News of Northwest Control-Line Model Aviation

Flying Lines

2456 Quince St., Eugene, OR 97404 JohnT4051@aol.com Editor: John Thompson/Publisher: Mike Hazel

It's the season for planting the seeds of CL success

We all know what time of year it is — time for getting busy with those 2001 building projects, maintaining all the equipment we beat up in 2000, and making our plans for the coming flying season. If we were farmers, we'd say it was planting season. That's not a bad analogy, either. If we want to harvest a good future in CL model aviation, we should be sowing the seeds now.

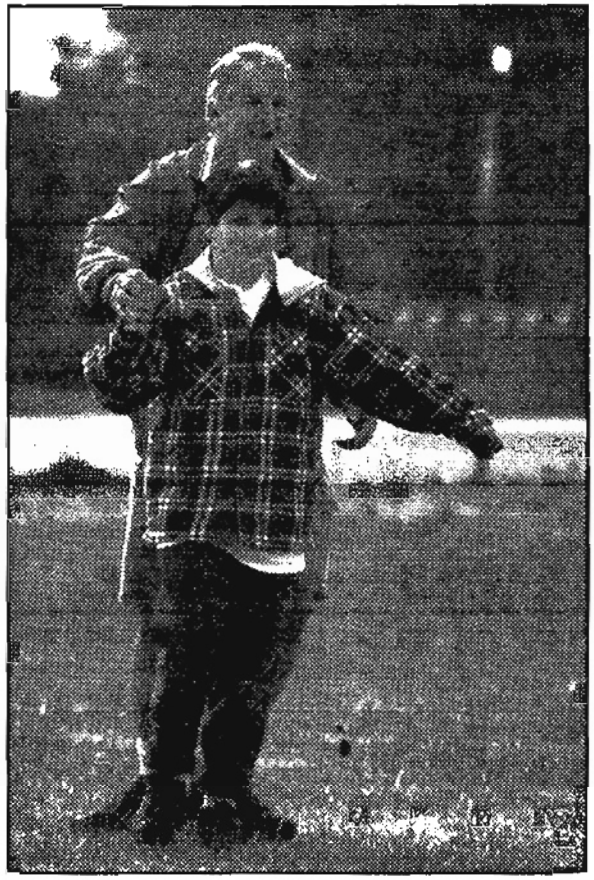
The picture at right is what we're talking about. There's Fred Walker teaching his son, Justin, how to fly a CL plane. They made lots of flight on the side circle at the Fall Follies stunt contest in Salem, ably assisted by Fred's brother, Paul (yes, *that* Paul Walker). They weren't the only family flying — there actually were two circles busy with beginners.

They were doing what we all should be doing. Every one of us who flies CL knows some youngster in our family, our neighborhood, our church, our school — or a group of youngsters. We also know adults who have expressed interest in our airplanes or in aviation in general. And we see spectators stopping by our flying sessions.

If each one of us were to take one of these potential new fliers under our wing, so to speak, and develop them as beginners for the 2001 season, we would *double* our participation. How's that sound? Well, it's up to us.

Here in *FL's* headquarters, Eugene, Ore., the Prop Spinners are planning a weekend display/seminar/building session/flying demo for early in the year for people who sign a sheet at the local hobby shop. That's just one idea being tried to boost CL participation. What's your idea?

Now's the time to get started on it. Let's share ideas and begin building our hobby as a whole in addition to our airplanes. That will assure we always have someone to fly them with!



Fred Walker gives a lesson to his son Justin at the Salem flying field. ***John Thompson photo***

In this issue ...

Round & Round

The Control-Line modeler at large

By John Thompson

Modeling thought for the month:

"A complex system designed from scratch never works and cannot be patched up to make it work. You have to start over, beginning with a working simple system."

— Second Law of Systemantics

Racing: Time for a restart

In baseball they call it the Hot Stove League. We have our counterpart in control-line model aviation. The "off-season" is a good time to think about the past year, look ahead to what might occur in the next, reminisce about the distant past and ponder the long-term future of our activity.

CL fliers in the Northwest have gathered around the stove early this fall, with the topic of racing on their minds. The entry level was down in 2001 and people have been wondering if there's any meaning to it, or whether it's just the normal cycle. A number of people have been thinking about ways to reverse the 2000 trend of declining attendance; some of their comments will appear in this issue of *Flying Lines;* other contributions to the discussion no doubt will surface over the course of the winter.

As a long-term racing participant, I have a few ideas of my own to toss into the hat for consideration along with the rest. Here goes ...

The Northwest has an advantage over much of the country in that racers here started thinking about a sensible comprehensive racing program, friendly to beginners and experts alike, as long ago as the 1970s. Some of us may take this excellent lineup of events for granted and not realize that much of what we are looking for already exists. It's more a matter of support and promotion than it is in reinventing the sport. What definitely is *not* needed is a new event — which seems to often be the solution to perceived participation problems.

Northwest contests now offer an impressive lineup of racing events, some of them well thought-out and evolved. If there's a problem, it is that there are too many events, fragmenting the participation to a dangerous level. We're spread too thin. In a way, we've been victimized by some of our own successes, Clown Race being a good example. Clown Race was invented to attract participation of casual competitors and beginners. It was a great success for a while at attracting such novices (until it was discovered that the loose rules had invented a very fast, hotly competitive competitive class) — but that success was at the expense of an existing event, Northwest Sport Race, that also was designed to appeal to novices (and which had been carefully drawn to avoid escalation into an expert-dominated event). Now, NWSR's participation is weak, while novices struggle to find competitive parity with experts in Clown Race.

