

FLYING LINES

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Nov. '79 NEWS OF NORTHWEST CONTROL LINE MODEL AVIATION Number 7

RAIN GEAR AND FEATHERS

That's what you will need for the last two contests on the schedule for 1979, if the event names are any indication.

The first contest is the FLYING LINES Benefit Turkey Tournament, Nov. 18 in Eugene, Ore. The second is the kickoff of the 1980 Northwest Sport Race Drizzle Circuit, in Portland, Ore. Dec. 9.

The Eugene contest, as announced in the October FL, is one in which entrants will use one plane to fly four events: speed, racing, novice stunt pattern and slow combat. It's meant to be a day of fun, low-key competition, and camaraderie, with the proceeds going to keep the newsletter publishing.

First prize will be a genuine frozen turkey, second prize is a model airplane kit (.35 size) and third prize is a free subscription or renewal to FL.

Due to last-minute scrambling to put out the October newsletter, the article in the newsletter and the Turkey Tournament flyer didn't agree on entry fees. The article was right: The entry fee is \$5 for subscribers, \$6 for non-subscribers. For \$10, both entry and a subscription can be bought. Bring your friends and tell them they can save \$2 on that deal. The other thing not mentioned last time is that while all engines and planes legal for sport race or slow combat are allowed, sport race legal engines will get a small points handicap.

The first event will be speed, flown 14 laps from a standing start, with take off from the ground required (that means a wheel, naturally). The second will be a race, with 100-lap preliminary heats and a 200-lap feature. No pit stops will be required but a three-ounce tank is maximum. Again, rise-off-ground is required. Third event will be AMA novice stunt pattern (see your rule book). Fourth event will be slow combat, with only the one plane allowed. Landing gear may be removed for combat.

Winners will be determined by their placing in the four events, with the first place in each event worth 10 points, second worth nine, and on down. Total up your points for your score.

For additional information, contact FLYING LINES' John Thompson, (503) 942-7324.

The second contest is one many of us have been waiting for since last spring--the opening of the second Drizzle Circuit. There really wasn't much drizzle last year but there was a whole lot of racing during the winter months.

The contest is in Portland due to the central location. It is sponsored by the Portland Aeroliners, at the control-line site in Delta Park. Dave Gardner is the contest director. Class I mouserace is the secondary event.

For those of you who didn't participate last year, the Drizzle Circuit is a five-contest circuit of races, with points accumulated at each race going toward year-end trophies.

At each race, contestants all fly in three preliminary heats, with their combined placings determining who makes the feature race. Championship points are awarded to finalists based on the number of overall entrants and the finalists' placing. In addition, all entrants receive points for each preliminary heat they finish.

After the last race, in Eugene next April, trophies will be awarded for the top three points winners, plus for fast heat. Other trophies or awards may be given as finances permit. (Last year's top junior entrant won a model kit.)

By the way, Flying Lines will keep detailed statistics, as was done by John Thompson last year. The stats show all heat times, placings, who's best at what, etc. The book is open to view by anybody who wants to compare their performances with others, analyze their consistency, etc. Last year's statistics are available, too. See Thompson for information.

Below is the schedule. Other information can be found in the contest calendar, elsewhere in the newsletter.

DATE	CITY	SITE	HOST	2nd EVENT
Dec. 9	Portland, OR	Delta Park	Aeroliners	½A mouse Class I
Jan. 13	Kent, WA	Boeing SpcCtr	Red-Max	Goodyear (scale race)
Feb. 10	Astoria, OR	Camp Rilea	CLAMS	½A combat, two classes.
March 9	Seattle, WA	Carkeek Park	Skyraiders	slow combat
April 13	Eugene, OR	Airport	Fropspanners	Goodyear & FAI team race

WHERE THE ACTION IS

Night may come earlier this time of year but the sun never sets on control-line activity in the Northwest. Here is a schedule of events we are aware of at Flying Lines. If you know of a contest or informal event not listed here, remind the contest director to send details to FL for inclusion in the next edition of the contest calendar. No time is too early. Results also should be sent promptly.

