FLYING LINES

NEWS OF NORTHWEST CONTROL-LINE MODEL AVIATION

1073 Windemere Dr. NW, Salem, OR 97304 Editor: **Mike Hazel**

MAY / JUNE 1996

ISSUE # 131

WOW! IN THIS JAM-PACKED ISSUE:

- ***ANNUAL RULES ISSUE, FEATURING RULES FOR ALL NORTHWEST EVENTS.***
- ***UPDATED NORTHWEST RECORDS***
- ***CONTEST RESULTS***
- ***COMPETITION POINTS STANDINGS***
- ***ARTICLES BY PAUL GIBEAULT, ORIN HUMPHRIES***
- ***CONTEST CALENDAR***
- ***RECORD REVIEW: 1/2 A PRO. PROTO SPEED***
- ***UPCOMING CONTEST FLYERS***
- ***AND MORE OF THE USUAL GOOD STUFF***

Lots of activity in April and May resulted in updating of several of the standings for 1996 Competition. The flying was hot and heavy in Oregon, Washington and British Columbia.

Flying Lines keeps track of standings in all AMA rulebook and Northwest official events, in all Northwest sanctioned contests.

Your *FL* editors do their best to keep up on the results, but contest directors can help keep the standings up to date by making sure to send the results to *FL* immediately after the contest. When you send your report to AMA, remember to send the results to *FL*, too.

Results must include the placing in each event through fourth place and the report also must list the number of contestants in the event, in order for the point standings to be counted accurately.

Also, please include in your report the hometown of the contestants. Only Northwest residents are counted in the standings (AMA Dist. XI and British Columbia). The score of each contestant also should be listed for general reporting purposes and for checking against the Northwest records, another popular *FL* feature.

Send results to statistician John Thompson at 295 W. 38th Ave., Eugene, OR 97405. Results also can be sent via e-mail to JohnT4051@aol.com.

Remember, only results that we receive can be counted, so send them in. If you flew in a contest t that doesn't appear to be counted, contact the contest director or *FL* and let us know.

Details, details: Because we keep separate junior standings, make sure to let us know when a junior contestant places in an open event. There are four fliers we're unsure about, and so have not listed them in junior standings to date: Aaron Olsen, Jesse Gooby, James Mills, Julie Rice. Let us know if these are junior fliers and we'll update the standings

Contests counted to date: March 16, Richland, Wash. March 24, Coquitlam, B.C. April 14, Richmond, B.C. April 20, Portland, Ore. April 28, Richmond, B.C. May 4-5, Richland, Wash.

Following are the standings for updated events (top fives for individual events, top tens for overall standings):

1996 STANDINGS

MOUSE RACE CLASS I (5 contests, 23 entries)

1. Todd Ryan	10
2. VM Racing Team	6
3. Nathan St. John	5
Bruce Duncan	5
5. Aaron Olsen	4
Dawndee Brittain	4
Rick Meadows	4

CLOWN RACE (6 contests, 27 entries)

1. Todd Ryan	29
2. Aaron Olsen	18
3. Mac Ryan	17
4. Nitroholics Racing Team	9
5. Stephen Cox	8

NORTHWEST SPORT RACE (2 contest, 9 entries)

1. Todd Ryan	9
2. Nitroholics Racing Team	6
Henry Hajdik	6
4. Mel Lyne	5
5. Ron Salo	4

NW SUPER SPORT RACE (1 contest, 4 entries)

1. Todd Ryan	4
2. James Mills	3
3. Alan Olsen	2
4. Jesse Gooby	1

OVERALL RACING (14 contests, 63 entries)

1. Todd Ryan	52
2. Mac Ryan	22
Aaron Olsen	22
4. Nitroholics Racing Team	18
5. Joe Just	14
6. VM Racing Team	12
7. Rick Meadows	10
8. Stephen Cox	9
9. James Cox	8
10. Paul Dranfeld	6

.15 NAVY CARRIER (2 contests, 6 entries)

1. Alan Olsen	4
2. Todd Ryan	3
3. Euan Edmonds	2
Lloyd Marohl	2
5. Jay Just	1
Rich McConnell	1

PROFILE CARRIER (2 contests, 3 entries)

1. John Thompson	2
2. Mike Hazel	1
Mike Potter	1

CLASS I CARRIER (1 contest, 1 entry)

1. Mike Hazel	1

OVERALL CARRIER (5 contests, 10 entries)

1. Alan Olsen	4
2. Todd Ryan	3
3. Mike Hazel	2
John Thompson	2
Euan Edmonds	2
Lloyd Marohl	2

SPEED (combined) (2 contests, 10 entries)

1. Bob Spahr	9
Chuck Schuette	9
3. Mike Hazel	3
Dick Salter	3
Julie Rice	2
Jerry Thomas	2

OLD-TIME STUNT (2 contests, 10 entries)

1. Greg Davis	9
2. Mel Lyne	8
3. Rick Meadows	7
4. Mike Conner	6
5. David Thompson	1

OVERALL AEROBATICS (2 contests, 10 entries)

1. Greg Davis	9
2. Mel Lyne	8
3. Rick Meadows	7
4. Mike Conner	6
5. David Thompson	1

TOP JUNIORS (5 contests)

1. Stephen Cox	9
2. James Cox	8
3. Nathan St. John	5
Scott Davis	5
5. Dawndee Brittain	4
Shawn Tilma	4
Derrick Meadows	4
8. Euan Edmonds	3
Travis Morgan	3
10. Nick Hagmon	2

Send contest results, corrections and other correspondence regarding Northwest Competition Standings to John Thompson, 295 W. 38th Ave., Eugene, OR 97405, e-mail JohnT4051@aol.com. For a printed copy of complete standings for any event, send a self-addressed, stamped envelope.

Cockpit Chatter

Notes from the editor's desk

By **Mike Hazel**

Welcome to this bulging issue. We strayed into the 3 ounce postal zone, something that hasn't been done in FLYING LINES history for over ten years! So much to put in, and ye olde editor didn't want to take anything out, so enjoy.....

We have a new feature this issue, it's called "Favorite Planes". There is an intro before the article. We hope you like it.

A once a year feature in this issue, is the "Regionals Records". As you know, the Northwest region has its own base of competitors that set records among themselves. Our NW region is defined as AMA district XI, plus British Columbia. Most sporting and racing events have "field" records, so to add some color to the NW Regionals experience, we have documented the best performances in all appropriate events. The difference with this set of records, is that all entrants regardless of homebase are eligible.

Paul Gibeault makes his return to the FL column scene with his part 3 installment of how to with Mouse Racing. If you missed the first two parts, remember that most FL back issues are available for a nominal sum. Paul reports that he will be moving to the Vancouver, B.C. area shortly. Want to see his Engines, Etc. column more often. Paul is requesting your questions and topics. Send those in to the editor, and they will be forwarded.

This issue is being printed just before the NW Regionals. The next issue of FL will of course, have full results and information. It is anticipated that this silver anniversary contest will be a great one. The move to Roseburg will certainly change the "landscape" of the event.

Please remember to keep this special rules issue in a handy place for reference. Remember, no excuse for not knowing the rules. Next issue is planned for early July, see you then!

CONTEST RESULTS

RICHMOND, B.C., APRIL 14, 1996

Flying Clown Race (JR) (6 entries)

1)	Stephen Cox	247
2)	Scott Davis	229
3)	Shawn Tilma	114
4)	James Cox	heat- 110

Northwest Sport Race (6 entries)

1)	Henry Hajdik	9:10
2)	Mel Lyne	9:20
3)	Ron Salo	9:25
4)	Rick Meadows	10:56

.15 Sport Race (7 entries)

1)	Mel Lyne	7:32.7
2)	Rick Meadows	8:36.7
3)	Mike Conner	8:56.2
4)	Paul Dranfield	9:27.8

PORTLAND, OREGON, APRIL 20, 1996

Northwest Sport Race (4 entries)

1)	Todd Ryan	9:32
2)	Julie Rice	11:13
3)	Nitroholics Team	11:16
4)	Mark Wahlster	120 laps

Flying Clown Race (12 entries)

1)	Todd Ryan	304
2)	Curtis Ryan	230
3)	Aaron Olsen	157
4)	Nitroholics Team	112 - heat

Mouse Race I (JR) (5 entries)

1)	Nathan St. John	8:21.18
2)	Dawndee Brittian	9:59.06
3)	Travis Morgan	91 laps
4)	Nick Hagmon	28 laps

Record Ratio Carrier (2 entries)

1)	John Thompson (profile)	243.7
2)	Mike Hazel (profile)	204.7

RICHMOND, B.C., APRIL 28, 1996

Old Time Stunt (9 entries)

1)	Greg Davis	244.0
2)	Mel Lyne	240.0
3)	Karl Brown	208.0
4)	Rick Meadows	186.0

RICHLAND, WASHINGTON, MAY 4 & 5, 1996

Mouse Race I (5 entries)

1)	Todd Ryan	7:43.47
2)	Aaron Olsen	13:41.03
3)	Jesse Gooby	17 laps
4)	V & M Racing	heat- 7:40

Flying Clown Race (9 entries)

1)	Todd Ryan	297
2)	Aaron Olsen	215
3)	Joe Just	87
4)	Mac Ryan	heat - 244

NW Super Sport Race (4 entries)

1)	Todd Ryan	9:18.57
2)	James Mills	15:13.29
3)	Alan Olsen	80 laps
4)	Jesse Gooby	heat - 64 laps

AMA Record Ratio Speed (5 entries)

1)	Chuck Schuette	89.6%
2)	Bob Spahr	86.7
3)	Dick Salter	85.2
4)	Jerry Thomas	85.0

NW Record Ratio Speed (5 entries)

1)	Bob Spahr	106%
2)	Chuck Schuette	98
3)	Mike Hazel	83
4)	Julie Rice	72

.15 Carrier (4 entries)

1)	Alan Olsen	203
2)	Todd Ryan	120
3)	Euan Edmonds	75
4)	Jay Just	48

Profile Carrier (2 entries)

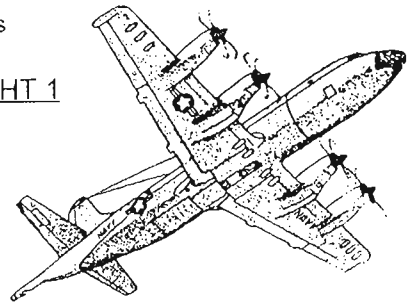
1)	Todd Ryan	276
2)	Euan Edmonds	93

Old Time Stunt (1 entry)

1)	David Thompson	278

SPECIAL TOPICS

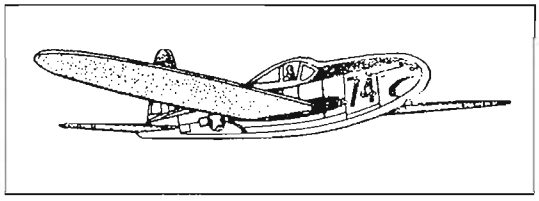
by Orin Humphries



STRONG AND LIGHT 1

Something of interest to most modelers is building light models that are strong enough to be durable. Too many times we build flying 2x4's, erring on the side of strength. They sure are durable but fly like soggy sweatshirts. The lowly pop can is the supreme example of what to do and I will talk of this at length. First let me define what a good structure is.

