

FLYING LINES

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

A happy new year flying session

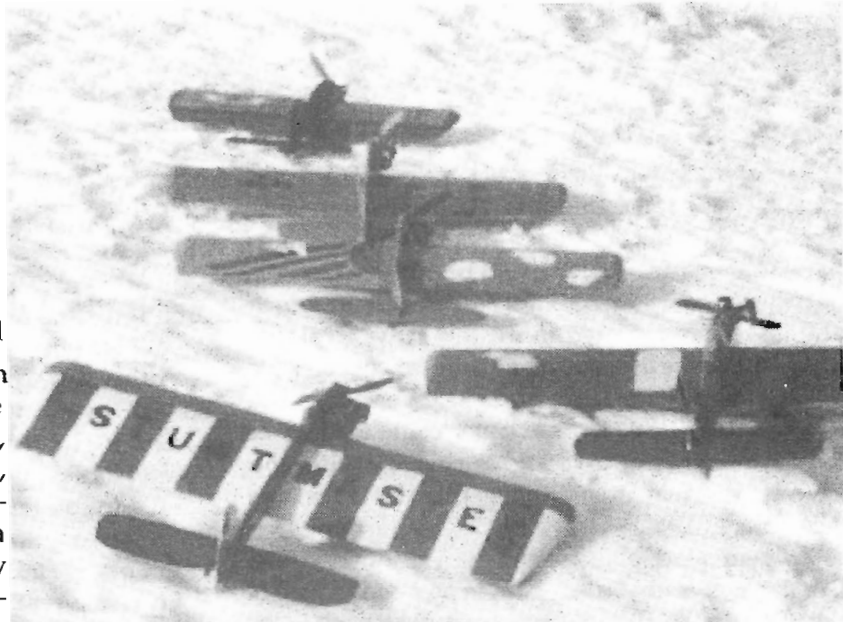
By Bruce Duncan

The Vancouver Gas Model Club's Polar Bear Fun Fly was on Jan. 1, 2004. As can be seen in the pictures it snowed the day before, but Jan. 1 was perfect, no wind, sunny, cool about +2 C or 35 F. After shoveling a takeoff area a number of flight were made by VGMC members and others. In attendance at for the start were Al Resinger, Chris Cox, Gerry Boyd, Mike Conner, Keith Varley, and Bruce Duncan. Shortly thereafter Ron Belcourt, Art Lander, Greg Davis, Marty Higgs, Harold Youds, and Henry Hajdik arrived. Pictures are courtesy of Keith Varley and his newest Digital Camera. (More pictures on Page 19.)

Models flown were, Ringmaster, Barnstormer, Flite Streak, Firecat, Super Clown, C.G. Bonzo, Giant Stuntmaster, and Giant Kingpin. Does it look like we like our Oldies?? You bet we do!

FL is honored to have in this issue an article written by one of control-line flying's legends, Bob Palmer. Bob describes his memories of the beginnings of inverted flight. Don't miss the article inside this issue.

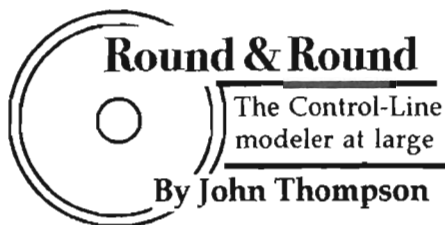
Trainers: An upcoming issue of *Flying Lines* will be sort of a "trainer" issue. It will feature purpose-built CL trainers by Joe Just and John Thompson. We'd happily include information on your favorite trainer. Send pictures and info by Feb. 1 to have it included in that issue.



The control-line fliers in Vancouver, B.C., aren't bothered by a little weather. These are some of the planes they flew on their Jan. 1 outing to the Rice Mill Road flying site in Richmond. (Keith Varley photo)

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Modeling thought for the month:

"Always imitate the behavior of the winners when you lose."

— George Meredith

Flyer of the plane rule

An obscure item in the back pages of a recent *Stunt News* got me thinking about an interesting variation of some of our standard competitive events that might be fun. It also could be an eye-opener.

There was a stunt contest somewhere in which all fliers were required to fly the same airplane. It was the same as auto racing's IROC concept: No excuses could be made for differences in equipment.

This variation on the usual contest could be done in either stunt, racing or combat, with the contest management supplying the airplanes and engines.

In stunt, the plane could be Top Flite's ARF Nobler. You could have a couple on hand in case of a crash, with the same engine setup in each. You could run regular PAMPA classes, or everyone in one, and just see how things stack up when the plane is not personalized.

Some fliers would fly just as well as always, no matter how far from their usual standard the plane is, because they have the talent, skill and experience to adjust. Some would find it hard to make the transition. Some of us might even score a bit higher, freed from fighting the quirks of our personal planes.

It could promote a little cross-pollination between events. Maybe, if the contest supplied the planes, some folks might try racing, for example. Identically set-up Clown racers might make for a great novice race.

It might make a great struggle for bragging rights between some of the better teams. Let's say, two heats, and switch planes between heats!

The ARF Flite Streak leaps to mind for racing, though Flite Streaks are a handful for racing because their wings are too stumpy for fast landing. But then, if everybody used the same planes ...

Combat is another place for such a leveling of the playing field. Everybody has their favorite

plane/engine combo, and everybody sets up the planes to their liking. How about handing everyone identical identical Mezzlik planes with the same engines, and letting them show who's the best at 80mph combat.

All of this would allow some mixing and perhaps some enhancement of mutual understanding between the devotees of different competition categories. Even within categories, it could be educational — and a lot of laughs as well.

Years ago, Paul Walker used to run the Stuntathon contest in Kent, Wash., with a twist.

Everyone got three flights. The first was the regular pattern. The second was the pattern flown backward. The third was a secret pattern revealed to the contestants just before flying began.

I remember that everyone had a pretty good time and most of the airplanes survived.

What got me thinking about this was that I recently invented a new maneuver of my own. No, no, not anything significant like inventing inverted flight or the CL Immelman. But it was kind of a rush, nonetheless.

It's the square cloverleaf. And, to my surprise, it's quite easy to do, in some ways easier than the round one we all know and love.

It was a real spur-of-the-moment thing. I had just finished the pattern. One of problems always is finding the bottom of the second segment of the cloverleaf (lower left outside). In this particular flight, in trying to find the right bottoms and intersections, I had sort of given the segments square corners — ugly! But as I finished, I sort of visualized the whole maneuver squared off.

With no further thought, I did two laps and then went into a square cloverleaf. To my surprise, it came out pretty good, first try!

The surprising thing about it is how easy it is. Starting high, the first segment is a bit softer than most square maneuvers, and a little speed is spilled off, so the lower left is not as violent as the outside square, for example. And because it's square, it was easier to find the ground level on that lower left outside than it is (for me at least) doing that round maneuver with no ground-level starting reference. The plane handled it fine.

I'm not suggesting that the maneuver be put in the rulebook, but as a way to do a little showboating after a practice flight — hey, give it a try!

