

NEWS OF NORTHWEST CONTROL-LINE MODEL AVIATION

ISSUE NUMBER 111 DECEMBER 1993

In This End of the Year Issue.....

- * ROUND & ROUND, by John Thompson
- * SCALE, by Orin Humphries
- * ENGINES, ETC., by Paul Gibeault
- * 1993 FINAL COMPETITION STANDINGS
- * FORMULA GX COMBAT, by David Thompson
- * MORE WONDERFUL STUFF!!!!!!!!!!!!

Cockpit Chatter



Notes from the
editor's desk
By Mike Hazel

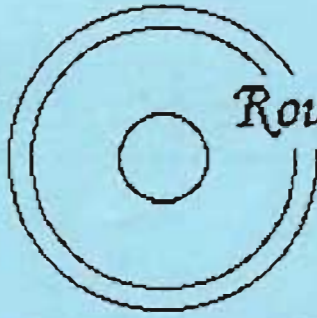
Welcome to this issue. Ye Olde Editor makes apologies for the untidy issue that last went out (Oct-Nov). Some of the graphics were recycled, and the printing picked up lots of messy lines. Also, most of the photographs were a disappointment. We will be upgrading the photo printing process in the future. The photos cost a bit more to include, so normally they are not run in each issue. This issue was intended to be put out early in the month, but conflicts sometimes arise in the life of a newsletter editor. The next issue will be designated January/February, most likely coming out about Feb 1st.

We welcome to the FL staff Mr. Paul Gibeault. Paul will be writing on engines and on related topics. If you have a topic or subject that you would like covered, then we encourage you to send your comments and questions to Paul, in care of Flying Lines. As most of you know, Paul is quite proficient in the Speed and Racing events, so I am sure that he can give relevant responses to your questions. Mouse Racers stay tuned, Paul will be sharing his expertise in the bitty bore racing class in following issues.

This issue features the end of year competition points. Any event that is not listed was included in the previous issue, and reflected the final standings for that event. The top two overall competitors for 1993 are two young gentlemen from the Tri-Cities, who coincidentally also held the top two places last year. Only this year they switched placings. Congratulations guys, and to all of you who show up in the event placings, and the overall top twenty-five places. As you know, we don't give out any awards for this, so we hope a sincere atta-boy is sufficient.

Racing fliers note, there is a new national organization just for you. It is the NCLRA (National Control Line Racing Association). If you would like to join, contact: Jerry Meyer, 8 So. Grace Street, North Aurora, Il 60542. Annual dues are \$10.00.

If you are due to renew, you will notice a nice change: FL rates have actually gone down. The new rate is \$13.00 (\$15.00 Canadian). This will still get you your 9 issues. Again a reminder, please watch the issue number and renew promptly. It is too costly to send out reminders to everyone. See you in Puyallup!



Round and Round

The Control-Line
modeler at large

By John Thompson

CL fliers get wired

Control-line model aviators have always been "on line," right?

It makes perfect sense, then, that in the computer age CL fliers are among the first to be on-line in the electronic information superhighway.

Therefore, readers of *Flying Lines* and *Model Builder* can now contact those publications through their computers.

Your Round and Round columnist — who also is the control-line columnist for *Model Builder* — can now be reached at least three different ways via computer.

So, if you have CL news to pass along either to *Flying Lines*, to *Model Builder*, or to me in my capacity as Dist. XI Control-Line Contest Board member or MACA district vice president, it's as easy as a modem hookup away.

You'll also discover, if you get to browsing, some other CL modelers on line. For example, you can reach Steve Scott, editor of the *Skywriter*, via electronic mail as well.

Those of you already on line will understand the addresses listed below. If you are new to "modeming," or planning to get on line in the future, feel free to contact me for help. (I'm still learning the ropes myself, but will pass on what I know.)

To reach John Thompson, use any one of the following email addresses. Be aware that electronic messages must be exact, and most are case-sensitive (you have to have all the capital letters in the right place.)

Compuserve: 73473,1407. (If emailing from another system, the address is: 73473.1407@compuserve.com ... note the comma changes to a period.)

America Online: JohnT4051 (If emailing from another system, it's JohnT4051@aol.com.)