- Nov. 18.....EUGENE, Ore. -- Flying Lines Benefit Turkey Tournament. Entrants will use one airplane to fly four events, speed, racing, novice stunt and slow combat. Any plane and engine legal for sport race or slow combat is allowed, one plane only. Entry fee \$5 for FL subscribers, \$6 for non-subscribers, \$10 for subscription and entry. Prizes--a turkey, a model airplane kit, and a FL subscription. Site: Mahlon Sweet Airport, Eugene, Ore. Contest Director: Mike Hazel. Contact Flying Lines, 1411 Bryant Ave., Cottage Grove, Ore., 97424 (503) 942-7324. Events start at 10 a.m.
- Dec. 9.....PORTLAND, Ore. -- Northwest Sport Race Drizzle Circuit No. 1. Northwest Sport Race (three preliminary heats for each entry, four-plane final, points accumulate for circuit trophies). $\frac{3}{8}$ A mouse race.* Entry fee, \$3. Sport race is for championship points only; trophies and merchandise for mouse race. Contest Director Dave Gardner, 17870 Shasta Trail, Tualatin, Ore., 97062. (503) 638-4224. Event director, Rich Schaper. Site: Delta Park. Mouse starts at 10 a.m., NWSR at noon sharp. Sponsored by Portland Aeroliners. *Mouse on .012" x 35' lines.
- Jan. 13.....KENT, Wash. -- Northwest Sport Race Drizzle Circuit No. 2. NWSR (above details) and Scale Race (Goodyear). Site: Boeing Space Center. Contact John Thompson c/o Flying Lines or Gary Stevens, (206) 633-3992. Sponsored by Red-Max.
- Feb. 10.....ASTORIA, Ore. -- Northwest Sport Race Drizzle Circuit No. 3. NWSR (above details) and $\frac{1}{2}$ A combat (two classes--reed valve and anything goes). Site: Camp Rilea, south of Astoria on Highway 101. Entry fee, \$3 for one event, \$2 for each additional event. Combat on .012" x 35' lines. Combat starts at 9 a.m., NWSR at

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ACTION, continued

- noon sharp. Contest Director Dave Green, 200 W. Franklin, Astoria, Oregon, 97103 (503) 325-7005. Sponsored by North Coast Control Line Aeromodelers' Society (CLAMS). Trophies.
- March 9.....SEATTLE, Wash. -- Northwest Sport Race Drizzle Circuit No. 4. NWSR (above details) and slow combat. Entry fee \$3. Trophies. Site: Carkeek Park. Contact John Thompson c/o Flying Lines or Al Johnson, c/o Hobby House, 10011 Holman Road NW, Seattle, WA 98177. Sponsored by Seattle Skyraiders. Combat starts at 10 a.m., NWSR at noon sharp.
- April 13.....EUGENE, Ore. -- Northwest Sport Race Drizzle Circuit No. 5. NWSR (above details), Scale Race (Goodyear) and FAI team race. Merchandise awards. Circuit trophy presentation. Fees \$3 for first event, \$2 for each additional. Site: Mahlon Sweet Airport. Contest Director Mike Hazel, 1319 Aspen St., Eugene, Ore., 97401. (503) 726-1185. FAI team race starts at 9 a.m., Goodyear 10 a.m., NWSR at noon sharp. Sponsored by Eugene Propspinners.

UNLOCKING THE MYSTERY OF THE K&B .35

(Or: How to make your Ringmaster go 7:40 with 10 minutes work, and other Northwest Sport Race tips)

By John Thompson

Much has been said in the past year about the mistique of the K&B .35 as a Northwest Sport Race engine. There have been those who argued the things should be completely outlawed, those who said they should not be allowed to run without venturi restrictions, those who said they couldn't be made to run reliably at all. And then there are those who have had some success with the engine and turned some excellent times.

For better or worse, after all the talk, the NWSR rules remained the same through the year and into the 1980 Drizzle Circuit, which will start in December. In fact, the vagueness of the rules was clarified where there was a question about what can and cannot be done to the venturi area of a sport race engine.

The result, for the time being at least, is this: Factory-provided venturi inserts are optional. They may be used installed or not. Also, there is no prohibition on replacing the original spraybar or modifying it or the needle valve. None of these changes, it has been concluded, affect the basic engine configuration or require the skills of an old pro. However, making of new venturis, venturi stacks, or other modifications that could be called "tuning" of venturies are strictly prohibited.

Still, there may be some questions about what needs to be done to make the sometimes crochety K&B engine perform the way some of them have been seen to do, and to do it reliably. The solution is simple, and the work of guaranteeing success with your K&B can be done in a few minutes' time. You need a pliers and a 1/16" drill bit.

I am offering this article for two reasons: 1. At present I hold both the heat and final records (3:53 and 7:40) using a K&B .35 on a Ringmaster, with 9x7 Zinger prop. 2. Sport race is ideally an event for fun and hearty

K&B, continued

competition. I hate to see anybody going much faster than anybody else, even if it's me, but I just can't bring myself to slow down on race day. I hope with this article to help some others go just as fast.

If you have a K&B, you know it as a Jeekyll-Hyde creature. With restrictor in it is a docile stunt engine, capable, if massaged, of fair speed. With restrictor out, they have the obvious potential for greater speed, but you have great difficulty in reliability over varying weather conditions. The reason is that you can not open the needle valve far enough to get the properly rich setting. The needle comes unthreaded.

I have discovered a simple modification of the spraybar that allows the K&B (mine, anyway, which is an old mutt on its second set of insides, but entirely stock) to go in the 88-90 miles per hour range consistently, with one-flip starts. I consider four or five flips to be a slow start, hot or cold.

Lest anyone feel they have to be an old pro, here are step-by-step instructions:

1. Remove the spraybar. This is done by using a $\frac{1}{4}$ " nut driver or a pliers to loosen the nut, and then screw the assembly apart.