John Thompson can be contacted by mail c/o Flying Lines, or by e-mail at JohnT4051@aol.com. Web site: <http://members.aol.com/JohnT4051/NorthwestCL.html>.

Where the action is!

Coming events in Northwest Control-Line model aviation

Jan. 31-Feb. 1

Northwest Model Expo, Western Washington Fairgrounds, Puyallup, Wash, 9 a.m. to 5 p.m. Saturday, 9 a.m. to 4 p.m. Sunday. Manufacturers, vendors, exhibitors, model displays, live demos, swap meet. For information, contact Bob Brownell, (253) 847-5721, expoinfo@nwmodelexpo.com. For swap meet reservations, contact Don Sweasy, (253) 445-4763. Sponsored by Mount Rainier RC Society.

Feb. 28-29

Evergreen Aviation Museum third annual Flying Model Static Exhibition, Evergreen Aviation Museum, 3685 N.E. Three Mile Lane, McMinnville, Ore. Bring a plane and get one free admission to the museum. Control-Line planes will be displayed along with others. See flyer in this issue for details. For info, contact Cecil Mead, (503) 864-3731.

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*.

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. 8

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

Your contest date?

The schedule is filling up fast. Make sure to get information about your 2004 contest to *Flying Lines* as soon as possible. Send your camera-ready flyer for publication at least three months before the event, to be assured that there is enough lead time. Questions? Contact the *FL* editor at JohnT4051@aol.com.

Clip this out and give it to a new CL flying friend!

Flying Lines subscription form

Name _____ Phone _____ E-mail _____

Street address _____

City _____ State _____ ZIP _____

Send the above information along with \$14 (\$15 U.S. funds in Canada) to *Flying Lines*, 2456 Quince St., Eugene, OR 97404.

The Flying Flea Market

Classified advertisements — FREE for *FL* subscribers

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.

FOR SALE: New-in-box Testors McCoy .19 and 29. \$40 each or the pair for \$75. Mike Hazel, (503) 364-8593, e-mail: zzclspeed@aol.com

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 instruction available for new fliers to try control-

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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.

SPEED INTEREST GROUP: Join the North American Speed Society. USA and Canada dues are \$25 annually, membership includes "Speed Times" newsletter. Write to: NASS, P.O. Box 371, Fenton, MI 48430.

WANTED: New Magnum .65 GP plain bearing engine. contact Rick Wallace, (360) 683-9860, or preferably by e-mail, toolman50@prodigy.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.

WANTED: K&B 4.9 engines and parts. Craig Bartlett, (541) 745-2025.

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.

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

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 cflfyer@tbcnet.com.

RACING INTEREST GROUP: National Control Line Racing Association offers newsletter with technical articles, organizes national events, keeps national standings and more. To join, send dues of \$10 U.S. (\$12 international) to NCLRA, c/o Mike MacCarthy, 4704 Hillsboro Ct., Santa Rosa, CA 95405. Online: www.NCLRA.org.

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

January 2004

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The Scoreboard
 Northwest control-line
 competition standings.

Rutherford captures points championship

"Dirty Dan" Rutherford of Bothell, Wash, was the Competitor of the Year in 2003, scoring 63.5 points, all in stunt events.

Rutherford scored points in all four stunt events — P-40, Old-Time, Classic and Expert Precision Aerobatics.

Congratulations, Dan, on a fantastic year!

Second place in the *Flying Lines* annual compilation of total competition points was Keith Varley of Vancouver, Wash., who scored all his points in stunt events. In third place was Mel Lyne of Garibaldi Highlands, B.C., who scored points in combat and racing.

The number of people scoring points in competition in 2003 was up from 2002, with 78 people or teams scoring, compared with 71 the previous year. Note that this is *not* the total number of competitors, only the number of people placing first through fourth place in sanctioned competition.

As usual, stunt had the greatest distribution of people scoring points, with 35 people, up from the 32 in 2002. Racing came in next with 19 scoring, up two from the previous year. There were 19 combat fliers scoring points, up from 16 the previous year. Fourteen people scored carrier points, compared with 10 in 2002. Nine speed fliers scored points, compared with 8 in 2001. three fliers scored points in scale, compared with one the previous year. Again, these totals reflect only placement, not actual number of competitors. The presence of out-of-region fliers in a contest can result in no points, or fewer points, being scored toward Northwest standings.

The Competitor of the Year recognition has been given since 1980, the second year of *Flying Lines* publication. Here is the history, giving the

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top three finishers each year:

Competitor of the Year, 1980-2001

1980: 1, John Thompson 2, Bill Varner 3, Jim Cameron

1981: Dick Salter, Thompson, Dave Green

1982: Dick Salter, Thompson, Mike Hazel

1983: Green, Thompson, Glenn Salter

1984: Green, Dick Salter, Gary Byerly

1985: Glenn Salter, Green, John Hall

1986: Not available

1987: Dick Salter, Glenn Salter, Green

1988: Not available

1989-90: *Flying Lines* not published

1991: Joe Rice, Rich McConnell, Tom Strom

1992: Rice, Todd Ryan, Hall

1993: Ryan, Rice, McConnell

1994: Ryan, Chris Cox, Nitroholics Racing

Team

1995: Ryan, Jeff Rein, Don McClave

1996: Ryan, Stephen Cox, Rick Meadows

1997: Ryan, Paul Gibeault, Stephen Cox

1998: Ryan, Mel Lyne, Dan Rutherford

1999: Ryan, Shawn Parker, Mike Conner

2000: Ryan, Lyne, Scott Riese

2001: Chris Cox, Ryan, Lyne

2002: Jeff Rein, Bruce Hunt, Nils Norling

2003: Dan Rutherford, Keith Varley, Lyne

Anyone who would like a printout of the complete 2002 Competitor of the Year standings can get one by sending a stamped, self-addressed envelope to the standings coordinator. The address is at the bottom of the column.

It's 2004 now and time to remind contest organizers to keep score through fourth place in all of your sanctioned contests, and send the results to *Flying Lines* for calculation in the standings.

Final standings in each 2003 event were published in *Flying Lines* past issues.

Below are the Final 2003 Competitor of the Year rankings. Initials after the names indicate the events in which points were scored.

C=Combat.

NC=Navy Carrier.

R=Racing.

Sp=Speed.

Sc=Scale.