Internet: jmt@efn.org (This address reaches me on a local Eugene BBS via the Internet.)

If you'd like to email Steve Scott for *Skywriter* purposes, his address on Compuserve is 71042,644. (From another system: 71042.644@compuserve.com)

For more general CL news, there are online control-line forums on both Compuserve and America Online. The Compuserve forum is moderated by noted modeler and part-time CL flier Doug Pratt. It has chat on a variety of CL topics nationwide.

People with Compuserve accounts can join the forum via the hobbies/lifestyles or aviation sections. There are a lot of general model aviation topics and one forum specifically for CL.

The America Online forum is a new one which I just started. AOL users can reach it through the aviation section (Keyword: aviation).

I check in regularly with both forums, so messages left there will reach me, and also will be read by modelers around the world.

Both of these services also have model airplane classified ad sections.

Turning to more general model aviation topics: It's currently under consideration to change the Fox .35 combat event to 80 mph combat at the '94 Regionals. I'd be interested in what people feel about that idea. Contemplated rules would be: Any plane, any fuel system, any engine, .018"x60' lines, two airplanes maximum, and all rules per AMA combat except that the speed would be monitored in the first two laps after takeoff and combat will not be started if any plane is going over 80 mph. The other plane would get air time.

Comments on any of the above topics can be sent to John Thompson, 295 W. 38th Ave., Eugene, OR 97405 — or at any of the above email addresses!

THERE SEEMS TO BE A LOT OF INTEREST IN SLOW-TYPE COMBAT EVENTS AS OF LATE. THE FOLLOWING REPORT IS ON A COMBAT CLASS CALLED, FORMULA GX. (USED TO BE KNOWN AS "GERIATRIC COMBAT". SOME OF THE BASIC CONCEPTS OF THE EVENT ARE: ANY PLANE OR ENGINE/FUEL SYSTEM MAY BE USED, BUT MUST GO SLOW! MAXIMUM SPEED IS 3.5 SECONDS PER LAP, WHICH TRANSLATES TO ABOUT 73 MPH. ALL CONTESTANTS FLY FOUR MATCHES, AND THE FINAL RESULTS ARE BASED ON POINT TOTALS FROM THE FOUR MATCHES COMBINED. POINT SYSTEM IS COMPRISED OF STREAMER/STRING CUTS, AND AIRTIME, NO KILLS. THERE IS A STRONG EMPHASIS ON AIRTIME, AND AGAINST MID-AIR CRASHES. FOR FULL RULES AND INFORMATION, YOU CAN CONTACT DAVID THOMPSON, WHO PROVIDED THE FOLLOWING REPORT:

What a beautiful day it was! On October 23rd, the Columbia Basin Balsa Bashers staged a fun fly to check out Formula GX Combat. Eight flyers came together for 4-1/2 hours of great fun. Everyone brought what they had laying around in the corners which made for quite a variety of airplanes and motors.

Throughout the entire contest we had no flyaways and only one minor line tangle when Thompson came around on Harris for one wrap. Thompson smacked the turf and Harris managed to fly out of it for the win. There were only two midairs, the first was only a tap between Thompson and Harris. Both ships stayed up until the second midair when Thompson came around inverted, lost sight of Harris who was doing a level lap at the same elevation. Harris stayed up again, as Thompson's ship skidded in with a new leaner look to it. Harris's prop had just cleared the motor, but took off the canopy, fin and half the elevator.

Campbell's new Fox Mark VI was really "hot" the first round but he managed to slow it down for the remaining three flights. The last match of the day could have given Thompson the win, but he had neglected to prerun his backup motor to burn out the afterrun oil. After four minutes of flipping he gave up. His opponent, Joe Just, had a couple of screws loose (*but what about his plane?..ed*) and couldn't get going either. Oh ya, they were backplate screws.

Yes, it was a fun day and the turf was soft for our first taste of Formula GX Combat, "Northwest style".

