

NEWS OF NORTHWEST CONTROL-LINE MODEL AVIATION

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Greetings. It's been some month, eh? Snow and ice all over, and a big windstorm in the Seattle area. Here at FL headquarters, we had a record high 63 degrees, just two days after freezing temperatures.

We have the first draft of the contest schedule in this issue. Our AMA area V.P, Ed McCollough, urges everyone to get in their sanctions ASAP to Dick Salter. Things will work out better all around by getting this done early.

On the subject of contests, Ed asked for some input regarding the Nationals. Specifically, should the Nats be an open affair, or an event for qualified competitors, perhaps having to go through some elimination process. If you have any thoughts on this, or anything else in regards to the Nats, give Ed a shout. Check his MODEL AVIATION column on how to get hold of him.

New event, or old event??? Included in this ish, are rules for .21 Proto, a speed event with a different twist- it includes appearance points. The rules closely follow those of the old B Proto class, but with some additions to keep model appearance more semi-scale. This event was born in the NW, and will be flown at a number of meets this year.

The photo page this month is actually an experiment. Photo man Jim Cameron came up with a technique to try in regards to the print process. You are being told this, in case it we have a poor looking photo page. But hopefully, it will look great.

The next issue will be out approximately March 1st, or so. For now, dig in and enjoy this issue.



RECORD REVIEW

DETAILS OF NW RECORD PERFORMANCES

One of the longer standing NW records is the Class II Carrier mark set by Orin Humphries back in 1987 at the Raider Roundup. That mark stands at 330.25 points. Here are the details:

The plane was a Super Corsair, F2G-2, and was built from a Sterling kit, with many modifications. The plane was powered by a Super Tigre 61 PDP pumper engine. The overall plane weight is 54 ounces. The propellor used was a Master Airscrew 11 x7½, which was modified. Fuel was 30% nitro blend, and the glow plug was a Fox idle bar. Top speed is approximately 96 mph, and low speed was about 65 seconds. Orin still has this plane, and says he is fitting it with another engine for experimenting, so look out!

NW Competition Standings

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

MR. COMPETITION 1992

1)	Joe Rice (sr)	118
2)	Todd Ryan (jr)	101
3)	John Hall	56
4)	Darrell Harvin	50
5)	Tom Strom	43
	Gary Byerley	43
7)	Don McClave	41
8)	Bob Parker	38
9)	Rich McConnell	36
10)	Kevin Magnuson (sr)	33
11)	Ron Hale	31
12)	Jim Cameron	30½
13)	Nitroholics Team	29
14)	Ken Burgar	28
	Bob Emmett	28
16)	Joe Campbell	26
17)	Al Resinger	24
18)	Chris Cox	23½
19)	Paul Walker	19½
20)	Tim Strom (jr)	19
	Mike Hazel	19
	Chuck Schuette	19

MR. JUNIOR COMPETITION 1992

1)	Todd Ryan	101
2)	Tim Strom	19
3)	Wes Mullens	12
	Bobbie Graff	12
5)	Stephan Cox	9
6)	Michelle Hajdik	5
	David Burdick	5
8)	Brent Hazel	4
9)	James Cox	3
10)	Chris Hazel	2

OVERALL SPEED (21 contests, 60 entries)

1)	Joe Rice (sr)	20
2)	Chuck Schuette	19
3)	Todd Ryan (jr)	12
4)	Mike Hazel	6
5)	Marty Higgs	5
6)	Brent Hazel (jr)	4
	Loren Howard	4
	Ron Salo	4
9)	Jeff Cleaver	3
10)	Bruce Duncan	2
	Scott Newkirk	2
	Jerry Thomas	2
	Willy Naemura	2
	Chris Hazel (jr)	2

OVERALL CARRIER (16 contests, 65 entries)

1)	John Hall	56
2)	Terry Miller	12
	Todd Ryan (jr)	12
4)	Roy Beers	10
	Orin Humphries	10
6)	Shawn Parker	9
7)	Tom Strom	8
	Mike Hazel	8
	Bill Darkow	8
10)	Stephan Baardsen	7

OVERALL STUNT (26 contests, 126 entries)

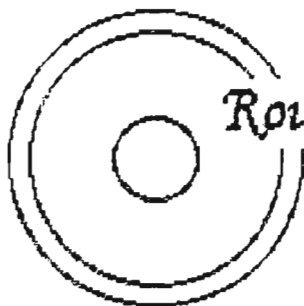
1)	Darrell Harvin	50
2)	Don McClave	41
3)	Bob Parker	38
4)	Bob Emmett	28
5)	Al Resinger	24
6)	Paul Walker	19½
7)	Barrie Shandel	13
8)	Chris Cox	10½
9)	Todd Ryan (jr)	10
10)	Dave Thompson	9

OVERALL COMBAT (9 contests, 77 entries)

1)	Gary Byerly	43
2)	Frank Boden	10
3)	Rich McConnell	8
4)	Jeff Rein	7
	Joe Campbell	7
	Mel Lyne	7
7)	Russ Popel	6
8)	Dick Salter	5
	Tom Strom	5
	Norm McFadden	5
	Todd Ryan (jr)	5
	Troy Lyne	5

OVERALL RACING (38 contests, 197 entries)

1)	Joe Rice (sr)	90
2)	Todd Ryan (jr)	53
3)	Tom Strom	30
4)	Ron Hale	29
	Nitroholics Team	29
6)	Ken Burgar	28
7)	Kevin Magnuson (sr)	26
8)	Jim Cameron	23
9)	Tim Strom (jr)	19
10)	Joe Campbell	18



Round and Round

The Control-Line
modeler at large

By John Thompson

A new engine for carrier

IF IT WEREN'T FOR newsletters, it would take us control-line fliers several times as long to develop our skills, and it would be nearly impossible to keep up with all the technical and political advancements of the hobby.

As a magazine and newsletter columnist, I'm privileged to receive a large number of publications — from special interest groups, clubs, and independent publications somewhat like *Flying Lines*. (Two of the best independently published newsletters, by the way, are *New England Combat News* and the *T.R. Inquirer*, a racing publication.)

