

FLYING LINES

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NORTHWEST REGIONALS XIV -- THE TEST OF THE BEST

The 1985 Northwest Regional Control Line Championships emerged from among the clouds of Regionals Week to equal the glory of the previous 13 years. Sixty-six contestants accounted for 180 event entries and hot competition in all areas.

Numbers were down and a bit more spread out than in recent past years, with the major decline seen in the loss of many of the California racers, missing for various reasons. But most events had their usual strong entry and close finishes.

Contestants battled for a dazzling array of trophies, the first place awards topped with aircraft replicas, as well as the usual merchandise bonanza. In general the usual big-time atmosphere prevailed and the contest was deemed by all to be another rousing success.

Dave Green of Astoria, Ore., won the coveted Grand Championship trophy with placements in racing, carrier and speed events. John Salvin III captured the Second Grand Champion trophy with a three-out-of-four performance in Combat and a Northwest Sport Race second. And a round of applause for junior Rich Salter, Third Grand Champion!

The unprecedented quality of trophies was made possible in part by the following sponsors: Flying Lines, Dark Ages Racing Equipment, Tom Knoppi, Gerald Schamp, Gene Pape, Albany Hobby Center, Mel & Delores Marcum, Eastwood Hobby, and Eugene's Toy & Hobby.

About 75 contestants, families and friends attended the second annual Saturday night Pizza Pig-Out, an event organized by Carolyn Mullens, which promises to become a tradition. The usual tent city, restaurant trailer, sanitary facilities and other accessories provided the makings of a real modeling city. New fishnet screening protected spectators from any mishap, and thankfully it was not needed.

The flying field was in top shape as a result of the backbreaking efforts of Eugene Prop Spinners Mel Marcum and Tom Kopriva, who had supervised and done most of the work in that monumental task.

A dedicated core of event directors and judges also made the contest tick. In Precision Aerobatics it was Dave Gardner, Jim Parsons, Pete Bergstrom and others too numerous to mention. In Racing it was Dave Green, Dick Salter, Mike Hazel and Dick Peterson. In Speed it was Mike Hazel and a flier-based timing crew. In Scale it was Earle Moorhead, Mel Marcum and Tom Kopriva. In Carrier it was Wayne Spears and friends. In Combat it was a last-minute team of Norm McFadden, Gary Byerley, Lisa Childs, Jim McFadden, Bruce Guenzler and one other hard worker whose autograph we didn't get. In Balloon Bust it was Dave Mullens and the Seattle Skyraiders. In Old-Time Stunt it was Pete Bergstrom. Delores Marcum captained the registration effort.

As usual, it was truly a regional event. Clubs represented included the Edmonton Birds of a Tether, the Northwest Aeroliners, Seattle Skyraiders, Vancouver Gas Model club, Utah State Aeromodelers, El Cerrito Flying Dons, Nor'Westers, Strat-O-Bats, North Coast Control Line Aeromodelers' Society, Herb's Speed & Racing, Boise Aeromodelers, Umpqua Valley Modelers, Northern California Combat Association and Eugene Prop Spinners. States and provinces represented included British Columbia, Alberta, Oregon, Washington, California, Utah, Idaho and Montana.

Opening of the Speed Circle at noon on Friday proved successful, getting many of the fliers on the board early in the still-growing Regionals Speed happening.

Prize donors included: CB Associates, Twinn-K, Sig Manufacturing, Grish Bros, Pactra Industries, Top Flite Models, Cox Hobbies, Sterling Models, Carl Goldberg Models, Virginia Craftsman, Carolina-Taffinder, Sullivan Products, Eugene's Toy & Hobby, Repla-Tech International, Hobbyoxy, JZ Products, Williams Bros., Hobby Lobby, Model Builder, Windsor Propeller, Coverite, Satellite City, World Engines, Astro Flite, America's Hobby Center, Mike Hazel, Don McClave and Flying Lines.

Everyone who participated is urged to personally thank the sponsors and prize donors for their support of control-line model aviation.

Now, on to the results, in alphabetical event order:

BALLOON BUST

Competition, especially when it has the word "championships" attached, tends to become serious business, but Balloon Bust fliers do it for fun. And fun there was for the three juniors and 11 open fliers who popped balloons, knocked down sticks, crashed planes and generally entertained the spectators and themselves.

Sentimental favorite of the contest had to be six-year-old Wesley Mullens, who without dad Dave's meddling might not have crashed! Welcome to the hard knocks of competition, Wes!

Here are the results:

JUNIOR BALLOON BUST (3 entries)

1. Rich Salter, Seattle, Wash. -- 1,439.48 points. Foam Flite Streak, Dick Salter adaptation, foam/balsa construction, Fas Cal finish. Oliver .21 diesel, Top Flite 10x6 nylon prop, D. Salter fuel, Fox 1-oz. outboard suction tank, .018x60 braided lines, Hot Rock handle. Pit crew Dick Salter.
2. Jason Howell, Tacoma, Wash. -- 394.02.
3. Wesley Mullens, Seattle, Wash. -- 117.22.

SENIOR-OPEN BALLOON BUST (11 entries)

1. Glenn Salter, Seattle, Wash. -- 1,833.09. Sterling Ringmaster, balsa, Monokote/FasCal/dope. Fox .35, 9x7.5 wood prop, Fox fuel, suction tank, .018 braided lines.
2. Dick Salter, Seattle, Wash. -- 1,013.6.
3. Dick Peterson, Renton, Wash. -- 757.56.
4. Ray Mathis, Bremerton, Wash. -- 499.8.

COMBAT

For the second year a row, combat fliers had to gang up on John Salvin II in the final event, AMA Combat, to prevent a sweep. Salvin won Slow, FAI and Half-A and was going strong in AMA until losing in the late rounds.

Here are the results:

AMA COMBAT (14 entries)

1. Gary Byerley, Spanaway, Wash. -- Granddog, Phil Granderson design, 46.75" span, 11 oz., foam, Solarfilm, aluminum motor mounts. Fox .36 ABC, Byerley rework, Top Flite 8x6.5 wood pylon racing prop, Fox long plug, home brew 40% nitro fuel, Supertigre needle valve assembly, Aldrich handle. Pit crew Norm McFadden.
2. John Salvin IV, Orinda, Calif.
3. Norm McFadden, Lynnwood, Wash.

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REGIONALS, continued

4. John Thompson, Cottage Grove, Ore.

SLOW COMBAT (6 entries)

1. John Salvin III, Orinda, Calif. -- Unnamed Bruce Coffey-designed airplane, 47.75" span, 24 oz., foam/balsa, Fascal/dope. Fox .36, Coffey rework, Master Airscrew 9x6 glass-filled nylon prop, Fox Missile Mist 25% nitro fuel, .288 venturi bore, Triangle Hobbies 4-oz uniflow outboard tank, .021x60 braided lines, E-Z Just handle. Pit crew John Salvin IV and Bruce Coffey.
2. Dick Salter.
3. Gary Byerley.
4. Glenn Salter.

FAI COMBAT (5 entries)

1. John Salvin III -- Aeolus, original design, 45.75" span, 16 oz., foam, Solarfilm. Nelson .15, Taipan 5.875x4 plastic prop, C&H long plug, Sheldon's 40% nitro fuel, inboard/outboard pacifier tank, .018x52 braided lines, Aldrich handle. Pit crew John Salvin IV and Bruce Coffey.
2. Mel Lyne, Garibaldi Highlands, B.C.
3. Dick McConnell, Seattle, Wash.
4. Gary Byerley.

HALF-A COMBAT (8 entries)

1. John Salvin III -- Sly Sir, foam/balsa, FasCal, Kustom Kraftsmanship Cox TeeDee .049m Tornado 5x3 plastic prop, Cox plug, Sheldon's 40% nitro fuel, pacifier tank, Sullivan handle. Pit crew John Salvin IV and Bruce Coffey.
2. John Thompson
3. Mel Lyne.
4. Jason Howell.

NAVY CARRIER

The deck was busy all of Saturday with a solid crew of competitors, with the bulk of the activity in Profile and Class I. Windy Saturday conditions made the flying exciting for the spectators and hair-raising for the pilots.

Here are the results:

PROFILE CARRIER (7 entries)

1. Dave Green, Astoria, Ore. -- 209. Sterling P-51 Mustang, 38" span, 34 oz., balsa/plywood/spruce, dope/Econokote. Supertigre G21 .35, Rev-up 9x7 wood prop, K&B long idle bar plug, Sheldon's 35% nitro fuel, Supertigre carburetor, suction uniflow outboard tank, .018x60 lines.
2. Stanley Johnson, Spokane, Wash.
3. Bob Parker, Renton, Wash. -- 193.2.
4. John Hall, Puyallup, Wash. -- 179.4.

CLASS I CARRIER (7 entries)

1. David Shrum, Roseburg, Ore. -- 192.3. Sturdi-Bilt Martin Mauler, balsa silkspan/dope. K&B .40, Zinger 9x8 wood prop, Sheldon's 10% nitro fuel, Shrum suction tank.
2. Terry Miller, Roseburg, Ore. -- 169.9.

CLASS II CARRIER (3 entries)

1. Orin Humphries, Spokane, Wash. -- 309. Modified Sterling Corsair, 35 7/8" span, 51 oz., balsa, K&B Super Pox. k+β .61, Top Flite 11x7.75 wood prop cut to 10", Fox long idle bar plug, Sheldon's 25% nitro fuel, Perry Pump, Humphries tank. .018x60 braided lines.
2. Roy Beers, Vancouver, Wash. -- 237.2.

PRECISION AEROBATICS

Numbers were down slightly but flying was excellent as the air calmed down for Sunday's shootout. Full advanced and expert classes had close flying, with Paul Walker and Mark Freeman edging ahead of the field.

Here are the results:

EXPERT PRECISION AEROBATICS (6 entries)

1. Paul Walker, Kent, Wash. -- 533. Bad News, original, 61" span, 56" span, balsa, Sig dope. OS .45FSR, Garner-Nelson rework, Zinger 12x6 prop cut to 11.3", Thunderbolt idle bar long plug, Red Max 10% nitro fuel, muffler pressure, Robbert 6-oz uniflow tank, .018x70 braided lines, Walker handle.
2. Randy Schultz, Seattle, Wash. -- 495.
3. Don McClave, Portland, Ore. -- 493.
4. Alan Resinger, North Delta, B.C. -- 461.

ADVANCED PRECISION AEROBATICS (7 entries)

1. Mark Freeman, Vancouver, Wash. -- 462. Airplane data unavailable.
2. Patrick Johnston, Boise, Idaho -- 449.
3. Randy Powell, Caldwell, Idaho -- 446.
4. Dave Mullens, Seattle, Wash. -- 407.

INTERMEDIATE PRECISION AEROBATICS (2 entries)

1. John Hall -- 396. Top Flite Combat Streak, 42" span, 32 oz., balsa,

REGISTRATIONALS, continued

Dope/Monokote, modified tail and flaps. Fox .35, Hall rework, Master Airscrew 9x6 glass prop, Fox idle bar plug, Red Max .15% nitro fuel, OS needle valve assembly, Hall 3.5-oz. suction uniflow tank, .015x60 braided lines, Fox handle.

2. Terry Miller -- 267.

BEGINNER PRECISION AEROBATICS (3 entries)

1. David Shrum -- 295. Roadrunner, from 1956 plans, 52" span, 48 oz, balsa, Monokote/dope. OS Max .35, Top Flite 10x6 wood prop, K&B long plug, Sheldon's 5% nitro fuel, Shrum 4-oz. uniflow tank, muffler pressure, .018x60 braided lines.

2. Glenn Salter -- 215.

OLD-TIME STUNT (5 entries)

1. Ray Mathis, Bremerton, Wash. -- 236.75. Sterling Ringmaster, 28 oz., Monokote. Fox .35, Zinger 9x6 wood prop, Red Max 10% nitro fuel, muffler pressure, .015x60 braided lines, E-Z Just handle.

