

Flying Lines

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Taking stock

How did things go in your favorite CL competition event in 2001?

Were you happy with the participation and the level of competition? Would you like to see more competitors, more contests, some changes made of one sort or another?

This issue of *Flying Lines* contains what most likely will be the final standings for competition in 2001, barring any late results. Take a look at the standings — not with regard to how you finished, but with an eye toward the number of points scored.

The points reflect participation in the event, since the scoring for Northwest standings is based on how many points people defeated to place in a contest. Beat nine other fliers and score 10 points. If you're the only entrant, you get 1 point.

The points not only indicate who was best in the category, but give a rough approximation of how many people competed throughout the year.

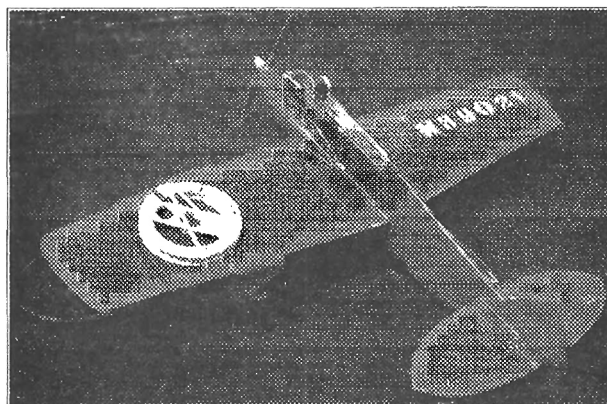
The standings are an indication as to which events are healthy, with lots of people involved, and which are marginal.

How does your favorite event compare with last year's scoring? (You can check back issues of *FL* to make the comparison.) Do you like the trend you see?

This is the time of year when we are thinking about next year's contests — not just in terms of our own competitive program, but in terms of what contests we are going to organize, support, and work on in 2002.

If we see problems in our own events reflected in the results of contests or in the standings points, now is the time to be thinking about what we want to do in the coming months to solve any problems we may perceive.

Remember, control-line competition isn't a big enough activity to "let George do it." If we want



All dressed up with nowhere to race? An AMA goodyear plane, campaigned against not much competition in the 2001 Northwest season. *FL* photo

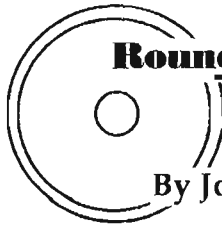
our favorite events to be healthy — and even to continue — it's up to us to step up and do what we can to make it happen.

Yes, the Regionals remains the biggest unsolved problem for 2002. But there are lots of small contests on the traditional schedule, some of which had serious problems of attendance (in certain events) in 2001.

Where do we go from here? *FL* remains a forum for such discussion, which also should be going on at the club and local levels.

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Round & Round

The Control-Line
modeler at large

By John Thompson

Modeling thought for the month:

"The moment of victory is much too short to live for that and nothing else."

— Martina Navratilova

Just gluing sticks of wood ...

The excitement of competition can consume us to the point where we lose track of some of the other joys of control-line model aviation. There are lots of good things about the CL hobby that don't involve contests.

One of the great things about the sport flying part of the hobby is that it's an activity without deadlines. That may be why many of us got into the hobby in the first place — it was something we could do that didn't demand us to perform any certain tasks at any certain time. That certainly appeals to someone like me, who lives by deadlines in the "real world."

But we get busy with competition, and make our own deadlines — getting ready for contests, for the coming season, etc. Sometimes we even lose our minds completely and start publishing newsletters, maintaining Web sites, organizing contests, making props for sale, etc., etc.

My semiretirement from the serious combat scene in the past year has allowed me to contemplate some of the more pastoral and, in some cases, simply silly, projects that have come to mind in the past. I say contemplate, because, of course, there remain *FL* deadlines, ongoing struggles to get a stunter to competitive performance, 80mph combat and racing planes to maintain, contests to organize and conduct, etc. There seems to be a lot more contemplation than actual building.

My thinking runs toward somewhat oddball projects, due in part no doubt to hanging around with *FL* publisher Z.Z. Hazel, creator of such mind-benders as the five-Black Widow bomber, the 100-foot line Ringmaster, the Big Blue jet sport plane, the tumbler biplane and the Cro-Magnon Air Force. Maybe it's contagious. In any case, here are some of my "one of these days" projects ...

- A biplane. Don't ask me why, but I like

bipes. Never had one, unless you count the swap meet Flying Fool that shed its top wing the first time I flew it. I also once started building a scale Stearman, but the Sterling kit's die-smashing was so bad that I finally gave the bones to somebody else, who I believe, after a respectful time, threw it away. I have acquired a Brodak .38 Special kit. I like the idea that it might sort of be able to do the stunt pattern. I know there are those who suggest that a Bi-Slob would be more my style.

- RSM has that nifty-looking twin-boom "classic legal" Crusader kit. Again, don't ask me why, but it looks cool. I'm trying to resist.

- My twin-engine stunter. This is one of my insane projects, born of an unsuccessful stunt effort of many years ago. I started building a Magnum when Sig first came out with the kit, but abandoned the project after the wing came out too heavy (Core Bond? Fuggeddaboutit!) But the parts are still in the attic and I've had the notion of converting it to a twin ever since. Gradually I have acquired the two tanks and the two radial engine mounts, and done some scheming about how to retro-design it. Wouldn't it be a gas if it actually *flew* pretty well?

- My U-2001 fast combat plane. Yes, I know, I am not flying fast combat any more (things can change, you know) but I have been redesigning my venerable Underdog design in my head for quite some time. (The original Underdog was designed in 1984 by Gene Pape, an improvement of my earlier Undertaker design.) U-2001 stands for Underdog 2001 and envisions a bigger plane with the Nelson up front, metal mounts on an acrylic center pod, internal double-bellcrank shutoff, arrow shaft boom, flexible internal pushrod and a license to kill.

Oops, the competitive juices have started flowing again.

Well, that's what winters are for — thinking, planning, and maybe even a bit of building. So, if I ever get this issue of *FL* off the desk, I'd better get out to the shop and get that Oriental finished. If Don McClave can build one in three days, I should be able to finish mine in two years!

Do you have nutty projects of your own? Why not write 'em up and send 'em in to *Flying Lines*? They might entertain us all!

Send comments, questions and topics for discussion to John Thompson, 2456 Quince St., Eugene, OR 97404. E-mail JohnT4051@aol.com. World Wide Web: <http://members.aol.com/johnT4051/NorthwestCL.html>.

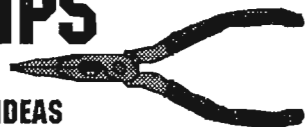
Where the action is!

Coming events in Northwest Control-Line model aviation

Your contest date, 2002 ???

It's not too early to get your 2002 contests listed in the "Where the Action Is" calendar. Send the information to *Flying Lines* and facilitate coordination of the schedule across the region. We work better when we work together!

SHOP TIPS



CLEVER BUILDING IDEAS
FROM *FLYING LINES* READERS

• **Crimped line ends:** There are several methods of making reliable terminations for lines and leadouts, some of which are elaborate and time-consuming. One of the best methods is avoided by many experienced modelers because it looks too simple to be safe. If done correctly, as follows, it is very quick and easy to do and utterly reliable. I have used this method, which I have refined a bit along the way, since the late 1970s, and never had a single failure as a result of the method:

Supplies: Lines, reel, grommets, copper tube for crimp (approx. 1/16" id) cut into 1/2" lengths, and (optional) small RC heat-shrink tubing.

Tools: Scissors or nipper for cutting lines, and a crimp tool. The best crimp tool for this method is an old nipper with dull blades. I use an old needle-nose pliers with a worn nipper. You want a tool that will pinch the copper tube without cutting it.

Step 1: Mark the position where the termination should be by making a slight bend in the wire at that point. Leave about 6 inches of extra wire.

Step 2: Slip a 1" length of the shrink tubing over the wire, and slide it out of the way. Slip a 1/2" piece of the copper tubing over the wire.

Step 3: Turn the wire back on itself and run it back through the crimp tube, then position the slight bend marker loosely at approximately the correct position. Now, turn the wire back on itself again and run it through the crimp again. Pull it



Big fun comes in small packages. Bob Smih (left) and Dave Baxter get ready for one of Bob's matches at the Scappoose Tee Dee-only 1/2-A combat contest in September. *FL photo*

far enough through that only the tiniest bend sticks out of the crimp. Now, take the wire end that is out the tubing end where the grommet will be and turn it back again and run it through the crimp once more. You should now have two loops of wire sticking out one end of the crimp, and at the other end will be the long part of the line, a tiny bend, and the loose end of the line.

Step 4: Insert the grommet in the double-loop, and pull on the long end of the wire and the loose end, tightening the loops over the grommet.

Step 5: Take your crimp tool and make a triple crimp — two crimps facing one direction and one at 90 degrees. Snip off the loose wire end.

Step 6: Slip the heat-shrink tubing over the crimp, the tiny loop and the end of the loose wire. Use your Monokote heat gun to shrink the tubing. This last step assures a smooth bend at the crimp, preventing wear, and also protecting your fingers from getting poked by the loose end. This step is optional, and is not shown in the diagram.

