

FLYING LINES



NEWS OF NORTHWEST CONTROL LINE MODEL AVIATION

1073 WINDEMERE DRIVE NW
SALEM, OREGON 97304

EDITOR: MIKE HAZEL

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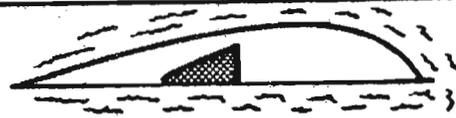
ISSUE NUMBER 85

Inside this issue:

- Round & Round, by John Thompson
- Stunt Scene, by Paul Walker
- CL FAI Team Trial(s) Results
- Contest Reports: Raider Roundup, VGMC Internats
- Scale, by Orin Humphries
- Engines, by Paul Gibeault
- Flight School, by Jim LaBarge
- Updated Competition Standings & Records
- Other Stuff!

Subscribers: Please note the issue numbers listed on your mailing sticker. If the last number is circled, then this is your last issue! Please send in renewal promptly to ensure continuous service.

COCKPIT CHATTER



NOTES FROM THE EDITORS' DESK

Ah, finally another issue out! Your next issue will be out sometime around Thanksgiving. By then, maybe the NW will have seen some rain. At least down in Western Oregon, the weatherman is now calling this dry spell a drought! (yeah, I know,....Oregon?) The pleasant weather has looked great for flying. I hope some of you are taking advantage, I know I haven't. Speaking of weather, it will soon be time for.....

DRIZZLE CIRCUIT!!!! (maybe it will rain?)

Dave Green has volunteered, or had his arm twisted, to coordinate the 87-88 season. I know that Dave wouldn't mind in having some help in this department, as he is also racing.

Here's what we know so far for the upcoming season. First of all, in the last issue the proposal was thrown out for going to three rounds of prelims, and dropping the secondary event(s). At this point, this appears to be the direction that we will head. While there has not been a lot of input on this, the clear majority that Dave and ye olde editor have talked to are in favor of this.

Dave is also ordering a large batch of fuel to use for the circuit. This is a great idea, always being able to count on the same fuel, and not have to use a lot of fuel/time retuning for different brew. I believe that a castor/synthetic mix lube fuel will be the order. I will be able to let everyone know in the next issue what the specs are. Meanwhile, get that sport racer put together and tested!

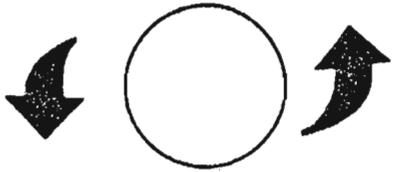
For those of you who have just thought about racing, this is the perfect thing to get involved in. Between the NW sport race, and the NW super sport events, there is lots of fun to be had in events that are not beyond the average modeler's skills or budget. Look for more complete details next month. Meanwhile, refer to back issues of FL for good reference material.

MISCELLANEOUS BITS:

Just received a flyer from J&J Sales (Joe Just), which indicates his main activity will be kit sales. As most of you probably know, Joe had to discontinue the fiberglass props portion of his business, due to medical reactions in handling the materials. Anyhow, his flyer lists a Goodyear kit (new), and news of some new things to come out. For information, write: J&J Sales, 709 Crescent, Sunnyside, WA 98944

The rumblings in the speed circles are that more guys are going to get into bitty bore action, yep! $\frac{1}{2}$ A Speed! I think the Duncan-Sackett effort of putting our NW record over 100 mph with basic equipment may have been an inspiration. Okay, who will be first to hit 120 mph?

Hmmm, there is some space left on this page, but it is late already, and this issue must get out, so please ignore the void below. Enjoy this issue, lots of good stuff.....



ROUND & ROUND

By: John Thompson

The thickness of our R&R file indicates it must be time for another installment.

The biggest event of the fall was the Washington State CL Championships/Raider Roundup in Seattle. Given the superb weather, the excellent level of entry and the fine administration, the 1987 running had to be the best Roundup ever. Results elsewhere in the newsletter.

BITS & PIECES

THONGS UP -- The CL Contest Board approved the emergency proposal to require safety thongs to be used in all Combat events. The proposal generated a vitriolic response from three eastern fliers who are not accustomed to flying with the thongs, but it is apparent the ruling will stand. When comfort and safety are the two opposing sides, we fall in with safety. The main argument against the thongs has been that fliers will not be able to change hands...in our opinion, changing hands in a combat match is an unsafe and usually ineffective method of clearing tangles. Northwest and California fliers have long since demonstrated that safety thongs are practical, and have saved many aircraft accidents.

HIT KITS -- Sterling Models plan to re-issue P-51D Mustang and Yak-9 kits this fall, according to Stephen Binerman, writing in Hi-Low Landings. We also understand that a limited number of G-S Carrier kits may be available direct from Bob Smurthwaite in Grants Pass, Ore., the original manufacturer.

HANG TIME -- Speaking of Navy Carrier, it's our observation that attendance at a Nats is an absolute must for Northwest carrier fliers who ever hope to become competitive on a national scale. The performance of some of the better fliers in slow-speed flight must be seen in person to be comprehended. They are able to virtually stop their airplanes and still remain within the legal angle-of-attack limits, especially with a good stiff wind for help. When the photographer can walk around the circle faster than the plane, you know you've got a good flight going.

BORDER WAR -- Bruce Duncan, writing in the VGMC Hot Head, suggests a Northwest Sport Race Can-Am challenge cup, with an annual fly-off between the top Seattle and Vancouver area sport racers (don't know his idea about the fliers in the rest of the region). A perpetual trophy would be awarded. We certainly wouldn't oppose such an event, but on the other hand, we prefer to think of the Northwest as one big family, and downplay geographic rivalries. That's why the FL standings always have treated AMA Dist. XI and BC as one region for standings and records purposes. To get more info or express your opinion, contact Bruce at 2080 McLennan Ave., Richmond, B.C. V6X2N5. By the way, local BC standings have Bruce at the top of the NWSR heap and Henry Hajdik leading 15 Nostalgia.

INTER-NATURALLY -- Excellent turnout made the 43rd Internats in Richmond, B.C., the best of the modern era. See results elsewhere. Congratulations to the VGMC. Hope we will be able to get up there some year...our schedule has disappointingly kept us away, but we enjoyed our visit with the VGMC people at last year's Canadian Nats. A key to the VGMC's success appears to be the strong sponsorship of several Vancouver-area hobby shops.

