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**NEWS OF NORTHWEST CONTROL-LINE MODEL AVIATION**

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1073 Windemere Dr. NW, Salem, OR 97304

Editor: Mike Hazel

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SEPTEMBER 1991

ISSUE #92

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The word from Ed McCollough, our AMA district VP, is that the 1992 Nationals will be held at Westover AFB, in Massachusetts. The issue of another NW Nats is however, far from dead. Ed says that the site in Corvallis, Oregon is still a possibility in 1993.

- A reminder that the season's major wrap-up contest, aka the Raider Round-Up, will take place soon. Let's everyone get out and support this one. A flyer is included in this issue, please take note of some changes.

FLYING LINES is still looking for some more people willing to help out, in the form of event columnists. We need to fill slots for combat, stunt, speed, and racing, and maybe a sport type column.

The CLOWN RACE event is now an official NW records category event. Originally a club event from the Columbia Basin Balsa Bashers, it is now being flown outside of the local club area, and enjoys a lot of participation. Looking forward to observing it for the first time at the Round-Up. Speaking of new record categories, look for another new entry in the record rolls soon, specifically, NW Pit Stop. Rules in this issue.

And while we are talking about NW records, a new feature starting this issue will be the RECORD REVIEW. This feature will detail the aircraft and performance of selected NW records. I'll be contacting some of you soon, asking for pertinent details of your record.

It was mentioned that some of the racing records are not current. If this is the case, we need to get this information updated. Some documentation is needed to do this. Many of the records are somewhat old, and might either reflect the fact that FL ceased publishing in 1988 and keeping records current, or, just the low level of competitive racing.

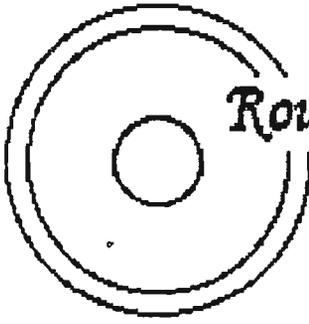
Ye Olde Editor recently received an engine from a friend in Leningrad. Perhaps one of you engine collector types would be able to tell me something about it. My Russian is not so good, as a matter of fact, nonexistent, so the instructions with the engine tell little about it to me. Here are a few facts: first of all, the engine configuration seems a little incongruent, it has a straight venturi, but is equipped with a flywheel as if for marine use, but there is no provision for water cooling. The engine name on the side of the crankcase is "KOMETA". One point distinguished from the instructions is that the engine size is 4.82 cc, or a "29". Timing, without measuring, appears to be quite conservative, so this is definitely not a high performance engine. It has never been run. If you know anything about these engines, let me know.

I was doing some research recently, flipping thru some old FL back issues, and it amazed me that there was at various times so many letters from readers published. Quite a contrast to now. Yes, there it is again, a chiding from the editor because we are not receiving any input for the Airmail department. Come on, now! There has to be something of a topical nature that someone wants to air. We'll just keep hammering on this!

Along with the other lack of input, no indication yet as to whether any of the racing crowd is interested in a resurrection of the Drizzle Circuit. It's getting late, folks. If it is to be, then it must be decided soon. Jim Cameron had an interesting idea. He suggested that rather than have an entire racing series dedicated to the sport race events, we include other classes. The premise being that a different racing event, or events, be held each time. In this way, the season championship would be decided by an entrant's performance in several classes, rather than specializing in one. Any thoughts on this?

Guess that's about it for now. See you at the Raider Round-Up.

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## Round and Round

The Control-Line  
modeler at large

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By John Thompson

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**DID YOU EVER** notice that when the weather is best for flying, you seldom get a chance to do it?

There always seems to be something to fill summer days besides flying. As this is written on Sunday, Aug. 18, I've been flying once (yesterday!) since the Bladder Grabber in June. Sometime in the dead of winter, when the rain is coming down and I'm tired of eating dust in the shop, I know I'll wish I had spent more time out flying this year. It'll be just in time for a New Year's resolution. It'll be Resolution No. 2. (No. 1 is always to get a proper stunt plane finished in time for contest season.)

There's still time for 1991, particularly for those interested in competition.

I'm all dressed up, equipment-wise, for the Raider Roundup.

The flyer just came yesterday, and I was overjoyed to note that Mouse Race made it on to the schedule. It was a late addition — and the Skyraiders' support for us racers is appreciated!

That brings to mind the general issue of support.

Most of us do some things in our hobby out of a sense of obligation, rather than pure desire. This is as it should be.

In spite of the rebirth that we see in control-line in recent times, we know that it's still an

activity loved relatively small group of people. The contributions of each individual to such a small group are much more important than the contributions of a single individual to an activity with a mass audience.

That's why the "retirement" of one contest director, one newsletter editor, one race official, etc., can make such a tremendous difference to the hobby. It's that thought that keeps people punching stop watches, publishing newsletters, organizing club meetings, etc.: "If I don't do it, who will?" People with a little bit of foresight realize that if they don't continue to contribute, the activity they love may be gone when they decide to return to an active status. But if everyone involved in the hobby is willing to do their part, the same old people shouldn't always have to be the ones doing the work.

One of the most disturbing trends in the hobby that I've observed in the 1980s is the trend away from participating in the work of the hobby. As the old reliable workers leave us, new folks are not taking their places.

Oh, there are competitors. But too many of the competitors are just that. Come, fly, collect their trophy and go home. As a result, we see clubs in areas where there are lots of fliers struggling to find contest directors, officials, etc., and we see contests in jeopardy.