2. Take out restrictor (don't throw it away, the rules may be changed some day.)

3. Take your $1/16$ " drill bit (or ice pick, or nail) and enlarge the hole in the center of the spraybar (the itty bitty one that feeds fuel into the shaft port).

4. Re-install the spray bar, with the hole pointing down toward the shaft.

5. Prime. Put finger on venturi and turn over engine twice. Connect battery. Flip prop. You now will have plenty of turns on the needle valve to get full performance out of your K&B under any conditions.

I have found in tests of various combinations that I gain little or no speed by making the modifications described above, but the engine can be run at optimum speed on any kind of day. Without doing that, in certain humidity conditions, the thing flat won't work. (The most typical problems are dying on takeoff as the fuel is pulled away from the engine, or simply an over-lean run.) I have also found that only some K&Bs are touchy in this way. Before a rebuilt after it wore out a year or so ago, mine was not sensitive. Yours may work fine without the spraybar punching.

How to get the proper racing needle setting:

I always make at least one test flight before a race. I try to start on the rich side and sneak up on the peak setting. My K&B runs best when it goes slightly crackly rich the first 5-10 laps. By that time, it usually kicks in and goes gangbusters until the end of the tank. Too lean a start will result in a sag at the end, giving you 10-20 hot laps. (Piloting tip: Using a Fox profile tank, with the proper needle setting, you can hear the engine go off peak two or three laps before it quits. A pronounced wag of the controls (not a shake, but a good up-down motion of the plane) will rob the engine of fuel and usually shut it off where you want it to, giving you ability to predict your landing point. This will not work if the engine is over-lean because it will go off peak too early and your wags will just make it run worse.

Here are some additional tips for making your sport racer competitive, no matter what your engine.

First of all, you must know your equipment. The only way to learn its idiosyncracies is through practice. Practice, both at your field on Sundays and at contests, prepares you for the little tricks your plane will play on you at the worst times.

The top Drizzle Circuit points winner in 1978-79 and an almost unbeaten sport racer this year is Mike Hazel, whose combination (A Ringmaster with Fox .36, 9x7 Zinger) is far from the fastest on the circuit. However, Mike takes extreme pains to know his engine, tank, plane and racing partner. He can count on a quick start, reliable restarts and a steady air speed.

Here are a few specifics:

Use the simplest fuel system possible. I recommend a Fox profile tank of the size that will give you about 50 laps range at your best needle valve setting. Take your Perfect wedges, uniflows, clunk and other tanks and throw them in the dumpster. Put a reliable fuel filter between the tank and engine, and flush it before every race. (See Hazel's column, Racing Roundup, in the September issue of FL for detailed sport racer preparation tips.)

Get a large bulb or bottle (a plastic bottle is best--you can see the fuel inside) and use a piece of large neoprene tubing on the bottle (not the tank). The neoprene can be quickly slipped over the filler vent in a pit stop. It's harder to stick the bottle's tube into the tubing on the tank.

Your pitting sequence should go like this:

1. Before the start of the race, warm up your engine. I usually fire mine after the 30-second warning, and let it run just long enough to take the chill off. (With a K&B you will need a prime to start but not after it's warmed up). When the starter says "15 seconds," connect the battery and make sure you have a good solid bump. (You can overdo it with some engines and flood it. Just get the bump and then wait for "Go.") By the way, don't be cheap. Put a new plug in before each heat. The old ones make great sport plugs.

2. On the pit stops, work with your pilot enough, if possible, to train him to bring the plane in as fast as you can snag it. Most profile planes are tough enough to withstand a pretty hot catch. Catch the plane, drag it out of the pitting line, and get the fuel bottle on the tank. While you are squeezing, get the battery clip on the engine. I sometimes use an assistant to do the battery duty alone. By the time the fuel squirts out the bottom, you should not have to fumble with battery, but only flip the prop smartly. Squeezing the fuel in hard will "gush" the engine through the fuel tubing, in effect priming it. With practice you should be able to perform the whole

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K&B, NWSR, continued

sequence within 4 to 7 seconds. Quick pits can make up for a lot of air speed.

Sport Race piloting tips:

Skillful piloting, one of the things NWSR is supposed to teach, also only comes with practice, best gained through actual contest experience. It can make the difference in winning or losing, especially when we are all running about the same speed.

1. Get your plane off the ground quickly, but don't skyrocket. Your main concern should be clearing the next pit crew (remember--safety before winning, at all times!!) and avoiding conflicts with other planes.