PARTS & PARCEL -- Doc Passen reportedly has Cipolla replacement piston/liner sets for Fox Mk III, IV, V and VI Combat Specials, at \$39.95 plus \$3 p&h. Quality reviews of these ABC parts have been mixed, but they provide an alternative to the disappearing Fox original parts. (We also understand that Mk VI Fox ABC p/l will work in old motors, provided the rod is changed, too.) Here at R&K HQ, our testing of our one and only MkVI indicates a lot more running will be needed to get the motor to competitive level. We've had the groping-piston syndrome. We understand from Engine Man Extraordinaire Norm McCreamsicle that baking the pistons before running solves this problem. Hopefully, we'll be able to report in a future issue on how this is done. No question about it, we'll be spending some shop time this winter setting up motors, after living off our old ones for a couple of years. Anybody want to sell a half dozen old MkIII's? For info on the Cipolla parts, write Doc at P.O. Box 111, Jasonville, Indiana, 47438.

FIELD DAZE -- Probably by the time you read this, the Eugene Prop Spinners will be flying on their new field. We've seen it in it's interim use (as a parking lot) and it looks good. Room for three asphalt circles and about 6 grass. It's entirely fenced and will have a gate lockable, with Prop Spinners having the keys. The asphalt will have parking lot lines on it, but that's a small compromise. The field also will be lighted. Plan to take a look at next year's Regionals.

ARE YOU LISTENING?-- In all quarters of AMA, the talk is about noise. None of us want mufflers, but we'd better face that issue sooner, rather than later, I'm experimenting with mufflers in a number of contexts; I don't want to be unprepared when the rule goes through, as it eventually will. Even if it doesn't, mufflers can open up a lot of new flying sites. If you haven't heard the message yet, your ears already have been damaged by too much engine noise.

ALPHABET SOUP -- Contest directors will want to take note of the revised contest classifications that will be in your new rule book. AAA and AA contests will be the same, but there will be a change in the criteria for the "A" classification now commonly used for our small contests (Drizzle Circuit, etc.). In the future, in order to qualify as a Class A contest, at least one rulebook event must be included. If there are no rulebook events, the contest is a Class C (new classification) contest. Two other new classifications also are included: "D" for flying demonstrations and "E" for mall shows and other non-flying events.

Questions and input always welcomed.

--John Thompson, 1505 Ash Ave., Cottage Grove, OR 97424

1988'S NEW RULE BOOK CONCEPT

It's the time for another reminder about rule books for 1988! Some months ago this column informed you that next year we would be issuing three separate books, replacing the one that is currently sent every two years. We are making an effort to inform you of this change as early as possible in order to eliminate as much of the confusion as possible.

Every member will be receiving a *Membership Manual* at the first of the year. This document will contain a great variety of information, some of which is already in the current rule book beginning on page 123. You will note that such things as the Safety Code, Frequency Committee recommendations, By Laws, Headquarter's departments, etc. can be found in that section. Our plan is to add many additional pieces of information to make it a much more usable book for the entire membership.

Beyond the ability to provide additional important information to the membership, we will be able to accomplish another goal. That goal involves emphasizing the fact that competition rules and regulations will be divorced from those items that affect the general membership. This column has repeatedly addressed this problem. Such questions as, "Do I have to put my AMA number on the wing?" continue to surface, and the answer to that one still depends on whether you are a competitor or a sport flier. The new membership manual will help us make the proper distinction between the two rules.

A second book will be available. This will be the competition rule book. The information will be of interest to the individual who competes in rule book events. **The person who is a weekend sport flier will have no need for this book.** It will be available by request after membership renewal. Watch for information to come that will indicate how that request can be made.

The third book will be the complete, updated FAI Sporting Code. At the present time the section in the AMA rule book that gives the FAI rules is an abridged

version. In addition, since the Sporting Code is only printed every four years by the FAI, the material is very much outdated compared to the rules that are being used in international competition.

Micheline Madison, the AMA Competition Director, has spent countless hours updating the Sporting Code information by including the many changes that have been made since 1984. This updated material is being submitted to Mr. Tony Aarts, FAI Technical Director, for his approval. This has been accomplished for portions of the book already, and the updated information is being placed on the AMA Headquarters computer.

The task that remains to be done with the rule books for this cycle is considerable. This is especially true since we will be doing the typesetting and the final cut-and-paste here at Headquarters this cycle. (The task has been subcontracted out-of-house for the past several editions of the rule book.) Those of us who are involved in the process are working hard to produce a quality product that will be of greater use to the membership whether sport flier or competitor.

STUNT SCENE

inverted anyone?



by: PAUL WALKER

1987 In Review

Now that the Nationals and team trials are over, let's look back and see what equipment was used and how it fared. Fearing that the U.S. is falling behind in International competition partly due to the 60's, Bob Hunt has pioneered a new system using a OPS 40 with a tuned pipe. The tuned pipe is not used to extract lots of power, but to act as a governor to tame the "hot" motor. He used this on his new plane "Crossfire". Bill Werwage also used this system in his plane nicknamed "The Bulgarian Bull". Each plane used props ranging from 4 to 5 inches pitch. Each fared only moderately well. In the wind at Lincoln the Crossfire showed its main weakness. With such a low pitch prop it was unable to penetrate very well. Hunt finished 8th at the Nats.

At the team trials, both had some trouble with the breezy, thermaling air on Saturday. When the wind slowed to 2 - 5 mph they did fairly well. Werwage finished fifth and Hunt in eighth. These systems do work well in maintaining a constant engine speed but only when the engine is running gast. This is the reason for the 4 - 5 pitch props. Given more development time, these engines may become competitive.

The 60's are the dominant force in Stunt in the U.S. these days. It took first through third and fifth at the Nats and first and second at the team trials. The reason it does so well seems to be its diversity. It can be set up to run in just about any configuration. This gives many options for trimming a plane that other engines don't. They are and will continue to be the dominant engine in Stunt for quite sometime. (even though it was observed that some guy from Texas that flies red airplanes was seen at the team trials to have sold all his 60 equipment, including his airplane!)

This year also saw some success with the S.T. 46 again. These engines finished 4th at the Nationals and 3rd and 4th at the team trials. They are the small brother of the 60 and do work well in 600 - 650 square inch 50 ounce airplanes. This is the combination Bob Baron used to finish 3rd at the team trials.

The one engine that I expected to see more usage but didn't, was the O.S. 40 FPS. The only one I saw was in Mike Pratt's Magnum at the Nats this year. It did quite well considering the conditions and the size of plane it was pulling.

There are still a number of good engines to use in the Stunt event, and this was meant to just be a run down of what was used with some success this year! Keep the power up!

