

FLYING LINES



NEWS OF NORTHWEST CONTROL LINE MODEL AVIATION

1073 WINDEMERE DRIVE NW
SALEM, OREGON 97304

EDITOR: MIKE HAZEL

JANUARY 1988

ISSUE NUMBER 87

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SUBSCRIBERS: As mentioned in the last issue, any of you who have not received your term of subscribership with this issue, may receive an equivalent amount of back issues.

To do this, just fill out the back issues listing form in the back of this issue. (ignore the prices). To determine how many issues you have coming, subtract 87 from the ending number on your mailing label.

This offer expires February 29, 1988.

Well Readers, here it is, your final issue. Or is it? Yes and no. It will be your final issue from this editor, but the hot news is that Flying Lines will continue on.

Pat Leonard in Montana will continue to keep the FL torch a-burning. He has a message below, which will explain how you can keep issues coming your way. Please note that all subscribers will have to start over again, as per explanation last month that we are flat out of money.

I will continue to stock the available back issues, and offer those for sale. Hopefully, any proceeds will cover the amount out of pocket which will go for sending out the credited issues.

Anyway, back to Pat. He will need your support- please read Uncle John's column, and follow through. I will be getting a lot of the materials and information to Pat shortly, and hopefully you will not experience a long delay before the next issue. But please be patient!

At this point, it would be appropriate to make some acknowledgements. Flying Lines never has been a one or two man show, but has been (and will be) an entity dependent upon the participation of many people. I will make no attempt to give a comprehensive acknowledgement of each individual, because not only someone might be missed (can't do that!), but also it is fair to say that every FL reader has made a special contribution of sorts at one time or another.

I would like to express my gratitude for the kind notes and words of encouragement that have come my way. Some of these are in this issue. Also a BIG thanks for some monetary contributions that were specific to fund this issue. You people know who you are, thanks again.

I had envisioned that there should be a lot of stuff to say, but I'm not into long sentimental ramblings. If there is something important that has been missed, then I'll pass it along to Pat for future mention. Meanwhile, the workshop beckons. See you on the contest trail!

MIKE

Dear FL readers. From Pat Leonard - Kila Montana

There will be more Flying Lines! Personally my hobby would lose alot with the demise of this newsletter, so I have arranged to publish it. also the other staffers will continue to contribute material. (Thanks guys!) This will go a long way in maintaining a "local flavor", and assuring material that suits the needs and interests of FL readers.

A problem you are familiar with is finance. I dislike to even mention it, but another issue can't be printed without a small donation from you readers. To those of you who contribute I will probably be able to give at least a one issue subscription extension for each two dollars donated. In this same vein: NOW is a great time to renew your subscription! (Even if it's not expired!)

Have a great '88!

Pat Leonard

P.S. The new Flying Lines address for subscriptions and correspondance is: Flying Lines - P.O. Box 177 - Kila Montana 59920

Pat

NW COMPETITION STANDINGS

FLYING LINES' COMPILATION OF EVENT PLACINGS BY NORTHWEST MODELERS COMPETING IN NORTHWEST REGION CONTESTS

Dick Salter of Seattle captured the "Mr. Competition" crown for 1987, unseating Dave Green who has held the title for four years. Dick competed in a number of events to accumulate his points, including taking the overall combat category. Most of Dick's points earned in the racing events were under the S&S team entry, which did not count in his individual entry totals.

Glenn Salter was just two points behind Dick. Glenn also placed very high in the combat events, and was at the top in Balloon bust, which had a significant point total. Glenn also was involved in racing, but those entries were done under the SHT entry, with John Hall.

Rounding out the top three, was Dave Green. Dave had the highest point total in the overall racing category, and had a few points in the speed category to boot.

In 1987 we had 86 competitors listed on the books, as compared to 89 for 1986, so the level of competition was about the same.

Following is the 1987 Top Twenty, followed by individual events and category overall totals.

1) Dick Salter	140	11) Dave Mullens	79.5
2) Glenn Salter	138	12) Jim Cameron	78
3) Dave Green	120	13) Bruce Duncan	75
4) Bob Danielson	119	14) Henry Hajdik	50
5) Dick McConnell	99	15) Wayne Drake	46
6) Mel Lyne	93	16) John Hall	45
7) Randy Schultz	90.5	17) Ron Salo	42
8) S&S Team	87	18) Roy Beers	41
9) Marty Higgs	85	19) John Thompson	36
10) SHT	83	20) Dick Peterson	32

PROFILE SCALE (2 contests, 15 entries)

1) Dave Mullens	15
2) Randy Schultz	12
3) Bob Danielson	6
4) Dick Salter	6
5) Orin Humphries	5

SPORT SCALE (2 contests, 5 entries)

1) Orin Humphries	5
2) Jim McCurrach	3
3) Dave Mullens	1

OVERALL SCALE (5 contests, 23 entries)

1) Dave Mullens	19
2) Randy Schultz	12
3) Orin Humphries	10
4) Bob Danielson	8
5) Dick Salter	6
6) Jim McCurrach	3
7) Wes Mullens	1

OVERALL SPEED (17 contests, 64 entries)

1) Jerry Thomas	20
2) Dave Green	17
3) Greg Beers	12
4) Loren Howard	12
5) Duncan/Sackett	11
6) Marty Higgs	11
7) Roy Beers	10
8) Dick Peterson	8
9) Mike Hazel	6
10) Bob Howard	3
Ron Salo	3

BALLOON BUST (5 contests, 72 entries)

1) Glenn Salter	56
2) Dick Salter	45
3) Bob Danielson	41
4) Dave Mullens	32
5) Dick McConnell	15
George Mickey	15

SPORT COMBAT (2 contests, 21 entries)

1)	Glenn Salter	21
2)	Rich Salter	15
3)	Dick McConnell	14
4)	Cameron Coughlin	13
5)	Dick Salter	4

FAST COMBAT (4 contests, 93 entries)

1)	Dick Salter	61
2)	John Thompson	25
3)	Mike Rule	22
4)	Dick McConnell	20
5)	Glenn Salter	16

SLOW COMBAT (2 contests, 12 entries)

1)	Mel Lyne	8
	Dick McConnell	8
	Glenn Salter	8
4)	Bob Nelson	6
5)	Dick Salter	4

FOXDOG COMBAT (2 contests, 14 entries)

1)	Randy Schultz	10
	Dave Pellerin	10
3)	Dick McConnell	8
4)	Glenn Salter	6
	Mel Lyne	6

A COMBAT (3 contests, 19 entries)

1)	Mel Lyne	11
	Rich Salter	11
3)	Mike Hazel	10
4)	Tom Strom	9
5)	Glenn Salter	7

OVERALL COMBAT (15 contests, 166 entries)

1)	Dick Salter	75
2)	Glenn Salter	58
3)	Dick McConnell	51
4)	Mel Lyne	30
5)	Rich Salter	26
6)	John Thompson	25
7)	Mike Rule	22
8)	Cameron Coughlin	13
9)	Mike Hazel	10
	Randy Schultz	10
	Dave Pellerin	10