But the basic elements of an excellent comprehensive racing calendar are already in place — It's just a matter of selecting the events and steering participation into them. The trick is to do so without upsetting folks who have the equipment all set up for their favorite events and don't want to be left out of the fun.

Before we make the choices, let's take a quick look at what already exists for us to choose from:

- **Class I Mouse Race:** A cheap, easy event that appeals to all ages, and is particularly attractive to adult mentors for groups of kids. Chief disadvantage is the sensitivity to weather.
- **Class II Mouse Race:** This has become a top-gun, high-speed event on the national level. It's a lot of fun, but not for beginners. A growing advantage is that very fast engines are available relatively cheaply, and national interest is rising.
- **Northwest Sport Race:** This event was designed to encourage beginner participation and training, using kit airplanes that might exist for sport flying or can be easily built, cheap engines that are readily available. Carefully written rules keep the playing field level, and expert pilots help teach novices racing skills.
- **Northwest Super Sport Race:** This event was designed to act as a stepping stone between the novice event, NWSR, and the faster AMA classes. It allows some creativity in airplane and engine work and the more advanced racing tricks common to the faster classes, but is carefully restricted to prevent escalation in speeds and difficulty. By luck or by design, the rules produced a fantastically exciting racing class with close races at a perfect speed for "the average guy" to pilot.
- **Clown Race:** What started as a club event

for Sunday fun-flying caught on nationally and evolved quickly into a very hotly competitive event. It remains simple to get into because the planes are easy to build and the engines are plentiful and cheap. It's main advantages are that it allows creativity in engine selection and, since it is scored differently from the other events, it is not "just another event." Its disadvantages are that it duplicates other novice events and takes place at much faster speeds than originally anticipated.

• **Northwest Goodyear:** This was created as a step-down event from the expensive and difficult AMA class, but it suffers from its duplication of existing novice events, Northwest Sport Race and Clown Race.

• **AMA Goodyear:** What started out decades ago as an event for cute, scale-like airplanes that would attract lots of novices and casual fliers, became an expensive, fast, top-dog national event with limited participation. It remains so.

• **Slow Rat Race:** Another of those "entry-level" events with rules that hindsight has proven to be poorly thought-out. Loopholes that allow inboard tanks and centrifugal carburetors have resulted in an event that is not slow, not easy, and not popular. NW Super Sport rules executed the Slow Rat concept successfully by closing the loopholes.

• **Rat Race:** The top-gun unlimited AMA event is great fun for those few able to handle the speeds, pull, difficult airplane construction, cost, etc., but aforementioned obstacles have virtually killed the event. Help is on the way, as the National CL Racing Association is studying a .21 engine size limitation that could resuscitate the event.

• **Other events:** Elsewhere in the nation, other racing events exist that basically duplicate the above list: NCLRA Fox Race is similar to NWSR, Quickie Rat is similar to Super Sport, etc.

What to make of the above list, when arranging a racing schedule?

Here's my suggestion, which is sure to prompt constructive alternative responses. I see two possible directions:

1) Continue with the current style of contest, but work hard on promotion, and weed out some of the superfluous events. Develop a yearlong schedule through cooperation among all the contest organizers, designed to reduce the number of events at each contest but to cover the spectrum over course of the year. A couple of the events should occur at each stop. In this scenario, I would propose running NWSR and NWSS at every stop, adding Mouse I, Mouse II and Clown at a few others. I would drop both Goodyear events and Slow Rat entirely. If Rat comes back as a .21 event, I would find a place for it on the schedule. The above suggestions would steer participation into the most popular events, restore a logical skill progression (Mouse-NWSR-NWSS-Rat), and prevent overbooking individual contest schedules.

2) In a slightly different approach, I would reduce the number of racing categories at any one contest, and expand the schedule to allow more racing within that event. I would use the old Drizzle Circuit scoring format, in which placement in multiple heats determined the finalists, to create a more interesting strategy. Under this approach, a contest might involve no more than two racing events, say NWSR/Clown, NWSR/NWSS, Clown/NWSS, etc.

What about skill classes? Nope. This is a successful approach for precision aerobatics because the task and airplanes are the same for all skill levels, and dividing fliers up by skill level makes sense. In racing, the different event classes themselves provide the skill division. Because it is a multipilot event, the mixture of novices and experts provides a desirable training arena. Putting beginners only with beginners results in perpetual beginners. And, finally, we've tried skill classes in racing, and it has not worked.

Whatever approach we take, one thing will be needed to get racing back on its traditionally strong footing in the Northwest — cooperation among racers.

We need to put aside differences that may have emerged, recruit new fliers, mentor and train them, and get them out to the contests in 2001. We can look at the example set by such fliers as Larry Hyder, Dave Shrum and Alan Olsen, and see that the future of racing rests on our shoulders. It should be possible for every established racing team to come up with one novice team to assist in the coming year.

Oh, and one more thing: When there's a racing contest, we have to *attend* it. Don't assume that it will always be there waiting for you, when you're in the mood to participate.

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.

Whither racing?

■ Northwest fliers are thinking about the future of CL racing in the region. Here are some of their ideas.