Team Trials Results:	1) Jim Casale	1043.56	
	2) Paul Walker	1042.67	
	3) Bob Baron	1034.78	
	4) Ted Fancher	1030.78	(1st alternate)

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PRECISION AEROBATICS TEAM TRIALS by Don McClave

In what has become rather routine over the past five years, Paul Walker and Jim Casale waged a two-man battle for the top spot at the 1987 U.S. Team Trials in Indianapolis on Labor Day weekend. After a marathon competition which required contestants to fly eight official flights over a two day period (the best six were averaged and scored), Jim avenged his second place finish at the Nationals, besting Paul by .86 point, 1043.36 to 1042.50. Bob Baron rounded out the three member team with an excellent 1034 score. The top ten finishers were as follows:

- 1) Jim Casale - team member
- 2) Paul Walker - team member
- 3) Bob Baron - team member
- 4) Ted Fancher - alternate
- 5) Bill Werwage
- 6) Windy Urtnowski
- 7) Bob Hunt
- 8) Frank McMillan
- 9) Bob Gieseke
- 10) Wynnr Paul

Unlike the Nationals, where the wind blew and Paul simply ran off and hid with the champion ship, the team trials were blessed with perfect weather on an excellent airport site. It set the stage for continuation of a competition which has totally dominated stunt for the past five years. Since 1983, Paul Walker and Jim Casale have finished 1-2 at every national championship and team trials they have entered. Each has won two national titles (they skipped the 1986 nats because it conflicted with the world championship date). Jim has nudged Paul for the top spot at the past two team trials, but Paul was the highest placing U.S. contestant at the last world championship.

Unlike close rivalries in many other sports, the battle between Paul and Jim for the top spot in U.S. precision aerobatics has been characterized by good sportsmanship and a total lack of animosity. They have set an example which others would do well to emulate. Hopefully their leadership will help restore the image of the United States in international competition; the petulant behavior of some team members in recent years has clearly been detrimental.

Jim Casale's various Spectrum designs have been published several times in FLYING MODELS and are well known to most flyers. Paul's Bad News has not been published and perhaps is not familiar to many flyers. A comparison of the two planes may be of interest.

Both planes have wing areas in the 700 square inch range. Paul's plane spans about 62 inches, slightly more than the 58 inch Spectrum. Both planes weigh 58-62 ounces. The Spectrum uses a thin Genesis/Avanti type airfoil, while the Bad News uses a "West coast" airfoil, somewhat thicker than normal with a fairly blunt leading edge. The Bad News also uses relatively small flaps and elevators, while the Spectrum is conventional in these respects.

As one might suspect, the flying characteristics of the planes are terribly reflecting the preferences of the designer/pilots. The Bad News is groovy, smooth with a better than average corner. The Spectrum is somewhat less stable and is more of a handful to fly. It has an absolutely blinding corner which is dazzling to behold. The common denominator is the countless hours of practice which Paul and Jim have put in to perfect their individual flying skills and hone their presentations to world championship levels.

Congratulations to Paul and Jim, the top U.S. names in stunt today, and to long-time top competitor Bob Baron who was also a member of the 1982 and 1984 teams and finished second in the world in 1984. They deserve the enthusiastic support of the stunt community as they attempt to snatch the world championship from the Russians at Kiev in 1988

1988 U.S. CONTROL LINE WORLD CHAMPIONSHIP

SPEED AND TEAM RACE SELECTION RESULTS

CLASS	ENTRANT	ROUND								AVERAGE	TEAM PLACE
		1	2	3	4	5	6	7	8		
F2A	Carl Dodge	12.767	13.130	NT	NT	-	-	-	-	12.949	1
	Chuck Schuette	13.657	NT	13.303	NT	-	-	-	-	13.480	2
	John Newton	14.573	14.553	NT	NT	-	-	-	-	14.563	3
	Jim Nightingale	15.977	14.990	14.780	NT	-	-	-	-	14.885	1st Alternate
	Ed Gifford	-	-	-	-	NT	NT	16.270	NT	-	2nd Alternate
	Billy Hughes	16.697	15.923	15.730	16.193	NT	NT	18.540	NT	-	3rd Alternate
	Raul Diaz	-	-	-	-	NT	NT	19.680	NT	-	4th Alternate
	Dave Williams	NT	NT	NT	NT	-	-	-	-	-	5th Alternate
F2C	Hollfelder/ Gillott	3:44.36	99 laps	3:55.62	3:58.56	3:41.09	3:46.26			3:43.90	1
	McCollum/ Knoppi	3:45.60	3:44.72	3:49.08	3:56.46	3:44.34	DQ			3:44.69	2
	Willoughby/ Oge	4:12.23	3:41.49	80 laps	4:06.69	3:50.37	4:02.47			3:51.44	3
	Callis/ Kusik	4:23.52	4:07.08	4:25.00	4:02.83	3:58.25	81 laps			4:02.73	1st Alternate
	Fluker/ Lee	71 laps	4:07.03	4:12.41	4:52.92	5:44.15	4:21.56			4:13.67	2nd Alternate
	Quedenfeld/ Whitney	5:25.02	DQ	4:42.03	4:28.49	5:46.85	DQ			4:51.85	3rd Alternate
	Hazel/ Salter	5:42.60	4:58.36	64 laps	NT	NT	NT			-	4th Alternate

COMBAT TEAM SELECTED

The Combat Team that will compete in the World Championships was selected last week with the following fliers having earned a spot on the team: Tom Fluker, John Stubblefield, and Steve Kott. The Championships will be held in 1988 in Kiev, USSR. The date has not been set, but will be announced in late December or early January.

THE FLYING FLEA MARKET

WANTED: Needing information on converting Top Flite Corsair kit to control line. Alan Munde, Po Box 8240, Levelland, TX 79338

FOR SALE: 3 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

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.

From the "HOT HEAD" Chris Sackett, editor

THE 'INTERNATS'

CANADAS' PREMIER C/L MEET, Sept 5,6 Richmond

The 43rd running of the long established 'Internats' was our best to date in the four years since returning it in 1984. This version finally had the entries and quality of flying typical of a 'AAA' type meet. While we still have a long way to go before perfection is achieved this meet was well accepted by all. The weather was great, warm and sunny both days although and the second, Sunday it blew all day making stunt flying a little tough.

Things started off Sat morning with a slow start because event directors forgot to get out of bed or in some cases didn't even show up! so the day dragged out until 6:30 at night. Anyway the speed circles were buzzing with some good activity with LOREN HOWARD out of Vancouver, Wash smoking his OS 65 powered Class D ship to a new N/W speed record at 195.57 MPH!. With the 'partner' on the flying handle Loren put up three very smooth flights 193, 194 & 195 MPH although on the last flight Partner was doing the 'Hickey Hickey shake' with the monoline handle due to a desoldered torque unit control horn!! Talk about your 'G-LINE' control....good thing the model was stable Loren!