You now have a wire termination that goes through the crimp tube and around the grommet twice. It cannot pull through the crimp. This will outlast the rest of the lines. — *John Thompson*

The Flying Flea Market

Classified advertisements — FREE for *FL* subscribers

FOR SALE: 2 Ea. Nelson 15 ABC FIRE, Exc., just back from Henry Nelson (new bearings, etc.) Used for FF and combat, U.S. \$135 or both for \$260; 1 Ea. Nelson 15 ABC FIRE longstack, C/W spinner, exc., low time used for GY, U.S. \$130; 1 Ea. NIB Irvine .15 MK 2 GY/FF Version, P/L chromed & fitted by Dye, fitted Nelson head, large venturi & pressure backplate, U.S. \$150; 1 Ea. NIB Irvine .15 MK 2 or speed, C/W spinner, P/L chromed and fitted by Dye, 4.9mm pipe stinger, U.S. \$185; also many excellent Irvine .15 parts for sale: heads, shims, spinners, P/L, venturis. Write for details & prices. 1 Ea original version Cyclon .15S FAI piped speed engine, Mint cond. in orig. handmade wood box W/ plexiglass top, C/W factory pan, prop, spinner, shutoff, tank & spare parts, also C/W Doc package for collectors, U.S. \$200; 1 ea. NIB Russian Cyclon .40 ABC pylon (RIRE) C/W, gorgeous 2-1/4-inch spinner, minipipe, head wrench, U.S. \$275. Paul Gibeault, 54-5380 Smith Drive, Richmond, B.C. Canada V6V 2K8, phone (604) 526 3386.

SALE - SALE - SALE - SALE - SALE - SALE: For two weeks starting Nov. 4 and running through Nov. 17, we will be holding a giant sale! All C/L kits and engines and fuel will be at a discount. Stock up now — it's building season. Give us a call; we can ship anything but fuel. Eugene Toy & Hobby, (541) 344-2117, www.eugenetoyandhobby.com.

WANTED: K&B 4.9 engines and parts. Also early version of Veco Tom Tom kit. Craig Bartlett, (541) 745-2025.

AEROBATICS INTEREST GROUP: Right now — as in **TODAY** — is the very best time to join PAMPA! Your \$25.00 will see a full year's worth of the world's best CL-specific magazine (at 100-plus pages we no longer call it a newsletter!) dropped in your mailbox. Send check or money order to: Shareen Fancher, 158 Flying Cloud Isle, Foster City, CA 94404.

FOR SALE: Vintage original model airplane plans circa: 30's to 70's. Rubber-FF-UC-RC-CO2-Jetex. Send #10 SASE for list to: Jerry Campbell, 2355 SE 43rd, Portland, OR 97215-3713, phone 503-233-2194.

J & J SALES now has three sizes of "UKEY-

SPORT" CL ARFs in its new line. A new 300-sq.-in. suitable for .15 size engines. The very popular 420-sq.-in. for up to .35 engines (over 300 of this popular plane sold in past two years!) A new 500+sq.-in. for up to .40 engines. This version has nearly full-length doublers. Give us a call at (509) 337-6489 or e-mail: ukeyman@altavista.net. Price: \$50 for the .15 size, \$60 for the .35 size, \$70 for the .40 size. All planes shipped POSTAGE-FREE.

NEEDED: Seattle area fliers are training several enthusiastic new combat fliers, and they need used fast combat engines to help get them started. If you have usable Fox Combat Special MK II, IV, VI or VII engines, or Stels combat engines you'll part with, contact Tom Strom at TStrom@aol.com, phone (206) 246-4258.

WANTED: Fox .35X and .36X parts. Also SuperTigre .35 parts. Chuck Matheny, (360) 659-0155.

COMBAT INTEREST GROUP: Miniature Aircraft Combat Association offers national newsletter with technical articles, organizes national events, keeps national combat standings, and much more. Send \$15 dues to MACA, c/o Gene Berry, 4610 89th St., Lubbock, TX 79424.

NAVY CARRIER INTEREST GROUP: Navy Carrier Society offers newsletter with technical articles, organizes national events, keeps national standings and more. Contact NCS, c/o Bill Bischoff, 2609 Harris, Garland, TX 75041. Online: President Bill Calkins at clflyer@tbcnet.com.

RACING INTEREST GROUP: National Control Line Racing Association offers newsletter with technical articles, organizes national events, keeps national standings and more. Contact NCLRA, c/o Dave McDonald, P.O. Box 384, Daleville, IN 47334. Online: <http://members.aol.com/DMcD143>

YOUR AD HERE: Remember, classified ads are free to *Flying Lines* subscribers. Send yours in today for publication in the next edition.

ON THE CONTEST TRAIL

Results of Northwest Control-Line Competition

Raider Roundup

Sept. 15-16, Lakewood, Wash.

By Steve Helmick

After Sept. 11's attacks, we almost canceled the Roundup. Dave Gardner was marooned in Iowa, and my heart really wasn't in it. But it was decided to carry on, with myself as the Assistant CD moving up.

Due to four- to five- hour waits at the border crossings, we didn't expect any of "The Dreaded Ones" to come down, but two did, Mel Lyne and Keith Varley.

Weather was clear and warm on Saturday, but changed to a misting overcast Sunday. Many were caught without warm enough clothes. Winds were fairly light and most of the time from good directions for the Clover Park Technical College site.

We had Jeff Rein running the combat events (and winning all three), Mike Potter ran Navy Carrier, and Nick Stratis ran Scale with Dennis Patera judging. In the various PA events, judges were Bob Emmett, Bob Parker, Rich McConnell, Paul Walker and myself. Ken Newell was a trouper, doing all the tabulation for the stunt events. Dave Gardner did all the pre-contest arrangements for sanction and trophies.

A new event for us was P-40, which it turns out is not for semiscale Curtis P-40's, but rather for Profile stunters (thus the "P") with .40 or smaller engines (the "40"). A lot of contestants said they didn't know we were having it, but it's been on the contest flyer since Spring. Next year, it will be back, and there will be a good turnout. Read your newsletter!

The original plan was to have certificates for third place winners, but with Dave being marooned, that didn't happen. As it was, I picked up the trophies from Gardner's early Saturday morning on the way to Clover Park — they arrived from AMA Friday. By the way, the plaques were very nice and a bargain — highly recommended to other clubs.

In retrospect, it was a great way for us to visit with good friends and do some healing after the

mind-shattering events of Sept. 11. I believe it was good for those of us who attended.

Here are the results (Northwest standings points in parentheses):

OLD-TIME STUNT (8 entries)

1. Don McClave, Portland, Ore. (8)	293.5
2. Pete Peterson, W. Valley City, Utah.	285.75
3. Emil Kovak, Issaquah, Wash. (6)	285.5
4. Dan Rutherford, Bothell, Wash. (5)	279.0
5. Bob Emmett, Sequim, Wash.	259.25
6. Rich McConnell, Seattle, Wash.	244.5
7. Jim Johnson, Olympia, Wash.	219.5
8. Keith Varley, Vancouver, B.C.	186

CLASSIC STUNT (6 entries)

1. Paul Walker, Kent, Wash. (6)	570.5
2. Don McClave (5)	563.0
3. Dan Rutherford (4)	518.0
4. Pete Peterson	516.0
5. Bruce Hunt, Salem, Ore.	507.0
6. Keith Varley	483.0

P-FORTY STUNT (3 entries)

1. Mike Haverly (3)	294.5
2. Rich McConnell, Seattle, Wash. (2)	241.0
3. Chris Gomez, Bothell, Wash.	DNF

BEG.-INT. PRECISION AEROBATICS (2 entries)

1. Jim Johnson (2)	404.0
2. Mike Haverly (1)	336.0

ADVANCED PRECISION AERO. (6 entries)

1. Pete Peterson	483.5
2. Keith Varley (5)	481.0
3. Bruce Hunt (4)	471.0
4. Dave Royer, Portland, Ore. (3)	468.5
5. Leo Mehl, Portland, Ore.	458.0
6. Rich McConnell	191.5

EXPERT PRECISION AEROBATICS (4 entries)

1. Howard Rush, Bellevue, Wash. (6)	526.5
2. Jack Pitcher, Gresham, Ore. (4.5)	523.5
3. Scott Riese, Portland, Ore. (3)	508.0
4. Dan Rutherford (1.5)	490.0

PROFILE NAVY CARRIER (2 entries)

1. Shawn Parker, Seattle, Wash. (2)	265.4
2. Mike Potter, Auburn, Wash. (1)	249.0

.15 NAVY CARRIER (4 entries)

1. Peter Tribe	218.8
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- 2. Shawn Parker (3) 211.0
- 3. Mike Potter (2) 199.7
- 4. Chris Gomez (1) 156.8

CLASS I/II NAVY CARRIER (1 entry)

- 1. Mike Potter (1) 208.2

GOLDEN AGE BIPLANE CARRIER (2 entries)

- 1. Mike Potter (2) 212.1
- 2. John Hall, Tacoma, Wash. (1) 207.1

80MPH COMBAT (13 entries)

- 1. Jeff Rein, Bothell, Wash. (13)
- 2. Robert Smith, Roy, Wash. (12)
- 3. Tony Huber, Renton, Wash. (11)
- 4. Bob Huber, Stanwood, Wash. (10)

1/2-A COMBAT (9 entries)

- 1. Jeff Rein (9)
- 2. Paul Vallins, Lynnwood, Wash. (8)
- 3. Dave Baxter, Scappoose, Ore. (7)
- 4. Jim Green, Bellevue, Wash. (6)

AMA COMBAT (7 entries)

- 1. Jeff Rein (7)
- 2. Mel Lyne, Garibaldi Highlands, B.C. (6)
- 3. Bob Nelson, Redmond, Wash. (5)
- 4. Jim Green (4)

PROFILE SCALE (2 entries)

- 1. Ron Canaan, Auburn, Wash. (2) 110
- 2. Chris Gomez (1) 106

SPORT SCALE (2 entries)

- 1. Chris Gomez (2) 130
- 2. Nick Stratis, Auburn, Wash. (1)

Combat at the Roundup

By Mel Lyne

First off, commendations to all the combat competitors who braved this daunting site. Thigh-high dried weeds, rock piles and brambles on the back half, and even some rebar in places on the uneven ground. You had to be careful walking out there. Saturday was grim, but Robert Smith brought his heavy-duty brush cutter on Sunday early and cut some launch paths. Kudos to Robert. A few rock missiles from the "mowing" luckily didn't make it as far as the line of PA stunt ships.