This isn't like Major League Baseball, where there'll always be somebody paid to mow the grass. In control-line model aviation, everybody takes a turn at the mower handle as well as at the handle on the end of the lines.

The Raider Roundup has been a case in point. As some of the reliable workers have tried to pass on the torch, it has been very difficult to get newcomers to take it up. Fortunately, a few hearty souls seem to annually "rescue" the contest.

A contest that is constantly in need of being rescued is not going to please either the workers nor the competitors.

It doesn't have to be this way.

The Skyraiders need two things right now:

First of all, they need strong support from among the competitors. Never mind if the publicity was a little late coming out, or the events list was in flux. We all know when this contest always is, and roughly what it will involve. We also know how hard it has been to put this contest on, but we also know what a joy it is to participate in. Let's make the effort to get there and participate at whatever level we can — and show our appreciation to this year's "rescue squad."

Secondly, we need to look around and see how we can help in the future. The most successful contests always involve a team effort by people from a wide

area. Everyone who attends should be looking for ways to help out, if not this year than maybe by signing up for some work at next year's contest.

I for one know that my modeling year would be incomplete without the Roundup, so to those who are making it possible this year, in advance: Thanks!

Looking a month farther ahead, the Eugene Prop Spinners would like to issue a hearty invitation to our annual fall fun-fly. Yes, it's a "contest" in the true sense of the word, with a full schedule of racing and precision aerobatics: the Really Racing program on Saturday, Oct. 12, and the Fall Follies stunt and Fox .35 combat on Sunday, Oct. 13.

But it's also a low-key event where having a good time is the main idea. And it's your second chance in a year to fly all the racing events. If we can get enough interest up in some of the less popular (read: AMA) events, maybe we can generate a few more chances to fly them.

It's also a good tune-up for a Drizzle Circuit. We're still hoping that the DC can be resumed this year if we can get the workers together to put it back into operation (see comments above). After 11 years of DC racing, last winter seemed pretty empty! Do want to race this winter? If so, climb on board with an offer to 1) participate and 2) work!

Speaking of the Really Racing event, why not spend a little time practicing and enter the pit stop contest?

If you haven't seen it before, the event is a true test of the quickness of a racing team's ability to shave time off pit stops, as measured from the point of shutdown to one lap after takeoff. Any racing plane with a shutoff is allowed — including sport racers, which may be

equipped with shutoffs for the pit stop competition. The planes must be flown on lines appropriate to their event and must meet all rules of their event, aside from the shutoff provision mentioned above for sport racers.

It is currently contemplated that a Northwest record category will be established for the pit stop event, with initial based on the Really Racing contest.

Want something to shoot for? Last time the event was run — several years ago at a Eugene summer contest — the Nitroholics Racing team did 18 seconds with a Goodyear plane. In our practice sessions, we had done 14 seconds — which requires a ground stop of about four or five seconds.

Either of those times should be attainable with a little practice. Who will establish the first record?

Speaking of racing, did you realize what happened in the Control-Line Contest Board to the rat race engine proposal?

I had viewed this as the best chance we have had in over a decade to revive interest in rat race. The proposal would have instituted a venturi restriction for .40 engines and opened the door for competitive .21-powered airplanes. The goal was eventually to phase out the .40s and make .21 engines the standard.

By reducing the weight and pull of the planes (and slightly reducing the speed), it was thought that the .21 rat would once again interest "the average person" in an event that now requires superhuman athletic ability.

Why did this proposal fail?

Well, two East Coast contest board members **failed to vote** in the all-important final ballot.

These were two who had supported the proposal on the initial ballot. The final tally was five yes, four no (with two-thirds required for passage). The no votes came from the same old Nats clique that defeats every significant improvement to AMA racing rules, primarily because it could obsolete the airplanes of the last 10 or 12 fliers who participate in this dying event.

It's too bad — rat has been AMA's premier racing event. At the 1991 Northwest Regionals, there were zero (0) entries for the first time ever. A sad day indeed.

Here's an idea: Why don't Northwest fliers start up the .21 rat as a true racing event. NO, don't write new rules — not a Northwest Rat Race. Why not build some .21 rats and campaign them in the regular rat event? There are no .40s to fly against anyway — and a good .21 should be competitive.

Let's show the rest of the country it can be done!

Comments, brickbats, questions, etc.: John Thompson, 1145 Birch Ave., Cottage Grove, OR 97424.

## NORTHWEST PIT STOP

- OBJECTIVE:** To achieve the lowest elapsed time in completing a CL Racing aircraft pit stop, as defined below.
- PIT STOP DEFINITION:** The period of time from the moment of engine shutdown actuation by the pilot, the subsequent landing, refueling, engine starting and launch by the pitcrew, until the moment that the aircraft completes exactly one full lap from the point of launch.
- ELIGIBLE AIRCRAFT:** Any CL racing plane, which is legal under specific NORTHWEST, AMA, or FAI rules is eligible. Line sizes and other specifications for the particular aircraft being used must be in accordance to competition regulations.
- ENTRY:** For purposes of name of entry, and establishment of NW record, the entry shall be made in the names of (1) pitcrew member(s); and (2) the pilot.
- OFFICIATION:** Each entry will be allowed two attempt periods of three minutes each. The pitcrew will signal the officials when it is ready for the three minute attempt period to begin, at which point the engine may not be running. When the officials signal the start of the attempt period, the pitcrew may start the aircraft and launch at any time.
- A minimum of two laps must be completed after the initial launch before the first engine shutdown. Up to three pit stops may be completed during the attempt period, allowing a minimum of ten laps between pit stops.
- There shall be a minimum of two stopwatches used, and the averaged times shall be read in seconds and rounded-off tenths. The best single pit stop time will be the entrant's score.
- FLYING:** Although this event is flown solo, legal flying heights must be maintained, along with the appropriate pitcrew and pilot movements in relationship to the circle layout for the aircraft class, and any other pertinent safety regulations.