VGMC member MARTY HIGGS upped his own club record and also grabbed the Canadian national record with his new F-40 ship... he cranked 140 with a pure stock K&B 6.5 !!. Bruce DUNCAN unfortunately bust a crankpin on his record holding 1/2A speed ship and bailed out. Mean while fast combat was in full swing down in the far grass circle and guess what no wipeout or flyaways that's got to be a record in itself. American guys copped this one from 1st to 3rd flying older type fast combat designs....but they were safe. 15 Nostalgia got off at about 12 noon due to the use of the circle by the speed flyers. No real surprises in this one, local guys doing their thing. HIGGS won it with a Jr Ringmaster at 8:25. It was good to see a new club member, KEN BURTON qualify for the feature with a four minute heat. Over in the Balloon burst circle RON UNDERHILL ran a novel event with four target balloons and one barrier balloon the target balloons had varying scoring points to them with the one nearest the barrier worth the most....good event, the guys liked it...we will run the same deal next year.

On the second day with many events scheduled a strange kind of Northwesterly wind blew consistently all day and so some of the precision events suffered on the scoresheet but it was still a lovely warm day. In precision aero Randy SCHULTZ from Seattle hung tough to win the event with fellow clubmate Ray MATHIS grabbing second only a few points behind. Old time stunt is proving to be a nice event and we will soon see many VGMC guys building ships over the winter for this event. Ray MATHIS won this one with a S-1 Ringmaster and Fox 35, second went to SCHULTZ with a 'Barnstormer' and a fox. There are actually many kits and designs available for this pre 1953 event. Some of the favourites include the All American Sr, the Stunt Wagon, the original Smoothie, Super Zilch, Kenhi Cougar and Mustang and many more. The Carrier circle was busy all day with a nice entry in Profile although a bit slow in Class I-II. The wind sure made things hairy on the slow speed runs but BOB PARKER the N/W record holder in this event from Seattle took first with a good 222.3 points followed by ORIN HUMPHRIES from Spokane with a good 214.2 points and just a 1/2 point behind him was Bob DANIELSON also from Seattle. In Class I-II HUMPHRIES had no problem taking home top spot with a medicore 229.4 point total. Wrapping up the day were the local yokels and one US flier going at it in 15 Combat down in the West circle. We saw many good matches with no flyaways once again and Combat proved to be a real crowd favourite....one thing guys, remember to enter BEFORE you start flying in competitions like this!

RESULTS 43rd V.G.M.C. 'INTERNATIONALS', Richmond, B.C. Sept 5/6

CONTROL LINE

SPEED (Record Ratio)

1st LOREN HOWARD, Vancouver Washington (Class D, OS 65)	195.57 MPH*	92.06%
2nd PAUL GIBEAULT, Calgary, Alberta (F-40, K&B 40)	151.84 MPH	91.77%
3rd MARTY HIGGS, Vancouver, BC, (F-40, K&B 40)	139.37 MPH	84.23%
4th BRUCE DUNCAN, Richmond, B.C. (Class 1/2A, Cox .049)	106.09 MPH	80.30%
5th RON SALO, Burnaby, BC (Class A, S/T X-15)	143.71 MPH	79.79%

15 SPORT RACE

* New Northwest record

1st MARTY HIGGS, Vancouver, BC (Jr. Ringmaster/Fox 15)	8.25 Min.
2nd HENRY HAJDIK, New Westminster (Jr Flite Streak/Fox)	8.35
3rd DENNIS MATTHEWS, Surrey, BC (Flite Streak trainer/Fox)	10.34
4th KEN BURTON, Richmond, BC (Jr. Flite Streak/Fox)	11.28
5th JACK OSTER, Surrey, BC	
6th DICK McCONNELL, Seattle, Wash.	
7th FRANK BODEN, Burnaby, BC	
8th STEVE WALTHER, Surrey, BC	
9th BARRIE SHANDEL, Surrey, BC	

BALLOON BURST

1st BARRIE SHANDEL, Surrey BC	14 Pts
2nd FRANK CLEAVER, San Diego, CA	14 Pts
3rd BRUCE DUNCAN, Richmond, BC	12 Pts.
4th STEVE WALTHER, Surrey, BC	10 Pts
5th JACK OSTER, Surrey, BC	6 Pts

FAST COMBAT

1st DICK McCONNELL, Seattle, Wash.
2nd GLEN BIRCH, Everett, Wash
3rd MIKE RULE, Redmond, Wash
4th LLOYD BIRCH, Everett, Wash
5th FRANK BODEN, Burnaby, BC

PRECISION AEROBATICS

1st RANDY SCHULTZ, Seattle, WA	438 Pts
2nd RAY MATHIS, Bremerton, WA	429 Pts
3rd GEORGE MICKEY, Seattle, WA.	368 Pts

NORTHWEST SPORT RACE

1st MARTY HIGGS, Vancouver, BC (M&P Bonanza/Fox 35)	8:37
2nd RON SALO, Burnaby, BC (M&P Bonanza/Fox 35)	9:01
3rd BRUCE DUNCAN, Richmond, BC (M&P Bonanza/Fox 35)	10:47
4th DICK McCONNELL, Seattle, WA. (Ringmaster/ Fox 35)	13:35
5th BARRIE SHANDEL, Surrey, BC (M&P Bonanza/Fox 35)	
6th GEORGE MICKEY, Seattle, WA. (Circle Jerk/Fox 35)	
7th FRANK BODEN. Burnaby, BC (M&P Bonanza/Fox 35)	

OLD TIME STUNT

1st RAY MATHIS, Bremerton, WA (S-1 Ringmaster/ Fox 35)	265 Pts.
2nd RANDY SHULTZ, Seattle, WA. (Guillows Barnstormer/ Fox35)	254 pts
3rd HENRY HAJDIK, New Westminster, BC (Ringmaster/Fox 35)	151 Pts

SPORT SCALE

1st ORIN HUMPHRIES, Spokane, WA. (A-26 Invader)	512 Pts.
2nd JIM McCURRACH , North Vancouver (P-51D Mustang)	459 pts.

PROFILE CARRIER

1st BOB PARKER, Renton, WA.	222.3 Pts
2nd ORIN HUMPHRIES, Spokane, WA	214.2 Pts
3rd BOB DANIELSON, Bothell, WA	213.7 Pts
4th REMY DAWSON, Vancouver, BC	107.9 Pts
5th STAN JOHNSON, Spokane, WA.	Att.