PLACE	POINTS	NAME	MOTOR	FUEL	PROP	AIRPLANE
1	1575	GARY HARRIS	FOX 35	12%	9X6	GRANDERDOG
2	1540	JOE CAMPBELL	FOX MK VI	10%	9X6	RINGMASTER
3	1440	JULIE RICE	FOX 36	10%	9X6	SCI
4	1240	DAVID THOMPSON	FOX 40	5%	8X7	PAIR-0-DOCS SLOW
5	1140	KEVIN MAGNUSON	FOX 35	5%	9X7	?
6	770	JOE RICE	FOX/K&B 35	10%	9X7	SKYRAY 35
7	535	CARL DUSENER	FOX 36	?	9X7	FLIGHT STREAK
8	435	JOE JUST	MAX 35S	20%	9X4	MONGOOSE II

David Thompson, 1003 Okanogan St., Wenatchee, WA 98801 day phone (509) 663-3929
eve phone (509) 662-5401



No matter how often I fly, I still dread take-offs and landings.

CLUB NOTES

NORTHWEST FIREBALLS: THE PORTLAND AREA BASED GROUP IS CONCERNED THAT THE CITY SEEMS TO HAVE OTHER PLANS FOR THE CONTROL LINE FLYING AREA IN DELTA PARK. THIS HAS ACTUALLY BEEN THE CASE FOR A NUMBER OF YEARS, BUT THE FIREBALLS ARE NOW STARTING DISCUSSION OF SECURING ANOTHER FLYING SITE.

VANCOUVER GAS MODEL CLUB: B.C.'S SENIOR CL CLUB PUTS OUT A FINE NEWSLETTER TITLED THE "HOTHEAD". IT IS NOW BEING PUBLISHED BY LONG TIME VGMC MEMBER GEORGE MOUL. IN 1962 (YES, OVER 30 YEARS AGO), HE VOWED TO NEVER AGAIN BE INVOLVED WITH A NEWSLETTER. VGMC PREZ BRUCE DUNCAN REMINDS GEORGE, "NEVER SAY NEVER".

EUGENE PROPSPINNERS: PLANS ARE ALREADY UNDERWAY FOR THE 1994 NW REGIONALS IN EUGENE. EPS PREZ CRAIG BARTLETT IS LINING UP THE SATURDAY NITE BANQUET SPEAKER. WHO? WELL, HERE'S YOUR TEASER: EVER HEAR OF THE "SPRUCE GOOSE"?

PACIFIC AEROMODELERS CLUB: LAST FALL THE PAC HAD A "NOVICE COMBAT FUN FLY". SEVERAL OF THE VETERAN COMBAT FLIERS GAVE NEWCOMERS HELP AT TRYING SOME COMBAT FLYING. ABOUT ONE DOZEN MEMBERS FLEW, USING PRIMARILY .15 ENGINE SIZED PLANES. MEL LYNE REPORTS LOTS OF GOOD ACTION: "IN ALL, A PRETTY GOOD DAY OF NOVICE COMBAT, AND SURPRISINGLY LITTLE DAMAGE. THE KEY INGREDIENTS TO SUCCESS SEEMED TO BE SLOW 50 MPH STEADY PLANES, NO WIND, AND SOFT CLAY GROUND."

WESTERN OREGON CONTROL LINE FLYERS: THIS IS THE NORTHWEST'S NEWEST CL CLUB. THE NAME IS KIND OF A MOUTHFUL, SO THEY JUST ABBREVIATE IT "WOLF". THE CLUB RECENTLY RECEIVED IT'S AMA CHARTER. MEMBERS ARE PRIMARILY FROM SALEM AND THE SURROUNDING CITIES. THE CLUB MEETS MONTHLY FOR BUSINESS, AND OCCASIONALLY SCHEDULES FUN FLYS. THEIR CURRENT FLYING SITE IS MINTO-BROWN PARK IN SALEM.

SEATTLE SKYRAIDERS: THE NORTHWEST'S LARGEST CL CLUB HAS ALREADY LINED UP THEIR 1994 CONTEST SCHEDULE- DETAILS FORTHCOMING. THEY ALSO HAVE A SWAP MEET SCHEDULED IN JUNE. AT LAST YEAR'S RAIDER ROUND-UP, ALL PARTICIPANTS ENJOYED HAVING SPECIAL GUEST BOB PALMER AT THE CONTEST AND AT THE SPECIAL BANQUET. TALK IS IN SEEING IF GEORGE ALDRICH MIGHT BE PERSUADED TO ATTEND.



