

FLYING LINES



NEWS OF NORTHWEST CONTROL LINE MODEL AVIATION

1073 WINDEMERE DRIVE NW
SALEM, OREGON 97304

EDITOR: MIKE HAZEL

May 1986

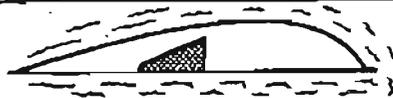
#73

INSIDE!

1985/86 Drizzle Circuit Finals Report
"Scale" by Orin Humphries
"Sunday Flier" by Larry Miles
"Round & Round" by John Thompson
plus.....
Updated racing records
Regionals Trivia
and special feature.....
 "Batteries can be dangerous" by
 Morrie Leventhal

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

Here we are at issue number 73. Whilst perusing thru some back issues I noted that the May issue is the anniversary milepost. This also being the May issue, it is appropriate to note our SEVENTH year of publication has been completed. On to number eight!

Contest Calendar: Last month the flag was raised in asking for input regarding an expanded calendar. This was in response to Chris Peter's letter desiring same. Response either pro or con has been zilch-o. Uncle John has the only response in his Round & Round column....please read.

Also please read his plea for help with our newsletter. (this one is near and dear to my heart!) While several serve in various capacities at present, there are tasks which could be delegated out which will ensure that your editor will not burn out. You don't really want to see me go up in a wisp of smoke now do you? Please give me a call at (503) 364-8593 and volunteer today!

One volunteer that has come forward is Paul Gibeault. He has graciously offered to author an engine column for a spell. Be looking forward to his first column soon.

CANNED NATS: Remember that June 13 is the deadline for pre-entry at the big do in Vancouver. Look for entry forms and other information that will be made available at our Regionals. By the way, I understand that the seven entry minimum for each event is not really enforced. This should be good news for those participating in specialty events. See you up there, eh?

Regionals time in Eugene is almost upon us. It would be quite repetitive to mention that this is the CL meet you don't want to miss, but we'll repeat ourselves again anyway. Don't miss out on this years bash, since the future of this meet is now up in the air. While something will or might replace it, who knows? If anybody needs some more Regionals contest flyers, we have some more at FL. Just ask.

Regionals Trivia: Test your Regionals history knowledge. (answers further back in this issue)

- 1) Name the highest entered event and year in Regionals history.
- 2) Can you name all of the contest directors in the 15 year period? (hint: 5 male, and 1 female)
- 3) What two consecutive years had the lowest attendance and why?
- 4) Have there ever been national records set at the Regionals?
- 5) Has the Regionals always been at least two days of schedule?
- 6) What major meet did the Eugene Regionals replace?

We could go on with all kinds of questions, but will stop here. If any of you have some special memory of either contemporary or long gone Regionals, write it down and send it in. Others might like to hear some reminences. Personally, the regionals that stands out in my mind was one I did not attend. That was in 1981. I was busy waiting for my second son to be born, which occurred in the following week. I am not tooting my horn, but could we get a count of those attending almost every year? 1981 was the only year that I missed.

You will note that the photo page is missing this issue. Sorry bout that! Look forward to a double photo page next month when we have a full report on the Regionals. Also due is a report on the Spanaway contest.

Well, I'm due back in the workshop. Read on.....

THE DRIZZLE CIRCUIT

ROUND and ROUND in the RAIN?



DAVE GREEN IS DOUBLE WINNER IN CLOSE DC CHAMPIONSHIP

PORTLAND, Ore. — How close was the 1986 Drizzle Circuit finish?

It was so close that Super Sport racers went into the final day of the five-contest winter season with a tie for first place.

It was so close that the Northwest Sport Race fast-heat competition ended in a three-way tie.

How was the 1986 winter for flying racing planes in the Northwest?

It was so nice that not a single serious rain shower touched any of the five contests. People felt drops of rain and put on their rain suits a couple of times...waited a few minutes and took them off again.

DC number eight was that kind of series.

When the sounds of racing died away over Delta Park April 13, Dave Green of Astoria, Ore., had repeated his feat of the 1983-84 season by winning championships of both Northwest Sport Race and Northwest Super Sport Race.

It was no easy task, however. Green went into the final race tied for first place with John Hall in Super Sport and only six points ahead in Super Sport Race. The showdowns came on a day when every single plane finished each and every one of the 12 preliminary heats and the two feature races.

Green settled the Northwest Sport Race issue decisively by winning Contest No. 5 with a 9:03 time, while his closest chaser, the Beers-Cole Racing Team, failed to make the feature. S&S Racing Team, made up of Dick and Rich Salter of Seattle, Wash., passed Beers-Cole for second place overall points.

En route to the NWSSR win, Green recorded two first place finishes, two seconds and a fourth.

The Super Sport Race finale had all the makings of the Gunfight at Jim Walker Field, as Green and Hall came in with equal points and equal desire to win. Hall and the rest of the racers once again saw Green demonstrate how champions respond to challenges.

Green had served notice in the warmup event, Slow Rat Race, of his preparation for the day. He used his Super Sport Race plane to win that event with a 7:14 time, some 31 seconds below the Super Sport Race feature record.

As if fate were trying to get things over early, Heat 2 of Round 1 pitted Green and Hall together. Green chose that moment to shatter the NWSS heat record with a 3:14 time. Not only was the heat 12 seconds faster than the current record, but it was nine seconds faster than the record retired last June when the 10-percent nitro limit took effect.

Green backed up that performance with a 3:18 in Round 2, while Hall limped to another second place and a seat on the sidelines for the feature.

As if that were all that fate felt necessary, Green encountered equipment problems and coasted to a third-place in the feature race. His troubles in the feature opened the door for a donnybrook between John Thompson and S&S, with Thompson winning at 7:44 by a scant 8-second margin.

The feature race time nipped one second off the Super Sport Race feature record, which had been owned by Green. Considering that Green held the record at 6:52 under unlimited nitro rules, that record is likely to drop considerably within the coming year.

En route to the Super Sport Race Championship, Green scored two first place finishes and two thirds, failing to make the feature once.

Here is the complete history of Drizzle Circuit champions:
 1978-79 NWSR (Old rules): Mike Hazel, Ringmaster, Fox .36.
 1979-80 NWSR (Old rules): John Thompson, Ringmaster, K&B .35.
 1980-81 NWSR: Dick Salter, Ringmaster, Fox .35.
 NWSS: Mike Hazel, Cro-Magnon SS, K&B .35.
 1981-82 NWSR: Dick Salter, Ringmaster, Fox .35.
 NWSS: Mike Hazel, Cro-Magnon SS, K&B .35.
 1982-83 NWSR: Greg Beers, Yak-9, Fox .35.
 NWSS: Dave Green, Minotaur, K&B .35.
 1983-84 NWSR: Dave Green, Yak-9, Fox .35.
 NWSS: Dave Green, Minotaur, K&B .35.
 1984-85 NWSR: Beers-Cole Racing Team, Yak-9, Fox .35.
 NWSS: Dave Green, Minotaur, K&B .35.
 1985-86 NWSR: Dave Green, Yak-9, Fox .35.
 NWSS: Dave Green, Minotaur, K&B .35.
 Here are the complete results of Contest No.5:

NORTHWEST SPORT RACE (10 entries)

1. Dave Green, Astoria, Ore. -- 9:03. Sterling Yak-9, Fox .35 stunt, other airplane data unavailable. Pilot Bill Varner, pit crew Dave Green (Dark Ages Racing Team).
2. S&S Racing Team, Seattle, Wash. -- 9:12.
3. Glenn Salter, Seattle, Wash. -- 9:36.
4. Wayne Drake, Troutdale, Ore. -- 11:11.