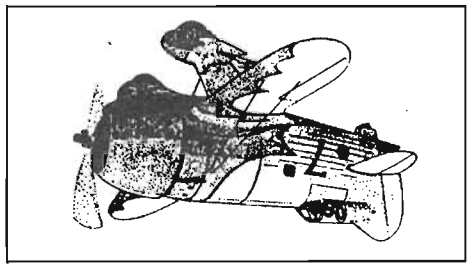
Structural efficiency takes into account three things: how much load you apply, how far the structure bends, and how much it weighs. To get a grip on this, let's standardize our discussion conditions. Let's say we are talking about a deflection of 1/2 inch. This could be a wing panel, an aft fuselage, etc. What's left, then, will be how much load per pound of structure weight produces that deflection. Let's go even farther. Let's talk about a Ringmaster wing. Now, we are all speaking the same language. Support the wing at the center and pile small sand bags on the wingtips. When the tips have bent down 1/2 in., we are at the test condition. Weigh the load on one tip and divide by the weight of half the wing. We now have weight of applied load per pound of structure. (No, for you purists, this is not unitless. A pound of this divided by a pound of that does not cancel out.)



What if you took the outlines of the Ringmaster wing and did your own thing with the structural design? If you built several different approaches to the problem, you could apply the above test and find which approach was most efficient. This series is all about how to approach this design problem from the best possible start. Some things really do make a major difference.

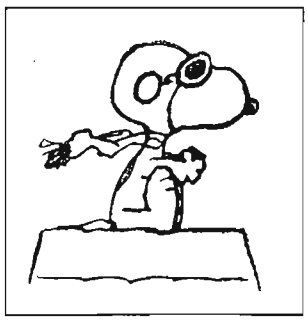
The pop can is a lesser god of structures. Let me give an example of the worst thing you can do before we get into the can discussion. In 1969 I had a model club after school at St.Georges's School in Spokane. I built a C-class trainer for the kids, a Sabre, as it was called. It had tricycle gear and a pine keel piece, being aimed at the trainer market. It also had a 3/8x1/2 spruce spar right down the middle of the wing to help it survive a crash. I later saw another plane someone had "strengthened" just like that and later sold to my good friend, John Hall, in Tacoma. The Sabre was a flying 2x4, really poor, and I am sure that other one eventually flew as poorly. The problem with both was inefficient structure, ie, too heavy. That central spar, right on the chord line, was the worst thing you can do. To see why, we humbly enter the court of the pop can. (Please cast your eyes down in a show of respect.)

At one time or another we all have taken an undamaged can and stood one foot upon it, supportting our whole weight (with the possible exception of a few of my larger Carrier friends, har har!)(well, maybe when they were kids...hee hee). The thing to do next was to reach down carefully and just lightly tap the side of the can. The slightest dent brough immediate collapse and a lot of entertainment.



FUNDAMENTAL PRINCIPLE #1: a structure is strong only so long as it can hold its shape.

We all know that you cannot even begin the can trick with a dented one. As I look about with the engineer's eye, I see building structural members, airplane members, etc., whose only job in life is to maintain the shape of the load bearing members. A great example is the museum of Flight across from Plant 2 at Boeing Field. Look at all those pipes the next time you see a picture of the outside. The load bearing ones are the ones right at the glass wall. The rest, outside of there, just keep those ones straight. It is amazing how little piping is actually hold the whole thing up. There is probably three times the weight of the load bearers just in stiffeners.



This is the thought I want to leave you with in this, the first part of a series. Look at your model structures and identify those parts who keep something else in its nominal shape. Example: the D-tube leading edge. The ribs not only provide airfoil shape, but they keep the LE skin from buckling. The D-tube is a"pop can".

Pop cans are great little structures. The ends are what hold the shape as much as possible. The second reason they are #1 will have to await some middle ground to be covered in the next article.

"Get off your booty, and do yer duty!"

..... Zoot Zoomer

ZOOT'S MIXTURE

Hi there, my cool friends, and welcome to my gig. I don't show up here nearly as often as I should, but I'll try to do better in the future. I got a lot of action and stuff going on.....knowadimean?

The contest season is getting into full swing. Be cool and show the contest management wherever you go that you appreciate their hard work. One way you can do this (without slobbering all over everyone), is to help out now and then pushing them stopwatch buttons, or playing the gofor position. Ya-know, when the official man needs something, you can gofor it. From contest to contest, you see some guys who never help. C'mon you geeks, you know who you are. Hmmmm, maybe you don't..... Just remember this, when the contest director man hollers for some help.....Get off your booty, and do yer duty!

Do you ever watch the speed circle action, and wonder how close the timers ever come? In normal competition, three timers are required with all watches being averaged for the official time. With good timers, all readings will usually come remarkably close.....normally within ten hundredths of each other. Occasionally the rare clocking will come up.....all three watches perfectly matched!

It was interesting to note that there was a racing record set at Delta Park in Portland last month. To my memory, this is the first record of any kind set in almost a decade. Back in the early and mid 80's, there was lots of record generating activity going. Remember the infamous 'Drizzle Circuit'? In the later years of the circuit, all five meets of the circuit were held in Portland to keep the site central to all. (the early years of the "D.C." had each meet in a different location throughout the Northwest). Those were good days for sport racing activity, and racing in general, since there was a steady participation which really saw the quality of NW racing rise. The circuit events included Fox 35 Sport race, and NW Super sport at each meet. There was also an occasional sideline racing event thrown in. Because of that concentration of racing, Portland was at one time, location of many racing records.

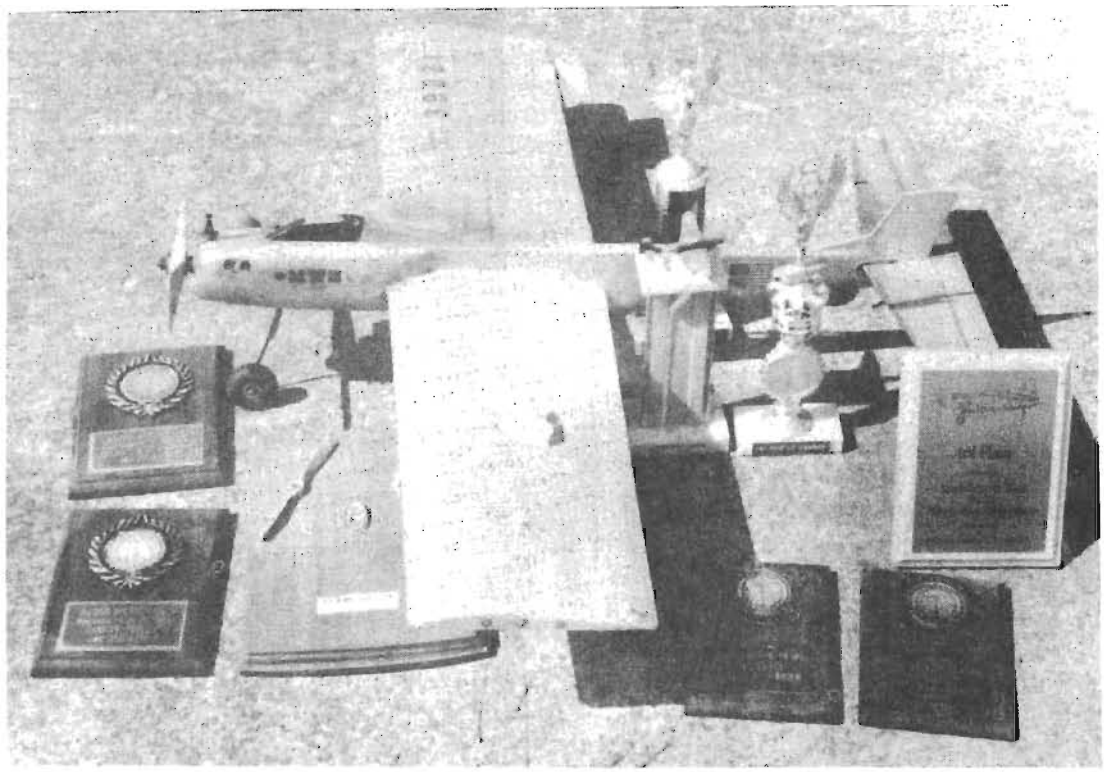
Right now seems to the "good old days" for Mouse Racing. There has been a tremendous surge of entries due mainly to the efforts of some very cool adults promoting young racers around the Northwest. Mouse Racing may just have enough potential contestants to even justify all three age groups being separated at larger meets. Haven't seen that in a long time!

The article on the following page is the first in a series for a new FLYING LINES feature that for now we will call, **FAVORITE PLANES.** The purpose of this feature will be for the FL subscriber to tell the rest of us about one of your model aircraft, which for whatever reason, has endeared itself to you.

We encourage everyone to participate in this feature, since everyone has a story to tell. If you have been modeling for a long time, then you probably have several accounts you could share. The topic can be either on a plane you are now flying, or one long since "deceased". A "visual rendering" would also be good to go with the story. After a couple of installments of this feature, everyone should have a pretty good idea of what we are doing. Contact us if you have a question about a possible article, but do go ahead and think about one of your favorite planes that has special memories attached to it, and consider sharing some of those memories with the rest of us.

The editor will use executive privlege, and do the first article. (considering what the subject matter is, future articles should all be improvements).

The editor's FAVORITE PLANES subject is an original design called the "CRO-MAGNON AIR FORCE ONE". (origin of the name could be explained, but is probably best left obscure). This plane is still in use, though it looks as if it died long ago. As a matter of fact, it will "celebrate" its 20th birthday this summer. That's over 100 in "model airplane years"!



The CM AF-1 began life as a sport model, equipped with throttle control and intended for just plain 'ol fun flying. And that's how it spent its first few years of life, and then somehow a hook was added and then this plane became known to some as the "scourge of the carrier deck", and "that lead sled". But that's ahead in the story.

Here are some construction notes of the CM AF-1: First note, this thing is heavy. At last count, it tipped the scales at about 38 or 39 ounces. I have no idea what the original weight was, but am certain there is significant ballast in the form of added epoxy and engine oil. The wing spans 37 inches, and is fully sheeted which must account for some of that weight. The fuselage is of balsa, of course, but not just any old balsa. The piece came not from a hobby shop, but a scrap plank from a shipping crate. This bird is not as pristine as it once was (an understatement). The silver dope finish is actually worn through in some places, but I don't want to spoil this plane's senior appearance by some foolish attempt at refinishing it.