The Flying Flea Market

Classified advertisements — FREE for FL subscribers

AIRPLANE PHOTO GREETING CARDS!!!!!!
WRITE TO YOUR FLYING FRIENDS ON GREETING CARDS FEATURING PICTURES OF YOUR OWN AIRPLANES! FOR INFORMATION, CONTACT JOHN THOMPSON (503) 465-1088

WANTED: SUPER TIGRE X-15 F.I. CONTACT: BRUCE DUNCAN, PO BOX 58037 STN. L, VANCOUVER, B.C. CANADA V6P 6C5

WANTED: *FLYING LINES* NEEDS COLUMNISTS FOR STUNT AND COMBAT ARTICLES. PAY IS A FREE SUBSCRIPTION, PLUS ALL THE FAME AND GLORY OF SEEING YOUR NAME AND EXPERT OPINIONS IN PRINT! CONTACT THE EDITOR, AND WE'LL TALK ABOUT IT.

WANTED: JOHNSON .35 PLAIN BEARING CRANKCASE. CONTACT: WAYNE SPEARS, 7454 N. BURR, PORTLAND, OREGON 97203

WANTED: OLD CL SPEED KITS FOR COLLECTION. LOOKING FOR: HELLRAZOR "A", HARTER'S DIZZY BUG, DIZZY BEE, DIZZY BUG, BERKELEY "SUPER-SQUIRT"; PLUS ANY OTHER SIMILAR KITS FROM THE 40'S, 50'S, & 60'S. MIKE HAZEL, 1073 WINDEMERE DRIVE NW, SALEM, OREGON 97304

ENGINES, ETC.

by Paul Gibeault

Thoughts on Winter Fuel.....

There are those of us who simply will not accept cold winter weather as a valid excuse for not flying. However, very cold weather temperature usually causes difficult engine starting. So, consider the following:

Rule #1: Always use a fully charged 12 volt glow-driver system. I'm sorry, but a ni-starter just won't do it. My cheap 12 volt motorcycle battery doesn't hold much charge in the cold, so I always charge it along with my plane. This is not necessary in warmer weather, but we're flying in the COLD!

Rule #2: Use of Kleen-Flow brand "Kleen-Start" starting fluid can be a real help. This is di-ethyl ether and a shot or two in the engine's carb can really make things come to life. It is also an upper cylinder lubricant, which means you won't damage or coke up your engine like other things people use, for instance WD-40. This product is meant to be burned in a combustion chamber. I use it. Caution: In the auto trade it is known as a "bomb in a can", and rightfully so. Since it is hyper-volatile, use common sense for storage. Keeping it outside your house, in the garage, is your best bet.

Experience has shown that adding 2-3 ounces of "Kleen-Flow" to a gallon of 10% nitro fuel is worthwhile doing. Use a plastic tube nozzle extension to spray the "Kleen-Flow" directly into the fuel can. This keeps the fumes down a bit. In any case this is something to do outside and downwind. After all, you don't want to gas yourself.

If possible, use a fuel with all synthetic oils. Castor based fuels make starting very hard in the cold as castor becomes very viscous under these conditions.

All this, however, is the quick and dirty way, and although much better than unadulterated fuels, the best all round solution is to custom blend your own tailor-made fuels.

I haven't had to blend fuel for awhile and this provided an excellent opportunity to do so. This is how I approached the task.....

1) Oil content 17%. This is the lower margin of a safe oil content, but we don't need too much oil cooling, we need heat. I like synthetic Castrol Super M, but any synthetic oil will do.

2) Lubricin N-1, 1%. My personal preference as a low viscosity (thin) film strengthener and detergent. If you can't find it, don't worry, skip it.

3) Nitromethane 25%. More nitro equates to more heat and more power and torque. Very useful.

4) Ether 5%. I use laboratory grade medical anhydrous ether, at great expense. In reality, I feel that you can substitute 5% Kleen-Flow and do equally well.