NW SUPER SPORT RACE (7 entries)

1. John Thompson, Cottage Grove, Ore. -- 7:44. Killer, Mike Hazel design, 42" span, 33 oz., balsa/plywood/foam, Monokote/K&B Super Pox, internal controls, K&B .35, Dave Green rework, Dark Ages Racing Equipment epoxy-glass copy of 9x7.5 pylon racing prop, cut to 9", Thunderbolt standard long plug, contest-supplied 10% nitro fuel, fastfill, shutoff, Hazel tank. Pilot Gene Pape, pit crew John Thompson.
2. S&S Racing Team -- 7:52.
3. Dave Green -- 7:44.
4. Dick Peterson, Renton, Wash., 4:00 heat.

HEAT WINNERS

NORTHWEST SPORT RACE

ROUND 1: Gene Pape (4:48), S&S Team (4:35), Beers-Cole Team (4:26).
 ROUND 2: Wayne Drake (4:47), Dave Green (4:29), Glenn Salter (4:47).

NW SUPER SPORT RACE

ROUND 1: John Thompson (3:40), Dave Green (3:14), Dick Peterson (4:20).
 ROUND 2: S&S Team (3:50), Green (3:18), Thompson (3:37).

SLOW RAT RACE (3 entries)

1. Dave Green -- 7:14. Minotaur, original, 34" span, 25 oz., balsa/spruce/maple/basswood, K&B Super Pox/Econokote, K&B .35, Green rework, Dark Ages Racing Equipment 8.75x7.5 epoxy glass prop, K&B plug, DARE 3.5-oz. uniflow tank. Pilot Bill Varner, pit crew Dave Green (Dark Ages Racing Team).
2. Dick McConnell, Seattle, Wash. -- 9:52.
3. Glenn Salter -- 11:41.

MODELERS LAMENT

SPRING IS SPRUNG,
 AND SUMMERS HERE,
 IF I'D BUILT LAST WINTER,
 I'D COMPETE THIS YEAR!

DRIZZLE CIRCUIT FINAL STANDINGS AND STATISTICS

NORTHWEST SPORT RACE	NW SUPER SPORT RACE	FAST TIMES
1. Dave Green . . 46	1. Dave Green . . 26	
2. S&S Racing . . 37	2. John Hall. . . 23	HEAT
3. Beers-Cole . . 32	3. John Thompson. 21	NWSR: 4:24 (Green, Ptsn, BC)*
4. Glenn Salter . 27	4. S&S Racing . . 18	NWSS: 3:14 (Dave Green)
5. Wayne Drake. . 18	5. Dick Peterson. 17	
6. Dick Peterson. 16	6. Dick McConnell 10	FEATURE
7. Gene Pape. . . 12	7. Glenn Salter . 9	NWSR: 8:53 (Beers-Cole)
8. John Hall. . . 10	8. Beers-Cole . . 8	NWSS: 7:44 (John Thompson)
Dick McConnell 10		
10. John Thompson 9	* NWSR Fast-Heat trophy awarded to Green after	
11. Bob Hoffman . 2	glow-plug spitting competition.	
Jeff Hinrichs 2		
Ralph Cooney. 2		
14. D. Phillips . 1		

CONTEST REPORT: NW CL Speed Record Trials, April 20, Portland

Six speedsters turned out for this cozy little contest. Not very many officials were turned in as everyone was having too much fun blowing up all their equipment. Actually, that is not 100% true. Roy Beers put up a flawless flight with his "A" job. (read that slow and steady).

Here's a run down on the troubles and woes. Loren Howard was the main master of disaster for the day. He had the high speed of the day with his sidewinder jet, but blew a reed valve on the previous attempt to tune up. He later followed up with an overlean flight on his "D" ship, which was a real melt-down for his newly rebuilt O.S. 65. Back to shop again!

Chuck Schuette put up a couple of practice flights, but did not get an official FAI clocking. A vibration problem plagued his model, with the cracked pan blues.

Greg Beers tried in vain to get his piped "B" job in tune. He gave up after hunting with several settings.

Mike Hazel couldn't even get his Formula 40 in air, owing to fuel tank demons that were not exorcised during the course of the meet.

Dan Burdick did get a clean flight, but also had the burst bladder blues on the starting line. He is threatening to go to a hard tank.

All in all, thought the results were practically nil, this meet gave area speedsters a good tuneup session. (?) Actually, it would be more accurate to say it gave them an opportunity to find their problems.

Following are the results. Isn't it interesting that no matter the entry level, the F40 event is always closely battled?

Formula 40 Speed (3 entries)

- 1. Loren Howard, Vancouver, Wash. 143.60 mph
- 2. Dan Burdick, Seattle, Wash. 142.80 mph

Jet Speed (1 entry)

- 1. Loren Howard, Vancouver, Wash. 162.54 mph

D Speed (1 entry)

- 1. Loren Howard, Vancouver, Wash. 161.37 mph

A Speed (1 entry)

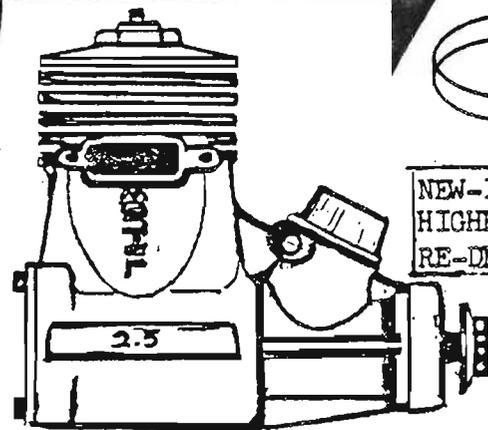
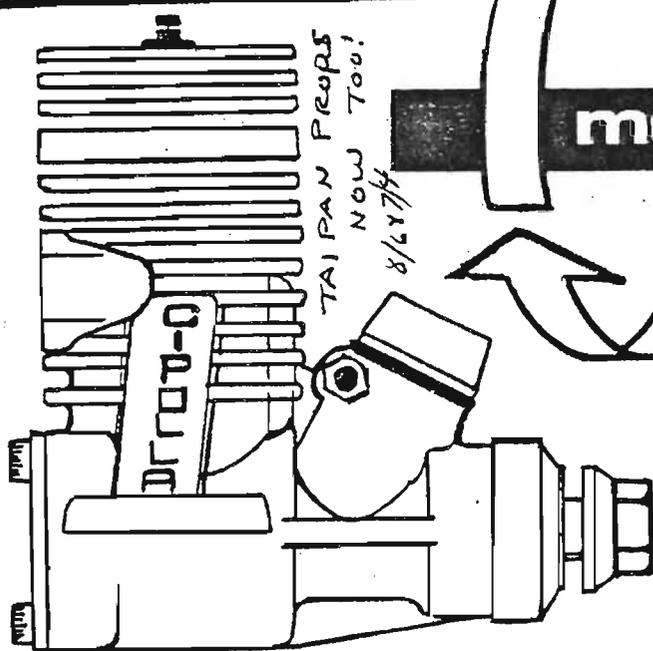
- 1. Roy Beers, Vancouver, Wash. 107.61 mph

COMBAT

motore cipolla

↑
motore cipolla

NEW-IMPROVED
HIGHER-RPM
RE-DESIGN



MASTER COMBAT 2.5 AAC-SE \$79.95
"SALE" PRICE....\$59.95

CIPOLLA COMBAT .36 ABC-RE \$89.95
Intro-"SALE" Price...\$69.95

Weight: 195 grams (6.96 Oz.)