80 mph Combat:

First event Saturday, and a good turnout of 13 flyers. The "Ex-Brit, Brit, Ex-Brit" combat team of Paul Vallins, Peter Tribe and Mel Lyne (Canajun) gave it a go along with Robert Smith, Bob Huber, Bob Nelson, Jim Green, Jeff Rein, Buzz Wilson, Dave Baxter, Tony Huber, Gary Harris and Rich McConnell. Peter, who had never flown

U.S. combat before, and Paul (a U.K. retreat after 10 years), had the "kill" rule explained, and were asked to limit "Tea Breaks" to between rounds. Jolly good show, chaps!

Mel was first up against Tony and lost a "technical" with bad plumbing problems (a sign of things to come), and even thumped it into the rock pile (the Fox miraculously surviving). Mel had left home at 2:15 a.m. to beat the border lineup, and the brain module never did power up 100% on Saturday. Next up was Paul, using a Mk. V Fox in a foamie against Jeff Rein. Just as the "combat" horn blew, so did the Mk V's crank. It shed the crank pin and split the case. Paul was not impressed with this equipment on loan from Mel. "Gimme a freakin' diesel" Paul was heard to mutter as Mel pleaded that that Mk V had been one of his best 80mph motors. Peter Tribe against Gary Harris was next. It was a barn-burner. 3 1/2 to 4 minutes of close following and tactical combat with Peter using all his diesel flying tricks from the '70s — lots of fakes, trimming the weeds, and even flying from his knees. GREAT STUFF! Very entertaining. Peter just got the win.

At each launch the pilot and launcher had the job of getting the lines off the "grabby" dried weeds. The best method was found to be "sawing" back and forth with the lines to cut the heads off the weeds. Those of us with ratty old lines with a half dozen twirlies and kinks had an easier "sawing time" than those with new smooth lines. This "tactical" advantage saved many seconds of ground time at launches, especially in the "deeper" spots on the circle back half.

Robert Smith had a convincing win over Rich, Buzz managed a win over Jim, and Bob Huber had a win over Dave.

Round 2

Bob Nelson won over Bob Huber, Dave had some tough luck against Buzz and lost, and Gary had a win over Robert Smith. Paul, still smarting from that broken crank, took on Tony. As Paul went for the handle, the bladder burst. Peter and Mel refueled a new one, started, and the second bladder blew! Frantic checking of the bladder compartment found no sharp spots. A third bladder got him in the air, and as the horn blew so did the third bladder. Talk about plumbing nightmares! A fourth bladder, but it was too late with too much ground time and Tony got the win. Peter then took on Rich. Some cautious exchanges and a cut for Peter. Then Rich went low head-on invert-

ed at Peter. The motors narrowly missed in the crunch and Rich was killed. Peter's Fox was left hanging by the motor strap. Mel took on Jeff in a "Honkin" match. All over the sky. One cut to Mel, one to Jeff. Mel's bladder burst. Refuel, more combat, another cut to Mel, a collision, and into the deck. But the ground time was too high, and Jeff took it by 16 seconds. Bob Nelson took on Jim, Jim getting the win.

Round 3:

Robert Smith and Tony both got up with rich runs. Lots of slow, fat action. Kinda like stunt practice. Finally, Tony gave Robert too much of a target and Robert got the kill. Bob Huber vs. Gary in a match all over the sky with a very close head-on pass then a double dork, Bob getting the win. Peter vs. Buzz, with Buzz having a lot of ground time and Peter getting the win although bursting a bladder. By now it was apparent that something was wrong with the "Brit" Team's bladders. In all, 7 bladders blew, all "yellow jacket" tubing from George Cleveland. After contacting George, he said it all came from The Core House and that we must have got some old stuff. When the bladders blew, the material exploded, leaving four or five pieces in the bladder tube. Pretty weird and very frustrating. Bob Nelson took on Jeff with Jeff getting the win, and Tony won over Jim in a "bye" replacement match.

Round 4:

The field was thinning out. Robert Smith vs. Peter. A streamer handling error with weed or thistle burr hanging up the streamer half way back. Then another burst bladder, and at the pit stop, Mel's shirt sleeve button is hooked on the shutoff leadout line. Thinking the "weeds" had got his shirt, Mel pulled his arm free and broke the line. Installing a new line took too long, and Robert took the win with a cut and air time. Bob Huber took on Buzz, Bob getting the win. Jeff vs. Peter in a "bye" replacement match, with Peter having more bladder problems and ground time, Jeff getting the win.

Final Rounds:

Jeff Killed Tony, Bob Huber lost to Robert Smith, and Peter lost to Bob Huber. The final was Robert Smith vs. Jeff, with Jeff taking the win. Third and fourth was between Bob and Tony Huber, with Tony taking third.

1/2A Combat:

It was midafternoon by the time 80mph was over, so 1/2A was run single-elimination to finish

on Saturday. Eight flyers competed.

First up was Jeff Rein, with his very fast Cyclon, vs. Mel Lyne using a Tee Dee. Speed and performance difference was quite dramatic. Jeff got the kill.

It was obvious in this contest that to compete on even terms, a Cyclon engine or a very fast VA is required. In a much larger contest, Top Gun last March, the same was true. However, the very high rotation speed on 35-foot lines of these high-horsepower motors does lead to increased line tangles. This year several California 1/2A contests have been successfully run using 42-ft lines, with a much reduced number of line tangles and flyaways. Pat Willcox and Rich Lopez provided this information.

Next was Paul Vallins vs. Tony Huber. Paul's first ever try at 1/2A combat. Paul flew well and got the win. Then Dave Baxter with a Lil' Satan took on Robert Smith with a fast foamie. An interesting match with a big performance difference. Robert made several attacks, but on his last one, he overshot and his string jammed Dave's motor, giving Dave the kill. The Tee Dees generally have a tough time digesting the AMA-recommended 1/2A string, and you have to get the string on the prop to break it. Buzz Wilson and Jim Green then had a go. Jim prevailed with the win. Paul vs. Dave was interesting, but Dave crashed on the rocks and couldn't get back up. Flying level, Paul was getting very dizzy and needed time at the pit stop to get his legs back, eventually getting the win. Jeff vs. Jim had Jeff with the win.

In the final, Jeff got a kill on Paul for first. Dave took third and Jim was fourth

Fast Combat:

Sunday, and with Robert Smith mowing the launch areas, launching was a bit easier and safer now. Less sawing of the lines was needed at take-off. There were six flyers in Fast. Double elimination.

Round 1:

Jim Green vs. Mel Lyne. A good match with Mel's howling Fox VI matching Jim's Nelson. Mel got the win, but by the end of the match the Fox was running slow and labored. Robert Smith vs. Bob Nelson. Robert had problems and Bob took the win. Jeff Rein vs. Buzz. Buzz's model kept heading for the center — great that the shutoff worked, twice! Jeff took the win.

Round 2:

Mel vs. Bob Nelson. A real barn-burner of fol-

lowing and tactics. But Mel's Fox VI was slowing down and Bob's Nelson was pulling away. Mel was lucky in anticipating correctly (for once) which way Bob would exit an exchange, and Mel had the kill. This was a very close and entertaining match, the kind we all hope to get. But the Fox was suffering. After landing there were lots of metal bits. A circlip had snapped and the wrist pin had grooved the cylinder wall, chewing off lots of piston bits.

Jim took on Jeff, ending in a win for Jeff. Buzz took on Robert, with Robert winning on airtime.

Round 3:

Robert vs. Mel. But Robert had major technical problems and Mel took an easy win, using another Fox, a tad slower. Bob Nelson took on Jeff. With two Nelsons howling, each took a cut, then an intense exchange, a tangle, a midair, and Bob's tail gone. The judges ruled a win for Bob. This was Jeff's first loss of the weekend.

Final rounds:

Jeff won in a second match vs. Bob, putting him in the final against Mel, who had no losses.

Jeff had a very good plane/Nelson, very tight. Mel was using the same foamie, getting a bit battle-worn, with the spare Fox. Bob Nelson had generously given Mel some good bladder tube earlier, so thankfully Mel had no bladders burst in fast. At the horn, Mel engaged, and Jeff was gone!

Man did that Green Machine go through the turns! Jeff's plane was way too quick for the Fox.

Mel ducked out inverted and tried to get Jeff lined up. But Jeff saw Mel coming, reversed and took a chunk of Mel's streamer. Alarm bells and "Dive, Dive, Dive!" were going off in Mel's brain. Again he ducked away inverted. Another chance to line Jeff up, but Jeff anticipated well and got a clean kill as Mel came around after him.

Now it was one life apiece. Sudden death. The second match. Mel thought he could cut across in an attack to counter Jeff's superior turning — yeah, right! The first encounter, and Jeff turned way inside Mel and had the kill for first place.

Stay tuned for more information on the Big Money Nostalgia Diesel Combat Contest scheduled for early May 2002 at Arlington, Wash., just north of Everett.

What's in *Flying Lines*? ... 3-2-1-Go! ... RPM ... Stunt Stuff ... The Cognitive Modulator ... Combat Cornucopia ... Northwest Speed News ... The Real Thing ... Where the Action Is ... On Lines ... Way Over the Top ... Northwest Records ... The Scoreboard ... On the Contest Trail ... Air Mail ... Shop Tips ... NW Carrier News

Nostalgia Diesel Combat

Sept. 22, Surrey, B.C.