The original powerplant was an Enya 35 RC, which is a very docile engine and made fun flying this plane very enjoyable. One "trick" I used to do was to slowly bring the throttle up at takeoff while gradually giving more down elevator, until the plane was running full speed on its nosegear with the tail in the air.....then give up control into a wingover and cut the throttle at the top of the circle and float down for a soft landing. Wore out a couple of wheels doing that, but what fun. One very fun flying day saw this plane flying formation with one of Jim Cameron's throttle ships. This was at the old flying site in Eugene. Somewhere back in one of the earliest FLYING LINES issues is a photo with both planes in the air, and that light beacon tower in the background.

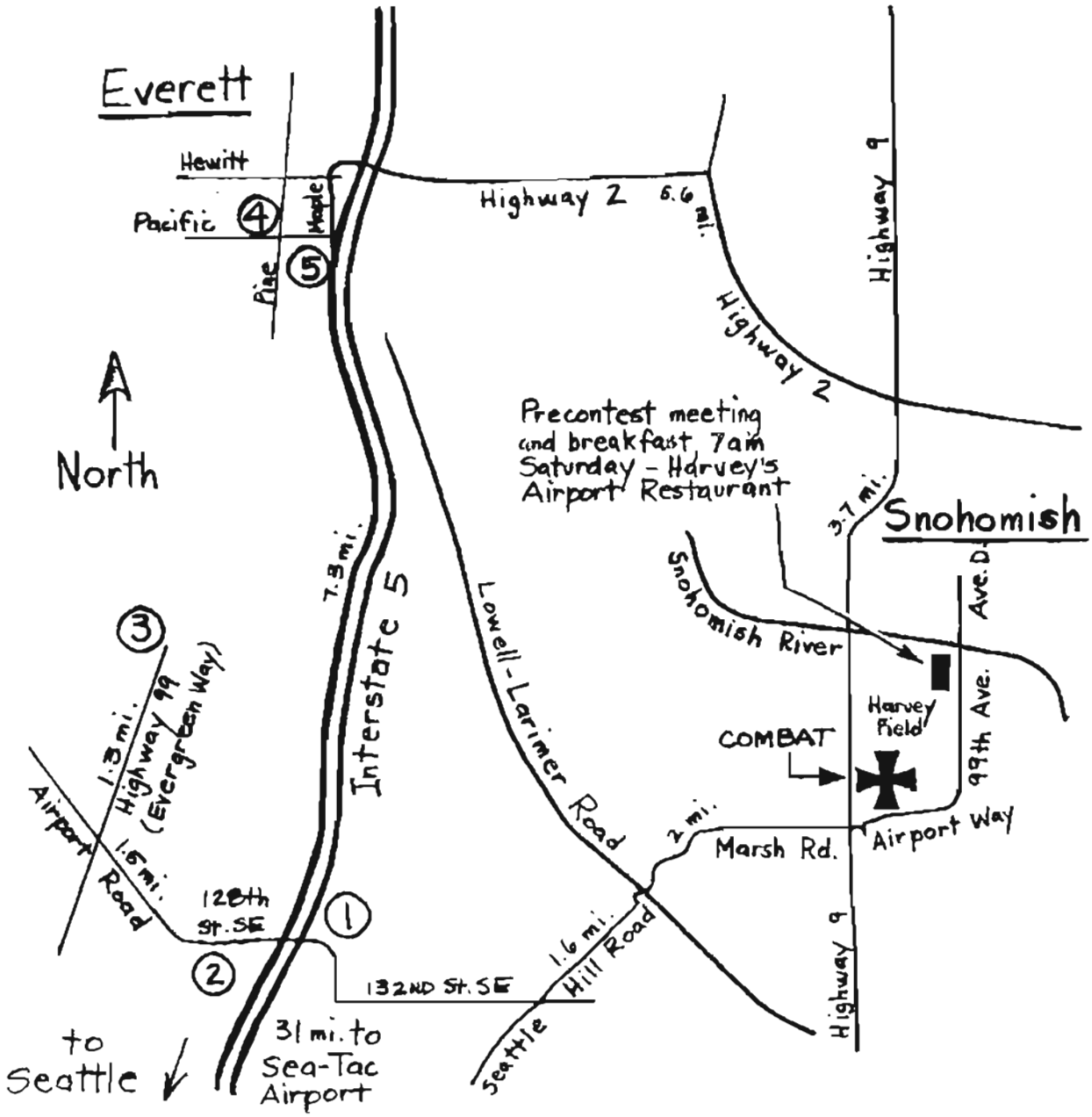
Back in the early 80's the Astoria-based "CLAMS" club held some nice little contests in their area. One of the local favorite events was "Clam-Scale", which was not really very serious, since even the CM AF-1 was eligible for entry. I engineered a bomb drop apparatus for one of the flight scoring options. A balsa wood "bomb" was triggered by yanking on a fourth line. Despite the fact that I missed the flight judges (I recall that they were the targets), the plane finished out of top placing. There are still some bits and pieces on the plane from that bomb drop equipment.

Having failed as a bomber, it was about this period of time (early 80's) a hook was installed and the Profile Carrier event was added to the act. Also installed, was a piece of tin stock in the outboard wing trailing edge. This actually serves two purposes: It serves as an adjustable fixed aileron to enhance low speed handling, plus since the wing was a couple of square inches shy of the 300 inch requirement it also makes the plane legal! Although this plane has never scored very high, it was very consistent and I generally made my 100 point landings. This was (and sometimes still is) good enough to place in almost every meet entered. By now, literally dozens of flight time hours had been logged. Wanting some more performance, the Enya was pulled off and a Fox 36 Mk V RC replaced it. This engine was a little disapointing with its poor idle, but the high speed came up a bit.

At the 1994 Raider Roundup in Kent, Washington, I entered this thing in Profile, and in Class i Carrier. There was a pretty heavy entry that year, but there was also a pretty heavy wind as well. Most fliers opted to sit it out. The Cro-Magnon and I didn't know any better, so we flew anyway. With the plane's heavy weight aiding in wind penetration, and the pilot knowing exactly what to expect from so many hours with this bird, the reward was first place in both events. In spite of the fact that this plane was left in the hangar during some years, it still has at least a dozen trophies to its credit.

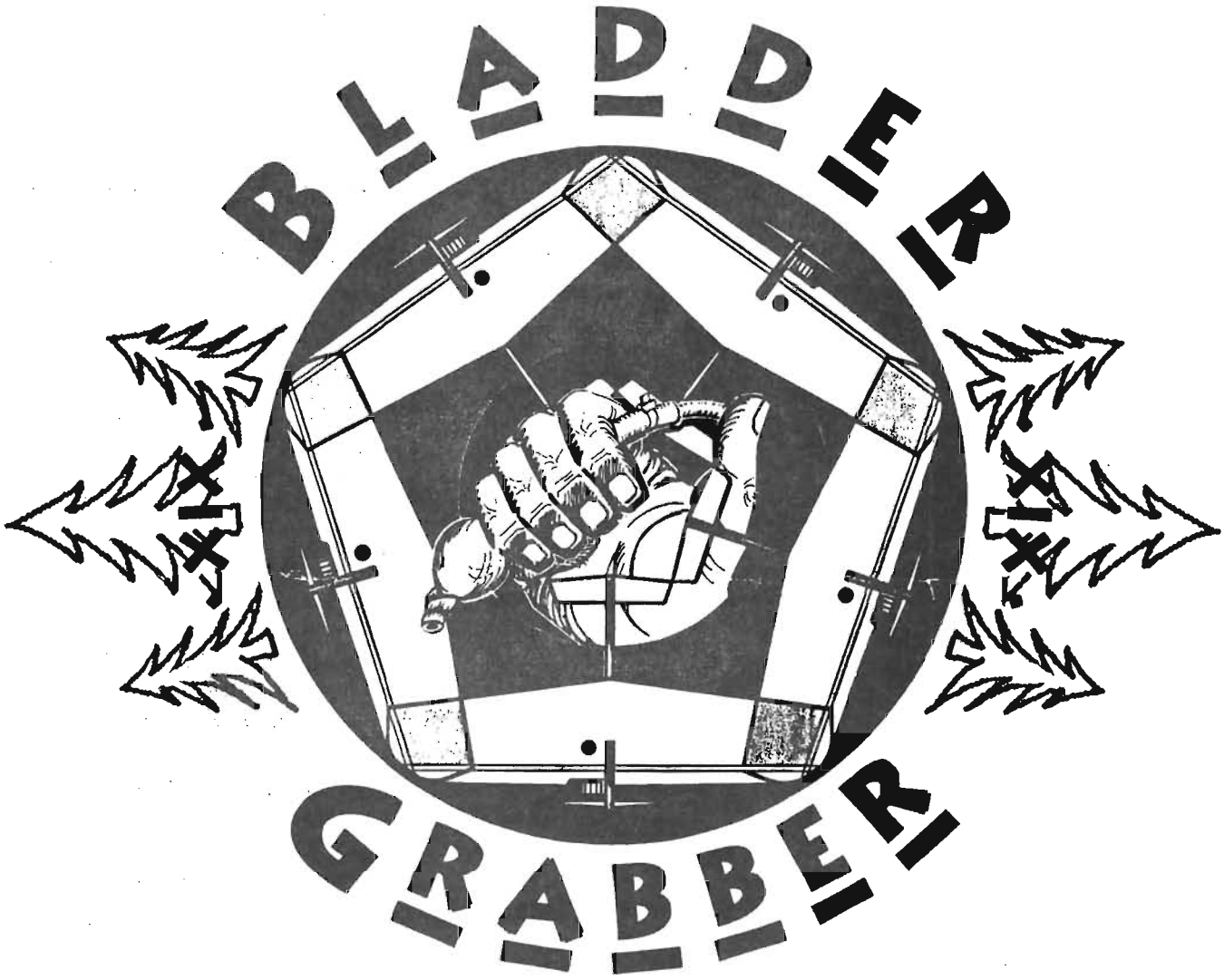
At this time, I am seriously thinking of taking that hook off and putting that more reliable Enya back on, and let the Cro-Magnon Airforce One finish out its days as I had originally intended.....just a fun sport plane.