RAT RACE (2 contests, 9 entries)

1)	Dick Salter	3
	Dave Green	3
3)	S&S Team	2
4)	Mike Hazel	1

SLOW RAT RACE (1 contest, 4 entries)

1)	Dick McConnell	2
2)	Bob Danielson	1

MOUSE RACE I (2 contests, 12 entries)

1)	S&S Team	9
2)	Mike Rule	4
3)	Jim Cameron	2
4)	Nitroholics RT	1

MOUSE RACE II (2 contests, 11 entries)

1)	Jim Cameron	7
2)	Nitroholics RT	5
3)	Ron Salo	4
4)	Dave Green	3
5)	Jim Booker	2

SPORT GOODYEAR (2 contests, 10 entries)

1)	Dave Green	10
2)	SHT Team	6
3)	Dick McConnell	5
4)	Dick Peterson	4
5)	Jim Cameron	3

NW SPORT RACE (15 contests, 131 entries)

1)	Bruce Duncan	54
2)	SHT	50
	Jim Cameron	50
4)	Dave Green	43
5)	Marty Higgs	39

NW SUPER SPORT (8 contests, 77 entries)

1)	S&S Team	52
2)	Dave Green	44
3)	SHT	27
4)	Nitroholics RT	24
5)	Wayne Drake	21

OVERALL RACING (42 contests, 310 entries)

1)	Dave Green	103
2)	S&S Team	87
3)	SHT	83
4)	Jim Cameron	78
5)	Marty Higgs	74
6)	Bruce Duncan	54
7)	Mel Lyne	49
	Henry Hajdik	49
9)	Wayne Drake	46
10)	Ron Salo	39

PROFILE CARRIER (4 contests, 35 entries)

1)	Bob Parker	22
2)	Bob Danielson	20
3)	John Hall	15
4)	Remy Dawson	12
5)	John Thompson	11
	Glenn Salter	11

CLASS I CARRIER (2 contests, 9 entries)

1)	Roy Beers	7
	Bob Danielson	7
3)	Dave Shrum	5
4)	Terry Miller	3
5)	Joe Just	2

CLASS II CARRIER (2 contests, 8 entries)

- 1) Orin Humphries 8
- 2) Roy Beers 6
- 3) Bob Danielson 4
- 4) Wayne Spears 2

OVERALL CARRIER (2 contests, 61 entries)

- 1) Bob Danielson 32
- 2) Roy Beers 31
- 3) Bob Parker 29
- 4) John Hall 21
- 5) Orin Humphries 14
- 6) Terry Miller 13
- 7) Remy Dawson 12
- 8) Glenn Salter 11
- John Thompson 11
- 10) Dave Shrum 5

OLD TYME STUNT (3 contests, 20 entries)

- 1) Randy Schultz 19
- 2) Bob Emmett 14
- 3) Ray Mathis 12
- 4) Dave Gardner 7
- 5) John Hall 5

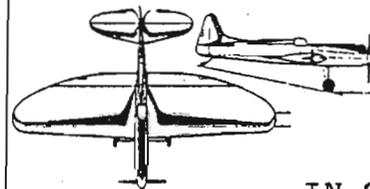
PRECISION AEROBATICS (11 contests, 71 entries)

- 1) Randy Schultz 35.5
- 2) Dave Mullens 28.5
- 3) Jack Pitcher 24
- 4) Ray Mathis 19.5
- 5) Jason Huntress 17
- 6) George Mickey 15.5
- 7) Ralph Cooney 15
- 8) Bob Emmett 13.5
- 9) Don McClave 10.5
- Gerald Schamp 10.5

Virginia Craftsman, Inc.

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 COMBAT SPEED RACING



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IN STOCK NOW:
 MERCO .61 "Stunt Special" \$95.00
 CLASSIC REPLICAS CL PLANS
 BOLLY COMPOSITE PROPS
 MERCO, FOX, K&B ENGINES
 STUNT ENGINE REWORK

New Eugene Field Inaugurated

Warmly dressed members of the *Eugene Prop Spinners* gathered on Sunday, Dec. 27, for one of the first flying sessions on the new Eugene flying field, at Mahlon Sweet Airport.

The new field is a couple of hundred yards from the old one, which saw 20 years of sport and competition flying. The new one is, in a word, mahhhhhvelous!!!

The vast expanse of pavement has room for four asphalt circles, with two pairs divided by parking. That means that the noisy racing and speed circles will be separated from the precision aerobatics and carrier areas. Right alongside the asphalt is room for four grass circles which will house the combat activities.

On each end of the field are little covered shelters with benches, for spectators, timers, or pit work.

There's lighting for night activity and a permanent portable rest room. And everything's still within walking distance of the airport terminal facilities.

Prop Spinners members plan work parties this winter and spring to mark out circles and prepare for the 17th annual **Northwest Regional Controline Championships**.

This is definitely going to be a big year for the Regionals, with every one of the old events on the schedule, and even better facilities than ever.

Start planning now for the Northwest's biggest contest. If you can't wait to see the field, drop on down to Eugene some Sunday and go flying with the Prop Spinners.

The field is locked for security, but Prop Spinners have the combination. Call any member of the Prop Spinners (including John Thompson (503) 942-7324) for admittance if nobody happens to be there. Better yet, call ahead and we'll make sure there's a flying session.

See you at Mahlon Sweet!

THE FLYING FLEA MARKET

BUY, SELL, TRADE

FOR SALE: 2 ea OS Max 25F-ABC, new in box \$65 ea, 1 OS Max 40FSR-ABC new in box \$75, 1 OS Max 40 VR-P new in box, with OS mini pipe \$120, 1 OS Max 40 VR-P, special head, mod exhaust adapter with K&B mini-pipe, bench run, strong \$125
1 ST X-15, excess weight machined off, special head insert, bench run only, good runner \$50
3- ST 36, new in box \$50 each,
2- K&B 40RC #4011 new in box \$45 ea.
1- Tower digital LED tach, VGC \$15
Dick Tyndall, 348 Argyll Circle,
Highland Springs, VA 23075

ENGINE WANTED: Como .40, non-sch., new, and/or new parts. SUPER TIGRE PARTS WANTED: For G-21.40: full circle crankshaft (AA40-1N); wrist pin (AA40-5). For G-15 engine: gasket set. ENGINES FOR SALE OR TRADE: OS Max 30S Stunt, NIB, two at \$45 ea. Testors/McCoy Series 21 (black hd.), .35 Stunt, NIB, \$35; .40, NIB, \$35. Veco 19 BB Stunt, NIB, \$40. McCoy .60 red hd., rear intake, exc. cond., hd. fins shaved, ex. butterfly added for carrier, \$75. Rossi R60, rear intake, set up for carrier by Bill Johnson w/ fuel meter and ex. slide, exc., \$85. \$2.00 postage per engine, M.O. please. Gabe Manfredi, 601 N.W. Selvitz Rd., Port St. Lucie, FL 34983. Ph. 305-878-9220.