By Mel Lyne

No contest report for the September 22 D/Bat. First time ever — no Americans came, and only a few Canadians. They elected to fun fly, so we got the judges, Keith Varley and Ron Belcourt to fly some combat.

Keith flies lots of stunt but has never flown combat before. He really enjoyed himself. We also put some beginner friends of Remy Dawson's up on diesel trainers. So it was actually a very enjoyable day, just no contest.

The border lineups in the day are 2 1/2 to 3 hours each way now, so this makes it tough. To beat the lineups, you have to hit the border between midnight and 5 a.m. Pretty hard on the driver!

Oregon CL

Speed Championships

Sept. 29-30, Salem, Ore.

By Mike Hazel

Speed contests in the Northwest were a little sparse this year, so speedsters in the area were hungry for some action. We had a pretty good turnout, with 11 actual entrants and a few others who chose to help out and not fly.

Weather was absolutely superb for the two days. Air was nice on both days, with Saturday temperatures in the 70's, and Sunday saw low 80's.

All participants were treated to a "roll your own" deli sandwich lunch on both days. This seemed very popular, as no one had to waste any time leaving the field for chow. Will there be a 2nd annual? Stay tuned, probably so ...

In the Jet class, only Jerry Thomas got in flights, putting up a couple of good steady runs. Loren Howard had a tailpipe blow apart on his first attempt. Mike Hazel was trying out a new head but came down with the flowjector blues and failed to get off the ground. In the Sport Jet class, everyone got plenty of flights, with Howard trying to catch Hazel.

In Class D, Howard had a "Wazzup!" episode with his McGee-powered asymmetrical job. On about lap two the wing/fuselage connection came loose and the plane went into brief but violent gy-

rations before hitting the ground. Too bad, as the engine sounded really strong. Craig Bartlett came tooling in late Sunday and mooched a flying wire and put up one flight for the win.

Chuck Schuette finally got a full flight on his 1/2-A Class piped asymmetric ship. The engine did not come up on pipe, but was still fast enough for the win and a new Northwest region record. Hazel and Team Kortness (Ken & Roger) putted around on bad needle valve settings. Chuck had the only 1/2-A Proto entry, but turned a solid 103 in that class.

F2A had the highest level of entries, what with some of the FAI boys using this meet for additional tuning and tweaking to prepare for the following weeks' team trials. Jim Booker came out on top with a solid 174, but of course in FAI whatever you turn isn't fast enough.

In Class A, Ron Salo had two fast flights, with 180+ being best, and good enough for Northwest and Canadian records.

Howard's NovaRossi-powered Li'l Dynamite was the winning .21 Sport Speed combo.

Salo and Hazel did most of the piloting during the meet.

Team Kortness put up the only officials in Formula 40 and Class B. There were no .21 Proto entries. Full results follow (Northwest Standings Points in parentheses):

<u>1/2 A SPEED (3 entries)</u>	<u>MPH</u>
1. Chuck Schuette, Vancouver, Wash. (3)	115.93 *
2. Mike Hazel, Salem, Ore. (2)	86.75
3. Team Kortness, Spokane, Wash. (1)	71.81
<u>1/2 A PROFILE PROTO (1 entry)</u>	
1. Chuck Schuette (1)	103.17
<u>A SPEED (2 entries)</u>	
1. Ron Salo, Surrey, B.C. (2)	180.74 *
2. Team Kortness (1)	112.24
<u>B SPEED (2 entries)</u>	
1. Team Kortness (1)	158.81
<u>D SPEED (3 entries)</u>	
1. Craig Bartlett, Corvallis, Ore. (3)	166.29
2. Team Kortness (2)	162.24
3. Loren Howard, Vancouver, Wash. (1) attempt	
<u>JET SPEED (3 entries)</u>	
1. Jerry Thomas, Edgewood, Wash. (3)	176.06
2. Mike Hazel (1)	attempt
Loren Howard (1)	attempt
<u>NW SPORT JET (3 entries)</u>	
1. Mike Hazel (3)	150.95

2. Loren Howard (2)	148.45
3. Ron Salo (1)	143.25
<u>21 SPORT SPEED (3 entries)</u>	
1. Loren Howard (3)	150.57
2. Chuck Schuette (2)	145.92
3. Jim Booker, Arlington, Wash. (1)	133.28
<u>FORMULA 40 (1 entry)</u>	
1. Team Kortness (1)	142.06
<u>FAI SPEED (5 entries)</u>	
1. Jim Booker (5)	174.50
2. Todd Ryan, Klamath Falls, Ore. (4)	172.35
3. Paul Gibeault, Richmond, B.C. (3)	165.89
4. Ron Salo (2)	164.36

* Northwest records

Really Racing! (Not, really)

Oct. 6, Salem, Ore.

The unfortunate trend of low entries continued at the season's racing finale. On Oct. 6, the Bill Riegel Field asphalt circle was clear for the Northwest's racers to have at it in the first day of the two-day, two-contest couplet known as Really Racing/Fall Follies.

It was the 12th annual running of the October racing classic in Oregon, and publicity was out well in advance, along with dire warnings about the future of racing if attendance did not reveal an interest in continued scheduling of contests for this event.

Nevertheless, the contest drew only three entrants — Ron Howell of Federal Way, Wash., Dave Shrum of Roseburg, Ore., and the host team, the Nitroholics Racing Team.

Several members of the Western Oregon Control-Line Flyers and others helped out in running the events despite the low entry.

Flights were put up in most categories, but the contest was moved along smoothly so that the assembled aerobatics fliers could get the circle to practice for Sunday's Fall Follies — which they did immediately after the racing finished.

Thanks from the racers to Bruce Hunt, Gary Harris, John Clemans, Dan Rutherford and others for pitching in with timing and running of the racing events.

Even so, there were a few good races. Northwest Sport Race was run as round-robin features. There was an excellent single feature in Northwest Super Sport, with two good times turned in.

Clown Race also turned out to be a good race, despite some bonehead pitting from the Nitroholics ground crew. (Gotta check that battery rheostat, you nitwit).

After it was all over, discussion began on whether to continue this fall tradition — or any racing contests — in the Salem area in 2002, in view of the attendance at this year's meets.

Should the 2002 contest be two days of stunt, adding Classic and Old-Time on Saturday?

Stay tuned.

If you have input on this subject, now's the time to hear from you. Contact *Flying Lines* with your thoughts.

Here are the results (Northwest Standings points in parentheses):

CLASS I MOUSE RACE (2 entries)

1. Nitroholics Racing Team, Oregon (2) 6:0.88
2. Dave Shrum, Roseburg, Ore. (1) 8:27.14

CLASS II MOUSE RACE (0 entries)

AMA SCALE RACE (GOODYEAR) (1 entry)

1. Nitroholics Racing Team (1) 7:43.35

QUICKIE RAT RACE (1 entry)

1. Nitroholics Racing Team (1) 77 laps

NORTHWEST SPORT RACE (3 entries)

1. Nitroholics Racing Team (3) 9:35.29
2. Ron Howell, Hoquiam, Wash. (2) 11:32.53
3. Dave Shrum (1) 13:13.40

NORTHWEST SUPER SPORT RACE (2 entries)

1. Nitroholics Racing Team (2) 7:14.71
2. Ron Howell (1) 7:54.07

EXPERTFLYING CLOWN RACE (2 entries)

1. Ron Howell (2) 233 laps
2. Nitroholics Racing Team (1) 222 laps

SPORTSMANFLYING CLOWN RACE (0 entries)

the advanced class.

Weather was excellent for stunt flying, with a threat of rain not materializing. The Western Oregon Control-line Flyers' annual stunt barbecue was much appreciated by the hungry competitors.

Longtime CL flier John Clemans returned to the scene as a spectator with plans to re-enter competition in the future, and he donated a Fox .35 for the top beginner flier.

All in all, it was a fine finish to an excellent season of aerobatics.

Here are the results (Northwest standings points in parentheses):

BEGINNER PRECISION AERO. (5 entries)

1. Mike Anderson, Bend, Ore. (5) 248.5
2. Mark Conner, Othello, Wash. (4) 246.5
3. Dave Baxter, Scappoose, Ore. (3) 211.5
4. Montana Marlatt, Metolius, Ore. (2) 131.5
5. Joe Just, Waitsburg, Wash. 108.5
6. Matthew Eichten, Dundee, Ore. 44.5

Judges: Bruce Hunt, John Thompson

INTERMEDIATE PRECISION AERO. (2 entries)

1. Loren Anderson, Bend, Ore. (2) 436.5
2. Jim Johnson, Olympia, Wash. (1) 429

Judges: Bruce Hunt, John Thompson

ADVANCED PRECISION AERO. (5 entries)

1. Bruce Hunt, Salem, Ore. (5) 468.5
2. Nils Norling, Metolius, Ore. (4) 452
3. Leo Mehl, Portland, Ore. (3) 448
4. John Thompson, Eugene, Ore. (2) 442
5. Mike Hazel, Salem, Ore. 425.5

Judges: John Leidle, Scott Riese

EXPERT PRECISION AEROBATICS (3 entries)

1. Scott Riese, Portland, Ore. (4.5) 533
2. Dan Rutherford, Bothell, Wash. (3) 521.5
3. Jerry Eichten, Dundee, Ore. (1.5) 493.5

Judges: John Leidle, John Thompson

Fall Follies a fine finale

Oct. 7, Salem, Ore.

The second day of the Really Racing/Fall Follies contest couplet, the 15th Annual Fall Follies, was well-attended and well-flown!

An encouraging sign was the lineup of seven entries in the beginner and intermediate classes, which rounded out the competitor list at 16 despite the absence of a few of the usual competitors due to other commitments. However, both the intermediate fliers, Jim Johnson and Loren Anderson, bid goodbye forever to that class, having turned in excellent flights, qualifying them to move on to

Get well soon, Frank!