15 COMBAT

1st TRAVIS LYNE, Squamish, BC
2nd MEL LYNE, Squamish, BC
3rd LYN MURRAY, Maple Ridge, BC
4th GREG DAVIS, Coquitlam, BC
5th DICK McCONNELL, Seattle, WA.
6th FRANK BODEN, Burnaby, BC

CLASS I-II CARRIER

1st ORIN HUMPHRIES, Spokane, WA	229.4 Pt
2nd BOB DANIELSON, Bothell, WA	180.0 Pt.

CONTROL LINE

SCALE

by orin humphries



page 10

Everyone should go to the Nats if for nothing else, simply to
LEARN

The '87 Nats at Lincoln had over a thousand pilots and this was said to be down from the previous year. The only good reasons for going to it, really, are for the knowledge sharing and the fellowship. You don't need the pressure of trying to beat somebody good.

Once again, as at the '79 Lincoln Nats, the weather turned unusually windy the last five days. We ended up trying to get our Scale flights in by starting the round before dawn on the last day to get around the wind.

There were thirteen models on the flight line, with more in the vehicles that wouldn't be brought out under the wind conditions. I saw nothing new in the area of materials or techniques, but did I gain important perspective! The best model there in my opinion was Ernie Violett's STAGGERWING. It was like a fine jewel.

We flew in three classes: Precision, Sport, and FAI. I'm afraid my getting down who got what is very remiss. Dick Byron got one first place, Ernie got another and I can't remember the last fellow's name. My apologies. My A-26 and T-34 got Thirds in Precision and Sport, with which I was very pleased.

There was an overall scale official named John (not our local, beloved ones by that first name) with whom I was displeased. He pushed the other C/L pilots into trying to fly a round on Saturday in 15 to 18 mph winds with gusts higher yet. He said it was for the good of the contest and AMA that we risk it. All those man years of labor and thousands of dollars should be risked because it would be best for the contest. When I could stand no more of his advice I asked him what his credentials were for giving it. The bottom line of his reply was that he had no relevant experience as he was mostly an R/C pilot. ("I've flown combat ships in worse winds than this" but no heavy, scale ships. Yeah, John, well I've driven my Toyota pickup in worse winds than even that but that wouldn't qualify me either.) We are the blood and body of AMA. We are what's important, in my opinion. John, now, just who pays the bills? And you, AMA, which one of us is right?

Seeing that some were going to attempt it anyway, I gave them a brief on wind techniques. "Do not allow the model to rise above head level on the upwind leg or it will sag so much on the downwind leg it will strike the third planet from the Sun. Keep your speed up. Spot it on the wind-at-your-back location for takeoff."

The first man out had qualifications up the arm. ("G" column.) He was a professional modeler with the biggest kit maker in the country and was on the US World Scale Team to France. He spotted his Zero on the downwind leg (wind on the tail) and I said to whomever was listening, "He will taxi five feet, the tail will come up and the prop will get shortened." He made it ten feet. Shoot me. He re-spotted it to the wind at your back place and got off. But he let it rise and throttled back to demonstrate throttle control. The model did a solo wing over of sorts and re-kitted itself 180 degrees from its lift off point.

The next three pilots kept it down and fast, did minimal qualifying flights and got on the board with intact airplanes. The fifth never got off due to prop shortening.

Next morning the sun wasn't yet up at 6 am. but we were firing off engines. The Moon was still out (I didn't recognize the guy). First

flight was at 6:15 and the sun cracked the horizon. The breeze was manageable and we all got in a good round.

We couldn't get in good throttling back to cruise speed because of the breeze and didn't get many points for throttle control. Judges should make adjustments. The only man to throttle way back had crashed the day before.

What did I learn? (One, I am not very christian in the face of inane advice. Why do they call me, "That infamous Orin Humphries"?) Lets see. What did I learn? Twenty years ago we began to get away from the engine size levels used in R/C which we found to be woefully too low for C/L Scale models. We went from .19s to .35s. This worked for the breezes we sometimes flew in, but they couldn't handle a 12 mph wind. Today there are no C/L Scale kits of national calibre on the shelves. You must put a bellcrank in an R/C kit. The .60 size R/C Kits are very popular, ten out of thirteen seen at the Nats were this size. But we still have the same old problem, fellows. A .60 is fine for good weather in an 8-9 lb. model, but it can't cut it in the wind. Just as we raised the power 50% then, so must we do this again, as our airplanes are larger, now. Our .60s must become .90s. We wont use all of it on nice days, of course.

You see, when the model comes around onto the wind on the tail leg, it loses the wind over the wing and stalls. We need brute power to accelerate a heavy model back to sufficient wind over the wing speed in a very short space.

To quantify this, we presently are power loading our models in the range .06 to .075 cubic inches displacement per pound. That is, a .40 is dragging around a 6 pound model and a .60 is pulling an 8 pounder. We need to get the loading to the .10 cubic inches per pound as in a .90 dragging a 9 pounder.

This may be only one thing from the Nats which I bring to you, fellows, but if you had been there, you would've seen why it is the most important guidance I can give Scale modeling for the next twenty years.

Where are we going? Dave Platt says we need to raise all category size/weight/power limits to those of Giant Scale and create a new category called Fun Scale for entry level efforts. This was given at the Scale Forum.

By the way, the guest speaker at the AMA banquet was Burt Rutan! And sitting across from me at the dinner was a humble, super nice Black man who, during our introductions, would only admit to having "flown until 1967". So they inducted him into the AMA Hall of Fame for having flown since 1932 and been on world teams and holding national records!!! He lives in Kamiah, Idaho. (my name problem again)(Editor, lets get his name from the magazine and invite him to the next Regionals.)

Maybe I should apologize to John for being so direct in print.

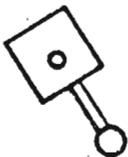
V.G.M.C. August 2, 1987 Meet
Richmond, B.C. Rice Mill Rd. site.

NW SPORT RACE

1) Marty Higgs	4:24	8:44
2) Bruce Duncan	4:23	10:01
3) Todd Delaurier	8:35	DNF(100laps)
4) Frank Boden	7:37	DNF(84 laps)
5) Barry Shandel	7:20(withdrew)	

15 NOSTALGIA SPORT RACE

1) Henry Hajdik	4:08	8:37
2) Marty Higgs	3:45	9:59
3) Dennis Matthews	5:01	10:37
4) Barry Shandel	4:47	DNF
5) Todd Delaurier	5:57	
6) Frank Boden	7:45	



ENGINES ANYONE???



by: Paul Gibeault

I received a letter from Norm Liversidge of Windham, New Hampshire. The gist of Norm's letter asked about the O.S. Max 40 RSR Rat race engine, and the Fox 36 pressure regulator.