RESERVE YOURS NOW!

MOTORE CIPOLLA COMBAT
608 W. Main/P.O.Box 111
Jasonville, IN 47438
COD-TEL: 812-665-3723
(you pay COD charge)
Please add-\$3. shipping

AL Kelly COMBAT PROPS
RUSSIAN or ENGLISH...
\$4.25
AMA-(FAST)...\$4.50
SLOW (coming soon!)

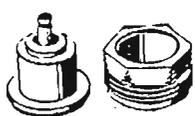
Technical features
Stroke 14 mm.
Bore 15 mm.
Swept volume 2.48 CC.
Weight 165 g.
Power (COMBAT) 0.7 HP at 27.500 rpm

Std. Plug insert
(Combat) \$3.95



Hi-Nitro
Racing Head
\$5.95
(for std. plug)

combat plug
\$1.49



Combat Head
(stock)

Needle & assy. complete-\$2.99

Standings in Northwest Sport Race and Northwest Super Sport Race were revised and Slow Rat Race standings opened for 1986 at the April 13 Drizzle Circuit Contest.

Flying Lines keeps track of the performances of Northwest Control-Line model aviators in sanctioned AMA/MAAC Northwest competitive events. Information about the scoring system and printouts of complete standings are available from FL.

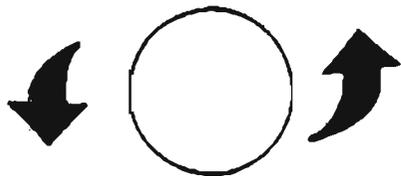
Top fliers in events in which standings have changed since publication of issue No. 72, computed as of April 23, are:

NORTHWEST SPORT RACE (4 contests, 39 entries)		
1. S&S Racing Team	Seattle, Wash.	35
Dave Green	Astoria, Ore.	35
3. Glenn Salter	Seattle, Wash.	23
4. Beers-Cole Racing	Vancouver/Portland	17
5. Wayne Drake	Troutdale, Ore	15
NORTHWEST SUPER SPORT RACE (4 contests, 29 entries)		
1. Dave Green	Astoria, Ore.	25
2. John Thompson	Cottage Grove, Ore.	23
3. John Hall	Puyallup, Wash.	13
4. Dick Peterson	Renton, Wash.	11
5. Dick McConnell	Seattle, Wash.	8
SLOW RAT RACE (1 contest, 3 entries)		
1. Dave Green	Astoria, Ore.	3
2. Dick McConnell	Seattle, Wash.	2
3. Glenn Salter	Seattle, Wash.	1

OVERALL RACING (10 contests, 73 entries)		
1. Dave Green	Astoria, Ore.	64
2. S&S Racing Team	Seattle, Wash.	41
3. Glenn Salter	Seattle, Wash.	24
4. Beers-Cole Racing	Portland/Vancouver	23
John Thompson	Cottage Grove, Ore.	23

CONTESTS COUNTED

- Northwest Sport Race Drizzle Circuit Contest 2, Jan. 12.
- Northwest Sport Race Drizzle Circuit Contest 3, Feb. 9.
- Northwest Sport Race Drizzle Circuit Contest 4, March 9.
- Northwest Sport Race Drizzle Circuit Contest 5, April 13.



ROUND & ROUND

By: John Thompson

Rummaging through the dusty corners of my office, workshop and nitro-aded brain for a topic for this month's R&R column, I chanced upon no single large topic to discuss but several small items worth remarking upon.

* First of all, from the April edition of FL, the question of a national contest calendar. As the person who compiled the calendar published in FL during 1985, perhaps I can shed some light on why we did it and why we stopped.

We started for the reason advanced by Chris Peter _ to give our out-of-region readers some local contest news _ as well as in service to our Northwest readers who might be traveling or simply interested in what's going on in other parts of the world. We felt it added to the overall quality of the newsletter and the communications network Chris mentioned.

However, it was an effort that more or less collapsed of its own weight. Compilation of that calendar took a full evening each edition. Though Chris credited it with being more complete than the MODEL AVIATION calendar, most of the entries in the FL national calendar were in fact taken from the MA calendar. Much of the time spent on the compilation was translating the arcane AMA listings into readable English. A few clubs sent us their flyers, but only a few.

I hope the current editor finds a way to work the national calendar into the newsletter, but there's really only one viable way for that to occur: Some FL reader needs to volunteer to compile, type and send that calendar to FL on a monthly basis. There you are, people, the ball's in your court.

* While we're at it, let's talk semantics. We call all of you who receive this newsletter "readers," but in fact you are something else. You are "members." FL has always been called the Northwest's COMMUNICATIONS NETWORK. That's not merely a cute term for "newsletter." It is the actual description of what FL is and what it does. It is the organ through which Northwest CL modelers communicate with one another, and thus the organ which keeps the region together and functioning as a unit.

As with any organization, FL is only as good as its members. A single editor or a small crew of workers simply cannot do an adequate job. Each member of the chain must contribute to the overall strength.

There are still several jobs that need to be taken off the editor's back, and the back of the former editor, who is trying to regress to "member" status. Those of you out there who wish to see FL continue to mean what it has to the Northwest' CL fraternity for the past seven years can find your opportunity to assure that status by pitching in and volunteering for those jobs.

Needed are contest reporters, statisticians, circulation helpers, columnists in various areas and several other key people. Contact the editor to find out how you can help.

* Everyone is gearing up for the Canadian Nats in Vancouver, B.C., and it promises to be a good show. Paul Gibeault in issue No. 72 warned of the need to read the rule book before heading north. I might add one small note to his comments.

Competitors with an eye to the record book will be interested to know that FL Northwest competition standings will apply to the Canadian Nats but RECORDS in some events will NOT.

Specifically, records will not be counted in racing events, because of differences in rules between the Canadian and AMA or Northwest versions. The main differences are that Canada does not have the AMA 10-percent nitro fuel limit, that Rat Racers do only two pit stops instead of AMA's three, and that Goodyears and Mouse Racers use different lines.

FL records are counted only events using AMA or Northwest official rules. Northwest official rules refer to Northwest Sport Race and Super Sport Race, which are in turn governed by AMA unified racing rules, which contains the 10-percent nitro rule.

* Going back to Chris Peter's observations about FL's content. Chris is incorrect in saying that FL has moved away from technical and beginner articles, but he is undoubtedly reacting to the normal seasonal shift of FL content. As he is one of the newer readers, he hasn't had enough time to see the whole cycle.

FL's content leans heavily to technical and beginner topics in the winter, when flying activity is at an ebb, and moves toward statistics -- contest results, standings and records -- in the summer when contest activity is heaviest. This is for simple reasons of space and time. There is less room in the newsletter for the "timeless" material in the summer, and much more room in the winter. FL remains dedicated to serving all participants in the hobby, from the casual sport flier to the dedicated competitor.

* A final note about the newsletter, and then on to other topics. We are embarking on the first season in which the physical production of the newsletter has been entirely on one person. This means that the editor is going to depend even more than ever on contest directors and organizers to get their calendar information in to him early.

Perhaps even more importantly, a heavier burden is falling upon contest organizers to do post-contest reporting. The contest reports that more or less automatically found their way into the newsletter, the standings and the records, will not necessarily do so now. It will be necessary for somebody to take on the role of contest reporter at each meet and to get the results to the editor -- and to the statistician, which is me for the time being. No results = no report = no credit in the standings or records. Nuff said.