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## CONTEST RESULTS

Columbia Basin Balsa Bashers contest, August 10, 1991, Richland, Washington

### OLDE TYME STUNT (10 entries)

- |    |         |                   |
|----|---------|-------------------|
| 1) | 278 pts | Richard McConnell |
| 2) | 252.6   | Bill Tucker       |
| 3) | 246.2   | John Hall         |
| 4) | 206.5   | Joe Campbell      |

### CLOWN RACE (9 entries)

- |    |          |             |
|----|----------|-------------|
| 1) | 209 laps | Joe Rice    |
| 2) | 185      | John Hall   |
| 3) | 165      | Bill Darkow |
| 4) | 145      | Ron Hale    |

BUILDING YOUR FIRST CARRIER PLANE

If we have convinced you to give carrier a try, now is the time to consider your first plane. I recommend that you begin with a profile plane. The Class I and Class II planes are too complex, and there are no kits available. Plus, if you find after giving Carrier a try that you want to try something else, the cost and time involved will be much less, and you'll still have a good sport plane. So, what do we begin with?

I suggest that you contact Russ James at AJ Free Flight in Fresno, California and purchase one of his outstanding P-51 replica kits. This plane is large enough to handle Profile flying at approximate 305 square inches. Russ puts out a very nice kit, which really is a replica of the old Sterling model, without all the crappy wood, poor fits, etc., that plagued that series.

There are only three modifications that you will need to do to make this the ideal Carrier competitor trainer. First, you will have to install a three line bellcrank, either a J-Roberts, a L&R bellcrank, or a homemade unit. While making a three line home built bellcrank is a real snap, you might find it easier to just buy one. In any case, you will need to build a new bellcrank mount out of five-ply  $\frac{1}{4}$  inch plywood. Make this platform large enough to fit snugly between the center ribs. Mount on  $\frac{1}{4}$  inch square hardwood blocks and epoxy the assembly into place. On the Mustang you will want to cut a slot in the ply mount so the throttle pushrod can exit through the bottom of the mount, and out the bottom of the center planking. By running the throttle pushrod out the bottom of the wing will make it easier for you to mount the tank on the outboard side of the fuselage.

The next modification you will have to perform is to open up the ribs on the inboard wing to allow all three lines to exit. You can either punch an extra hole, or you can open up all the inboard ribs for leadout clearance, it's your choice.

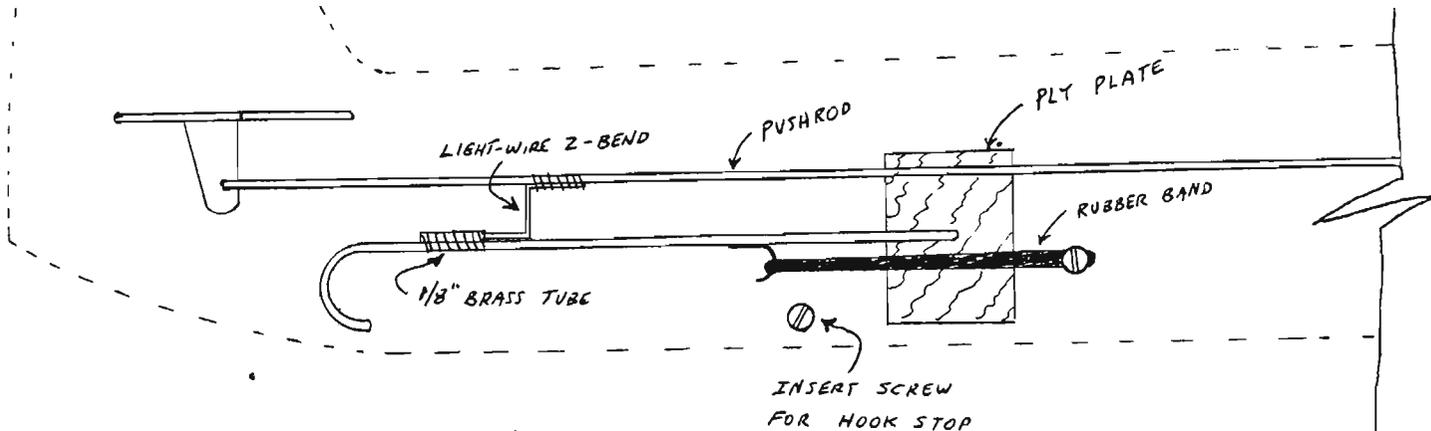
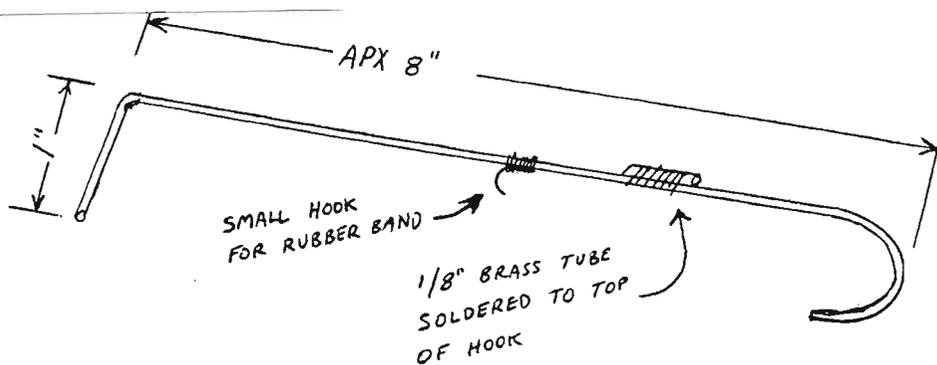
I personally recommend that you put in extra sweep to your leadouts to insure good line tension during slow flight. Let's say the foremost leadout line should be an extra two inches further aft from normal position. During all this I am assuming that you realize that all the above mentioned work should take place on the wing before you finish the center planking and installation in the body. It might behoove you to tack the wing in place, and mount your engine before finishing the planking of the wing. You then can make any minor adjustments to the throttle pushrod while there is still room to work in. If you find everything is working fine, then finish the wing and permanently epoxy it in place. Add fixed flaps, not movable as in a stunt model.