The Blind Men & The Elephant

(or) What's Wrong With Racing and How To Fix It

By Bill Darkow

First of all, I am NOT going to offer any magic pill that will cure racing's ills. The problems have progressed too far for that. As investigators have discovered about most airplane crashes, the root cause is rarely a single factor. Rather, it is usually a chain of events ending in a final catastrophic failure. Further, if any one of those events had not occurred or been modified, the crash would not have happened. However, they are usually able to make changes to assure that, although airplanes will continue to crash, a root cause has been eliminated or at least minimized.

Next, we need to agree that racing is in deep trouble, that it is worth saving and that we are willing to work together and make the necessary changes. After checking e-mail, reading postings on forums, visiting chat rooms and old-fashioned talking with local flyers, it is difficult to deny that racing is in decline. Clubs from coast to coast are considering either cutting back on the number of events or dropping it from their contest calendars.

Pointing fingers and assigning blame can only hasten the demise of racing through self-destruction. That's like the favorite whipping-boy of the National Transportation Safety Board — "pilot error." However, if we substitute "human nature," we may come closer to a better understanding of the problems threatening racing. In racing, it is human nature to want to go faster than the other guy and we will do whatever it takes to succeed at it.

Model airplane racing, like nearly all forms of racing dependent on mechanical propulsion, is approaching stasis. Take Clown Racing for example. When it started, 200 laps was the threshold of expertise, then 250 and now 300. The early improvements in performance came relatively quickly and easily. Now, it takes a lot of time and effort to achieve even a small improvement. The same is generally true for all control-line racing events.

When that happens, a small band of dedicated "super experts" dominates the event. Unless beginners are equally dedicated, they will find it extremely difficult to break into the winners circle. Since we are supposed to be racing toy airplanes for the fun of it and there isn't much fun in losing regularly, it is hard to remain dedicated and general participation drops off. The small band of super experts soon realize that winning by default is unsatisfying and there is such a thing as victory without honor.

At this point, concerned racing enthusiasts begin searching for ways to improve participation. Unfortunately, we seem to be acting like the blind men who were asked to describe an elephant by touching it. Since each of them took hold of a different part, their descriptions varied widely, but each was sure his was correct so "they argued loud and long." The conclusion was that "Each was partly in the right, and all were in the wrong." This piecemeal approach to reforming racing has led to a number of proposals, each of them with some merit, but none of them addressing the problems in a comprehensive manner.

As a former CL racer, event and contest director, I believe we need an overall plan to deal with the problems that takes into account a basic fact: There are too few contestants participating in too many events that require too much time and staff to run at small, club-sponsored contests. The days of the big multi-event marathon meets are long gone.

Too many events. Almost everyone will agree on that, but no one wants their favorite event left out. Furthermore, many of the present events are long past their prime in terms of development as well as participation. The last "new" event I can recall is the very successful Clown Racing and it's over a decade old.

I believe that if we are truly concerned about the future of CL racing, the time has come to take a unified approach to getting us out of the current decline by devising a comprehensive plan that will promote racing and increase participation. Perhaps the NCLRA is best suited to do that.

I said I wouldn't provide a magic pill and this isn't one, but maybe we should carefully consider performance-based classes based on demonstrated

skill levels similar to that used successfully by PAMPA — a sort of Pro-Am distinction. Tried it briefly in Clown until participation dropped off so much that it became inoperable, but it seemed to work satisfactorily when there were enough contestants to make the distinctions.

If we want CL racing to prosper in the new century, I believe it's going to take a concerted effort to make a fresh start. It's up to us.

Some Thoughts on the status of NW racing

By Mike Hazel

There has recently been some discussion among Northwest CL modelers regarding the apparent decline of racing activity in our region. The discourse has included both positive and negative type ideas — along with similar type attitudes.

On the positive side we have had both racers and general CL proponents offer ideas on how to stimulate interest. This has included some conceptual changes in how racing contests might be conducted. *FL* readers also should have noted that there was a "rookie award" given for the year, of which was hoped to spur some more interest.

And on the negative side, we have modelers about that are so narrow-minded that they don't want any racing at their contests because they aren't personally involved in the event themselves. As a racer, but moreover as a general overall supporter of CL, I find such attitudes appalling and indicative of a lack of appreciation or respect for another niche in our discipline. We all need to be supporting each other, and not contributing to any clique mentality. If you believe that your particular event is the "premier," or end-all activity, perhaps you are ready to "graduate" to RC! *(Oh wow!, did I really say that?????)*

To be sure, Racing has some "problems." To some degree, every event (or event class) shares some of these problems. One factor that has perhaps hurt racing is that there are probably too many events. With too many event classes, it can dilute entries across the board. Plus, it becomes more of a burden on contest management. Some might argue that this helps, as it gives the participant more to participate in, and the various event classes provide skill niches that competitors can fall into. That argument is at least partially correct.

However, I wonder if the basic "problem" is that of all high-performance oriented competition activities ... THE BEST COMPETITOR WINS! In our society's ever-increasing instant gratification mind-set, *(Bad news! In case you haven't noticed, our hobby is not immune to this disorder!)* too many modelers may have the notion that they can just buy some equipment and stroll into the winner's circle. Sorry, it just doesn't work that way for racing, or really any other event for that matter.

Here's another possible reason: It is the "graying" of participants in the hobby, hereafter referred to as the Geezer Factor. Ya know, I don't remember getting older, but it sure seems that some of us have been doing this hobby a long time. And maybe, *just maybe!*, some things get a little harder to do.