First, the O.S. fitting sequence:

- 1) Clean up the liner well with scotchbrite pad and solvent.
- 2) Roughen up the sleeve with 400 wet or dry paper & oil wrapped around a reasonable close fitting dowel. The idea here is to roughen up the sleeve just enough to allow the new ring to seat-in. If any glaze or varnish is left on the sleeve, the ring will not fully seat.
- 3) Lastly, push the ring into the sleeve squarely with the piston and check for any gaps with a bright light. If no gaps exist, you're in business. I'll further elaborate on ring fitting in a later article or series, if there is interest.

My OS 40 RSR is set up as follows: Head clearance for high nitro fuel is about right at approximately .018 inch. Now with the 10% nitro restrictions, .010 - .012 is better if your plugs hold out for an entire race.

I don't care for the stock O.S. NV assembly, so I use either a K&B racing NVA or better yet a Wisniewski NVA. I bore out the venturi diameter (I.D.) to match that of the drum and make it a bit more bell-shaped while I'm at it. O.S. does have a nice CL venturi for this but I'll draw up mine for your information.

Rotor timing is usually good between 200 - 220 degrees total duration. I haven't found much difference except that the high timed drum will easily run backwards during initial start-ups. Cylinder exhaust duration should be raised to 150 degrees if it isn't already.

I've thought of using an OS 40 FSR ABC piston/liner assembly, but am not sure if the cylinder ports match up with the crankcase or what the port timing is. Performance, will however, depend on the following:

- 1) How well cylinder ports line up.
- 2) If port timing is correct.
- 3) If head clearance is correct.
- 4) If piston to sleeve fit is correct. (the factory fit when new is good).
- 5) If correct (optimum) prop is used with matched fuel. (lots of know-how and testing required here).

The saving grace of the OS RSR ring engine is its tractability (ease of starting and handling). Performance? On 40% nitro my 32 ounce Rat will go 130 mph proto (F-40 style timing) and 140 mph top speed. I have heard certain OS's go 150 mph in a rat, so at least 10 mph more can be had than what I've obtained. On 10% fuel the above speeds drop by 10 - 15 mph, using the same prop. Many Rats have superior airspeed to mine, but most of my success lies in instant starts and one flip pitstops.

Regarding your F-40 questions: I will say right here and now that a decent K&B 6.5 has an easy 10 mph advantage over the O.S. With a reasonably light (25 ounce) model a stock 6.5 can hit 150+ proto. The new O.S. VRP 40 has also flown 150+ mph proto. So....what I'm leading up to is that for competition purposes, one is further ahead with a new O.S. VRP or K&B 6.5 (don't forget the Super Tigre X40mwh)

However, with slight enlarging of the O.S. RSR mounting holes I can interchange my O.S. with a K&B 6.5. The cowl must also be modified as the O.S. is side exhaust and the K&B rear exhaust, with mini-pipe of course.

So.... for a beginner an OS RSR 40 is perfectly OK to start out with, but remember its short comings in the top speed department. Many things (not commonly realized) go into a successful F-40 ship to go fast. They are:

- 1) A straight light weight rigidly surfaced model.
- 2) Very steady running tank or bladder.
- 3) Smooth take-off and entry into pylon.
- 4) Easy starting procedure, easy ground tuning.
- 5) Correct prop selection.
- 6) High BHP output.

Once the basics are mastered with your RSR, higher performance can then be sought utilizing the newer generation engines.

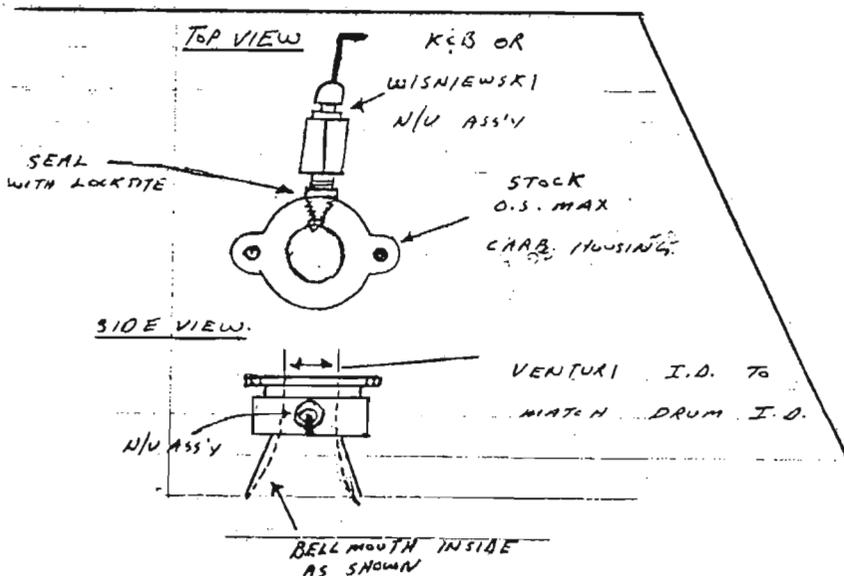
Now, with regards to the questions on pressure regulators. First off, I am not an authority on this, but I'll tell what I know. Jim Walker first came out with a pressure regulator for a model engine in December 1950. The usual fuel source to a regulator is a pen bladder. However, fuel pressure delivered by a bladder is not always constant, due to uneven bladder wall thickness, soft spots, etc. Also, bladders tend to exert greater fuel pressure when full and this diminishes gradually as the bladder deflates.

Since high performance engines tend to be more sensitive, you find that it becomes difficult to hold a full power setting throughout the run. Many times the engine run progresses from rich to lean.

In the case of the Fox Combat Special, it must be set so rich that you have to keep pinching the fuel line on takeoff to prevent it from going overlean in the air. And, if it's launched a bit rich, 9 out of 10 times it will flood out shortly after take-off. This is where a regulator really helps in fast combat use. The basic idea is that a regulator allows fuel to flow in proportion to the suction setting of the engine. This usually means that you can set your engine at peak RPM on the ground, and the engine will hold the setting in the air despite unloading. The diaphragm type regulators now in use assure a lower but much steadier fuel supply to the engine regardless of the bladders pressure output.

Another feature common to regulators is a ball check valve. Should you pancake the ground for example, with the engine stopped, there is no fuel flow to the engine. This check valve arrangement therefore prevents the usual massive flood. However, as soon as the engine is turned over, crankcase pressure unseats the ball and fuel starts flowing, so be aware of this.

All in all a fuel pressure regulator really helps out the Fox Combat Special. The only thing you should be aware of is this. Your fuel must be filtered and kept scrupulously clean! Any particulate matter allowed into the regulator itself will quickly render it useless! Dirt, etc. will quickly plug up the tiny pressure parts and interfere with the diaphragm and ball check valve. Properly looked after, they're great, otherwise you're better off without something else to go wrong.



