

FLYING LINES

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Well, as John had warned in the last issue, I would be taking on the editor position once again. This is going to be a hard act to follow. Yes, I have been the editor of this newsletter, and others before. However, John is the professional and I am the amateur when it comes to putting together a visually neat paper, which is also a good read.

However, both you the subscriber and I will get over it, and together we will do what this newsletter has always been about..... getting out the control-line message to this corner of the continent.

There won't be any major change to what we do, but the changeover is not going to be "seamless". I am not up to speed on putting this paper together "computer style" to the extent that John is. Listen real carefully and you will hear what sounds like teeth and toenails being drug across the floor. That's me being pulled along on a slow learning curve. (Bet you didn't know that had a special sound, eh?)

So, with no further apology or excuse, here we go.....

Coming up next month is the Northwest's premiere CL event, the Regionals. Everybody should have received a flyer and info packet some while ago, but just in case anyone was missed, a flyer is included in this issue. More information is included in this issue.

Attendees this year will see some changes from the previous two go-rounds held at the Albany, Oregon site. Parking will be a bit tighter this time, due to some new storage buildings built. We will still fit, but you might not have your favorite parking space available this year.

The large hangar has been cleaned up and upgraded. This is due to a tenant using the structure, and who is graciously letting us utilize the large floor space area therein.

This year we will have a food vendor on site. (this fell thru the cracks last year). A local Lion's club will be running their burger stand all three days, so no need to leave site for chow. We

will repeat the Saturday nite hangar feed, which was fairly popular last year. Pizza, chicken, and all the trimmings after the competition.

We are also going to work a little harder on getting the grass flying areas spruced up. Help is always appreciated, details later in the issue on how you can sign up to do your part.

And here's a plea to contestants to send in their registration in advance if at all possible. This will make life a bit happier for the registration personnel, and will also smooth out the process. Thanks!

In our last issue we forgot to credit Orin Humphries with the "special project" article that was printed. Sorry 'bout that!

Mac Ryan passed on a good idea..... how about having flying site maps included in a issue which could be pulled out for future use. Whatcha think?

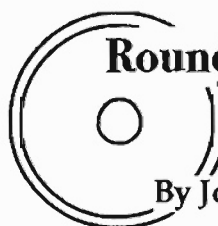
Our next issue (ahem.....#200) will come out after the Regionals. And yes, the photos will return with that issue. Everybody get your articles in by the end of May.

Please take a look at the "Where the Action is" section. Lots of new activities added. Make plans and get out to as many of these as you can.

See you in Albany! -- Mike --

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Round & Round

The Control-Line modeler at large

By John Thompson

Modeling thought for the month:

"Have no fear of perfection — you'll never reach it."
— Salvador Dali

Another lesson relearned

I've said this before.

Control-line flying and building, though it seems on the face of it to be a fairly simple activity, can be a humbling experience.

Well, we all need the occasional dose of humility. I got another recently.

Many of you have heard me moaning over the past couple of years about the Oriental I built for classic stunt that seemed to have an intractable trim problem.

Well, it turns out that that the problem is a result of my failing to heed a construction lesson I'm sure I learned in about 1962.

In the process of searching for the solution, I learned and relearned some other lessons. Among them:

- If the plans say to build a plane a certain way, they're probably right. Probably. Maybe not.

- Carefully consider all advice anybody gives you, and be grateful for the help. But people giving advice may not have all the information you have about the particular plane or problem, so apply your own logic and findings to the advice you get.

- Never give up trying to find the solution to airplane trim problems. Sometimes there's a solution to even the most hopeless-seeming problems.

- If you can't figure out your problem, ask for help. Somebody will know the answer. Just remember, when somebody else asks you to help them, take the time to pass the favor along.

- The Internet is a wonderful thing. Yes, it's populated by idiots. But there also are a lot of CL fliers out there, and somebody knows the answer to your question.

- No matter how much trouble you're having with a particular airplane, a Sunday flying session always makes you feel better — just be sure to bring along some *other* planes that you know work well. (Personally, I find that a rousing flight on a dandy fast combat plane flushes all the bad vibes out of my system!)

Anyway, on to Oriental's intractable trim problem ...

On its maiden flight, the plane was nose-heavy. That was obvious. I added some weight to the tail. This is when things got interesting. The balance point moved back to where it should be, and the plane still seemed nose-heavy *when turning insides*. On outsides, it was just right, in fact a very nimble flier.

I began logical trim adjustments, some of which were obvious things to try and some of which I didn't think of but were suggested by others with more experience with stunters than I have. Bear in mind that while I was trying all these things unsuccessfully, I was flying the plane now and then, including in three or four classic contests.

The plane's flying characteristics barely changed over the two years, despite all the adjustments. Inside turns were a one-line affair, outsides a nice snappy turn.

I tried to disguise the trim problems for the judges by really reefing on the insides and opening up the outsides. It wasn't easy to make them look the same, and I got what I consider to be pretty generous scores. Maybe the judges felt sorry for me!

More or less in this order, I tried ...

- Sealing up the elevator hinge line. I had sealed the flap line before flying the plane. Someone suggested sealing the elevator, too. It seemed to help the overall flight characteristics but not the inside-turn problem.

- Adjusting the thrust line. Somebody suggested that the engine was pointed down. Though I couldn't see it, I figured it was worth a try. Not much change in flight characteristics.

- Biasing the handle toward the up side. No help, but it did motivate me to buy a very trick new handle.

- Cutting into the fuselage to increase elevator travel. It seemed as if there was enough, but no excess, so what harm could it do? None, but no help, either.

I more or less quit flying the plane except when forced to in a contest.

Recently, Mike Haverly mentioned on the Stuka Stunt Works online forum that he had finished his new Oriental. I replied to his note that I was interested to know what trim problems he encountered and told my tale.

Next day there was a reply from a Bob Reeves, from somewhere out there in cyberland, suggesting that I check to see if the pushrod was flexing. Well, sheesh. Of course it's flexing. It took about 10 seconds to test that hypothesis. Flexing like a noodle.

I've put pushrod guides in an uncounted number of planes of all types over 40+ years of flying model airplanes. But I didn't put one in this plane.