FOR SALE: ~~ONE~~ each Fox 35 Stunt, all new in box. @ \$29.00.
~~1 each Fox 36 plain bearing new, no box @ \$22, and one more of the same, missing NVA @ 16.00~~
~~1 each Fox 36 plain bearing used, very good condition @ \$10.00~~
Prices include shipping.
Mike Hazel, 1073 Windemere Drive NW,
Salem, Oregon 97304

WANTED: Pen Pals. I am in an area with no CL fliers. Would like to correspond with Stunt fliers. Walter Hicks, 2252 Brigadoon, Bishop, CA 93514

WANTED: Old Controline kits (preferably combat) and build, new and old UC planes, any size
Chip Giordano, Day 201-286-1200
Eves 201-240-4451

DAWG SALE-- Help me clean out the nooks and crannies of my workshop. The following items are flyable airplanes and running engines, all used, ranging in quality from beater to better. I will make delivery or bring them for viewing to Drizzle Circuit contests.

4- Sam-Too combat planes, much used, usable for FAI practice, drilled for Fox 15BB engines. \$5 each or \$15 for lot. Not competition quality

1- much used Goodyear racer, Midget Mustang, drilled for Cox. Needs minor repair \$20

1- Ringmaster, used in old NWSR and early NWSS, drilled for K&B 35 or Fox 36. \$15

1- Akromaster, complete with Fox 15, excellent flier does full pattern \$25

1- Sig Mustang Stunter, beautiful but flies like a brick, excellent adult trainer. With Fox 35, \$50

3- Wings cannibalized from old profiles, \$10 for the lot

1- Batch of 1/2A planes, suitable for kids to play with, make offer.

1- Giesecke Nobler, has tank problems, ugly as sin, flies OK, Fox 35 stunt engine, \$50

1- Ringmaster, used in NWSR and NWSS Good shape, good flier, \$20 or with new style McCoy 35 \$35

2- SuperTigre G21 engines, reworked for fast combat, with pressure regulators. \$20 each

~~2 stock SuperTigre G21 .35 engines used in slow combat, \$30 for pair~~

1- McCoy 35 (new style) \$15

1- Fox 36 plain bearing \$25

John Thompson, 1505 Ash Avenue,
Cottage Grove, OR 97424
(503) 942-7324

CONTROLINE CONTEST SCHEDULE 1988

February 6th&7th, 1988
Northwest Model Expo
Puyallup, WA
Western Washington Fairgrounds
Model displays, static competition,
controline demo flies and training.

February 27, 1988
Skyraider Beginners Day
Seattle, WA, Carkeek Park
All new fliers welcome to fly
the trainers or get help tuning or
trimming your own plane .

February 14, 1988
Drizzle Circuit Race #3
Portland, Or. Delta Park
NWSR, NWSS.

March 13, 1988
Drizzle Circuit Race #4
Portland, OR. -Delta Park
NWSR, NWSS,

March 20, 1988
SKYRAIDER 3X1
Seattle, WA.- Carkeek Park
Same plane and engine to fly
NWSS, Stunt, and Balloon Bust.
Cumulative scores for overall winners.
Trophies through third place. First place
trophy for each event winner.
Registration at 9:00, flying at 10:00.
Entry fee \$5.00 for the day.
CD: Dan Cronyn 782-5552

April 10, 1988
Drizzle Circuit Race #5
Portland, OR.-Delta Park
NWSR, NWSS

May 28 & 29th, 1988
Northwest Controline Regionals
Eugene, OR,- Mahlon Sweet Airport
Speed, Racing, Stunt, Carrier, Scale,
Combat, Balloon Bust. Most AMA
events are flown. A brand new
flying site to fly on.

June 25&26, 1988
Bladder Grabber
Fast Combat at its best.

July 9th, 1988
Stuntathon "88"
Kent, WA.
Boeing Space Center
Precision Aerobatics, Old
time stunt, Jr. Novice stunt.
CD:Bob Emmett

July 23-31, 1988
AMA Nationals

September 3&4, 1988
1988Vancouver Internats
Richmond Field,
Vancouver, B.C.

September 17, 18, 1988
RAIDER ROUND UP "88"
THE WASHINGTON STATE
CONTROLINE CHAMPIONSHIPS
Combat, Racing, Carrier,
Balloon Bust, Stunt, Scale

SKYWRITER COMPETITION NEWSLETTER .

The competition newsletter is for those modelers who are not members of the Seattle Skyraiders Model Aviation Club. The COMPETITION NEWSLETTER, is already included in the SKYWRITER, the regular newsletter of the Seattle Skyraiders. The Competition Newsletter will be offered a minimum of twice a year, but more than likely three or four issues will be offered. The basic intent is to provide the Northwest modeling community a contest schedule, contest results and the competition standings. The competition newsletter will NOT provide any modeling articles. The regular SKYWRITER has articles and reports and is also available to non-members.

NAME: _____
Address: _____
City: _____ State: _____ Zip: _____
Telephone: _____
AMA Number: _____

PAYMENT: \$5.00 annually regardless of number of issues.

Send payment and application to: THE SKYWRITER
15559 Palatine Ave. N.
Seattle, WA 98133

GOOD NEWS:

It always seems blackest before the dawn.

Those of us who believe that a communications network like Flying Lines is of vital importance to control-line model aviation in the Northwest were afraid that the newsletter finally was about to die after all these years. It simply had exacted too much of a toll from the people who put it out.

Then, at the 11th hour, it appears possible that a new editor may step forward.

But we're not out of the woods yet, friends.

Even if a new editor is found, that person is going to need the same kind of help that the past ones have had; in fact, he's going to need considerably more help. In order for any editor to maintain the effort of putting out the newsletter for any significant length of time, he needs the assistance of contest officials, fliers, club officers and readers in general.

No matter where he is located, the editor cannot be expected to show up in person at each contest to get the results, or to intuitively know in advance when they will occur, as FL people have done in the past. To perform like a professional newspaper reporter is too much to ask from an amateur who also is trying to be a modeler.

He is going to depend on contest directors and competitors to provide him with all the information possible, before and after the contests.

As someone who has gone through the ups and downs of CL model aviation in the Northwest for the past 12 years, I am convinced of the importance of a strong newsletter.

I urge everyone to help build FL up to an even greater level than it has been in the years that you've known it if we are able to continue it under a new editor.

Urge your fellow modelers to subscribe...lending them your copy undercuts the newsletter's financial base. Send information on your contests well before they take place (three months at least) and follow up with a complete report, copy of the AMA documents, etc. Send pictures, reports of club activities, technical articles, letters, opinions, club newsletters, etc., to the new editor.

In order to keep this good thing we've got alive, we have to support it. The number of CL modelers in the region, spread out as we are, simply can't function as well as we need to without a newsletter to link us all up.

