with a hammer, not too hard. Then you can bend the actual skid portion however you prefer. Tapping the wire into the pan generally keeps it very tight, but I usually spread a little epoxy glue around it just to make sure.

Sketch number two shows what is probably the most common method with a pan. The wire is usually 1/16". As you can see in the drawing the wire coming up out of the pan is bent into a small loop, and then secured with a small (4-40) bolt and washer. This type of skid is easily changeable. Note the small loop on the ground side of the skid. This keeps the small diameter wire from poking things. When using larger wire just round off the end.

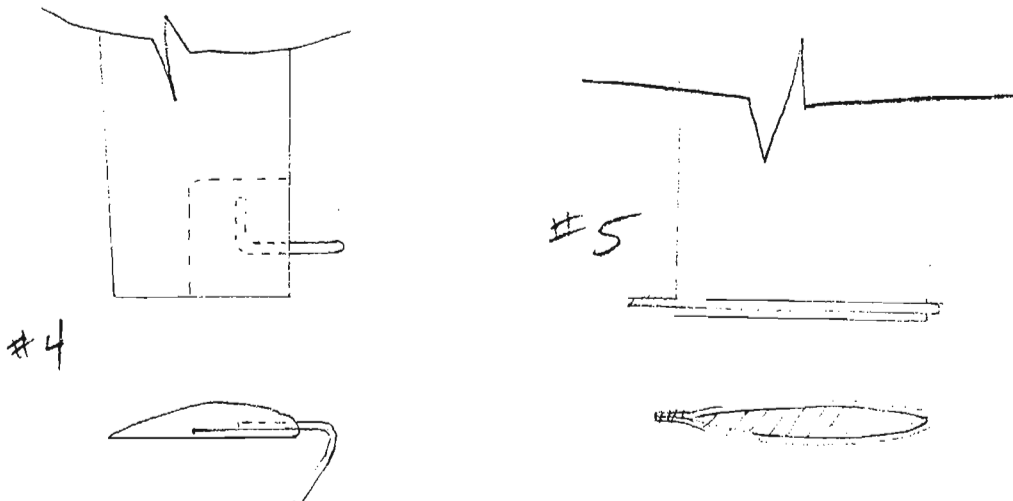


## RACING, continued

Sketch number three shows the most widely used type of skid construction of all for profile fuselages. An inset of maple or your favorite hardwood is matched into the fuselage. Prior to gluing the inset in, drill the holes as shown and install blind nuts. The skid is formed with 1/16" wire and soldered. It is then bolted on, making for an easily serviced system. An alternate method which is simpler, and actually just about as good is to attach the skid with wood screws.



Sketch number four shows a different type of wingtip skid. This one helps prevent the plane from getting away during high-speed catches. The idea is not to try to catch the wing by the skid, but simply that the skid will catch your hand should the wing start sliding through your fingers. The bottom portion shown is plywood, and the L-shaped wire is sandwiched between it and the top part of the wing. This can probably be done any number of ways. The difficulty with this construction is having the wire in the way during wing shaping. Installation may be easier after initial shaping.



Sketch number five shows a wrap-around wing tip skid that I have seen in use on team racers. It is obviously low drag and serves the same function as the last one to help keep "the fast ones from getting away." Construction here should be self-explanatory. It is secured by a bead of epoxy along the length.

There are a couple of other popular wingtip type skids that are not shown. One commonly used on a rat race or similar model with solid wing will use a skid similar to the one depicted in sketch three. Another popular type in use on sport racers and the like consists of simply bolting on a nylon control horn to the trailing edge. This is easy, replaceable and reasonably durable. I have no doubt left some other types out.

For those of you who have any interest in the AMA slow rat event, be sure to give your input to John Thompson. As you know, he is our district CLCB member. The board is making an interim vote on June 6 regarding the can of worms batch of cross proposals regarding this event. It is going to be interesting to see what kind of event we wind up with if the final vote goes another way other than the 10 percent nitro proposal.

Well, that's it for this time. May your airspeed be high and your pit stop quick.

--Mike Hazel, 1040 Windemere Dr., NW, Salem, OR 97304.

## HOBBY SHOP DIRECTORY

FIRGROVE MODEL SUPPLY -- Radio Control, Control-Line and Gliders. 10611 136th St. East, Puyallup, Wash. 98373. (206) 845-7675.

Owned by R.B. "Bob" Pfeiffer.