St= Precision, OTS or Classic Stunt

2002 OVERALL STANDINGS

1. Dan Rutherford — St	63.5
2. Keith Varley — St	56.5
3. Mel Lyne — C,R	47
4. Paul Walker — St	42

5. Mike Conner — NC,R	41	Marty Higgs — R	3
6. Bruce Hunt — St	40	Lee Uberbacher — St	3
7. Mike Potter — NC, Sc	39	Ben Madsen — St	3
8. Don McClave — St	39	Dave McCheyne — R	3
9. Todd Ryan — R	36.5	Frank Boden — NC	3
10. Robert Smith — C	36	Steve Helmick — St	3
Chris Cox — St	36	63. Jay Woods — C	2.5
12. Bob Smiley — St.	33	Mark Hansen — C	2.5
13. Milissa Huber — C,R	32.5	65. Jeff Reichel — C	2
14. Shawn Parker — NC	30	Bruce Duncan — R	2
15. James Cox — NC, Sc	27	Leo Mehl — St	2
Pat Johnston — St	27	Larry Bell — R	2
17. S&S Racing Team — R, Sp	26.5	Craig Bartlett — Sp	2
18. John Thompson — C, St.	25 *R16	Bob Parker — NC	2
19. Dave Royer — St	24	Maria Huber — R	2
20. Rich McConnell — NC, Sc, St	23	Joe Just — St	2
21. Loren Howard — Sp	21	73. John Leidle — St	1.5
22. Cayce Rule — C, R	20	74. David Miller — St	1
23. Jim Booker — C, R, Sp	19.5	Ted Gritzmacher — Sp	1
24. Ken Kortness — Sp	19	Gerry Boyd — R	1
25. Paul Dranfield — C	18.5	Jason Parker — NC	1
26. Alan Resinger — St	18		
Jerry Eichten — St	18		
Tony Huber — C	18		
29. Nitroholics Racing Team — R	16		
30. Mike Hazel — NC, Sp	15 *R16		
31. Ron Salo — Sp	12.5		
32. Dave Gardner — St	12		
Mac Ryan — R	12		
34. Mike Haverly — St	11		
Mike Rule — C	11		
36. Dave Baxter — C	10		
Paul Vallins — C	10		
Bob Emmett — St	10		
Scott Riese — St	10		
40. Burt Brokaw — C	9		
John Morrow — C	9		
Roy DeCamara — St	9		
Chuck Schuette — Sp	9		
44. Dave Pellerin — C, St	7		
Rich Salter — NC, St	7		
Mark Conner — R, St	7		
Henry Hajdik — R	7		
48. Dave Shrum — NC, R	6		
49. Bob Carver — C	5		
Chris Gomez — St	5		
51. Jeff Rein — C	5		
52. Bick Brannen — St	4		
Dick Salter — NC	4 *26.5R		
John Hall — NC	4		
Dennis Matthews — NC, R	4		
56. Thadd Faussett — St	3		

* Also scored with a team entry. Symbol after score indicates category and team's points.

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

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

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

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

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

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

Send contest results, corrections and other correspondence regarding Northwest Competition Standings to John Thompson, 2456 Quince St., Eugene, OR 97404, e-mail John14051@aol.com. For a printed copy of complete standings for any event, or for a copy of the rules for any Northwest event, send a self-addressed, stamped envelope.

Transporting Model Airplanes

By: Fred Cronenwett
March 2003

One of the biggest challenges in this hobby is sometimes getting the model airplane to the flying field. Most of the time the drive is short, but sometimes you need all the space possible for that long road trip. A pickup truck is a popular way to transport models to the flying field, and if you have a camper shell you have a dry location with lots of room. You can pile all of your field boxes and planes in the truck bed and hope that nothing gets crushed when the field box tips over. Or you can make the most of the space you have by making a platform as shown in the pictures.

Step #1 – Purchase materials:

- Metal Bars** – 1/8" thick steel, 1 1/2" angle
- Plywood** – 1/2" thick, cut to fit truck bed
- 2 x 2 wood** - used to stiffen plywood board
- Hardware** -Nuts, bolts, washers, etc

Wood - Get at least 1/2" thick plywood, if you use 1/4" or 3/8" thick you will need to reinforce the bottom with 2 x 2 wood using drywall screws. I haven't tried 1/2" yet, but it still may need bottom reinforcement. This also keeps the board from "bouncing" while you drive down the road.

Metal Bars – use steel bars for durability. The first version of this I used had aluminum bars and they started to bend over time. Get 1 1/2" wide steel angle, 1/8" thick. The steel bars allow you to lean and put your own weight on the structure.

Step #2 – Mount Metal bars in truck:

Depending upon the mount used to hold down your camper shell, drill holes and adapt the metal bars to fit your truck. You can see how I put a notch and drilled a hole in the bars to fit the mounts in my truck. These holes may require match drilling to fit properly, do not assume the mounts are the same distance apart at front, center and rear bar. Label the bars so that you pull them out later and you will know where they go.

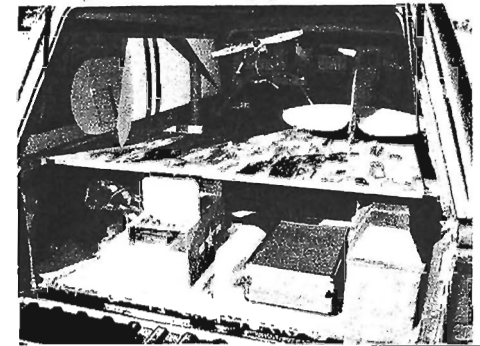
Step #3 – Mount the plywood to metal bars:

Drill three holes in each bar, left and right edge, and one in the middle. With holes drilled in the metal bars locate the plywood so that it is centered (side to side) and in the right location front to back. Make sure you can close your camper shell with the plywood in this location. With the

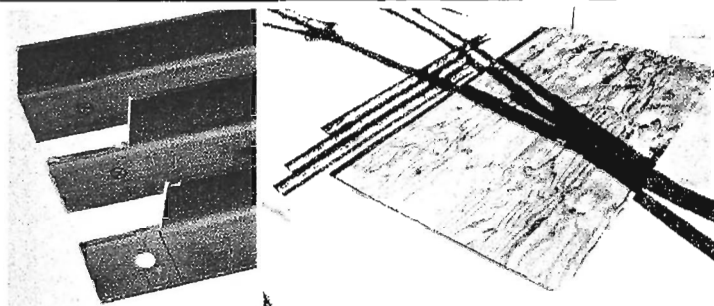
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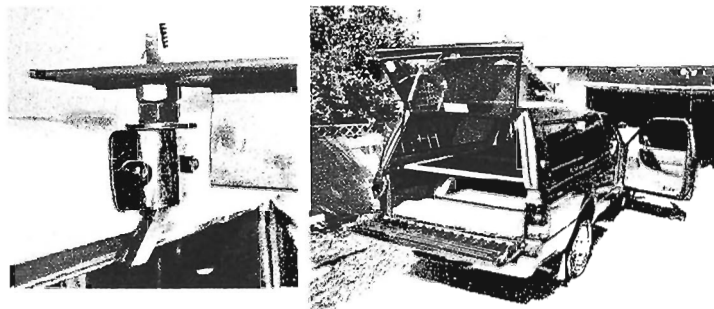
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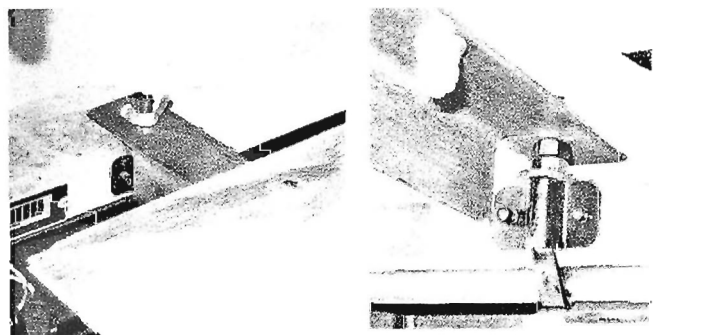
Step #1 – Purchase Metal bars & plywood



Step #2 – Mount metal bars in truck



Step #3 – Mount plywood to metal bars



plywood in the desired location drill one hole thru the plywood at the front bar and mount the bolt, washer and nut (use 1/4" diameter bolts). Then drill a second hole thru plywood at the rear bar of the board and mount that bolt, washer and nut. Now that you have two bolts in place so the board won't move and you can drill the remaining 10 holes in the plywood. A cordless drill is very handy during this portion of the assembly.