My 1988 New Year's resolution is to work as hard as I can to support the newsletter. Please join me in that resolution.

GLAD TO BE BACK:

Returning to the Drizzle Circuit in December was a special moment for me. As some of you may recall, I had made the first 40 contests in a row (8 years) but missed all of the 1986-87 season because of a work conflict. I hope that in December I started a new string.

It was great to see that the interest and quality of our winter racing series has not waned a bit...in fact the opening of the 1987-88 series had excellent attendance and some great flying. The weather being fine also helped.

I'm also looking forward to completing the season with the new three-heat format, which gives us a lot more racing for our drive to Delta Park in Portland.

If you've never flown in the Drizzle Circuit, never raced, or never competed, this is a great place to start. There's a fine camaraderie among the competitors and the winter series, though a serious competitive event, lacks the hurry and frazzle of those big summer contests where you're trying to be 10 places at once.

There's no easier and more low-key and enjoyable competition event than Northwest Sport Race and no more interesting and exciting racing event than Northwest Super Sport Race.

Come on out and give it a try.

ROUND & ROUND

By John Thompson

TIPS AND RIBS:

INFORMATION — National Championships entry packets now are available. If you attended last year's Nats, you'll get one in the mail; if not, you can request one from AMA or clip one out of Model Aviation. The Nats are July 23-31 in Virginia Beach, Va.

MERITORIOUS — The Yancouver Gas Model Club recently presented some special people some awards for their past year in CL model aviation in British Columbia. Bruce Duncan received honors as the 1987 Control-Line champion and as the club's Northwest Sport Race champion, having hit a 4:00 heat time in competition. Bruce and Henry Hajdik were champions in Nostalgia .15 Sport Race. Isabel Hajdik was presented with a Special Service Award and an Associate Membership Award for her work on 27 contests over a three-year period. Chris Sackett received a Special Service Award for his work with the Hot Head newsletter and his contest management work. YGMC has a full schedule of contests planned for 1988.

NO GAMBLE — The AMA guarantees a weekend of fun in Reno, Nev. next June 24-26 at the first National Fun Fly. We gather that everyone is just invited to come down to "The Biggest Little City" and fly their planes, with no formal competition on tap. Reno's a short hop from the Northwest.

UKIE, TO — The Norfolk Aeromodelers of Norfolk, VA, have regular sessions at which they invite people to come and learn how to fly CL planes. They hand out flyers around town announcing the time and place. All the public has to do is bring a CL plane and the club handles the instruction. Good idea!

BUILDING (UP) MODELS — Yours truly will as of February be taking over the CL column in Model Builder magazine from your erstwhile FL editor, Mike Hazel. I'm already inviting all of you to send me news, information, tips, questions and photos for the column. Thanks!

CHAMPIONS, ALL — The U.S. World Championship Team in FAI Combat will be Steve Kott of Michigan, John Stubblefield and Tom Fluker of Texas. Good luck! Phil Granderson of Portland, Ore., as fifth place finisher, would be second alternate behind Chuck Rudner. (Note: There are three former Bladder Grabber champions on that list (Kott, Granderson, Rudner).

Questions and letters to Round & Round always are invited.
--John Thompson, 1505 Ash Ave., Cottage Grove, OR 97424

ENGINES.....by Paul Gibeault

How To Set Up A Newly Acquired Engine For Flight (The Basic Blueprint)

Part 1

So....you've plunked down your hard earned money, bought the top-of-the-line quality (or bargain basement special) engine. With this done, why shouldn't you just bolt it on and go flying? Well, perhaps a bit of history is in order.

Q. Why is it that I notice two identical engines don't produce identical power? One is faster, one is slower!?

A. There are many reasons for this. The main reason is called "ganging of tolerances". Briefly, all engine parts are machined to a specific set of dimensions. This set of dimensions is referred to as the "blueprint" of specification drawing, "spec.". However, for each dimension there is a plus or minus tolerance. That is, a Rossi 15 conrod is to be .123" between centers, plus or minus two thousandths ($\pm .002$.) Therefore, an "acceptable" rod could have a maximum length of .125" or a minimum length of .121".

It is to be noted that all engine parts have this plus or minus tolerance. In some areas the tolerance is not critical, but in other areas it is extremely critical. For example:

(1) Being .001" out on the shape of the engine head fins is absolutely negligible with regards to performance.

(2) Being .001" out on the con-rod center holes, crankpin size or head to cylinder bore fit will affect performance (and engine life) somewhat.

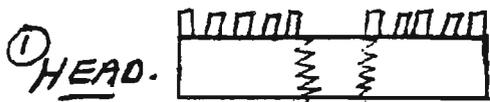
(3) However, being .001" out on piston to sleeve fit is absolutely critical and is the difference between a new and a totally worn out piston/sleeve (P/S) fit. This may also be called piston/liner (P/L) fit. If the piston is on the large (tight) side, the engine may require a prolonged break-in period or may be prone to overheating and seizing up. If the piston is on the small (loose) side, starting, especially by hand, may be difficult if not impossible, and power will be lost due to poor piston sealing at running temperature.

It is most important to remember here, that with other things being equal, the difference between a really "hot" and a mediocre engine, lies in this critical piston to sleeve fit.

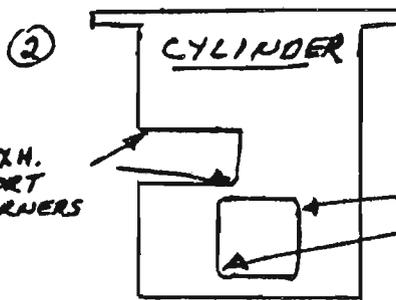
Q. Are there other reasons, too?

A. Yes! A number of quality engines these days are being assembled "dirty". By this I mean that tiny shavings of metal, from machining, etc. have found their way into various parts of the engine. Most notable are the underside of the piston and inside of the crankshaft journal.

Also some burrs may be left on parts, just waiting to depart (into the engine). The most common burr or flashing is found on the underside of the head where the glow plug threads into it. Other common areas are cylinder ports and on crankcase castings, usually around the intake port, venturi area, and transfer (XFER) passages. Refer to the diagrams for more details.

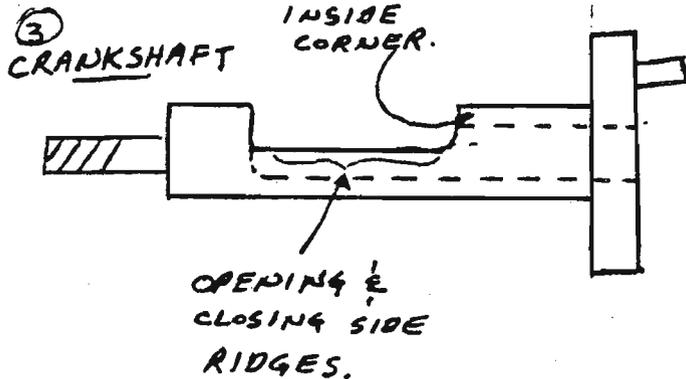


① HEAD.
REMOVE BURR W/ #11 EXACT
OR SLIGHT TWIST BY
HAND W/ LG. DRILL BIT.