HERB'S SPEED & RACING PRODUCTS -- Speed pans, epoxy glass speed tops, and other supplies. Send SASE for info. 1621 M St., Merced, CA 95340. (209) 722-7836.  
Owned by Frank Hunt.

# SUNDAY FLYER

by Larry Miles

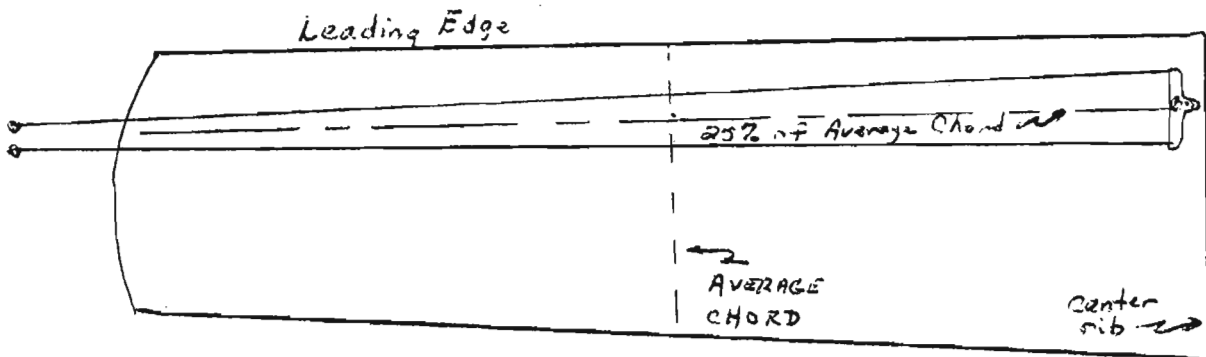
## DO-IT-YOURSELF MODEL PLANE DESIGN, PART II

The August, 1981 issue of Flying Lines presented a method for obtaining a set of tapered wing ribs for the do-it-yourself plane designer. This article is a continuation of that article.

In using those ribs to construct a wing I suggest the D-tube type of construction using a square or triangular leading edge (latter rounded to airfoil shape desired). The D-tube method of construction particularly when used with cap strips results in by far the strongest, most torsionally rigid type wing for the amount and dense weight of material used.

Cap strips are a natural in conjunction with the D-tube method of wing construction turning each rib into a very lightweight but very strong I-beam unit. If you don't have one a good balsa stripper saves much money and trouble in obtaining cap strip material.

On a wing of up to 42", spars are not needed (fast combat models excepted). But it is necessary to close the aft end of the D-tube using shear webbing consisting of 1/16" vertical grain balsa from rib to adjacent rib and from the top to bottom leading edge sheeting. Using this method of construction I have yet to have a wing failure in use other than a hard crash and my planes normally have higher speed potential and tighter turning capability than comparable commercial kits due primarily to their lighter weight. The D-tube type construction also



lends itself well to filling the D-tube cavity with foam (available from Sig) to add strength for little weight penalty, for you race types that want a stronger wing for hot pit stop handling.

My preference for the bellcrank location is just slightly forward of 25% of the average chord with the leadouts centered on 25% of the average chord line. This places the weight of the flying lines as far as the fore and aft position is concerned over the center of lift. This also is a good position as far as turns are concerned. If you contemplate a nose-heavy plane, as many profile models tend to be, you might want to try a further aft position for the leadout location as the weight of the flying lines will offset the weight of the engine. A further aft position for the leadouts might prove advantageous for a combat model to aid in maintaining line tension in tight maneuvers. However, any placement of weight far from the fore and aft position of the center of gravity will hinder turning capability due to rotational inertia.

As far as the vertical stab is concerned, most control-line models will fly quite well without them so use your own preference. Mine is for a fairly low, long fin (laid-back look) so that if I have to come in upside down minimal damage is sustained.

Here's to untangled flying lines!!!

--Larry Miles, 2112 Scott Ave., Independence, Mo. 64052.



## AIR MAIL

COMMENTS.....NEWS.....VIEWS  
FROM THE FLYING LINES READER



DEAR FL:

Just a little note of encouragement to let you know that your work and that of Flying Lines contributing editors and competitors is very much appreciated.

Thought I better report that Flying Lines was represented in the air at the 1982 and 1983 "Great Oregon Radio Control Model Exposition" in Corvallis, Ore. We were able to display some of our latest "high tech" control-line developments at what one RC participant said was the "biggest modeling event in Oregon." (Editor's note: We hope you invited him to the Regionals!)