2. Pete Bergstrom, Spanaway, Wash. -- 224.5.

3. Randy Schultz -- 195.35.

4. Terry Miller -- Attempt.

RACING

Lack of California entrants made the 1985 contest a primarily Northwest affair, and with NW fliers hard at work officiating, overall entires were largely down. Nonetheless, there was competition in each event except for FAI Team Race, where the two teams drifted into an all-evening practice session and forgot about racing for the trophies. The activity, however, gave spectators a look at the Northwest's two contestants for the World Championship team, incumbents John McCollum/Tom Knoppi and newcomers Mike Hazel/Dick Salter.

Here are the results:

RAT RACE (2 entries)

1. Paul Gibeault, Calgary, Alberta -- 6:00. Hooptee III, John Kilsdonk design, 32 oz., spruce/bass/magnesium, K&B Super Poxy, OS Max RSR .40, Kelly 8x8 epoxy glass prop, GloBee 4L plug, 40% nitro fuel, K&B carb, crankcase pressure, fastfill, shutoff, hot glove, Gibeault handle. Pilot Paul Gibeault, pit crew Roy Andrassy.

2. Dave Green -- 13:57.

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SLOW RAT RACE (3 entries)

1. Dave Green -- 8:17. Minotaur NW Super Sport Race plane, 33" span, 26 oz., balsa/bass/spruce/maple, K&B Super Pox/Solarfilm. K&B .35, Green rework, Dark Ages Racing Equipment 8 5/8x7.5 epoxy glass prop, K&B 1L plug, supplied 10% nitro fuel, crankcase pressure, venturi turned .015, fastfill, shutoff, hot glove, DARE uniflow tank, Fox handle with 2" spacing. Pilot Bill Varner, pit crew Dave Green.
2. Dick Peterson, Renton, Wash. -- 8:19.
3. Dick McConnell -- 11:28.

GOODYEAR (4 entries)

1. Paul Gibeault -- 7:18.8. Midget Mustang, John Ballard design, 25.5 oz., balsa/plywood, Endura epoxy finish, aluminum motor mounts. Nelson .15, John McCollum 6.5x5.5 prop, GloBee 4L plug, low-nitro head, Sheldon's 40% nitro fuel, crankcase pressure, .350 carb, fastfill, shutoff, Taffinder 3-oz. tank. Pilot Roy Andrassy, pit crew Paul Gibeault.
2. Roy Andrassy, Calgary, Alberta -- 7:26.9.
3. Jarl Boles, Salt Lake City, Utah, 9:03.9.

JUNIOR CLASS I MOUSE RACE (2 entries)

1. Rich Salter -- 42 laps. J&J Sales Dragonfly, balsa, dope. Cox Black Widow .049, J&J glass prop, Cox high-compression plug, Sheldon's 15% nitro fuel, spring starter, Dick Salter handle. Pilot Rich Salter, pit crew Dick Salter.
2. Jason Howell -- 6 laps.

SENIOR-OPEN CLASS I MOUSE RACE (7 entries)

1. Bob Boling, Richmond, Calif. -- 4:51. Ignatz 1b, original design, 20" span, 7 oz., bass/balsa, epoxy. Cox .049, Boling rework, Cox 4.5x4 plastic prop, Cox TeeDee plug, Sheldon's 50% nitro fuel, drilled out venturi, fastfill, hot glove, spring starter, Cox uniflow tank, Boling handle. Pilot Fred Margarido, pit crew Bob Boling.
2. John McCollum/Tom Knoppi Team, Seattle, Wash./El Toro, Calif. -- 4:53.
3. Paul Gibeault -- 5:43.
4. Roy Andrassy -- 2:46 heat.

CLASS II MOUSE RACE (6 entries)

1. Bob Boling -- 10:37. Same as Class I entry above, except: Pilot Bob Boling, pit crew Frank Hunt.
2. Roy Andrassy -- 10:57.
3. McCollum/Knoppi -- 150 laps.
4. Paul Gibeault -- 4:07 heat.

JUNIOR NORTHWEST SPORT RACE (2 entries)

1. Rich Salter -- 9:08. Sterling Ringmaster, 42" span, balsa/plywood, Monokote. Fox .35, McCollum fiberglass prop, Aldrich long plug, Sheldon's 12.5% nitro fuel, TKO 55cc uniflow tank. Pilot Rich Salter, pit crew Dick Salter.
2. Jason Howell -- 125 laps.

SENIOR-OPEN NORTHWEST SPORT RACE (15 entries)

1. S&S Racing Team (Dick/Rich Salter) -- 9:09. Sterling Ringmaster. Fox .35. Pilot Rich Salter, pit crew Dick Salter.
2. John Salvin III -- 9:21.
3. Waterman/Cooney Team, Troutdale, Ore. -- 10:05.
4. C.W. Drake, Troutdale, Ore. -- 95 laps.

NORTHWEST SUPER SPORT RACE (7 entries)

1. Dave Green -- 7:50. Same as Slow Rat entry above, except: Sheldon's 35% nitro fuel. Pilot Tom Knoppi, pit crew Dave Green.
2. Glenn Salter -- 9:36.68.
3. Dick Peterson -- 9:36.92.
4. John Boles, Salt Lake City, Utah -- 12:38.

SCALE

The spectators' delight, Scale, did not disappoint, especially in the precision class. Magnificent flights by Orin Humphries RA-26A, Dave Mullens' Ryan, and Patrick Johnston's scale stunt warplane, were Sunday highlights. Entries dropped off in the usually popular profile scale class, but the planes entered were excellent.

Here are the results:

PRECISION SCALE (4 entries)

1. Orin Humphries -- 547. RA-26A, modified Kyosho kit, 60" span, 7.5 lbs., plywood/balsa, silk/Aero Gloss dope. Twin Enya .29s, Top Flite 10x6 nylon props, Fox idle bar long plugs, Sheldon's fuel, throttles, idle hole enlarged, Veco 3-oz tanks, .018x70 braided lines.
2. Dave Mullens -- 515.
3. Patrick Johnston -- 385.

PROFILE SCALE (2 entries)

1. Don Chandler, Redwood City, Calif. -- 117. P-63A, modified Midwest

REGIONALS, continued

kit, 48" span, balsa, polyurethane. Supertigre .46, Top Flite 10x6 wood prop, K&B 1L plug, Omega 5% nitro fuel, .018x60 braided lines, Fox handle.

2. Randy Schultz -- 95.

SPEED

The Regionals continued to be a growing showcase of control-line Speed competition, and the extra half-day of flying enhanced that image. There was solid competition, many flights and close times throughout, with the only disappointment being the failure of any junior-senior contestants to enter their record ratio category.

Here are the results:

JET SPEED (4 entries)

1. Chris Sackett, Burnaby, B.C. -- 188.21 mph. Ironsides II, Jerry Thomas design, 22" span, 30 oz., aluminum/magnesium/titanium, polished. Dyna-Jet, Jerry Thomas rework, home brew 50% nitro/50% propylene oxide fuel, suction, .031x70 monoline, Stanzel/McGraw handle. Pilot Chris Sackett, pit crew Jerry Thomas, Chuck Schuette, Frank Hunt.
2. Frank Hunt III, Merced, Calif. -- 184.54 mph.
3. Jerry Thomas, Puyallup, Wash. -- Attempt.

D SPEED (3 entries)

1. M&M Team (Fred & Joyce Margarido), Fremont, Calif. -- 180.65 mph. Original, 37-oz., glass top/magnesium pan/basswood stab, Super Foxy, semi-assymmetric wing. OPS/Tigre .65, M&M rework, Rev-Up 9x12 wood prop, McCoy Magnum long plug, home brew 70% nitro fuel, crankcase pressure, M&M 60cc tank, .031x70 monoline, M&M handle.
2. Loren Howard, Vancouver, Wash. -- 170.55 mph.
3. Glen Dye, Draper, Utah -- 160.36 mph.

FORMULA 40 SPEED (7 entries)

1. John Boles -- 152.09 mph. Pink Lady, Wisniewski design, Sackett kit, 30 oz., OS VRP .40, Glen Dye rework, Dark Ages Racing Equipment 8x8 glass prop, K&B 1L plug, supplied 40% nitro fuel, crankcase pressure, Boles 1.7-oz. uniflow tank. Pilot John Boles, pit crew Glen Dye.
2. Dave Green -- 149 mph.
3. Dick Peterson -- 147.24 mph.
4. Paul Gibeault -- 138.19 mph.

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REGIONALS, continued

B SPEED (4 entries)

1. Glen Dye -- 163.42 mph. George Aldrich design, 26" span, 26 oz., wood, polyurethane varnish. TWA .29, Top Flite 7x9.5 wood prop, GloBee 4L plug, home brew 70% nitro fuel, 35cc suction uniflow tank, Stanzel monoline handle. Pilot Jim Rhoades, pit crew Glen Dye, John and Jarl Boles.
2. Frank Hunt III -- 156.87 mph.
3. Greg Beers, Vancouver, Wash. -- 149.32 mph.
4. Don Chandler -- Attempt.

A SPEED (5 entries)

1. Frank Hunt III -- 171.20 mph. Original design, 28" span, 17 oz., Newton glass top/balsa/aluminum, aluminum wings, clear finish. Supertigre X-15, Hunt rework, Rev-Up 6x8 wood prop, McCoy short standard plug, home brew 75% nitro fuel, bladder tank, pressure regulator, Stanzel monoline handle. Pilot Frank Hunt, pit crew M&M Team.
2. M&M Team -- 168.79 mph.
3. Jim Rhoades, Salt Lake City, Utah -- 157.28 mph.
4. Les Akre, Edmonton, Alberta -- 106.47.

FAI SPEED (6 entries)

1. Chris Sackett -- 142.03 mph. Wildfire, original, 38" span, 19.5 oz., aluminum/basswood/balsa, K&B Super Foxy, carbon fiber integrated pan-bellcrank mount assembly. Rossi .15, Sackett rework, Lenzen 6.2x6.3 carbon fiber prop, K&B 1L plug, custom button head, Sackett ram carb, Sackett suction uniflow tank, Sackett handle. Pilot Chris Sackett.
2. Chuck Schuette, Vancouver, Wash. -- 133.34 mph.
3. Jim Rhoades -- 132.69 mph.
4. Paul Gibeault -- 111.04 mph.

HALF-A SPEED (6 entries)

1. Dave Williams, Yorba Linda, Calif. -- 128.43 mph. Black Widow, original design, 16" span, 8.5 oz., epoxy-glass/balsa, K&B Super Foxy. Zit .049, 2 1/8x4.3 epoxy glass prop, Cox 1702 head, home brew 78% nitro fuel, bladder tank, pressure regulator, monoline system. Pilot Fred Margarido, pit crew Dave Williams.
2. Roy Andrassy -- 89.78 mph.
3. Paul Gibeault -- 84.23 mph.
4. McCollum/Knoppi -- 74.6 mph.

SPANAWAY TUNE-UP WAS NOT FOR FAIR-WEATHER FLIERS

Reports from the SKYWRITER and Dick McConnell

April showers make for lousy toy airplane contests. April 27-28 was the time and Bethel Junior High School was the place.

Saturday was not only rainy but quite windy and cold. Half-A Combat had seven entries with Dick Salter and Gary Byerley flying in the final round. It took three matches to determine a winner as Dick and Gary took turns getting bad engine starts. In a go-for-the-string final, Gary killed Dick and settled the matter. Fingers were so cold that bystanders were being recruited to turn the needle valves on the TeeDees.

There were six entries in slow combat with Dick Salter reversing the order of finish with Gary.

Old-time stunt was flown in the morning breezes. Only three entries arrived. Actually, only two arrived in the morning. Don McClave has a new old Nobler and flew against John Hall flying a Ringmaster. Ray Mathis arrived after Don and John had both flown two rounds. Both morning contestants agreed to let Ray fly. Ray agreed to let Randy Schultz and Pete Bergstrom fly his Ringmaster. Randy ended up winning with Ray coming in second.