So it took one more surgery to install a pushrod guide, and now the O turns its insides much better.

I managed to hide the scar pretty well by going in from the bottom of the fuselage.

Only problem now is that after two years, the Sig tissue has turned from blue to gray, and the plane has gained two ounces from fuel soaking.

Well, it's a classic plane, so I guess it's OK that it looks old. And a classic construction goof-up.

Well live and learn. And relearn.

John Thompson can be reached in care of Flying Lines or at JohnT4051@aol.com.

Regionals schedule correction

In reshuffling the schedule a bit for the 2004 Northwest Control-Line Regionals, the inevitable typographical error occurred.

Class II Mouse Race is listed as a Regionals event on the cover page, but on the back side, where the schedule is, Mouse II does not appear.

So, racers, get your pencils out: **Class II-Mouse Race will be held at 1 p.m. on Friday, May 28.**

Northwest Goodyear will be the first event, up at noon on Friday. Clown Race is to follow Mouse II at 2 p.m. Clown may go off just a little later as a result of adding Mouse II, but be ready to fly at 2. Sorry for the mixup.

Where the action is!

Coming events in Northwest Control-Line model aviation

April 25

PAC Fun Fly for Carrier, Rice Mill Road Model Park, Richmond, B.C.

April 25

Stunt and Judging Clinic & Fun Fly, at Delta Park, Portland, Oregon. Contact Scott Riese, 503-246-4631, or, SRiese5283@aol.com

May 1

Open Diesel Combat Five-Round Fun Fly, Ole Johansen's place, 3188 Highway 9, Sedro-Woolley, Wash. Directions: From I-5 take Exit 236 (Bow-Edison) and head east about 7 miles to Highway 9. Turn North and go about 3 miles to the Prairie Fire Station on the left. Ole's place is 8 acres right behind the fire station. If you get lost, call Kenny Johansen at 425-876-4613. For info, contact Mel Lyne, (604) 898-5581, e-mail mlyne@sea-to-sky.net.

May 16

PAC Fun Fly, Rice Mill Road Model Park, Richmond, B.C.

May 22

T.E.A.M. Flying Field Grand Opening, DeAlton Field at the Evergreen Aviation Museum, McMinnville, Oregon. Info: <http://hometown.aol.com/jeichten/TEAM.html>

May 28-29-30

Northwest Control-Line Regionals, Albany Municipal Airport, Albany, Ore. Full slate of AMA and Northwest CL competitive categories in the 33rd annual running of the West's biggest CL contest. For info, contact *Flying Lines*. Sponsored by Northwest Regionals Management Association and *Flying Lines*.

June 12-13

Stunt-a-Thon, Clover Park Technical College, Tacoma, Wash. Stunt and Navy Carrier events. For info, e-mail sbasser@yahoo.com

June 19

M.E.C.A. Region 3 Collecto, Toledo, Washington contact: Jim Bassett 360-864-2953

June 20

WOLF Summer Eve Fun Fly, Bill Riegel Model Airpark, Salem, Oregon. Start at 6 PM, fly till dark!

June 26

Big Money Vintage Diesel Combat, Arlington Airport, Arlington, Wash. 9 a.m. start. For info, contact Mel Lyne, (604) 898-5581, e-mail mlyne@sea-to-sky.net.

July 3-11

World CL Championships, Muncie, Ind. See AMA Web site for info: www.modelaircraft.org.

July 4

PAC "33-1/3" and Balloon Burst Fun Day, Clayburn, B.C.

July 10

WOLF Lucky Hand Fun Fly, Bill Riegel Model Airpark, Salem, Oregon. Contact: Mike Hazel 503-364-8593, or, zzclspeed@aol.com

July 11-17

U.S. National CL Championships, Muncie, Ind. See AMA Web site for info: www.modelaircraft.org.

July 24-25

PAC Invitational, Rice Mill Road Model Park, for NW Sport Race, .15 Nostalgia Race, Flying Clown Race, Carrier, Scale. Contact:

July 24-25

Wright Brothers Centennial + 1 Precision Aerobatics Fun Fly, Arlington Airport, Arlington, Wash. Saturday: Trimming, coaching and practice, 8 a.m. start. Sunday: PAMPA stunt and judging clinic. For info, contact Steve Helmick, sbasser@yahoo.com.

July 31-Aug. 1

Bladder Grabber triple-elimination fast combat tournament, Harvey Field, Snohomish, Wash. Big prizes! For information, contact Jeff Rein, jeffrey.a.rein@boeing.com

July 31-Aug. 1

Western Canada Stunt Championships, Rice Mill Road Model Park, Richmond, B.C. For info, contact Chris Cox, (604) 596-7635, e-mail ccox1@telus.net. Sponsored by Vancouver Gas Model Club.

Aug. 7-8

Auburn Good Old Days CL flying demo, at elementary school, 200 Main St., Auburn, Wash. For info, contact Chris Gomez, gomez580468@earthlink.net

Aug. 7-8

Prairie Fire Stunt Contest, Edmonton, Alberta. Contact Bruce Perry: abperry@telus.net

Aug. 8

Tailhook 2004 Navy Carrier contest, Carkeek Park, Seattle, Wash. All carrier events. Details TBA. For info, contact Mike Potter, skyshark58@cs.com

Aug. 8

Five Rounds Vintage Diesel Combat and BBQ lunch, Mission Wings RC field off of Highway No. 7, Mission, B.C. Pilots' meeting, 9:45 a.m. E-mail map to the site available. For info, contact Paul Dranfield, (604) 826-3376, e-mail pdran@telus.net

Aug. 14-15

Hillsboro Air Show, Northwest Fireballs flying demonstrations, Hillsboro Airport, Hillsboro, Ore. For info, contact Scott Riese at sriese5283@aol.com

Aug. 14-15

Northwest Summer Speed Meet, Bill Riegel Model Airpark, Salem, Oregon. All speed events. Contact: Mike Hazel 503-364-8593, e-mail zzclspeed@aol.com

Sept. 4-5

Can-Am Speed Championships, Upper Coquitlam River Park, Coquitlam, B.C. For info, contact Bruce Duncan, (604) 513-9450, e-mail a.b.duncan@shaw.ca. Sponsored by Vancouver Gas Model Club.