AIR MAIL, continued

In '82 we demonstrated the incredible capabilities of carbon fiber airframe reinforcement on a killer Kamikaze Special at 55-60 mph and maximum "g" 5-7' radius 180° turns and other assorted flying. A one-pound spool of carbon fiber material is available from Hercules for around \$30 (inquiries welcome).

At the '83 air show our 20-oz., 555-in<sup>2</sup> "Amsoil Injector Stunter" powered by a TeeDee .051 running on alcohol fuel (no nitro) with ultimate Amsoil 2-cycle oil being injected via an additional needle valve into the top of the venturi while swining a Cox gray 6x3 cut to 5-5/8", and thinned and de-pitched to 2", put on a nice solid little CLPA show at 46-47 mph with the little mill revving around 24K in cool, turbulent, just-under-sea-level density air on its 50'x.012 lines.

At the moment I am able to write all modeling expenses off my taxes as advertising expenses for my MLM ultimate quality Amsoil lubrication business. Hopefully, it won't be too long before this great little Amsoil business will help pull me out of my temporary lull in modeling activities due to current cash flow anomalies. In fact, I am hopeful of really getting into this hobby of ours. Don't look back, Mike, Scott and some of you other speed fliers. What could start gaining on you might turn out to be much too demoralizing for you to endure!

Oh yes, and speaking of combat strategy, especially for impressionable beginners, may I attempt to inject my two cents worth. If a would-be warrior would learn to fly clockwise normally and would a plane light but very tough and bouncable (a little armor helps here); slow but maneuverable and stable via a large stab system with as large a diameter nylon prop as possible offset 10-20° and use a very low "eyes-off inverted" (for the enemy) defensive strategy, I am convinced from some of the combat experience I have enjoyed that such tactics can ensure not only a logistics capability that is well within the economic capabilities of virtually any potential aggressor but also can be very competitive as well.

The annals of the history of air warfare shows that the overwhelmingly superior deadly throw weight in the larger diameter prop mounted on a ship capable of 180° turns can turn the tide of battle very decisively against the foe. A hapless opponent quickly gets confused and feels that all he can ever get a hold of are teeth and claws! It helps to broadcast a sardonic laugh on the enemy's frequency just before finishing him off so his comrades will be put into the "right frame of mind" when it is their turn to suffer the same fate. Hu-hu-hu-ho-ho-ho-ha-ha-ha!!!

Although we always scrupulously try to avoid a mid-air (though this should not be emphasized lest the enemy interpret kindness as weakness) it is imperative to force a head-on attack at every possible opportunity. Amazingly, it seems that the fanatical enemy will keep pressing suicidal attacks right into the jaws of certain death no matter how many get mowed down, but by simply keeping the pressure on, the victorious course of events that inevitably follows is that the enemy: 1) bites the dust, 2) loses a piece of streamer, 3) loses a piece of streamer, the inboard section of his already too-small stab and then he bites the dust, 4) gets into a line tangle and then proceeds down into Davy Jones' locker because of his marginal line tension due to the sacred sanctions against engine offset that could help hold his already barely controllable machine out there in such situations. The main thing to remember is to always be as polite as possible when destroying the enemy.

And finally, I thought you might find the enclosed material entertaining, especially the circled square eight proposal that must eventually be passed so that at least the objective standard of the book will be geometrically possible in CLPA. Please consider that I am perpetually making a formal proposal at every possible opportunity until it is ultimately passed.

Keep your powder dry.

--Rich Porter, 386 Benji Court NE, Salem, OR 97301.

(Editor's note: Sorry we don't have space for the copies of similarly brilliant letters by Rich to Ross McMullen, Laird Jackson, Joe Klause, et. al., because they deserve to be read. "Ridiculous" Rich certainly is every bit as prolific with the pen as he is magical with the airplane. What fun!)

DEAR FL:

I thank you for the constant flow of information via your publication and your letters. Also, we thank you for your interest in control-line flying.

It is true that the Combat Special Mark IV will no longer be produced. In its place there will be a 36RC version. The crankcase is similar to the Combat Special, except there is no front bearing and the shaft is a little longer. Also, the exhaust stack has been altered to provide for fastening on a muffler.

We do have a fair amount of repair parts and a few Combat Specials left in stock. Would recommend the combat fliers stock up as best they can. We hope this information is of help to you.

--Duke Fox, President, Fox Manufacturing Co., 5305 Towson Ave., Fort Smith, Ark. 72901.