One doesn't have to subscribe to every newsletter, however, to share in the exchange of information. That's because newsletters freely share information. In that honored tradition, I'm going to steal part of an article from *Aeromail*, the newsletter of the Norfolk Aeromodelers in Virginia, that should be of interest to carrier fliers in particular and to Fox engine enthusiasts in general. It also contains some lessons about the preparation fliers need to go through in development of their competitive programs and the kind of testing that's needed to work out the bugs. (Not to mention a lesson about proper storage of fuel!) The author is Terry Bull, editor of *Aeromail*.

I fly Fox engines exclusively in the displacement range from .15 to .74. They are good engines, and getting better. Fox is introducing a new .25BB engine, a new carburetor for .45 engines and larger, a new "hemi-head" and needle valve for the .35 stunt, and if there is a sufficient demand, a throttled .36 for profile carrier.

FOX CARRIER SPECIAL

At the 1992 Nats, I said something to Betty Fox and John Lowery about the unavailability of a .36 engine for profile carrier and asked if the

Combat Special could be fitted with a carburetor.

The answer was "yes" but there was a question about how well it would idle. Last month I received the prototype engine for testing.

It is a Combat Special .36 fitted with a .40 size Fox carburetor. When I took it out for its first test run, it was about 40 degrees with a 25 mph crosswind. The fuel was Missile Mist which had been stored in a can with a loose cap, and the prop was a Master Airscrew 10x6. The engine started as easily as a Fox Combat Special engine, turned 12,800 rpm at full throttle, 3,800 rpm at idle, and transitioned smoothly between idle and full throttle.

Sound level was 118 db at 3 feet. There were no adjustments made to the factory settings on the carburetor at this time. My concern about needing an exhaust throttle was unfounded. The only problem was that the engine would quit at any throttle setting when the glow-driver was removed. This was attributed to the improper storage of the fuel.

Two problems needed to be corrected on the engine. The cylinder was not lined up exactly with the exhaust port (1/16" overlap of the exhaust port by the liner) and there was an air leak around the carburetor. This was the first time the engine had been run since leaving the factory and approximately 8 ounces of fuel was run through the engine at this time.

Before the second test the cylinder liner was aligned with the exhaust port, the air leak around the carburetor was sealed with silicone, and the idle stop was adjusted to close more completely.

The high and low speed needles were not adjusted for the second test. The temperature was 45 degrees and the wind was calm. The prop was the same Master Airscrew 10x6. But the fuel was Dukes' Fuel (10% nitro). The engine idled at

3,100 rpm but would run up only to 11,800 rpm at full throttle, and rapidly bogged down and died. Examination of the glow plug revealed a crushed element.

After replacing the plug with a Fox RC short plug, the engine was restarted. The low speed remained at 3,100 rpm, but at full throttle the high speed went up to 13,400 rpm, and the transition was smooth.

The serious contest-oriented carrier flier may be able to modify an older engine or custom build an engine, but for the beginner or novice flier this is the only currently available engine that I know of.

Like the Combat Special, the Carrier Special will be available only directly from Fox Manufacturing Co., 5305 Towson Ave., Fort Smith, AR 72901. Phone (501) 646-1656 and ask for Betty Fox or John Lowery.

Terry didn't mention — and fliers experienced with the Fox Combat Special probably are well aware — that the engine is set up to run on high nitro; a significant rpm increase should be expected in moving up from the 10% Duke's fuel to a competition fuel. Some experimentation undoubtedly would be required to figure out just what combination works for idle.

Speaking from experience with the combat engine, I would recommend about 40% nitro for top performance. If the engine wants to blow plugs at that percentage, add a shim to increase the head clearance.

It's standard practice for combat fliers to increase the timing of the crankshaft, but it's doubtful whether the engine would idle on suction feed at more than the standard crank timing (it comes set

up for slow combat, with a conservative — in combat terms — timing). However, if you want to experiment, consider that combat fliers run on bladder pressure with the crank closing in the range of 62-69 degrees after top dead center, compared with the approximately 52 degrees of the stock engine.

Oh, by the way, carrier fliers planning to use the combat engine will want to replace the rear bearing. The stock Combat Special bearing is a time bomb, ticking away and just waiting to explode into little pieces of shrapnel that will destroy your engine. Replace it with K&B Part No. 8777, which is a plastic cage bearing.

The December issue of *Aeromail* also includes the announcement from Fox about the new hemi-head conversion for the stunt .35. The kit consists of a new rear cover, head button and head clamp. The brochure says the kit eliminates stalls in maneuvers and creates smoother runs in flight.

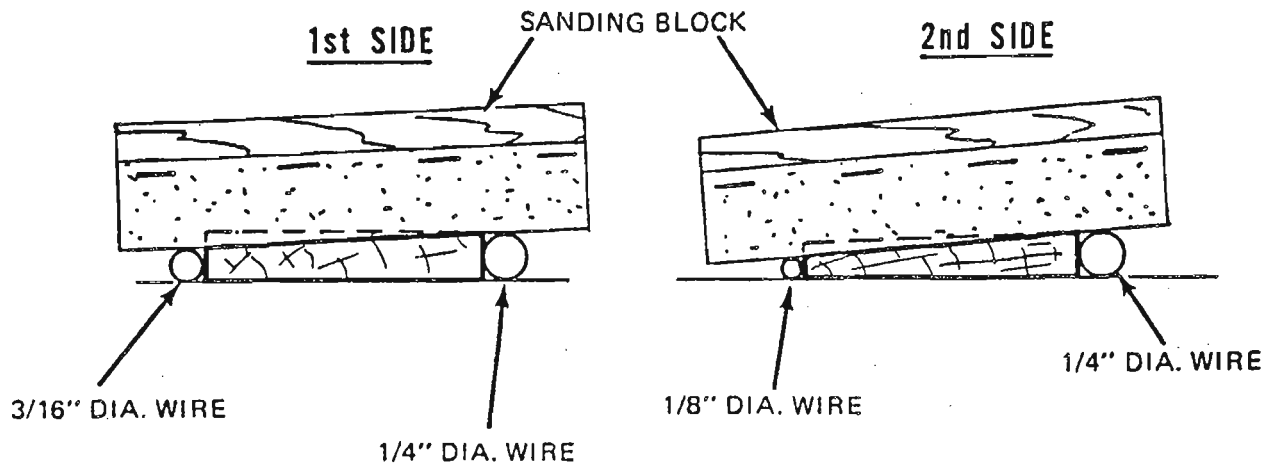
The complete kit is \$28; individually, the head is \$13, the button \$7, and the rear cover \$12. Sounds like a good investment that could make the Fox stunt once again a competitive stunt engine.