Step #4 – Add reinforcement under the board:

This is required if you use 1/4" or 3/8" thick plywood. It may even be required for 1/2" thick, but haven't tried that yet. The simple act of driving down a bumpy road will tend to make the board "bounce" without any reinforcement.

Using a black marking pen, draw lines on the underside of the plywood board so that you know where the metal bars are located when installed. Remove the board from the truck and use drywall screws to attach the 2 x 2 wood on the bottom surface as shown. This will stiffen up the board considerably and eliminate any "bounce" when you drive.

Step #5 – Add tie down points and wing rack:

Now you have a plywood board that allows you to roll the model anywhere on the upper section of the truck. Using a marking pen locate where you will want tie down points for the models you normally fly. Tail draggers typically only need a tie down spot for the tail wheel; airplanes with tricycle landing gear typically need 3 tie down points. I used simple hooks and mini shock cords to keep my planes in one spot while I am on the road. A model can be put into the truck and restrained in less and 30 seconds with the method I have shown here.

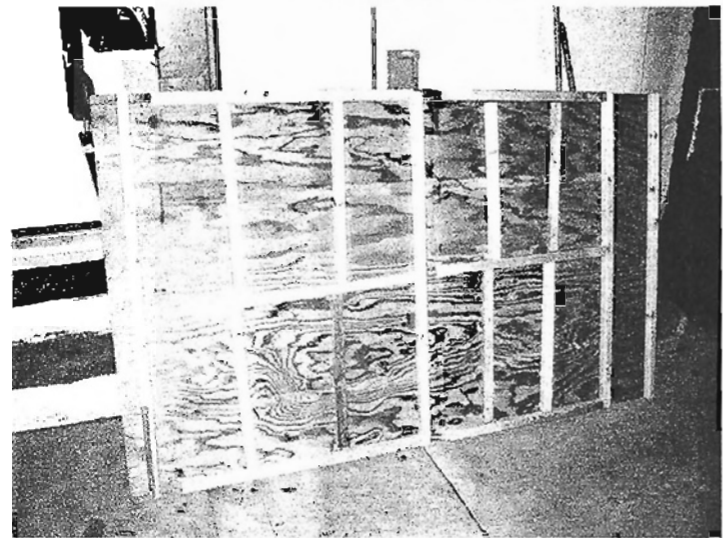
The wing rack is made from 2 x 2 wood, PVC tubing and insulation. Drill holes in the wood, glue PVC tubing (you can also use dowel if you want) into place and slide insulation over that. Use drywall screws from below to hold the wing rack in place.

Conclusion:

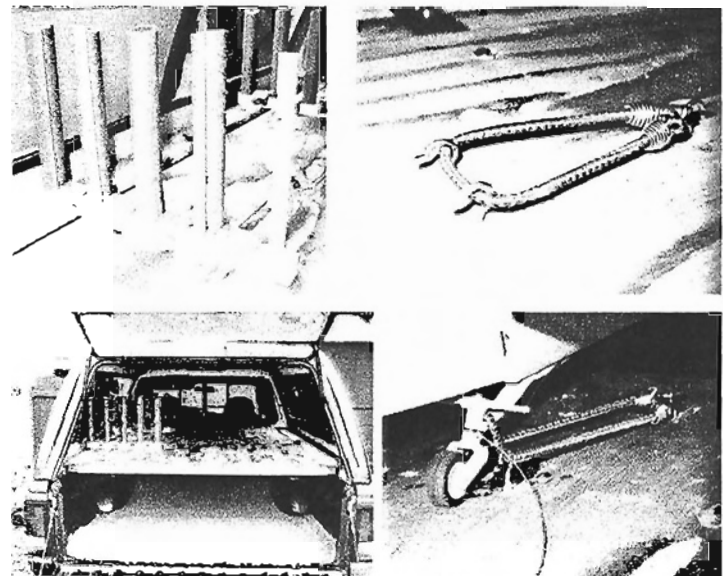
You can see by the picture to the right that I have two large models in the truck and all of the required flight boxes with room to spare. I still have lots of room below the plywood board for other stuff if I was taking these models to a flying event more than days drive away. The other advantage is that you eliminate the dings and dents that happen when you pile the models and flight gear in the back of the truck.

Good luck with your own version and happy landings!

Step #4 – Plywood reinforcement



Step #5 – Wing Rack and Tie downs



Truck loaded with room to spare



How inverted flight began

■ One of control-line model aviation's legends describes the events that turned the CL flying world upside-down

By Bob Palmer

This is about the way we finally flew upside-down.

In the spring of 1945 —the date is the best I can remember — a modeler from the northern part of California came down to one of our contests. His name was Roy Mayes.

He didn't say at that time he could fly upside-down. He lost the handle just as he turned over to fly upside-down — and we thought he just crashed, not knowing why.

He went home and came down again later on to a contest with the same kind of model. It was a biplane powered by a small engine — no symmetrical airfoil, a lot of area.

In the contest, he flew upside down to everyone's amazement. He very carefully climbed to get height and suddenly gave down and recovered to right side up.

He raised everyone's attention as to how the tank was made to fly upside-down. He was very cooperative on how it worked and so simply that none of us had thought of it before. So four fliers new were intent on flying upside down. A biplane with a Clark Y airfoil was not the way to go.

Roy Mayes returned home with his first-place trophy and many thanks for his cooperation and help. We now had the tank and now to make a plane to fly upside-down. We contacted an aeronautical engineer to ask the question about a symmetrical airfoil. His answer was that it wouldn't work as they have no lift.

The four people who were going to try it were J.C. Yates, Dan Gullota and Landsberg and and Dave Slagle (10, a junior).

J.C. Yates and I were flying Lockheed planes — I a Lockheed Vega and Yates a Sirius (41" span). The two planes we used had more airfoil on

the bottom. So Yates used this as a wing to fly upside down, since it may have lift to do it.

Slagle in the meantime was going to try a symmetrical airfoil by putting two Clark Y together. His mother built his planes, and his father handled the engine installation. I don't know how the two young fliers were doing — Gullota and Landsberg — they lived away from Yates and me.

What was I doing? Contests were going at the time and I was working and trying to keep my planes ready. Yates got a two-hour lunch period and was building his planes. Slagle's mother was building his plane.

It wasn't long until Yates was ready and he flew the plane over on its back high up so he could pull out right-side up. It was Orwick-powered doing about 80 mph. He didn't make it — airfoil just not enough lift upside down.