DEAR FL:

Such an impassioned letter! I have not heard anyone get quite that excited over a prop! To begin with, TF has no intention of discontinuing that particular size -- specifically the 8½x6½ pylon. So what you heard is nothing more than what you called it, a rumor. However, we have discontinued quite a few of the pylon and speed props simply because they do not sell and every year at inventory time we find ourselves counting the same props -- this is not good business and had to be stopped -- we stopped it. We have a very good handle on what sells and what does not. Further, we have "cut-off" figures for all of our products and when that figure is reached, generally the product is discontinued. This policy must be adhered to if we intend to stay in business and believe me we do intend to stay in business!

I want to assure you that we at Top Flite sincerely hope that control-line makes a big fat comeback -- we'll be right here to do whatever we can to supply the market place. In the meantime, I've got to be honest and tell you that the numbers still are not there to make us commit to additional control-line oriented products. Just the reverse is true and last year we dropped a lot of our control-line kits and a bunch of the props I referenced earlier.

As long as the market is small then the cottage industries making these items have a place. Larger manufacturers with high overheads and manufacturing costs cannot be expected to inventory for the consumer when such small numbers are involved -- it doesn't pay and in fact is quite costly. As a manufacturer of some size and experience in this industry/hobby/sport Top Flite can only realistically respond to the marketplace, not create it -- that is up to the consumer.

I sincerely hope that this has been of some help to you and that your particular phase of the hobby -- control-line -- prospers and once again becomes what it once was and bigger.

--Scott Christensen, Vice President, Top Flite Models, Inc., 1901 Narragansett Ave., Chicago, Illinois 60639.

DEAR FL:

Enjoy your publication more with each issue. I have recommended Flying Lines to the B.C. Zone Model Aeronautics Association of Canada, to those that are interested in control-line flying in our publication, Model Aviation Canada.

--Bob Newman, 19880-28 Ave., RR2, Langley, British Columbia, Canada V3A 4P5

### THE FLYING FLEA MARKET

TRADE ONLY -- Custom tuned Supertigre .46, by Gene Martine with Martine muffler, brand new with one bench run by Gene. For the refined and polished stunt flier. These are state-of-the-art and no longer produced. Ed Robbert and Mike Mustain "uni" tanks. Bob Hunt Max .40FSR muffler new. Many Mark III and IV Fox Combat specials, Fox .15 BBs and Rossi for F2D combat, and several TeeDees for ½A. Assorted other top notch competition-oriented super equipment. Would like to trade for ignition engines in excellent or better condition, or RC pattern equipment. What have you got to pop my pistol? Cory Tennison, Rt. 2 Box 224-A, Libby, Mont. 59923. 44-45.

HANDLES -- Limited supply of Davis 2/3-line handles available. New in box, lighter than E-Z Just. \$4 postpaid. Not suggested for fast combat or heavy models. DO-ER PRODUCTS, see below. 44-45-46.

WOOD ANALYSIS -- For those interested in light models, I do density/weight analysis @ \$5 and up, plus postage. Examples: G. Nobler, \$15, a/2 stuff (solid), \$5. SASE for inquiries, please. DO-ER PRODUCTS, 1037 Eastman, Oshkosh, Wis. 54901. 44-45-46.

FOR SALE OR TRADE -- 1952 Berkeley N.A. AJ1 Savage CL scale kit, all original and complete, box in good condition, 3/8 scale. N.A. P51, CL scale, 1947 vintage, original and complete, box in good condition, 37" span with retract LG, Berkeley original. Bob Newman, 19880-28 Ave., RR2, Langley, British Columbia, Canada V3A 4P5. Ph. (604) 530-3916.

### COME TO THE REGIONALS -- IT'S A MODELING PARTY!

Contest Director Dave Green reports that as the day approaches for the Northwest Regional Control-line Championships, most of the major preparations are complete and it looks like the 1983 Regionals will be the biggest and best ever.

But the Regionals is much more than simply the most complete control-line contest this side of the Nats. It also is one long modeling party.

It starts Thursday or Friday night when the first competitors roll in and pitch their tents around the flying field as the Eugene Prop Spinners are hard at work on their final field preparations. Festivities start going full speed at 8 a.m. Saturday with the opening of registration. Carrier, racing, combat and general excitement fill the day as spectators crowd around the displays, the

hobby shop truck, the concessions and the bleachers.

This year the Flying Lines benefit flea market, open to all modelers with something to buy or sell, will add to the fun.

After the conclusion of the main events on Saturday, as the team racers finish up their first-ever Regionals show, the Seattle Skyraiders pot luck hot dog feed blossoms in tent city. This year the Northwest's contest directors will gather at the hot dog feed for their first annual meeting.