Sept. 11-12

Raider Roundup, for Old-Time, Classic and PAMPA Stunt, Navy Carrier and Scale. Clover Park Technical College, Tacoma, Wash. contact Steve Helmick, sbasser@yahoo.com

Sept. 12

PAC Fun Fly for Carrier, Rice Mill Road Model Park, Richmond, B.C.

Sept. 16-19

Great Intergalactic Fun Fly, Waitsburg, Wash., in conjunction with Lions Salmon Bake and Waitsburg's annual Buffalo Feed. For info, contact Joe Just at ukeyman@justice.com

Oct. 3

PAC Season End Fun Fly, Clayburn, B.C.

Oct. 9-10

Fall Follies, Bill Riegel Model Airpark, Salem, Oregon. NW Sport Race, Classic Stunt, P-40 Stunt, PAMPA Stunt, Sunday BBQ. Contact: Mike Hazel, 503-364-8593, e-mail zzclspeed@aol.com

Contest Directors: As always, please get your event information, including corrections and updates to *Flying Lines* as soon as possible. We can distribute your contest flyers, please allow plenty of lead time for this. Contact the editor for details.

This is the last issue for the following.....

Jimmie Banks, Jim Cameron, Don Chandler, Jim Drury, Dave Green, Steve Helmick, Preston Husted, Richard Kulaas, Jeff Rein, Fred Margarido, Nils Norling.

Get those renewals in soon, you don't want to miss the next issue!

THE FLYING FLEA MARKET

Free ads for the Flying Lines Subscriber

SLOW RATS FOR SALE: You just need a handle, battery and fuel, and you're off flying. Four AMA slow rat airplanes, with lines and engines. Two rear Nelson .36s, two front Nelson .36s (one brand new) and props. Also two extra O.S. drum rotors. All planes, engines and lines are switchable. All planes were built by me, and have taken second and third places at the Nats. With a good pilot and pit crew and some practice, these slow rats should be in the winner's circle. Total estimated value over \$2,800. Total price for all four \$1,400. Shipping free UPS. For more info, call Mike MacCarthy after 5 p.m. Pacific Time, (707) 542-2492.

CONTROL-LINE SUPPLIES: Just arrived: Top Flite Flite Streak ARF: Durable balsa/ply construction covered with MonoKote — a classic is reborn. Regular price is \$89.99. Special for *Flying Lines* readers, \$69.99. Also: Top Flite Nobler ARF: Wood covered with MonoKote, painted fiberglass cowl, leadout already installed!! Regular price is \$139.99. Special for *Flying Lines* readers, \$119.99. Remember — We ship UPS daily. Eugene Toy & Hobby, (541) 344-2117, www.eugenetoyandhobby.com.

COMBAT SHUTOFF: H&R MKIII Combat Fuel Shutoff now available. Sliding bellcrank design. CNC milled 7075 anodized and hard coated aluminum. Brass bushing and line buttons. 3" for Fast and 80MPH, all new 2" for F2D and 1/2A. \$25 plus \$5 S&H. Contact Jeffrey Rein at jeffrey.a.rein@boeing.com, or (425) 823-6053.

VIDEOS FOR SALE: Videos of the 2003 Vintage Stunt Championship and the 2003 Northwest Regionals Precision Aerobatics competition are available for \$15 plus \$3.85 shipping, each. Videos are 2-hour summaries of the highlight flights, with stills and captions. Available from Bruce Hunt. Call (503) 361-7491 or e-mail at bhunt@swbell.net

DIESEL COMBAT BEGINNER HELP: The Diesel Combat Group has beginner trainers and in-

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struction available for new fliers to try control-line flying at most flying sessions. These will commence in March 2004 at Arlington and Sedro Woolley, Wash., and at Richmond and Clayburn, B.C. For information on dates contact Mel Lyne at (604) 898-5581 or e-mail: mlyne@sea-to-sky.net.

FOR SALE: Cyclon Top 3 engine, \$130. (New price is \$165.) This one has about 3 minutes of running time. E-mail Tom Strom at TStrom@aol.com.

FREE: Old model magazines, in lots of five. Free plus cost of shipping, unless I deliver them to you at a contest, then free. Contact John Thompson, JohnT4051@aol.com

FASCAL: Back by popular demand. The ultimate combat plane covering, good over open frame or foam. Available in full 27"x150' rolls. Contact me for price and availability info. John Thompson, JohnT4051@aol.com.

FOR SALE: Sig Field Boss power panel, only used one season. \$10. John Thompson, JohnT4051@aol.com

ELIMINATOR PROPS - Carbon Fiber Props, Carbon Fiber Landing Gear, 4" Carbon Fiber Bellcranks, Plans on CD's and More. I have 38 new props and several new items. Along with 11 different CD's of plans and articles. For my latest flier just send me your e-mail address or a self addressed stamped envelope. Steve Wilk 3257 Welcome Ave N, Crystal, MN 55422 (763) 531-0604 - e-mail: swilk@cpinternet.com

WANTED: Need the following A.M.A. rule books for my collection..... 1959 thru 1963; 1966; 1968-1969; 1973; 1976-1977. Mike Hazel, contact at Flying Lines.

FOR SALE: We have back issues of *Flying Lines* available for your reading pleasure, going back twenty and more years. Immerse yourself in nostalgia, do control line research, settle bets, look at pictures of people who had hair back then. Request your order list from FL headquarters.

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

April-May 2004

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Stunt Stuff

Notes on Precision Aerobatics
from Chris Cox

Get those Wings Level!

Several years ago, Paul Walker wrote one of the most comprehensive trimming articles published to date. I still pack a plasticized copy of this article in my tool box for reference purposes. One of the first "must do" aspects addressed in this article is the necessity to level your wings before any further trimming process takes place. In terms of level, Paul states, "This means that the wing takes the same attitude relative to the control lines, both upright and inverted".