Air Waves, the newsletter of the Pacific Aeromodellers Club in Vancouver, B.C., reports that **Frank Boden** is out of the hospital and improving. He has moved to Revelstoke, B.C., to live with his son, Mark, and even has been building some airplanes. That's good news about one of the Northwest's CL institutions! Anyone who might like to send Frank greetings, encouragement, etc., can reach him at the following address:

Frank Boden c/o Mark & Pat Boden
Box 2313
Revelstoke, B.C., Canada V0E 2S0

The Scoreboard

Northwest control-line competition standings.

Sorting it all out

Several autumn contest shootouts juggled the standings for what is likely to be a final time, though the scoreboard remains officially active until the end of the year.

The Raider Roundup, Oregon CL Speed Champs and Really Racing/Fall Follies resulted in almost a complete remix of the standings in September and October.

Since this is likely to be the last update for the year, we're publishing the complete standings as of press time for Issue 176. These will serve as the final standings unless there are unexpected updates or corrections.

Contests counted to date: March 10, Richmond, B.C.; April 7, Surrey, B.C.; April 8, Salem, Ore.; April 21-22, Portland, Ore.; May 6, Richmond, B.C.; May 12, Surrey, B.C.; May 25-27, Roseburg, Ore.; June 9-10, Lakewood, Wash.; June 23-24, Snohomish, Wash.; June 30, Surrey, B.C.; July 21-22, Redmond, Ore.; July 27-28, Richmond; Aug. 11-12, Coquitlam, B.C.; Aug. 12, Lakewood; Aug. 25-26, Salem; Sept. 1, Richmond; Sept. 8, Scappoose, Ore.; Sept. 15-16, Lakewood; Sept. 29-30, Salem; Oct. 6, Salem; Oct. 7, Salem.

Following are standings for updated events:

2001 STANDINGS

80mph COMBAT

- | | |
|--|----|
| 1. Jeff Rein, Bothell, Wash. | 40 |
| 2. Mel Lyne, Garibaldi Highlands, B.C. | 23 |
| 3. Bob Huber, Stanwood, Wash. | 17 |
| 4. Bob Smith, Roy, Wash. | 12 |
| Chuck Matheny, Arlington, Wash. | 12 |

1/2A COMBAT

- | | |
|----------------------------------|----|
| 1. Jeff Rein | 18 |
| 2. Paul Vallins, Lynnwood, Wash. | 8 |
| Mel Lyne | 8 |
| 4. Dave Baxter, Scappoose, Wash. | 7 |

- | | |
|-----------|---|
| Bob Smith | 7 |
|-----------|---|

NOSTALGIA DIESEL COMBAT

- | | |
|-----------------------------------|----|
| 1. Mel Lyne | 20 |
| 2. Remy Dawson, Vancouver, B.C. | 18 |
| 3. Jeff Riechel, Snohomish, Wash. | 13 |
| 4. Paul Dranfield, Mission, B.C. | 11 |
| 5. Buzz Wilson, Edmonds, Wash. | 6 |

SLOW COMBAT

- | | |
|-----------------------------------|---|
| 1. Jeff Rein | 3 |
| 2. Mel Lyne | 2 |
| 3. Bill Petterson, Everett, Wash. | 1 |

AMA COMBAT

- | | |
|---------------------------------|----|
| 1. Mel Lyne | 14 |
| 2. Howard Rush, Bellevue, Wash. | 9 |
| 3. Jeff Rein | 7 |
| 4. Bob Nelson, Redmond, Wash. | 5 |
| 5. Jim Green, Bellevue, Wash. | 4 |

OVERALL COMBAT

- | | |
|-----------------------------------|----|
| 1. Jeff Rein | 68 |
| 2. Mel Lyne | 67 |
| 3. Bob Smith | 19 |
| 4. Remy Dawson | 18 |
| 5. Bob Huber | 17 |
| 6. Paul Dranfield | 16 |
| 7. Jeff Riechel | 13 |
| 8. Buzz Wilson | 12 |
| 9. Chuck Matheny | 12 |
| 10. Tony Huber, Renton, Wash. | 11 |
| Charlie Matheny, Arlington, Wash. | 11 |
| John Thompson, Eugene, Ore. | 11 |
| Tom Strom, Seattle, Wash. | 11 |

PROFILE NAVY CARRIER

- | | |
|------------------------------------|----|
| 1. Mike Potter, Auburn, Wash. | 24 |
| 2. Shawn Parker, Seattle, Wash. | 12 |
| 3. Mike Conner, Pitt Meadows, B.C. | 11 |
| 4. Todd Ryan, Klamath Falls, Ore. | 9 |
| 5. James Cox, Delta, B.C. | 6 |

.15 NAVY CARRIER

- | | |
|-----------------|----|
| 1. James Cox | 16 |
| 2. Mike Potter | 15 |
| 3. Todd Ryan | 8 |
| 4. Shawn Parker | 8 |
| 5. Mike Conner | 7 |

CLASS I NAVY CARRIER

No points awarded

CLASS II NAVY CARRIER

- | | |
|------------------------------------|---|
| 1. Mike Potter | 4 |
| 2. Team Mark & Ted, Portland, Ore. | 2 |

OVERALL NAVY CARRIER

- | | |
|----------------|----|
| 1. Mike Potter | 49 |
|----------------|----|

2. James Cox	23
3. Shawn Parker	20
4. Mike Conner	18
5. Todd Ryan	17
6. Ted Gritzmacher, Portland, Ore.	3
7. Mark Hansen, Portland, Ore.	2
Team Mark & Ted, Portland, Ore.	2
John Hall, Tacoma, Wash.	2
10. Mike Hazel, Salem, Ore.	1
Chris Gomez, Auburn, Wash.	1

CLASS I MOUSE RACE

1. Nitroholics Racing Team, Oregon	3
2. Dave Shrum, Roseburg, Ore.	2
Aaron Smith, Madras, Ore.	2
S&S Racing Team, Seattle, Wash.	2
5. Amanda Smith, Madras, Ore.	1

CLASS II MOUSE RACE

1. Nitroholics Racing Team	1
----------------------------	---

NORTHWEST GOODYEAR

1. Paul Gibeault, Richmond, B.C.	2
----------------------------------	---

AMA GOODYEAR

1. Todd Ryan	8
2. Nitroholics Racing Team	7

QUICKIE RAT RACE

1. Todd Ryan	7
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2. Nitroholics Racing Team	
----------------------------	--

RAT RACE

1. Todd Ryan	4
2. Nitroholics Racing Team	3

SLOW RAT RACE

1. Todd Ryan	1
--------------	---

FLYING CLOWN RACE

1. Mac Ryan, Pasco, Wash.	11
Todd Ryan	11
3. Nitroholics Racing Team, Oregon	10
4. Paul Gibeault, Richmond, B.C.	6
5. Mike Conner	4

NORTHWEST SPORT RACE

1. Ron Howell, Federal Way, Wash.	23
2. Todd Ryan	22
3. Nitroholics Racing Team	5
4. Ron Salo, Surrey, B.C.	4
5. S&S Racing Team	3
Henry Hajdik, New Westminster, B.C.	3

NORTHWEST SUPER SPORT RACE

1. S&S Racing Team	9
2. Nitroholics Racing Team	8
3. Todd Ryan	7
4. Ron Howell	1

OVERALL RACING

1. Todd Ryan	60
2. Nitroholics Racing Team	38
3. Ron Howell	27
4. S&S Racing Team	17
5. Mac Ryan	11
6. Paul Gibeault	6
7. Ron Salo	4
Bobby Arledge, Sedro Woolley, Wash.	4
Mike Conner	4
10. Henry Hajdik	3

SCALE (all classes combined)

1. Chris Gomez	3
Nick Stratis, Auburn, Wash.	3
3. Ron Canaan, Auburn, Wash.	2
Mike Potter	2

SPEED (All classes combined)

1. Loren Howard, Vancouver, Wash.	23
2. Nitroholics Racing Team	18
3. Paul Gibeault	16
4. Chuck Schuette, Vancouver, Wash.	12
Marty Higgs, B.C.	12
6. Jim Booker, Arlington, Wash.	11
Ron Salo	11
Ken Kortness, Spokane, Wash.	11
9. John Headley	9
10. Jerry Thomas, Edgewood, Wash.	8
Dick Salter, Seattle, Wash.	8

OLD-TIME STUNT

1. Chris Cox, Delta, B.C.	32
2. Keith Varley, Vancouver, B.C.	24
3. Emil Kovac, Issaquah, Wash.	20
4. Don McClave, Portland, Ore.	10
5. Mike Conner	6

CLASSIC STUNT

1. Don McClave	30
2. Paul Walker, Kent, Wash.	18
3. Scott Riese, Portland, Ore.	7
Dan Rutherford, Bothell, Wash.	7
5. Bruce Hunt, Salem, Ore.	5

PRECISION AEROBATICS

1. Chris Cox	46.5
2. Paul Walker	40.5
3. Howard Rush	33
4. Jack Pitcher, Gresham, Ore.	28.5
5. Keith Varley	26

OVERALL STUNT

1. Chris Cox	82.5
2. Paul Walker	58.5
3. Keith Varley	50

4. Don McClave	49
5. Howard Rush	33
6. Jack Pitcher	28.5
7. Dave Royer, Portland, Ore. Bruce Hunt	23
9. Scott Riese	23
10. Mike Conner	22.5
Nils Norling, Metolius, Ore.	21
	21

TOP JUNIORS

1. Montana Marlatt, Metolius, Ore.	7
2. Aaron Smith, Madras, Ore.	2
3. Amanda Smith, Madras, Ore.	1
Ken Smith, Madras, Ore.	1

Flying Lines keeps track of standings in all AMA rulebook and Northwest official events, in all Northwest sanctioned contests.