At 7:30 Sunday, with the opening of the speed circle, the flying resumes for speed, more combat, more racing, more scale (precision following Saturday's profile) and balloon bust.

Then comes the huge trophy presentation, a pause for cleanup, and then the big Flying Lines post-Regionals newsletter anniversary party. This year the party will be at the field if the weather's nice and at another location if it's damp.

This only scratches the surface of the typical Regionals, the only contest like it. We'll see you there, Mahlon Sweet Airport, Eugene, Ore., May 28-29, 1983.

## FLYING LINES

1411 BRYANT AVENUE  
COTTAGE GROVE, OREGON 97424

Flying Lines is produced monthly by a dedicated staff of volunteers interested in keeping lines of communication open between Northwest modelers. FL is totally independent of any organization, depending entirely upon support from subscribers, advertisers and donors.

FL is your link to the rest of the Northwest's control-line modelers. Help keep it alive by spreading the word. Wear your FL T-shirt and tell your buddies what it stands for. FL T-Shirts available at \$8 -- name your size and color.

Prices for subscriptions: \$5 for 5 issues and \$9.50 for 10 issues. Canada and Mexico: \$5.50 for 5 issues and \$10 for 10 issues. Overseas, \$10 for 5 issues and \$18 for 10 issues, U.S. funds, please. Premium subscriptions, \$25, U.S., Canada and Mexico only.

Advertising rates: \$6 per half page, \$4 per quarter page, \$1 for five lines of classified advertising. Hobby Shop Directory, \$15 per year.

Here is the FL staff:

Publisher....Mike Hazel	Carrier.....Orin Humphries	Speed.....Mike Hazel
Editor.....John Thompson	Aerobatics...Paul Walker	Scale.....Orin Humphries
Photo Editor..Bruce Guenzler	Combat.....Gene Pape	Sport.....Larry Miles
Advertising..Frank Macy	John Thompson	Beginners..John Thompson
	Racing.....Mike Hazel	

Staff opening: Engine columnist -- contact the editor!

### HOW DOES THIS GRAB YOUR BLADDER?

Combat fliers, here is some good news and maybe some bad news.

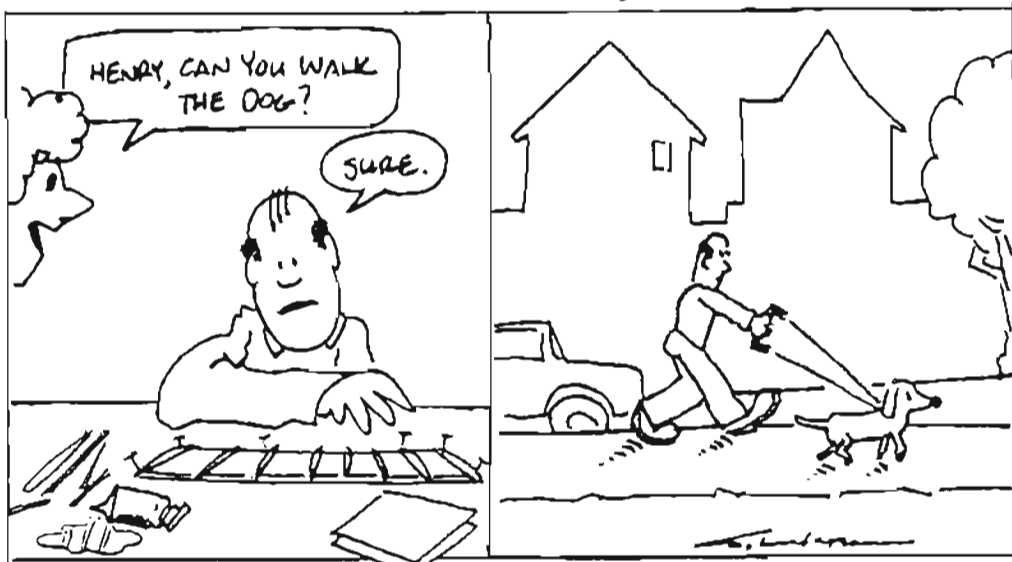
Whether the bad news is bad news is up to you.

The good news is that the Bladder Grabber, the Northwest's AMA combat showcase, will occur again. And again, as is the custom, Bob Carver will donate some \$5,000 worth of the best stereo equipment in the land as prizes, for the usual token entry fee. It will be a chance to fly a minimum of three matches against the best and the brightest of the West's combat fliers and maybe take home a prize worth enough to pay for your year's -- or more -- modeling expenses.