The final modification to the kit is the installation of the hook for the arrested portion of the flight. Don't let this throw you, it really is simple. The rules state that the hook can be no longer than one third the length of the body. I have found that an eight inch hook usually fills this requirement in Profile Carrier. Referring to the sketch, bend 1/16 or 3/32 inch music wire for the hook.

Solder on a brass tube to the hook near the location shown. Holding the hook next to the pushrod side of the body, mark where the "L" shaped portion of the hook will go through the body, leaving about a half inch between the soldered tube and the pushrod. Drill a hole through the body at this spot the same diameter as the hook. On each side of the body epoxy on drilled square pieces of 1/8 inch ply as reinforcement. Also, inserting a drilled  $\frac{1}{2}$  inch square hardwood block into the fuselage here will add great strength.

Slip the "L" portion of the hook through the body and keep in place with a wheel collar. Next, solder on a small "Z" bent wire to the underside of the pushrod, placing it so that near full down will release the Z-bend from the tubing. You might have to tinker with this release wire some. The wire should be just deep enough to keep the hook up near the stab, and not hanging down so far as to rub on the ground. The best part of using a hook like this is that it is easily removeable for simple practice flying, especially over grass the first few flights. If you desire, you can solder on a very small hook to a portion of landing hook, and you can then run a rubber band or spring to ensure the hook drops to its best landing position. This is best done if you also have some sort of a stop so the wire doesn't come too far forward.

NOT TO SCALE!



Finish the plane in Navy colors, and you needn't spend too much time here. Any Carrier plane that's finished in either solid white, yellow, blue, or silver will pass the appearance portion of the Carrier pre-flight judging.

Next time, "Your first Profile Carrier motor".



## The Flying Flea Market

Classified advertisements — FREE for FL subscribers

Back issues of FLYING LINES are available for low cost. Send your request for list to FLYING LINES.

WANTED: CL speed kits for collection. Mike Hazel, 1073 Windemere Drive NW, Salem, Oregon 97304

FOR SALE: Odd assortment of unused APC propellers. Sizes from 8 to 10 inches. 9 props for only \$7.50 postpaid. Mike Hazel, 1073 Windemere Drive NW, Salem, Oregon 97304

FUN FLY-FUND RAISER-BBQ

WHEN: September 21st, Saturday

WHERE: Delta Park flying site, Portland

TIME: 9:00 AM to dusk

WHY: To benefit Frank Macy

COST: \$5.00 a person, \$10.00 a family

BRING: Your own meat dish for the grill, and one potluck dish to share and whatever else strikes your fancy.

A grill will be provided, along with lots of fun and friendship, so bring the whole family.

For more information contact:

Greg Beers (206) 892-6485

Jim Cameron (503) 287-9620

Hope to see you there!

NORTHWEST AEROLINERS

Frank Macy was admitted into a hospital on June 26th, and had a quadruple bypass surgery the following day. At last report, Frank is doing well.

Because of this operation, Frank will be unable to return to work for several months. The social security benefits he will receive are meager. For this reason, along with the cost of medication and non-covered medical expenses, John and Carol Macy have opened an account for donations to be used by Frank in his time of need. If you would like to made a donation, it can be sent to: U.S. Bank Customer Service, PO Box 14050, Salem, Oregon 97309 (Frank Macy account number 0176063931).



1974

Two good reasons why control line speed flyers grow old fast



"I just can't understand what attraction these things have got that we haven't!"

Greetings, racing fans! Until this newsletter gets a racing columnist, you may get me from time to time.

The first subject here is regarding 21 RAT. As you have probably heard, all useful proposals for overhauling the AMA Rat event have gone in defeat for the next rules cycle. Wottabummerman! But this mean the idea of a 21 Rat is dead? Nowayman!!!!

There is the temptation to write up rules for a local event here, but is it really necessary? Me has thought about this every now 'n then, and it might be very enjoyable (and perhaps challenging) to engineer a 21 racer to actually be competitive with a 40. Sound impossible? Maybe not. But let's clear up some definitions here. When I sez competitive, I mean more on the local or regional level. On a national level, it may just not be possible. One just has to look at one of the real class acts of Rat, the team of Shahan and Fogg, of Southern California. Their very well engineered racers turn upwards of 160 mph, which is even faster than the 21 speed record.