Do not interpret the above to mean a five degree bank inward, both upright and inverted, as being acceptable. Should this be the case, line tension will always be partially lost when cornering. In this particular case, extreme loss of line tension would be experienced when upwind, turning the first and third corners of the reverse wing over as well as the entry into the overhead eight. To re-emphasise, the wings must follow the same tangent as the control lines, whether upright, inverted, at 45 degrees or overhead. Naturally, when in level flight, the wings would be level to the horizon.

Last year's Saturn had an inherent trim problem. When in level flight, either upright or inverted, the wing tip was slightly high. The airplane flew well, but as mentioned above, it did have some line tension issues. The reason I lived with this particular problem was when additional tip weight was added to bring the wings level to the horizon, a hinging problem would rear its ugly head. What

this means is that the wing tip in a hard corner would be deflected to outside of the corner, and in doing so a yawing action would also occur. In the world of precision aerobatics, neither is good!

Through either luck or divine intervention, I stumbled upon another classic trimming article written by Ted Fancher. Ted speaks of the ability to carry additional tip weight by placing a tab on the outboard flap. Ted is not speaking of the traditional trim tab per se, but an "area tab". As the lifting action of the outboard flap in now more powerful (more area), it is able to overcome the effect of the added tip weight.

To set this system up, you must first get the wings level. This may first require some tweaking of the flaps to get the same angle, both upright and inverted, and then adding tip weight to bring the wings level to the horizon. Should the hinging be evident as noted above, it is time for the area tab to be installed. To do so, I used a piece of card stock cut into a three inch square. Fold in half and then tape to the bottom and top side of the outboard flap. Tape the tab near the outboard end of the flap close to the wing tip for maximum lift authority. Start with about 1/2" extending past the flaps trailing edge. Ensure the tab trails straight back and is not deflected either up or down. Effectively, what you have now is an additional one and a half square inches of flap area. Put up a test flight and note whether the hinging is better, worse or if you're really lucky, gone. If better, but hinging is still evident, lengthen the tab another quarter inch. If wing tip now deflects into the corner, move tab in a quarter inch. Keep adjusting until the hinging moment is completely gone. Once satisfied, you may glue on a permanent area tab matching the area of your temporary tab. I used a piece of clear plastic which effectively camouflages the tab. Many people have not even noticed the tab until pointed out to them.

What you should notice when finished is enhanced line tension in all portions of the pattern. That first turn of the reverse wing should feel very solid. Even the over head tension will also be improved. I was absolutely delighted by the improved flying qualities of the Saturn following this procedure.

By the way, the articles I speak of above are all available from the Precision Aerobatics Model Pilots Association (PAMPA). PAMPA has a complete library of most all articles ever written on the subject of stunt. You can look up PAMPA on the web at:

<http://www.zianet.com/pampaeditor/>. Order yourself a copy of the "Stunt Bibliography" for a listing this wealth of information.

Till next time, fly stunt!

Editor's note: It's always great news to hear of a new flying site. This report is by Ron Canaan of the NW Skyriders.

I have just completed an agreement with the Seattle Parks Dept. to use the Sand Point N.A.S for a controline site. Dan Iverson Seattle Parks Dept. has suggested several spots for our consideration. The only area we cannot use is Kite Hill.

The site he would like us to use is the 2 parking lots at hanger 27. These are very large and completely paved. You can just drive up unload and fly. Very much like the old Boeing site was.

The only times that it would not be available to us would be several times a year when Grey Hound uses them for driver training. That would be during the week 8 am to 3 PM. The other time is 2 weekends when there are events in the hanger and the parking lot is full of cars.

For grass use, it is suggested that we use the area just to the right as you come in the main

gate. The area is used once in a while for soccer at the South end if we stay at the North end there should be enough room.

The reason these 2 location are suggested is NOISE WOULD NOT BE A PROBLEM.

We can also use the paved and grass areas down at the other end of the base at the old commissary (sea plane hanger). However we would be a few blocks or so away from residential homes, mufflers are not mandatory but could be a problem at this end of the park.

After 6 to 8 months the parks dept. said if the site was used they would paint our circles and talk about a joint venture to make it a designated control line site, just the same as Carkeek Park, i.e. carrier deck, fencing, benches ect.

What we have to do is provide the Parks Dept. with an AMA insurance policy, phone #s of 2 or more contact persons, a letter of who the club is, history, and what we will use the site for. I will ask Steve Helmick to send for the AMA insurance as soon as he can. The rest will be taken care of by me tomorrow.

Vern and I are going to Sand Point tomorrow and take pictures and get directions on the various areas, parking, restrooms, ect.

One additional note in hanger 27 an indoor R/C club (The Barn Owls) flies there daily. Very nice guys and fun to watch them fly I am told. Dan Iverson the Parks Director is VERY FRIENDLY toward modelers in general and is happy to see the park used for this purpose. Some of the Barn Owls go outside and fly in other areas of the park but Mr. Iverson said he turns a blind eye unless they cause a problem. General R/C flying is not allowed. R/C cars both fuel and electric are allowed in designated areas.

If we want to hold a contest we might have to pay a small fee to reserve the site unless it is designated for controline only at a later time this year.

This does not mean I am giving up on Riverwalk, no way, this is an important site that we have maintained for 5 years and I am close to working something out with the City of Kent.

So there you go guys, you wanted a paved area to use for daily flying and contests and grass for combat now you have it. I will have more details at the meeting and will have Dave publish an up date in the Skywriter.

.....Ron Canaan

VSC 16 REPORT,

By Floyd Carter

The 16th Annual Vintage Stunt Championships (VSC) was held in Tucson on March 18-21. This contest features C/L Stunt in the Old time category and CLASSIC category. Old Time (OTS) is restricted to models kitted, published or flown before 1953. CLASSIC is restricted to models flown prior to 1969. A separate event featuring OTS spark ignition C/L models was included.

This year, VSC was scheduled a week earlier than usual. This put it in the middle of the school Spring Break. The resulting overload on accommodations, restaurants, and highway travel made the trip less than enjoyable for me.