Control-line flying is the most physical of all aeromodeling disciplines, and Racing is probably the most physical of all. *(No, don't cite Free Flight to me, those guys have motor scooters to chase their planes!)* The Racing pilot must be quick on his feet, and be bumping and grinding in the center of the circle with one or more pilots for several minutes. And the racing pitman generally gets to work on his knees in a bent-over position, deftly catching speedy incoming planes and then he must quickly and accurately service the plane and "get rid of it" as soon as possible.

Yeh, I can see that if one has succumbed to the Geezer Factor, the above might not sound real appealing. *(This is the juncture at which the hard-core racer would chide non-racers for being wimps — but we won't do that here, at least not this time!)*

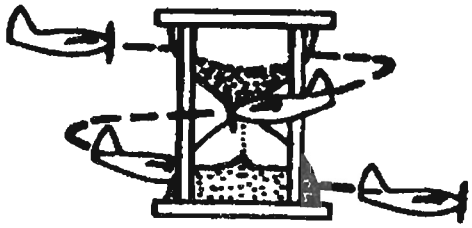
This writer has become mildly involved in the Stunt scene over the last year or so. I see quite a contrast in "lifestyles." Many of the Stunt folks will be at a contest all day, just to put in two official flights. Much of the rest of the day is spent socializing, which might mean helping others or just sitting around. None of this is meant as criticism, far from it. Perhaps there is a "social factor" that is missing amongst the racing troops.

Now let's wander off onto another train of thought:

Every activity seems to have it's periods of ups and downs. This simply means that interest can be cyclical. Having been involved with the Northwest Regionals contest since its inception, I

have had ample opportunity to witness this. I can remember a time when there were 20 or more entrants flying Goodyear and Rat, meanwhile only a mere handful flying Stunt. Does this tie into the above mentioned factors? Oops! Let's not forget a more recent example, that being the approximately 30 Mouse Race entries only three years ago at the Regionals.

Not real sure if any of this rambling will make sense to all, but more will follow and comments are invited. Just a couple of closing thoughts: Racers, you need to get off your butt and promote your event. And Contest Management, don't be hasty in dropping Racing from your venue. All events need support, and if all low-entry events had been dropped over the years, none of us would be here!



Can You Endure?

By Mark Hansen

Recently there has been a renaissance of sorts that has taken place in the Pacific Northwest and in an isolated part of New Jersey, a renaissance in AMA event 332. That's right — control-line endurance.

After the endurance population explosion of the late 1990's, there are now somewhere in the area of *four* competitors. All vying on a national level for the coveted AMA record of 2 hours plus, on a mere 4 ounces of fuel.

Most of the rank and file flyers in this event have come to the conclusion that there should be some changes made to help curb the recent trend in popularity. So, Bill Darkow and I sat down over burgers and soda at Portland's Delta Park Burger King and came up with what we both agree is a set of rules that makes the event more user-friendly for both the contest official and competitor.

Our rationale for the new event follows. We feel these are changes that will increase the number of contest, and the number of participants, at these contests.

We decided to split the event into two separate events, one for diesels and one for glow engines, since the economy afforded by diesel fuel gives these quirky engines an unfair advantage over glow power. We also appreciate the fact that the mere mention of the word diesel sends most competitors running upwind, in search of cover. I chose to lump ignition engines into the diesel category, since their fuel has many of the same advantages as diesel.

The line size has been set a very user-friendly 35 feet, .012 diameter stranded lines. This allows for the meager powered aircraft to stay tight on the lines even in windy weather. The size was not by chance, since this is currently the line size used in 1/2-A combat and they are commercially available.

The tank volume has been reduced to allow for more test flying and more flyers to compete at contests. Currently a test flight will last somewhere in the area of 35 minutes, and several such flights may be necessary to determine what plagues the engine.

The engine sizes have been brought into a more realistic size for the competitor searching for endurance. It is also of note that most diesel manufactures are currently making engines in the 1 c.c. to 2 c.c. size, and not one competitor in the Northwest has used an engine above that size in competition.

The 15-pound pull test is consistent with the average speed (30 mph) and weight (24 ounces) of the models being flown.

I hope that the above changes will help to increase the popularity of an event that is both a technical challenge, and requires exceptional piloting skills.

A copy of the proposed rules appears on the next page.

Please feel free to address all comments to me at FastCombat@aol.com, and remember stop wasting fuel — fly endurance!

Empty mailbox alert!!

Your daily delivery will be missing something important if you let your *Flying Lines* subscription expire! Here is the list of subscribers who are expired after issue #168:

Larry Bell, Preston Husted, Will Naemura, Nils Norling, Scott Riese, Richard Scherer, Chuck Schuette, Mark Wahlster, Bob Whitney.

Northwest Control-Line Endurance

1. All AMA control-line general rules will apply.

2. Spirit of the event: Northwest Endurance is designed to provide a simple event for those modelers who wish to advance the development of modeling through improved engine economy, efficiency and reliability.

3. All AMA event 332 rules will apply with the following exceptions:

a. Engine and line size shall be per the chart below; line size and diameter are minimums and may be increased from those recommended.

b. Maximum fuel volume shall be 1 fluid ounce (31 cubic centimeters).

c. Displacement of four-stroke engines shall be figured at .6 of actual displacement.

d. Pull test shall be per the chart below.

Engine Displacement	Line Diameter.	Line Length	Pull Test
1c.c.-2c.c.	.012 stranded min.	35' min	15 lbs.