Let's do some comparisons. A 40 Rat flies on .018 wire, while the 21 size is allowed to use .014 wire- the same as Goodyear. Right here is the most significant key as to whether this might work. Any of you engineer types out there wish to do some horsepower absorption formulating?

It just might also be that the 21 size engine is more efficient and powerful per cubic inch. One things is for sure, there are some very good 21 racing type engines available. The top selection would probably include NovaRossi, OPS, Picco, and maybe O.S. and Irvine. Some of these are available only in race car configuration, so some modification would be necessary.

Some miscellaneous thoughts regarding making the 21Rat somewhat competitive with a 40:

- Make the plane as reasonably light as possible without sacrificing strength. Besides the point that the 40 size planes are physically difficult for the average pilot to fly, light weight planes will accelerate quicker and also slow down easier for the pit stops.
- Design your racer to be of the inverted configuration. The fastest 40's are "upside-down", so a 21 can be no different. With the shorter prop that would be used, the landing gear will be quite small with consequent lower drag.
- If you have a favorite 40 size design, you can probably just scale it down. My guess would be about 90%. A 36 inch span wing would then be 32½ inches.
- The fuselage cross section can be narrowed down. What size of speed pan would be used? A 21 will fit into a "Darp" class A pan, but the tank, controls, etc., might be a bit tight. A class B pan would be plenty roomy, but the only cross section reduction would be in the upper cylinder area. Solution here might be to machine up a metal crutch unit to the exact requirements.
- Keep everything else in the design as clean as possible: internal quick-fill, no external control components, recessed bolt heads, etc. etc. Of course all of this is done much of the time in all sizes, just remember you could afford no handicaps.
- Work hard at making it work! I suspect with the higher revving 21's, more fine tune tweaking would be necessary: prop, head clearance, intake & exhaust timing, mini-pipe length, consistent fuel delivery, etc. etc.

So, just how fast would a 21 go? Who knows, maybe we should try it. My estimate is that the low twelves should be a achievable, but challenging target.

Let's hear some feedback from you NW racers: Salter, Peterson, Higgs, Newkirk, Strom, Rice, McConnell, Thompson, Green, etc. etc.

Coming up are a couple of contests featuring plenty of racing. We have the Raider Roundup in September, and the Really Racing meet in October. I urge all racers to support these. If you are interested in CL racing, but don't really know where to get started, the October meet would be a good one to attend, as all classes are being flown, giving one an opportunity to look things over.

Guess that's it for now, until later, practice, practice, and practice.



# Northwest Competition Records

Record performances established between Northwest CL modelers in sanctioned competition

1/2A SPEED	112.17	Bruce Duncan	7-7-91	Richmond, B.C.
A SPEED	181.56	Chris Sackett	6-29-85	Richmond, BC
B SPEED	187.66	Chris Sackett	6-22-86	Richmond, BC
D SPEED	203.71	Loren Howard	5-27-90	Eugene, OR
JET SPEED	202.39	Jerry Thomas	7-19-89	Richland, WA
FORMULA 40	154.84	Dick Peterson	9-13-86	Kent, WA
21 SPORT SPEED	136.83	Chuck Schuette	7-7-91	Richmond, BC
FAI SPEED	174.56	Chris Sackett	9-30-90	Coquitlam, BC
1/2A PROFILE PROTO	83.63	Paul Wallace	3-29-81	Eugene, OR
MOUSE RACE I -50 Lap	2:52	Mike Hazel	9-13-86	Kent, WA
MOUSE RACE I -100 Lap	6:33	Salter/Salter	9-13-86	Kent, WA
MOUSE RACE II -75 Lap	3:40	Dave Green	5-24-86	Eugene, OR
MOUSE RACE II -200 Lap	10:04	Hazel/Thompson	9-19-87	Kent, WA
AMA SCALE RACE -70 Lap	4:22	Clarence Bull	5-24-86	Eugene, OR
AMA SCALE RACE -140 Lap	9:02	Clarence Bull	5-24-86	Eugene, OR
SLOW RAT RACE -70 Lap	3:56	Dave Green	4-14-85	Portland, OR
SLOW RAT RACE -140 Lap	7:14	Dave Green	4-13-86	Portland, OR
RAT RACE -70 Lap	2:40	Dick Salter	7-22-86	Richmond, BC
RAT RACE -140 Lap	5:46	Dick Salter	7-22-86	Richmond, BC
FAI TEAM RACE -100 Lap	3:48	Knoppi/McCollum	1986	Pecs, Hungary
FAI TEAM RACE -200 Lap	7:49	Knoppi/McCollum	?	?
NW SPORT RACE -70 Lap	4:00	Bruce Duncan	5-12-87	Richmond, BC
NW SPORT RACE -140 Lap	7:47	Henry Hajdik	6-8-86	Richmond, BC
NW SUPER SPORT -70 Lap	3:14	Dave Green	4-13-86	Portland, OR
NW SUPER SPORT -140 Lap	7:03	Dave Green	3-8-87	Portland, OR
CLOWN RACE - 15 Minutes	209 laps	Joe Rice	8-10-91	Richland, WA
CLASS I CARRIER	318.3	Roy Beers	9-13-86	Kent, WA
CLASS II CARRIER	330.25	Orin Humphries	9-19-87	Kent, WA
PROFILE CARRIER	238.44	Bob Parker	9-19-87	Kent, WA
.15 CARRIER	188.20	John Hall	5-25-91	Eugene, OR
AMA ENDURANCE	18:37	Wesley Mullens	8-15-87	Kent, WA