5) Propylene Oxide 5%. "Prop" sets off the nitro and causes your engine to run quite hot. However, this is winter and we need the heat, specially at idle. I can run up to 10% prop in my speed engines, with 75% nitro, in very controlled conditions. But a wrong needle setting and I have seen melted engines. Easy to do at the Nationals, in 90 degree temps, but in the middle of winter, 5% prop. will make life very smooth.

6) Methanol 47%, balance. Use the purest stuff you can find.

FULL FORMULA:	Synthetic Oil	17%
	Lubricin N-1	1%
	Nitromethane	25%
	Ether or Kleen-Flow	5%
	Propylene Oxide	5%
	Methanol	47%

Total

100% of very good stuff.

Filter the final mix through coffee or milk filter paper and keep well sealed. This stuff left uncapped will start to evaporate immediately.

Mixtures like this should be stored in metal fuel cans, and use a fuel pump. Opening caps on any model fuel can is Bad News. The methanol is hydroscopic, meaning it absorbs water vapor like a sponge.

My fuel can is only exposed through one tiny fuel line during fueling. This keeps my fuel fresh and powerful, always. It prevents moisture contamination and prevents the prop. and ether from escaping more than what's necessary.

My winter flying has been confined to using only an O.S. 40 and O.S. 25. Both run great and starting either engine is simple, much to the chagrin of others who have much trouble.

My apologies for not writing this sooner. (*just in time, Paul!!!, ed.*) I take no pleasure in watching people struggle through winter starting and flying. I have much experience, but no secrets. I hope you find this article useful.

NW Competition Standings

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

MOUSE RACE I (5 CONTESTS, 33 ENTRIES)

1)	TODD RYAN	14
2)	BRUCE DUNCAN	9
3)	JOE RICE (SR)	6
	KEVIN MAGNUSON (SR)	6
5)	MARTY HIGGS	5
	JOE CAMPBELL	5

MOUSE RACE II (2 CONTESTS, 9 ENTRIES)

1)	RON SALO	5
2)	DAVE CLEAVER	3
	CLEAVER TEAM	3
4)	JIM CAMERON	2
5)	NITROHOLICS TEAM	1

SLOW RAT RACE (2 CONTESTS, 8 ENTRIES)

1)	NITROHOLICS TEAM	8
2)	RICH McCONNELL	3
3)	CLEAVER TEAM	1

NW GOODYEAR (3 CONTESTS, 11 ENTRIES)

1)	JOE RICE (SR)	8
2)	JEFF CLEAVER	4
3)	RICH McCONNELL	3
	CLEAVER TEAM	3
5)	TODD RYAN (SR)	2
	MORRIS GILBERT	2

FLYING CLOWN RACE (4 CONTESTS, 27 ENTRIES)

1)	TODD RYAN (SR)	24
2)	JOE RICE (SR)	11
3)	JULIE RICE (JR)	10
	BILL DARKOW	10
5)	RICK MAGNUSON	9

NW SPORT RACE (6 CONTESTS, 34 ENTRIES)

1)	CHRIS COX	17
2)	JOE RICE (SR)	15
3)	TODD RYAN (SR)	9
4)	MEL LYNE	8
5)	BILL FISHER	7
	NITROHOLICS TEAM	7

AMA RAT RACE (2 CONTESTS, 6 ENTRIES)

1)	JEFF CLEAVER	2
2)	CLEAVER TEAM	1

NW SUPER SPORT RACE (6 CONTESTS, 25 ENTRIES)

1)	TODD RYAN	15
2)	DAVE CLEAVER	6
3)	RICH McCONNELL	4
	NITROHOLICS TEAM	4
	JOHN HALL	4

OVERALL RACING (35 CONTESTS, 169 ENTRIES)

1)	TODD RYAN (SR)	64
2)	JOE RICE (SR)	46
3)	NITROHOLICS TEAM	23
4)	CHRIS COX	17
5)	BILL FISHER	14
	JULIE RICE (JR)	14
7)	RICH McCONNELL	13
8)	KEVIN MAGNUSON (SR)	12
	BILL DARKOW	12
	CLEAVER TEAM	12

OVERALL STUNT (28 CONTESTS, 138 ENTRIES)