4. There shall be two separate events, one restricted to glow engines, and one restricted to diesel engines. The two events will be called Northwest Glow Endurance, and Northwest Diesel endurance.

5. Records will be kept in junior, senior, open, for all of the above engine classes.

6. All other types of engines shall compete in the diesel event.

mhansen/fl/11-17-00 provisional

SHOP TIPS

CLEVER BUILDING IDEAS FROM *FLYING LINES* READERS

• Here's a "Lost Foam" process tip that can be used for fiberglass cowlings, wheel pants, and any "one-off" shell.

Carve and sand a male mold out of blue or pink hard foam insulation. Mist 3M #77 Spray adhesive onto layers of whatever material (glass cloth, carbon veil, kevlar) you like, and wrap it onto your male mold. Use enough layers to do the job. Impregnate the layers with epoxy resin. *Do not use polyester resin.* It will dissolve the mold. When fully cured, pour acetone or Lacquer Thinner into the male mold, and the foam will dissolve, leaving the shell.

— Mel Lyne

• Ever need spacers for a bellcrank installation? Try using nylon curtain rollers, the type used on I-Beam curtain rods. They are just the right size and are way lighter than steel flat washers.

— Mel Lyne

• Combat model boom material: The superlightweight thinwall 5/16" dia arrow shafts made of Easton 2016 aluminum are the lightest, but tend to snap in dorks. 3/8" dia carbon tent pole or 1/4" dia carbon kite spar also can fail in a dork. Just a couple of grams heavier is 3/8" dia Easton 7075 aluminum tent pole. With a slightly thicker wall, these survive all dorks. Available from R.E.I. and outdoor stores, it comes in 26-inch lengths.

— Mel Lyne

• Ever want to put lightening holes in a solid foam wing? Take a clean empty bean can, remove the bottom, and using tin snips cut off the rolled edge, leaving a sharp thin edge.

Place the sharp edge on your wing resting on cardboard and use a twisting motion with a little downward pressure to "bore" through the foam.

When through, use the same twisting motion to remove the can. With care, a neat hole can be created. The "slug" of foam in the cylinder can be pushed out ready for the next hole.

— Mel Lyne

• Sanding delicate items or small areas can be tricky with a big sanding block or a handful of sandpaper. Go to the cosmetics section of your grocery store and buy a package of emery boards. They make great miniature sanding blocks.

— John Thompson

Do you have your own favorite new tool or technique? Send it to Flying Lines *for publication in* Shop Tips.

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 Dr., Richmond, B.C. Canada V6V 2K8 Phone: (604) 525-1020 weekends.

FOR SALE: All props and plugs 25% off; Eugene Toy & Hobby, 32 E. 11th Ave., Eugene, OR 97401. (541) 344-2117, www.eugenetoyand hobby.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: Don't fly Stunt? But you do paint. Cover with plastic film. Rework props. Fiddle with motors. Wish to build light but strong models. Have an interest in composite structures. Can't get enough of Da Dirt's blather. (Okay, the latter is a stretch!) But you do like to be fully informed on all things CL. Hey, you should be a Precision Aerobatics Model Pilots Association member after all! Send $25.00 to Shareen Fancher, 158 Flying Cloud Isle, Foster City, CA 94404.

FOR SALE: FasCal — I have turned over sales of FasCal model airplane covering to J&J Sales. See their ad in this issue for contact information. Please make all FasCal orders from J&J sales. Thanks for your business! John Thompson, 2456 Quince St., Eugene, OR 97404. E-mail: JohnT4051@aol.com.

FOR SALE: Kits: Sig Magnum, $50. Brodak .38 Special, $50. Brodak Fancy Pants, $50. Brodak Profile Mustang, $50. Sterling Hellcat profile, $40. Control Line Classics OTS Viking, $50. All kits new in box. O.S. Max .32 ABC, Dixon rework, never run, $100 or best offer. Gerald Schamp, 1761-12th Ave., Sweet Home, OR 97386. (541) 367-6800 after 5 p.m.

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.

WANTED: Collectible quality CL speed kits. Mike Hazel, (503) 364-8593.

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.

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

Just for the **FUN** *of it!*

By Bill Darkow

Are we having fun, yet?

In order to amuse us, some comedians have offered twisted meanings for ordinary expressions. I offer this pair — "Contest flying" and "Fun (sport) flying" — commonly used to differentiate types of modeling activity. Does this distinction mean we believe contest flying is neither fun nor sporting — or fun flying is trivial silliness? I don't think so. However, many of us seem to act as though they are mutually exclusive activities.

Where's the fun in competition? What's the challenge in fun flying? My guess is that it depends on the expectations and attitudes we bring with us to the field.

If we compete with the expectation that how we feel about ourselves needs to be boosted by beating other contestants, then that will be reflected in the intensity of our drive to win. Victory becomes our proof that we are superior — hence the chant, "We're Number One!". Defeat becomes a personal loss. That is usually what's behind the unpleasant behavior we sometimes see at contests — rule-bending, questionable flying tactics, protests, arguments, etc. Under those circumstances, there is very little "fun" for anyone in competition.

However, if we compete with the expectation that we will strive to do our personal best and pleasure is found in progress toward that goal, then we will be driven to improve ourselves. Victory simply means our level of accomplishment is higher than others through a combination of applied enthusiasm, talent, equipment and practice. It is neither proof of our superiority nor their inferiority. Defeat exists only if we become discouraged and give up on ourselves. With that set of values and beliefs, the stage is set for plenty of "fun" for everyone.