②
ENH.
PORT
CORNERS

BOOST & XFER
CORNERS.



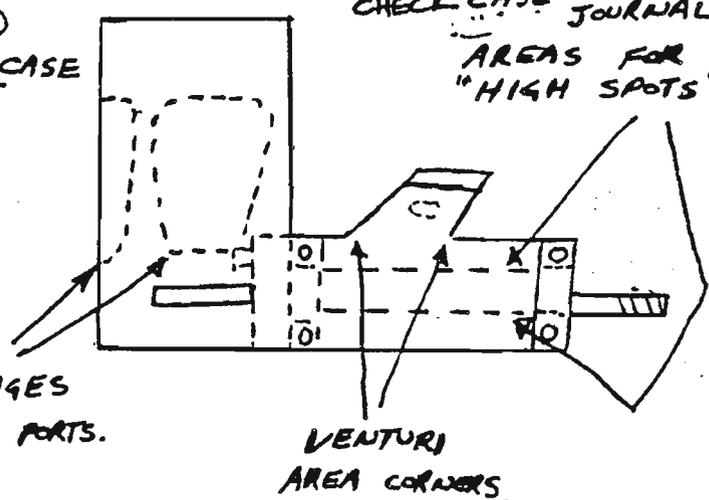
③
CRANKSHAFT

INSIDE
CORNER.

OPENING &
CLOSING SIDE
RIDGES.

④
CRANK CASE

LWR EDGES
OF XFER PARTS.



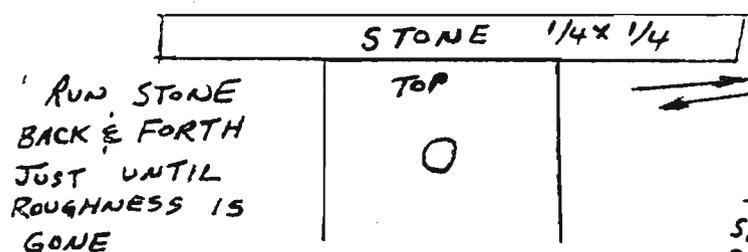
CHECK CASE JOURNAL
AREAS FOR
"HIGH SPOTS"

VENTURI
AREA CORNERS.

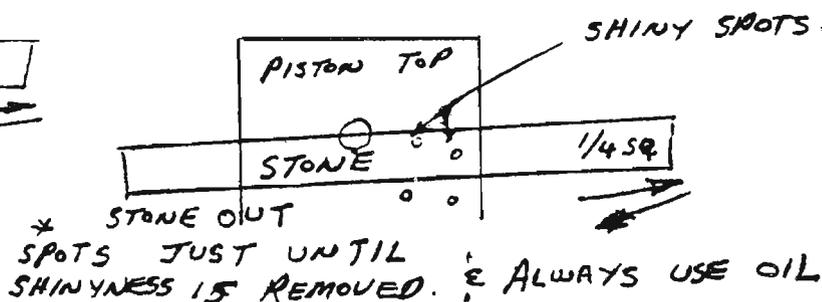
Most burrs and flashing can be removed using Dremel silicon grinding points. I prefer #'s 83322, 84922 and 83702 as they seem to work well for me. If required (usually only on the sleeve), finish up with a Craytex wheel or Dremel #427 polishing point. Now, for a word of caution. Exercise great care when using a Dremel Moto-tool around the piston and sleeve. Deburring is not difficult to do, but it must be done slowly with good lighting, and with a reasonably steady hand. Just think of the sleeve as your mouth, with yourself as a dentist doing the cleaning (no drilling!) and you'll make out fine.

You will very seldom need a Dremel tool to do piston work. At most you'll be required to dress out high spots on a newly run-in piston and remove smashed plug elements from the top of the piston crown. Shiny spots on a piston, especially an A.B.C.-type are easily removed by using an Indian or Arkansas stone. I found a 1/4" triangular stone works quite well. Shiny piston spots indicate excessive friction (rubbing) and this detracts from top performance. If the piston top is too fough from burnt plug elements, true it up with the stone by rubbing the stone back and forth with a bit of oil. Cutting oil, 3-in-1, or WD-40 are O.K. See diagrams for further details. In any case, use the stone only until the rough or shiny spots are dull again. Remember, for now, you don't want to change the piston shape. Barely touch it, dress out just until the work is done, and don't get carried away!

It sounds ominous, but is really quite easy once you've seen how it's done.



RUN STONE
BACK & FORTH
JUST UNTIL
ROUGHNESS IS
GONE



* STONE OUT
SPOTS JUST UNTIL
SHINYNESS IS REMOVED. ALWAYS USE OIL

For the most part, burrs and shavings are unlikely to ruin the engine entirely. They usually score the piston/sleeve or cause the bearings to turn roughly which diminishes performance, sometimes quite significantly! Along with factory shavings, the dirt and grit you allow into the engine goes hand in hand. The worlds best engine is quickly shot by running dirt and grit through it. Briefly, you allow this to happen by neglect, i.e.; you

1. Use dirty fuel (left cap off at the field).
2. Don't use an onboard fuel filter.
3. Run engine on sandy or very dirty, dusty fields.
5. Don't bother using an air filter over the venturi.
6. Start engine immediately after a crash without first checking for dirt (combat matches!).
7. Don't keep engine covered with a rag when not in use.
8. Allow fuel lines to deteriorate and flake.
9. Use corroded metal fuel tanks.
10. Don't bother using an "after run" engine oil like LPS, WD-40, Marvel Oil, Prathers Oil, etc. This allows your engine to rust which eventually flakes off.
11. Don't bother disassembling your latest engine, and just hope it's O.K. inside.

The "fix" for the above is obvious. Take the time to keep things clean.

There is another area that is concerned with outright engine defects and factory flaws. Factory flaws I have seen include, but are certainly not limited to:

1. Piston sleeve installed 180 degrees "out" (great idle but no power!).
2. Conrod installed backwards.
3. Excessive gaskets/shims installed, which results in incorrect running clearances.
4. Holes or bushings machined eccentric (off center).
5. Known defective parts due to incorrect machining, flawed designs, and incorrect metallurgy. Examples of this have been:
 - (A) Early versions of the Cox 15 piston. Made of sintered iron, this piston had a very high rate of piston crown failure and was subsequently remade.
 - (B) Early versions of the K&B Conquest 15 conrods had a very high failurerate of the rods bottom end.
 - (C) Oversize crankshafts in a certain number of Rossi 15 MK.II's. This earned several renowned fliers disqualifications at team trials and world championship events.
 - (D) In 1984 the Cox factory in Minneapolis released thousands of Cox T.D. .049 glowplugs that had faulty element welds which would fail very prematurely.
 - (E) Early MKI versions of the Fox Combat Special had many crankshafts shear in half. This was redesigned for later versions. Later MKIV's had faulty pistons which were quickly recalled and replaced.