Carrier was won by Marty Phillips flying his profile Vulture. Skyraiders results are uncertain on the placing for second and third, but it is believed that Shawn Parker was second with John Hall third.

Sunday saw blue sky and steady wind. Pete Bergstrom and Jim Parsons lined up all the Stunt planes Nats style for appearance judging. Except for Randy Schultz, who was fashionably late. Alan Resinger had his new bird out as did Don McClave, Bob Danielson, Dave Mullens, Dan Cronyn, Ray Mathis and Marty Phillips. Not too many clones this year -- there were some distinct and different shapes and color schemes.

FAI Combat was won by Canadian Mel Lyne. Fast Combat was won by Gary Byerley with Jim Booker from Idaho second. Norm McFadden had a spectacular flyaway that went straight up through the clouds and slowly rode the wind North in a nice lazy spiral. Gene Pape had a plane skim the surface like a cruise missile and implant itself in a brick wall of the school.

There was more complaining and lip-flapping than normal for a Northwest contest. Pete Bergstrom did a good job putting up with all the _____. Jim Parsons and Alan Resinger judged stunt, Bob Emmett judged Old-Time

Stunt, Bob Parker judged Scale, Dick McConnell and Glenn Salter did an outstanding job of running Combat with lots of assistance from the competitors. Randy Schultz did yeoman duty timing and counting cuts in the rain on Saturday.

Bob Parker ran Carrier and took care of the deck duties. Pete's tent worked out well for registration and was very handy on Saturday. The Byerleys provided nice plaques for awards and Bob McKain provided a Fox .35 for the winner of Old-Time Stunt. Shawn Parker was the recipient of the Best Crash Award for a figure nine during his stunt pattern.

The complete results are as follows. Airplane data is unavailable.

HALF-A COMBAT (7 entries)

1. Gary Byerley, Spanaway, Wash. -- 5 wins, 1 loss, 1 bye.
2. Dick Salter, Seattle, Wash. -- 5-2-0.
3. Glenn Salter, Seattle, Wash. -- 1-2-0.
4. Richard Birch, Everett, Wash. -- 2-2-0.

MATCH RESULTS:

Round 1: Gary Byerly d. Glenn Birch, air time. Dick Salter d. Lloyd Birch, air time. Richard Birch d. Jason Howell, air time. Glenn Salter, bye.

Round 2: Byerley d. G. Birch, air time. G. Salter d. R. Birch, airtime overcame 1 cut. D. Salter d. Jason Howell, air time. L. Birch, bye.

Round 3: D. Salter d. L. Birch, 2 cuts to 1 and air time. R. Birch d. G. Salter, disqualification. Byerley, bye.

Round 4: D. Salter d. R. Birch, 1 cut and air time. Byerley d. G. Salter, air time.

Round 5: D. Salter d. Byerley, air time.

Round 6: Byerley d. D. Salter, air time.

Final: Byerley d. D. Salter, kill.

FAI COMBAT (4 entries)

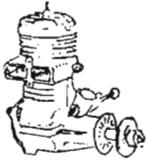
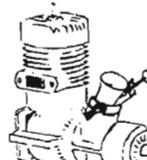
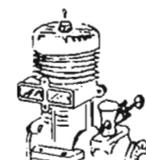
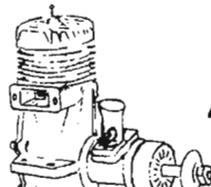
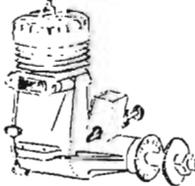
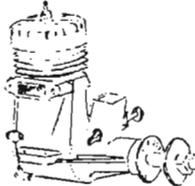
1. Mel Lyne, Garibaldi Highlands, B.C. -- 4-1.
2. Gary Byerley -- 2-2.
3. Dick McConnell, Seattle, Wash. -- 1-2.
4. Dick Salter -- 0-2.

MATCH RESULTS:

Round 1: Mel Lyne d. Dick McConnell 248 to -178. Gary Byerley d. Dick Salter 334 to -188.

Round 2: McConnell d. Salter 66 to -196. Lyne d. Byerley 340-272.

♥♥♥ FOX LOVES CONTROL LINE FLYERS TOO ♥♥♥

 <p>FOX 15X</p> <p>The lightest weight lowest cost 15 you can buy. Ideal for Streak Trainer, Ringmaster Jr, etc. This little gem has been finding favor with control liners everywhere for 25 years now. Priced at only \$24.95</p>	 <p>FOX 35 STUNT</p> <p>In 1949 this motor started winning control line contests, and has been at it ever since. In 36 years nobody has been able to improve on its easy starting and reliable control line performance. Same quality that has made it a legend — Still only \$37.95</p>	 <p>FOX 19BB</p> <p>This remarkable state of the art motor has to be one of the easiest starting, nicest running 19's ever produced. Super hot restarts too. Not advertised as C.L. but available from the factory on request. Specify pressure or Suction Intake \$49.95</p>	 <p>FOX 25</p> <p>Lighter weight than even our Stunt 35, but has about equal power. Smaller displacement makes use of smaller line size legal. You will like flying this one. Priced at only \$27.95</p>
 <p>FOX 40BB COMPACT</p> <p>A bored out version of our famous Combat Special. Really hauls. Our special iron piston gives exceptional hot restarts. Only \$44.95</p>	 <p>FOX 45BB</p> <p>Built like a Combat Special but a little larger. Suitable for large stunt and scale models. Not a listed product but available on special order. For only \$64.95</p>	 <p>FOX EAGLE III 60 Side Exhaust</p> <p>Has the power to fly heavy scale models. You had better have a strong arm however. On special order. Priced at \$84.95</p>	 <p>FOX 15BB</p> <p>1982 Worlds Champion Combat. By far the best Combat 15 you can get for under \$100.00. 2 ball bearings. mehanite piston. Priced at only \$39.95</p>
 <p>FOX 29BB</p> <p>A sleeved down version of our famous Combat motor. Hot restarts like no aluminum piston motor. Mehanite piston. Leaded steel cylinder. Alloy crankshaft. Only \$44.95</p>	 <p>FOX 36BB</p> <p>Successor to the famous Fox Combat Special. Interchangeable with MK III and MK IV except case and crankshaft. The most competitive combat motor you can buy today. Priced at \$44.95</p>	<p>Fox also produces fine quality Bell Cranks, Glow Plugs, Wrenches, Prop Reamers, Wheel Collars, Spinners, Prop Extensions, Pressure Fittings and many other fine products for Control Line Flying.</p>	<p>ATTENTION DEALERS: Due to low sales volume, many of these items will have to be obtained directly from the factory. Call 501-646-1656</p> 

NW COMPETITION STANDINGS

FLYING LINES' COMPILATION OF EVENT PLACINGS BY NORTHWEST MODELERS COMPETING IN NORTHWEST REGION CONTESTS

The 1985 Northwest Regional Control-line Championships and the Spanaway Spring Tune-up got the points races in full swing in all Northwest competition events.

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

Top fliers in all events, as of June 11, are:

NORTHWEST SPORT RACE (8 contests, 80 entries)			NORTHWEST SUPER SPORT RACE (6 contests, 41 entries)		
1. S&S Racing Team	Seattle, Wash.	47	1. Dave Green	Astoria, Ore.	32
2. Beers-Cole Team	Vancouver/Portland	32	2. Dick Peterson	Renton, Wash.	27
3. Dave Green	Astoria, Ore.	30	3. Glenn Salter	Seattle, Wash.	20
4. Nitroholics Team	Salem/Cottage Grove	23	4. Beers-Cole Team	Vancouver/Portland	17
5. Henry Hadjik	New Westminster, B.C.	22	5. Nitroholics Team	Salem/Cottage Grove	12
SLOW RAT RACE (2 contests, 7 entries)			CLASS I MOUSE RACE (2 contests, 9 entries)		
1. Dave Green	Astoria, Ore.	7	1. McCollum/Knoppi Team	El Toro/Seattle	6
2. Dick Peterson	Renton, Wash.	4	2. Rich Salter	Seattle, Wash.	2
3. Glenn Salter	Seattle, Wash.	3	3. Jason Howell	Tacoma, Wash.	1
4. Dick McConnell	Seattle, Wash.	2	CLASS II MOUSE RACE (1 contest, 6 entries)		
RAT RACE (2 contests, 4 entries)			1. McCollum/Knoppi Team		
1. Nitroholics Team	Salem/Cottage Grove	2	El Toro/Seattle		
Dave Green	Astoria, Ore.	2	OVERALL RACING (23 contests, 160 entries)		
GOODYEAR (1 contest, 4 entries)			1. Dave Green		
No Northwest entries.			Astoria, Ore.		
HALF-A COMBAT (3 contests, 19 entries)			2. Beers-Cole Team		
1. John Thompson	Cottage Grove, Ore.	9	Vancouver/Portland		
2. Glenn Salter	Seattle, Wash.	8	3. S&S Racing Team		
3. Gary Byerley	Spanaway, Wash.	7	Seattle, Wash.		
4. Dick Salter	Seattle, Wash.	6	4. Glenn Salter		
Mel Lyne	Garibaldi Hghlnds, B.C.	6	Seattle, Wash.		
NORTHWEST SPORT COMBAT (1 contest, 7 entries)			Dick Peterson		
1. Gary Swisher	Milwaukie, Ore.	7	Renton, Wash.		
2. John Thompson	Cottage Grove, Ore.	6	PRECISION AEROBATICS (9 contests, 40 entries)		
3. Glenn Salter	Seattle, Wash.	5	1. Dave Mullens		
4. Alan Stewart	Vancouver, Wash.	4	Seattle, Wash.		
FAI COMBAT (2 contests, 9 entries)			2. Paul Walker		
1. Mel Lyne	Garibaldi Hghlnds, B.C.	8	Kent, Wash.		
2. Gary Byerley	Spanaway, Wash.	5	3. Randy Schultz		
Dick McConnell	Seattle, Wash.	5	Seattle, Wash.		
4. Dick Salter	Seattle, Wash.	1	4. Mark Freeman		
SLOW COMBAT (2 contests, 12 entries)			Vancouver, Wash.		
1. Dick Salter	Seattle, Wash.	11	Don McClave		
2. Gary Byerley	Spanaway, Wash.	9	Portland, Ore.		
3. Glenn Salter	Seattle, Wash.	7	OLD-TIME STUNT (2 contests, 10 entries)		
4. Jason Howell	Tacoma, Wash.	3	1. Ray Mathis		
AMA COMBAT (2 contests, 23 entries)			Bremerton, Wash.		
1. Gary Byerley	Spanaway, Wash.	23	2. Randy Schultz		
2. Norm McFadden	Lynnwood, Wash.	18	Seattle, Wash.		
3. John Thompson	Cottage Grove, Ore.	11	3. Pete Bergstrom		
4. Jim Booker	Boise, Idaho	8	Spanaway, Wash.		
5. Gene Pape	Eugene, Ore.	7	4. Don McClave		
OVERALL COMBAT (10 contests, 70 entries)			Portland, Ore.		
1. Gary Byerley	Spanaway, Wash.	44	5. John Hall		
2. John Thompson	Cottage Grove, Ore.	26	Puyallup, Wash.		
3. Glenn Salter	Seattle, Wash.	20	Terry Miller		
4. Dick Salter	Seattle, Wash.	19	Roseburg, Ore.		
5. Norm McFadden	Lynnwood, Wash.	18	PRECISION SCALE (1 contest, 4 entries)		
PROFILE NAVY CARRIER (1 contest, 7 entries)			1. Orin Humphries		
1. Dave Green	Astoria, Ore.	7	Spokane, Wash.		
2. Stanley Johnson	Spokane, Wash.	6	2. Dave Mullens		
3. Bob Parker	Renton, Wash.	5	Seattle, Wash.		
4. John Hall	Puyallup, Wash.	4	3. Patrick Johnston		
CLASS I NAVY CARRIER (1 contest, 7 entries)			Boise, Idaho		
1. Dave Shrum	Glide, Ore.	7	SPORT/PROFILE SCALE (1 contest, 2 entries)		
2. Terry Miller	Roseburg, Ore.	6	1. Randy Schultz		
CLASS II NAVY CARRIER (1 contest, 3 entries)			Seattle, Wash.		
1. Orin Humphries	Spokane, Wash.	3	OVERALL SCALE (3 contests, 9 entries) *		
2. Roy Beers	Vancouver, Wash.	2	1. Dave Mullens		
SPEED (All classes combined) (7 contests, 35 entries)			Seattle, Wash.		
1. Chris Sackett	Burnaby, B.C.	10	2. Orin Humphries		
2. Dave Green	Astoria, Ore.	6	Spokane, Wash.		
3. Dick Peterson	Renton, Wash.	5	Randy Schultz		
Chuck Schuette	Vancouver, Wa.	5	Seattle, Wash.		
5. McCollum/Knoppi	El Toro/Seattle	3	3. Patrick Johnston		
Jet, FAI			Boise, Idaho		
F-40			F-40		
FAI			Half-A		

SPANAWAY, continued

Round 3: Byerley d. Lyne 338-120.
Round 4: Lyne d. McConnell, disqualification.
Final: Lyne d. Byerley 338-20.