When I was attempting to promote interest and participation in CL ROW, I was surprised to have a colleague ask, "What's the point?" The point is to fly an event where you enjoy meeting the challenge, get good at it and then get better because it gives you pleasure and satisfaction to meet the goals you set for yourself, i.e. have "fun." If you happen to win a prize or two or set a record along the way, that's icing on the cake.

Now I'm part of a team promoting flying in CL demonstrations at air shows. After flying in four shows this summer, we were asked, "Well, how many new members did this bring into the club?" None. Does that mean we were failures? It does if bringing in new members (like winning) was our only goal. However, I don't think of our efforts as a waste of time. Nearly everyone who flew with the team, including one hard-core contest flyer, commented on how much "fun" they were having.

The challenge for each member of the team is to improve our showmanship and the quality of our presentations in 2001 — six of them! If we pick up a few new club members, that will be a bonus but not the only measure of how much "fun" we have.

Contest-flying and Fun-flying are two sides of the same coin. They're both fun in their own ways. How much fun depends on you.

Fireballs Olympia flying demo

The NW Fireballs wrapped up their biggest and best CL demo season with an outstanding show at the Olympic Flight Museum's "Wings Over Olympia" aviation event on Saturday, Sept. 30 at the Olympia airport.

The threatening weather cleared up in the afternoon to allow plenty of flying. Fireball fliers included: Gary Harris, Bill Darkow, Mark Hansen, Jim Johnson and Leo Mehl. Seattle Skyraider Chris Gomez helped pit.

Star of the show was Ted Gritzmacher's Veco .61-powered P-51 Mustang flown by Jim Cameron. The model is a semiscale profile copy of the museum's "American Beauty" P-51. Pilot and museum founder Brian Reynolds, as well as director Teri Thorning, were so impressed by the model and the Fireballs' performance that they invited them to a return show at the "Gathering of the Warbirds" fly-in next June.

After the show, the whole team met at the Darkows for hangar flying and what has become a traditional dinner featuring BBQ'ed ribs by Caroline.

The Fireballs have racked up a record five shows this year with several appearances at the Pearson Air Museum in Vancouver, Wash., and a highlight 3-day demo at the Hillsboro Air Show in July.

Their excellent performances have earned them a return engagement at Hillsboro and a new invitation to a 2-day show at the Albany Arts & Air Fair in August.

This success has led the Fireballs to seriously consider forming an AMA-certified C/L Show Team for 2001.

THE COGNITIVE MODELER

Thinking about our hobby ... By Mark Hansen

As a new columnist to the *Flying Lines* staff, I think some background on me is necessary before I broach the subject of this months column; designing a fuel tank of any given volume.

I have been modeling in one form or another since I was about 11 years old. I first flew a control-line model at the ripe old age of 12, when my brother received a Cox P-51 for his birthday; we flew the wings off of that little green Mustang! My first control line model was a Goldberg Little Jumping Bean which made about half a lap under the control of my spindly 13 year old arm, before destructively meeting the ground; and being shelved for the next 15 years. In the hiatus I managed to build about 100 stick-and-tissue rubber powered models, graduate high school, and work my way through a bachelors of science in geology, from Portland State. I returned to control-line modeling by repairing that, same old, busted up, Jumping Bean, and re-engining it with a Medallion .09. Not long after that I completed a Stanzel Tigershark and met my first NW Fireball, at East Delta Park; that was 1996, and I have been an active control-line modeler ever since, mostly competing in combat and racing.

Now, that is enough yammering about me, let's tackle the subject at hand. How to make a fuel tank of any desired volume.

Step one, decide what volume of fuel you need for the desired application. For sake of example, I will work with a 1-ounce tank suitable for NW Flying Clown Race. I am also assuming that the tank is a regular rectangular solid, all corners are at 90 degree. Next, one must decide whether the tank will be made out of brass, or tin plated steel, also you must know what thickness is to be used and the overall relative proportions you wish to use. For the following example I will be using a tank of 2 inches length (that is all the room there is between an engine and leading edge on a Clown) and .75-inch thick (which just happens to be the distance form the engine bearer to the needle valve), the height is still to be determined, based upon our final volume, 1 ounce. I will digress to say that for glow engines it is necessary to use tin plated steel, and that brass is only suited to diesel or ignition applications, as the copper reacts with the nitrate in the nitromethane causing corrosion.

Volume is calculated by the simple formula:

$$\underline{\text{Volume}=L\text{x}W\text{x}H}$$

Which, in our case needs to be solved for the height since we have predetermined what length and width are to be. Solving the above equation yield the following:

$$H=V/L\text{x}W$$

Now, we are faced with a bit of a problem, we are looking for a liquid volume, but we are measuring our tank in linear inches. Not to fear though, I will now without the use of a safety net walk you through the calculation of the number of cubic inches in a fluid ounce.