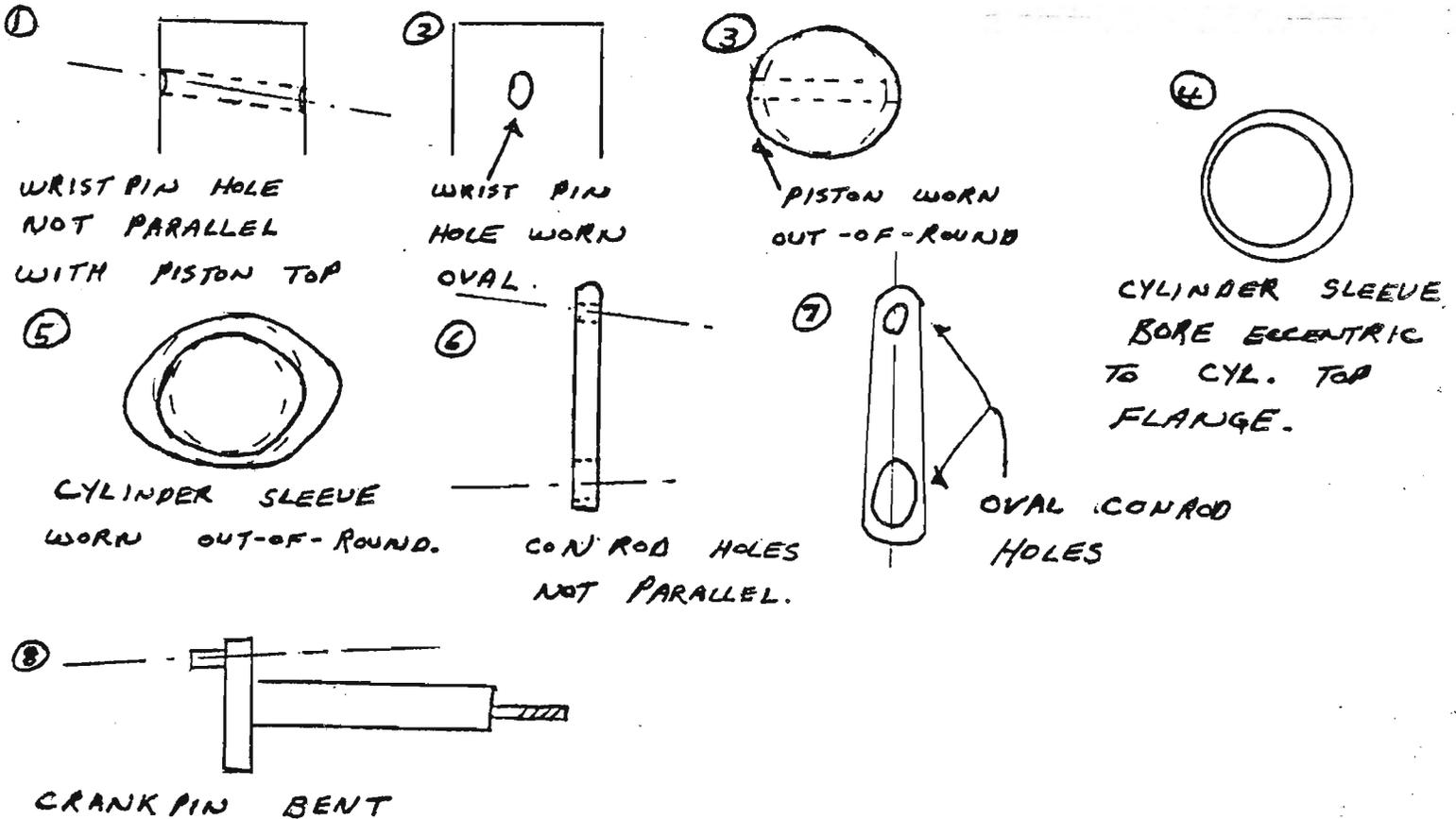
Considering the total number of manufacturers and engines produced, I would estimate that less than 1% of engines have significant factory flaws. And, with the introduction of super accurate CNC (computer numerically controlled) machines, production tolerances are superior today for many brands of engines.

Also, many manufacturers have extensive ultrasonic cleaning facilities, which today produce the cleanest of parts with which to build your engine from.

These last two items, CNC machining and ultrasonic cleaning, have enabled the average modeler access to fabulous-running out-of-the-box engines. However, this article should help you to make sure that this is indeed the case and if it's not, why not.

Note the following diagrams for various flaws which may or may not be factory induced. Flaws are exaggerated for clarity.

Piston flaws:



Lastly, but most importantly is the factor I refer to as "operator error". Even given two factory tested identical engines, a performance oriented modeler will often obtain better performance than your average sport modeler. But, how can this be?

The main reason is that the engine itself is only a component part of the total production of horsepower. The other factors are:

1. Correct engine break-in.
2. Correct prop selection.
3. Correct fuel/plug selection.
4. Correct fuel tank selection.
5. Properly built model.

A competition flyer tries to find out all he can about the above points by:

1. Following the manufacturers instructions.
2. Talking to better modelers and asking questions.

Many sport flyers:

1. Either don't care or are afraid to ask people for help.
2. Are too cheap to do things right.
3. Like to believe in engine secrets, black magic, luck, and that the other guy must be cheating.

As I will explain further in this series, the proper attitude, having an open mind about engine care, and a bit of basic engine know-how, will make you confident around any type of engine situation. As a result you'll be doing a lot less fiddling with equipment and a lot more flying. And that, my friends, means more fun!!

AIRMAIL



COMMENTS, NEWS , and VIEWS from FL READERS

Mike,

There's a circle around 86 so I guess that means ante up if I want the final issue. My check for \$2.50 is enclosed to help offset a little of the red ink. I sure know how that goes! Really sorry to see the end of the paper, but I also know how that goes. There just ain't no way unless your're rich to sustain one of those things. If we were rich we would buy a P-51 and go flying.

Your NW sport racing has been a big help to me in trying to get something going here in the Dayton area again. The once powerful Buzzin Buzzards are down to a half dozen flyers and some of us are pushing 60, so if we don't breath some new life into is soon it'll be too late. And we have two city maintained paved circles, no hassle about noise or anything else! I guess the affluent society offers too many options. I couldn't get anybody to go flying on these beautiful fall Sundays because they were watching football on TV. Incredible!

I've got a few more ideas for Fox 35 events that I'll work on- may even put some effort into promoting some cash for prizes. Maybe they would come out of the closet or the woodwork or wherever to compete for cash. And maybe not. We have come up with a Fox 35 racing event "Fox-berg" type open to Goldberg's three designs- Ringmaster or scale-like racers of 360 sq inch. Follow your NW rules except the Fox must be box stock incl the NVA. 1½" thick built up wing, it may go. I'm going to build a Formula 40 type ship for Fox 35 just to see what it will do- say 100mph? And I may offer some cash for the top speed only contest. That's the annual Dayton Cold Cash Bash. Maybe I can promote \$100 or so for the prize money. And that's really just a kick around idea at this stage.