SLOW COMBAT (6 entries)

1. Dick Salter -- 5-1-0.
2. Gary Byerley -- 3-2-1.
3. Glenn Salter -- 2-2-0.
4. Jason Howell, Tacoma, Wash. -- 1-2-0.

MATCH RESULTS:

Round 1: Gary Byerley d. Buzz Wilson, 2 cuts and airtime. Dick Salter d. Jason Howell, air time. Glenn Salter d. Tracy Brazzle, 1-1 cuts, air time.

Round 2: Byerley d. Brazzle, 1 cut and air time. Howell d. Wilson, 1 cut and air time. D. Salter d. G. Salter, 1 cut and air time.

Round 3: Byerley d. D. Salter, 1 cut overcame air time. G. Salter d. Howell, 1 cut and air time overcame 2 cuts.

Round 4: D. Salter d. G. Salter, 1-1 cuts and air time. Byerley, bye.

Round 5: D. Salter d. Byerley, 3-1 cuts and air time.

Final: D. Salter d. Byerley, 3-2 cuts overcame air time.

AMA COMBAT (9 entries)

1. Gary Byerley -- 4-1.
2. Jim Booker, Boise, Idaho -- 4-2.
3. Gene Pape, Eugene, Ore. -- 3-2.
4. Norm McFadden, Lynnwood, Wash. -- 2-2.

MATCH RESULTS:

Round 1. Jim Booker d. Dick Salter, kill. Gary Byerley d. Jason Howell, air time. Norm McFadden d. Dick McConnell, kill. Gene Pape d. Glenn Salter, kill.

Round 2: Howell d. Mike Rule, air time. D. Salter d. Pape, kill. McConnell d. G. Salter, air time. Booker d. McFadden. Byerley d. Rule, 1 cut and air time.

Round 3: Booker d. D. Salter, kill. McConnell d. Byerley, air time. Pape d. Howell, air time.

Round 4: McFadden d. Booker, 1 cut. Pape d. McConnell, kill.

Round 5: Byerley d. McFadden, kill. Booker d. Pape, kill.

Round 6: Byerley d. Booker, forfeit.

COMBINED SCALE (3 entries)

1. Randy Schultz, Seattle, Wash.
2. Dave Mullens, Seattle, Wash.
3. Dave Mullens.

RECORD RATIO NAVY CARRIER (3 entries)

1. Marty Phillips, Kirkland, Wash.
2. Shawn Parker, Renton, Wash.
3. John Hall, Puyallup, Wash.

OLD-TIME STUNT (5 entries)

1. Randy Schultz.
2. Ray Mathis, Gorst, Wash.
3. Don McClave, Portland, Ore.
4. John Hall.

EXPERT PRECISION AEROBATICS (5 entries)

1. Paul Walker, Kent, Wash.
2. Randy Schultz.
3. Don McClave,
4. Alan Resinger, North Delta, B.C.

ADVANCED PRECISION AEROBATICS (4 entries)

1. Marty Phillips.
2. Dave Mullens.
3. Ray Mathis.
4. Dan Cronyn.

INTERMEDIATE PRECISION AEROBATICS (2 entries)

1. George Mickey, Seattle, Wash.
2. John Hall, Puyallup, Wash.

BEGINNER PRECISION AEROBATICS (2 entries)

1. Jason Howell.
2. Shawn Parker.

TAFFINDER WINS THE "BIG ART" ENGINE

Doug Taffinder, owner of Carolina-Taffinder and a long-time supporter of Flying Lines, was the winner of the winter-spring 1985 raffle.

Doug has been shipped the "Big Art" Adamasin customized OS .35 stunt engine that was donated by Alan Resinger of Delta, B.C., as the raffle prize.

Watch next issue of Flying Lines for the summer-fall raffle, which will have the biggest prize ever offered!

STANDINGS, continued

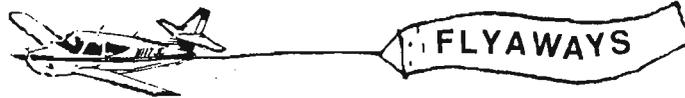
OVERALL NAVY CARRIER (4 contest, 24 entries) *

1. Dave Green	Astoria, Ore.	7
Dave Shrum	Glide, Ore.	7
3. Terry Miller	Roseburg, Ore.	6
Stanley Johnson	Spokane, Wash.	6
John Hall	Puyallup, Wash.	6

BALLOON BUST (3 contests, 23 entries)

1. George Mickey	Seattle, Wash.	9
2. Randy Schultz	Seattle, Wash.	8
3. Glenn Salter	Seattle, Wash.	7
4. Dick Peterson	Renton, Wash.	6
5. Rich Salter	Seattle, Wash.	3

* When two or more class of competition are combined for a contest (i.e. Class I/II Carrier, Precision/Sport Scale), points scored are shown in the "overall" category only.



RANDOM TIPS AND RIBS FROM THE FL WORKSHOP FLOOR

[=====**SIG-NIFICANT**: We hope our Midwest readers will flock to the June 30 Sig Control-Line Championships in Montezuma, Iowa. Precision Aerobatics and Fox .35 "Growler" Stunt are the events. A Saturday night party and factory tours are on the schedule. When a major manufacturer invites CL fliers in, we should respond en masse to show our interest in their support!

[=====**BELIEVE IT OR NOT**: When the Precision Aerobatics Model Pilots Association recently suggested that AMA use a two-class system at the Nats (Masters and Open), AMA suggested that PAMPA "try proficiency classes on the local contest level first." Talk about out of touch!

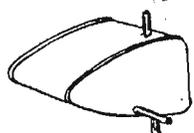
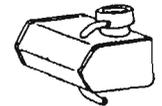
[=====**GOLDEN OLDIES**: Congratulations to the Vancouver Gas Model Club on celebrating their 50th anniversary. Speaking of the VGMC, word at the Regionals was that the 1986 Canadian CL Nats would be in Vancouver. Mark your calendars.

[=====**PACK YOUR BAGS**: The 1985 Combat team trials will be in Chicago over Labor Day weekend. Now, let's see, \$555 for three Nelsons, \$150 for 10 airplanes, \$100 for fuel, \$100 for plugs, props, etc., and \$500 for air fare. That comes to \$1,405 by our calculations for enough equipment to attend one contest, without much allowed for practice. Under current rules and circumstances, it would appear that even a low-key attempt to be world champion is very definitely a business, not a hobby. Now, for a little humor: There is an award for the top junior at the trials! (It's

CAROLINA-TAFFINDER

FUEL TANKS — for Control Line Models

S A L E

		<u>Regular Price</u>	<u>SALE PRICE</u> ★
	3oz	4.65	3.70
	4oz	4.95	3.90
	5oz	5.25	4.20
Profile Stunt Tanks			
	1 1/2 oz	6.75	5.40
	2 oz	6.50	5.20
	2 1/2 oz	6.50	5.20
Goodyear Tanks			
	3 oz	6.50	5.20
	4 oz	7.50	6.00
	5 oz	8.75	7.00
Rat Race Tanks			
<p>★ Add \$1 for postage</p> <p>J & J S A L E S C O M P A N Y 709 Crescent Sunnyside, Wa. 98944</p>			



a free trip to the WC to watch...seems to us like it would be cheaper to just buy a ticket.)

[====REVIVED: The North Coast Control-Line Aeromodelers Society (CLAMS) of Astoria, Ore., have built up a membership of about 15 again after a down period. Several of the new fliers are expected to be seen on the contest circuit soon. Just goes to show, you can't keep a good club down.

[====RIDICULOUS: Congratulations to Rich Porter for his finely detailed article on the marvelous "Ridiculous" stunt plane, in the July MODEL AVIATION. It's well worth the wait.

[====POLL PALL: Northwest racers, put down your handles and pick up a pencil long enough to fill out the Northwest Sport Race rules poll in the May FL issue. If you don't, you risk letting two or three people decide for you!

NW COMPETITION RECORDS

RECORD PERFORMANCES ESTABLISHED BETWEEN NORTHWEST MODELERS IN SANCTIONED COMPETITION

Tom Knoppi of Seattle, Wash., and his partner, John McCollum of El Toro, Calif., wiped the slate clean in the Class I Mouse Race event at the Northwest Regional Control-Line Championships May 25, beating their own Northwest records in both preliminary heats and feature races.

K/M turned a 2:20 preliminary heat, to replace their 2:35, and they turned a 4:53 feature race to beat their old 5:08.

Loren Howard of Vancouver, Wash., earned an asterisk by turning in a D Speed flight of 170.55 mph. That is close enough in the FL record-keeping system to be considered a tie with Mike Hazel's 170.71 mph record. Hazel, being first at the 170-mph mark, retains the official record.

Because of the 10-percent nitro fuel rule that went into effect June 1, all of the Racing records below are now retired, except for Half-A Racing classes (exempted from the rule) and Slow Rat Race (rule was applied earlier, current records made under the new rule).

Flying Lines keeps track of the best performances of Northwest control-line fliers in AMA-sanctioned contests (or MAAC-sanctioned contests using AMA rules), and in Northwest regional events. Here are the complete records as of June 1:

MOUSE RACE I 50-lap: 2:35 (Knoppi-McCollum)	100-lap: 5:08 (Knoppi-McCollum)
MOUSE RACE II 75-lap: 3:54 (John Thompson)	200-lap: 9:21 (Bill Varner)
GOODYEAR 70-lap: 3:28 (Dave Green)	140-lap: 7:42 (John Thompson)
SLOW RAT 70-lap: 3:56 (Dave Green)	140-lap: 8:03 (Dave Green)
RAT RACE 70-lap: 2:29 (Mike Hazel)	140-lap: 4:53 (Mike Hazel)
TEAM RACE 100-lap: 3:51 (Knoppi-McCollum)	200-lap: 7:49 (Knoppi-McCollum)
NW SPORT RACE 70-lap: 4:13 (Henry Hajdik)	140-lap: 8:27 (Dick Salter)
NW SUPER SPORT 70-lap: 3:23* (Dave Green)	140-lap: 6:52 (Dave Green)
HALF-A SPEED: 88.2 mph (Paul Wallace)	FAI SPEED: 158.98 mph (Scott Newkirk)
HALF-A PROTO: 83.63 (Paul Wallace)	FORMULA 21: 79.54 (Rich Salter)
A SPEED: 164.77 (Chris Sackett)	FORMULA 40: 152.28 (Scott Newkirk)
B SPEED: 184.57 (Chris Sackett)	JET SPEED: 194.73 (Chris Sackett)
D SPEED: 170.71** (Mike Hazel)	PROFILE NAVY CARRIER: 225.88 (Orin Humphries)
	CLASS I NAVY CARRIER: 311.1 (Rick Wallace)
	CLASS II NAVY CARRIER: 323.7 (Loren Howard)

* Established by Green, tied by Dick Peterson.