The venue at the Tucson Columbus Model Park is ideal. There are two paved circles and three grass circles, all well maintained. The facilities and the weather this year were just about perfect. We had sunshine and temperatures in the mid 80's with very little wind, except for Sunday afternoon, when the wind picked up a bit. The host club, the Cholla Choppers of Tucson, did an outstanding job of running the contest. The pit bosses, tabulators, judges and facilities management personnel were selected from volunteers from all over the country. As a result of this efficiency, all flying rounds were generally completed by 2 PM each day, with a couple hours of good flying weather left over for practice flying.

There was only one instance of bad Karma, which is important enough to report. There were approximately 6 contestants who arrived without pre-registration. The Contest Director refused entry! These contestants had traveled from as far away as North Carolina, California, and Oregon. There was a heated discussion at the field, and I happened to be involved in the discussion. The Contest Director had basically two arguments: C-D argument #1: The contestant lists, individual score sheets, the main score board, were all entered in the "computer" and printed. And therefore, since no computer was at the field, nothing could be changed. Rebuttal #1: Hey, we did very well in the old days with paper and pencil. And that little orange thing on top of the pencil is called an eraser. AMA doesn't require a contest report for a couple weeks, so any field changes can be entered in the computer in plenty of time.

C-D argument #2: Pre-registration forms

were printed in the PAMPA STUNT NEWS, so even if a contestant is unsure of attending, then send the entry. Money can be refunded. Rebuttal #2: Fair enough. But my heart is heavy thinking of those who came all this way, and spending lots of time and money to get to Tucson. One rejected person, from CA, simply packed his models and drove back to Redwood City, probably never to return.

We take great effort to get modelers to join our clubs and fly at our fields. Why do we do things that turn people away from C/L flying?

Now for the results. In OTS glow, there were 68 entries! The top winners were:

- 1) Larry Foster
- 2) Charlie Reeves
- 3) John Wright
- 4) Lou Wolgast

In OTS Spark Ignition, there were 15 entries. The top winners were:

- 1) Don Hutchinson (Madman/Orwick 29)
- 2) Dale Gleason (flying Don's plane--yes it's legal-but one wonders if it should be legal.
- 3) Glen Allison (Humongous/O&R 60)
- 4) Floyd Carter (Wildman 60/Orwick 64)
- 5) Frank McMillan (Madman/Torp 29)

In CLASSIC, there were 68 entries. The top winners were the usual suspects, hungry for hardware:

- 1) Bill Werwage
- 2) Bob Hunt
- 3) Bob Whitely
- 4) Richard Oliver
- 5) Keith Trostle
- 6) Ted Fancher

The awards banquet on Saturday night featured some great moments, especially the attendance of many of our notables, such as Bob Palmer, Dale Kirn, John Brodak, Bob Hunt, and many former AMA champs, Internats champs and Walker Cup winners. Some of the more important awards were:

*Keeper of the Flame (perpetual trophy):
As last year's winner, I presented this to Marvin Denny.

*GMA Memorial (perpetual trophy):
Dave Baxter

*Concours Award: -----?
Gialdini Sportsmanship: Lila Lee
Spirit of '52 Award: Roy Franklin
Most Unusual Award: "Doc" Holliday
Spirit of '64 Award: John Condon
Best I-Beam Award: -----?

Most Fun Award: Usually presented by Tom Lay, but not awarded this year, although I saw the trophy at the field.

Editor's Note: The following was written by John Thompson, and was sent via e-mail to several people. It is reprinted verbatim for the benefit of review and for you who may not have e-mail, or were missed.

"NW Regionals, arm-twisting dept."

Western fliers, you know that the Northwest Regionals, coming up this Memorial Day Weekend, is a much larger event than could ever be put on by a single local club -- especially when the grandiosely named organization that sponsors the contest amounts in truth to three middle-aged geezers. We're sort of like the guy behind the curtain in the Wizard of Oz movie. For that reason, we depend on all of you to pitch in a little bit to help us put on the contest each year. This contest is truly a team effort, involving literally dozens of people working behind the scenes.

Most of you seeing this, if you're regular Regionals attenders, already are doing something to help. We thank you. At this juncture, I'm assembling the annual list of people willing to help with various lifting, toting, hauling and preparing. The most daunting of all the jobs that need to take place for the Regionals is what happens before the contest begins and after it ends: Field setup and tear-down. We have to transform the Albany Municipal Airport from a sleepy small-town aerodrome into a bustling, big-time model airplane contest venue. This means removing tie-downs, covering tie-down holes, stringing ropes and barriers, hauling stanchions, moving scoreboards, putting up speed nets, marking

circles, mowing grass areas, directing motorhomes and campers to where they go, and on and on. Then when the contest is all over, it all has to be put back the way we found it and equipment stored away.

This year, we have to reinvent the stowage routine because we're losing our storage rooms in the hangar. Major work on all this begins on the Thursday of contest week, and preparation has to be finished by the time the contest begins Friday morning. Teardown begins immediately after the trophy presentation on Sunday night, and we try to finish before dark.

Anyone who would be willing to help with any of this is invited (no, I should say, begged) to contact me by e-mail (JohnT4051@aol.com) and I'll put you on the list. Let us know what you'd be willing to do. Incidentally, besides the field setup/teardown, there's always plenty of work to do along the lines of judging, timing, pull-testing, registration, hangar feed help, security patrols, and general "seeing what needs to be done and doing it." Help in any of that is welcomed!

We expect a bigger and better-than-ever contest in this 33rd year (yes, the food concession will be back!). If anyone within range has never been to the Northwest Regionals, believe me, it is a contest worth attending. We hope you'll come.

We offer 41 events over three days of competition in all disciplines, with trophies and merchandise prizes. There's a hangar feed, commemorative T-shirts, and lots of fun and camaraderie. Anyone who needs a contest flyer/entry packet, send me your mailing address and I'll see that you get one.

--jt

<http://members.aol.com/johnt4051/northwestcl.html>

Regionals Contestants, please remember the deadline for receipt of advance entries is May 10th. You still have time to request a form and return it! The hard-working registration people will appreciate it!