Your *FL* editors do their best to keep up with the results, but contest directors can help keep the standings up to date by making sure to send the results to *FL* immediately after the contest. If you spot errors, please let us know.

Results must include the placing in each event through fourth place and the report also must list the number of contestants in the event, in order for the point standings to be counted accurately.

Also, please include in your report the hometown of the contestants, and note which contestants are juniors. Only Northwest residents are counted in the standings (AMA Dist. XI and British Columbia). The score of each contestant also should be listed for general reporting purposes



Life isn't all competition. Some planes are just for fun — even jets. Mike Hazel shows off "Big Blue," his two-line Dyna-powered sport plane. *FL* photo

and for checking against the Northwest records.

Remember, only results that we receive can be counted, so send them in. If you flew in a contest that doesn't appear to be counted, contact the contest director or *FL* and let us know.

Special notes: Precision aerobatics expert fliers' scores are multiplied by a factor of 1.5. When an individual is allowed more than one entry in a single event, only the highest-placing score shall be counted.

Send contest results, corrections and other correspondence regarding Northwest Competition Standings to John Thompson, 2456 Quince St., Eugene, OR 97404, e-mail JohnT4051@aol.com. For a printed copy of complete standings for any event, or for a copy of the rules for any Northwest event, send a self-addressed, stamped envelope.

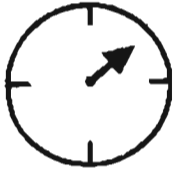
Flyaways

Random tips and ribs from
the *FL* workshop floor

- **Good news on a sad front:** Some time after legendary CL and old-time modeler Clarence Bull died, his entire collection of old engines was among the items taken in a burglary at his Harrisburg, Ore., workshop (former factory for B-Y&O props). Later, we got news that 108 of the engines, most of the collection, has been recovered. Free-flight guru and friend of Clarence, Bob Stallick, is preparing an article for a future issue of *Flying Lines* that will tell the story of the loss and recovery of the collection in more detail.

- **CL as poetry:** There are a number of entertaining and informative online forums. Two have emerged as your *FL* editor's favorites. One, of course, is the one I started in the Yahoo clubs section. It has a lot of Northwest dialog, plus a chat room, photos, etc. The address for that forum is <http://clubs.yahoo.com/clubs/controllineflyingforum>. But there's another forum that I also get a log of enjoyment out of: the CL forum on the FlightLines RC bulletin board. Lots of messages posted there, too, of both serious and whimsical nature. Where else, for example, could you find a lengthy exchange of CL-related haiku poetry, some of which is from the Northwest's own Howard Rush (Howard, we never knew!). One good thing about this forum is that there are no hoops to jump through to join up; just pick a name and password. Here's the address: <http://www.flightlines.com/cgi-bin/forumdisplay.cgi?action=topics&forum=Control+Line+Forum&number=6>. A haiku sample:

*The breeze is singing
My pattern is circular
And my lines are tight*



Northwest Competition Records

Best performances established between Northwest CL modelers in sanctioned competition

When speed fliers gather, records are in danger, as they proved again at September's Oregon CL Speed Championships in Salem, Ore.

Chuck Schuette knocked down Mike Hazel's 1998 1/2-A speed record, and Ron Salo took away Will Naemura's 1999 A Speed mark.

1/2 A Speed	115.93	Chuck Schuette	9-30-01	Salem, Ore.
A Speed	180.74	Ron Salo	9-30-01	Salem, Ore.
B Speed	168.47	Ron Salo	6-14-97	Kent, Wash.
D Speed	171.85	Ron Salo	5-28-00	Roseburg, Ore.
Jet Speed	196.64	Jerry Thomas	8-08-93	Richmond, B.C.
Formula 40 Speed	154.71	Ken Kortness	9/23/00	Salem, Ore.
21 Sport Speed	153.78	Loren Howard	9-18-99	Salem, Ore.
FAI Speed	183.52	Will Naemura	9-19-99	El Monte, Calif.
1/2 A Profile Proto	106.78	Chuck Schuette	6-20-99	Tacoma, Wash.
21 Proto Speed	133.03	Chris Sackett	5-25-97	Roseburg, Ore.
NW Sport Jet Speed	153.40	Loren Howard	9-18-99	Salem, Ore.
Mouse Race I - 50-lap	2:17	Stephen Cox	8-23-97	Salem, Ore.
Mouse Race I - 100-lap	4:22	Paul Gibeault	7-15-99	Muncie, Ind.
Mouse Race II - 75-lap	3:00	Todd Ryan	7-00	Muncie, Ind.
Mouse Race II - 200-lap	8:56	Todd Ryan	7-00	Muncie, Ind.
AMA Scale Race-70-lap	2:53	Todd Ryan	7-00	Muncie, Ind.
AMA Scale Race - 140-lap	6:54	Todd Ryan	5-27-01	Roseburg, Ore.
NW Goodyear - 70-lap	4:00	Joe Rice	5-22-98	Roseburg, Ore.
NW Goodyear - 140-lap	8:01	Julie Rice	5-27-95	Eugene, Ore.
Slow Rat Race - 70-lap	2:41	Todd Ryan	7-00	Muncie, Ind.
Slow Rat Race - 140-lap	5:49	Todd Ryan	7-16-98	Muncie, Ind.
AMA Rat Race - 70-lap	2:45	Todd Ryan	5-29-99	Roseburg, Ore.
AMA Rat Race - 140-lap	5:38	Todd Ryan	5-24-98	Roseburg, Ore.
FAI Team Race 100-lap	3:31	Ryan/Whitney	7-00	Muncie, Ind.
FAI Team Race - 200-lap	7:40	Knoppi/McCollum	6-84	Shanghai, China
NW Sport Race - 70-lap	4:00	Bruce Duncan	5-12-87	Richmond, B.C.
NW Sport Race -140-lap	8:22	Todd Ryan	7-24-99	Richmond, B.C.
NW Super Sport - 70-lap	3:12	Todd Ryan	5-27-01	Roseburg, Ore.
NW Super Sport - 140-lap	6:38	Todd Ryan	5-28-00	Roseburg, Ore.
Quickie Rat - 70-lap	3:05	Todd Ryan	5-26-01	Roseburg, Ore.
Quickie Rat - 140-lap	68 laps	Todd Ryan	5-26-01	Roseburg, Ore.
Flying Clown Race, Laps:	319	Todd Ryan	8-4-00	Coquiltam, B.C.
Class I Carrier	370	Todd Ryan	8-6-00	Richmond, B.C.
Class II Carrier	330.25	Orin Humphries	9-19-87	Kent, Wash.
Profile Carrier	314.00	Todd Ryan	5-23-97	Roseburg, Ore.
.15 Carrier	244.7	Todd Ryan	5-26-01	Roseburg, Ore.
AMA Endurance	39:56	Mark Hansen	7-12-98	Salem, Ore.

Records as of 10/19/01
New records in boldface

The Fox .15BB, which has been in production for many years, was once a viable engine for FAI combat. Now, it's a popular choice for events such as Northwest Goodyear and Flying Clown Race. The following hop-up information is from Paul Gibeault's "speed files," taken from the MACA Newsletter in the early 1980s, and written by Duke Fox himself. Some corrections have been made by Paul.

Duke Fox tells all

Quite a lot can be done to steam up the performance of a Fox .15BB for combat use. When the following modifications are carefully done, you can have a motor that will run with or faster than the best Rossi, SuperTigre or Nelson. Proceed as follows:

Disassemble the motor complete. Clean all parts thoroughly.

Crankcase: Extend the back bypass (the side opposite the exhaust) all the way down into the crankcase. The material is .093" thick in this area, and you can take .060" to .070" out without danger.

Front bypass: Fill the top of the front bypass with Devcon F so that the gas is deflected up from 40 to 45 degrees. This must be done accurately so that the top of the fill area is exactly .035" below the top of the cylinder port.

Rear cover: The top of the rear cover bypass must also be built up to match the top of the rear bypass in the case. This can be done much easier by cutting a scrap crankcase and a scrap cylinder in two, so that you can push the rear cover into the back half of the crankcase and work through the port to get the fill just right. You must use Devcon F, as any other material we have tried washes out quickly.

Cylinder liner: The bypass opposite the exhaust port works best when it is perfectly straight. Due to tooling problems, most ports drop a little bit at the sides. Very carefully, maintaining the same 35-degree bevel angle, even out the back bypass. Second, very carefully chamfer the insides of all the ports to .005x45 degrees. If

you have a lathe, try to wisher off the bottom flange to try and get it as square with the cylinder body as possible. Leave the piston and cylinder real tight at this point.

Crankshaft: If the crankshaft is annealed at 750 degrees for an hour or two and allowed to air cool, it will be slightly less susceptible to fatigue cracks than when left in the stock condition. A home oven will not get this hot, but a pizza oven will. Under ideal conditions we suggest a double anneal. Using a handy grinder, grind out the hold on the crankshaft until all the tool marks and rough edges are gone. The motor will run faster if the crankshaft hole diameter is increased, but that increases the chances of failure. As it is, the cranks have a very finite fatigue life. We suggest .281 as the largest practical interior diameter on the crank hole.

Intake: The intake diameter can be reamed to .312 with no problem. The diameter feeds all the air that the engine can use if the needle valve is replaced with a jet type such as used on the early Fox Combats or the SuperTigres. If you want to use a spraybar type, it should be filed as thin as possible to reduce the air intake restriction. A spacer mounted on the front of the crankcase to brace the intake stack in case of a crash is a good insurance policy. Filing a little flat area on the back of the intake stack and screwing a bushing into the crankcase the way we handle this. (*Editor's note: You also can mount the stack with No. 3 nylon bolts, which will break away in a crash, preventing damage.*)

Prop shaft stud: The stock prop studs are made from mild steel and tend to strip. If you can replace this with one made from an Allen screw, a possible source of failure will be eliminated.