1 gallon=128 fluid ounces (oz)

1 gallon=231 cubic inches (in^3)

since both of the above equations show a gallon related to something else, we can easily combined them to form:

$$128\ oz=231\ in^3$$

dividing both sides of the equation gives:

$$1oz=231\ in^3/128\ oz$$

$$1oz=1.805\ in^3$$

Using the above relationship we are able to calculate the height of our tank from the equation above.

$$H=1.805\ in^3/2\ in\ x\ .75\ in$$

$$H=1.20\ in$$

So, the final dimensions of our tank will be 2in x .75 in x 1.2 in., and I have chose to construct this tank from the commercially available K&S .008" thick tin plated steel, found at hobby shops everywhere. Now that we know the final dimensions of the tank we have to decide how we are going to construct it. I prefer to make tanks with two end caps, and a main body bent from one piece of metal. This type of tank construction necessitates that the main tank be bent in four places, soldered, and the endcaps soldered into place. These four bends are going to cause a problem if we cut our sheet metal exactly to the dimensions above; the

tank will end up substantially smaller than the once ounce we want. Don't get distressed we have a solution to this pesky problem, the famous bending allowance. The formula for bending allowance for a soft steel bent 90° metal is:

L=(0.64xT)+(1.57xR)

Where L is the length of the bending allowance for each bend, T is the thickness if the metal in question, and R is the inside radius of the bend. Let's look at the tank in the above example and make a sample calculation.

L=(.64x.008")+(1.57x1/64")

L=.005"+.025"

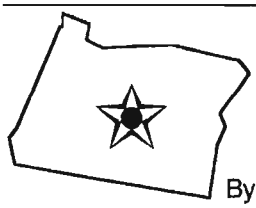
L=.030"

Wow! That is a large allowance considering that there are four bends to be made, which would translate to.

4 bends x.030"=.120"

That's right our piece of sheet metal would have ended up over 1/10 of an inch too short. Let me shine some light on how to use this tidbit of information. When laying out the piece of sheet metal to become the main body of the thank, the dimensions would be 2"x1.23"x.78". These are the dimensions that will be used for the pattern. Also, note that the allowance is for the bends between, the endcaps, since they are most commonly bent to fit the body of the tank.

I hope that this discussion will help anyone wishing to construct a fuel tank for themselves, if you have any questions, please feel free to address them to me via e-mail at FastCombat@ aol.com.



Central Oregon News

By Nils Norling

Winter has arrived in Central Oregon, but the flying weather has been good. Cool, but good. Not too much sun-in-the-eyes & the winds have been light. We broke out our burning barrels at the field a few weeks ago, now we just need a few RC quarter-scalers for fuel. Those things really put out a lot of heat, for a while at least.

Speaking of burning barrels, here's a bit of rural modern weirdness for you — we tried to take our burn barrels to the "Transfer Station" half a mile away & dump them since they were already in the back of the pickup. There were some ashes & old burnt cans & broken glass & whatnot in them left over from last year. Well, guess what? They won't let you dump burning barrels any more. Know what we were told? Loose quote — "Take them to Prineville's 'Sanitary Landfill' (28 miles away) or to Bend (20 miles away), OR, DIG A HOLE IN YOUR BACK YARD & BURY IT."

Now I might be off track here, but wasn't that what they were trying to keep people from doing years ago when they started making city dumps? Apparently we've gone full circle from dumping cans & bottles in our yards, to free city dumps, to "Sanitary Landfills" (that charge you money), and now to "Transfer Stations" that tell you take your garbage home & bury it in your yard. Weird.

Anyway, back to airplanes —

I was contacted about a month ago by the *Redmond Spokesman* newspaper about doing a feature story about model airplanes. I contacted all the guys in the RC club with e-mail addresses and told them when the news people were going to be out at the field, but apparently it was too cold for them and the only people present for the interview were Loren and Mike Anderson, my nephew Montana and myself. Consequently, they saw a lot of stunt flying and very little RC. The day the photographer was there she took some pictures of Mike's RC helicopter but I guess they didn't make the cut.

I think at least some of the article will appear elsewhere here in *FL*. There were a few minor mistakes but all in all I think it was well done. I hope we can pick up a few more control line flyers from this exposure. If nothing else, people will know that control line flying is still alive and well here in Central Oregon.

Where the **action** is!

Coming events in Northwest Control-Line model aviation

Feb. 3-4, 2001

Northwest Radio Control **Model Exposition,** Western Washington Fairgrounds, Puyallup, Wash. Displays of all types of models and products from peanut scale to giant scale — aircraft, cars, boats, helicopters, CL, railroads. Sponsored by Mt. Rainier RC Society. For info, contact Don Sweasy, (253) 445-4763.

Combat Cornucopia

Combat news and views by Mel Lyne

Care and Feeding of Combat Tee Dees

Over the years many people have asked me why my Tee Dees run so fast and so reliably. I don't claim to be an engine man. And I don't do really special machine work. But I have learned from others, their articles and my own experiences. I have been messing about with model engines since 1958. I do follow certain practices with all my motors.

I set the motor up to what I think will be maximum output, and then I experiment with each engine to get the best out of it. Getting the compression level and the nitro content to work at optimum level is how I run my motors for maximum power. These two items work together and are dependent upon each other. So if you change one, it may require a change in the other.

Most store-bought glow fuel at this time has a total oil content of between 16% and 20%. The plain bearing Tee Dees must have lots of castor oil if the crankshaft-to-aluminum crankcase bearing is to last a long time. To every jug of glow fuel I buy I add 9% Sig Castor oil. This brings the total oil content up to between 25% and 29%. The more castor the better in plain bearing motors.

I use this fuel in my .36 size motors also. Foxes really like lots of oil. 3% of one quart is a full 35 mm plastic film canister (any brand). So I pour 3 film canisters of castor into each quart of fuel. This increase in volume lowers the nitro content slightly of course. In 35% nitro fuel you finish up with about 32.1% nitro.