** Speed of 170.55 has been recorded by Loren Howard.

HOBBY SHOP DIRECTORY

FIRGROVE MODEL SUPPLY -- Radio Control, control-line and gliders. 10611 136th St. East, Puyallup, WA 98373. (206) 845-7675. Open daily 12-8, Saturday 12-6, closed Sunday and Monday. Owned by R.B. "Bob" Pfeiffer.

MOTORS & MEMORIES -- Control-line model supplies. Mail orders to P.O. Box 78388, Seattle, WA 98178. (206) 772-7091. Owned by Dick Peterson, an active control-line flier.

TRIANGLE HOBBIES -- Everything you need to fly combat. Mail orders to 1211 Brookgreen Dr., Cary, N.C. 27511. (919) 467-6270. Owned by Bob Nicks.

HAVE YOUR FAVORITE SHOP LISTED HERE -- Ask your hobby supplier to buy a Directory listing. It's \$15 for a year, and he gets the newsletter, too!

THE FLYING FLEA MARKET

FOR SALE _ Fox .36 plain bearing engine, has seen limited use in Northwest Super Sport Race. \$15. Contact John Thompson, c/o FL.

FILL THE GAPS IN YOUR FL LIBRARY -- Copies of many Flying Lines back issues are available. Send 50 cents per issue to FL. Refunds or alternates for any issues out of stock.

HELP WANTED -- Flying Lines seeks a volunteer to write a monthly engine column. Payment is free subscription for as long as you continue the work. Contact the editor.

BARGAIN -- One free flea market ad for each new or renewed subscription. Collect for yours or get one for signing a buddy up. Send ad with subscription to Flying Lines, 1505 Ash Ave., Cottage Grove, OR 97424.

WHERE THE ACTION IS

UPCOMING ORGANIZED EVENTS

NORTHWEST EVENTS

Listed below are the Northwest control-line model aviation events known to Flying Lines. If you or your organization is sponsoring an upcoming event, contact FL NOW. All events listed here are sanctioned by AMA or MAAC (Canada) unless otherwise noted. There is no charge for listing here, and FL will distribute contest flyers free as well. All AMA-sanctioned events are open to all AMA members unless otherwise noted. Age class codes: (J)=junior. (S)=senior. (O)=open. All events JSO unless otherwise noted.

- June 23 ... RICHMOND, B.C. -- Stuntacular. Four classes of Precision Aerobatics. Site: Richmond flying field. Entry fee \$5. Prizes and trophies through third place. Contact Alan Resinger, (604) 594-0931.
- June 29-30 ... RICHMOND, B.C. -- Northwest CL Speed Championships. Half-A/Half-A Profile, A-B, Jet, Formula 40, Record Ratio Speed. Site: Richmond Field. Contest Director: Chris Sackett, Box 82294, North Burnaby, B.C., Canada V5C 5P7. (604) 299-4500.
- June 29-30 ... REDMOND, Wash. -- Bladder Grabber for AMA Combat. Triple-elimination. \$5,000 worth of stereo prizes. Site: Marymoor Park. Contest begins with free contestants' breakfast at 9 a.m. Registration closes and flying starts at 11 a.m. Saturday. Contact Howard Rush (206) 823-6018 for information.
- July 6-7 ... KENT, Wash. -- Boeing Air Fair and Stuntathon '85. Stunt clinic, four PAMPA classes of Precision Aerobatics, Junior Stunt, Old-Time Stunt. Contact Bob Emmett, 17972 W. Spring Lake Drive SE, Renton, WA 98055.
- July 27-Aug. 4 ... CHICOPEE, Mass. -- United States Model Airplane Championships.
- Aug. 18 ... SPANAWAY, Wash. -- Spanaway Spectacular, Hosted by Seattle Skyraiders, sponsored by Bill's Hobby Town. Four classes of Precision Aerobatics, Old-Time Stunt, AMA combat, Half-A Combat, FAI combat, Slow Combat. Site: Spricker Park. Contest Director Pete Bergstrom, 110 192nd St. Ct. E., Spanaway, WA 98387.
- Aug. 31-Sept. 1 ... VANCOUVER, B.C. -- Vancouver Gas Model Club Internationals. Formula 40, D, Jet and Record Ratio Speed, Precision Aerobatics (Beg-Int)(Adv-Exp), Profile Navy Carrier, Class I-II Carrier, Scale, Northwest Sport Race, Balloon Burst, .15 Combat. Contest Director: Bob Newman, 19880 28th Ave. RR -2, Langley, B.C., Canada V3A 4P5. (604)792-5927.
- Sept. 7-8 ... KENT, Wash. -- Raider Roundup, the Washington State Control Line Championships. Details to follow. Contest Director Dave Gardner, 17210 109th Pl. SE, Renton, WA 98055.
- Sept. 28-29 ... First Annual Masters Precision Aerobatics contest. All contestants will judge except for the flier up and the next flier in order on deck. Best score of each day combined to determine winners. Contest Director Pete Bergstrom, 110 192nd St. Ct. E., Spanaway, WA 98387. (Editor's note: We have no site info.)
- June 15-16 ... MARIETTA, GA -- PAMPA, Novice and Old-Time Stunt. T. Dixon, (404) 973-9238.
- June 16 ... INDIANAPOLIS, IN -- AMA, Slow and Half-A Combat. F. Bean (317) 251-4151.
- June 16 ... SIOUX FALLS, SD -- Rat, Slow Rat, Mouse I, Goodyear, Sport Racing, Precision Aerobatics. J. Ricketts, (605) 332-8609.
- June 22-23 ... DALLAS, TX -- Precision Aerobatics, AMA, Slow, Half-A and Goldberg Combat, Record Ratio Speed, Goldberg Racing, Balloon Bust. G. Gornto, 27B-9447.
- June 22-23 ... WICHITA, KS -- Slow Rat, Goodyear and Class II Goodyear, Goldberg Racing, Profile and I-II Carrier, AMA, Slow and Slow-Slow Combat, Precision Aerobatics. M. Tallman, (316) 524-4004.
- June 23 ... GRAND LEDGE, MI -- AMA, Slow and FAI Combat. P. Barbour, (517) 627-3381.
- June 23 ... SANFORD, ME -- Slow Rat, Goodyear Racing, .15 Replica Speed, .36 Proto Speed. W. Prime, 324-2923.
- June 23 ... WOODHAVEN, NY -- Class I, II and Profile Carrier. B. Silversmith, (718) 846-3095.
- June 23 ... ROCKFORD, IL -- Rat, Slow Rat, Goodyear and Midwest Sport Race, Profile, I and II Carrier, PAMPA, Midwest Novice and Old-Time Stunt, AMA, Slow and Half-A Combat, Balloon Bust. A. Johnson, (815) 398-3490.
- June 30 ... LINCOLN PARK, NJ -- PAMPA, Old Time, Old Time II and Half-A Stunt. J. Miske, (201) 472-2752.
- June 30 ... DETROIT, MI -- Novice Aerobatics, AMA, Slow and FAI Combat, Sport Scale, Sport Race. R. Sears, 681-4150.
- June 30 ... MONTEZUMA, IA -- PAMPA and Growler Stunt. M. Gretz, (515) 623-5772.
- June 30 ... VIRGINIA BEACH, VA -- Profile, I, II and .15 Carrier. E. Daniels, (804) 855-6415.
- June 30 ... EL MONTE, CA -- Half-A, D, Formula 40, Formula 21, Jet, Half-A Proto and FAI Speed, Mouse II, Northwest Sport Race and SCAA Big Goodyear, I-II and Profile Carrier. M. Leventhal, (714) 535-6570.
- July 6-7 ... SEGUIN, TX -- AMA, Slow, FAI and Super Slow Combat, Quickie Rat and Goldberg Racing. W. Hess, (512) 342-8029.
- July 7 ... LOS ALTOS, Calif. -- Half-A, A, B, D, Jet, Formula 40, Half-A Proto Speed, Mouse I & II, Northwest Sport Race, Slow Ten-mile, Ten-Mile Race. Don Chandler, (415) 364-0216.
- July 7 ... DEARBORN, MI -- Profile, I and II Carrier, Precision Aerobatics, AMA, Slow and FAI Combat. A. Adamasin, (313) 291-7078.
- July 7 ... SUGAR GROVE, IL -- Profile, Sportsman Profile, I and II Carrier. P. Mazur, (312) 466-4051.
- July 7 ... SUGAR GROVE, IL -- Midwest Sport Race and Limited Goodyear. J. Meyer, (312) 897-1306.
- July 7 ... DENVER, CO -- Formula 40 Speed, Profile, I, II, .15 Profile and .15 Scale Carrier, FAI and Precision Aerobatics, AMA, Slow and Half-A Combat, Mouse I, II and .35 Sport Race. D. Rolley, (303) 644-3715.
- July 7 ... CHICAGO, IL -- AMA, Slow and Biplane Combat. R. Mathieson, 595-0890.
- July 13-14 ... Mouse I, Goodyear, Special Slow Rat Racing, Profile and I-II Carrier, Precision Aerobatics, AMA, Slow, FAI and Half-A Combat, Mixed Nuts. M. Olson, 232-3647.
- July 14 ... TOPEKA, KS -- Mouse I and II, Half-A Goodyear I, Class II Goodyear, Profile and I-II Carrier, Sport Scale. M. Schuette, 671-2583.

OUTSIDE THE NORTHWEST

The following activities are listed as a service to FL readers living outside the Northwest. Contact person or contest directors are listed for details. This space is available for listing of any CL contest. Listings must include all scheduled CL events, and be accompanied by a contact person's phone number.

1986-87 RULES ISSUES SETTLED

Final results of all the 1985-86 rules proposals, as well as the emergency racing fuel proposal, have been released by the Academy of Model Aeronautics.

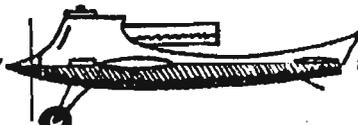
The emergency racing fuel proposal was passed on a 7-1 vote. As a result, effective June 1, all racing fuel will be restricted to 10% nitro and supplied by contest management. Half-A racing classes are exempt from this rule.

The rule affects Northwest Sport Race and Northwest Super Sport Race, which are covered by the AMA Unified Racing Rules.

The only general rules proposal affecting all sectors of model aviation, was GEN-86-6, prohibiting a contest director from refusing a protest. It does not say he must rule in favor of the protestor; but simply that he must accept the protest and start the AMA process. The vote was 71-8 in favor.

Here are the results of the final voting on the control-line proposals which passed the initial phase and were considered for final adoption. A two-thirds majority, or 8 "yes" votes, was required for passage. Those which passed will be included in the 1986-87 rule book.

	CONTROL-LINE RULES PROPOSALS	YES-NO
CL-86-2	Exempts Combat models from mufflers	PASSED 9-2
CL-86-3	Don't end match for bashes, tangles, flyaways	FAILED 6-5
CL-86-4	Eliminate Combat 65-foot safety circle	PASSED 10-1
CL-86-6	50% displacement for 4-stroke Stunters	FAILED 1-10
CL-86-10	Jury system for Combat	PASSED 9-2
CL-86-11	Prohibit changing Combat handle	PASSED 11-0
CL-86-12	Outlaw tuned pipes/megaphones in speed	FAILED 0-11
CL-86-13	More ways to lose Stunt pattern points	PASSED 11-0
CL-86-15	Increase Mouse Race pull tests	PASSED 11-0
CL-86-20	Pilots'-view Stunt drawings	PASSED 11-0
CL-86-21	Clarify start-end of Stunt vertical eight	PASSED 11-0
CL-86-22	Eliminate Stunt hand signal	FAILED 4-7
CL-86-23	Stunt hand signal for starting	PASSED 10-1
CL-86-24	Lose Stunt starting pts with electric starter	PASSED 11-0
CL-86-30	.010" single-strand Mouse Race lines	PASSED 11-0
CL-86-32	Allow mufflers in Navy Carrier	FAILED 5-6
CL-86-33	Exempt Navy Carrier from muffler requirement	PASSED 9-2
CL-86-34	Weigh Navy Carrier planes without fuel	PASSED 11-0
CL-86-35	Mufflers inside or outside of Carrier planes	FAILED 2-9
CL-86-37	10% nitro for all Racing	PASSED 11-0
CL-86-39	Exempt Racing from muffler requirement	PASSED 9-2



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FLYING LINES

Flying Lines is produced monthly by a dedicated staff of volunteers interested in keeping lines of communication open between Northwest modelers. FL is totally independent of any organization, depending entirely upon support from subscribers, advertisers and donors.