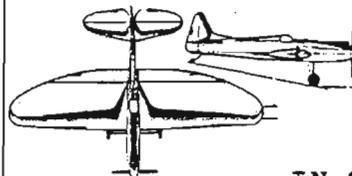
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FLIGHT SCHOOL

by: Jim Labarge



Welcome back to Flight School, and this time we are going to discuss Safety, and liability, Safety, and flying sites, Safety, and building; by now I think you get the message that this round is about SAFETY.

Someone said you have to make Safety happen and I agree. Most of us are familiar with safety when riding a bike, or driving a car, or doing most other everyday things but for some strange reason I have seen too many modelers forget about being safe and they have had their day or life ruined. Anytime you are working with power or hand tools, chemicals, fuel, etc. you have to engage the brain or you will get hurt or killed. I know, I now earn my living teaching high school Vocational Education, and believe me I do not need a student getting hurt.

We can break safety down into three areas: in your shop, at the field, and in the air. Let's tackle your shop first....

Model building is full of potential hazards and to keep this hobby fun we have to be careful. Most glues, dopes, and fuels are poisonous or dangerous. Never leave hobby chemicals out where children can get at them. A lockable box or cabinet is not a bad idea. Out of sight, out of danger. Also most hobby chemical have toxic and/or flammable fumes. Never use around flame, sparks, people smoking, or use them in a closed room. Make sure your shop is well ventilated. If you have to build on the dining room table be very cautious and use the smellier items outdoors. Moms and wives have a tendency to go bezerk when the house begins to smell like a hangar.

On another note about hobby chemicals, the new Super glues are a potential hazard. Originally designed to close wounds on the battlefields of Vietnam the super glues do a devil of a job gluing you to what ever they are applied to. If you get stuck, don't just rip the skin, borrow some fingernail polish remover from Mom or wife and that should release you. The best bet is to not get stuck in the first place, be careful where you put the glues.

Model finishes and fuels all contain highly explosive and poisonous chemicals. As I mentioned in a earlier column, model fuel is not much different than Indy or dragster fuel, potent, flammable, and deadly if used wrong. Never smoke or use finishes near water heaters, space heaters, fireplaces; the fumes are heavy and can crawl along the floor to the source of flame and explode.

Tools in your shop are the last item to discuss, whether power or hand tools, they can injure or maim. Your columnist can attest to that. As a teenager I believe I caused my mother great amounts of grey hair by greeting her one day after she went grocery shopping with a finger almost cut off by an Xacto knife. Didn't bother me much at the time but for months afterwards I sure knew I goofed. About the only thing sharper than an #11 Xacto blade is a surgeon's scalpel. Enough said, keep them sharp, but keep fingers away from the path of knives.

Other tools in the shop can cause just as much pain as knives, Any saw, drill, dremel tool, etc. that runs on power can bite very badly if guards aren't used or you can in the path of the cutter. Also long hair, sleeves, or loose clothing can get caught in the spinning tools and drag ones bod into them.

I could go on about safety for a long time but keep in mind that now hobby will be fun if it causes you or your family to get hurt.

Next time we will talk about flying and field safety, this column ran furthur than expected.

Keep flying and do it safely.....

Dear F.L.

It's getting close to drizzle circuit season, and I would like to make a few comments about the proposed changes to the secondary event.

I enjoy flying the secondary event, and I know many other people enjoy flying it too.

I also think that it draws other people to the contest, it breaks the routine of sport & super sport racing, and it keeps the interest level up.

There is a few people who fly in most all heats throughout the day, and after four rounds of racing those pilots are tired.

Sport race is a fun event to fly, but two rounds is enough! The same is true for super sport race, enough is enough! I do not think that you should drop the secondary event, but if you decide to drop it, don't add any more rounds to the regular racing.

thanks,
Rich Salter

Here's an idea I have had for a while, and I would like your input as to should we or shouldn't we. How about a NORTH WEST SPORT RACE CAN-AM challenge cup?

We already, both to a very limited degree, attend each others meets, but there is no complete mix and calculation of total points between the two. I would suggest no changes to the current systems, but at seasons end, late Sept. or early Oct. we have a fly-off altn between the Seattle area one year and the Vancouver, B.C. area the next. The top two U.S. and the top two Canadian point getters plus one altn. who will fill in in the event one of the others can't make it.

There would be no heats only a final, of course there would be all of the warm up flights wished until final race time.

The winner would be entitled to wear the No.1 on his aircraft until next year.

A reasonably priced, but, worthy trophy would be presented and this would be a perpetual trophy that would be returned yearly and have a tag engraved with the years winners name.

I propose that the V.G.M.C. put up about \$35.00 to \$50.00 U.S. towards the trophy and ask our U.S. counterparts to do the same.

If there is enough intrest it could be done for this year, but I think next year would be best.

Give me a call or write me a letter;

Bruce Duncan
2080 McLennan Ave.,
Richmond, B.C. V6X 2N5
604-273-6883

NW COMPETITION RECORDS

RECORD PERFORMANCES ESTABLISHED BETWEEN NORTHWEST MODELERS IN SANCTIONED COMPETITION

The month of September saw four new records to change the books. The first was set at the VGMC Internats early in the month. Loren Howard upped his class D speed record from 179 to a very good 195+mph score. This now makes all of the NW speed records look at least half-way respectable.

A trio of records were set at the Raider Roundup later in the month at Kent, Washington. Bob Parker boosted his own Profile Carrier mark 6 points to 238. Orin Humphries took his Class II record up just a smidge to 330 points from 329. And in the racing circle, the Nitroholics Racing Team (Thompson-Hazel), took the Class II Mouse standard of 11:49 by Dave Green, down to 10:04.

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)
1/2 A SPEED	108.85		(Duncan-Sackett)	FAI SPEED	172.33	(Chuck Schuette)
A SPEED	181.56		(Chris Sackett)	1/2 A 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	201.03	(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)			