2. Once you are in the circle, follow these practices:

- A. Stay ahead of your plane. This doesn't mean whipping. It means keeping the lines at an angle perpendicular or ahead of your plane, so that you aren't holding it back unintentionally. This also gives you a jump on towing it to the pits if it quits abruptly, and makes it possible for you to react better in emergencies.
- B. Walk the circle as tightly as you can. Loping around the outside just makes your plane go farther each lap, and it's hard work. If some other big galoot hogs the center, just put your shoulder to his and lean on him.
- C. Hold your handle on your chest except when passing. This also shortens the distance the plane travels. When passing, hold your hand high but keep it in tight. This allows your plane to pass at a low altitude, thereby not slowing with climbs and dives.
- D. Fly as low as possible and safe ("ever let your plane go below 10 feet high when others are pitting, just in case the odd crewman stands up in your way. You'd feel lousy if you hit him even if it were his fault.) On the other hand, never climb too high. Climbing and diving slows your plane, and high flying can cost you penalty laps. You should be able to pass within only a few feet of the other planes if you hold your hand high.
- E. Be alert: Don't get caught coming up behind a slow plane too low to get over him. Passing underneath is both disastrous and illegal. If your plane is unstable, give others a wide berth. If another plane appears unstable, give it a wide berth.
- F. Beginners should be careful to avoid the tendency to look directly at a plane that is passing theirs. This often leads to an unintentional climbing by your plane, which could cause a collision. Keep your eye on your own plane and what's ahead of it.
- G. Be aware of the approximate location of other planes; who is passing you or who you are passing. Know who is down for a pit stop and where their pit is. If you have everything else in mind, you might want to keep track of how many laps you are ahead or behind.
- H. Watch your pit crew. They may be trying to signal you about something, such as warning about high or low flight, number of laps to go, etc. (If you're running short of fuel and may have to do an extra pit stop, fly low--it keeps fuel at the pickup tube, if you are in danger of an over-run, start wagging your plane to shut it off and plan to pit in front of your usual pit just in case you come down on the last lap.) You should work out a pre-arranged set of signals between you and your pitman.

3. Landing techniques:

- A. Bring the plane to your pit crew. Time spent running for the plane is wasted. The way to do this is to tow the plane. You must get out of the pilots' circle and ahead of the plane on the circle. Run sideways or backwards, keeping your plane low but going fast enough to make it to the pit. Don't let it balloon up in the wind, or you'll fly in front of somebody or lose control.
- B. Set the plane down at the last possible moment, so that it is going as fast as the pit man can catch it.
- C. Put the plane down right on the pitting line, not inside or outside it. Don't make your pitman play shortstop; put the plane in his hands.
- D. Watch out for the other pits, pit crews, planes coming up or down or stopped on the ground. Keep your lines down while in the pits, so a landing or taking off plane doesn't snag them (the rules say the accident is your fault.)
- E. When you are finished, crawl outside the second interior circle so other landing pilots don't fall over you as they tow their planes.

These tips should enable you to get the most out of your plane-engine combination, get in contention at most races, and have a lot of fun flying sport race.

Sport race is meant to be easy, but neither it nor any other competitive event can be won without preparation and practice. As some unknown has said, "Luck is defined as the meeting of preparation with opportunity." Or something like that. See you on the Drizzle Circuit.

Most of the column this time will pertain to the Formula 40 speed aircraft, as promised in the last installment.

First thing to do is take a check in the AMA rule book and see what it says. Official description is as follows: "This event is intended to be a common ground for competition between monoline speed fliers and two-line racing fliers (and other two-line fliers) using an engine size that is rapidly becoming the most highly developed and most commonly used of all model airplane engines. Because of the requirement for two lines and fixed landing gear, it is hoped that newcomers will also enter this event."

This author notes that while the event was brand new, the participation was fantastic, with people coming out of the woodwork to fly it. In fact, the winner at the 1976 Nationals was a radio control pylon racing flier. But, alas, participation has fallen off somewhat from the initial boom. But it does continue to be one of the more popular speed events.

It was hoped that the rat race people would flock to the speed circle to enter F40. While some racing people have come over, few rat race planes can successfully compete (on a national basis) with the lighter-weight, specially built airplanes. More on that later.

Engine requirements: Displacement is limited to .2800 to .4028. Constant diameter exhaust pipes are allowed with a maximum length of five inches measured from the cylinder centerline.

Model design: Fixed landing gear with at least one wheel, and construction of two-part models (pan and top) must be similar to or as strong as that described in the control-line speed section of the AMA rule book. That's it!

Other: Launching requires ROG (rise-off-ground). Lines are .018" single strand, and timing is for one mile (14 laps) from a standing start.

Now lets get down to brass tacks.

First order of business is engine selection. There are many racing 40s on the market. For maximum performance I suggest the Supertigre X-40 or the K&B 6.5. With regard to parts availability, the latter will get the nod. Both engines are of ABC (aluminum-brass-chrome) cylinder configuration, with rear exhaust. The X-40 is rear intake and the K&B comes in either front or rear intake. I recommend the rear intake for ease of installation and peace of mind regarding crankshaft failure.