SITE MAP FOR BLADDER GRABBER CONTEST:



HOTEL & MOTEL RATES: 1 ROOM, 2 PEOPLE, 2 BEDS. PRICES DO NOT INCLUDE TAX. SEE MAP FOR LOCATIONS.
CONTACT JEFFREY REIN AT (206) 823-4035 FOR ADDITIONAL INFORMATION

①	HOLIDAY INN	101 128TH ST. S. W.	(206) 337-2900	$69.00
②	MOTEL 6	224 128TH ST. S.W.	(206) 353-8120	$35.99
③	MOTEL 6	10006 EVERGREEN WAY	(206) 349-2060	$33.99
④	BEST WESTERN	2800 PACIFIC AVE	(206) 258-4141	$77.00
⑤	HOWARD JOHNSON PLAZA HOTEL	3105 PINE	(206) 339-3333	$69.00



$5000 WORTH OF AUDIO EQUIPMENT & PRIZES

TRIPLE-ELIMINATION MODEL AIRPLANE COMBAT TOURNAMENT

SPECIAL GUESTS FROM FOX MANUFACTURING -
BETTY FOX AND JOHN LOWERY

JUNE 29-30, 1996

HARVEY FIELD, SNOHOMISH, WASHINGTON

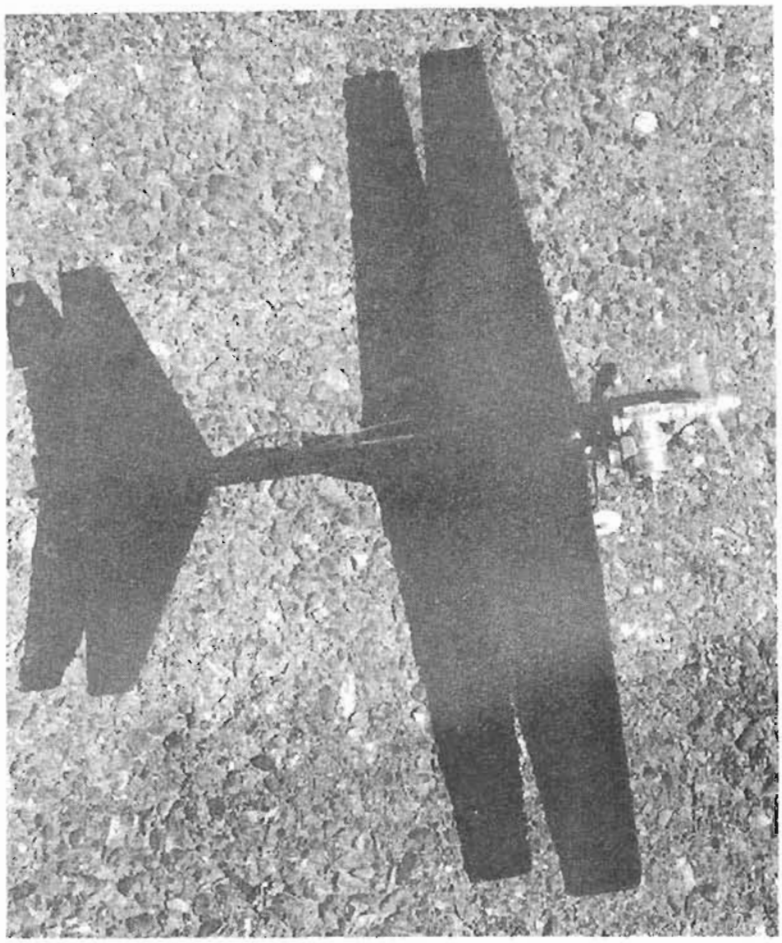
ENTRY FEE IS $25. AMA MEMBERSHIP IS REQUIRED AND IS AVAILABLE WHEN YOU ENTER THE CONTEST. FLYING BEGINS AT 9:00 A.M. THERE WILL BE NO FLYING AT THE FIELD BEFORE SATURDAY, AND NOT BEFORE 8:30 ON SATURDAY.

IT IS ILLEGAL (BIG FINES) TO CARRY FUEL ON AIRPLANES. SHIP FUEL BY UPS TO NORM MCFADDEN, 14625 42ND AVE. W., LYNNWOOD, WA 98037. ALLOW TWO WEEKS FOR UPS TO GET IT TO NORM.

FOR FURTHER INFORMATION CALL NORM AT (206) 745-1314 OR HOWARD RUSH AT (206) 746-5997 OR E-MAIL HOWARD 73763.746@compuserve.com

MODELS FLOWN IN THE BLADDER GRABBER MUST BE EQUIPPED WITH WORKING FUEL SHUTOFFS.

NORTHWEST RECORD REVIEW



Bob Spahr of Brush Prairie, Washington set a new NW mark for 1/2 A Profile Proto Speed. His 98.16 mph score was turned on May 5th at the Columbia Basin Balsa Bashers contest held in Richland, Washington at the Columbia Point Park site.

Bob's original design plane is built mainly of balsa. It's wing spans 20 inches and has the rule minimum 45 square inches. The tail spans 10 inches, with an area of 18-3/4. Fuselage length is 13-1/4 inches. The model was finished in red K&B Superpoxy paint.

The powerplant is a stock C.S. 049, fed with 50% nitro fuel. A fuel regulator is used with the pressure fuel tank. Glow plug used was a Naemura #3. The prop used is a fiberglass ZZ Prop Schuette 1/2A proto.

And to keep things fun, Bob piloted his own model.

Bob holds his record breaking 1/2 A Proto job.

Looks like he's thinking..... "I blew Chuck Schuette's wings off again!"

NORTHWEST CL CONTEST CALENDAR

THE FOLLOWING LISTING IS A SUMMARY OF ALL KNOWN A.M.A. AND M.A.A.C. SANCTIONED EVENTS AS OF 5-15-96. FOR FURTHER INFORMATION, PLEASE CONTACT THE INDIVIDUAL LISTED. CONTEST DIRECTORS AND CLUB LEADERS ARE ENCOURAGED TO CONTACT FLYING LINES AS SOON AS POSSIBLE WITH THEIR PLANS, INCLUDING REVISIONS AND TENTATIVE DETAILS.

JUNE 15: RICHMOND, B.C. EVENTS: NW FLYING CLOWN RACE, .15 SPORT RACE, JUNIOR ONLY MOUSE RACE. SITE: RICE MILL ROAD SPONSOR: PACIFIC AEROMODELLERS CLUB. CONTACT: ??????????????????????

JUNE 22 & 23: KENT, WASHINGTON 1996 STUNTATHON
EVENTS: PRECISION AEROBATICS, OLD TIME STUNT, CLASSIC STUNT, NATIONAL RECORD RATIO SPEED, NORTHWEST RECORD RATIO SPEED. SITE: BOEING SPACE CENTER, KENT, WASHINGTON. SPONSOR: SEATTLE SKYRAIDERS. CONTACT: DAVE GARDNER (206) 226-9667, OR FAX (206) 226-2759

JUNE 29 & 30: SNOHOMISH, WASHINGTON 1996 BLADDER GRABBER
EVENT: AMA FAST COMBAT SITE: HARVEY FIELD. CONTACT: NORM McFADDEN (206) 745-1314, OR HOWARD RUSH (206) 746-5997

JULY 8 - 13: MUNCIE, INDIANA AMA CONTROL LINE NATIONALS

JULY 20 & 21: COQUITLAM, B.C. CAN-AM SPEED CHAMPIONSHIPS
EVENTS: ALL CLASSES OF SPEED FLOWN AGAINST NORTHWEST RECORDS & SPECIAL JR ONLY CLASS I MOUSE PROTO EVENT. SITE: UPPER COQUITLAM RIVER PARK. SPONSOR: VANCOUVER GAS MODEL CLUB. CONTACT: BRUCE DUNCAN (604) 855-7295 OR RON SALO (604) 279-0530

JULY 27 & 28: RICHMOND, B.C.
EVENTS: NW FLYING CLOWN RACE, NW SPORT RACE, PRECISION AEROBATICS, OLD TIME STUNT, PROFILE SCALE, CARRIER. SITE: RICE MILL ROAD SPONSOR: PACIFIC AEROMODELLERS CLUB. CONTACT: ???????

AUGUST 3: RICHLAND, WASHINGTON EVENTS: 1/2 A COMBAT, 80 MPH COMBAT SITE: BURBANK SCHOOL. SPONSOR: COLUMBIA BASIN BALSA BASHERS. CONTACT: DON STEWART, 1922 THAYER DRIVE, RICHLAND, WA 99352 (509) 946-0915

SEPTEMBER 14 & 15: KENT, WASHINGTON 1996 RAIDER ROUNDUP
EVENTS: TENTATIVE SITE: BOEING SPACE CENTER SPONSOR: SEATTLE SKYRAIDERS CONTACT: JOE DILL, 22533 152ND AVE SE, KENT, WA 98042 PHONE: (206) 631-2367

SEPTEMBER 29: COQUITLAM, B.C. EVENTS: NW FLYING CLOWN RACE, MOUSE RACE I. SITE: UPPER COQUITLAM RIVER PARK. SPONSOR: PACIFIC AEROMODELLERS CLUB. CONTACT: ???????

OCTOBER ?????: ?????, OREGON REALLY RACING & FALL FOLLIES
EVENTS: RACING, PRECISION AEROBATICS. DETAILS TENTATIVE

OCTOBER 5 & 6: RICHLAND, WASHINGTON DESERT CARRIER BASH
EVENTS: PROFILE CARRIER, .15 CARRIER, CLASS I & II CARRIER COMBINED, FLYING CLOWN RACE, CLASS I MOUSE RACE, NW SPORT RACE, NW SUPER SPORT RACE, OLD TIME STUNT. SITE: HORN RAPIDS ATHLETIC COMPLEX. SPONSOR: COLUMBIA BASIN BALSA BASHERS CONTACT: PAUL RICE (509) 627-3142

More scheduling notes: Location of the Eugene Propspinner's October contest may be in Portland, due to current site difficulties at the Eugene Airport. Stay tuned. Say, what's with you folks in PAC-land? Can't we get all of the contest information needed? Contest directors & club leaders, *please* let FLYING LINES know what's going on! We help promote your events at no charge to you!!!!!!!!!!

Northwest Competition Records

Record performances established between Northwest CL modelers in sanctioned competition

The contest season is just underway, and the records are already falling. Way up North in Richmond, B.C., Stephen Cox shaved one second off of Joe Rice's Mouse I heat record. Good to see another Junior grabbing NW records. Todd Ryan upped his own Clown Race record by three more laps at the April Portland meet. Of note, this is the first record set in nearly a decade at the Delta Park site! And last, but not least, Bob Spahr took the 1/2 A Proto mark ever closer to 100 mph with a 98 mph run at the Richland, Washington meet early in May. Congratulations, all!