PROPELLORS II

AIRFOILS

The most familiar NACA graphs on airfoil data are of no use to modelers. The environment in which an airfoil is operating can be labeled by the value of a fraction that occurs in the equation. The fraction is called the Reynolds Number, Rn. In the charts we see, the range of this value is usually from 1 million to 6 million. The data are valid only for flows having the same range. Our props operate in the range maybe 35,000 to 90,000. The sad fact about airfoil behavior is that it does not scale much. What an airfoil is doing near one Reynolds number is no guide whatsoever as to what it may do at a very different one. Trading off airfoils in the "bible" for serious students of aerodynamics, THEORY OF WING SECTIONS by Abbott and von Doenhoff, is a grand waste of time. I bugged NASA on this subject in the 1970's so much that they finally sent me their one remaining microfiche copy of a captured German book on model aeronautics by Schmidts. It was just fascinating! I probably should give it to the AMA museum so others can see this stuff. It is so practical for model designers. Guess I'll have to get off my duff and donate it. I will give you a synopsis of his material in the months to come. I published a lot of it in this column way back when I was active. Where was I? (What a rush to once again tread upon this ground ☺)

I just ran a calculation of the Reynolds Number for a Speed plane going 170 mph, 28,000 RPM, 1/2" blade tip chord on a Standard Day. I got 76,000 the first time through this. That is so far away from 6,000,000 that any looking for a better airfoil for a Speed prop is better spent in the tavern. Hmmm. This is gonna be a longer series than I thought.

Let me illustrate. Burt Rutan, whom I had the pleasure to meet and spend time with at the Lincoln Nats, designed the Beech Starship. It was a canard configuration, and he built an 80% scale model of it and flew the test flights. Based upon the data from that, Beech decided to build the business plane. It flopped because the data from the 80% propeller didn't scale up. The 100% Starship missed its performance marks too badly. The Italian Avanti, it's competitor, took all the marbles. Burt was a Carrier pilot in 1960, by the way.

L modeler

It is well known that to reproduce one of the standard airfoils found in Abbott & von Doenhoff you would have to be able to get the surface right to maybe .0001". So, that is a waste, as well. Paul Gibeault (send me your current address, Buddy) once asked me if there was anything to gain by trying very under-cambered airfoil sections. That brings us to the sketches. (The short answer is nuh-uh.) You have all seen the lift vs. alpha (angle of attack) graphs like Fig. 1.

The vertical axis is the coefficient of lift and the horizontal axis is alpha. This is for a typical flat-bottomed airfoil like a prop blade. Notice that the angle of zero lift is a little negative.

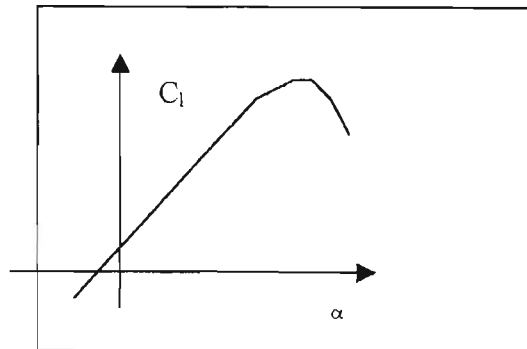
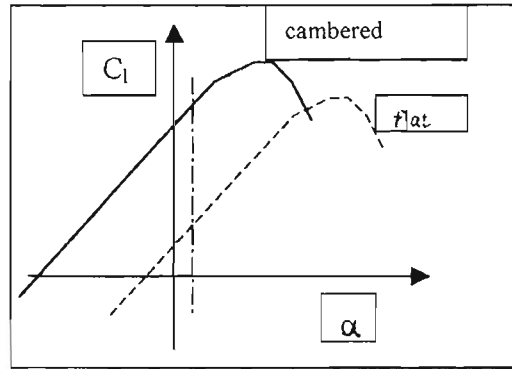


Fig 2.
 Here is the same thing for an under-cambered airfoil, the solid line. The dashed curve is the same one above. The major difference is the VERY negative angle of zero lift. Note that the slope of the two curves is so nearly the same. The vertical dash is some value of alpha.



Herein lies the point of all this. Focus on the slopes. What Paul and all the Speed guys are after amounts to finding an airfoil having a steeper slope. The effect would be, well, say, you and your competitor, who has a flat-bottomed airfoil for a blade section, both improve your prop pitch by one degree, closer to ideal. You have an under cambered prop blade. He gets another pound of thrust and you get 1-1/4 pounds. Wouldn't that be nice? Sorry guys, to my eye, the differences in slopes, even if you could carve blades that accurately, is so small as to be a waste of time. There is much more performance to be had in another area. Before I can do that subject, though, I must show you the "drag polar" for these two airfoils.

The vertical dashed line goes up and cuts the flat-bottomed curve at some point. You go left to the C_l axis and read off a corresponding value of the coefficient of lift, say 0.3. Continue up the vertical dash to the curve for the under cambered airfoil. Go left from the intersection to the lift axis. There you read some value, say 0.8. There is a high price to be paid for that increased lift. The flat-bottomed airfoil likely will kick the butt of the cambered one, all other things being equal.

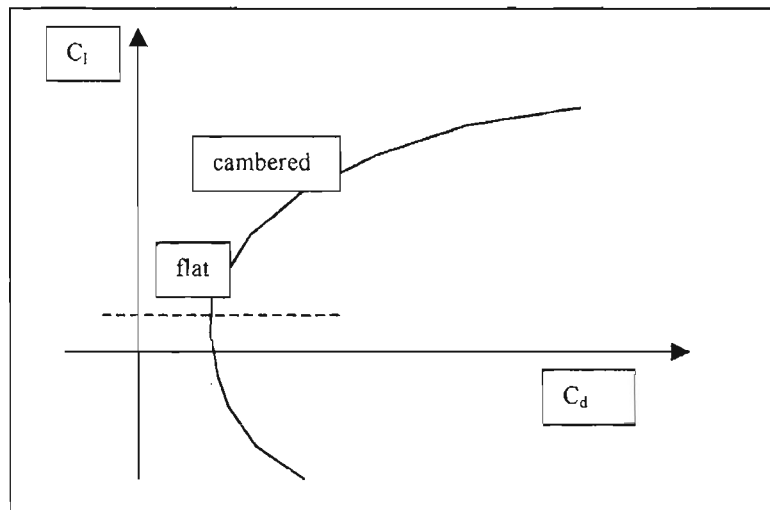
This is the REAL reason you should stay away from major under-cambering. A drag polar is a graph having coefficient of lift on the vertical axis and coefficient of drag on the horizontal.