Now Slagle was ready and his plane flew well and flew upside-down and back to normal flight. Word spread fast that it worked. And after a while I saw Slagle go high and dive down at the ground and pull out inverted — awesome!

(I had sold Slagle a plane and taught him to fly, and he flew so well that as a junior he won the Jim Walker trophy three years in a row, 1946, 47 and 48. He flew two planes at once with motor control and stunting both of them. I was proud to have helped him become a champion.)

So Yates built a plane with a symmetrical airfoil and it became the Madman. Where did he get the name? When he flew he finished the pattern and did a series of wingovers, just missing the ground at 80 mph. Everyone said he flew like a madman.

Now Burbank Manufacturing Co. with Hi Johnson made the Madman plane as a kit and I made one to fly team with Yates. Now, Yates wanted me to learn to fly inverted so we could fly inverted together. I got an Orwick engine and flew it but almost crashed. At 86 mph, things happened too fast for me. I flew for four years right-side-up and to go the other way didn't want to work so well, especially going high to pull out right-side up. So I decided to make a new plane with twin rudders to clear the ground inverted. I was going to take off upside-down on a set of wheels top and bottom and when I got enough, give full down and return to normal flight.

After work, my wife and I found a place to fly and I went over to try it. I only went one round and

back to right-side-up, and I landed on the right-side wheels. The power was a Super Cyclone 60, not so fast. For a week I went every day until I could go right-side-up in to inverted and back again. I then tried my Madman and flew it just fine.

I immediately called Yates and told him I had mastered inverted flight. We flew many flights together only 8-10" apart.

So inverted was well on its way. Yates and Gullota and Landsberg were winning the contests. I got a third and sometimes a fourth until 1947. Tucson had a very big contest sponsored by the Army — really nice trophies and merchandise to go with it, \$150 watches to go with first place.

I made a bigger Madman and went to an 11x8 prop I liked and the Yates used a 12x7 prop. Weather was over 100 degrees and altitude at Tucson I think was very high. Yates tested his plane and thought he needed less pitch. Gullota and Landsberg followed suit. I never changed anything, expecting third or fourth place.

At the contest, Yates and the other two were staggering in all pullouts. Come my turn to fly and I flew very smooth — no staggering — my plane with more area and an 11x8 prop worked fine, flying slower and doing well all the way, and I could watch my intersections and bottoms and tops.

We were now following a pattern brought about by George Aldrich and we thanked him for his work in this direction. He sometimes sent me new stunts to try and get my opinion of the stunts.

This concludes the story of inverted flight.

Bob Palmer can be reached in care of Flying Lines.

Time flies when you're having fun — flying!

It's that time again for some FL subscribers: renew or get left behind. Everyone who renews gets a free *Flying Lines* toolbox sticker. Get yours today. Remember also, besides the great Northwest CL news coverage, all subscribers get free classified ads. Here's the list of fliers "on the bubble."

Greg Beers, Preston Briggs, Bret Cason, John Clemans, Bob Dash, Jim Green, Gary Harris, John Hall, Bob Parker, Dennis Patera, Paul Rice, Jerry Rocha, Dave Royer, Dick Salter, Keith Varley, Paul Walker.



ZOOT ZOOMER
SEZ.....

"FAST IS COOL!"

Zoot's Mixture

By Mike Hazel

Yo dudes, what's up!??? As this is being written there is snow on the ground, and it's too cold to venture out to the ol' zootshop. All those projects will be on hold for a little while longer.

I am really bummed out — was planning on going to the World champs and the Nats next summer. Note the past-tense wording. At my place of employment (yes, I do have a job. It's not cheap being zoot!) the vacation weeks are divvied upon a seniority basis. Even though it feels like I have been working there forever, there are others who have been working there forever and a day, therefore having bidding rights ahead of me. Well it seems that some of them got a little greedy this year, taking more than their fair share of summer weeks. So while these ne'er-do-wells are out doing silly things like camping, boating, fishing and other assorted and sundry nonsense, I will be sitting at home just dreaming about the control-line excellence going on in Murcia. Arghhhhh! Guess I better remember to cancel that reservation for the nice room at the Signature Inn. About the only thing worse than not being able to go, would be paying for the stay without being there.

Hamster Speed? Occasionally I look in on the online speed and racing forums. As of late, one of the more interesting and active discussion threads involves a proposed speed event involving the .15 size rat racer. As most of you know, the .40 rat event pretty much died awhile ago, and attempts to revive the Rat event utilizing .21 engines went absolutely nowhere. But for some reason the idea of using .15 engines has been catching on, despite the fact (*hmmmm, or maybe because of*) there is already a .15 size racing event, with engines readily available. Oh, and a word of explanation here: One of the racers coined this class "Hamster," as they are larger than a Mouse racer, and obviously smaller than a Rat racer (previous size, that is.)

Anyway, someone suggested that planes from this new class could be used as is to fly an informal speed class, kind of a downscaled Formula 40 thing. I am generally against creating new events and classes if they are just being added to a bunch of similar events. However, this concept might be good because it would encourage some event cross-over between the racers and speedsters (which was part of the intent of the Formula 40 speed event) and it does not require a specialized ship to do it with. Anytime a plane can be appropriately used for more than one event or class, I am in favor of doing so. Anyhoo, log onto one or both of those forums for some interesting discussion. Naturally there are some who are already agonizing over rules and loopholes, but I suspect all of that will be well legislated.

Better Late Than Never Department: I had ordered a BMS (Bailey Machine Service) Jet engine way back in the summer of 2001. Actually kind of forgotten about it and then lo! and behold! it finally showed up last month. What a nice surprise. For those of you not familiar with the BMS engine, it is basically a clone of the Dynajet, except that it is built much nicer. They are easily identified by the anodized blue engine head. The Zoomer has some more boom! boom! in his future.

"Northwest CL racing" was the lead-in from Dan Rutherford's column in the Jan. 2002 issue. I urge everyone to please go back and read it again, and do some thinking. Better yet, give some response to the ideas presented there. Things haven't really changed since then. Dan ponders the low participation problem as we either don't have the right event to interest folks, or folks simply aren't interested in racing anymore.

There are a multitude of classes of racing already, so finding one that seems to fit one's comfort level of performance should be no problem, which was already pointed out. So, it would seem that people are rejecting racing in its present format. Perhaps a real shakeup of the racing format might give a shot in the arm. Of course we are not talking about changing the rulebook, but just doing our own regional thing.

Dan now updates some of his thoughts and concepts in last month's issue. There he proposes a sport race event where the equipment really is box-stock, and tailored toward being novice-friendly. And the qualifying races are done in a

bit different manner than the rulebook, but gives the entrant more opportunity to race with rewards for consistency.

So please go back and take a look at these ideas, and maybe you will have some ideas to propose as well. Let's hear from you!

When it comes to racing or any other low-participation activity, there will always be a few diehards, but to my way of thinking, the control line hobby will be stronger overall if each and every segment remains a viable and valuable part of the whole. I would hate to think that there are those who would just stand by watching and waiting for racing (or YOUR event____), to die off so as not to be a nuisance when competing for time on the contest schedule or space on the flying site.