For more information about Terry Bull's testing program, write him at 1428 Woodside Court South, Chesapeake, VA 23320.

To contribute to the general knowledge of Northwest control-line fliers via the *Round & Round* column, write John Thompson at 1145 Birch Ave., Cottage Grove, OR 97424.

And, with the contest season approaching, don't forget to send in postcards with your name, address and phone number if you are interested in being listed on the new Northwest list of fliers who are willing to provide overnight accommodations for visiting fliers.

TRY THIS ILLUSTRATED METHOD FOR MAKING PRECISION SHAPED FLAPS



Sand flaps to shape. 1/4" thick at the front and 1/8" thick at the rear. Use method shown in illustrations above. Do not round front edge yet.

The following is from AEROLINES, newsletter of the NW FIREBALLS,
Dave Royer, editor.

Precision Aerobatics for Women?

by Alice Cotton Royer

Yes, it is entirely plausible for women to fly model airplanes, be it for competition or enjoyment. So why don't they? Perhaps the absence of female role models dissuades women from getting involved. I think it is important, encouraging, and motivating to see another woman participating in a hobby that is traditionally male and seemingly out of reach or consideration.

Hey, if she can do it,
well then so can I.

When my husband, Dave Royer (a precision stunt competitor), came home from the NATS (the National Control Line Championships) quite impressed with a Russian woman named Svetlana Filipova who had flown in the precision aerobatics championships at the Expert Level, it definitely caught my attention - perhaps more than I had realized. I think I may have thought something like, "Hey, if she can do it, well then so can I".

It wasn't long after this that I began training in precision aerobatic flying and found myself focusing more and more on entering Beginner Stunt at the next Northwest Regionals control line contest a little over a year away.

..amidst unmentionable crashings
and burnings..

Another invaluable contribution to my continued interest in control line flying were the long summer hours of support and coaching donated by Jim Cameron, vice president of the N.W. Fireballs, and my husband, Dave Royer, both of whom fly precision stunt. Jim brought numerous trainer planes for me such as the Firebaby II, the Flip, and the Buster - all either made or modified by Jim for training purposes or were donated to the club. My husband also made a couple of Firebaby II's for training purposes.

With these airplanes, amidst unmentionable

crashings and burnings I learned to climb and dive, and fly inverted until I could finally complete some semblance of "The Pattern".

About this time the president of the N.W. Fireballs, Greg Beers, began to nag me about building my own airplane. His wife, Laura Beers, the secretary of the N.W. Fireballs and a Carrier event competitor, built some of her own models that were quite impressive. This helped spark in me the motivation to build a model airplane. (Female role models are priceless). Again I thought something like "Well if she can do this, then so can I".

Dave bought and helped me build an Akromaster (a .15 sized Sig kit). It came out nicely but wasn't enough airplane to match the flying skills I had developed. Jack Pitcher, a master stunt pilot and builder here in Portland, suggested I build a Prowler (a Bob Hunt model designed to take you from Intermediate to Advanced level stunt flying). This plane I built myself with much consultation from Dave and other model experts such as Gerald Schamp, Jack Pitcher and Jim Cameron.

The Prowler is not a beginner's kit so its construction was a long and sometimes arduous process. I worked on it every spare moment for 3-4 months until one week before the Regionals it was at last done. With a few flight trimming tips from Don McClave (an Expert stunt pilot and builder) and a last minute tank job by Jim Cameron we were off. (I was using an O.S. Max .35FP (Dixon reworked) engine and a 4 oz. tank. I kept running out of fuel before finishing the pattern so Jim cut down a 5 oz. uniflow wedge Dave had to a 4 1/2 oz. wedge to fit in the tank space available on the Prowler. This gave me the extra flight time I needed.)

First contests are a special time in one's life and this one was an exceptionally memorable one for me. Dave and I arrived Friday Memorial Day Weekend to get in some practice flights. They were

all there - the precision aerobatics stunt gods, top West Coast fliers and builders collecting themselves for show and tell, sharing of technology and flight practice.

...to my surprise and delight, applause broke out all around...

I took out my Prowler and prepared to fly. I knew this moment could make or break me. If I flew poorly I would be regarded as a "woman" pilot forever, left to the dregs of mediocrity and condescension. I started my engine, took the lines and flew the best pattern I knew how. Much to my surprise and delight, applause broke out all around me when I finished. Needless to say this began an incredible weekend I am never to forget.

A great exchange of invaluable information and feedback accompanies a contest such as this. Tips on how to trim your airplane, tune your engine, fly your pattern. It pays to listen and pay attention. By doing so my pattern improved over the course of the weekend.

The precision stunt competition (all levels; Beginner, Intermediate, Advanced and Expert) were held Sunday morning. It was suggested to me to not enter Beginner and move to Intermediate. Apparently they were using the Beginner stunt pattern that has its own unique set of maneuvers. Since I had already learned the AMA pattern, it seemed to make more sense to fly Intermediate. Due to this change I no longer expected to come home with a trophy (or plaque in this case). But I was glad to be in Intermediate. Besides I had met an excellent young Eugene Junior stunt pilot, Bobby, who had his sites set on winning Beginner stunt and I was obliged to get out of his way.

...we had to spit glow plugs

As it turned out I tied for second place with my husband!!! Shock of shocks. We were, of course, teased a lot about this, especially Dave. He was told things like "You aren't supposed to coach your students to be as good as you are!"

In order to break the tie we had to spit glow plugs. Whoever spit the furthest would win the tie.

This is a Northwest traditional tie breaking method. We decided to have fun with this. I was offered an advantage, as I am much shorter than my husband, by allowing me to stand ahead of him. I refused to accept this advantage but asked if I could jump. As there were no rules about jumping I proceeded to leap straight up what felt like 12 feet into the air and blew my glow plug far across the asphalt. This received quite a bit of laughter and cheering. Dave said aloud, "No fair, that's Advanced spitting!" more laughs and chuckles.