Fig. 3 DRAG POLAR

The vertical axis is the coefficient of lift and the horizontal is the coefficient of drag. The dashed line is the sweet spot for which you must strive.

What Fig. 3 is showing is this: as the lift increases, the drag follows the curve. At high lift, near the top, you get high drag. That's no surprise. As the lift decreases, so does the drag. A certain minimum drag occurs, at the dashed line. As lift decreases to the point of going negative, the drag increases again, going to the right. The under cambered foil makes more drag than the flat bottomed foil.

The value of lift for minimum drag is between 3 and 4 degrees angle of attack, alpha. That's what you must pitch your prop for. AT MINIMUM DRAG, THE LARGEST FRACTION OF YOUR ENGINE'S POWER IS CONVERTED INTO THRUST. (Continued)



RULES FOR .15 NOSTALGIA VINTAGE DIESEL COMBAT

1.1. Engine: Any production .15 c.i.d. maximum diesel having a single ballrace or plain bearing, non-Schneurle, iron piston/ steel cylinder.

1.2 Only suction fuel systems are permitted.

1.3 ~~The propeller must be a Grish Tornado 8" x 6" White Nylon Flexi prop. The diameter must remain at 8"; balancing may be done by sanding one blade face. The propeller may be any prop sold as an 8x6. The original diameter must remain untrimmed. Balancing may be done by sanding one blade.~~

2.1 Aircraft: A nostalgia combat model must be a design which was in common use or kitted prior to December 31, 1970. It must have been designed for a .15 cu in engine.

2.2 Models must be an accurate plan view of the original. The following alterations are permitted:

- Addition to or omission of sheeted areas. Omission of vertical fins.
- Changes to airfoil or internal structure. Additional booms or substitution of wire for wood, or vice-versa.
- Recessing engine into leading edge.
- An upright engine mount may be changed to side mount.
- A balanced elevator may be changed to a conventional, and vice-versa. The elevator must retain the original outline.

Such changes must be done using constructional techniques that were commonly used at the time the model was in use. Carbon, Kevlar or boron fiber is not permitted. Modern adhesives and coverings are permitted.

2.3 The following alterations are not permitted:

- Foam construction may not be used. Exterior controls may not be used.
- Metal motor mounts may not be used. Any changes to the original plan view except those outlined in 2.2 are not permitted.

The CD may decide to not accept a model which has been altered from the original design outline.

3.1 Pull test: 25 lb.

4.1 Lines shall be a minimum .015" diameter, stranded type, with a length of 52'-3" measured from the handle grip to the fuselage, plus or minus 6 inches.

5.1 Speed limit: 64 mph = 7.0 seconds/2 laps towing a streamer.

6.1 Number of models. One model per match. 3 models maximum per contest.

7.1 Pit crew. Two pit crew are allowed per contestant. A contestant may start his own engine.

8.1 Officials: A contest shall be run by a circle marshal who shall be the overall timekeeper, plus one scorer per contestant.

9.1 The match: One minute for engine starting and launching. The 5-minute match clock is started as the second plane launches or at the end of the one minute, whichever comes first. The match lasts 5 minutes.

Engines must be started by hand.

9.2 Scoring: One point is deducted for each second a contestant's plane is on the ground during the 5 minute match. 50 points are awarded for each cut of their opponent's streamer or string with knot. There are no kills.

The match shall continue after a midair collision or line break. Lines may not be changed during a match.

10.1 Contest Procedure: Each contestant shall compete in 5 rounds. 2 points for a win, 1 point for a tie, 0 for a loss. The top 4 flyers will then compete in 2 semifinals and a final to determine the winner.

10.2 Combat Site: A 5 foot radius pilots circle and a concentric 65 foot radius safety circle.

ml/jt/FL5/00p/ballot#164p/ballot199

The 33rd annual...



Control-Line Northwest Regionals

May 28-29-30, 2004

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With 41 events and 130 trophies, the Northwest Regionals provides the largest selection of CL competition events and awards available in a single contest in North America.

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- COMBAT — AMA Fast, 1/2-A (high-performance), 80-mph and Vintage Diesel!
- NAVY CARRIER — Profile, Class I, Class II, .15 and Nostalgia!
- RACING — Mouse I&II, .15 Rat, Goodyear, NW Goodyear, NW Sport, NW Super Sport, Clown and Quickie Rat! Separate trophy for best novice Clown!
- SCALE — AMA Precision, AMA Sport Scale and Profile Scale!
- SPEED — 1/2-A, 1/2-A Proto, A, B, D, FAI, Jet, Formula 40, .21 sport, .21 Proto, NW Sport Jet!
- JUNIOR/SENIOR EVENTS — Northwest Sport Race, Class I Mouse Race!

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Northbound, take Exit 234. Southbound, take Exit 234A*

New for 2004: Advance registration!

Sign up early and get an **entry fee discount.**

Reserve your T-shirts and banquet tickets by mail. Write for entry package:
John Thompson, 2456 Quince St., Eugene, OR 97404; JohnT4051@aol.com

Check the back of the flyer for schedule and rules details.

Saturday swap meet and Saturday night pizza feed!