Northwest Sport Jet Speed rules accepted

Balloting is complete and the Northwest's speed community has voted in favor of the formal Northwest Sport Jet Speed rules, as presented in Issues No. 195 and 196 of *Flying Lines*.

The rules will be effective for the 2004 season. They are substantially the same as the provisional rules used for the past several years, but there are some differences. The differences were explained in Issue No. 195.

Speed fliers planning to participate in Northwest Sport Jet Speed should review the rules as published. The rules will be published again this spring in the annual *FL* rules issue.

For an explanation of how the Northwest rules process works, see Issue No. 196.

Help Wanted!

Become a part of the *Flying Lines* staff!
Here are some of the ways you can help out with your Northwest CL newsletter:

- Local news reporter for your area
- Contest reporter — help gather results
- Photographer
- Contribute technical articles or columns
- Cartoonist — Send us CL humor

Contact the editor to join the network!

California Dreaming...

By Don McClave

Looking for a neat OTS or Classic ship for the coming season? Why not check out some of the great designs that came out of Southern California during the decade following World War II? Designers like J.C. Yates, Hi Johnson and the great Bob Palmer created some of the most beautiful and best performing ships of the era, and they were powered by locally produced engines – Fox, Veco, Orwick, Johnson, Ohlsson & Rice, Super Cyclone and K & B. Here are a handful of excellent but often overlooked designs from that period.

Old Timers:

- The Stearman PT-19 biplane won flying scale at the 1949 Nationals in the hands of Bob Palmer and J.C. Yates, but it will do also a very nice pattern.
- The Palmer Mars is an absolutely gorgeous design that flies surprisingly well if kept light.
- The Veco Mustang. Comments about the Mars apply to this one as well.
- Kenhi Cougar I. Thin airfoil, swept forward trailing edge, built up control surfaces. Once again, build light.

Classic Ships:

- Hi Johnson's Stuka. A sensation at the 1958 Nationals. Dennis Schauer and Jim Ivy placed well flying this gull wing, flapless design.
- Hi Johnson's Spitfire. Flapless sequel to the Stuka and flown to fifth place at the 1959 Nationals by Dennis Alford.
- Bob Palmer's "round nose" Thunderbird. Third place at the 1956 Nationals and gets my vote as the prettiest of the Thunderbird series.
- Another Bob Palmer design, the Skyscraper, has wing dihedral and needs a Veco or K & B .45. Very attractive, like all of Bob's designs.

The West Coast has a long and rich history as a stunt hotbed, and nowhere is it stronger than in Southern California. Why not try one of these designs and help keep the tradition alive? Plans for all of the ships described above are available from Tom Dixon. I hope one of them catches your fancy...on such a winter's day!

Carrier fliers: Are you nostalgic?

If so, you might consider hooking on to the Nostalgia Carrier event that's beginning to catch on in the Northwest.

You can do so at the 2004 Northwest Regionals in Albany, Ore. Nostalgia Car-

rier has been added to the Regionals event lineup.

Rules for the Nostalgia Carrier event are on the next page.

Other event changes at the Regionals for 2004 are: P-40 stunt and fast combat have been added; Slow Rat race has been dropped and Rat is now .15 only.

NOSTALGIA NAVY CARRIER RULES

3.1. Engine Specifications: Engine and fuel system specifications shall be as listed in the current AMA regulations for each event.

3.2. Moveable Leadouts: Vertical or horizontal position of the leadouts relative to the model may not change in flight.

3.3. Electronic Control Systems: Electronic control systems are not permitted

4. Builder of the Model: The builder of the model rule does not apply to Nostalgia Navy Carrier.

5. Historic Model Bonus: A bonus of 20 points will be awarded for models which were published or manufactured prior to January 1, 1978. The Contest Director may require proof of eligibility, which shall be the responsibility of the contestant. Proof may consist of dated published plans, magazine construction articles, or advertisements. To qualify for this bonus, models must comply with the following requirements:

5.1. Modifications: No modifications to the original design are permitted, except as listed below. Any modifications other than those listed in section 5.2 which, in the opinion of the event director, significantly change the appearance or performance of the model as it was originally designed, shall not be permitted. This prohibition includes, but is not limited to, changes in airfoil, changes in dimensions, and use of moveable control surfaces not included on the original design.

5.2. Allowable Modifications:

5.2.1. Landing gear may be changed in length or material, but must exit the model at the original position. A tail wheel may be substituted for a skid and vice versa. Wheels may be of any diameter.

5.2.2. Leadout position may be changed from that shown on the plan. Ground-adjustable leadouts are permitted.

5.2.3. Control travel, control mechanism location, and control mechanism may be changed.

5.2.4. Tip weight may be changed or may be adjustable.

5.2.5. Tail hook and its location may be changed.

5.2.6. Structural changes to strengthen the aircraft are permitted.

5.2.7. Building and finishing material substitutions are permitted.

5.2.8. Location of access hatches may be changed.

5.2.9. Engine mountings may be changed, and engines of different displacement may be used.

6. Non-Schnuerle Engine Bonus: Non-schnuerle engines will receive a bonus of 20 points.

7. Carrier Deck: A carrier deck corresponding to current AMA regulations will be used.

8. Records: Records will not be established for Nostalgia Navy Carrier.

9. Combination of Classes: Class I and Class II may be combined for Nostalgia Navy Carrier. If classes are combined, Class I models will receive a five percent bonus on total score (multiply Class I total score by 1.05). Profile Class will not be combined with Class I and Class II in Nostalgia Navy Carrier.

CHOLLA CHOPPERS MODEL AIRPLANE CLUB
PRESENTS THE

THE 54TH SOUTHWEST REGIONALS
CONTROL LINE CHAMPIONSHIPS

Flying Site Christopher Columbus Park (Silverbell) Tucson, Arizona

TROPHIES and AWARDS THRU 3rd PLACE

Saturday & Sunday --- January 24th & 25th, 2004. Class AAA

CONTEST DIRECTOR: Bart Klapinski; 4003 W. Valley Mine Dr.; Tucson, AZ. 85745; Ph. 1-(520)-887-7003

SATURDAY EVENTS

1/2A COMBAT (Tucson Rules; Double Elimination)
*75 MPH COMBAT (Double Elimination)

*OLD TIME STUNT
*CLASSIC STUNT
*PROFILE 40 STUNT
SPORT SCALE
PROFILE SCALE

Jr. 1/2A MOUSE I
*FORMULA UNLIMITED
*TEXAS QUICKIE
*CLOWN RACE
*FOX RACE

SUNDAY EVENTS

FAST COMBAT: (Fuel Shutoff Required; Double Elimination)

AMA & NOSTALGIA PROFILE CARRIER
AMA CLASS I CARRIER
AMA CLASS II CARRIER
NOSTALGIA CLASS I & II COMBINED
.15 CARRIER
SPORTSMAN (OPEN ONLY)
SPORTSMAN (Jr. / Sr. ONLY)
PAMPA PRECISION AEROBATICS:
BEGINNER INTERMEDIATE
ADVANCED EXPERT

**ENTRY FEES (No Penalty for Late Entries): OPEN \$10.00 first event, \$5.00 each additional event.
JR/SR \$5.00 one time charge.**

AMA License Required -- Available at the flying site.