If I have a Tee Dee with good compression, I will use a Babe Bee low compression head, one gasket, and 35% nitro (actually 32.1%). If the air temperature is 65 deg F or higher, the motor will scream well and the starting will be one-flip. The low compression Babe Bee head gives much better starting than the Tee Dee higher compression heads. If I only have the higher compression heads I will use 3 gaskets.

Break-in of a new piston-liner fit is very important if you want a good final fit and long life. I use 25% nitro fuel with 9% castor added, and the 5x3 Cox soft black nylon prop.

Do some bench running if the motor is tight. If the whole motor is new, bench run in a rich four-cycle with short spurts screaming for 4 runs of 3 minutes each to let the crank polish nicely and the piston-liner fit to work in. The piston actually needs about 6 heat cycles to finish growing and stabilize the shape. So it is important not to run too lean during this period. But you must run lean enough to let the motor reach full operating temperature on each heat cycle. After each of the first 6 runs the motor should cool completely.

After 6 or so runs, fly the motor on 25% nitro, but keep it a little rich running on the bladder. I put more than an hour of running on my Tee Dees on 25% nitro before I push them hard on 35%.

I have tried a variety of props over the years on my Tee Dees. But I always come back to the soft black nylon Cox 5 x 3 Paddle blade prop. I just have not found a better prop. If you dork hard you have to straighten them, and sometimes they are too badly bent at the hub. This soft black prop can be re-pitched on the model by tweaking the blades. I find this very useful.

I like my Tee Dees to run between 24,200 and 25,500 rpm on the ground. This gives them about 2,000 rpm to unload in the air. I don't have an audio tachometer, but I believe my Tee Dees peak at 26,500 to 27,000 rpm in the air. So If it is a "slow day" with the motors running a bit slow, I depitch the prop and pick up some rpm to make the motors sound happier. Incidentally, I fly 1/2A and A free-flight power events using the same Cox soft nylon 5x3 on my Tee Dees and AME engines. My Stardusters climb very well with this prop.

Engine mounting: This is very important for maximum power output. In my combat models my Tee Dees are mounted on 1/4" wide x 3/16" thick 6061 aluminum mounts. My motors will just not achieve high rpm on wood mounts.

Stay tuned for the next Tee Dee article on how to set up your motor and do minor mods on your Tee Dee for maximum power.

Send comments, questions and ideas to Mel Lyne c/o Flying Lines or e-mail Mel at mlyne@alpha.sea-to-sky.net

News from the
Seattle Skyraiders

Editor: **Dave Gardner,** 15107 SE 145th Pl., Renton, WA 98059 — Phone: (425) 226-9667 — E-mail: DGardner55@aol.com

JANUARY CLUB BANQUET:

We discussed several places to have the annual banquet, different than the last few years. Mike Potter suggested a spaghetti feed at Clover Park — we can get the whole building to ourselves! We need to tie this down at the November meeting, if possible, to get reservations and notices out to all our members.

SWAP MEET:

The winter swap meet is upon us, to be held on Dec. 9. See the flyer for details.

Bring your treasures and sell, trade or swap it for someone else's treasures!

EXPO 2001:

The Skyraiders have a booth lined up for the EXPO 2001 in Puyallup, Wash.. The dates are Feb. 3 and 4 (Sat-Sun). Plans are to have a club booth, have videos with a VCR, possibly have a raffle for a flyable airplane, distribute Skyraiders promotional piece and offer three free copies of the next newsletter mailings if people sign up. This will give us a fresh list of prospects for club members.

Last year, **Ron Caanan** volunteered and built a new Ringmaster S-1A, donated by **Nick Stratis,** which we raffled off as a complete flyable airplane. Ye olde editor has a new Sig Akromaster kit, which, with the inclusion of a mild 15 or 19, would make a similar great raffle piece. Anyone have a broken-in Fox 15 PB? or an older Enya, or OS in this category?

Handouts will be the promo piece and sample recent copies of the newsletter. On the back of the promo piece, there will be a maps to the Lakewood & Kent flying sites. We'll cover more at the meeting.

Oh, yeah; Expo will have the usual model display. There are two basic categories for us controliners: Control-Line Scale, and All Categories of Control-Line, except scale. Plan to bring out your best birds for this — a lot of Skyraiders brought home a lot of awards last year. There is no charge for the static display.

For tables for the Swap Meet, contact Don Sweasy at (235) 445-4763. He will send you a reservation form for tables. There are no wall tables left, and center tables are $25 for Saturday; a little less for Sunday.

The Seattle Skyraiders'

2000 WINTER SWAP MEET

The LAST Control-Line Swap Meet of the *MILLENNIUM*!

Saturday, December 9, 1999

9 AM - NOON

John Hall's Racing Garage,

10917 - 50th Avenue
Tacoma, Washington

To get to John Hall's, take the Canyon Road exit (South) from Highway 512.
At the first intersection stop light (112th St. E.), turn right (West) to 50th Avenue.
Turn right (your only choice) on 50th Ave and go to the Summit Hobbies Sign.

BRING YOUR GOOD STUFF, YOUR JUNK

AND ALL THE OTHER STUFF NO ONE COULD POSSIBLY LIVE WITHOUT!

There is no table charge, since you must bring your own! Bring a card table, or whatever. Plenty of chairs and hangar talk.

Coffee, donuts compliments of the Skyraiders!

For Information, contact:
John Hall, Summit Hobbies (235) 536-1338

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FLYING LINES
2456 Quince St.
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