For his turn, Dave decided to get into a kind of Jerry Lewis body wrench and let the glow plug kind of dribble from his lips. This got an interesting array of funny audience sounds from giggles to guffaws. It was a humorous moment and bound to be repeated in a variety of forms as Regional stories are told and retold.

Possibilities unfold, dreams begin to take hold

So, as it turned out, I came home with a 2nd Place plaque for Precision Aerobatics which was a truly wonderful thing. But perhaps something even more profound had occurred at this event.

As I was the only female competing in precision stunt at this event, perhaps I, too, had become a role model for other women. Perhaps there was a woman there watching me saying to herself, "Hey, if she can do it, so can I". Women tend to shy away from arenas that are traditionally male dominated as I tend to do. But there is a certain magic that happens when one observes the accomplishments of another. Possibilities unfold, dreams begin to take hold.

So I am here to say that if a woman has any interest at all in this kind of hobby, I think she will be delightfully surprised at the support, encouragement and enjoyment that surrounds flying and building a model airplane. As for me, I am now planning what I'll be building next and look forward to the adventures awaiting me in this new hobby.

CONTEST BEHAVIOR

Here are a couple of examples I have noticed. It is widely reported that a certain event in contests of a different control mode is populated with many pilots who are so competitive they would rather step on your airplane than loan you a glo-plug if you asked for one. At a C/L contest in Canada ten years ago a young combat pilot had been told by some old hand back home that if you didn't like a judge's call you should just pack up your stuff and go home, so he did. How one behaves at a contest of any kind is a personal choice. I would like to share another example which I found remarkable. Judge for yourself.

The Prince

It was in 1970 at the Spokane Internats at Geiger Field, Spokane WA, the second biggest contest in the nation at the time. I was very green, flying my first Carrier event at age 28. Late in the afternoon I needed a plug and I thought about asking some of the other pilots. It made sense to me that I should not expect any offers, as helping me would keep one more competitor, however green, in the contest. I was pleasantly surprised when a gentleman around 47 to 49 years old, I think, offered me one. The lines in his face told me he had been in modeling for many, many years. I tried to pay him for it, but he refused, suggesting that maybe he might need something in return sometime. I thanked him, but could not imagine how I might come to have something he would need.

It crossed my mind that he had offered this assistance so freely, knowing that some quirk of fate might find my beating him thanks to his help. Yet he freely gave me what I needed. That made a profound impression! Throughout the event his manner was always so calm and sporting, a true Gentleman.

The next day he in fact needed one kind of prop which I happened to have and I gave it to him. He offered to pay and I refused, following his example. Later that day I needed something else, others had borrowed from each other during the two days, and it was always a repeat of the same scene. Assistance was freely given without thought of the possible outcome.

I finished out of the trophies, of course, no threat to him at all, but I couldn't get over the thought that he would have loaned anybody anything, knowing they might then beat him. I knew then that I would never forget him, and that if I ever passed through his home town on a trip or something, I had a friend I could count on. This, then, was the role model after which I would try to fashion myself in my unfolding career.

But I didn't see him again and lost his name. I probably will never know who The Prince was.

I have tried to emulate him at contests as the years rolled on, and I could see the same look in the eyes of people to whom I loaned/gave things. You could see the thought pass over their eyes that they knew, that I knew, etc., they might beat me. The same wonder and feeling would spring forth that they had a friend for life.

The ultimate result of The Prince's values has occurred several times by now. Several people have in fact finished ahead of me with the help I gave. Each of us knowing how that had come about was a remarkable feeling to share with a friend. One man even set a current Regional record with a prop of mine. For one who is following this Way, the times will come when your career is mature, when you will bow out or side step some trophies so that younger people will get them. They need the encouragement. This, you must please understand, is by no means a blowing of my own horn. This is honoring the life, the values, the man who was, The Prince.

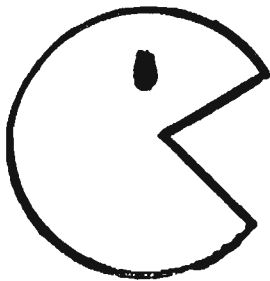
Epilogue.

Could I become the modern version of him? Certainly not. I have a temper. And a few other mortal faults. But I offer you this Way, as but one example, of how a modeler might chose to be not only at a contest, but elsewhere as well.

To make another long story short, may I suggest this: If you get a bad call from a judge, I suggest you be a Gentleman or Lady, as the case may be, and stay cool. Don't mistakenly try to tie your self esteem to your contest results. Measure that by how you treat others. Attempt to offer your view of things to the judges at the proper time and in the proper way, listening to what they say, and being discrete so as to allow everyone to maintain their dignity. If you feel you must strongly protest, you might think about not attending the next contest/event at that field and quietly passing the word along to the club president or CD as to why. There are still other ways.

I wish I could be the Prince, but will never make it. I wish I knew his name.
orin humphries, 19805 48th Ave. W., #A101, Lynnwood, WA 98036-5583, 206-776-5517

PAC MAN SAYS (from AIRWAVES, editor Frank Boden)



BY FRANK BODEN

MACA PRESIDENT PAT WILLCOX HAS RETIRED AND EDITOR CHIP GIORDANO OF MACA NEWS IS ALSO READY TO MOVE ON, SO THE COMBAT ASSOCIATION IS IN NEED OF HELP. PAT WILLCOX IS JUST BACK FROM EUROPE WHERE HE DICK STUBBLEFIELD AND CHUCK RUDNER BATTLED IT OUT IN THE WORLD CHAMPIONSHIPS. SAYS THEY WERE THE ONLY ONES WITH BOOMS ON THEIR AIRCRAFT. IT SEEMS THE RUSSIAN DESIGN IS WHAT EVERYONE IS USING.

IT HAS VERY TIGHT TURN CAPACITY AND IS TOUGH.