* POP'S TOPS: Boy, have you seen the new J&J Sales catalog? Great line of CL stuff. Send off to J&J Sales/Pop's Props at 709 Crescent, Sunnyside, WA 98944 for your copy, and tell them FL sent you. The info about custom glass props alone is worth the effort.

* DOO THE FOX: Versions of MACA Combat, FoxDoo, Super Slow Combat, and the like are popping up all over. Not sure, but we think Northwest Sport Combat may have started all this about four or five years ago. Anyway, Northwest experience has shown the Fox .35 stunt/VooDoo combination works. Barry Baxter from Southern California says they opened it up to any design and Fox stunt or McCoy Redhead .35 engines and had lots of fun. Chief advantage of the class is that the planes fly well enough to be useful in combat -- they stay out there on the end of the lines and turn well -- but are slow enough for even novices to handle them. This is what Slow Combat was supposed to accomplish but never quite did. Our hats off to Gene Pape, who invented the NWSC event, and Riley Wooten, who authored the MACA Combat concept. Opinion: Don't give up the .018 lines. The FoxDoo's, at least, fly fine on those -- why give up the safety margin?

* FAI-YI-YI: From foreign lands come the following proposals to revise FAI Combat: Minimum dry weight 15.7 oz., maximum span 1 meter, maximum root chord 15.74 inches, maximum prop diameter 7.79 inches, suction fuel systems only. Come on, you guys! Listen: Go to one airplane per match, 60-foot lines, and a \$100 price limit on engines. That would solve all your FAI Combat problems and make the event as popular as mustard on hotdogs.

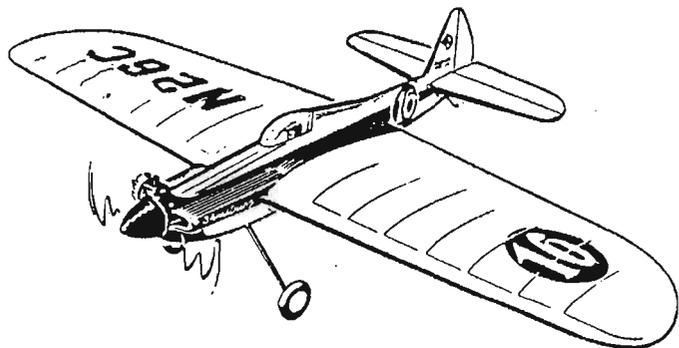
* FLYING HIGH: Congratulations to Pete Bergstrom and Marie Adamisin on their nuptials, due to take place in Dearborn, Mich., about the time you read this. First comment heard on the flying field: "What a guy won't do to get some stunt tips!" Now the famous Adamisin stunt family has a real "Competitor" in their midst.

* SHRAPNEL: A proposal to split the Control Line Contest Board into separate boards for each events is running into heavy flak, says Ed Robbert, author of the idea. We admit to firing a salvo ourselves. Our point is, CL needs to reduce fragmentation, not increase it. Ed has the sport's best interests at heart, but we agree to disagree. Watch MODEL AVIATION for more puffs of smoke.

* 0000000: Nice, nice. SST Specialty Products makes a combination pine and aluminum crutch to hold the engine of your stunt plane rigid and make all your horsepower go into driving the plane forward, not shaking it apart. They're custom made. Write SST Specialty Products, 29746 Westfield, Livonia, Mich. Get in line behind me.

* BOTTLE NEWS: Reading the fine print of the Sig Catalog, I discovered that Sullivan makes 8 and 16-ounce fueler bottles that work great as racing fast-fuelers with only minor modifications. And you just finished carving one from scratch from a plastic log! I bought one and used it on the Drizzle Circuit. That bottle can't be beat -- I finally won a race!

* SPACE AGE: Then here in the mail comes the catalog for Model Research Laboratories with such mysterious offerings as boron filament, kevlar thread, composites of carbon fiber and kevlar, carbon fiber paper, kevlar cloth, clear generic mylar coverings, Cox engine rework, speed pans, props, Rossi and Picco engines and on and on. Try Model Research Laboratories, 25108 Marguerite Pkwy, B-160, Mission Viejo, CA 92692, and tell them FL sent you.



THE SHOESTRING IS BACK!

PERFECT FOR THE NEW "FOX-BERG"
EVENT. ONE OF THE BEST ALL
AROUND C.L. PLANES EVER DESIGNED.

**CARL GOLDBERG
MODELS INC.**

4734 WEST CHICAGO AVE., CHICAGO, IL 60651

Visit our truck at the Regionals
on Saturday and Sunday!



**Eugene
Toy and
Hobby**

Phone 344-2117
32 East 11th Avenue
Eugene, Oregon 97401

WE HAVE WHAT YOU NEED

The Northwest's most
complete control line supply
COMPETITIVE PRICES

"If we don't have it-----
----- we'll get it!"

WE SHIP UPS EVERYDAY
call (503) 344-2117

Serving the modeler for 52 years

BATTERIES CAN BE DANGEROUS

By MORRIE LEVENTHAL

MOST OF US ARE AWARE THAT AUTOMOBILE BATTERIES GIVE OFF HYDROGEN GAS WHEN CHARGING OR DISCHARGING, AND CAN EXPLODE UNDER CERTAIN CONDITIONS. THEY ARE ALSO AVAILABLE FOR "ARC WELDING" WHEN THE TERMINALS ARE SHORTED, HOWEVER THE GREATEST DANGER WITH BOTH THE AUTOMOBILE BATTERY (LEAD-ACID) AND THE NICAD (USING A STRONG BASE, POTASSIUM HYDROXIDE, AS AN ELECTROLYTE) IS CHEMICAL BURNS OR DAMAGE FROM SPILLS OR LEAKY CELLS.