# NW Competition Standings

Flying Lines' compilation of event placings by Northwest  
modelers competing in Northwest region contests

## OVERALL STUNT (12 contests, 57 entries)

1)	Richard McConnell	23.5
2)	Don McClave	21
3)	Bob Emmett	18
4)	Paul Walker	9
	Barry Shandel	9
	Bill Tucker	9
7)	John Hall	8
8)	Joe Campbell	7
9)	Greg Davis	6
10)	John Thompson	4.5
	Al Resinger	4.5
12)	Joe Dill	4
	Dave Finnie	4
	Dave Royer	4
15)	Jim Sofra	3
	Jim Cameron	3
17)	Rich Brannan	1
	John Reidle	1

## OLDE TYME STUNT (3 contests, 17 entries)

1)	Richard McConnell	11
2)	Bill Tucker	9
3)	John Hall	8
4)	Don McClave	7
	Joe Campbell	7
6)	Bob Emmett	3

## CLOWN RACE (3 contests, 30 entries)

1)	Joe Rice (sr)	30
2)	Ron Hale	25
3)	Mike Rule	11
4)	Don Stewart	10
5)	John Hall	8
6)	Bill Darkow	7
7)	Bill Fisher	6
8)	David Schultz (sr)	5

## OVERALL RACING (13 contests, 77 entries)

1)	Joe Rice (sr)	49
2)	Ron Hale	33
3)	Mike Rule	20
4)	Richard McConnell	18
5)	Don Stewart	14
6)	Salter/Hall Team	11
7)	Bill Fisher	10
8)	Joe Campbell	9
9)	Henry Hajdik	8
	John Hall	8
11)	Bill Darkow	7
12)	Todd Ryan (jr)	6
	Ron Salo	6
14)	David Schultz (sr)	5
15)	Kevin Magnuson	4

## CONTEST CALENDAR

SEPTEMBER 7 -----RICHLAND, WASHINGTON-----

Events: Mouse Race Class I, NW Sport Race, NW Super Sport Race.  
Site: Horn Rapids Athletic Complex.  
Contact: Joe Just, 709 Crescent, Sunnyside, WA 98944 (509) 837-5983  
Sponsor: Columbia Basin Balsa Bashers

SEPTEMBER 14/15 -----KENT, WASHINGTON-----

### RAIDER ROUNDUP

Events: Class I Carrier, Class II Carrier, Profile Carrier, Precision Aerobatics-PA classes, Northwest Super Race (j-s)(O), Northwest Super Race, Clown Race, Profile Carrier, Sport Scale, Fox 3F, 1/2A Combat, Record Race. Contact: Joe Dill, 152nd Ave SE, Kent, WA 98042. Site: Boeing Space Center in Kent.  
Sponsor: Seattle Skyriders

OCTOBER 5/6 -----RICHLAND, WASHINGTON-----

Events: Old Time Stunt, Profile Carrier, Carrier Class I, Carrier Class II, 15 Carrier, NW Sport Race, Mouse Race CL I, Clown Race. Contact: Joe Just, 709 Crescent, Sunnyside, WA 98944 (509) 837-5983 Sponsor: Columbia Basin Balsa Bashers.

OCTOBER 12 -----EUGENE, OREGON-----

### REALLY RACING 1991

Events: Mouse Race I, Mouse Race II, NW Goodyear, AMA Goodyear, AMA Slow Rat, Rat Race, NW Sport Race, NW Super Sport Race, plus Pit Stop event. Site: Eugene Airport. Contact: John Thompson, 1145 Birch Ave., Cottage Grove, OR 97424 (503) 942-7324 Sponsor: Eugene Prop-spinners

OCTOBER 13 -----EUGENE, OREGON-----

### FIFTH ANNUAL FALL FOLLIES

Events: Precision Aerobatics, Fox 35 Combat. Site and contact same as above.

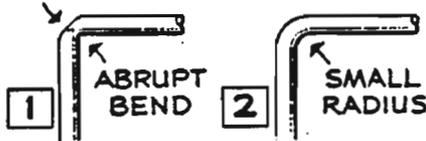
# Landing Gears

... it's no harder to build 'em right

Most landing gears for gas model planes are made of steel wire. It is the most durable, the simplest, and no doubt the best all-round type gear for either free flight or control line models.

Once a few knacks are mastered, even beginners can produce excellent landing gears, and the same knowledge of wire bending, cutting and soldering is applicable to the building of take-off dollies and other miscellaneous wire parts

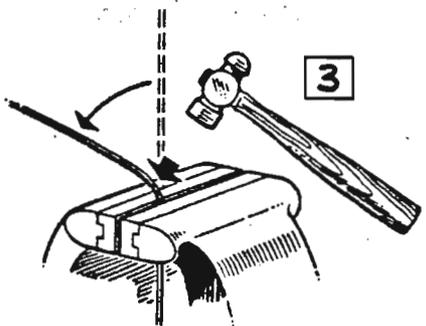
**FRACTURE**



in all types of model airplanes.