THE DUKE FOX MEMORIAL COMBATFEST WAS IN CHICAGO AREA ON AUG 14-15. IT HAD 38 CONTESTANTS WHO FLEW 125 MATCHES. PETE ATHANS LOST AN AIRPLANE TO A FLYAWAY IN HIS FIRST MATCH. THE SHIP CLIMBED INTO THE DENSE LOW CLOUD COVER, OUT OF SIGHT. THE MK V1 COULD BE HEARD FOR SEVERAL MINUTES ON IT'S WAY SOUTH, THEY NEVER FOUND IT. THERE WERE FOUR FLYAWAYS IN THE CONTEST WITH TWO OF THE PLANES BEING EQUIPED WITH SHUTOFFS. McFADDEN HAD A DOUBLE CUTAWAY AND THIS TIME HIS SHUTOFF FAILED TO ACTUATE. HIS OPOONENTS ALSO CLIMBED UP SEVERAL HUNDRED FEET T'ILL IT RAN OUT OF GAS. HOWARD RUSH HAD A ROB MARTIN SHUTOFF WHICH PERFORMED PERFECTLY, KILLING THE ENGINE THE MODEL SOFT LANDED ABOUT A HUNDRED FEET FROM THE CIRCLE, TO THE DELIGHT OF EVERYONE PRESENT. I WOULD POINT OUT THAT MOST SHUTOFF FLIGHTS LEAVE THE AIRCRAFT WITH NO DAMAGE AT ALL. THE WINNERS WERE STEVE WILK FIRST, PETE ATHANS SECOND, AND HOWARD RUSH THIRD. I FLEW ATHANS LAST YEAR, THOUGHT HE WAS EASY T'ILL HE KILLED ME.



21 PROTO RULES

THIRD DRAUGHT, JANUARY 1993

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

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

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

AIRPLANE SPECIFICATIONS: The model shall have a minimum of 125 square inches of wing area; The stabilizer must be a minimum of 25% of the wing and the rudder shall be a minimum of 5% of the wing area. The minimum wingspan shall be 24" or 16" for a biplane. The minimum distance from the trailing edge of the wing to the leading edge of the stabilizer must be 5". The model must have a clear canopy, a minimum dimension of 4" in length by 1" high and 1" wide and shall house a scale pilot with a minimum of 1" in height. (Williams Brothers type or equivalent) The landing gear must be of the fixed type and similar to a real airplane. The main landing gear shall consist of two wheels spaced at least 6" apart between wheel centers. Wheels must have a minimum diameter of 1½". The wing and stabilizer must be of equal span with no asymmetry, maximum deviation is ¼". The weight limits of the aircraft (dry) shall be 18oz minimum and 28 oz maximum.

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

FLYING LINES: Only two wire type control systems are acceptable. Minimum two wire size shall be (2) .018" x 60'-0". The minimum wing tip separation of the lines shall be .20". The model and control system shall be subjected to a 40G pull test.

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

DISTANCE OF TIMED COURSE: The model will be timed from the instant the model is released from takeoff for 14 laps (1 mile). The flyer will be allowed $\frac{1}{2}$ full laps to get model airborne before entering the pylon. Any attempt to whip the model more than is necessary to get airborne during the first lap shall constitute a foul and the flight will be DQ.

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

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

That is the three divided by the number of entries, with each model receiving points according to its position.

EXAMPLE:

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

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

EXAMPLE:

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

TOTAL 122.71 POINTS

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

HANDY 21 PROTO APPEARANCE POINTS GUIDE

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

The following is the third, and final installment, of Joe's taped interview at the 1992 Nationals of some of the top Carrier flyers.

J.J. OK, Steve, our beginner is the kind of a guy that is set in his ways and he says, "Nah, I don't want a .15 size plane, I have a couple of 35's. I really want to get into Profile, and the larger stuff". What do you recommend?

Steve Dinerman Ok, he can get a Sterling Mustang, they fly fine and you can actually put in a very small line slider. But to be really competitive you have to have a line slider. However, one has to be aware that when the line slider trips, the elevator goes down and so does the plane and it can be a killer! People lose planes that way!

J.J. Do you really think a beginner needs to go with a line slider on his first Profile airplane?

Steve Dinerman No, but the slider does help to keep the airplane out and that the important thing is there are ways around the slider problems. A couple of years ago, Orin Humphries had an article in the NCS bulletin about a way to keep the plane from diving.

J.J. ... Yeah, he called it the "jump buster". Using this method, the plane stays level when the slider is tripped. Steve, you published an article in Flying Models of a Profile Kingfisher . Would that be a good plane for a beginner to start with?

Steve Dinerman..... Yes, providing they build it to the plans, and use the nyrod leadouts as shown on the plane.

J.J. Steve, let's say a beginner would rather start in Class I or II with a full bodied plane. Is there anything you could recommend to him then?

Steve Dinerman..... He could try a Sterling Guardian. It was designed specifically for Carrier. I would however , build it without moveable flaps.

J.J. ... That plane was designed for the McCoy 60. Is there anything that should be modified? What about other engines to use?

Steve Dinerman.... Just move the motor mounts, and change the balance point. Other engines, any front intake .40. Who needs the agravation of a racing engine? A beginner is only going to get frustrated and will stuff the plane. Get something that's reliable, that's half the battle. In the long run more trophies are won with reliability than expensive stuff.

J.J. Finally, what is the most important point, in telling a beginner what to do to get started in Carrier?

Steve Dinerman Don't get frustrated! Keep it simple. Then practice, practice, and practice. Learn to fly in the wind. It takes time. If you want to win, you have to practice. When you go out.... learn! Learn how your engine runs. Learn to fly the 60 degree...it's not that hard, it's really easy. Read my article on the Kingfisher, it tells how to do it!

J.J. : My personal thanks to all the carrier flyers at the nats that took time to do this impromptu interview. They were all gentleman about my using up a lot of time that they could have used otherwise. Should you like a copy of the original video, showing several scenes from the nats, including combat, stunt, indoor, several views of carrier action as well as the interview, send me a tape (VHS only) of at least 40 minute length, and enough to cover the postage back and I'll make you a copy.

.....Joe Just, 709 Crescent, Sunnyside, Washington 98944

This chart was just received from AMA Hq, and gives the results of the CLCB initial vote.

For a more complete explanation of the rule number, consult the January issue of MODEL AVIATION, page 139.

The proposals that were defeated are dead. The ones passed, will go to another vote later in the year.