FORTUNATELY, THERE IS A SAFE AND INEXPENSIVE WAY TO STOP OR AT LEAST DETER THIS. FIRST WE WILL DISCUSS THE LEAD-ACID TYPE BATTERY. THE AUTOMOBILE BATTERY IS THE MOST COMMON OF THE LEAD-ACID TYPES, BUT THE SMALL BATTERY USED FOR A STARTING MOTOR TO START MODEL ENGINES IS THE SAME TYPE, ONLY SMALLER. THE ELECTROLYTE OR LIQUID IN THESE BATTERIES IS THE SAME, A STRONG SOLUTION OF SULPHURIC ACID (CHEMICAL FORMULA H_2SO_4) SULPHURIC ACID AS USED IN BATTERIES IS STRONG ENOUGH TO CAUSE SEVERE BURNS TO SKIN, DISOLVE ON CONTACT CLOTHING, CORRODE MOST METALS, AND WILL COMPLETELY "TAKE OUT" NYLON AND OTHER POLYESTER FABRICS INSTANTLY ON CONTACT. WHAT IS THE REMEDY OR NEUTRALIZER FOR SULPHURIC ACID?.....ORDINARY WASHING SODA AS IT IS CALLED IN THE SUPER MARKETS. (CHEMICAL NAME IS SODIUM CARBONATE, CHEMICAL FORMULA Na_2CO_3) DON'T CONFUSE THIS WITH SODIUM BICARBONATE OR BAKING SODA. ALTHOUGH BOTH WILL WORK, WASHING SODA IS THE BEST AND FASTEST. AS I MENTIONED, WASHING SODA IS AVAILABLE IN MOST SUPER MARKETS AS A POWDER AND IS VERY INEXPENSIVE. WASHING SODA CAN BE USE TO CLEAN UP THE TERMINALS ON AN AUTOMOBILE BATTERY BY SIMPLY SPRINKLING A GENEROUS AMOUNT OF THE POWDER OVER AND AROUND THE TERMINALS AFTER WASHING THEM WITH WATER FROM A VERY SLOW RUNNING HOSE SO AS NOT TO SPLASH. ALLOW THE SODA TO SIT ON THE TERMINALS FOR ABOUT TEN MINUTES, THEN WASH EVERYTHING OFF INCLUDING THE BATTERY TRAY, FENDER ETC. FROM THE SAME SLOW RUNNING HOSE. NEITHER ARE POLLUTANTS IN THE NEUTRALIZED STATE, SO THE BEST PLACE TO DO THIS IS IN THE STREET. IF THE BATTERY SPILLS ON THE CARPET OF YOUR SHINEY NEW VAN OR ROLLS-ROYCE, DO THE SAME THING WITH WASHING SODA IMMEDIATELY. SPRINKLE A BUNCH ON THE SPILL, WAIT ABOUT TEN MINUTES, THEN CLEAN UP THE MESS WITH WATER, AND REPEAT. YOU WILL PROBABLY HAVE TO CLEAN THE SECTION OF CARPET WITH UPHOLSTERY SOAP AND WATER, AND THERE MAY BE SOME DAMAGE, BUT THE WASHING SODA WILL STOP ANY FURTHER DAMAGE. A LIQUID NEUTRALIZER CAN BE MADE AT HOME BY DISOLVING THE WASHING SODA IN WATER DISOLVE AS MUCH OF THE SODA IN THE WATER AS POSSIBLE. A LITTLE UNDISOLVED SODA IN THE BOTTOM OF THE CONTAINER MEANS YOU HAVE ENOUGH. THIS SOLUTION CAN BE USED TO WASH ACID OFF SKIN OR CLOTHING BUT NOT EYES. LOTS OF WATER IS USED FOR EYES, THEN CALL A DOCTOR. WASHING SODA CAN ALSO BE USED TO NEUTRALIZE ACID SPILLS ON FLYING BOXES, AIRPLANES ETC, HOWEVER, DON'T USE THE SOLUTION AROUND ANY ELECTRICAL OR ELECTRONIC EQUIPMENT, THE POWDER IS FOR THIS PURPOSE. WASHING SODA IS NON-TOXIC, NON POLLUTING, AND NO MORE DANGEROUS THAN AN ALKA-SELTZER,

NEXT, THE VERY POPULAR NICAD BATTERIES. ALL NICADS, WHETHER SEALED, LIKE THE ONES USED IN RECEIVERS AND TRANSMITTERS, OR THE OPEN, CLEAR, FILLABLE TYPE SOLD IN SURPLUS STORES, CONTAIN AS AN ELECTROLYTE, POTASSIUM HYDROXIDE (CHEMICAL FORMULA KOH) USUALLY ABOUT A 30 TO 40 PERCENT SOLUTION. THE SEALED TYPE, GENERALLY ROUND, WITH A METAL CASE, DON'T PRESENT MUCH OF A PROBLEM, BECAUSE

THEY USUALLY WON'T SPLIT, BUT WILL SEEP OR LEAK SLIGHTLY WHEN OVERCHARGED. BY THE WAY, IF ANY OF THE SEALED NICAD BATTERIES LEAK OR SEEP, THEY LEAVE A WHITE CRYSTALLINE DEPOSIT ALONG THE BATTERY SEAMS, AND ARE USUALLY ON THEIR WAY OUT.

IF ANY SEALED TYPE NICAD LEAKS OR SEEPS IT IS ADVISABLE TO THROW IT AWAY AND REPLACE THE CELL. NOT THE WHOLE PACK, JUST THE BAD CELL. THE OTHER TYPE OF NICAD, THE ALKALINE FILLED TYPE ARE USUALLY SOLD DRY AND MUST BE FILLED. THEY ARE GENERALLY CLEAR, SQUARE OR RECTANGULAR IN SHAPE, AND HAVE BOTH TERMINALS ON THE TOP OF THE CASE. THESE TYPE ARE VENTED SOMEWHERE, USUALLY ON TOP AND CAN DRIP. POTASSIUM HYDROXIDE IS NOT AS DESTRUCTIVE AS ACID BUT CAN CAUSE ALKALINE BURNS TO SKIN (DRY, CRACKED SKIN SIMILAR TO DETERGENT BURNS OR CHAPPED SKIN) THE NEUTRALIZER IS EVEN SIMPLER THAN WASHING SODA IT IS COMMON ORDINARY VINEGAR, AND FURTHER THE CHEAPEST TYPE WILL WORK. NO NAME BRANDS OR GENERIC IS FINE. VINEGAR IS NOTHING MORE THAN A 4 OR 5 PERCENT SOLUTION OF ACETIC ACID. VINEGAR IS WHAT BADLY OXIDIZED WINE TASTES LIKE. ACETIC ACID IS USED EXTENSIVELY AS A PHOTOGRAPHIC "STOP BATH" OR "SHORT STOP". VINEGAR IS ALSO SALAD DRESSING OR IS USED IN SALAD DRESSINGS. IT IS ABSOLUTELY HARMLESS.... YOU EAT IT IN SALADS, AND THE SMELL GOES AWAY WHEN IT DRIES. IF A NICAD SPILLS OR SEEPS ON YOUR CARPET, VAN, ROLLS OR WHATEVER, JUST POUR A LITTLE VINEGAR ON IT, AND MOP IT UP. THE ALKALINE FILLED TYPE OF NICAD GENERALLY OR ALWAYS WILL SEEP AROUND THE TERMINALS, BUT THIS IS NORMAL. DON'T USE VINEGAR ON THE TERMINALS, PLAIN WATER IS SUFFICIENT TO CLEAN THE BATTERY. ANOTHER GREAT USE FOR VINEGAR IS AS A FLOOR SOAP NEUTRALIZER. THE NATURAL ENEMY OF LINOLEUM IS SOAP. SOAP OR DETERGENT WILL EVENTUALLY DISOLVE VINYL LINOLEUM. (THATS WHEN THE SHINY VINYL WON'T SHINE ANY MORE, AND BLACK AREAS APPEAR THAT CAN'T BE SCRUBBED OFF) SCRUB YOUR FLOOR WITH WHATEVER DETERGENT YOU NORMALLY USE. INSTEAD OF USING PLAIN WATER ON THE MOP TO RINSE THE FLOOR, SOAK THE MOP IN A BUCKET WITH ABOUT A GALLON OF WATER AND TWO CUPS OF VINEGAR IN IT, WRING THE MOP OUT ABOUT HALF WAY, AND MOP THE FLOOR. THE SECOND TIME WRING OUT THE MOP COMPLETELY. DON'T USE THE "VINEGAR MOP" FOR SOAPING. TWO MOPS ARE BEST. (ONE RUINS THE OTHER) VINEGAR CAN BE USED TO NEUTRALIZE ALKALINE ON HANDS, CLOTHING, FLYING BOXES, AIRPLANES ETC, BUT AGAIN, AS WITH SULPHURIC ACID, NOT FOR EYES. USE LOTS OF WATER FOR EYES, THEN CALL A DOCTOR.