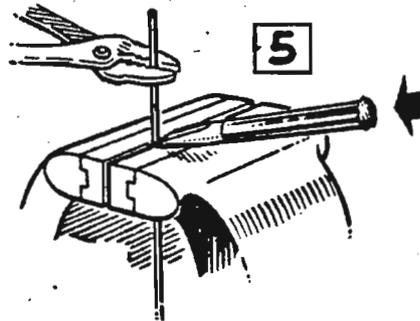
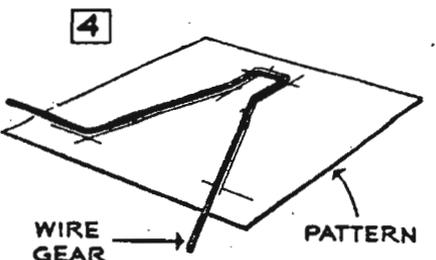
Tools and materials needed are a bench vise—the larger the better—a hammer, cold chisel, file, soldering iron, resin- or acid-core solder (or bar solder and a paste flux), and copper or annealed wire for binding.

Lightest A/2 models may use 1/16" diameter steel wire or even smaller; mid-sized models generally call for 3/32" diameter; larger jobs use 1/4" and occasionally 3/16" diameter steel wire,

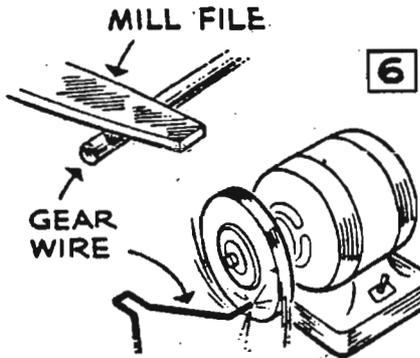


and the heaviest models sometimes resort to two- or three-strut steel wire gear types.

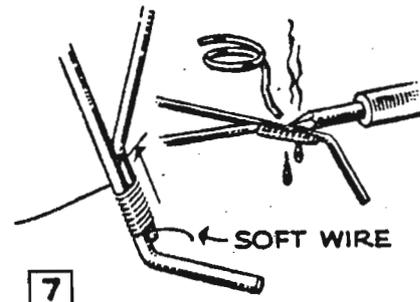
Bending wire properly is the fundamental thing. Avoid sharp, right angle bends (1) in fashioning cold wire as this often produces fractures which can cause subsequent failure. Instead, bend the wire with a small radius (2) to avoid trouble. Sharp bends when necessary, however, can be made if the wire is first heated, bent and then retempered by heating red hot and quenching in water.



With one end of the wire held firmly in the vise jaws, the other can be bent by hand with a few licks of a hammer near the bend (3). Have a paper gear pattern nearby (4) and check the accuracy of the part by superimposing it from time to time. Small corrections in the angles can sometimes be made with



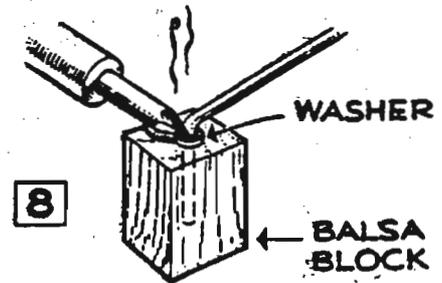
heavy pliers, depending on wire size. Cutting can be done by sawing with a hacksaw, but it is far easier to simply shear the wire off with a cold chisel, clamping the wire in the vise and striking the chisel smartly with a hammer



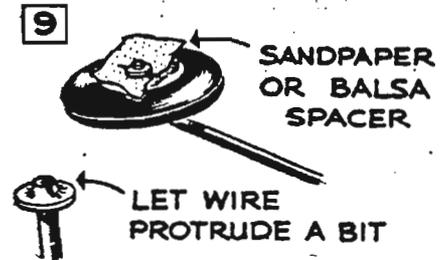
(5). The wire end to be cut off should be held by someone with pliers. Ragged ends of the cut wire should be dressed down uniformly with a file or on a grinding wheel (6).

When struts are joined, sand the wires to clean them for soldering, bind them neatly and tightly with soft annealed wire or copper wire, then sweat solder through the binding for a sound joint (7). Good soldering requires a well "tinned" iron which really gets hot, and

the surfaces must be free of all dirt. Clean washers and axles with sandpaper preparatory to attaching the wheels. The axle end can be forced into



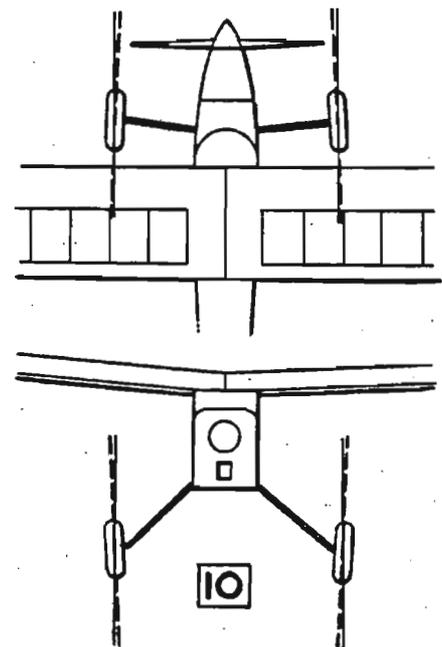
a soft balsa block after the inner washer is slipped onto it (8). The block positions the washer and holds it perpendicular during soldering. If acid-core solder is used, carefully wipe all traces of the



acid away with a cloth; coat with oil.

See that the wheels fit the axles snugly but freely, bush them with thin wall tubing if necessary, then slip on the wheels. With a piece of thin balsa or sandpaper as a spacer between the outside of the wheel hub and the washer, solder the washer in place (9).