I used to have a lot of fun flying bushing engines (Torps) against McCoys and Doolings in Class B speed, going for first in class, and then the bushing engines took over for awhile. Well nothing is like it used to be. Whatever became of the 3¢ stamp? Good luck and best regards,

..... Eric Williams, Po Box 451, Vandalia, OH 45377

Dear Mike,

There are no words that can bring you and John what we owe you both for your contributions to Control-Line modeling in the Northwest. The best that there is, memories, is what you leave us. A vehicle of communication facilitates memories. Contests, how-to's, news, fellowship.... Thank you, gentlemen. With highest regards,

..... Orin Humphries, 19721 48th Av W, E-1, Lynnwood, WA 98036

Hi Mike,

Here's my buck and a half. Sorry to see you guys go. I've enjoyed the newsletter. Hope you stay with Model Builder. You've probably heard that Dave Rolley and Melvin Schuette are thinking about trying to start a new control line newsletter next year. I hope it works out.

I keep hearing rumors that the AMA executive council will pass a blanket muffler rule under the guise of "safety" very soon. If they do this, the least they could do is give us a year to get ready, and not make it effective Jan 1, 1988. I wonder if it will be a "muffler-silencer" rule, or a db limit. I know that mufflers had to come sooner (I hate that word), or later, but, I still don't like it, especially when it's jammed down our throats under the guise of safety. Unless a way is found to eliminate tuned exhausts, they will in effect be madatory in all events in which speed is important. I can already hear the cussing starting! "D" speed flyers will be back to an engine per run, combat planes with rear exhaust engines will need upright engines, free flighters will really hate them, etc.

..... George Lieb, 5202 Emeline Street, Omaha, Neb 68157

Mike,

I've been a sporadic on again off again modeler for 35 years, so I understand the problem of waning interest, lack of challenge - whatever that causes people to take sabbaticals from sorts of activities, not just modeling.

Hope someone grabs the reins of FL, but if not, so be it, we'll survive with or without it.

Had hoped to get to Lincoln past summer but frankly didn't feel well enough battle heat. Honestly don't understand since AMA isn't doing all that much to involve youngsters in modeling, and why Nats aren't held in spring or fall when weather is more pleasant as school vacation isn't that germane these days.

By the way I lived in Portland during WWII with my parents, brother was born there, still have couple cousins there. Lived in Bremerton, Washington about six months while with USN late 60's. Beautiful part of nation. Thanks for your past sacrifice for sake of promoting state of modeling.

..... Larry Miles, 2112 Scott Ave, Independence, MO 64052

Dear Michael,

I'm shocked but not surprised by your announcement, if that makes any sense!

Not much to say, except I believe you've done a terrific job, and I hope we can get together sometime soon.

Before I get sloppy, I'll quit- good luck and keep in touch.

..... Bob Kampmann, 8818 Piedra Way, Fair Oaks, CA 95628

Dear Mike,

I am sorry to see the newsletter go. I saw your request for help and was frustrated I couldn't help as to geography (and spelling) and my inexperience in the hobby to be much help. I do enjoy the newsletter very much. I am a stunt flyer with interest in all control line. I am at the stage of just mastering inverted flight without crashing so often.

..... Michael Hawk, 1455 Mantelli Dr., Gilroy, CA 95020

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TAFF'S

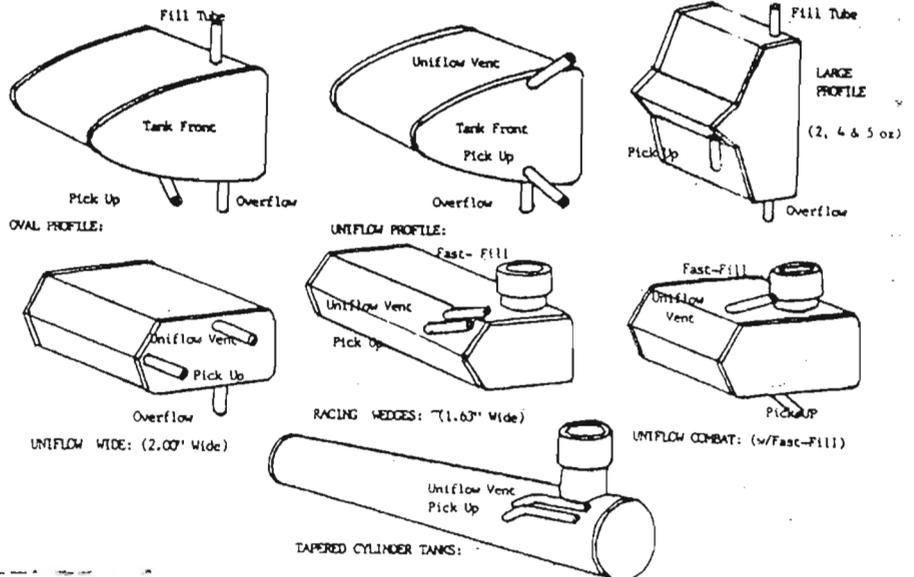
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THE DRIZZLE CIRCUIT

ROUND and ROUND in the RAIN?



DRIZZLE CIRCUIT RACE NUMBER ONE, DECEMBER 13, 1987

NORTHWEST SPORT RACE (13 entries)

Round 1

Cameron 4:22	Green 4:16	McConnell 4:55	Drake 4:27
SHT 4:36	S&S 4:30	Mickey 5:04	NRT 4:53
Danielson 4:37	Booker 4:52	Nakano 7:44	Huntress 5:46
Huber 4:59			

Round 2

Cameron 4:30	Drake 4:53	S&S 4:30	Green 4:21
SHT 4:46	Huntress 6:46	NRT 4:41	McConnell 5:26
Mickey 8:44	Nakano DNF	Danielson 4:43	Booker DNF
Huber DQ			

Round 3

Drake 4:27	Green 4:17	Cameron 4:30	Mickey 5:03
SHT 4:29	NRT 5:25	S&S 4:51	Danielson 5:29
Huntress 4:42		McConnell 5:07	Huber DNF
Booker DNF		Nakano 5:15	

Final

- 1) Green 8:50
- 2) Drake 8:56
- 3) Cameron 10:34
- 4) S&S 56 laps

NORTHWEST SUPER SPORT RACE (8 entries)

Round 1

S&S 3:27	SHT 3:58	Green 3:48
NRT 3:48	McConnell 5:30	Danielson 8:22
Huntress 5:40	Mickey 8:22	