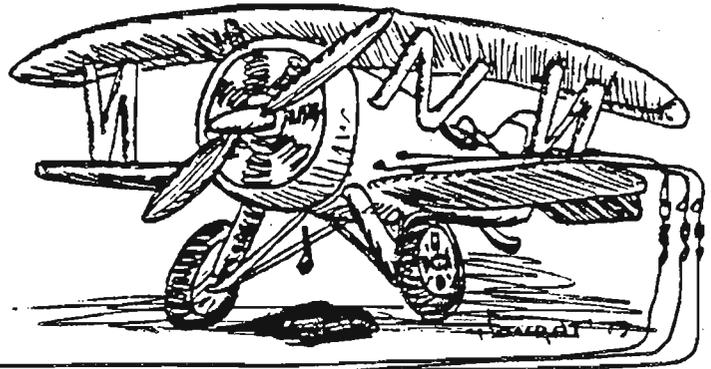
BOTH WASHING SODA AND VINEGAR ARE AVAILABLE AT MOST SUPER MARKETS, ARE VERY INEXPENSIVE, AND AS MENTIONED BEFORE, NO NAME, PLAIN LABEL, OR GENERIC IS FINE. WHY NOT MAKE VINEGAR AND WASHING SODA A REGULAR PART OF YOUR FLYING BOX. THEY WON'T TAKE UP MUCH ROOM (WITH ALL THE JUNK WE CARRY, COFFEE THERMOSES, SIX PACKS OF BEE.....EH...CHERRY COKE, AND LAST SUNDAY'S NEWSPAPER, YOU WON'T EVEN NOTICE THE EXTRA) I GENERALLY KEEP A FIVE GALLON COLLAPSIBLE CONTAINER OF WATER IN THE TRUNK OF MY CAR (FOR THE HORSES IN MY ENGINE).

FINALLY, A WORD OF CAUTION. BOTH ACID AND ALKALINE WILL BUBBLE AND BOIL OVER WHEN NEUTRALIZED.....BE CAREFUL. IF ANYTHING GETS IN YOUR EYE, WASH IMMEDIATELY WITH LOTS OF WATER, AND CALL A DOCTOR.

CONTROL LINE

SCALE

by orin humphries



SCALE FAIL

Fuel tanks are deceptively simple-looking things. I just came from a friend's house where he showed me a P-38 he'd gotten from another person. This profile model had the identical problem of tank location as another profile scale twin had which I'd seen a year ago, and I thought this is obviously something that needs discussion.

TANKS, AGAIN.

(anytime!)

Picture a profile model of any twin engine plane, looking at it from above. These two models that lead to this piece had the inboard tank between the left nacelle and the fuselage and the outboard tank between the fuselage and the right nacelle. Neither tank is in the right place, and neither model would fly due to improper mixtures for the engines. Lets see how this happens.

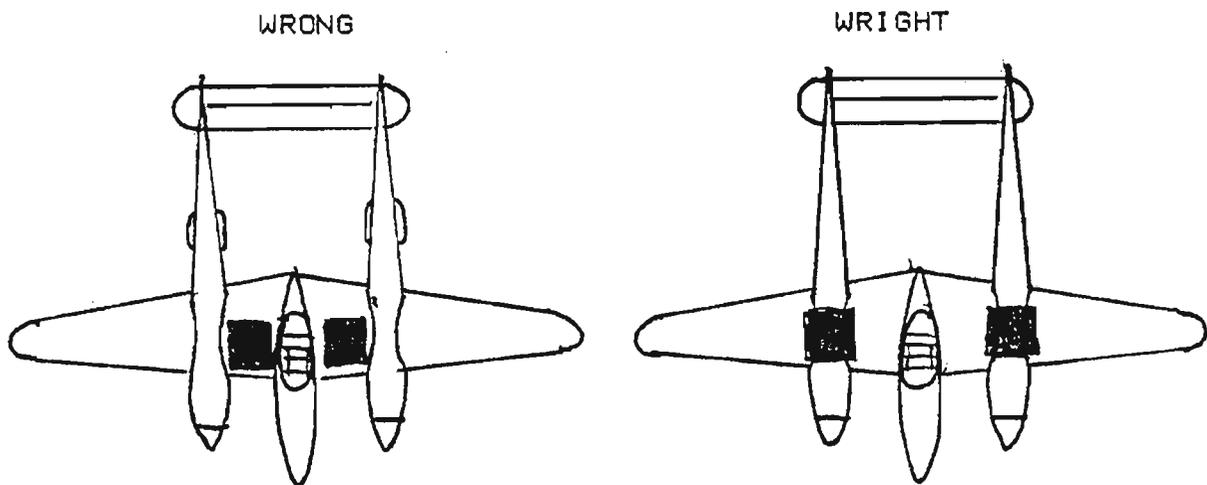
When the model is flying in a circle, as in our field, there are other forces on the fuel besides gravity. The principle one is inertia, the tendency for the fuel to remain on a straight line. Some incorrectly call it centrifugal force, but such doesn't exist, no matter what you've heard, friend. That's another story for later. Consider the inboard tank. Being incorrectly placed, farther from the pilot than the engine, inertia makes the fuel feel as if it has to flow "uphill" to get to the engine. Thus, the engine will run fine on the ground when there is no inertia acting on it, but in the air it will lean out to the point of dying very soon. The outboard tank is wrongly placed closer to the pilot than the starboard engine, and its fuel feels as if it is running "downhill" to get to the righthand engine. This engine is flooded in flight, though it ran fine on the ground, and it labors, incapable of supporting the plane. You could get the same effect on the ground without going anywhere by literally mounting the tanks below or above the engines' level, thus having true uphill and downhill situations rather than the "jive" up/downhill sensations created by inertia while in circular flight.

The only correct, operable location for the tanks is directly in line with the engines. Here, the fuel will neither be uphill or downhill from the engines as the plane goes around in a circle and your mixtures will be all right in flight as well as on the ground. One must do whatever he has to while building such a model to mount the tanks properly. He may have to scratch his head a bit to come up with viable structural solutions, but if he wants to fly his creation he has no alternative other than, perhaps, using a pressure system, and I don't recommend getting into that if he's still at a stage in his experience that he's not yet sure on tank locations. May I suggest he outline the cutout he'll have to make for the tank in the nacelles with 1/64th plywood to reinforce the hole in a profile model. If the tank or tanks have to go in the wing as in the Sterling P-38 profile model, don't hesitate to cut out the rib that's at the nacelle location to make room for the tank. The nacelle/boom is strong enough without the rib.

A lot has been said in the stunt column about tank location, so I won't get too long on it here. Suffice to repeat that the tank HAS TO BE on the engine's centerline. More specifically, the center of the tank MUST be centered with the spraybar of your carburetor, both in the vertical sense and in the horizontal. It will run fine on the ground in other places, but it will die in the air.

One should start out in stunt. You learn so much of what you must so that the model will stunt properly, there. If you can fly stunt fair to middlin', you surely can do all that other stuff no sweat. It all then applies to whatever area you then decide to specialize in. You won't be all the modeler you can be, in my humble opinion, until you have also learned something of freeflight, the art of making a model fly itself perfectly without you. There is a whole bunch to this craft of ours, stuff that separates the pilots from the balsa guiders. (Soapbox time again, right guys? Sorry.)

This is all clear to me, but I don't always communicate well. Call or write for more information. Next time, multi-engine myths (propagated only by single-engine pilots). See ya! Orin Humphries, N.5208 Elgin, Spokane, WA 99205, (509)-325-9773.