Finally give the plane a careful top and front view inspection for wheel



alignment (10). From the top view slight "toe-in" can be tolerated and from the front a little "camber" if desired in order to prevent the wheels splaying out.

Later we will discuss landing gear types, how to fasten them to the fuselage, shock absorbers, wheel "spats," etc.

MIKE HAZEL EPOXY/GLASS PROPS

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1073 Windemere Drive NW, Salem, Oregon 97304

The following list is my current offering of quality glass props. There are more sizes in the works for the future, let me know your needs.

As per typical practice, these props are supplied semi-finished, needing some trimming, cleaning up, and of course balancing. 95+% of the mold flashing is removed, so your work will go quicker. (some props are supplied ready-to-run as indicated). All props are oven cured for full strength.

TERMS: Payment may be made by check, money order, or cash. Ten percent discount allowed for orders over \$75.00 All orders include \$2.50 shipping.

\*\*\*\*\*  
(fraction in parenthesis denotes shaft hole bore dimension)

21 SP.....copy of popular East coast design for 21 speed, 6½ x 6½ (3/16)	\$6.00
SCHUETTE 21.....original design by Chuck Schuette , 6.1 x 6.5 (1/4)	\$6.25
REV-UP 9 x 12 .... A class D standard (3/8) .....	\$8.50
ZOOT D ..... recountoured Rev-Up, measures 8.8 x 12.75 (3/8) ....	\$8.50
NUSZ D..... raked-tip Rev-Up by Bill Nusz, measures 8.9 x 13.0 (1/4)	\$8.50
TOP FLITE 6 x 7 ..... Class A speed, cuff is cropped off (3/16).....	\$5.00
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REV-UP 6 x 8 ..... " " " " " .....	\$5.50
SCIMITAR GOODYEAR ..... glass and carbon fiber composite, based on APC design, measures 6.2 x 5.7 (3/16) .....	\$7.50
HIGGS GOODYEAR .....rev your Nelson up on this 5.9 x 5.5 fan (3/16)	\$7.00
ZOOT 9 x 7 ..... thin bladed unit for sport racing, carrier, etc. (1/4)	\$9.00
FOX 35R .....narrow blade Rev-Up copy. Zoot Zoomer's favorite for NW Sport Race . Measures 8.75 x 8.5 (1/4) .....	\$8.50
ZOOT COMBAT .....developed for fast combat from Top Flite design, blades thinned and hub lightened. Ready-To-Run .....	\$14.00
15 BENCH .....designed specifically for break-in, and reference bench testing of high performance 15's. Large hub, square tips, very strong. Chuck Schuette sez a good FAI engine should turn this at 35,000. Ready-To-Run (3/16)	\$12.00
40 BENCH ..... same features as 15 Bench. Use for engines 29 to 40. Ready-To-Run (1/4) .....	\$15.00

# WASHINGTON STATE CONTROL LINE CHAMPIONSHIPS

## AMA Sanctioned 'AAA' Model Airplane Contest

The Seattle Skyraiders present:

# RAIDER ROUND-UP '91

September 14th and 15th  
Boeing Space Center  
Kent, Washington

### Saturday Event Schedule

9:00am	Northwest Sport Race <i>(kitted profile + stock Fox .35 stunt)</i>	JSO
<del>10:00</del>	<del>Fox .35 Combat <i>(any design + Fox .35 stunt)</i></del>	<del>JSO</del>
10:00	Navy Carrier <i>(profile, .15 profile, Class I, II)</i>	JSO
11:00	NW Super Sport Race	JSO
12:00	Old Time Stunt <i>(pre-1952 design - GSCB rules)</i>	JSO
<del>12:00</del>	<del>Balloon Bust</del>	<del>J</del>
<del>12:00</del>	<del>Balloon Bust</del>	<del>SO</del>
12:30pm	Mouse Race I	J
1:00	Mouse Race I	SO
2:00	Mouse Race II	JSO
2:00	Nostalgia Stunt <i>(any design 25 years or older)</i>	JSO
3:00	Flying Clown Race <i>(PDQ kit/repro, any engine ≤ .19, 1 oz. tank)</i>	JSO
<del>3:00</del>	<del>1/2A Combat</del>	<del>JSO</del>

### Sunday Event Schedule

9:30am	Precision Aerobatics <i>(PAMPA Beg/Int, Adv, Exp classes)</i>	JSO
10:00	Speed Record Ratio	JSO
12:00	Static Judging Profile & Sport Scale	
2:00pm	Profile & Sport Scale Flying	JSO
SCHEDULE CHANGE		
(grass field not available on Saturday)		
10:00	Fox 35 Combat	
12:00	Balloon Bust	
3:00	1/2A Combat	

Registration each day from 9:00am unit start of event.

OPEN entry fees \$10.00 - no maximum. JUNIOR/SENIOR entry fees \$5.00 each event.

AMA or MACA membership required for all pilots/mechanics - applications available at contest site.

CONTEST DIRECTOR: Joe Dill, 22533 152nd Ave SE, Kent, WA 98042 - phone (206) 631-2367

# FLYING LINES

1073 Windemere Dr. NW  
Salem, OR 97304

FLYING LINES is produced by a dedicated staff of volunteers interested in keeping lines of communication open between Northwest region control line modelers. FLYING LINES is independent of any organization, and depends upon the financial support of its base of subscribers.

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