Round 2

NRT 3:45	Drake 4:07	Green 3:28
Strom 4:45	SHT 4:59	McConnell NT
	Mickey 5:10	

Final

- 1) S&S 7:20
- 2) Drake 8:08
- 3) Green 12:31

DRIZZLE CIRCUIT RACE NUMBER TWO, JANUARY 10, 1988

NORTHWEST SPORT RACE (11 entries)					
Round 1					
S&S	4:38	Cameron	4:34	Green	4:42
NRT	4:46	Nakano	5:05	Drake	4:57
SHT	5:05	Danielson	5:22	Strom	5:01
		McConnell	5:56	Mickey	DQ
Round 2					
Drake	4:34	Green	4:22	Mickey	4:43
SHT	4:40	NRT	4:58	Danielson	4:44
McConnell	5:40	Cameron	5:52	Strom	5:24
S&S	DNF	Nakano	DNF		
Round 3					
NRT	4:42	Green	4:19	Strom	4:39
SHT	4:43	Cameron	4:38	Mickey	4:48
McConnell	6:18	Drake	4:55	Danielson	5:50
S&S	DNF				
Final					
		1) Green	9:03		
		2) Cameron	9:26		
		3) NRT	9:48		
		4) Drake	128 laps		

NORTHWEST SUPER SPORT RACE (9 entries)					
Round 1					
Drake	4:45	Cameron	3:41	NRT	3:54
Strom	4:48	Green	4:10	S&S	4:09
Mickey	5:18	SHT	4:10	Danielson	DNF
Round 2					
Green	3:32	Strom	5:27	NRT	3:58
Cameron	3:39	Danielson	5:36	Mickey	4:03
Drake	4:50	S&S	DQ	SHT	7:05
Round 3					
Drake	3:35	Green	3:43	S&S	3:50
NRT	3:48	Mickey	4:19	SHT	4:29
Cameron	NT	Danielson	5:11	Strom	5:41
Final					
		1) Green	7:30		
		2) Drake	7:55		
		3) NRT	8:10		

**FLYING
LINES**

Mike Hazel

**1073 Windemere Dr. NW
Salem, Oregon 97304**

Listed below are the Flying Lines back issues that are still available. The issue number is followed by the cover date. The cover date normally reflects the month that the issue was sent out. If you are looking for contest report results from a meet in May, order a June issue. Most all issues include a wealth of technical information. Sorry, it is too much work to find specific articles, please don't ask. Some of the Dec. or Jan. issues included a summary of a past years articles.

Please circle the issue(s) desired. The issues marked with an asterik (*) are in short supply. It would be advisable to indicate alternate issues desired.

Copy prices are 75¢ each, or 10 for \$6.00. Payment may be made by cash, check, money order, or unused U.S. postage stamps. Make out checks/M.O. to Mike Hazel.

- | | | | |
|---------------------|------------------|------------------|-----------------|
| (4)* Aug 79 | (11)* Mar 80 | (13)* May 80 | (16)* Aug 80 |
| (17)* Sept 80 | (23)* Jan 81 | (29)* Oct 81 | (32)* Jan 82 |
| (33)* Feb 82 | (35)* May 82 | (36) June 82 | (37)* Aug 82 |
| (38)* Sept 82 | (39)* Oct 82 | (40) Nov 82 | (43) Mar 83 |
| (44) Apr 83 | (45) May 83 | (46)* Jun 83 | (47)* Aug 83 |
| (49) Nov 83 | (50) Dec 83 | (51)* Jan 84 | (52) Feb 84 |
| (54) May 84 | (57)* Oct 84 | (59)* Dec 84 | (60)* Jan 85 |
| (61) Feb 85 | (62) Mar 85 | (64)* Jun 85 | (65)* Aug 85 |
| (66) Oct 85 | (68)* Dec 85 | (69)* Jan 86 | (70) Feb 86 |
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| (87) Jan 88 | | | |

Please fill in name and complete address to the right. This will be a shipping label.

DRIZZLE CIRCUIT SEASON POINTS

(two races completed)

1)	Green.....	24
2)	Cameron.....	21
3)	Drake.....	20
4)	NRT	12
5)	S&S	11
6)	SHT	6
	Danielson	6
	McConnell	6
9)	Mickey	5
10)	Huntress	3
	Nakano	3
	Strom	3
13)	Huber	1
	Booker	1

1)	Green	17
	Drake	17
3)	S&S	11
4)	NRT	9
5)	Mickey	5
	Strom	5
	SHT	5
8)	Danielson	4
9)	Cameron	3
10)	Huntress	2
	McConnell	2

NW COMPETITION RECORDS

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

MOUSE RACE I	50-lap: 2:52	(Mike Hazel)	100-lap: 6:33	(Mike Hazel)
MOUSE RACE II	75-lap: 3:40	(Dave Green)	200-lap: 10:04	(Nitroholics)
GOODYEAR	70-lap: 4:22	(Clarence Bull)	140-lap: 9:02	(Clarence Bull)
AMA SLOW RAT	70-lap: 3:56	(Dave Green)	140-lap: 7:14	(Dave Green)
RAT RACE	70-lap: 2:40	(Dick Salter)	140-lap: 5:46	(Dick Salter)
FAI TEAM RACE	100-lap: 3:44	(Knoppi/McCollum)	200-lap: 7:49	(Knoppi/McC.)
NW SPORT RACE	70-lap: 4:00	(Bruce Duncan)	140-lap: 7:47	(Henry Hajdik)
NW SUPER SPORT RACE	70-lap: 3:14	(Dave Green)	140-lap: 7:03	(Dave Green)
½A SPEED 108.85	(Duncan-Sackett)	FAI SPEED 172.33	(Chuck Schuette)	
A SPEED 181.56	(Chris Sackett)	½A PROTO 83.63	(Paul Wallace)	
FORMULA 21 79.54	(Rich Salter)	FORMULA 40 154.84	(Dick Peterson)	
B SPEED 187.66	(Chris Sackett)	JET SPEED 201.49	(Jerry Thomas)	
D SPEED 195.57	(Loren Howard)			
PROFILE NAVY CARRIER	238.44	(Bob Parker)		
CLASS I NAVY CARRIER	318.3	(Roy Beers)		
CLASS II NAVY CARRIER	330.25	(Orin Humphries)		
AMA ENDURANCE	18:37	(Wesley Mullens)		

1988 CONTROL LINE ACTIVITY AT RICHMOND FIELD

(A) MARCH 13	SPORT RACING SEASON OPENER for Northwest & Junior Sport Race
(A) MAY 15	SPRING OPENER, 33 1/3, RACING, 15 COMBAT, CARRIER.
(AA) JUNE 12	SPORT RACING SERIES #3 for Northwest & Junior Sport Race.
(AA) JUNE 25/26	NORTHWEST C/L SPEED CHAMPIONSHIPS- All classes of C/L speed.
(AAA) SEPT 3/4	44th INTERNATIONALS- All categories of Control Line flying.
(AA) OCT 2	SPORT RACING GRAND FINALE- \$300 in merchandise.

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