Answers to Regionals Trivia Questions:

- 1) Highest entered event was Fast Combat in 1976, with 29 entrants.
- 2) Contest directors: Morrie Gilbert, Suzanne Satterlee, Gene Pape, John Thompson, Mike Hazel, Dave Green.
- 3) Lowest attendance years: 1979 with 41 entries. Factors seemed to be gas shortage situation, and on low side of participation cycle. 1980 saw the eruption of Mt. Saint Helens throw ash in heavy amounts in certain areas, restricting travel. Entry level that year was 35, the all time low.
- 4) Any national records? Yes! Sam Snyder and his kids set a few speed records when they competed at the Regionals in the mid-70's. I also believe Joe Kall turned some record F40 times in the same time period.
- 5) Has the Regionals always had at least two days of scheduling? Yes! The third day was added last year.
- 6) What major meet did the Eugene Regionals replace? Actually, none. But it did fill a void. There was a traditional CL and FF meet that was held in Albany, Oregon during June that had its last stint in 1969. That year also marked the end of the Sandpoint Regionals, which was held in early May, but also had RC along with CL and FF.

THE FLYING FLEA MARKET

BUY, SELL, TRADE

WANTED: Midwest "Aries" control line stunt kit, vintage mid 60's. Tom Lowe, 823 Kingston Lane, Crystal Lake, IL 60014

WANTED: Need needle valve assembly and venturi pipe. (Forster 29 rear intake glow, SN# 6539, Year 49/50) Paul Karr, 751 Gold Coast Drive, Fairfield, CA 94533

WANTED: Full size plan for Jim VanHoit's "Carousel" UC stunter, March 1961 American Modeler and Harold Price's Tempest (date unknown) Ken Thompson, 220 E. 95th Street, New York City, NY 10028

FOR SALE: K&B 40 RC w/ perry carb and pump, new in box \$58. K&B 3.5 UC/FF, new in box \$44 Mike Hazel % Flying Lines

FOR SALE: Spread the word by wearing your official Flying Lines T-Shirt! Only \$8.00. Specify size and color.

WANTED: Old combat kits; Guillow Reactor and Galaxy, Fox Rumble, Midwest Hornet and Half-fast, etc. Also have for sale old combat plans; full size Renegade, T-Square, Orbit Ace, Quicker, etc. Barry Baxter, 10116 Cabo, Westminster, CA 92683 (714) 531-7270

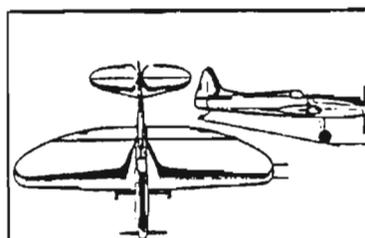
FOR SALE: Flying Lines back issues. Fill in the gaps in your FL library. singles \$1 each. Four or more @ 50¢ each. Issues available:

4	6	11	12	13	14
16	17	18	22	23	26
29	30	32	33	35	36
37	38	39	41	43	44
45	46	47	48	49	50
51	52	53	54	57	59
60	61	62	63	64	65
66	67	68	69	70	71
72					

FOR SALE: K&B 5.8 engines, from a Spokane area hobby shop. Contact Orin Humphries if interested. N. 5208 Elgin, Spokane, WA 99205 phone (509) 325-9773

WANTED: Control line kits old and new, will pay fair price. Interested in anything, will buy outright or trade. Would also like to hear from specialty shops, basement hobby shops, and kit collectors. Send a list of what you have or call. Mark St. George, 43 Summit Ave Westwood, NJ 07675 phone (201) 664-4602

FOR SALE: Many engines and CL kits, too numerous to mention them all. Includes O.S., Enya, Fox, from .19 to .45 sizes. Jetco, Top Flite, Sterling and other CL model kits. Also have for sale some completely built and ready to fly stunt models. Everything for sale is good merchandise---no junk. Some of the engines are new, and the others are in good to excellent condition. I will have all this merchandise at the NW Regionals. Prices will be marked to sell! I don't want to take it all back home with me! ...Gerald Schamp



Tom Dixon
Suite 401
1938 Peachtree Road
Atlanta, Georgia 30309

CLASSIC REPLICA CL PLANS
BOLLY COMPOSITE PROPS
MERCO, FOX, K&B ENGINES
STUNT ENGINE REWORK

NW COMPETITION RECORDS

RECORD PERFORMANCES ESTABLISHED BETWEEN NORTHWEST
MODELERS IN SANCTIONED COMPETITION

RACING RECORDS TUMBLE IN DRIZZLE CIRCUIT FINALE

Racing records tumbled like rain in contest No. 5 of the 1986 Northwest Sport Race Drizzle Circuit, April 13 in Portland, Ore.

* Dave Green lowered the Slow Rat Race feature time to 7:14, replacing the 8:03 he had set previously. Both the old and new records were established with his Minotaur Super Sport Race plane and K&B .35 plain bearing engine.

* Green knocked the Super Sport Race heat record down to 3:14, replacing his own 3:29.

* John Thompson took the Super Sport Race feature record to 7:44, replacing Green's 7:45.

Flying Lines keeps track of the best performances of Northwest control-line fliers in AMA-sanctioned contests (or MAAC-sanctioned contests using AMA rules), and in Northwest regional events.

Here are the complete records as of April 24:

MOUSE RACE I 50-lap: ---	100-lap: ---
MOUSE RACE II 75-lap: ---	200-lap: ---
GOODYEAR 70-lap: ---	140-lap: ---
SLOW RAT 70-lap: 3:56 (Dave Green)	140-lap: 7:14 (Dave Green)
RAT RACE 70-lap: ---	140-lap: 5:38 (Dick Salter)#
TEAM RACE 100-lap: 3:51 (Knoppi-McCollum)	200-lap: 7:49 (Knoppi-McCollum)
NW SPORT RACE 70-lap: 4:03 (Henry Hajdik)	140-lap: 8:53 (Beers-Cole)
NW SUPER SPORT 70-lap: 3:14 (Dave Green)	140-lap: 7:44 (John Thompson)
HALF-A SPEED: 88.2 mph (Paul Wallace)	FAI SPEED: 158.98 mph (Scott Newkirk)
HALF-A PROTO: 83.63 (Paul Wallace)	FORMULA 21: 79.54 (Rich Salter)
A SPEED: 181.56 (Chris Sackett)	FORMULA 40: 152.28 (Scott Newkirk)
B SPEED: 184.57 (Chris Sackett)	JET SPEED: 194.73 (Chris Sackett)
D SPEED: 170.71* (Mike Hazel)	PROFILE NAVY CARRIER: 232.5 (Bob Parker)
	CLASS I NAVY CARRIER: 311.1 (Rick Wallace)
	CLASS II NAVY CARRIER: 323.7 (Loren Howard)

* Speed of 170.55 has been recorded by Loren Howard.

Temporary -- established in solo heat.

CAROLINA-TAFFINDER

TEL.: 803-553-7169



Manufacturing a full line of model fuels blended to proven formulas. We also blend fuels to your particular needs. Ingredient sales also available. A new half-gallon size in 1 and 4-Paks has been added to our 1 and 4-Pak gallon jugs. Send SASE for fuel prices or 50¢ (check/MO) for brochure of fuel tank diagrams & prices and our fuel prices.

CARDBOARD COMBAT

Here on the eastern terminus of the Oregon Trail (today's history lesson-reminder), the considerable attention the CL press has recently given to FoxDoo combat has caused me to more vividly recall an idea I pursued a few years ago towards El Cheapo combat.