After your motor has been reworked in this manner, reassemble it and be sure you have no binds anywhere except in the piston and cylinder. run the motor on a test stand for about 10 minutes. A power starter is probably necessary to get it started. If, at the end of 10 minutes, when the plug is removed, the piston still sticks in the cylinder, a little hand lapping is in order. Disas-

semble the motor, and using Fox Garnet and oil, hand lap the piston from the bottom up with the piston in backwards for the desired amount. Wash thoroughly in Varsol and reassemble, then run the motor for another 10 minutes.

Your motor should be ready for competition.

Again, to summarize: The things that are needed to make the motor go are, 1) Open the bottom part of the bypass opposite the exhaust; 2) Filling the top and beveling of the two Schnuerle bypasses; 3) Chamfer the inside of all the cylinder ports and square up the bypass opposite the exhaust; 4) Grinding out the inside of the crankshaft; 5) Enlarging the intake tube. In the interest of durability, we recommend replacing the crankshaft stud with one out of alloy steel and putting a brace back of the intake tube. Good contest practice dictates keeping some sort of time history on the crankshafts, and for important contests, replace them ahead of time. I think you will be amazed at the urge you get out of your Fox .15BB with these modifications.

For practice fuel we suggest you use Fox Missile Mist fuel, which is 25 percent nitro.

For competition, we suggest a fuel of the following formula: 40% nitromethane, 20% nitroethane, 3% propylene oxide, 10% castor oil, 8% Ucon oil, 19% methanol.

— Duke Fox, Fox Manufacturing Co.

Paul Gibeault also provides the following prop/plug test data for a stock Fox .15BB on 10% nitro (standard racing) fuel.

APC 7x4 — 20,100 with K&B short reach plug (steady).

APC 7x4 — 19,600 with Fox short reach plug (unsteady).

APC 7x5 — 17,600-17,900 with Fox plug.

APC 7x5 — 17,900-18,200 with K&B plug.

APC 6.5x5.5 — 18,800.

Paul Gibeault can be contacted in care of Flying Lines. He welcomes your engine questions that can be answered in the column.

Yoo, hoo! Time to renew!

You don't want to miss an issue of *Flying Lines!* If you're on the list below, your sub is due!

David Baxter, Robert Burks, Jim Craig, Jerry Eichten, Steve Helmick, Ron Howell, Ronal Ingham, Ken Kortness, Larry Price, Mr./Mrs. C.E. Ryan, Philip Straka, Homer Smith, Bruce Sharpe, Ron Yamada.

Stunt Stuff

Notes on Precision Aerobatics
from Chris Cox

The long and short of stunt plane lines

Line length. Longer, shorter, or just right?

How do you know when the lines you are using are just right? Can you calculate the optimum length? Pretty easy questions to answer if you race or fly speed, but flying stunt does not restrict you to a particular length, plus or minus 6 inches. In North America, both Canada and the United States utilize a minimum of 25 feet (7.62 meters) to a maximum of 70 feet (21.34 meters) from the center point of the grip part of the control handle to the fore and aft center line of the model. Of course, we can generally approximate the correct length simply by using past knowledge of aircraft size, weight and power. As an example, a Fox .35-powered Banshee will probably come in around 60 feet. A good starting point for a .46-powered Stiletto might be 66 feet while a 700 square inch, SuperTigre .60 ship will in all likelihood go a full 70 feet. No doubt any of the setups I've mentioned above will do fine, but is it optimum?

I suppose I first started asking this question when flying my Defiant II. With the OS .40VF up front and in reasonably light winds line tension was of no consequence, but when the wind really started to whip up I found that maneuver placement was of paramount importance. Miss the spot by a mere 5 feet and you wish you had taken a pass or just didn't bother to show up. Now first off, let me just say that leadout location plays a huge roll in line tension issues, but even when perfect if the engine is a little tired or the lines just too plain long, at some point you will run into trouble. I must have tried a zillion different combinations of leadout positions, nose weight, tail weight, tip weight, flap tweaking, pipe length, propeller changes, yadda, yadda, yadda. As a result, I did find the combinations that gave me the very best flying characteristics, but come the wind and turbulence all bets were off. All this time I had not shortened the lines. Hey, if Paul Walker flies on 70-footers, then so should I, right? Well, maybe yes, maybe no. First off, although primarily cosmetic, Defiants are different from Impacts. Also, as alluded to before, all engines do not create equal power output.

It wasn't until one of my philosophical discussions with Ted Fancher on matters of stunt that this subject came up. Ted suggested I shorten the lines! Sometimes it is very hard to see the forest for all the trees! Had I been flying a 1/2A job or a .35-powered profile and experiencing these same problems, one of the very first things I would have tried was shorter lines. But not with Defiant! This was a matter of pride. To fly anything shorter would be akin to admitting you are anything but a man (hey, Keith)! Well, imagine my shock when Ted informed me he was flying his PA .61 Final Edition on 68-foot lines and considering shorter! Not only did it provide Ted with what he felt more comfortable control, but he took it

one step further. His theory was, if he took a 5-foot stick in his hand and steered it about himself to simulate a pattern, he was confident he would hit the five foot level every time! Lengthen the stick, and the harder it would be to continue doing so. Make that stick 70 feet long and, well, you get the picture. Make the lines on a stunter too short and you might find yourself with a tiger by the tail.

That night I lopped off 2 feet and headed out to the field. Wow, much better! Amazingly, the bottoms were easier to hit. Two feet sounds like nothing, but in reality the difference is quite apparent. A general rule of thumb is for every foot you remove from line length you will lose .10 seconds of lap time, or you need to reduce the engine speed by 100 RPM in order to maintain the same lap time. Another option if you do not want to slow up the engine, but want to retain the original lap time is to reduce the propeller pitch. You might try 1/4 inch of pitch to start. Engines have optimum speeds, especially piped engines, to produce torque. Drop out of that speed range and you now have a high-tech muffler instead of a tuned pipe.

All of this line length stuff recent came to light again with my Saturn. Saturn started life on 70-footers, but very quickly was shortened to 68 feet. Never satisfied I tried 66-footers a few weeks ago. Although line tension was of no issue at anytime, I did not like the pull I was experiencing and to fly at a reasonable lap time the engine had to be slowed up too much. I should have tried different props, but I felt in my heart of hearts that I had gone too far. Also, another very strange phenomena reared it ugly head and the airplane would not track straight and level. Instead it wanted to hunt in level flight and tracking out of a hard corner was not ideal. Lengthening my lines to 67 feet made life considerably more pleasant, but the hunting in level flight was still there, albeit not as bad. Finally experience kicked in and I remembered how moving the leadouts too far forward would cause an airplane to hunt in level flight. So, back went the leadouts a 1/4 inch and WOW, did I have one fine flying airplane out on the end of the lines! Bottoms, and pullouts were instantly crisp and far more accurate than before. Admittedly I am flying faster than normal (5.10 sec), but it felt very controllable and relaxed. Next test will be slightly less propeller pitch and get the lap time up to around 5.25 seconds.

One thing about airspeed should be touched upon. Remember that a 5.4-second lap on 70-foot lines will give an equivalent airspeed of approximately 56 mph. Reducing line length to 67 feet with no change to engine RPM, prop pitch, etc. will reduce your lap time, NOT your airspeed. Should you reduce propeller pitch to raise your lap time back to 5.4 seconds, not only will your airspeed now be less than before (53 mph), but so will the line tension you had experienced on the longer lines! Also, it could very well be that your airplane prefers to fly at a slightly higher airspeed. When we shoot for a 5.4 or 5.5 second lap time, we should not be thinking that the slower you fly the better the pattern will be. In fact what we should be looking for is at what speed is the airplane happiest? This could be very fast to very slow depending on the airplane design. For example, one would not try to fly a Ringmaster at 5.6-second laps. The wing would never be able to provide the lift required. It needs to fly much faster. Conversely, we would not fly a Firecracker (i.e. "Big Ass Airplane") at 4.0-second laps. Not only would the wing loading be out of this world when trying to hit that magical 1.5-meter-radius corner, but it pull your arm out of its socket!

Since beginning this article I have been out doing some additional testing. One thing I have found is that although flying faster lap times on shorter lines, the speed

of the model still feels very comfortable. If I remained on 70-foot lines but flew a 5.10-second lap, the airspeed of the model would be considerably higher (59 mph) and the maneuvers would feel more rushed than shorter lines at the original airspeed. Remaining at slightly quicker lap times should provide me with all the line tension I'll ever need, time to fly accurate maneuvers and should I miss the maneuver placement by five feet or so from ideal, no sweat, the airplane will handle it with grace.

Chris Cox welcomes stunt questions. Send them to him in care of Flying Lines.

WAY THE
OVER TOP!
By Combat Maniac

"Big Road Trip" or "Driving A Really Long Ways To The Contest"

If some of you folks live near the end of the earth, way out in the boonies, or in another country even, then you'll have had first hand experience of those expensive, long, tedious, gas-sucking, exhausting road trips. But there is an easier and cheaper way to get to contests.

Now, we're all modelers, and we all like cheap. But hotels and motels are really cutting into the social assistance check or monthly disability pension, especially of us older guys who no longer get to "pad" the expense account. So here is what you do. You drive all night and sleep in the rest areas during the day. This way you don't need hotels and you don't even have to pay for a campsite. If you've got a van or a camper, it's perfect. Or if you've just got a car you can modify the driver's seat to be fully reclining, so you can sleep in luxury. Just be careful you don't get any "model crunching" noises when you recline for sleep. Heck, I've even stretched out on a blanket in the shade at some of those interstate rest stops. You do need earplugs for this. And, of course, only do this in the daytime. It's way too dangerous at night. You might bump into guys you haven't seen outside the slammer before.