Control Line Contest Board Initial Vote		George Higgins No. Pembroke, MA I	Joe Ortiz Jackson Hts, NY II	Laird Jackson Philadelphia, PA III	Wayne Foster Advance, NC IV	Dave Henszraught Munks Co., SC V	C. Roberts Leongton, KY VI	Larry Driak Slevens Pt., WI VII	Bill Bischoff Dallas, TX VIII	Michael Taiman Wichita, KS IX	Vic Garner Livermore, CA X	John Thompson Cottage Grove, OR XI	Result of Vote and Tally
Y = Yes N = No 1 = Most Desirable 3 = Least Desirable													
P = Passed F = Failed													
CL 94-2:	General, safety things required, all events.	-	Y	N	Y	Y	-	N	Y	N	Y	Y	P
CL 94-3:	Event 322, 326, marking outer limits of circle.	-	N	N	N	Y	-	Y	N	N	Y	N	F
CL 94-4:	Events 301-310, records may be set at class A events.	-	Y	Y	Y	Y	-	Y	Y	Y	N	Y	P
CL 94-5:	Events 301, 305, 306, 1/2A, 1/2A Proto, 10% nitro fuel to be supplied.	-	2	3	2	3	-	1	3	3	3	3	F(23)
CL 94-6:	Events 301, 305, 306, 1/2A, 1/2A Proto, 40% nitro fuel to be supplied.	-	3	2	3	2	-	2	2	2	2	2	F(20)
CL 94-7:	Events 322, 326, delete starting requirement.	-	N	Y	Y	Y	-	Y	Y	Y	N	N	P
CL 94-8:	Events 311-317, redefines entrant's responsibilities.	-	N	Y	Y	Y	-	Y	Y	Y	Y	Y	P
CL 94-9:	General, defines thong attachment and testing.	-	N	Y	N	Y	-	Y	Y	Y	Y	N	P
CL 94-10:	General, add new item, "Workmanship".	-	N	N	N	Y	-	Y	N	N	Y	N	F
CL 94-11:	Event 304, requires fiberglass, carbon (composite) propellers.	-	Y	N	N	N	-	N	Y	N	Y	Y	F
CL 94-12:	Event 330, remove Supplemental status.	Duplicate numbers on initial ballot. Will revote before final ballot.											
CL 94-13:	Events 305, 306, 1/2A Profile, make 306 Official, combine 305 and 306.	-	Y	N	Y	Y	-	Y	Y	Y	Y	Y	P
CL 94-14:	General, rewrite of 5.3 through 5.3.4.	Duplicate numbers on initial ballot. Will revote before final ballot.											
CL 94-15:	Event 311, change in control system.	-	N	Y	N	Y	-	N	Y	N	N	N	F
CL 94-16:	Event 311, delete event.	-	N	Y	N	N	-	N	N	N	Y	N	F
CL 94-17:	Events 322, 326, replace item 7.	-	N	Y	Y	Y	-	Y	Y	Y	Y	N	P
CL 94-18:	Event 311, new specifications for engines larger than .2135 cu. in.	-	Y	N	Y	Y	-	N	Y	Y	N	Y	P
CL 94-19:	Event 311, add item regarding weight and line sizes.	-	N	N	N	Y	-	Y	Y	Y	N	N	F
CL 94-20:	Event 312, add item regarding weight.	-	N	N	N	Y	-	Y	Y	N	N	N	F
CL 94-21:	Event 313, 315, delete "currently produced" from 2.1.	-	Y	N	Y	Y	-	Y	Y	Y	Y	Y	P
CL 94-22:	Events 313-316, change max weight to 1 pound.	-	Y	N	Y	Y	-	Y	Y	Y	Y	Y	P
CL 94-23:	Event 317, add item regarding weight.	-	N	N	N	Y	-	Y	Y	N	N	N	F
CL 94-24:	Events 322-326, maneuver description change, item 11.	-	N	N	N	Y	-	Y	Y	N	N	N	F
CL 94-25:	Events 322-326, item 12, change in definition of Official Flight.	-	3	3	3	3	-	1	3	3	2	3	F(24)
CL 94-26:	Events 322-326, item 12, replace with new text.	-	2	2	2	2	-	3	1	2	3	2	F(19)
Neither CL 94-25 nor CL 94-26.		-	1	1	1	1	-	2	2	1	1	1	P(11)
CL 94-27:	Event 312, item 2.1, glow plug engine only, replace 2.6.	-	N	N	N	Y	-	N	Y	N	N	N	F
CL 94-28:	Add new event "80 MPH Combat".	-	Y	Y	N	Y	-	Y	N	N	Y	Y	P
CL 94-29:	Event 328, change line length tolerances to 59'9"-60'3".	-	N	N	N	Y	-	N	N	N	N	N	F
CL 94-30:	Event 330, change line chart engine size to 0.0000 - 0.0154 cu. in.	-	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	P
CL 94-31:	Event 328, item 4, new text for streamer requirements.	-	Y	N	Y	Y	-	Y	N	Y	Y	Y	P
CL 94-32:	Event 330, item 2, new text for streamer requirements.	-	N	N	N	Y	-	N	N	Y	Y	N	F
CL 94-33:	Event 328, item 3.2, restraining cable text change.	-	Y	Y	Y	Y	-	Y	Y	Y	Y	Y	P
CL 94-34:	Events 311-317, new paragraph requiring fuel shutoff.	-	N	Y	N	Y	-	Y	Y	N	Y	N	P
CL 94-35:	Add new event "Quickie Rat Race."	-	N	Y	N	Y	-	N	Y	N	N	N	F
CL 94-36:	General, item 4, add Precision Aerobatics to first sentence.	-	N	N	N	N	-	N	N	N	N	N	F

1993 NW CL CONTEST CALENDAR

First Edition

As of the last week of January, the following is the contest scheduling information that we have gathered. Some of the listings are incomplete, and we haven't received full information from all the clubs. All of you contest directors and club leaders are encouraged to send in this info, whether tentative or firm. It is hoped that the March issue will have a contest calendar that is nearly 100% complete.

MARCH 20 -----RICHLAND, WASHINGTON-----

Events: Flying Clown Race, NW Sport Race. Site: Horn Rapids Athletic Complex. Contact: Paul Rice, Rt3, Box 8642, Richland, WA 99352 (509) 627-3142. Sponsor: Columbia Basin Balsa Bashers

APRIL 10-----RICHLAND, WASHINGTON-----

Event: NW Super Sport Race, NW Sport Race. other details same as above.