**COMBAT, CARRIER, & PROFILE 40 STUNT ON GRASS CIRCLES
STUNT (except Profile 40), AND RACING ON ASPHALT CIRCLES**

CARRIER DECK CLOSES AT 3 PM

AMA Rules and Regulations Apply - *Special Event rules available upon request.

SATURDAY Jan 24th: Combat pilots meeting 9 AM (1/2A & 75 MPH Combat are Double Elimination). Stunt pilots meeting at 8:30 AM, Racing & Scale pilots meeting at 9:00AM. **Registration for Stunt (Old Time, Classic, & Profile 40) closes at the start of the first flight (between 8:45 & 9:15AM).** Registration for all Racing & Scale events closes at 9:30AM.

SUNDAY Jan 25th: Combat pilots meeting 9AM (Fast Combat is Double Elimination). **A fuel shutoff is required for all matches in Fast Combat.** Stunt Pilots meeting 8:30AM. Carrier deck open at 9AM. **Registration for Stunt (PAMPA Classes) closes at the start of the first official flight (between 8:45 & 9:15AM).** Registration for all Carrier events close at 9:30AM.

SAFETY THINGS REQUIRED FOR ALL EVENTS (Except Racing).

NO ALCOHOLIC OR CONTROLLED SUBSTANCES will be permitted at the Control Line site while contest is in progress. Contestants considered under the influence will not be allowed to fly. **THANKS** for your cooperation.

Combat Cornucopia

Combat news and views by Mel Lyne

Fox .36X Combat Engines, Keeping Them Alive (Part 7)

In order to get peak performance out of your Mk VI, the engine must be fairly extensively modified. A new head button, cylinder and head button shims, and a new con-rod are required. A number of careful grinding and machining operations are also required. Careful attention to the exhaust timing, blowdown timing, and deck height is needed. In other words, you will have to spend some money and a lot of time doing these mods. I have enjoyed playing with motors for the past 40 years, and I really like spending hours in my workshop modifying motors to see if I can get them to go really fast. I am sure all the other "go faster" engine modification guys like Glen Dye, Mark Smith, Greg Davis, George Aldrich, Henry Nelson, Dub Jett, etc. also have a real love for making their motors go really fast.

You will have to decide how far you want to take the modifications to your Fox. I will outline each mod as we go through the motor. You will have to decide if it is practical or possible for you to do that particular mod.

Everyone has their limitations. I don't do lathe work. For this reason, I do not bore out the cranks of my motors. Glen Dye and Mark Smith bore the crank of the VI to the limit (to almost touching the crank pin).

To measure engine timing, you will need a 360 degree timing wheel which bolts on the crank in place of the prop. It is easy to make one. Just take a 4-inch diameter 360 degree plastic protractor (the high school type) epoxy a plywood disc each side in the center to make a hub, then drill through 1/4" dia to match the Fox crank stud.

Secure the timing wheel on the crank in the motor. Now take a large size paper clip, straighten it, and bend 2 loops at one end so they match the Fox mounting lug holes. Now bolt this wire "pointer" to the motor and bend the long end so that it just grazes the outside edge of the timing wheel as it rotates with the crank. Having the

backplate off and the plug out make timing reading much easier.

At this point, you need to assess the quality of the engine you have. In order to make a really fast engine you must have a very good piston/cylinder fit. Ideally, you want to start with a piston/cylinder that has not been run and is quite tight. The reason is that you are going to shim up the cylinder and this means the piston will not travel as far up the bore into the tightest-fit area. If your stock motor is low on compression, you need to replace the piston or replace both the cylinder and piston.

With the plug out and the backplate off, we will measure the blowdown and exhaust timing intervals. The blowdown is the angle in degrees between the closing of the main transfer port (MTP) and the closing of the top of the exhaust port. The MTP is the large one directly opposite the exhaust port.

Bolt on the timing wheel and pointer and adjust the wheel so that the zero aligns with the pointer just as the piston opens the top of the exhaust port. If you put the piston up and slowly turn the crank while you look down the plug hole, the instant that light comes in at the exhaust is the exhaust opening. Now keep the piston traveling down until the top of the MTP just comes into view at the top of the piston. You can also see this better if you shine a light from below and watch for the instant you see the light. Record this position in degrees. This timing interval is very important. To run fast it must be between 18 and 22 degrees. If it is less, then your engine will try to run really fast but will be un-needleable. You'll find you can't get a setting. If it is more, then your motor will have a nice steady run like a stunt motor, but it won't produce big power. Almost all the Mk VIs are in the 18-22 degree range. If you have one that is a bit low, then you have to very carefully raise the top of the exhaust to get it between 18 and 22 degrees. Use a fine Dremel cutter or stone to do this, and finish it by scraping the chrome burr on the inside with a paring knife tip. Make absolutely sure that the inside chrome edge is smoothed properly before you try the piston in

there. Try raising this top edge about .010", smooth out the chrome, then fit up and measure. Once you have 18-22 degrees blowdown, you work on exhaust timing.

Using the timing wheel again with zero set at the top of the exhaust just starting to open, rotate the crank so that the piston goes all the way down and comes up again to just close the top of the exhaust port. This is the exhaust timing interval and you want it to be close to 165 degrees for max power. The stock Mk VI comes with about 155 degrees, so shimming up the cylinder is required. To go from 155 to 165 degrees needs a shim of about .020". After shimming, check that the exhaust timing is close to 165 degrees.

With this raising of the cylinder the piston must still make good compression, or you won't get big power. This good piston/cylinder fit is essential. Assuming you now have the blowdown and exhaust timing correct, start looking at the matching of the MTP in the cylinder and the case. The MTP passage in the case on the VI is machined too high to match the cylinder MTP, even when the cylinder is unshimmed. So to get a match here you have to use JB Weld epoxy to lower the MTP passage top edge. Clean the case well in this area, then rough it a little with a knife point. Mix and apply JB Weld. Wait 3 hours for it to harden a bit then start "sculpting" with sharp knives. You will need a curved knife to do a good job. I take paring and kitchen knives and re-grind their shape on my bench grinder to make the tool I require. I also heat knives to cherry red to bend them sideways. You have to be a little creative. The JB Weld is much easier to carve before it is fully hard. Initially carve out the epoxy to let the cylinder fully insert with the shim in place. Now, through the exhaust port, gently scratch a mark in the JB Weld at the bottom of the slope in the top of the MTP in the cylinder. Remove the cylinder and carve the transition slope (concave-shaped) in the epoxy. Put the cylinder back in and check the matching. If you've carved out too much epoxy (which is easy to do), then add some more and repeat the marking and carving process. You need to get a smooth transition from the case to the cylinder MTP.