The bad news is, Bob Carver is tired of putting up these fabulous prizes for 12 or 13 fliers. If the BG does not draw a good number of entries this year, it will end.

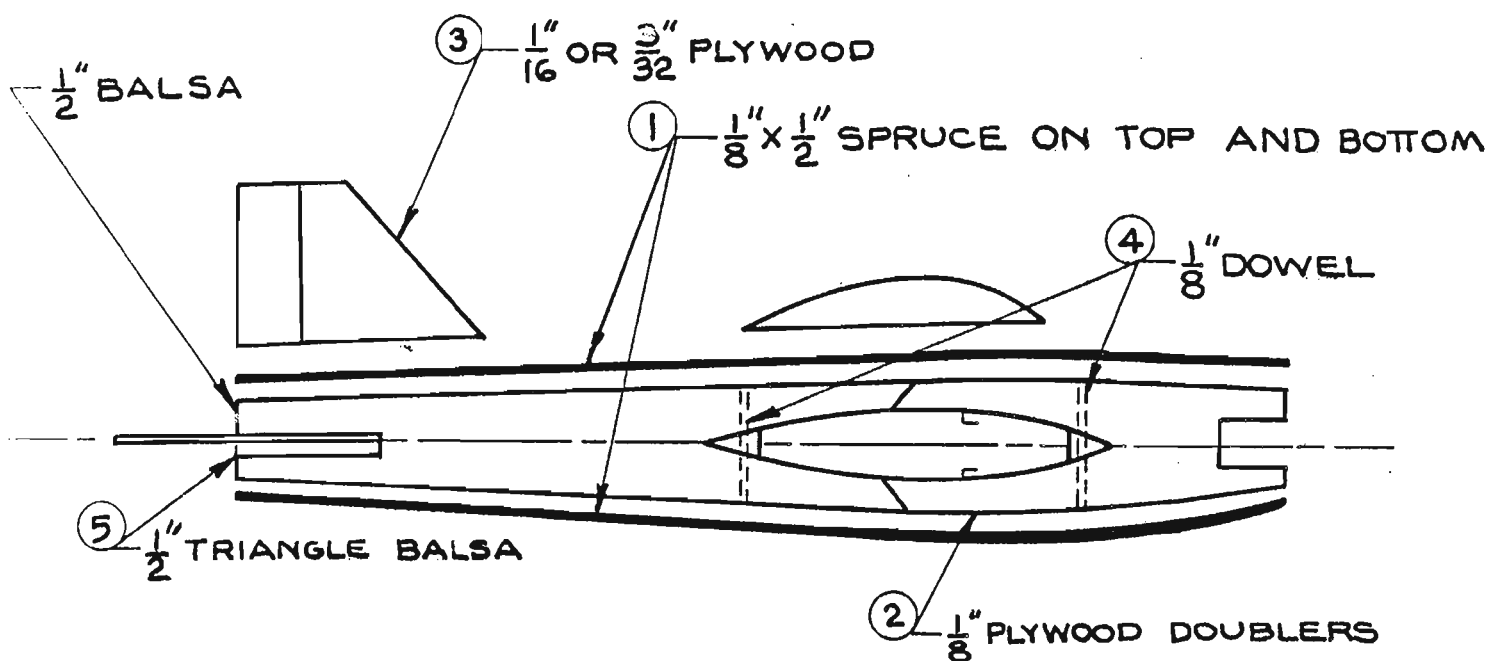
So, if you would like to see the most coveted combat contest in the land continue, you had better make plans to be there on July 9-10, at the Boeing Space Center in Kent, Wash., for this triple-elimination extravaganza.

The future of the Bladder Grabber is in your hands.



## BULLETPROOF?

Well, maybe not completely bulletproof but this page has some good ideas by Don Reed on how to build a profile that will take those bumpy landings a little better. This is reprinted from the Skywriter, newsletter of the Seattle Skyraiders.