Swap meet 1 p.m.- 4 p.m. \$5 table rental, \$1 admission. To rent tables, contact
Bob Stalick, 5066 N.W. Picadilly Ct., Albany, OR 97321 freeliter@aol.com

FOR INFORMATION, CONTACT:

Contest Director Craig Bartlett, 205 N.E. Cedar Lane, Corvallis, OR 97330
(541) 745-5507, e-mail sraigbart@yahoo.com

The Northwest Regionals are brought to you in part by
Eugene Toy & Hobby, (541) 344-2117, www.eugenetoyandhobby.com

The Northwest Control-Line Regionals

Albany Municipal Airport, Albany, Oregon

SCHEDULE OF EVENTS

<u>FRIDAY</u>	<u>SATURDAY</u>	<u>SUNDAY</u>
Speed (all classes) Noon-5:30	Speed (all classes) 8:30-5 p.m.	Speed 8:30 to noon
Carrier (all classes) Noon-5	Carrier (all classes) 9-5	Ad.-Ex. Precision Aero. 8:30 a.m.
Vintage	OT Stunt, P-40 Stunt 8:30 a.m.	Carrier (all classes) 9 a.m.-4 p.m.
Diesel Combat 10:30 a.m.	1/2-A Combat 8:30 a.m.	Scale static judging 9 a.m.
Northwest Goodyear Noon	80mph Combat 11 a.m.	AMA Combat 8:30 a.m.
	Mouse Race I (Jr.-Sr.) 9 a.m.	AMA Goodyear 9 a.m.
	Mouse Race I (Open) 9:30 a.m.	NW Sport Race (Jr.-Sr) 11 a.m.
Clown Race 2 p.m.	NW Super Sport Race 11:30 a.m.	NW Sport Race (Open) 11:30 a.m.
	Classic Stunt Noon	Scale flights Noon
	Beg-Int. Aerobatics Noon	Quickie Rat Race 2 p.m.
	.15 Rat Race 1 p.m.	Contest ends at 4:30, award ceremony at 5 p.m.

SCHEDULE NOTES

Registration Friday 10 a.m.-5 p.m., Saturday and Sunday 8 a.m.-noon.

Absolutely no engine running before 8 a.m. any day.

RULES INFORMATION

- AMA events are per **2002-2004 rule book**, except as noted below. **Know the rules!**
- Official Northwest Rules will be used for the following events: *NW Sport Race, NW Super Sport Race, NW Goodyear, Flying Clown Race, .15 Carrier, Nostalgia Carrier, 80-mph combat, Nostalgia Diesel Combat, P-40 Stunt and Northwest Sport Jet Speed (2004 updated rules!). Quickie Rat will use NCLRA rules.* For complete rules, write John Thompson, 2456 Quince St., Eugene, OR 97405, JohnT4051@aol.com. **Not knowing the rules is no excuse — get a copy now!**
- **COMBAT** — Fast, 80mph and 1/2-A double-elimination; Diesel five rounds if time permits. *1/2-A combat will be flown on 42-foot lines, starters OK.* **FLYAWAY SHUTOFFS required in Fast and 80mph: Failure of a shutoff results in disqualification from the event.** Be sure that yours works!
- **RACING** — *1/2-A Mouse Race Class II* will use contest-supplied 10% nitro fuel. A special "Best Novice Clown" trophy will be awarded.
- Precision Aerobatics Model Pilots Association rules will be used for *Old-Time Stunt* and *Classic Stunt*.
- **Safety thongs required in all events.**
- Contestants may at some times be required to assist in timing or judging.

OTHER INFORMATION

- AMA or MAAC membership required for all participants. AMA membership available at registration.
- Only participants and officials allowed in flying areas. All others must stay outside roped-off or restricted areas.
- Absolutely no alcoholic beverages on flying field during meet hours.
- Awards — Trophies and merchandise through third place in each event and age grouping, and first through third place. Event champion trophies for each category!
- **Product vendors contact Contest Director for permission and site info.**
- Primitive camping allowed on site (no hookups). Get directions from contest officials. Commercial camping/RV locations nearby.

FOR MORE INFORMATION, CONTACT:

Contest Director Craig Bartlett, 205 N.E. Cedar Lane, Corvallis, OR 97330 — (541) 745-5507
e-mail sraigbart@yahoo.com

The Northwest Control-Line Regionals are sponsored and produced by the Northwest Regionals Management Association in association with *Flying Lines* newsletter and Northwest control-line clubs.

Northwest Rules Discussion Corner

Information and
exchange of views on
regional rules

Nostalgia Diesel Combat prop rule update proposal

A housekeeping change has been proposed in the Nostalgia Diesel Combat rules used in the Pacific Northwest. This change is to make the official rules conform to what has been standard practice for the past year.

The official Nostalgia Diesel Combat rules specify a brand and type of propeller as part of the overall effort to restrict performance of the models. The rule specifies the 8x6 Grish Nylon Flexi.

However, in the recent past the specified prop has gone out of production and is no longer commonly available. Contests during the past year have allowed any 8x6 propeller.

Approval of the proposal submitted by Mel Lyne would ratify current common practice. The proposal also updates the event's title to the more common usage.

For review, here is how the Northwest rules process works:

Proposals for new or updated rules are submitted to Northwest fliers for approval via *Flying Lines*. A ballot is published, which gives everyone an opportunity to vote on the proposals. Approved proposals take effect immediately on publication of the updated rules in the *FL* issue following the approval.

After approval, copies of the rules are always available upon request from the rules coordinator (currently John Thompson, JohnT4051@aol.com), and are published yearly in *Flying Lines*.

Normally, a month is allowed for discussion between the time of the initial

proposal's publication and the publication of the ballot. In this case, because the rule change is a minor one to conform with current practice, and because contests are coming up in the near future, we're including the ballot in this issue.

The complete updated rules are on the next page. The old rule is struck through and the new language underlined.

Why you should vote: If you plan to fly Nostalgia Diesel combat now or sometime in the future, you want to have a say in the rules. If you do not vote, you are leaving the decision up to others.

Who can vote: Anyone living in the Northwest, defined as Academy of Model Aeronautics District XI and British Columbia.

How to vote: Fill out the ballot below and mail it to *Flying Lines* by May 1, 2004. You can also vote by e-mail to JohnT4051@aol.com.

All ballots must include the voter's name and home town. Ballots whose senders cannot be verified will not be counted.

BALLOT

Do you approve of the Nostalgia Diesel
Combat Rules listed on the next page?

YES

NO

Name

Address

FLYING LINES is produced by a staff of dedicated volunteers interested in keeping lines of communication open between Northwest region control-line model aviators. *FLYING LINES* is independent of any organization, and is made possible by the financial support of its subscribers.

Contributions for publication are welcomed. Material submitted to the editor which is not for publication should be clearly indicated as such. Duplication of contents is permissible, provided source is acknowledged. Contributions may be submitted by postal or e-mail to the address on the cover.

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