FL is your link to the rest of the Northwest's control-line modelers. Help keep it alive by spreading the word. Wear your FL T-shirt and tell your buddies what it stands for. FL shirts available at \$8 -- name your size and color.

Prices for subscriptions: \$6 for 5 issues and \$12 for 10 issues. Canada and Mexico: \$6.50 for 5 issues and \$13 for 10 issues. Overseas by surface mail: \$7 for 5 issues and \$14 for 10 issues. Overseas by airmail: \$12 for 5 issues and \$24 for 10 issues. U.S. funds, please.

Advertising rates: \$6 per half page, \$4 per quarter page, \$1 for five lines of classified advertising. Hobby Shop Directory, \$15 per year. Help FL and yourself by selling an ad!

Here is the FL staff:

Publisher.....Mike Hazel	Combat.....Gene Pape
Editor.....John Thompson	John Thompson
Advertising...Steve Lindstedt	Racing.....Mike Hazel
Photo editor...Pete Bergstrom	Scale.....Orin Humphries
Aerobatics....Paul Walker	Speed.....Mike Hazel
Beginners.....Ken Burdick	Sport.....Larry Miles
Carrier.....Orin Humphries	Artwork....S. Lindstedt

RACING ROUNDUP

by mike hazel

This month let's discuss the current state of NW racing. No, we're not going to talk about our sport racing events, as these represent a very good and healthy participation. However, please do respond to the rules questionnaire that was in the last issue. The issue of what constitutes a legal entry for NWSR is an important one.

Now, regarding our other events. First of all, what happened to all the rat racers? Our regionals entry level in that event has to represent an all time low. In past years the entry has been well over ten. Granted, many of these are from out of the area, but we would have ten rats in the NW, if all the racers who have threatened with an entry would produce. The complexion of this event, and others, will change with the new advent of using mandatory 10% nitro fuel. - more on that later.

Goodyear is an event that long died in our region, may it rest in peace. .21 size Rat, anyone? I have heard some interest of a sport goodyear event, although this may simply further dilute racing entry. I think our sport race events fit the bill for this concept.

Slow Rat enjoys(?) a slightly larger entry in our region. Two people have fitted super sport planes with K&B 5.8's. But that can hardly be considered a serious entry. This event seems kind of foo-foo to begin with. Our Super Sport is certainly slower, but is similar and a bit easier to do. Slow rat competition requires the use of expensive hard to find engines in which to be competitive. Hey, what about an event requiring a Fox Combat Special? Would that bring out some combat fliers to race?

Mouse race I has always enjoyed a reasonable degree of popularity. This is unfortunately to some degree, due to a perception of an easy to do toy-like event. How many entrants really treat it like a "real" racing event? Probably half the entrants do not even know how fast their plane goes. I am not advocating that we must elevate Mouse into a cubic money race, but let's treat it for what it is...A racing event that simply uses a small engine, not an excuse for some comedy act. (horrible flying tactics, engines falling off, ugly planes, etc.)

Hokay, now that I have spouted off some steam, let's get down to business. As you SRF (serious racing folk) know, June 1st was the starting date for the new standard fuel rule for AMA racing events (except Mouse). The specification calls for fuel with a maximum of 10% nitro, and a minimum of 20% lubricant, and the rest methanol. I personally think that these specs are a bit "loose", but so be it. The rule was put in for safety purposes (mainly to take some speed off of rat), but it will have some very positive ramifications for these events. Many of these are such that hopefully some of you may consider taking up an AMA event or two.

The obvious one off the top is that fuel costs will be reduced by over half. Also, engines are not going to be stressed to the same degree, so you will see engine life greatly extended, and fewer broken parts. Operating costs of glow plugs will also be reduced. All of these things have come to pass with the Slow Rat event, where this fuel rule has been effect during the current rules cycle.

Here are some basic considerations for engine operation on 10% nitro fuel. First of all, if you have been already running these events, you can probably use all your props for paint stirring sticks. It is most likely that a lower pitch is going to work better, so start all over on prop carving. Secondly, some adjustments with the cylinder head will be in order. You may want to bump up the compression slightly, and perhaps experiment with chamber shapes.

The opinion has been expressed that some of the older ringed style rac-engines may be more competitive now. If so, it would be nice to see some of those engines utilized, instead of laying in a box.

Our next area of discussion will be regarding making pit stops. No matter how fast your plane is, your score will be poor if the pit man has to beat the plane to death to get it restarted. This simple point has been one that has eluded a racer or two in the past. An example that I am thinking of concerns one individual who always figured something must be wrong with the watches when he did not win. After all, his plane went ten mph faster, so it was a sure thing, right? Wrong! His competitors racked up laps ten times faster than he could possibly gain in the air while he sat on the ground engaged with an uncooperative engine.

Another way to make a simple illustration of this is to picture yourself driving down the freeway. You go past a truck at a rate of 5 mph faster than it. You now have a considerable lead, and pull off to get some gas, or to

tap a kidney. You get back on the freeway and pass this truck again 30 minutes later, because he has made considerable distance while you were on the "ground."

Next time you are watching a race, observe how many laps the plane(s) in the air make while one of them is not under power. (the plane pitting) A lot of distance is covered by your opponents while you may be chasing your entry after a missed catch, changing a plug, or putting out fires.

A few years ago, we had a "pit stop" event at a contest. This was kind of fun, and maybe something we should do again. The way it worked was as follows: Your pit stop was timed from the moment of engine shutdown, to the point of the plane making one full lap after launching. In this way, the time taken for coasting to a stop, and for acceleration after engine starting was included. Many consider the pit stop just the time the plane is in hand. That is just one way to measure it. The most accurate way to calculate the time used during a pit stop is this: 1. time the plane in the air for half a mile. 2. Now time the plane for half a mile with a pit stop included in the middle. 3. Check the difference. Armed with this information, you can also calculate possible race times based upon theoretical airspeeds.

Next time we will discuss some ideas to speed up the pit stop process, now that we see how important it is.

Mike Hazel, 1073 Windemere NW, Salem, OR 97304 phone (503) 364-8593

CUTS & KILLS

Thoughts on Combat by John Thompson

RANDOM NOTES

With the 1985 combat season now in full swing, here are some observations, notes and tidbits on combat in the Northwest.

SAFETY SENSE

This year we see combat fliers trying several ways of improving the safety of the event, with varying success.

At the 1985 Regionals in Eugene, several fliers were oiling the first 20 feet of their lines (from the handle) with varying substances in an effort to lubricate them and make them less susceptible to breakage.

It may work. We noted that when lines crossed between Bill Varner and John Salvin, Bill's lines held while John's parted. Bill's lines were oiled with WD-40.

John Salvin was also being safety-conscious, though. He was voluntarily using .021" lines, which didn't seem to measurably slow his always fast airplanes.

There were no major flyaways at the Regionals, but there were several thrown engines, including a two-engine launch in a midair between John Thompson and Jim Booker. This has the author again thinking of trying to tie the engine to the bellcrank. It's required in FAI but would be a good safety measure in AMA as well. We may try it in the next batch of airplanes. A simple cable from bellcrank bolt, out through the leading edge and perhaps attached by one of the backplate bolts should do the job.

Speaking of flyaways, there were a couple of nasty ones at the Spanaway spring tune-up. Norm McFadden lost an engine, plane and regulator when his plane went straight up into the clouds, caught a thermal and disappeared. It may still be flying.

However, there's a way to help in getting such lost items returned. Bill Varner already had started with it at the Regionals. It's simple. Just make sure each plane carries your name and address. It's not as much of a chore as you think. Here's how:

Just type up the information on white paper, take it to a photocopy shop and run off a bunch of copies. Then, cut them out and stick one under the FasCal on your airplane. Then, if your plane flies away, some conscientious person may return it. Be prepared to pay a small reward.

A similar technique can be a classy way to decorate your airplanes without a lot of effort on each one.

Use transfer letters to make a design for the name of your plane, and your AMA numbers, your team name, or whatever. Then go to the photocopy shop and have them copy it on CLEAR material. Most good shops can now do this. Then you cut the "decal" out and stick it under the FasCal. My planes now carry the name of the plane in an old-English type, my AMA numbers the Beaver State Combat Team logo, and my name and address, all on the clear material under FasCal. If you use opaque covering, stick the decal on the back of a piece of FasCal and put that over the covering. You'll never have to write your AMA numbers in magic marker again.

By the way, you DO put your numbers on the plane, don't you? It's required

GUTS, continued

to validate your AMA insurance.

In other safety news, the Control Line Contest Board has passed the rule, effective 1986, clarifying that the handle cannot be changed during a match. This change grew out of a disputed disqualification in the 1984 Regionals. Because the entire control system must be pull-tested, the handle must not be changed. The rules will make this clear in 1986.

HORSEPOWER DERBY

An interesting mixture of engine power is beginning to develop in the AMA Combat ranks. At the 1985 Regionals, in addition to the usual array of Fox Combat Special Mk III and IV, there were some TWA and Hoffelt motors. Fox seems still to give the best bang for the buck, especially as we hear of the Hoffeltes beginning to blow up after some use. They were supposed to be more bulletproof than the Foxes in order to justify their \$265 price. The TWA also are nice engines, but their speed is not enough greater than the Fox to justify the extra cost. We've heard of some people using the Supertigre S-36, but we haven't seen one yet.

Speaking of extra cost, how does a \$119.95 Fox Combat Special sound?

It may not be as expensive as it sounds, when you consider that this version of the Mk IV from Kustom Kraftsmanship has a heat-treated crankshaft, custom rear bearing, hard chromed and fitted sleeve and piston, and high-performance head. It comes fitted and assembled. KK also has a full line of parts for the engine.

For information, write KK at P.O. Box 2699, Laguna Hills, Calif., 92653, and tell them FL sent you.

We may begin seeing more and more variety on the flying field as the out-of-print Fox engines become more and more rare.

MACA COMBAT

Out of the Miniature Aircraft Combat Assn. comes a proposal for a new low-key combat event, "MACA Combat," authored by such famous names as Riley Wooten, to name only one.

This would be a one-engine, possibly one-design event. The engine would be a Fox stunt .35, and the plane design may be a VooDoo.

We are thinking of a demonstration contest for this event in Eugene, Ore., later this year. The general guidelines would be: Fox .35 stunt engine, VooDoo airplane (maximum two per flier per contest), .018 lines, AMA combat flying rules.

Let us know what you think. If you are interested in this event, it could be a new nationwide sport and beginner combat craze. It could serve the purpose that slow combat was supposed to serve.

SAVE THOSE REJECTS!

When you're cutting foam with your hot wire, once in a while the wire sticks or for some other reason you get one of those wowiees in the foam and you throw it away, right? Wrong!

A product called Model Magic Filler, designed to be used as a ding repairer in balsa or foam, is an excellent substance for smoothing out those cores and covering up a variety of mistakes in all kinds of model building. It's sort of like microballoons but a lot less trouble to use. It's quite lightweight and very sandable. Tap water can be used to thin it out if it gets hard in the can. Look for it in your hobby shop or read the magazine ads.

STRENGTH IN NUMBERS

MACA is an AMA-recognized special interest group that speaks for combat fliers nationwide. Since MACA represents you, it would be to your benefit to join up and participate in its activities and decision-making. Send \$9 for an American or Canadian subscription or \$20 for foreign membership to Chris Gay at 1952 Wessel Ct. Apts., St. Charles, Ill., 60174.