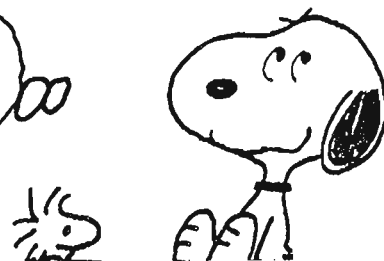


- 1) USE SPRUCE ON TOP AND BOTTOM OF FUSELAGE, HELPS INCREASE STRENGTH OF NOSE AND DECREASES AMOUNT OF WHIP IN FUSELAGE BEHIND TRAILING EDGE OF WING DURING ENCOUNTERS WITH MOTHER EARTH.
- 2) EXTENDING THE DOUBLERS PAST THE TOP AND BOTTOM SPAR OF THE WING SEEMS TO ELIMINATE THE NOSE WEAKNESS IN MOST PROFILE MODELS.
- 3) REPLACE BALSА RUDDERS WITH PLYWOOD, IT HELPS SAVE RUDDERS WHEN LANDING INVERTED.
- 4) IF SOLID LEADING AND TRAILING EDGE MATERIAL IS USED, INSTALL  $\frac{1}{8}$ " DOWELS THROUGH THE FUSELAGE, THEN THROUGH THE LEADING AND TRAILING EDGES OF THE WING. IT KEYS TOGETHER WING AND FUSELAGE, ALSO DECREASES THE AMOUNT OF CRACKING THAT OCCURS AROUND LEADING EDGE AND FUSELAGE JOINT DO TO VIBRATION.
- 5) TRY PUTTING TRIANGLE SHAPED BALSА UNDER THE STABILIZER. IT HELPS STOP THE FLUTTER OF THE LARGER STABILIZERS AND STRESS CRACKS THAT OCCUR ON ROUGH LANDINGS.

IF ALL THESE IMPROVEMENTS ARE USED ON YOUR NEXT PROFILE, YOU'LL HAVE LESS DAMAGE NEXT TIME THE GROUND JUMPS UP AND HITS YOUR PLANE.

HINTS TO  
STRENGTHEN PROFILE  
PLANES.

IDEAS BY: DON REED



# CLAMBASH '83

Pier 3, Port of Astoria  
June 12, 1983

## EVENTS AND TIMES:

Precision Aerobatics*	9-12, 1-4	Class 1 & 2 House Race	9 a.m.
Profile Carrier (Class 1 & 2 combined)	9-4	1/2-A Combat**	10
CLAI.-Scale (judging & flying)	Noon	NW Sport Race	11
		NW Super Sport Race	1 p.m.

\*Beginner, 0-300; Intermediate/advanced, 300-450; Expert 450+

\*\* .049/.051, .012x35" lines, reed or TD, fast rules, single elimination

Registration 8a.m. to Noon

Fees: \$4 first event, \$2 each additional event. Juniors \$3 and 1/2.

PRIZES: Trophies and merchandise through third place

Fox Stunt 35 RAFFLE  
50 cents each, 3 for \$1

SAFETY THONG requested in all events

Plenty of room for parking and spectators; other facilities limited.

No A-A Combat because of lack of sufficient grassed ground

There will be a party at Dave Green's House Saturday night.

Space for sleeping bags is available at Green's or Bill Varner's.

Camping available at Fort Stevens, but call to make reservations.

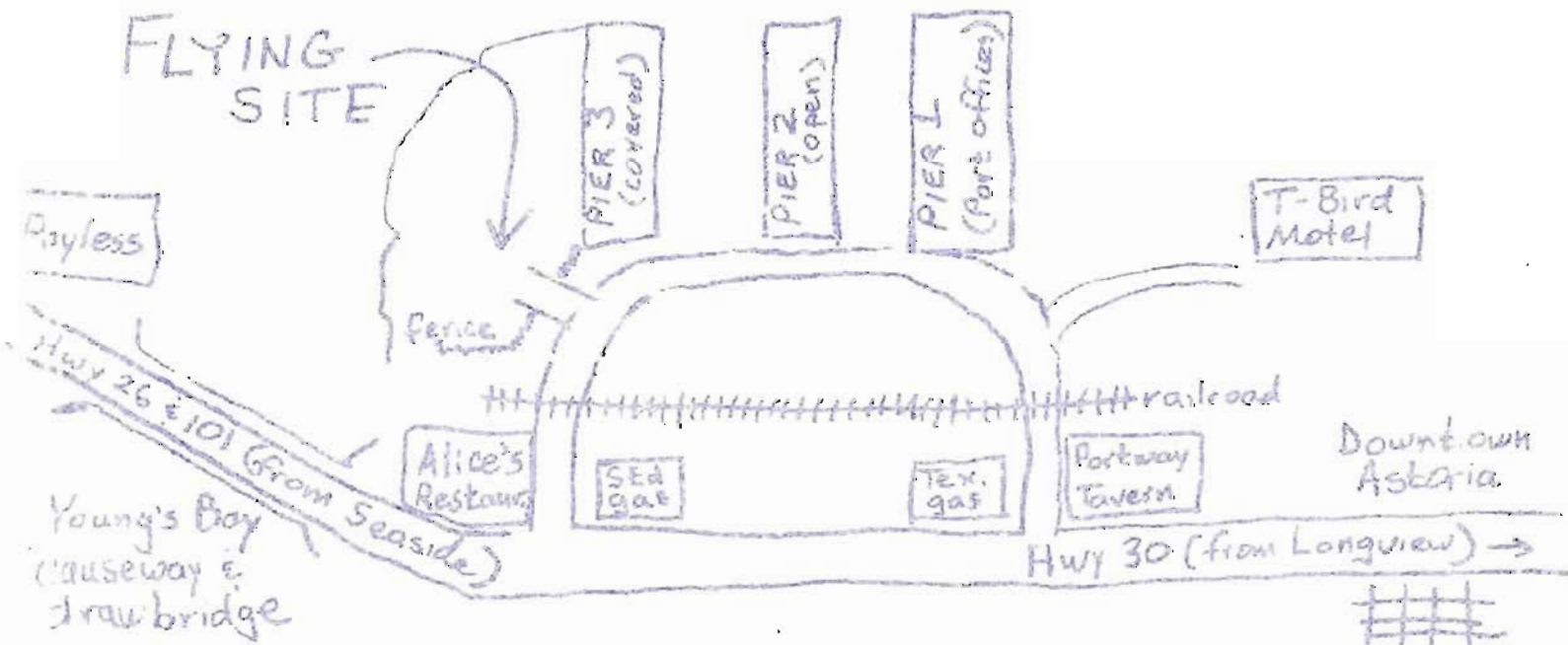
For more information:

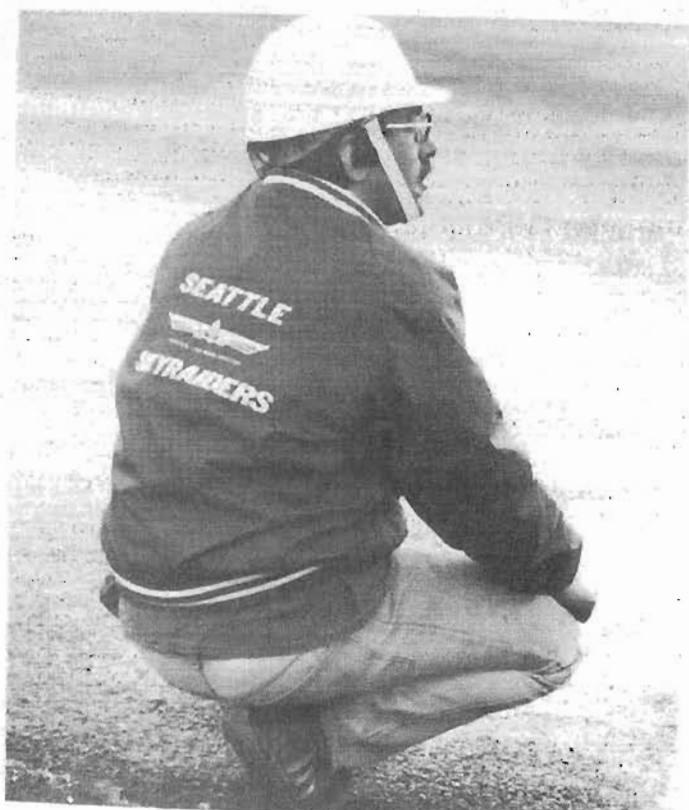
DAVE GREEN, 200 W. Franklin, Astoria 97103

(503) 325-7005

BILL VARNER, 105 Willow Lane, Astoria 97103

(503) 325-7134





FACES OF THE NORTHWEST

FACES OF THE NORTHWEST

Left column, top to bottom: Richmond Modelers Association, Vancouver, B.C., line up at a Jan. 1 flying session. Best-dressed modeler on the Drizzle Circuit, Dick McConnell in new Seattle Skyraiders jacket and Flying Lines racing helmet. The quintessential combat flier, Bill Varner, plane demolished but still smiling, at 1982 Regionals. Right column, top to bottom: Kootenai Valley Model Airplane Club members, Libby, Mont., at a meeting. More Drizzle Circuit fashion, Dick Peterson on stopwatch duty. Steve Lindstedt of Northwest Aeroliners flipping prop of his profile scale plane, Portland club kingpin Pat Webb holding. Photos by Chris Sackett, John Thompson, Rory Tennison.