1)	DON McCLAVE	42.5
2)	CHRIS COX	41
3)	BOB EMMETT	35.5
4)	JIM CAMERON	34.5
	JACK PITCHER	34.5
6)	BOB PARKER	33.5
7)	AL RESINGER	20
8)	ALICE COTTON-ROYER	19.5
9)	PAUL WALKER	18
10)	DAVE ROYER	15

OVERALL BALLOON BUST (9 CONTESTS, 37 ENTRIES)

1)	RICH McCONNELL	24
2)	MEL LYNE	10
3)	TODD RYAN (SR)	9
4)	DAVE CLEAVER	8
	TROY LYNE (SR)	8
6)	HENRY HAJDIK	7
7)	RICHARD SCHERER	6
8)	STEPHAN COX (JR)	5
9)	MICHELLE HAJDIK (JR)	4
10)	DAVE THOMPSON	3
	JIM CAMERON	3
	JAMES COX (JR)	3

JUNIOR COMPETITOR 1993

1)	JULIE RICE	15
2)	TIM STROM	12
3)	DAVE BURDICK	11
4)	STEPHAN COX	7
5)	JAMES COX	6
6)	MICHELLE HAJDIK	4
7)	CHRIS HAZEL	3
8)	DERRICK MEADOWS	2

OVERALL COMPETITORS 1993

1)	TODD RYAN (SR)	106
2)	JOE RICE (SR)	74
3)	RICH McCONNELL	72
4)	JEFF REIN	71
5)	JOHN HALL	70
6)	CHRIS COX	68
7)	DON McCLAVE	42.5
	JIM CAMERON	42.5
9)	BOB PARKER	35.5
	BOB EMMETT	35.5
11)	BILL DARKOW	35
12)	JACK PITCHER	34.5
13)	CHUCK SCHUETTE	32
14)	TOM STROM	31
15)	MEL LYNE	30
16)	GARY HARRIS	27
17)	KEVIN MAGNUSON (SR)	26
18)	DAVE THOMPSON	24
19)	DICK SALTER	23
	NITROHOLICS TEAM	23
	TERRY MITCHELL	23
22)	AL RESINGER	20
23)	ALICE COTTON-ROYER	19.5
24)	TROY LYNE	19
25)	PAUL WALKER	18
	RICK WALLACE	18

.15 CARRIER (4 CONTESTS, 28 ENTRIES)

1)	JOHN HALL	19
2)	TODD RYAN (SR)	17
3)	JOE RICE (SR)	13
4)	LLOYD MAROHL	11
5)	BILL DARKOW	9
	TERRY MITCHELL	9

PROFILE CARRIER (4 CONTESTS, 24 ENTRIES)

1)	JOHN HALL	22
2)	TOM STROM	9
3)	BILL DARKOW	8
4)	RICH McCONNELL	7
5)	JOE JUST	6

CLASS I & II CARRIER (5 CONTESTS, 26 ENTRIES)

1)	RICK WALLACE	18
2)	JOHN HALL	16
3)	TERRY MILLER	8
4)	ROY BEERS	7
	LOREN HOWARD	7

OVERALL CARRIER (14 CONTESTS, 88 ENTRIES)

1)	JOHN HALL	60
2)	BILL DARKOW	20
	TODD RYAN (SR)	20
4)	RICK WALLACE	18
	TERRY MITCHELL	18
6)	JOE RICE (SR)	13
7)	LLOYD MAROHL	11
8)	TOM STROM	9
	JOE JUST	9
10)	KEVIN MAGNUSON (SR)	8
	TERRY MILLER	8

OLD TIME STUNT (7 CONTESTS, 30 ENTRIES)

1)	BOB EMMETT	18
2)	DON McCLAVE	11
3)	RICH McCONNELL	9
	DAVE THOMPSON	9
5)	AL RESINGER	7

PRECISION AEROBATICS (18 CONTESTS, 84 ENTRIES)

1)	CHRIS COX	41
2)	JIM CAMERON	34.5
3)	BOB PARKER	33.5
4)	ALICE COTTON-ROYER	19.5
5)	PAUL WALKER	18

RIVETS, PANEL LINES, AND GRUNGE

by Orin Humphries

At a Nats I judged long ago I saw the first effort by some fellow, a B-25, with rivets simulated. He had used a syringe, according to his documentation. Something had not been right, because the rivets if enlarged to 1:1 would have varied from golf ball size to grapefruit. It would have been better had he not attempted it. This brings us to the theme of this installment: It has to look right.