TEAM CANADA GRABS SIDES AT BLADDER GRABBER, EH?

Modelers have a sense of humor. Who would survive in such an often-nutty hobby without one? Yet, Northwest modelers over the past several years have reached the general conclusion that the zaniest creatures in the model aviation world inhabit the vast sovereign land to our immediate north - Canada.

Herewith, to confirm that notion, is the report on the 1984 Bladder Grabber from one of that wild and crazy bunch from the Vancouver, B.C. area, Greg, "Wicked" Wornell.

One warning to our readers. Don't ever let this article or any others by the author get near something written by Professor Rich Porter. The two documents might reach critical mass and explode. The resultant fallout of consonants and vowels would transform all the rest of the modeling world into glowing, pulsating Amsoil blobs.

Read on...

BLADDER GRABBER '84

An account by Greg 'Wicked' Wornell.

The famed Bladder Grabber Fast Combat Bash was held again this year at Kent, Washington on July 7,8. And once again it drew many of the most severely-afflicted combat junkies on the continent who came to combat their brains away in the triply-punishing, triple-elimination contest. Audio electronics mastermind Bob Carver, the event's sponsor, once again supplied several thousand dollars worth of his high-zoot stereo products as prizes.

The Vancouver "Obliterator" Combat Team of Greg "Demon" Davis, Lyn "Mad" Murray, and Greg "Wicked" Wornell set out early Saturday morning for the land of carnage and oblivion. As we sped down I-5 with visions of crepe paper dancing in our heads, the excitement in the air was nothing short of electrifying. We were prepared, indeed, with a dazzling array of 9 streamer-snatching monsters that had blistered through the air on test flights, ripping air molecules to smithereens on a terrifying, relentless hunt for crepe paper. Earlier, news that our Obliterator Team Mascot -- Bill Giffen -- could not accompany us on this crucial trek had left us stunned. However, we had overcome this otherwise-crippling setback soon enough.

As we pulled up to the as yet untarnished combat site, the competition eyed us nervously. They were all there: Rush, Carver, McFadden, Pape, Granderson, Lopez, Breezy, etc. The list goes on. We were the Ever-So-Dangerous Canadian contingent, and they knew it.

The meet was soon to erupt into life, but not before rules-clarification and considerable sho-biz work in the practise circle. The object of the latter ritual is to see who can yank their airplane all over the circle with the wildest, most flailing arm movements while looking as nonchalant as possible. We skipped the primitive, chest-beating ritual, opting to spring our devastating flying tactics on them all in due course.

Then began the 2 days of all out aggression from which only the mighty would emerge unscathed. Demon Davis looked particularly tricky and deadly in the early going. After upsetting one of the big-guns in an early match, he was quoted as saying smugly, "I just toyed with him for a while, then went in and finished him off clean. I don't think he even knew what hit him." Meanwhile, Mad Murray began cautiously but showed his experience in the dirty deeds of combat treachery, while Wicked Wornell started off somewhat shakily, this being his first real Combat competition with the Fast breed.

By midway through Day 2, Davis went out after 5 matches, having made one too many costly errors of judgement. The grimacing Mad Murray went out fighting after a furious and frantic exchange with SoCal's Von Lopez that ended in a spectacular mid-air, sending a flurry of foam, balsa, and crepe paper fluttering to the field below. It was his fifth match as well. It was Wicked Wornell, then, who shouldered the awesome responsibility that goes with being the only remaining Canadian. As the event progressed to the seventh round, Wicked found himself matched up against NoCal hot-shot Coffey. There was good news and bad news. The bad news was that ol' Coffey hadn't lost a match in either day. The good news, reckoned Wicked, was that he should have been just about due for a whopping defeat -- at least according to the odds. As the starter for the match sounded, Coffey's plane lept into the air first. Demon and Mad pitting, Wicked's motor roared to life. The adrenalin surged, and all eyes were transfixed upon what was about to begin, when suddenly and inexplicably, Wicked's crankshaft gave way with an excruciating snap that was felt in the heart. Stunned, Wicked knew he had suffered a most cruel and unfulfilling defeat. Coffey had won again all right, but it must have been a hollow victory indeed, the Canadians concluded. As the last of the now defeated Canadian team's mangled equipment was dragged off the field, we proclaimed aloud for all to hear, "Damn Yankee engines! They're not even good enough to be bookends, much less big-league combat motors. Looks like we'll simply have to make our own." We then issued a bitter warning, "You haven't seen the last of us, you stinking swines!"

When the last of the debris had settled on the once tranquil field, and an eery silence replaced the ear-splitting wail of Combat Specials, the winners were justly rewarded and the epic event drew to a close: First Place: Coffey. Second Place: Von Lopez;

As we piled our remaining wreckage into the car and sped out of site, leaving the devastation behind us, I couldn't help ponder over what might have been if ol' Mascot Bill had been there.

“Good sportsmanship we hail, we sing,
It's always pleasant when you spot it,
There's only one unhappy thing:
You have to lose to prove you've got it.”

Richard Armour
(1906-)
"Good Sportsmanship,"
Nights with Armour



“ACTUALLY, I'VE NEVER HAD ANY
PROBLEM FLYING INVERTED.”

LET'S BUILD A TANK!

By Bob Emmett

Have you ever been frustrated in your search for "the" tank for your airplane? There are a variety of commercial tanks still available; although the job of finding one with sufficient capacity which will function satisfactorily in your stunter can involve a lot of time and trial and error.

Custom tanks are available to the serious competitor with more money than time, which are of exceptional quality and which do function well; however, most of them are based on one constant cross-section, which results in some pretty long tanks with attendant C.G. shift. (Do you ever balance your airplane with and without fuel?) Still frustrated? Why not build one?

I allocate one evening for tank fabrication on any new stunter. If I already have one that will fit, one more free evening. I have used a "square" tank in almost every stunter I have built for more years than I'm willing to admit to. I've tried a few others over the years and come back to the same basic shape. The only significant changes which have been made involve various venting schemes to achieve steady engine runs. Built as described and shown, the tank will provide steady run and you will have about two lap warnings (leaning out) before the engine quits. I am convinced that all that a wedge does is to complicate tank construction and compromise use of available body volume.

The basic tank shell is made from tin stock. A gallon thinner can is OK. K&S stock requires splice for larger tanks, and tin stock is available. Dick Peterson of Motors & Memories has stock available. Lay out the shell with a 1/8" overlap. I generally solder the shell on what will be the side opposite fuel feed and vent attachment.

The height (h) of the tank should be at least 1". I generally put a metal plate on the engine bearers which jacks my engine .050" to .063" away from the surface of mount beam, which enables me to increase (h) to approximately 1.1" to 1.5".

Tank width (w) is slightly less than the space between fuselage sides to permit ease of installation. Tank length (l) should be as short as possible within fuel capacity required to minimize rearward CG shift with attendant change in control sensitivity as fuel is used.

Tank ends are fitted to shell with tabs bent inside the tank. This simplifies solder flow into seam and assures tank shape.

Assembly procedure:

1. Lay out and assemble the tank shell. Metal required: $h/2 + w + h + w + (h/2 + 1/8 \text{ overlap})$, by l.
2. Lay out and fit tank ends into shell. A good fit-up is required to assure a good solder joint.
3. Drill hole in bottom of tank and insert overflow tube through hole and solder to bottom at hole and to tank sidewall. Overflow tube end should be as close as possible to forward upper corner of tank.
4. Solder forward tank end in place.
5. Drill hole through forward tank end on horizontal C.L. (The fuel feed can be routed to either inboard or outboard side to tank, dependent upon your favorite needle valve position.) I prefer outboard side.
6. Install fuel feed tubing. Tubing should be beveled on end inside tank and attached to side wall somewhere near the back of tank. Attach tubing to forward tank end.
7. Install vent and route to accommodate your favorite pressure reference (ram, muffler). The vent is installed right below the fuel pickup and 1/8" to 1/4" forward of pickup, attached to tank wall as well as shell penetration. The vent/pickup relationship with this tank setup is critical and vent reference relationship to engine pumping influences tank vertical location in airplane. The reference pressure port must be inboard of tank to avoid siphoning.
8. Install aft tank end.
9. Test for leakage. Cap two tubes, submerge in water and blow through third tube, looking for bubbles. Solder patch any leaks.
10. Flush out tank using alcohol or thinner to remove solder flux and other contaminants.

Some shim may be required between the tank and engine bearers to obtain consistent upright and inverted engine RPM. I generally build my tanks a little on the thin sides to allow for all possibilities. Vent position for schnerle porting is different than conventional bypass porting.

Good luck with your tank!

--Bob Emmett, 17972 W. Spring Lake Drive S.E., Renton, WA 98058, (206) 432-5808.

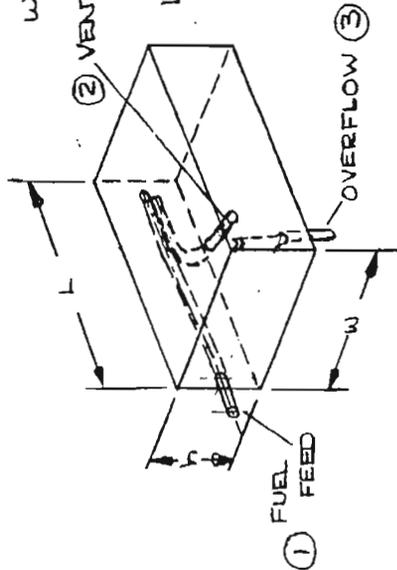
"SQUARE" TANK (ACTUALLY RIGHT RECTANGULAR PARALLEPIPED). THIS IS THE SIMPLEST SHAPE TO BUILD AND MAKES THE MOST EFFICIENT USE OF THE VOLUME AVAILABLE INSIDE THE BASIC FUSELAGE OF MOST STUNTERS. VENTED AS SHOWN, CONSISTENT STEADY RUNS SHOULD BE THE RULE, ASSUMING A CLEAN SYSTEM AND PROPER ENGINE TIMING.

TANK MATERIALS:

- BASIC SHELL: .008-.012 TIN SHT (BRASS CRACKS)
- TUBING: 1/8 O.D. COPPER (BRASS IS O.K. BUT MAY HAVE CORROSION PROBLEM WITH TIME)
- SOLDER: 1 USE 50/50 TIN-LEAD (THE HARDER THE BETTER)

- h - TANK HEIGHT - USUALLY 1.0"-1.2"
- w - TANK WIDTH - DEPENDS ON BODY WIDTH
- L - TANK LENGTH - DEPENDS ON BODY CAVITY. SHOULD BE AS SHORT AS POSSIBLE (SEE TEXT)

$$w/h = 1.6 \text{ TO } 2$$



$$\text{TANK CAPACITY} = \frac{h \times w \times L}{1.805}$$

(IN OZ.)

FOR REALLY ACCURATE WORK, INTERNAL TUBING MUST BE ACCOUNTED FOR.

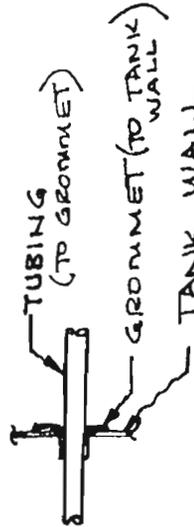
THIS SKETCH SHOULD SUFFICE FOR ANYONE WHO HAS AT ONE TIME OR ANOTHER ATTEMPTED TO BUILD A TANK. SEE TEXT FOR DISCUSSION OF FEATURES.