	1/2 A SPEED	99.78	BRUCE DUNCAN	5-29-94	EUGENE, OREGON
	A SPEED	184.16	BOB SPAHR	7-11-95	RICHLAND, WASH.
	B SPEED	158.53	RON SALO	7-13-95	RICHLAND, WASH.
	D SPEED	183.41	BOB SPAHR	7-14-95	RICHLAND, WASH.
	JET SPEED	196.64	JERRY THOMAS	8-8-93	RICHMOND, B.C.
	FORMULA 40 SPEED	153.13	MARTY HIGGS	6-26-94	RICHMOND, B.C.
	21 SPORT SPEED	147.97	CHUCK SCHUETTE	9-12-93	KENT, WASHINGTON
	FAI SPEED	181.57	CHRIS SACKETT	8-13-95	COQUITLAM, B.C.
*	1/2 A PROFILE PROTO	98.16	BOB SPAHR	5-5-96	RICHLAND, WASH.
	21 PROTO SPEED	123.58	CHRIS SACKETT	9-17-95	KENT, WASHINGTON
*	MOUSE RACE I -50 LAP	2:42	STEPHEN COX	3-24-96	RICHMOND, B.C.
	MOUSE RACE I -100 LAP	5:16	JOE RICE	10-7-95	RICHLAND, WASH.
	MOUSE RACE II -75 LAP	3:40	DAVE GREEN	5-24-86	EUGENE, OREGON
	MOUSE RACE II -200 LAP	10:04	HAZEL/THOMPSON	9-19-87	KENT, WASHINGTON
	AMA SCALE RACE -70 LAP	3:25	MARTY HIGGS	7-20-89	RICHLAND, WASH.
	AMA SCALE RACE -140 LAP	8:48	JOE RICE	7-17-93	LAWRENCEVILLE,IL
	NW GOODYEAR -70 LAP	4:12	JOE RICE	5-30-93	EUGENE, OREGON
	NW GOODYEAR -140 LAP	8:01	JULIE RICE	5-27-95	EUGENE, OREGON
	SLOW RAT RACE -70 LAP	3:10	HAZEL/THOMPSON	5-30-93	EUGENE, OREGON
	SLOW RAT RACE -140 LAP	6:38	HAZEL/THOMPSON	10-17-92	EUGENE, OREGON
	AMA RAT RACE -70 LAP	----	----------	-------	----------
	AMA RAT RACE -140 LAP	6:32	HAZEL/THOMPSON	10-22-94	EUGENE, OREGON
	FAI TEAM RACE -100 LAP	3:36	KNOPPI/McCOLLUM	6-84	SHANGHAI, CHINA
	FAI TEAM RACE -200 LAP	7:40	KNOPPI/McCOLLUM	6-84	SHANGHAI, CHINA
	NW SPORT RACE -70 LAP	4:00	BRUCE DUNCAN	5-12-87	RICHMOND, B.C.
	NW SPORT RACE -140 LAP	8:48	TODD RYAN	10-8-94	RICHLAND, WASH.
	NW SUPER SPORT -70 LAP	3:14	DAVE GREEN	4-13-86	PORTLAND, OREGON
	NW SUPER SPORT -140 LAP	7:03	DAVE GREEN	3-8-87	PORTLAND, OREGON
*	FLYING CLOWN RACE, LAPS: 304		TODD RYAN	4-20-96	PORTLAND, OREGON
	CLASS I CARRIER	318.30	ROY BEERS	9-13-86	KENT, WASHINGTON
	CLASS II CARRIER	330.25	ORIN HUMPHRIES	9-19-87	KENT, WASHINGTON
	PROFILE CARRIER	296.15	TODD RYAN	10-8-95	RICHLAND, WASH.
	.15 CARRIER	220.96	TODD RYAN	9-23-95	HOQUIAM, WASH.
	AMA ENDURANCE	18:37	WESLEY MULLENS	8-15-87	KENT, WASHINGTON

records as of 5-10-96

NW REGIONALS COMPETITION RECORDS

BEST RECORDED PERFORMANCES AT THE EUGENE, OREGON NORTHWEST REGIONAL CL CHAMPS BY ALL ENTRANTS.

1/2 A SPEED	132.39	BILL NUSZ	1992
A SPEED	166.60	JERRY ROCHA	1994
B SPEED	179.75	FRANK HUNT	1994
D SPEED	183.98	BILL NUSZ	1993
JET SPEED	187.62	BILL NUSZ	1995
FORMULA 40	151.26	BILL NUSZ	1993
21 SPORT SPEED	147.00	CHUCK SCHUETTE	1994
FAI SPEED	173.81	PAUL GIBEAULT	1994
1/2 A PROF. PROTO	100.74	BILL NUSZ	1992
21 PROTO SPEED	120.24	ROY FLETCHER	1995

(RACING RECORDS REFLECT ONLY FINALS)

MOUSE RACE I	4:34.59	PAUL GIBEAULT	1992
MOUSE RACE II	10:39.59	PAUL GIBEAULT	1991
AMA GOODYEAR	6:00.34	LES AKRE	1995
NW GOODYEAR	8:01	JULIE RICE	1995
SLOW RAT RACE	6:14.9	VIC GARNER	1987
RAT RACE	6:04	BILL CAVE	1994
NW SPORT RACE	8:33	VIC GARNER	1987
NW SUPER SPORT	8:05	SALTER / SALTER	1986
NW FLYING CLOWN			
CLASS I CARRIER	306.8	ROY BEERS	1995
CLASS II CARRIER	329.96	ORIN HUMPHRIES	1987
PROFILE CARRIER	251.7	TODD RYAN	1995
.15 CARRIER	208.5	TODD RYAN	1995

ENGINES, ETC.
by Paul Gibeault

HOW TO LOSE AT MOUSE RACE
(from a guy who's been there & done that)

A. "The Engine"

I assume that if you follow my engine set-up tips, you should have a very decent running engine. I do like the new 'Killer Bee' type crankcase and would recommend them over the older type if you are experiencing case problems. The new Cox 'Venom' engine makes you quite competitive quicker, but you still need to keep in mind most of the engine maintenance tips mentioned earlier. It will not not necessarily make you an instant winner, since both AMA records are held with much older vintage engines. So don't go throwing out 'ole reliable' just yet.

B. "The Model"

I assume you have built the Streaker V with 2 ounce fiberglass cloth all over with 1/4 ounce of wing tip weight, for a total model weight of 6-3/4 ounces. In this event only, heavier is better. It's most noticeable in windy conditions. Speaking of which, at my last Nats in very heavy winds I taped an additional Canadian dollar coin to the outboard wing tip of all our models. We finished 1st, 2nd, and 4th, and not one of us incurred a take-off accident. Unlike many designs, the heavily tip weighted Streaker V can darn near fly in a storm if need be. After all, anybody can fly in calm.....but successfully flying in wind separates the men from the boys!

When flying in rainy conditions it is the pilot's job to wipe off the flying lines with a soft cloth often and absolutely just prior to every race. I feel a lot of the sticky film build-up on flying lines comes from the oil laden engine exhaust trails, hence the need for constant wiping. I have lost races neglecting this!

I assume you use a good quality nose wheel (i.e., Perfect with CA around the hub), and solder it on with Sta-Brite silver solder. I have lost face (and races) when my wheel fell off during the race. Regular solder just doesn't do it.

In keeping with the spirit of the event (i.e. FUN), mousers really ought to be RAD looking (radical for those of you not with it). The more neon colors, the more paint and decals the better! All of my top models sport a Mickey Mouse on the top wing, just to remind me that this airplane is to be flown for fun. (You just can't get too worked up about a "mickey mouse" event). P.S., I'll let you all in on a very well kept building secret of mine. My clear painted models all look like the wing and stabs have hi-tech fancy carbon fibre edges. This really psyches out most competitors until they find out it's really nothing more than a black felt marker run around the edges just before the clear coat went on! (like I said in Part I, "deceptively simple.....").

C. "Piloting"

An otherwise great airplane / engine combination is obviously disadvantaged by poor piloting. Here are a few suggestions you might find advantageous.

1) Since Mouse races often involve line tangles, (surprise, surprise!) choose a pilot with combat experience. This type of individual often has a 'never-say-die' attitude even when lines from other (often crashed) models have him wrapped up like a fly in a spider's web. He just keeps on flying, no matter what. A good pilot when suddenly caught up in a line tangle will cooly but quickly change hands if necessary to get out of it. I can fly with either hand and this ability has paid off many times. The lesson here is that not all line tangles will bring you down if you keep a cool head about you.

A great pilot must train himself in 3 up races to not look at his own model; but watch his opponents and his own pitman for signals. This allows you an important split second to see and avoid accidents just as they happen and fly accordingly. Reed valve engines don't have fuel shut-offs so an often fatal mistake is seen in the following scenario:

2) You are flying along, just overtaking a slower model and your engine quits! You quickly lose airspeed and sink into the model you just overtook, bringing both models down in a line tangle. Happens every contest it seems, but consider this: A great mouse pilot must:

* Count and be aware of his lappage at all times, i.e., know what lap he is on and know how many laps his model is capable of. (say for example, 30 laps / tank in traffic)

* At maximum laps less five (per example, 25 laps), assume your engine will quit if you pass.

* If you are approaching a passing situation at this critical stage then:

If you are ahead, flap your elevator (up & down) and do not pass since it's only a few laps until you will run out of fuel.

OR, if you are not ahead, as you approach to overtake, quickly whip hard with just enough height to get by safely. Do not climb any higher than absolutely necessary or your engine surely will quit! As soon as you have just gotten by, stop whipping. You shouldn't have to whip for more than 2 seconds to do this right. You may very well be warned or called for whipping, but much better a warning than a crash. Should your Streaker quit while passing, the whip momentum will allow you to complete the pass even with a dead engine! Such is the beauty of flying a properly weighted Streaker V.

However, if you have ignored instructions and built it too light and not enough tip weight, then you'll find out two things: 1) It doesn't whip well flying high and falls out of the sky downwind, cartwheeling upon landing. 2) It builds momentum slowly and won't keep it's speed up with a dead engine and you end up crashing in a line tangle anyways, ala scenario number 2.

D. Pitting

An otherwise good pit man can cost you the race by launching you without first looking for traffic! Sometimes you will be taking off just as another pilot is landing. A launch at this critical time involves you in an instant line tangle / crash and a DQ for that race. The solution is "heads-up" pitting. A great pit man will just grit his teeth and hang on a second or two until it's safe and clear to release. You must remember to always yield to the landing model. Seldom is a race lost by 2 or 3 seconds, but it's always lost on a pitting accident that results in you being disqualified.

Sometimes, other models will pit or crash in front of your assigned pit area. A great pit man will quickly walk to a safer area and signal with hand held high, his new pitting location. A great pit man is not fazed when forced to relocate. He must be mobile to enable the quickest pitstops under real racing conditions.