For aircraft layout, build something similar to a rat race plane, assuming you are already familiar with that. For ease of construction, go with a standard upright configuration. Half-pan construction will save some weight, along with slightly reduced dimension from a regular rat racer. About 90 to 100 square inches is adequate for the wing. Build it mostly out of balsa, with a maple or spruce leading edge to give some rigidity. The horizontal stabilizer should have an area of 35 to 40 square inches. The elevator should be on one side only, to reduce sensitivity. Either side works fine.

Whenever designing a speed plane, remember that it is better to have a plane a little large than a bit too small. A too-small plane is more difficult to fly and may actually be slower.

Regarding the rest of the plane, build it light as you can without sacrificing strength.

For fuel system I prefer a bladder tank. It is lighter and does not compromise itself in regard to location in relation to carburetor like a metal tank does. A bladder tank also is a lot easier to make.

Several times now I have referred to weight. This is because a light weight will make a big difference in the score since this is an acceleration event. An average rat weighs in at about 32 ounces, while a reasonably built F40 weighs about 25 ounces, and a real good one is 22 or below.

Now, I would like to emphasize that while it takes a special purpose plane to do real well in F40, no one should be discouraged from using their rat racer in this speed event if they so desire. I make the following suggestions to optimize performance: Remove that large metal tank, and make up a bladder tank. You will save nearly two ounces, which will help. You will find it helpful to set up for external fueling so as not to be hassling with disassembly just to fuel up. Use a T-fitting inside the plane and run the fueling line out through the hole where the fastfill plug would be. For pinching the line off, use a perfect brand line clip just like the combat guys do. Make sure you practice a starting sequence.

I also suggest that you fly with a handle that has narrow line spacing to desensitize the controls. This will help give you a smoother straight-as-an-arrow takeoff, and fly in a perfect groove, which is faster. You also may want to experiment with props.

For those interested in a tried and true design for F-40, I have drawn up a set of plans for the design that I have used for three seasons now. A total of three have been built and all have flown well. It is designed around the K&B and weighs about 24-25 ounces. I can provide detailed written construction notes that would be a little too much for this column. Contact me for the particulars.

PYLON POOP, continued

Random Shaft Runs:

I recently attended a speed and race meet in Merced, Calif. Yours truly didn't do anything spectacular. The FAI gang was there. Luke Roy was breathing hard on the record, but didn't break through. Contest Director Frank Hunt was consistently turning in the low 190s with his D speed plane. He uses a new Rossi 65 which shows promise of hitting 200 miles per hour.

Cox recently released an .049 size speed plan. It is a re-issue of the one they made a few years ago, with some minor improvements. Ultra-light, and set up to take a Cox TD engine, of course. Price is \$6.95. I understand they may not be going through regular distribution channels, so you may have to order direct or through a specialty shop.

For those interested, I will work on speed pans for the benefit of anyone not having the facilities to do so. To fit engine, drill and tap mounting and hold-downs, the cost probably would be around \$15.

Speed Equipment Directory:

Kustom Kraftsmanship, P.O. Box 2699, Laguna Hills, CA 92653. 1/2A engine specialists, reworked engines and parts, glow plugs, control lines, Harter rat/speed pans, button-connection bellcranks.

John Newton, 2154 Los Padres Drive, Rowland Heights, CA, 91748. Fiberglass fuselages, FAI speed kits.

Herb's Speed and Racing, 1621 M St., Merced, CA, 95340. Speed pans, basswood, glow plugs, monoline equipment, fiberglass fuselages, control lines, props, engines, and some engine work.

More suppliers listed next column.

If any of you troops out there have a particular topic you would like written about, just let me know, as I am open to suggestions. Also, I will correspond if you have any questions. Go Fast!

--Mike Hazel, 1319 Aspen St., Eugene, Oregon, 97401 (503) 726-1185.

AIR MAIL

Dear FL:

I wrote earlier that I had ordered Sterling's F6F Hellcat for conversion to profile carrier. I also wrote to Sterling about this and I received a reply from them today (10/22/79). It seems that Steve Dinerman, a carrier flier in the Philadelphia area, had visited their head designer and looked at the plans, kit and a prototype, and got together with them and set up carrier details to also be included in the instructions on the plans. As the plans were already out for printing, the conversion drawings will be on a separate sheet. This setup will have all the details for in-flight movable leadouts, movable offset rudder, and of course, installation of three-wire control and throttle system.

This, then, will make it unnecessary for me to work it out and make a report on it. I do have all the drawings for this conversion, although the kit still hasn't hit the market yet. The projected weight is two to 2 1/4 pounds, but I am sure this could be cut down further by careful selection of wood.

This is going to be one of the most versatile kits on the market, as they have already set it up for CL and RC operation. Now, with the interest of carrier fliers, for profile carrier.

--Bill Skelton, 45 SW 11th, Warrenton, OR (Box 105) 97146

Dear FL:

I've been putting this off for more time than I care to admit. Enclosed is \$5 for a subscription to FLYING LINES.

We have a small control-line club, AMA sanctioned, here in Sunnyside, Wash., sponsoring one CL contest each September. CL activity up here to the near past has been quite limited but there is a definite upsurge in interest lately.