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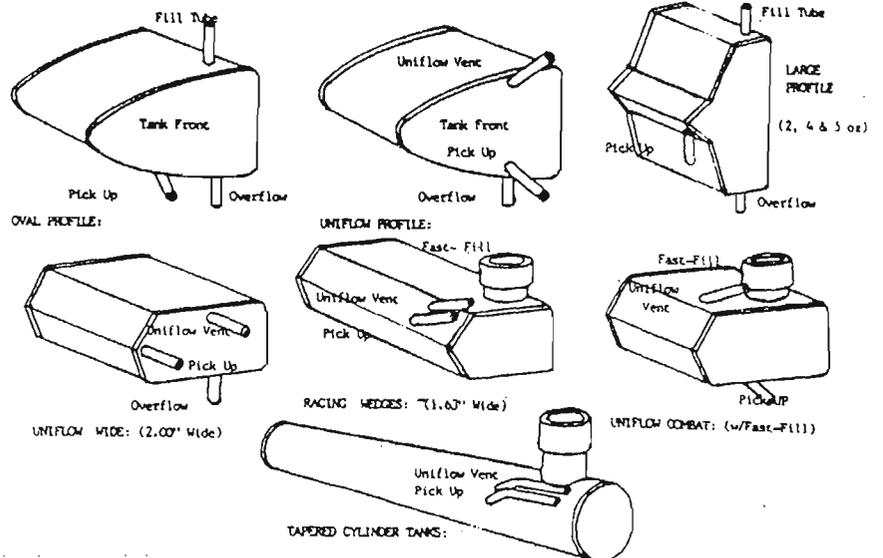
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NW COMPETITION STANDINGS

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

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

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

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

NW SPORT RACE (12 contests, 107 entries)

1)	SHT Team	50
2)	Bruce Duncan	48
3)	Jim Cameron	39
4)	Marty Higgs	31
5)	Dave Green	30

NW SUPER SPORT (7 contests, 67 entries)

1)	S&S Team	42
2)	Dave Green	36
3)	SHT Team	27
4)	Nitroholics RT	17
5)	John Hall	16
	Jim Cameron	16

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

OVERALL RACING (40 contests, 276 entries)

1)	SHT Team	83
2)	Dave Green	82
3)	Jim Cameron	67
4)	Marty Higgs	56
5)	Bruce Duncan	48
6)	S&S Team	45
7)	Mel Lyne	40
8)	Henry Hajdik	38
9)	Ron Salo	32
10)	Bob Danielson	29

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

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

1/4 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

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, 62 entries)

- 1) Jerry Thomas 20
- 2) Dave Green 17
- 3) Greg Beers 12
- Loren Howard 12
- 5) Duncan/Sackett 11
- Marty Higgs 11
- 7) Roy Beers 10
- 8) Dick Peterson 8
- 9) Mike Hazel 6
- 10) (stat not available)

RAIDER ROUNDUP, KENT, WASHINGTON, SEPTEMBER 19 & 20, 1987

RECORD RATIO SPEED (9 entries)

- 1) Dave Green F40- 150.07 90.70%
- 2) Jerry Thomas Jet- 190.04 89.25
- 3) Marty Higgs F40- 143.14 86.52
- 4) Roy Beers A - 148.95 82.37

BALLOON BUST - JR (3 entries)

- 1) Wesley Mullens 1100.8
- 2) Dan Martin 400.41
- 3) Shawn Mullens 245.7

BALLOON BUST SR/OP (16 entries)

- 1) Glenn Salter 1075.9
- 2) Dick Salter 773.6
- 3) Mel Lyne 707.6
- 4) Bob Danielson 597.8

PROFILE SCALE (8 entries)

- 1) Dave Mullens 129
- 2) Randy Schultz 129
- 3) Dick Salter 114
- 4) Orin Humphries 106

SPORT SCALE (3 entries)

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

PROFILE CARRIER (12 entries)

- 1) Bob Parker 238.44
- 2) Glenn Salter 206.46
- 3) Remy Dawson 200
- 4) Roy Beers 187

CLASS I CARRIER (3 entries)

- 1) Bob Danielson 253.35
- 2) Joe Just 70.73
- 3) Roy Beers attempt

CLASS II CARRIER (3 entries)

- 1) Orin Humphries 330.25
- 2) Roy Beers 314.59
- 3) Bob Danielson 307.33

NW SPORT RACE (17 entries)		ADVANCED STUNT (9 entries)	
1)	Mel Lyne 8:47	1)	Bob Emmett 460
2)	Jim Cameron 9:08	2)	Jack Pitcher 454.5
3)	SHT Team 9:18	3)	Gerald Schamp 454
4)	Bruce Duncan 9:52	4)	Hube Start 446
NW SUPER SPORT RACE (7 entries)		INTERMEDIATE STUNT (4 entries)	
1)	Dave Green (times not available)	1)	Jason Huntress 402
2)	S&S Team	2)	Dick McConnell 344
3)	SHT Team	3)	Dave Pellerin 296
4)	Nitroholics RT	4)	Bob Danielson 95
MOUSE RACE I - JR (3 entries)		BEGINNER STUNT (5 entries)	
1)	Wesley Mullens 9:10	1)	Rich Salter 210
2)	Shawn Mullens crash	2)	Shawn Mullens 119
3)	Dan Martin DQ	3)	Steve Scott 114
		4)	Wes Mullens 76
MOUSE RACE I SR/OP (4 entries)		1/2A COMBAT (11 entries)	
1)	Mike Rule 6:47	1)	Mel Lyne
2)	S&S Team 7:02	2)	Mike Hazel
3)	Jim Cameron 55 laps	3)	Tom Strom
4)	Nitroholics RT DNF	4)	Rich Salter
MOUSE RACE II (5 entries)		SLOW COMBAT (8 entries)	
1)	Nitroholics RT 10:04	1)	Mel Lyne
2)	Jim Cameron 11:41	2)	Dick McConnell
3)	Dave Green 14:38	3)	Bob Nelson
4)	Jim Booker 15:37	4)	Glenn Salter
SPORT GOODYEAR -JR (2 entries)		FOXDOO COMBAT (8 entries)	
1)	Wesley Mullens 8:08 (heat?)	1)	Dick McConnell
2)	Shawn Mullens 8 laps	2)	Randy Schultz
		3)	Mel Lyne
		4)	Dave Pellerin
SPORT GOODYEAR SR/OP (5 entries)		AMA FAST COMBAT (17 entries)	
1)	Dave Green 10:55	1)	John Thompson
2)	Dick Peterson 12:48	2)	Glenn Salter
3)	Dick McConnell 14:10	3)	Dick McConnell
4)	SHT Team 14:22	4)	Mike Rule
OLD TYME STUNT (7 entries)			
1)	Randy Schultz 291.5		
2)	Bob Emmett 268.5		
3)	John Hall 248.5		
4)	Joe Just 210		
EXPERT STUNT (4 entries)			
1)	Randy Schultz 537		
2)	Pete Bergstrom 518		
3)	Mark Freeman 508		
4)	Al Resinger 504		

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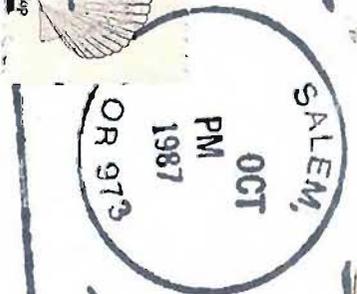
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