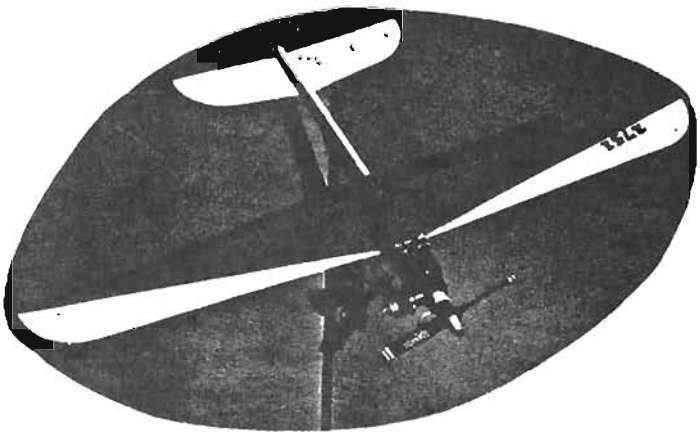
E. Conclusion

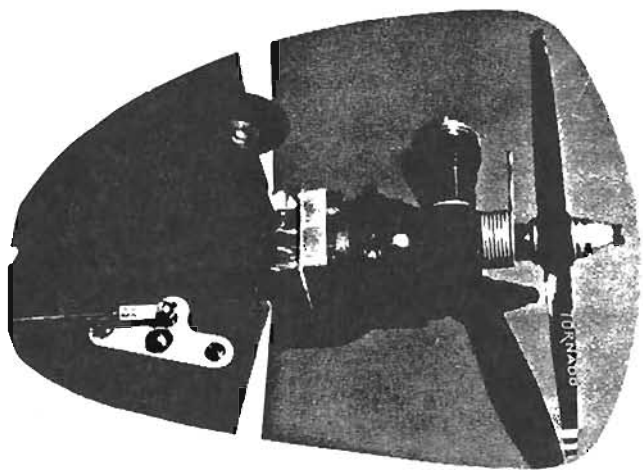
Gestalt N: Where the sum of the whole (working together in harmony as one) is greater than the sum of the individual parts working separately. A winning mouse race effort can basically be put down to the right amount of "Gestalt". That is to say the ability of a good team working together in a nicely flowing manner; yields better results than a team with a killer model but lack of teamwork and practice.

I have been most fortunate to fly with my 2 flying buddies, Roy Andrassay and Les Akre. Their superior piloting and pitting abilities have guided us all to many victories. A big thanks , for all your great work guys. I enjoyed every minute of it!

I also wish to thank the rest of you fellow mouse racers out there for coming out to race with us. If it wasn't for all of you, mouse surely wouldn't be the Nats most popular CL racing event, that it is today. I wish you all the best of luck and most importantly, take it easy on my delicate ego when you beat me!

..... Mr. Mouse





21 PROTO RULES

FOURTH DRAUGHT, JANUARY 1996

OBJECTIVE: It is the purpose of 'New Proto' to fly semi-scale,realistic airplanes in C/L speed competition. Proto speed models need not be scale models however true scale subjects are highly encouraged.

DESIGN; The model must have a full fuselage and rudder. Butterfly type stabliizers are not acceptable unless it is a true scale model.The engine can be mounted in any position,if mounted sideways model must have matching opposing cowl. A model with a small fuselage and helmet cowl used on traditional speed model designs is not acceptable. The model must have a cockpit or cabin as laid out in specifications following. No pod and boom fuselages,flush or prone cockpits or flying wing designs will be accepted unless they are actual scale models of full size craft.

The engine must be fully cowled except in the case of a scale model. If the builder wishes,the glow plug or head fins may be exposed. Wing area enclosed in the fuselage will be considered but area of fillets shall not be counted. The model must be colorfully painted, with no all clear finishes.* The entrants AMA or MAAC license must be permanently affixed to the upper right-hand wing surface at least 1" high and prefixed with either 'N' (USA) or C,CF (Canada) *Clear areas of finish must not exceed 20% of the total models surface area(Wing,stablizer,fuselage,rudder)

AIRPLANE SPECIFICATIONS: The model shall have a minimum of 125 square inches of wing area; The stabilizer must be a minimum of 25% of the wing.Rudder/fin area shall be a minimum of 5% of the wing area. The minimum wingspan shall be 24" or 16" for a biplane. The minimum distance from the trailing edge of the wing to the leading edge of the stabilizer must be 5".The model must have a clear canopy,a minimum dimension of 3½" in length by 1" high and 1" wide and shall house a scale pilot with a minimum of 1" in height. Pilot must have clear unobstructed view. The landing gear must be of the fixed type and similar to a real airplane. The main landing gear shall consist of two wheels spaced at least 6" apart between wheel centers. Wheels must have a minimum diameter of 1½". The wing and stabilizer must be of equal span with no asymmetry,maximum deviation is ¼". The weight limits of the aircraft (dry) shall be 20oz minimum and 30oz maximum.
*True scale subjects are exempt from all specs other that minimum 125sq Wing

ENGINE,PROPELLOR AND FUEL SYSTEM: The engine shall have a maximum size in displacement of .2135 cubic inchies. An open exhaust or mini pipe type exhaust system only. A mini pipe cannot be longer than 6 inches from the centerline of the engine bore to the end of pipe. the inside diameter of the pipe shall be of constant size. Any fuel system is acceptable and the use of a shutoff is encouraged. Only standard two bladed propellors are acceptable either wood or composite.

FLYING LINES: Only two wire type control systems are acceptable. Minimum two wire size shall be (2).016" x 60'-0". The minimum wing tip seperation of the lines shall be .20" . The model and control system shall be subjected to a 32q pull test.

FUEL: Fuel shall be of standard composition containing 10% Nitro Methane, 20% lubricants and 70% Methanol. The fuel will be supplied by contest management.

DISTANCE OF TIMED COURSE: The model will be timed from the instant the model is released from takeoff for 14 laps (1 mile). The flyer will be allowed 1½ full laps to get model airborne before entering the pylon. Any attempt to whip the model more than is necessary to get airborne during the first lap shall constitute a foul and the flight will be DQ.

JUDGING ; All models will be lined up where an experienced panel of three judges will place them in order of appearance from best to worst. The model aircraft will be inspected and judged upon REALISM, CONSTRUCTION and FINISH and models will receive points based on the following formula;

$$\frac{3}{\text{number of entries}}$$

That is the three divided by the number of entries, with each model reciving points according to its position.
EXAMPLE:
Six entries divided into three equals .5 stagger of points from best to worst where the best model would get the maximum three points, 2nd would receive 2.5 points, 3rd would receive 2 points, 4th-1.5, 5th-1 point and 6th-.5 . This works for any number of entries , the more the entries the tighter the competition. Points are rounded out to the 100th.

SCORING; Each contestant uses their best Proto speed time in MPH converts that time to points and adds in the appearance points for the final tally, EXAMPLE;

' Joe Speedster' .....: PROTO SPEED TIME : 121.21 MPH
: APPEARANCE POINTS: 1.5

TOTAL 122.71 POINTS

RECORDS; All records local or national will be expressed in the actual Proto speed time of the model only.

HANDY 21 PROTO APPEARANCE POINTS GUIDE

(number of entries)

(judged position)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1st	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
2nd		2	2	2.25	2.4	2.5	2.57	2.63	2.67	2.7	2.73	2.75	2.77	2.79	2.8
3rd			1	1.5	1.8	2	2.14	2.25	2.33	2.4	2.45	2.5	2.54	2.57	2.6
4th				.75	1.2	1.5	1.71	1.86	2	2.1	2.18	2.25	2.31	2.36	2.4
5th					.60	1	1.29	1.5	1.67	1.8	1.91	2.0	2.08	2.14	2.2
6th						.50	.86	1.13	1.3	1.5	1.64	1.75	1.85	1.93	2.0
7th							.43	.75	1	1.2	1.36	1.5	1.62	1.71	1.8
8th								.38	.67	.90	1.09	1.25	1.38	1.5	1.6
9th									.33	.60	.82	1	1.15	1.29	1.4
10th										.30	.55	.75	.92	1.07	1.2
11th											.27	.50	.69	.86	1
12th												.25	.46	.64	.8
13th													.23	.43	.6
14th														.21	.4
15th															.3

RULES FOR NORTHWEST 80MPH COMBAT

1. PURPOSE: It is the intent that this event will provide a form of combat that is slower, more relaxed, and less destructive to equipment than all-out AMA combat events.

2. All rules for AMA (fast) combat shall apply except as follows:

3. ENGINES: Any engine up to .40 displacement is permitted.

4. SPEED LIMIT: The airspeed limit for all contestants shall be 80 mph, which is defined at 6.43 seconds for a two-lap period at 20-foot height. No devices capable of varying the speed of the airplane in flight, such as throttles or carburetors adjusted by elevator trim, are allowed.

5. MATCH PROCEDURE: Flying of matches shall be exactly the same as in AMA combat except as follows:

Airspeed timing:

The first airplane to launch will be timed for two laps after the first full lap, at a height of approximately 20 feet (brief deviations in height for safety reasons are permitted). If the time for those two laps is greater than 6.43 seconds, the airplane will be judged eligible to compete. Pilots must keep the plane near the 20-foot height; failure to do so will delay timing.

If the second airplane launched appears to the circle marshal to be slower than the first plane, after the first plane has been declared eligible, the circle marshal may waive the timing of the second plane and signal the start of combat. If the second plane appears equal to or faster than the first plane, the circle marshal may time the second plane as well before beginning combat.

In the case of a simultaneous launch, the faster airplane will be timed.

Airplanes will not be timed on successive launches in the same match, unless the circle marshal has reason to believe that a plane has passed the 80mph speed limit. The circle marshal retains the right to stop combat at any point and re-time any airplane that appears to have passed the 80mph speed limit.

Exceeding the speed limit:

If, on the initial launch, a plane is judged to be flying in excess of the 80mph speed limit, that plane's airtime watch will be cleared, and airtime will not be counted until the plane is judged to be consistently flying below the airspeed limit; combat will not be started until both airplanes are within the speed limit. If a plane is judged to exceed the limit at sometime during the match — after the initial timing — the airtime watch will be stopped and not restarted until the plane is judged to be consistently flying below the speed limit; combat will be stopped until both planes are below the speed limit.

6. SCORING: Per AMA Combat.

For information, contact: John Thompson, 295 W. 38th Ave., Eugene, OR 97405

jmt/FL/1-21-94/rev:2-18-94/6-10-94/4-15-96*
* ballot

Julie and Joe Rice battle it out in Combat match last year in Tri-Cities meet.

(Gary Harris photo)

1993 RULES FOR NORTHWEST GOODYEAR RACING

(Provisional)

1. Purpose: It is the intent that this event will provide a form of Scale Racing similar to the AMA Scale Racing (Goodyear) class but without the expense and high speeds required in that class.