Please send me the latest issue ASAP.

--Joe Just, president of CLASS, 713 Crescent, Sunnyside, WA 98944

Dear FL:

In our rebuttal to Dirty Dan (Rutherford) for saying nice things about us (in his RC Model Builder column), we allowed as how we would be willing to manufacture shutoffs and make them available at a very nominal cost to encourage NWSR fliers to use them. We also allowed as how you two (John Thompson and Mike Hazel) would install them for everyone! See, don't say we never did anything for you!

Latest project is to get Toodles to swallow a handle so the baby can get used to it now. The Nats aren't too far away!

--Greg and Sherry Holland (editors of CL-RPM Racing News), P.O. Box 316, Yardley, PA, 19067.

(Editor's Note: Sherry (Toodles) and Greg (Chop) refer to recent proposals from Dan Rutherford and Vic Garner, among others, that shutoffs be legalized in Northwest Sport Race. What to FL readers think?)

HAZEL CAN "B" FAST

Only one new Northwest record was set since the October edition of FLYING LINES, a new B speed record of 148.95 miles per hour.

That record was set in Merced, Calif., Oct. 21. Hazel observes ruefully that the national open class record for B speed is 200.34 miles per hour.

FLYING LINES began keeping track of the best performances by Northwest modelers with last spring's Northwest Regional Control-line championships. They can be set by any Northwest flier in any AMA sanctioned contest. Some documentation is requested from anyone claiming an out-of-area record.

Hazel's new B record eclipses his own previous 142.47 mph.

Here are the complete records:

½A MOUSE, CLASS I	50-lap: 3:05 (Jim Cameron)	100-lap: 6:36.9 (Cameron)
½A MOUSE, CLASS II	75-lap: 4:24 (Gilbert-Shelby)	200-lap: 14:32 (Cameron)
GOODYEAR	80-lap: 3:52 (Mike Hazel)	160-lap: 7:31 (John Thompson)
SLOW RAT	70-lap: 4:15.4 (Mike Hazel)	140-lap: 8:33.6 (John Thompson)
RAT RACE	70-lap: 2:35.55 (Mike Hazel)	140-lap: 5:21 (Mike Hazel)
FAI TEAM RACE	100-lap: --	200-lap: --
NW SPORT RACE	70-lap: 3:53 (John Thompson)	140-lap: 7:40 (Thompson)
½A SPEED:	76.57 (Jeff Bell)	JET SPEED: 165.83 (Mike Hazel)
A SPEED:	125.82 (Mike Hazel)	FAI SPEED: 88.05 (Scott Newkirk)
B SPEED:	142.47 (Mike Hazel)	½A PROTO: 71.97 (Jeff Bell)
C SPEED:	--	B PROTO: --
D SPEED:	--	FORMULA 40: 149.5 (Mike Hazel)
PROFILE NAVY CARRIER:	208.78 (Marty Phillips)	
CLASS I NAVY CARRIER:	268.98 (Terry Miller)	
CLASS II NAVY CARRIER:	319.65 (Orin Humphries)	

SUNDAY FLIER

By Chris Genna

A Portland newsman, at my invitation, came out to watch the Portland Aeroliners-hosted Drizzle Circuit No. 3 sport race contest last February.

Steve had said he had a son interested in modeling and thought he'd see what it was all about. He and his son missed the combat, an event I thought they'd enjoy, but found sport race very interesting, viewed through the showers from the comfort of their car.

Steve explained that his son had received a ready-to-fly plane as a gift, but couldn't get the engine started. The advice I gave wasn't exactly profound, but since it worked, from our modeling point of view, I'll pass it along to you.

I told Steve to throw out the cigarette-pack-sized battery he had which had come with the plane and get a nice round No. 1 dry cell. I told him two dry cells wired in parallel would be even better. I told him to follow the manufacturer's instructions to the letter because Cox didn't make engines that didn't start -- bad for business.

I told him if the head was glowing inside and was on tight, the thing would start, though the amount of priming and flipping he had to do might surprise him. Just prime and flip, I told him; don't monkey with the knob. I told him everything I knew -- it took about five seconds to do so -- about what might tell him it was too lean or too rich.

I told him when he got it running to open it up till it just wasn't going to run anymore, and run the fuel out that way. Then, after the engine had cooled completely to start it again and slowly twist that needle valve down until it was screaming.

Most important of all, I told him, was karma. The engine had to know who was boss; it had to be shown that it was required to start.

Steve called me about three days later to tell me they'd been flying the plane like crazy and really having fun, but that it wouldn't loop. I told him to keep his son at it until he smashed the thing to smithereens, then buy a Goldberg Wizard. I told him it wouldn't fly a lot better but would be a big improvement if he left off all the autopilot garbage and kept the lines short. I explained different ways to get the RTF's engine onto the nose of a Wizard.