So this is why you drive at night. And there's hardly any traffic at night so you can make really good time. The cops are usually in the donut shops by 8 p.m. and then home to watch sports on TV, so this is a bonus too. Just be sure you tank up (gas that is) before midnight at one of those big gas bars, because you won't find squat open at 3:30 in the morning if you run dry.

Staying awake driving at night does take some adjustment. Lots of strong coffee is good, and tea is even better. If you drink gallons of tea it really keeps you awake because you are hanging on just trying to make it to the next rest area! The interstate rest stops are usually pretty good with vacant bathrooms and sometimes they even give you free coffee!

Most of us have our own little "staying awake while driving" techniques, such as using your finger to hold one eye open at a time so the other one can sleep, and lots of other good tricks to keep your vehicle "Wheels-down."

The one bad side effect of this night travel is that you arrive at the combat contest in the morning and all you

want to do is go to sleep! Now this is actually not all that bad. If you're like me you probably screw up your first couple of matches anyway due to nerves, hangover, glue fumes from the all-night plane finishing frenzy — you know what I mean. This time you'll be doing it because you've fallen asleep at the handle! So just make sure you fly only in triple-elimination contests and you'll do fine.

So keep yer stick on the ice. I'm pulling for ya. We're all in this together.

Combat Maniac has no fixed address and can be contacted only via replies published in Flying Lines.

Just for the
FUN *of it!*

By Bill Darkow

It was a very good year ...

... for Firecat show team flying. There were spectators who applauded and asked questions, sponsors who treated us well, wrote "thank you" letters and invited us to return, students and guest pilots who shared in the fun and there was good weather for our shows — all that and more.

Statistics can be dry, but they tell a good story. Seventeen Firecat team members participated in nine shows. They put up about 325 flights that were witnessed by about 25,000 spectators.

We started the year with a modest two-day static display in June at the Olympia, Wash., airport's "Gathering of the Warbirds" event sponsored by the Olympic Flight Museum. It was really great to get up close to those classic WWII birds, then see and hear them fly by.

Then we jumped into a big three-day static/flying demo featuring the Blue Angels at the Rose Festival airshow in Hillsboro, Ore. Firecat team members consisting of event director Scott Riese, Jim Cameron, Bill Darkow, Gary Harris, Cecil Mead, John Anderson, Mark Hansen, Leo Mehl, Bill Veselik and Wayne Spears put up about 60 flights for about 10,000 spectators. We were invited back before we had finished flying and look forward to putting on a bigger and better show in 2002.

We performed for the Pearson Air Museum in Vancouver, Wash., during July, August and September. They are long-time supporters of the Northwest Fireballs/Firecats and really treated us well. Jim Cameron is the event director for this continuing series of shows. He was supported by John Anderson, Bill Darkow, Ted Gritzmacher, Gary Harris, Dave Royer, Alice Cotton-Royer,

Roy DeCamara, Roy Beers, Leo Mehl, Bill Veselik, Mark Hansen, Dave Baxter and Scott Riese.

Scott was also event director for a three-day extravaganza at Zupan's Historical Car Race Show held at Portland International Raceway the middle of July. Although somewhat overshadowed by the car people, Gary Harris, Mark Hansen, John Anderson, Bill Veselik, Jim Cameron, Bill Darkow, Wayne Spears and Nils Norling put up the most flights of any show this year. Nils "Bi-Slob" flights were real crowd-pleasers.

Probably one of the best in terms of "red carpet" treatment was the "Wah Chang Northwest Art & Air Festival" in Albany on Aug. 17-19. Event director Bill Darkow with of Jim Cameron, John Anderson and Dave Baxter put up about the same number of flights as the Hillsboro show. Show team members who missed a great time will get another chance to participate next year.

Finally, Firecat show team manager Jim Cameron directed the team's activities at the Oregon Air Fair also held in Albany on Sept. 15-16. Team members Leo Mehl, John Anderson, Ted Gritzmacher and Cecil Mead enjoyed a smooth blacktop flying site near the entrance to the Linn County Expo Center where the fair was held. We have also been invited to participate next year.

Note to competition flyers: Albany may be the site of the Northwest Regionals in 2002. The NW Firecats show team has performed there twice this year and "warmed up" the site for you. Let's take advantage of this opportunity and try to make this one of the best Regionals ever!

You are part of the CL communication network!

Flying Lines is your newsletter! There are many ways *you* can participate in making CL more fun and relevant for all of us:

- **Technical matters:** Share your knowledge in full-length articles or short items for the "Shop Tips" feature.
- **Regular columns:** Do you have a specialty that you'd like to write about regularly? There may be a place for such a regular item in *FL*.
- **Local news:** Condense your club newsletter for a page in *FL*, or send us local news if your area doesn't have a newsletter.
- **Favorite planes:** Send in a picture and an article about your favorite plane, past or present.
- **Unsung heroes:** We all know someone who has contributed immensely to the hobby. Send in a picture and an article about a modeler who has inspired you.
- **Letters:** Your comments welcomed in "Air Mail."
- **Your ideas!** Anything else you think might advance the general good of CL model aviation. Send it in!

News from the Northwest Skyraiders

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FLYING SITE REPORT

Ron Canaan continues to negotiate every possibility for a site! Here's a recap of his latest activities!

I met with John Hodges of Kent Parks Dept. on Oct. 10. and laid our cards on the table about River Walk. We talked for little over an hour. All I came away with was a promise that we would have a use permit by the end of the month for the use of the site and the ground rules spelled out on what we can do and can't do.



First of all, there are no plans for the park for three to four years. We can continue to use it through that time frame.

2. We are referred to as "homesteaders" in the parks department weekly meeting. Dwight, who cuts the grass, has reported several times that we keep our trash picked up. A letter stating this has been placed in our file.

3. Improvements can't be made at this time by the city or us without their permission. If the city does any work they have to develop the entire park per city law, then they aren't eligible for state funds for park development.

4. This park was bought with federal funds but the city missed the date for federal funds for development. They have applied and have been approved for state funds for a PASSIVE use park, i.e. picnics, walking trails etc. The group that was to have funded the walking trail around the rivers edge has backed out of the agreement and the city now has complete control again.

5. The Parks Dept. site plan has us placed in the northern part of the site with a note that the club will meet with them about site improvements. This is only if the state considers us as passive users. John wants us to continue to fly there and to get involved with civic groups to promote our sport. I suggested that we give a demo to the senior citizen center. He thought that would be great and he is going to follow through and let me know when and where.

6. The only improvement I could get was to level the flying site. We can make 2 level circles. He can't use parks department people for this; this would be an IMPROVEMENT. However, there is a volunteer parks group, Boy Scouts and folks sentenced to community work that are looking for projects such as this. He gave me the contact persons name and phone number. All we have to do is contact the guy and go with him to the site so he can see how many people it will take to level and seed it. Then we see John for his signature on the work order. We must have someone on site while the work is done. If we had a couple of guys to help level the circles this would place another letter in our file to be given to the state for

consideration for passive use.

7. I have several estimates for a paved open center circle. They range from \$3,410 for concrete, \$6,181 to \$14,258 for asphalt. The city of Kent says if we pave more than 5,000 feet, we must have a water catch basin. Our paved circle is very close to that, depending on our final diameters; we can make it legally fit!

8. If and when we are approved as a passive use group, then the city will build the whole park including a model park to our specs, with restrooms on site., etc. The only catch is we won't be able to limit its use to our group, but it can only be used by AMA insured members. A sign will be posted stating that, along with safety notes.

9. When our use agreement is issued later this month we will be required to meet with John about every three months to discuss any items dealing with our site, also to keep us up to date on the progress or lack of on the park development.

The Kent Parks department wants to talk to King County about the County's plan for us, and our long-term site with them. He is willing to let us use River Walk until the state makes up its mind or the County finally moves on a site for us. John cannot say for sure if we will end up with River Walk so he is going to push the county to work something out for us. It is his opinion that King County is the proper agency to provide a site for control-line as they have for RC. I told him that we really preferred River Walk. He will continue to keep us in the long term plan but if King County comes through first with a complete site, not just one circle then we will have to go there so another group can be penciled in for River Walk.

How about another site to look into? Well, I just happen to have another one to check out. Ever hear of Grandview Park? It is about 1 mile north of the landfill on Military Road. Thirty-plus acres, so far all that is there is two soccer fields. I haven't been there yet but John Hodges told me about it and drew a map for me.

Now here is the downside. City of SeaTac operates it and is trying to give it to King County Parks. John suggested that King County take part of it and convert it to a site for us. At least that is what he is going to suggest to them. This might work and then again it might not. But what the heck, these guys are going to get tired us pound-ing away at them!

Chris Gomez reports that the Kent field is very good shape for flying. Nick Stratis ~~stole~~ ~~acquired~~ purchased a used John Deere riding mower and has made it operational. He and Chris have been cutting it every week. As a grass field, it gets better with each cutting. Ye olde editor has actually flown out there himself! Chris has also placed a 4" black pipe in the center of the circle which helps find the center when you wander about a bit in the wind! He has also extended the outer ring to 78 feet, so 70-foot lines don't end up in the rough.

CLOVER PARK SITE UPDATE:

Mike Potter clarifies the site issue: The Clover Park site is officially available **ON WEEKENDS ONLY**, according to our current agreement. There are other items in the wind, but for now, it's available.

Condense your club newsletter for publication in Flying Lines. Contact the editor for info.

FLYING LINES

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