Once this is done, look at the front Schneurle transfer port and how the case matches the cylinder. You will probably need to dremel the top end of the passage in the case to get a good match. The matching of the top edge is the really important

one.

Now look at the rear Schneurle transfer and how the backplate matches the cylinder. Holding the backplate on with your thumb you can look through the exhaust port to see how things line up. The Mk VII and the Fox 40BB have the same Schneurle backplate which has the transfer passage 50% wider than the Mk VI. You can modify the VI backplate to be the same. Fill in the recess on the outside of the backplate next to the transfer passage with JB Weld epoxy. Let it harden 24 hours, then Dremel the inside to widen the passage to about 9/32" wide. You will cut through into the JB Weld, just keep the passage side vertical. At the top, hollow the chamfered lump to be a perfect match with the cylinder rear port.

Now when you assemble the engine, the three intake ports in the cylinder should line up perfectly with the transfer passage top ends in the case and backplate. If you've managed to do this, you should get a fast engine. And remember that you have matched the case to this particular cylinder. Other cylinders may not match as well, especially non-Fox ones. So it's important to have a very good cylinder to start with, not one that's losing chrome.

.....to be continued in Part 8

Regionals planning advances; help needed!

The Northwest's biggest CL contest will be upon us before you know it, and there's still lots to be done.

If you can help put on this huge meet, anything you can do to share some of the load will be gratefully accepted. Here are some of the jobs that volunteers are needed for:

- Field setup
- Field teardown and equipment stowage
- Officials: Speed timers, racing timers, combat judges, stunt judges, scale officials, carrier timers
- Banquet coordinator, setup crew
- Registration workers
- Security staff
- Many, many other miscellaneous duties.

Contact the Northwest Regionals Management Association in care of *Flying Lines* if you can help.

The Real 'Dirt'

Some tight lines from the bad boy of CL flying, "Dirty Dan" Rutherford

CL STUNT? I DON'T HAVE A MODEL!

That simply is not correct, nor is it even a good excuse. Everybody has a model which can be used in at least one event, a great many of you have equipment on hand that can be used in two, maybe even three different events.

Look, we're serious; we once welcomed Mel Lyne to the Stunt circle when all he had to fly was a D-Bat model. Yes, an old British Combat design, complete with .15 diesel and lashed-up landing gear. Based upon the age of the design, the model was legal for Classic Stunt and this was the event in which Mel participated. And he would have been made welcome when PA came along the next day if not busy whippin' the boys in Combat.

Dick McConnell has made do with a Flying Clown, using it (I believe) in Old-Time Stunt, Classic and Advanced PA. At the 2001 Roundup, Dick entered P-40 with this same model, surely getting bragging rights for maximum flights with one piece of equipment.

Seems as if everybody has a Ringmaster, even if it needs spiffing up. Legal for OTS, plus it handles all the maneuvers with ease. Remember, if that old crock really needs work, there are no appearance points in OTS. Yes, that also means you can buy or borrow a model for OTS, no penalty whatsoever. Unless you're like me, letting Don McClave borrow a model (once) or giving Chris Cox some quality handle time (twice!) only to all three times see these interlopers use my flying hardware take home first-place hardware.

Slow Combat models which are no longer competitive can easily be detuned for Stunt flying. A proper prop is all most of them need; in some cases a wedge of balsa jammed in the venturi will improve fuel draw and increase the mileage. (Mr. McConnell has a monopoly on this technology and you are referred to him for both materials and advice.) Come to think of it, a good Slow Combat model fitted with a true chicken-hopper tank would be the star of the show, as it seems to me many Stunt guys with profile models would benefit greatly from understanding these tanks.

We know there are quite a number of North-

west Sport Race models hanging unused in shops all over the Northwest. They've already got the preferred motor hung on the front, only need a larger tank, a 10-6 prop and removal of that big wad of tip weight in order to do air tricks. Even if they have been built to be, uh, sturdy for Racing, they will competently handle OTS and Beginner/Intermediate PA patterns.

While Flite Streaks and the variants based upon it are not legal for OTS, they easily qualify for Classic Stunt. A couple flights in this event, where the emphasis is about 50/50 between interesting models from our past and flying scores, and you would have a pretty good read on what PA class to sign up for on Sunday.

One of my favorite models is a new Combat Streak, upright motor, hard tank, single wheel and all. Powered by an O.S. 25FP, it's got more power than it really needs. While I have not yet done so, it is my intention to enter this model in Classic, if for no other reason than to demonstrate that a *very* simple model, built primarily for Sport flying when the mood strikes, can also be competitive in this event.

But let's say that you turn the shop upside down, even clean the attic looking for a model which can be used in Stunt and still come up empty. Two choices, in my opinion: An ARF Flite Streak from Top flite. Bolt on a Fox 35 or 25LA and go flying. The second choice would involve a little more work, but the SIG Skyray 35 is a very good profile. As with the Flite Streak, plug in a Fox 35 or 25LA, hang a good tank on it and you're set. (*Editor's note: Dan's original recommendation in the paragraph above was for a UKey .35, not an ARF Flite Streak. The article was written before the UKey went out of production and the Flite Streak ARF became available. We took the liberty of updating the info above. —jt*)

See, there really is no reason to claim you don't have equipment for at least one Stunt event. Good models are too easy to come up with, especially today with Stunt offering OTS, Classic and four skill-level classes in Precision Aerobatics.

Dan Rutherford can be reached in care of Flying Lines.



EVERGREEN AVIATION MUSEUM And THE EVERGREEN AERO MODELERS

INVITE YOUR PARTICIPATION IN
THE 3rd ANNUAL FLYING MODEL STATIC
EXHIBITION

FEBRUARY 28TH & 29TH, 2004
9am – 5pm

Location:
Evergreen Aviation Museum
3685 N.E. Three Mile Lane
McMinnville, OR 97127

Admission Rates: Adults \$11.00, Seniors \$10.00, Ages 6-18 \$7.00, Ages 5-0 Free
Bring a plane and get 1 free admission to the museum

Categories

- Radio Control, Sport, Scale & Racing
- Controline Sport, Scale, & Racing
- Free flight gas/electric & rubber power
- Helicopters

Plaques & Ribbons
Will Be Awarded



For more information contact
Cecil Mead 1(503) 864-3731
Bill Lawrence 1(503) 435-0230

Planes can be brought to the museum:

Fri. Feb 27th between 4-5 and
Sat. Feb 28th between 8-9am

Planes can be picked up:

Sun. 29th between 4-5pm
Mon. 30th between 9-10am

VGMC Polar Bear Fun Fly

Richmond, B.C., Jan. 1, 2004



Plenty of flying went on as the Vancouver, B.C., area fliers celebrated the new year. Clockwise from top left: James Cox is bundled up for flying; James and another flier check out a plane's trim; Bruce Duncan heads to the circle while (from left) Alan Resinger, James Cox, Chris Cox and Joan Cox lend moral support; Chris starts the engine on an ARF Flite Streak while Bruce holds; Chris starts the engine on a Buster while Mike Conner holds. (Keith Varley photos)



FLYING LINES
2456 Quince St.
Eugene, OR 97404

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