About a week later, Steve told me his son had the Wizard doing everything he dared and then some, and wanted to know what was next. (We all know a Wizard's loops are 50 feet in diameter, and represent a five degree inclination of the level-flight circle, but they do loop.)

I trotted out standard chat No. 43, all about the advantages of airfoils and ribs and covering, and told him to get a Baby Flite Streak or Jumping Bean and try that.

SUNDAY FLIER, continued

And as far as I know, there's one more serious sport flier in Portland.

What I'm trying to illustrate is that there is a logical progression to building and flying talents -- that it's easy for one to keep pace with the other. I'm also saying $\frac{1}{2}$ A flying is a sure source of cheap thrills and there's no reason to scoff at reed-valve engines. (Perhaps John Thompson will ruefully relate the starting contest he and I were going to have, to see whether his front-rotor .35 or my reed-valve .049 would start sooner.)

Kids with unstartable plastic planes in the closet are unlikely to see the thrill of control-line flying and one day become top stunt pilots. But if one of those planes shows up at your flying field, a little less scorn and a little more help may get the owner off and flying.

Once a beginner is behind the handle, HE can tell what he needs to do next. Telling the beginner that he's over-controlling only tells him what it's called, now how to fix it.

Similarly, he'll feel the plane fall out of the top of his loop and know the plane is lacking. He may appreciate a discussion of lift vs. weight, but I've never seen a beginner yet who REALLY appreciated a crack like "Back to the drawing board."

True, I've never heard anyone say anything like that. But I've rarely heard anyone volunteer the lift vs. weight discussion either.

It can't be that the local experts don't know about aerodynamics. It must be that they figure it's their turn in the circle. If that attitude persists, in 30 years we'll see a half dozen retirement-age types flying combat on the last flying site.

PROFILE of Chris Genna

(Editor's note: At our request, Chris, our regular sport flying columnist, sent us a biographical sketch with his first column. We didn't have room that time, so here it is.)

Chris Genna, like most sport fliers, has been a modeler in an on-again, off-again fashion. He began flying control-line when he was 12, and after a lapse in high school, took up the Ambroid again while a student at Oregon State University.

That phase was interrupted when he began flying 12 inch = 1 foot scale aircraft for the U.S. Army. He returned to modeling in 1976, becoming a charter member of the North Coast Control-Line Aeromodelers' Society (CLAMS) in Astoria. He writes the club's more-or-less monthly newsletter, the CLAM-gram, and has been the club secretary since September, 1977.

A newsman for The Daily Astorian, he is 32. He, his wife Mary, and daughter Jennifer, 9, live at 645 Highway 101, Astoria, Ore., 97103.

HOBBY SHOP DIRECTORY

SEATTLE

INTERLAKE HOBBIES -- Control-line and RC supplies, specializing in parts. 1406 N. 80th St., Seattle, WA 98103. (206) 525-6757. Owned by the Reifel family. "If we don't have it, we will get it."

HOBBY HOUSE -- Control-line, free flight and RC supplies. 10011 Holman Road NW, Seattle, WA. Owned by Allyn Johnson. (206) 782-1609.

PORTLAND

HOBBYLAND -- 20 years serving all model aviation enthusiasts. 4503 N. Interstate Ave., Portland, OR 97217. (503) 287-4090. Owned by Ken Thorstad.

(Hobby Shop Directory listings are presented as a service to area model aviators who want to know where to go for their CL supplies. If your favorite shop isn't listed here, show them your copy of FLYING LINES and suggest they sign up. Ad rates listed elsewhere in the newsletter.)