MAY 1/2-----RICHLAND, WASHINGTON-----

SPRING TUNE-UP Events: NW Super Sport Race, Flying Clown Race, Class I Mouse Race, NW Goodyear, Old Time Stunt, all Speed classes, all Carrier classes. Site: Columbia Point Marina Park. Contact: Paul Rice Rt 3, Box 8642, Richland, WA 99352 (509) 627-3142. Sponsor: Columbia Basin Balsa Bashers

MAY 9----- KENT, WASHINGTON-----

Events: 21 Sport Speed, 21 Proto, Formula 40. site: Boeing Space Center. Contact: Tom Knoppi, 19007 120th Ave SE, Renton, WA 98058 (206) 228-9502

MAY 28/29/30-----EUGENE, OREGON-----

NW CONTROL LINE REGIONALS
Events: most all events known to Western control line civilization. Site: Eugene Airport. Contact: John Thompson

JUNE 12/13-----KENT, WASHINGTON-----

STUNTATHON Events: Precision Aerobatics, Old Time Stunt, Nostalgia Stunt. Site: Boeing Space Center Contact: Joe Dill (206) 631-2367 Sponsor: Seattle Skyraiders

JUNE 19/20-----RICHMOND, BRITISH COLUMBIA--

Details TBA, contact Chris Cox (604) 396-7635 Sponsor: Pacific Aeromodelers Club

JUNE 26/27-----COQUITLAM, B.C. -----

VGMC INTERNATS Events: Mouse Race Class I, NW Goodyear, all Carrier classes, all Speed classes including new 21 Proto. Site: Coquitlam Park Contact: Bruce Duncan (604)855-7295

JULY (?) -----SEATTLE AREA-----

BLADDER GRABBER details TBA

JULY 17/25-----LAWRENCEVILLE, ILL.-----

AMA NATIONALS

AUGUST 6/7-----COQUITLAM, B.C.-----

NW SPEED CHAMPIONSHIPS Events: all speed classes Site: Coquitlam Park. Contact: Chris Sackett, Po Box 82294, Burnaby, BC V5C 5P7 Sponsor: BC Aces

SEPTEMBER 11/12----KENT, WASHINGTON-----

RAIDER ROUNDUP details TBA
Sponsor: Seattle Skyraiders

OCTOBER (?)-----EUGENE, OREGON-----

REALLY RACING/FALL FOLLIES

Events: all AMA & NW racing events, Precision Aerobatics. Site: Eugene Airport. Contact: Mike Hazel Sponsor: Eugene Propspinners

NATS Return to Lawrenceville

Dates Remain the Same

The 1993 NATS have changed directions and will be held in Lawrenceville, Illinois, the site of the 1991 National Championships. Plans for Lubbock, Texas were scrapped because of failure to receive final FAA approval.

The RC and CL events will be held in Lawrenceville, July 17 through 25, Indoor events will fly June 3 through 6 in Johnson City, Tennessee and the Free Flight Championships are again scheduled for September 1 through 5 in Muncie, Indiana.

Lawrenceville, located near the Indiana state line, is in the south central part of Illinois. Hotel and camping information can be received by contacting Sharon Gillespie, Lawrenceville Chamber of Commerce, 1112 Jefferson, Lawrenceville, IL 62439. The phone number is (618) 943-3516.

The schedule and entry forms will be sent to those attending last year's NATS or are available by filling out and sending in the coupon shown below.

This is a show you won't want to miss!



To receive an Official Entry Form, or to become a volunteer worker, complete the coupon below and mail to:

1993 Nationals
5151 East Memorial Drive
Muncie, Indiana 47302

Name _____

AMA# _____

Address _____

City _____

State, Zip _____

Please Send Dorm Information



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ENGINES FOR SALE: 1 ea new Cox TD 049 (stock)- \$35; 2 ea new factory tested special TD 051 (stock) \$40
1 ea used Rossi 15N MkII, modified venturi & Gillott finned head, for Goodyear- \$80; 1 ea new Irvine 15 modified for Goodyear (special heads for Nelson plug and Dye P/L) - \$160; 1 ea new Fox 35 Stunt (cleaned, lapped and fitted)- \$65; 2 ea K&B 6.5 MkIII newly rebuilt with Dye ABC P/L -\$125
1 ea K&B 6.5 Mk II newly rebuilt with Dye ABC P/L- \$100; 1 ea K&B 6.5 MkII older Lee custom version with sub-port induction, history unknown -\$65
-All prices quoted in U.S. dollars
-All engines in excellent condition.
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-I have many spare parts for all the above engines, write for prices.