A scale modeler must put all other things aside, how he feels about it, what its artistic appeal is, and so forth. In the cold light of day, the only question is, "How real does it look"? In the later '60s and through the '70s many Scale builders were drawn to the technology of the Aerobatics models. People were putting black ink lines all over their planes to simulate skin seams and dots for rivets. I saw a P-51 that had a span of around 33", 1/12 scale, with black lines on it that were a good 3/32" wide. In a way it looked gorgeous, all wrapped up in a detailed pattern of black lines on silver. The trouble was no 1:1 Mustang ever appeared in photos or in real life at airshows with skin seams over an inch wide nor were they black. There was simply too much contrast between the seam and the material adjacent to it. It had very high eye appeal, this replica; there was a powerful artistic appeal there. It had become an art form rather than a Scale event entrant. This is okay on Aerobatic birds where the name of the game is appeal, but not in Scale.

It made me go to an airfield and look at 1:1 craft up close and personal. What did seams really look like? How much contrast was there between the appearance of the seam and the surrounding skin? And what did weathering really look like? This experience along with a study in my huge photo collection back at home answered the question about size and contrast. Photos are great sources of information as they show a reduced size view, rather like the scale plane we build at home. The model and the photos should appear close. I decided as a result that the proper medium to use for skin seams was drafting pencil vice ink. There are a variety of lead hardnesses which allow you to select what looks most realistic on your colors and at your size. Art supply departments have these. Panel lines on a light color are relatively easy to see; good luck trying to see them on a dark blue Corsair! How to protect the pencil lines will be covered after the next topic.

What does weathering look like? At the airport I saw that the weathered material coming out of seams was really finely ground metal dust from the two surfaces rubbing together. It appears black like soot from a candle. Metal dust looks black when the particles are this small. The smear suddenly appears at a seam and proceeds down stream. It does not appear on the upwind panel. You have to look at airplanes or their photos to know the real direction and curvature for these streaks at the various locations where they are found. What do you have available to simulate these smears? As a teacher at the time I instantly recognized the pencil sharpener as the very best source, all things considered.

How do you get access at an airfield? Take along things to establish who you are and what you are doing: your project, a Polaroid of it, the plans, etc., and something with your name, address and phone number on it. Leave your name at the counter and promise two things: not to touch anything and to stay within sight of the office. Tell them you need to study full size planes up close in order to make your plane's finish look more realistic. They usually will be happy to accommodate you.

In your shop, you put a piece of tape with a clipped, square corner on the scale project at an intended seam edge. Stick your finger in the collector from the sharpener and rub the graphite on the plane. Your finger is partly on the tape and partly off. With the tape removed you get the clean, crisp outer or upstream panel edge.

Other stains such as fuel, oil, and miscellaneous materials can be easily simulated with artists' chalks and sometimes water colors. All of these weatherings can be protected with a very thin overcoat of clear, say four times the usual amount of thinner. Lets talk about the amount of gloss.

Even a 1:1 plane that is shiny at the moment would not look as shiny if you were at the scale distance away from it. That is, if you were far enough away for it to appear the size of your 1:X project at home, the atmosphere between you and the 1:1 would gray it out a bit and knock off some of the shine. Conversely, a very flat finish on a 1:1 will look a bit shinier than life at a good distance, suitable for smaller scale ratios such as 1:16 projects. My 1/8 T-34C was over sprayed with 1 part flat and 2 parts gloss clear

with 4:1 thinner. I just knocked of the edge of the shine. The atmospheric effect dictates that you never use chrome or white paint on a plastic model as they will appear simply too bright for believable appearance at a distance. They must always be knocked down with a touch of black. The same is true to a lesser extent on our larger flying projects. They will look more realistic when grayed out a skosh. The gray paint in Air Force Europe II camouflage (lizard) looks lilac gray at distances of 100 yards or more, due simply to the amount of air between you and it. Blue gray shading added to any paint on a replica will make it look the most like a 1:1 a block away.