2. All rules for AMA Scale Racing shall apply except as follows:

3. ENGINES: The following list of .15-size engines are those permitted in this event. The engine used shall be a standard production unit; no prototypes or "factory specials" are allowed.

Fox: Any version.
K&B: Any version.
Cox: Any version.
Conquest: Any version from K&B, Cox or RJL
O.S.: Any version.
Supertigre: Any front-intake version
Enya: Any version.

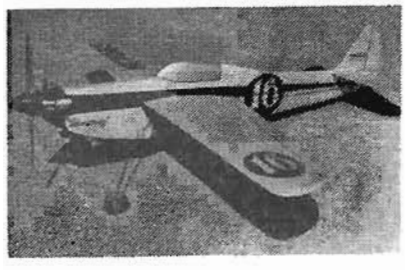
Engine reworking is permitted, providing that all major engine components are from the original manufacturer. (No hybrids or scratch-built major engine components permitted.)

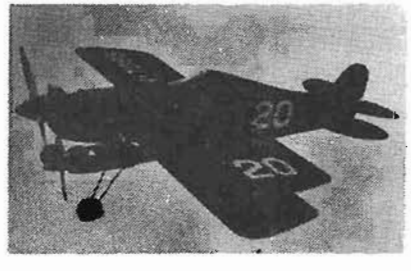
4. Lines shall be 60 feet long, plus or minus 6 inches. Lines shall be .014" single strand lines (per AMA rulebook) or .015 multistranded.

5. Pull test will be 25 pounds.

FOR INFORMATION contact Mike Hazel, 1073 Windemere Dr. N.W., Salem, OR 97304.

mwh/jmt 3-27-93





NORTHWEST FLYING CLOWN RACE

1. PURPOSE: This event is intended for all fliers and pit crews interested in a simple racing event which uses a common aircraft, emphasizes both speed and economy, and encourages the use of a wide variety of engines.

2. All AMA control-line unified racing rules apply, except as follows:

2.1. Pull test is 25 pounds. Lines are .015 stranded steel. Length is 52 feet, plus or minus 6 inches, measured from the center of the handle to the fuselage.

3. Engine: Any design or make of piston engine is allowed, except that maximum engine displacement is limited to .19 cubic inches. Modifications are not restricted within the limits of the AMA safety code.

4. Fuel tank: Any design of fuel tank is allowed, including pressure systems, except that fuel capacity is restricted to 1 ounce, with a +5% tolerance, 31cc maximum. The fuel tank shall be fully external of the plane, on the outboard side of the fuselage, and entirely in front of the leading edge.

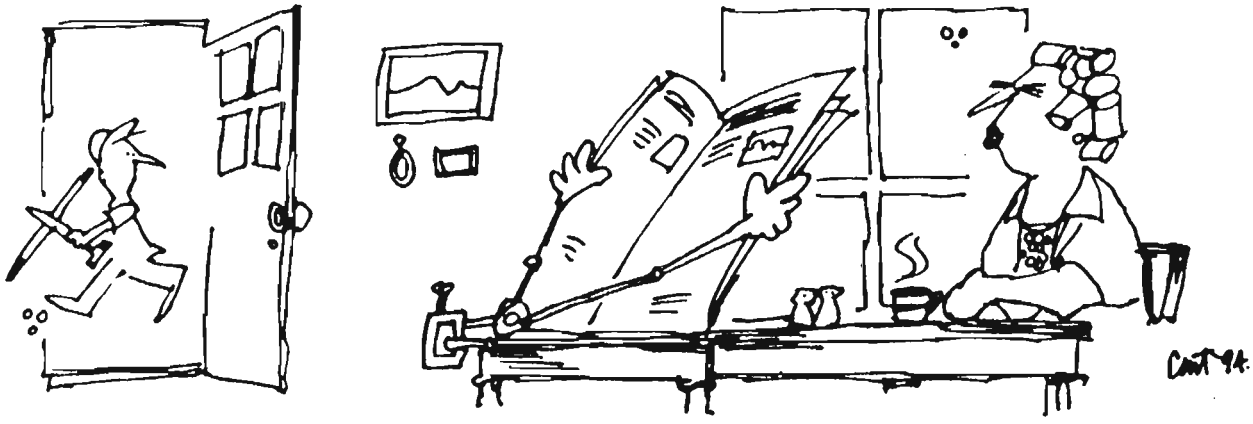
5. Fuel: Glow fuel shall contain a maximum of 10 percent nitromethane with 20 percent lubricant and the rest methanol. Glow fuel will be supplied by the contest management. Diesel engines may use diesel fuel.

6. Aircraft: The only aircraft allowed is the PDQ Flying Clown or faithful replica. Changes to the planform, profile, or wing thickness are prohibited. Wheels must be at least 1 inch in diameter, and be spaced laterally about 7 inches.

7. No hot gloves, fast fills, or trick pitting equipment is allowed.

8. Races: All preliminary heats and the final race will be timed for 15 minutes from start to finish. The contestant with the most laps wins. Preliminary heats may be 7-1/2 minutes if agreed to by a majority of contestants. Records shall not be established for heats less than 15 minutes. There shall be either two or three pilots in heat and final races.

jmt/cbbb/FL/rev:6-10-94/4/15/96*
* ballot



The Flying Flea Market

Classified advertisements — FREE for FL subscribers

FOR SALE: FASCAL- CLEAR AIRPLANE COVERING FOR EITHER FOAM OR OPEN FRAMES. IT HAS STICKY ADHESIVE, SO IT'S GOOD FOR ON-FIELD REPAIRS. WORKS WITH HIGH OR LOW HEAT, AND CAN BE PAINTED. A MUST FOR COMBAT FLIERS. PRICE IS 75 CENTS PER FOOT, PLUS SHIPPING. I WILL DELIVER IT AT CONTESTS IF CONTACTED IN ADVANCE. JOHN THOMPSON, 295 WEST 38TH AVE., EUGENE, OR 97405, OR E-MAIL 73473,1407 COMPUSERVE COM. NO PHONE ORDERS, PLEASE.

BUY/SELL/TRADE: MODEL MAGAZINES AND SPECIAL INTEREST NEWSLETTERS. SEND S.A.S.E. FOR LIST. JOHN THOMPSON, 295 WEST 38TH AVE., EUGENE, OR 97405

FOR SALE: NEW REWORKED VA .049 MOTORS. ALL MACHINED SURFACES HAND LAPPED, FIT, BLUEPRINTED AND MY NEW BULLET PROOF (BP) CONNECTING ROD INSTALLED IN EACH MOTOR. NO BREAK IN REQUIRED, READY TO RUN. 30,000+ RPM OUT OF BOX. $75. REWORK YOUR OLD VA $25 LABOR PLUS PARTS. 7075T6 ALUMINUM BP CON ROD $10. JEFFREY REIN, 14326 102ND AVE NE, BOTHELL, WA 98011, PHONE (206) 823-6053

WANTED: STILL LOOKING FOR MORE SPEED KITS, COLLECTABLE QUALITY DESIRED. MIKE HAZEL, 1073 WINDEMERE DRIVE NW, SALEM, OREGON 97304 (503) 364-8593

FLYING LINES SUBSCRIBERS: THIS SPACE IS FOR YOU!!!!!!!! SEND IN YOUR AD FOR SELL / SWAP / OR FOR NEEDS. YOUR AD WILL RUN FOR TWO ISSUES, UNLESS YOU REQUEST OTHERWISE. CHANGE AD AT ANYTIME.

WANTED: BUY OR TRADE: SIG PT-19 KIT. WAS POPULAR DURING THE 70'S, BUT NO LONGER AVAILABLE. DON CHANDLER (916) 824-6999, OR (916) 529-8336

WANTED: DYNAJET ENGINES, OR ANY DYNAJET PARTS, PARTICULARLY HEADS. RON SALO, #10-8280 BENNET RD, RICHMOND, B.C., CANADA V6Y 1N5 (604) 279-0530

FOR SALE: MANY BACK ISSUES O F FLYING LINES ARE AVAILABLE. AN ORDER SHEET IS AVAILABLE UPON REQUEST, LISTING ISSUE NUMBERS AND DATES AVAILABLE FROM THE FL ARCHIVES.

RULES FOR NORTHWEST .15 CARRIER
(Provisional)

1) PURPOSE: It is the intent that this event will provide an entry level Navy Carrier competition using a simple airplane.

2) AIRPLANES: Any model is allowed; it is not required to be a model of a full-scale aircraft. Working functions are strictly limited to throttle, hook and elevator; no working flaps, ailerons, rudder , etc. The tail "wheel" may be a non-moving hook.

3) ENGINES are limited to .15 displacement. Muffler pressure is allowed, Mufflers are recommended but no mandatory.

4) LINES, as measured from the center of the handle's grip to the center line of the aircraft, must be between 52 feet and 52 feet, 6 inches, with a diameter of .012 inch or larger.

5) All AMA general rules, control-line rules and Navy Carrier rules shall apply unless specifically addressed above.

For information, contact: Orin Humphries, 19805 48th Ave. W., #A101, Lynnwood, WA 98036

oh/jmt/4/16/93

RULES FOR NORTHWEST SPORT RACE

1. Purpose: It is the intent that that this event will provide the novice competitor a beginning racing event, racing with other competitors using similar equipment which is readily obtainable and operates in a basic fashion.

2. All pertinent rules from AMA unified racing rules shall apply, in regard to safety and conduct of races, except as follows.

3. Engine: The only allowed engine shall be the Fox stunt .35, which shall be a stock, unmodified engine operated on suction feed. ("Stock" is defined as absolutely unmodified except for needle valves and spray bars.) No exhaust extensions are allowed except bona fide mufflers that do not increase engine performance. The Fox Manufacturing Co. hemi/stuffer kit modification is **prohibited.**

4.1. Aircraft: The model shall be built from, or an exact duplication of, a commercially manufactured kit. In the case of obscure or rare kits, some documentation, such as a set of plans, may be required by the contest director for confirmation of the airplane's kit status. Kits need not be in current production or distribution to qualify.

4.2. Models must be of profile fuselage type, and must conform to the general profile definition. The model must have a minimum fuselage length of 24" when measured from the propeller thrust washer face to the leading edge of the movable elevator surface.

4.3. The minimum wing area shall be 300 square inches. The wing must have a minimum thickness of 1 inch when measured at any point along the span, with the exception of the last two inches before each wingtip.

4.4. All models must have a canopy, horizontal stabilizer, elevator and vertical fin. Models must have a fixed landing gear with a minimum of one wheel, 2 inches in diameter or larger.