It all started with an article in Model Airplane News about a CL aircraft constructed primarily of corrugated cardboard, and my abhorrence on watching the financial carnage taking place on the combat fields and on how it would affect my pocketbook and more importantly the pocketbook of young beginning combat pilots with even more limited resources than mine should they or I venture a go at combat in a half serious fashion, not to mention construction time. (Larry, have you been taking sentence structure lessons from Rich Porter?..... Ed.)

Thus was cardboard combat born, for me anyway. You say you never heard of it? I propose to rectify that situation now, but, not before mentioning it's not entirely my fault that corrugated cardboard companies haven't been deluged with requests for cardboard from combat fanatics.

At the '79 Nats in Lincoln, Neb. some dude from Model Aviation took a picture of a Fast and a Slow version of my cardboard marvels.. That's the last I heard of the pictures. A few years later I sent an entire plane for evaluation as an entry level or fun combat to Model Builder for forwarding to Dan Rutherford. As far as I know the postmaster was the last to see it as neither Model Builder or Dan responded.

I mention this not to cast disparagement on anyone from Model Aviation, Model Builder, or Dan Rutherford, as I'm sure there were reasons for whatever was or was not done but rather to indicate how firm my convictions were and are that corrugated cardboard combat is a good place to begin combat training or for just plain fun combat. So let's get to some particulars.

First you ought to know that just as balsa and foam come in different densities, strengths, weights, etc., so does cardboard. The corrugations per inch, the thickness of the cardboard, weight and finish of the facing papers and perhaps other factors of which I am not aware all contribute to the weight and strength of corrugated cardboard and its suitability for model planes.

Nor in general the lightest weight corrugated commonly available is what we want, since corrugated is a fairly heavy modeling medium comparatively. Don't aggravate that by getting heavy cardboard, also the light-weight is plenty strong.

Titebond and similar are the glues of choice for gluing cardboard to cardboard and cardboard to balsa/plywood. Use glue to seal edges of exposed corrugations as well.

Corrugations for using ribs should run from upper to lower wing surface. Ditto the single full depth spar of cardboard. 2 or 3 coats of the cheapest household variety urethane works great as a sealer with a fine sanding between coats to knock off fuzzy. Add pigment for color.

A good pair of scissors is desirable though not essential. Since the weight of the cardboard is distributed over the entire wing in approximately equal proportions a plane of cardboard is more likely to be tail heavy than one of balsa.

A well designed, constructed model of corrugated is extremely strong. One of my modeling playmates once accidentally sat on one of mine. No damage. Try that with one your balsa flimsies.

To get cardboard around curves such as wing leading edges without sharp creases, wrinkle and the like, cut the inside facing paper between corrugations wherever the wing surface is to be curved.

For safety's sake the motor mounts, center rib and tail boom as well as the bellcrank mount were all tied together in a continuous unit of balsa and plywood in my models. I recommend you do likewise. This also facilitates wing replacement should such become necessary making it all but a field operation.

These models build extremely fast for me and I'm a slow builder. I would estimate 6 models of corrugated for one model of built up balsa construction for time and I have much more balsa experience so the ratio might be higher with more practice.

Because of the earlier mentioned fact that the distributed weight of cardboard wings is such that the CG tends to be more toward the trailing edge than with a comparable wing of balsa, paraphernalia such as tail-booms tend to aggravate a tail heaviness tendency. The obvious possibility is to eliminate the tail boom and build something similar to the old Sterling T-Square and especially so those seeking nostalgia or ancient age combat.

I don't now recall the precise amounts but I had figured on the time my total direct cost of what I considered the expendable portion of my cardboard combat models at being less than \$2 per model. That included the assumption that the motor mount, center rib and tail boom (for the models that had them) and bellcrank mount would be reusable once.

What do you think, should I have entered my cardboard creations in either of the great international paper plane contests? (Is there a Concours de Cardboard?Ed.)

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

-
- MAY 23-25 -----EUGENE, OREGON-----
NW Regional Control Line Championships
Events: RACING: Rat, Slow Rat, Mouse I, Mouse II, Goodyear, NW Sport Race, NW Super Sport Race; COMBAT: 1/2A, Slow, Fast, FAI; PRECISION AEROBATICS: Four PAMPA classes, Old Time Stunt; SCALE: AMA precision, Profile; NAVY CARRIER: Class I, Class II, Profile; Balloon Bust; SPEED: 1/2A, A, B, D, FAI, JET, F40
Trophies and merchandise awarded thru third place in all events. Largest CL meet on the West Coast. Site: Mahlon Sweet Airport (Eugene) CD: John Thompson, 1505 Ash Avenue, Cottage Grove, Oregon 97424 (503) 942-7324
- JUNE 8-----ASTORIA, OREGON-----
CLAM-Bash 1986
Events: NW Sport Race, NW Super Sport Race, Class I Carrier, Class II Carrier, Profile Carrier, 1/2A Combat, AMA Fast Combat, Precision Aerobatics flown in three PAMPA classes, CLAM Scale.
Site: Warrenton City Park. CD: Dave Green, 200 W. Franklin, Astoria, Oregon 97103 (503) 325-7005
- JUNE 21-22 -----RICHMOND, BRITISH COLUMBIA---
NW Control Line Speed Championships
Events: All speed events flown Site: Richmond field. CD: Henry Hajdik (604) 526-9554
- JUNE 28-29 -----REDMOND, WASHINGTON-----
Bladder Grabber XI
Event: AMA Fast Combat flown triple elimination. Awards worth thousands of dollars. Site: Marymoor Park
Contact: Howard Rush, 8817 NE 137th, Kirkland, WA 98033 (206) 823-6018
CD: John Salvin (415) 254-7720
- JUNE 28-29 -----KENT, WASHINGTON-----
Boeing Air Fair Stuntathon
Events: Precision Aerobatics flown in three PAMPA classes, Old Time Stunt, Junior Novice Stunt. Plus Stunt clinic
Site: Boeing Space Center- Kent
CD: Bob Emmett, 17972 W Spring Lake Dr, Renton, WA 98055
- JULY 20-26 -----VANCOUVER, BRITISH COLUMBIA--
1986 Canadian Nationals
Events: Most all Control Line Events, plus FF and RC. Contact: Mr. Brian Dalling, 4214-W. 15 Ave. Vancouver, BC Canada V6R 3A6

FLYING LINES is produced ten times a year by a dedicated staff of volunteers interested in keeping lines of communication open between Northwest control line modelers. FL is totally independent of any organization, depending entirely upon support from subscribers, advertisers, and donors.

Prices for subscriptions: U.S.: \$6 for 5 issues and \$12 for 10 issues. Canada and Mexico: \$6.50 for 5 issues and \$13 for 10 issues. Overseas by surface mail: \$7 for 5 issues and \$14 for 10 issues. Overseas by airmail: \$12 for 5 issues and \$24 for 10 issues. U.S. funds, please. Make checks or money order out to FLYING LINES. FL subscribers may place personal ads in the classified section at no charge. For business advertising, contact the editor for rates and specifications.

The FLYING LINES staff:

Editor.....	Mike Hazel	Combat.....	John Thompson
Aerobatics.....	Paul Walker	Racing.....	Dave Green
Scales.....	Orin Humphries	Beginners.....	Jim LaBarge
Graphics.....	Jim LaBarge	Speed.....	Mike Hazel
Round & Round.....	John Thompson	Carrier.....	Orin Humphries
Sport.....	Larry Miles	Competition Stats..	John Thompson



1073 WINDEMERE DRIVE NW
SALEM, OREGON 97304

FLYING
LINES



FIRST CLASS MAIL