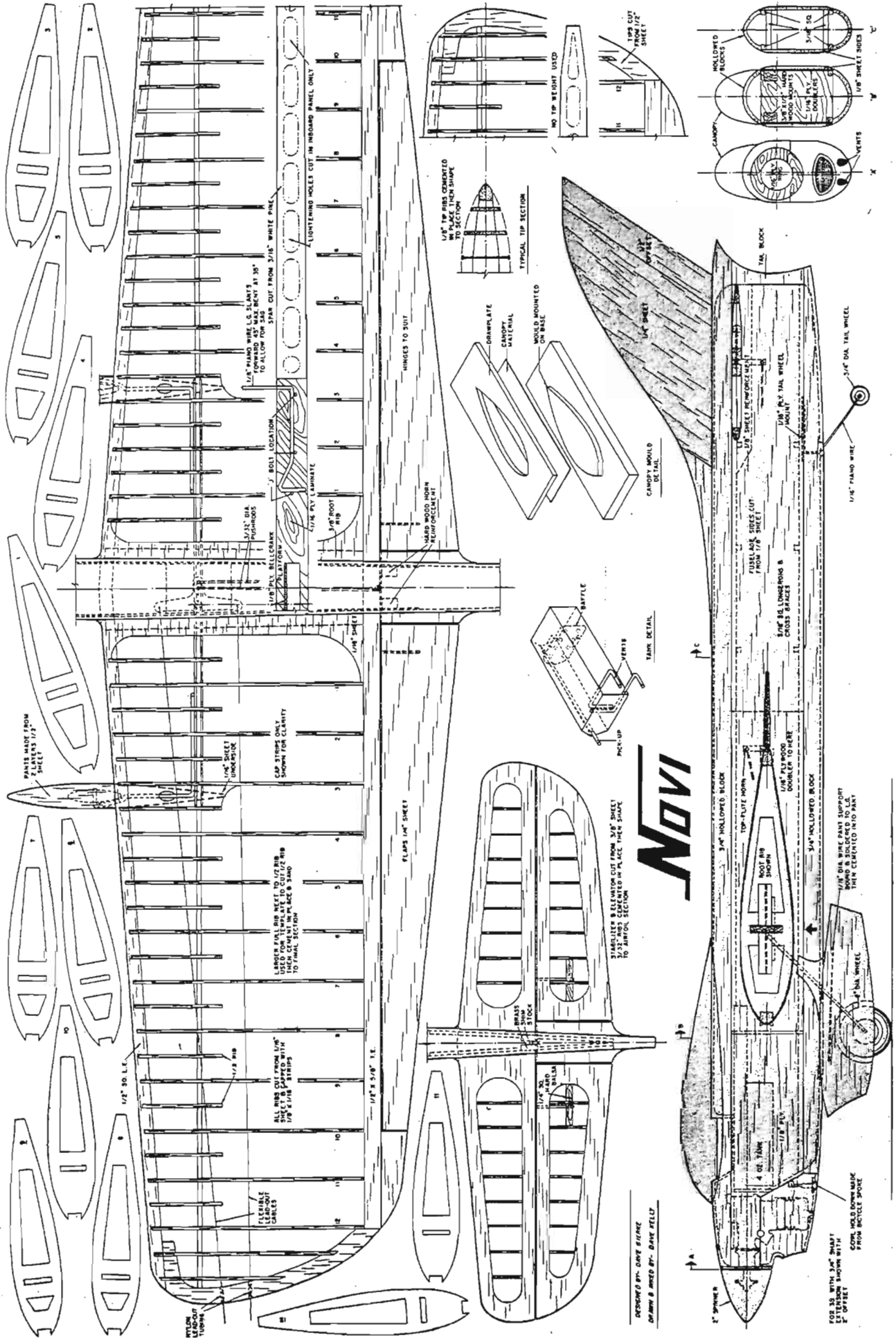
Paul Gibeault, 87 Macewan Parkway NW, Calgary, Alberta, Canada T3K 3E4
phone (403) 275-9630 24 hr answering machine, or FAX (403) 282-7917, Attn: Paul Gibeault.

WANTED looking for following kits: Guillows Reactor, Kenhi Wildcat, Panther, and Cougar, 1st version Veco Thunderbird, Jetco Sabre Stunt, A.J. Aircraft Firecat, Sterling Navion. Will trade or purchase for the above kits. Bruce Duncan, Po Box 58037, Stn L, Vancouver, BC V6P 6C5 phone 604-855-7295, fax 604-855-7285

Aviation misc. softcover: 4) "P-38 LIGHTNING IN ACTION", by SQUADRON /SIGNAL publications 1976 \$5
Propellers: 5) Rev-Up series 480 8x9, \$2 ea or \$20/doz; 6) Top Flite Pylon 8 1/2 x 6 3/4 (combat flyers take note) \$1.50 ea, or \$15/doz; 7) package of ten J & J SALES 1/2 A fiberglass racing props, these are unfinished, all for \$15; 8) Package of collector props, about 70 in total, brands include: Top Flite, Hoop, Dynamic, Tornado, Grich, Testors, B & B, Super Special, Flo-Torque, Kaysun, Air-B-Line, S Rev-Up. Be a instant prop collector for only \$40; 9) 6 ounce brass boat tank \$2.50; 10) nip Dubro Mini-Muff-L-Aire II #mm-595, \$4; 11) Tatone 29/48 peace pipe muffler \$3.50; 12) Cox 1/2 A speed pan, nip \$9; 13) Veco small size elevator horns .75 ea; 14) custom built minipipe for O.S. 65 OF with machined exhaust adapter, you supply o-ring, \$20; 15) old style Rossi 15 tuned pipe adapter \$3; 16) 2 ea nip O.S. 21F-ABC cylinder heads, \$3.50 ea; 17) nip glass/nylon engine mount for 19/20 engine \$1.25; 18) K & B 20/28 radial mount backplate \$2; 19) Fox Combat Special parts packet, includes backplate gasket, lapping compound, glow plug, venturi restrictor, 6 engine screws, \$3.75; 20) Wen-Mac "racing log" book, circa 1955, mint condition \$7.50; 21) Tatone pocket booster battery charger, \$3; 22) partial engine: Super Tigre G.20 15 FI: case, crank, bearings, & backplate only, needs cleaning, otherwise excellent, \$18; 23) collector item: Miebach 2.5 cc tuned pipe, made in Germany circa 1968, comes with original and Super Tigre headers, \$50

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Mike Hazel, 1073 Windemere Drive NW, Salem, Oregon 97304



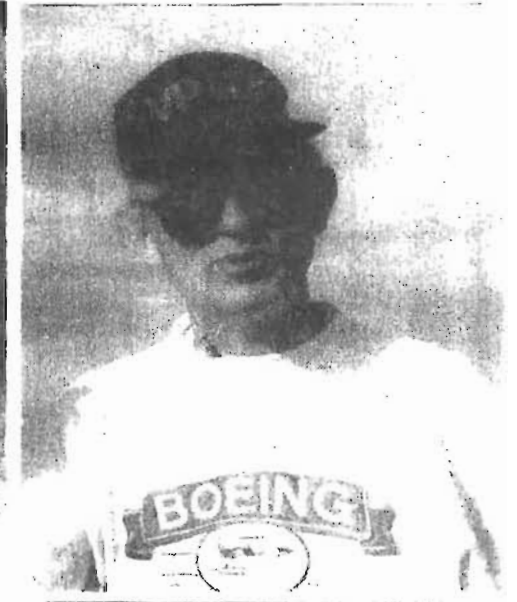
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center row) Dave Mullens, Mr. NW Carrier, John Hall, Dave Gardner
bottom row) FL competition stats man, Rich McConnell; Howard Rush, and Paul Walker.



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