4.5. Modifications: Major changes to the kit design such as clipped wings, shortened fuselage, partial omission of the tail assembly, etc., are prohibited. Reinforcement of the nose and engine mount areas is permitted. Landing gear location and construction are entirely optional from what may be included in the kit, except as specified in section 4.4.

5. Fuel tank: The fuel tank shall be fully external and forward of the wing leading edge, and located on the outboard side of the fuselage. The tank may not be designed so as to cowl the engine. All tank vents are limited to a maximum size of 1/8-inch outside diameter. The tank may not be pressurized, but the vents may be directed forward into the airstream.

6. Prohibited equipment: Equipment and devices standard to full-race aircraft are prohibited. These include fuel shutoff, pressure refuelers, fast-fill systems, "hot glove" electrical contact systems, and centrifugal carburetor switches.

7. Pull test: The plane and entire control system shall undergo a pull test of 35 pounds.

8. Lines shall be of a minimum .018-inch diameter, and lines shall be of the stranded type, with a length of 60 feet measured from the handle grip to the fuselage, plus or minus 6 inches.

9. Races: Preliminary heats shall be of 70 laps duration, with one pit stop minimum required. Feature races shall be of 140 laps with two pit stops minimum. All races shall be flown with at least two entrants, and not more than four entrants. At contestants where entrants fly preliminary heats to determine finalists, at least three entries shall proceed to the final races. The decision on the number of final entries shall be made by the event director and made in advance before the start of any preliminary heats.

10. It is assumed that the usual sportsmanship of Northwest modelers will prevail in this event. The event director may disqualify any entrant that is not in keeping with the spirit or intent of this racing event.

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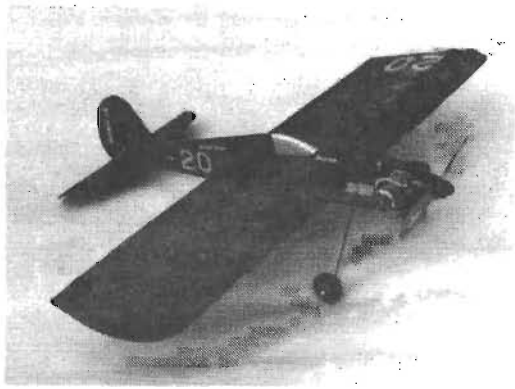

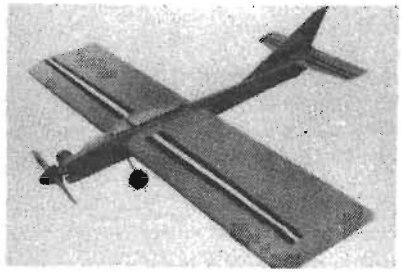

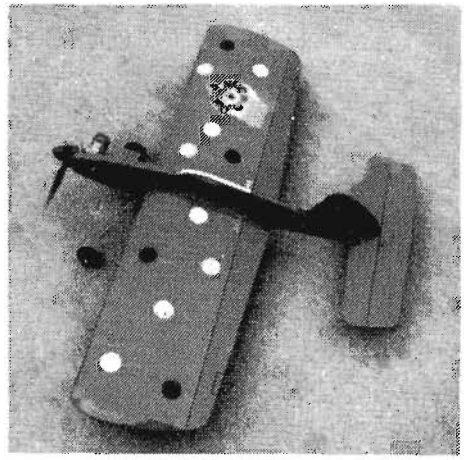

RULES FOR NORTHWEST SUPER SPORT RACE

1. Purpose: It is the intent that this event will serve as an intermediate racing class between Northwest Sport Race and the AMA racing events.

2. All pertinent rules from the AMA control-line racing unified rules section shall apply in regard to safety and the conduct of races, except as follows.

3. Engine:

3.1 The "engine" is defined as the complete unit, ready to run, needing only prop, fuel and starting voltage, except that the glow plug, venturi and/or restrictor and spraybar and needle valve, gaskets, bolts, drive washer, front washer, prop nut, shims, piston ring(s) (if used), and ball bearings (if used) need not be considered part of the production unit. These parts are not subject to the rules regarding quantity or source.

3.2. No tuned pipes or exhaust extensions are allowed except bona fide mufflers which do not increase engine performance. Engines shall operate on suction feed. No variable or in-flight adjusting carburetors are allowed; however, any other modification of the intake is permissible except as noted below.

3.3. Two types of engines will be allowed:

3.3.1. Engines of .36 c.i.d. maximum with single bypass intake port. These engines shall not be restricted in regard to venturi dimension. There is also no restriction regarding engine rework, except that all major components shall be produced by the original manufacturer. No material or part may be added.

3.3.2 (a). Engines of maximum total nominal displacement of 0.4020 cubic inches (6.6 cc). Engines must be production units assembled from factory available production parts. Engines and parts, with the exception of the venturi-spraybar assembly, must have been produced in quantities greater than 500, and all must be available through normal retail outlets in the U.S.A. Parts substitution shall be limited to catalog listed parts produced in quantities greater than 500 units for the engine being altered and available commercially to anyone from the manufacturer of the engine. Engines may only be modified by removing parts or material from parts. No material or part may be added.

3.3.2 (b). The engine must be of the front-intake, single-bypass configuration. All air for the combustion process must come through the crankshaft. Altering nominal subport induction, timed holes in the case and the sleeve, or other techniques to circumvent the requirement that all air come through the specified venturi opening, are prohibited.

3.3.2 (c). No ABC or AAC piston/sleeve configurations are allowed.

3.3.2 (d). Each engine shall be equipped with a venturi and spraybar meeting the following restrictions: The venturi shall have an inside circular bore of not more than 0.315 inch. The venturi will maintain this diameter for at least 0.25 inch above and below the spraybar centerline. The spraybar assembly will be located precisely through the centerline of the venturi bore and shall have a circular cross section of diameter not less than 0.155 inch for the portion in the throat of the venturi. Exception: R/C carburetors may be used with the opening fixed in one position.

3.3.2 (e). The complete engine/venturi/spraybar system shall weigh less than 10.5 ounces (excluding muffler).

4. Aircraft: The model shall conform to the AMA slow rat specifications:

"Models must be of profile fuselage type, and must conform to the general profile definition. The model must have a minimum fuselage length of 24" when measured from the propeller thrust washer face to the leading edge of the movable elevator surface.

"The minimum wing area shall be 300 square inches. The wing must have a minimum thickness of one inch when measured at any point along the span, with the exception of the last two inches before each wing tip.

"All models must have a canopy, horizontal stabilizer, elevator and vertical fin ... Models must have a fixed landing gear with a minimum of one wheel."

5. Fuel tank: The fuel tank shall be fully external and forward of the wing leading edge, and located on the outboard side of the fuselage. The tank may not be designed so as to cowl the engine. The tank may not be pressurized, but the vents may be directed forward into the airstream.

6. Pull test: The plane and entire control system shall undergo pull test of 35 pounds.

7. Lines: The minimum diameter of lines shall be .018". Lines shall be of the stranded type, with a length of 60 feet measured from the handle grip to the fuselage, plus or minus 6" tolerance.

8. Races: Preliminary heats shall be of 70 laps duration, with one pit stop minimum required. The final or feature race(s) shall be of 140 laps duration, with three pit stops minimum required. All races shall be flown with at least two entrants, and not more than three entrants. At contests where entrants fly preliminary heats to determine finalists, at least three entries shall proceed to the final race(s). The decision on the number of finalist entrants shall be made by the event director and be made before the start of any preliminary heats.

10/89/DC/jmt//Ed:jmt/4/15/93.

A N N O U N C I N G

The Seattle Skyraiders / Jim Parsons' Memorial

S T U N T - A - T H O N '9 6

The Northwest's Premier All-Stunt Contest
Plus Record Ratio Speed Flying on Saturday

June 22nd and 23rd, 1996

Boeing Space Center, Kent, Washington

Flying site is on West Side of Space Center, in the large parking lot.
Enter from S. 212th St, across from the KOA

SCHEDULE:

SATURDAY, June 22:	**9 AM**	**Old Time Stunt JSO**
	1 PM	**Classic Stunt JSO**
	9 AM - 4 PM:	**National and NW Record Ratio Speed**

****Informal Pizza Dinner Saturday Night! ****

SUNDAY, June 23:	**9 AM**	**Official Flying Starts**
EVENTS:	**PAMPA**	**Beginner (short pattern)**
	PAMPA	**Intermediate (301 - 400 points)**
	PAMPA	**Advanced (401 - 500 points)**
	PAMPA	**Expert (500 - up points)**

NO TRICK EVENTS THIS YEAR, JUST THE STRAIGHT STUFF!

For Information, contact:
Dave Gardner, C.D., (206) 226-9667 or fax: (206) 226-2759

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Vancouver Gas Model Club

presents the

CAN-AM Control-Line Speed Championships

JULY 20th & 21st, 1996, from 10:A.M. to 5:P.M.

Upper Coquitlam River Park, Coquitlam, B.C., All classes of M.A.A.C. & A.M.A. C/L Speed.

Plus a JUNIOR** ONLY CLASS 1 MOUSE PROTO SPEED*
*ANY ELIGIBLE CLASS 1 MOUSE RACER ON 42' LINES IS ELIGIBLE
** Junior is under 18 as of January 1st (M.A.A.C. age classification)..

Entry fee: Open/Senior $10.00 U.S. per event, $25.00 maximum, Juniors for Speed $5.00 per event $10.00 maximum. Awards for speed will be cash and calculated v/s Northwest Records. Junior Mouse awards will be announce in the next newsletter.

Schedule of events: Saturday July 20th, open testing from 10:00 am to 10:30 am
" " " , Junior Class 1 Mouse Proto 10:30 am to 12:00 noon
Award presented at 12:15.
Saturday July 20th, Speed Contest 12:30 until 5:00 pm
Sunday July 21st. " " 10:00 am until 4:30
Awards presented at 5:00 pm.

For further info please contact; Bruce Duncan at 1-604-855-7295 or Ron Salo at 1-604-279-0530

All other club newsletters please advertise the Junior Class 1 Mouse Proto Speed event and help promote more interest in the phase of our sport.

JUNIORS JUNIORS JUNIORS

SPECIAL EVENT for you at the V.G.M.C. CAN-AM SPEED CHAMPIONSHIP

Bring your Class 1 Mouse Racer and have it timed as a proto speed model.
Any reed valve .049 powered model, 42ft steel flying lines.
First prize is 1/2 of the Jr. Mouse entry fees, second 1/4 of the entry fees, PLUS a random drawing for Jr. entrants only a new Cox .049 Venom engine.

Saturday July 20th 10:30 am to noon
upper Coquitlam River Park, Coquitlam, B.C.

FLYING LINES

1073 WINDEMERE DRIVE NW
SALEM, OREGON 97304

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

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JUN 13 PM 1996

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EUGENE, OR 97405

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