Rivets are best done with a syringe and, say, Elmer's glue. Syringes can be obtained in model railroad catalogues/departments where they are sold for oiling small parts. Maybe your doctor could give you one that diabetics use. Lay out the lines with hard pencil, and put a ruler along side the line for the proper spacing. It takes 45 minutes to put rivets on one of four wing skins on a monoplane. After you have done one panel you will have the feel of the spacing and not need the ruler further. Spacing will vary depending on the part and location. Go to an airport to see this. I tried mixing a little water with the glue, but you can get too much. This makes the dot shrivel like a micro raisin. The right amount can look more like a flush rivet. In the end I just used the glue straight. After they are on you spray a last coat of color over them to hid the fine pencil lines. Last comes the weathering and the thin clear over that.

Bob Karlsson put excellent flush rivets in dope this way. He sprayed on a light color undercoat first and then two quick thinish coats to a wing panel. He'd wait a moment just until the outer paint film had started to form, then he'd use his rivet tool. That was a piece of the right size brass tubing with a sharp edge on the rim of an end. He'd spun a drill bit in the end first. He'd place the end against the drying paint and twist it, cutting through the film. As the paint finished drying the film would shrink a tad, exposing a very narrow ring of light paint, marking the location and size of the rivet. He was careful not to attempt an area too large to do before the film was too dry to respond properly. That took a little practice. It looked great!

In parting, how you feel about the plane is one thing, quite separate from what is the most realistic appearance. Perception and Reality are difficult to separate. I shall deal with problems stemming from this very soon. Good luck out there, don't let the plane climb above head height in the wind!
Orin Humphries, 19805 48th Ave. W., #A101, Lynnwood, WA 98036-5583, 206-776-5517

**13th
ANNUAL
N.W. MODEL
EXPO '94**

THE PACIFIC NORTHWEST'S LARGEST MODEL SHOW



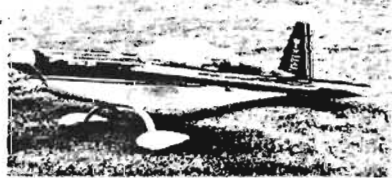
FEB. 5th-6th

9 AM-6 PM SATURDAY **10 AM-5 PM SUNDAY**

**WESTERN WASHINGTON FAIRGROUNDS
PUYALLUP, WASHINGTON**

RADIO CONTROLLED MODELS

OVER 80 MANUFACTURERS—SWAP SHOP—HUNDREDS OF MODELS—CONCESSIONS
AIRCRAFT—BOATS—CARS—RAILROADS
INDOOR-OUTDOOR R/C CAR RACING—BOAT DEMONSTRATIONS IN OUTDOOR POOL
CONTROL LINE DEMONSTRATIONS—R/C HELICOPTER DEMONSTRATIONS
ELECTRIC R/C PLANE DEMONSTRATIONS



Sponsored by the Mt. Rainier R/C Society

**ADULTS: \$5.00
CHILDREN (6-12): \$3.00 w/adult
SENIOR CITIZENS: \$3.00**

FLYING LINES

1073 WINDERMERE DRIVE NW
SALEM, OREGON 97304

DEC 21 PM

FLYING LINES is produced by a staff of volunteers interested in keeping lines of communication open between Northwest region control line aeromodelers. FLYING LINES is independent of any organization, and is solely supported by its base of subscribers.

The FLYING LINES staff: John Thompson, Rich McConnell, Orin Humphries, Joe Just, Paul Gibeault, Jim Cameron, editor, Mike Hazel. Contributions for publication are welcomed. Any material submitted to the editor which is not for publication should be indicated as such. Duplication of contents is permissible, provided source is acknowledged.

FLYING LINES is published nine times per year. Subscription rate is \$13.00 for USA, and \$15.00 for Canada (U.S. funds). Subscription expiration is noted on the mailing label beginning and ending issue numbers are listed after name.

DEC 21 PM 1993

Claire Chennault
USA 40
DEC 21 PM 1993

RUSH TO:

JOHN THOMPSON

295 WEST 38TH AV

EUGENE, OR 97405

FIRST CLASS MAIL