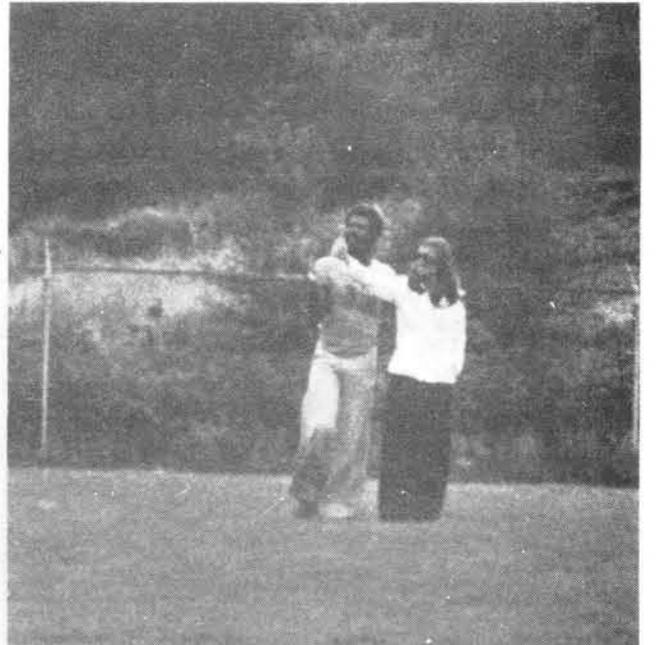
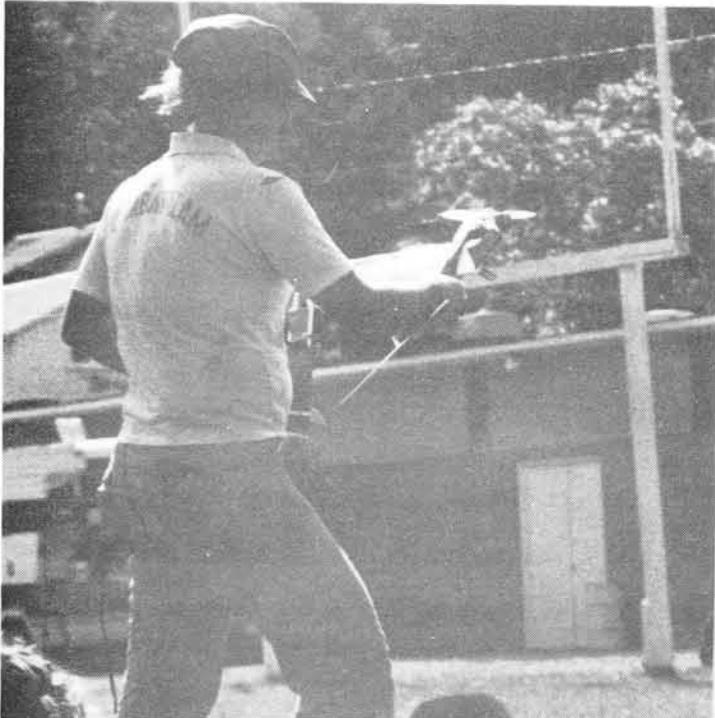
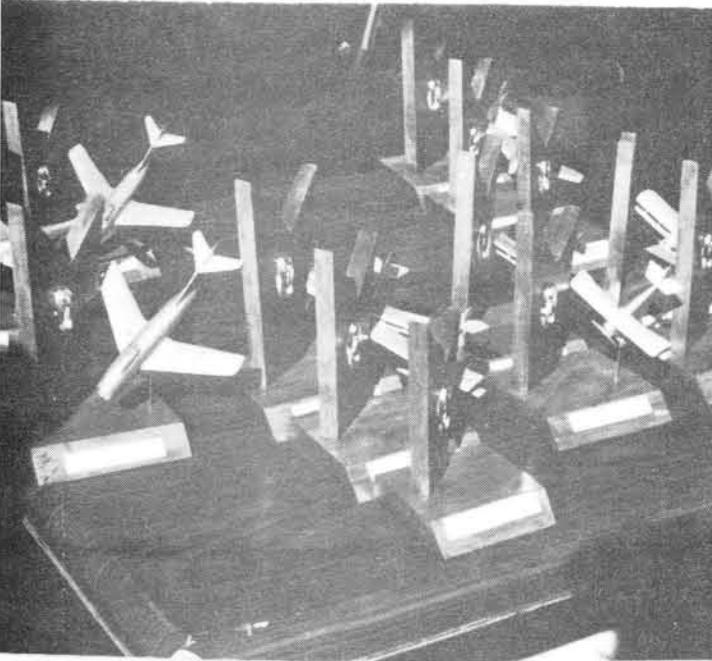
TILL NEXT MONTH...

All this typing about model flying made your editor itch to get a handle in hand. And I proved once again, that model airplanes will fly under water. What's the saying? "Into each flying circle a little rain must fall?" Getting soaked with castor oil, grinding your knuckles into hamburger on Zinger props, flying in the rain, reeking of epoxy and baffling your friends with words like "bellcrank" and "square loop" is all part of the crazy hobby that brings us all together.

FLYING LINES is a Northwest modelers' effort to keep us together -- by communicating, at least -- across the long distances that separate our flying fields and the long periods between our gatherings.

The key to FL's continued success will be readers' passing the word to others and helping our communications network to keep growing. Tell your friends about FL's regular contest reports, calendar, competition records, columns on speed, sport, combat, stunt, racing, carrier and scale, articles, letters and photos.

Subscriptions cost \$6 for 12 issues. Ad rates: \$5 per half page, \$3 per quarter page, \$1 for five lines of classified advertising, \$10 per year for hobby shop directory listing. The address is on the masthead.



The Second Annual CLAMbash in Astoria, Oregon, is the subject of this month's photos, captured on film by Gary Genna. Top: Dave Green launches Jim Cameron's $\frac{1}{2}$ A combat plane in match with Chris Genna. Center, left: Array of handsome CLAM-made trophies. Center, right: Bill Varner Sr., father of infamous Bill "Prop Nut" Varner, a faithful CLAM stop-watch pusher. Bottom, left: Gary Stevens carries back remains of his faithful Tomahawk, which died of old age abruptly in the middle of the Northwest Sport Race feature. Bottom, right: Phil Granderson tutors a new modeler.