BASIC !! KEEP IT CLEAN !!
BEFORE, DURING, AND AFTER FABRICATION

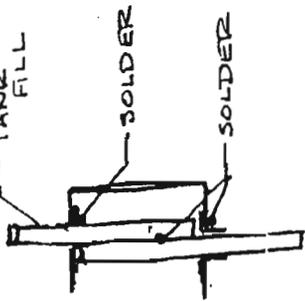
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(206) 432-5808

DESIGN TIPS

TANK PLUMBING - SOLDERED CONNECTIONS RELY ON WHAT IS CALLED A SHEAR COUPLING TO CARRY LOAD. MOST TANK LEAKS OCCUR WHERE TUBING PENETRATES FLAT TANK WALLS. THIS HAPPENS BECAUSE THE JOINT BETWEEN THE TUBE AND THE WALL IS POOR AND MANY TIMES THE ONLY SUPPORT POINT FOR THE TUBING. SKETCHES BELOW SHOW SEVERAL PRACTICES WHICH WILL MINIMIZE LEAKAGE OF THE TYPE NOTED ABOVE:

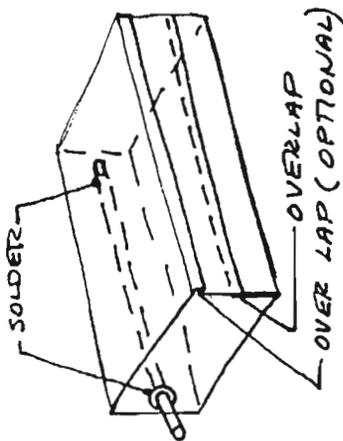


TANK PENETRATION



SIMPLE FILL/VENT

ALL TUBING INSIDE TANK SHOULD BE SUPPORTED AT BOTH ENDS.



SPEED AND RACE

4th Annual

DAY

July 7, 1985

8am-5pm

Reg-8am to noon, but
racing events start early

AMA SANCTIONED

AMA SANCTIONED

SPEED

1/2a

A

B

D

Jet

Formula 40

1/2a Pro Proto(Jr only)

Mouse Race Class 1

Mouse Race Class 11

Northwest Sport Race

Slow Ten Mile*

Ten Mile Race*

Contest Director

Don Chandler
(415)364-0216
1878 Woodside
Redwood City, Ca.

Trophies for high Jr. times

All contestants must show
evidence of current AMA
insurance. Alcoholic beverages
or other intoxicating materials
will not be permitted on the
contest premises.

Contest site is Foothill Jr. College, Los Altos Hills, Ca.

Three asphalt circles. Foothill College is about 35 miles south
of San Francisco just off of highway 280 on El Monte Rd. This site
has been used for several meets over the last four years and has
proven to be very popular. It gives us three smooth asphalt circles
and is relatively secluded in the bay area foothills.

* JAM rules-these events are very similiar to the AMA Rat events, Contact
CD for details. All other events flown according to Current AMA rules.

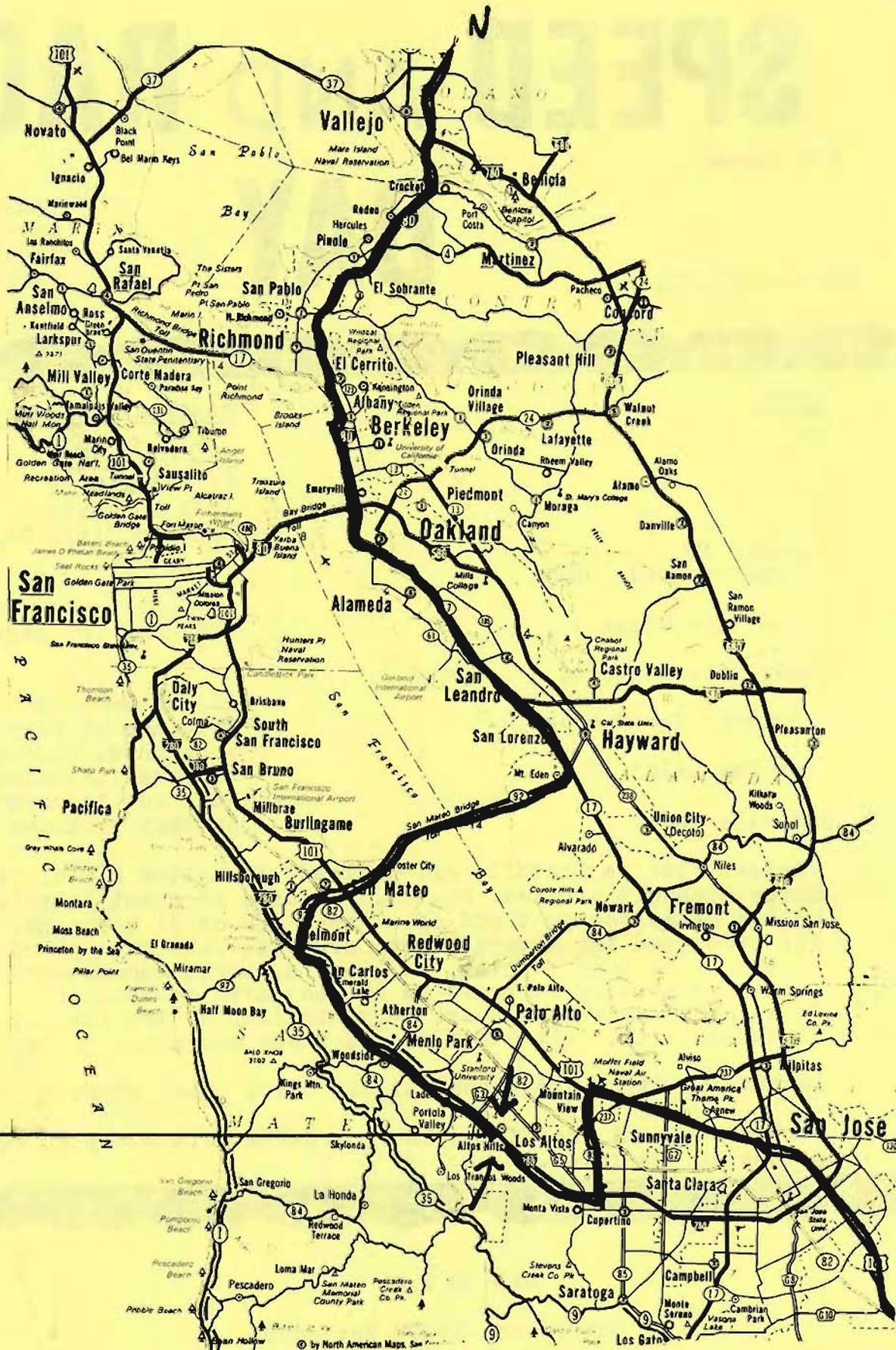
Awards for first and second place, third place where entries warrant.

Northwest Sport Race flown in accordance with accepted rules, contact CD for
a copy of the rules.

MAP ON BACK

Entry Fees-\$3.00 Per Event

Foothill College is part of the Calif. state college
system and as such having food brought in from an
outside vender is prohibited-bring a lunch.



TAKE EL MONTE
RD

S

Richmond Modelers' Assn.
&
V.G.M.C.

Stuntacular 85

Control Line Precision
Aerobatics

Sunday June 23, 1985

P.A.M.P.A. Classes

- Beginner
- Intermediate
- Advanced
- Expert

Prizes & Trophies Thru 3rd Place

Pilots' Meeting — 9:15

Flying Starts — 9:30

\$10.00

C.D.: Alan Resinger
(604) 272-1425 BWS.
(604) 594-0931 Home

MAAC or AMA Required
— Membership
Available at Flying Site



AIR MAIL

COMMENTS.....NEWS.....VIEWS
FROM THE FLYING LINES READER



DEAR FL:

Haven't taken the opportunity to bug you in a long time. Two points on the Northwest competition lists that I would like to bring up.

In the scale standings, the results of the Raider Round Up were not included in the final scale standings. I would hope that in the upcoming year that all scale results will be included in the final standings. (Editor's Note: If this is true, it is the result of oversight, not intent. Sometimes Ye Olde Editor gets a little bleary poring over hundreds of numbers in putting the standings together monthly. Our apologies.)

At the 3x1 I was jumped on as to why the results of a contest like the 3X1 cannot be included in the event and overall standings. Acting as a go-between on this one, here is what I heard: With nine entries the 3X1 actually has more competition than many of the other contests held during the year. The winners of the individual events actually fly fairly respectable times in the racing events and stunt scores for the top finishers aren't that far out for profile type sport stunters. (Editor's Note: Standings for 3x1 are now being counted).

While I'm on the apple box, one other question. Why does a newsletter for the Northwest need to include local event contest dates for Texas? I realize the Flying Lines subscribers come from all parts of the country, but it is my understanding that it is a newsletter for the Northwest. I would much rather see a more comprehensive contest schedule for the Northwest than see what is happening in Podunk, Texas. By more comprehensive I don't mean on contest dates but more in the line of contest information on condition of flying sites and special contest rules and perhaps hints on how to fly some of the specialty events at a particular contest.

(Editor's Response: The abbreviated out-of-Northwest contest report initiated in Issue No. 62 is provided as a service to our readers in other parts of the country, and to Northwest modelers who may want to drop in on contests during vacation or other travel. Northwest modelers enjoy the benefits of extensive monthly news and feature coverage in part as a result of the subscription fees pay by out-of-region subscribers, who make up roughly half our paid circulation. Without their subscriptions, the newsletter would find it difficult to survive financially. In addition, the out-of-region schedule helps keep Northwesterners up on what's happening in the rest of the modeling world. Finally, FL is always open to information from contest organizers to add any kind of detail to our contest calendar, and the newsletter distributes contest flyers free of charge. However, much of the time, we do not receive materials from contest directors in time to publish them and are forced to go make phone calls, write letters and read minds to get the more comprehensive information into the newsletter. As we have said many times before, the newsletter is only as good as the modelers who contribute to it.)

On a different note, how about stirring up some interest in a Northwest Nats. At the District XI meeting held at the Puyallup Expo, there was pretty general support from all areas of the model flying fraternity in support of going for a Northwest Nats. Site is a problem but Vince Mankowski would like recommendations on any feasible site, regardless of how obtainable it might be.

--Dave Mullens, 15559 Palatine Ave. N., Seattle, WA 98133.

DEAR FL:

After reviving my spirits in control-line flying at your Eugene CL Regionals, I would like to be put on your monthly mailing list. I used to do a lot of flying up in Seattle, Wash., prior to relocating five years ago to Newport, Ore. Due to the fact of not having a local hobby shop nearby, I'm behind on what's new in the air of control-line flying. So, to say the least, I hope to hear from you.

--Thomas G. Ryan, MAKAI Box 33, Seal Rock, Ore. 97376.

DEAR FL:

You have a great newsletter. Mike Hazel sent me a March, 1985, issue and I enjoyed it very much. I'm enclosing \$1 for two more back issues. I realize it's directed to the Northwest (and, buddy, that's a long way from here), but it has to be the most CL info I have found since I started flying again. I'm sure I will subscribe in the near future.

--Gary Winner, 3508 Rolling Brook Drive, Cleveland, TN 37311.

L & R Products is very pleased to announce the AVENGER series of combat airplanes. The AVENGERS are flying wing type aircraft constructed of balsa and plywood with foam leading edge. The Fast Combat model can be built in 2-2½ hours with no requirement for a jig. All you need is a flat building surface. As with the INSTANT REPLAY series, all controls are included in the kit. All you add is covering and dope. The INSTANT REPLAY series with easily replaceable foam wings are still available at 1984 prices. Send us your name and address to be put on our mailing list for new product announcements.

	Price Each	How Many	Total Price
AVENGER Fast Combat	\$15.50		
AVENGER FAI Combat	14.50		
AVENGER 1/2A Combat	12.50		
INSTANT REPLAY Slow Combat	17.00		
Extra Slow Combat Wings	6.00		
INSTANT REPLAY .35 Stunter	17.00		
Extra .35 Stunter Wings	6.00		
INSTANT REPLAY .15 Stunter	16.00		
Extra .15 Stunter Wings	6.00		
Name _____	Sub-Total		
Address _____	Shipping & Handling	\$ 3.00	
_____	Illinois - 6% Tax		
City _____ State _____	Total Amount Sent		

Zip Code _____ **Please give street address for UPS delivery**

L & R Products P.O.Box 236 Mendon, Illinois 62351

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COTTAGE GROVE, OREGON 97424

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