



**WESTERN
OREGON
CONTROL
LINE
FLYERS**

THE WOLF CALL

Oct. Nov. Dec. 2017

**ACADEMY OF MODEL AERONAUTICS
CHARTER CLUB #3464**

Upcoming Local Events

January 1st Portland Fun Fly

January 13th WOLF A.G.M.

The "WOLF CALL" is the newsletter for the Western Oregon Control Line Flyers. WOLF members fly at the Bill Riegel Model Airpark facility at the Salem Airport.

WOLF membership is not required to utilize the facility, but fliers should be A.M.A. members. If you are not a WOLF club member, please consider joining us to help support control line model aviation activity in our area.

WOLF CLUB OFFICERS:

President: Craig Bartlett

Vice-President: Dean Singleton

Secretary-Treasurer: Mike Hazel

Safety Officer: John Thompson

Newsletter: Mike Hazel

For the latest Northwest Control Line news go to:

flyinglines.org

Miscellaneous Ramblings from Ye Olde Editor

Boy Howdy! This issue is plenty late so there is lots of local catch up news. Plus plenty of other pilfered news, views, and reviews. Enjoy!

As you can see from the dates listed on the left, we have activities coming up soon. First off, the Portland-based NW Fireballs club is hosting the first in a series of three fun fly events in our state. Forget the football on New Years day and do some flying! The WOLF AGM (annual general meeting) will take place once again at the Flight Deck restaurant. Details pretty much the same as past years, guess that's the way we like it. More details on the flyer enclosed in this issue. We encourage all club members to attend. It's more than just a stuffy meeting, some good food and fun as well.

Dooz R Doo! That's right, it's once again time to pony up your bucks for another exciting year of WOLF membership. Renewal form somewhere located in these pages! Save a postage stamp and come to the AGM and pay in person!

Fox Parts? Saw a note on a control line forum that says the MECOA company is getting/has the remaining Fox engine parts. They also have the Fox bellcranks, which is good news.

Thought of the month.....

Why do you press harder on the buttons of a remote control when you know the batteries are dead?

NORTHWEST CONTROL LINE CALENDAR 2018

January 1	Oregon Flying Fun No. 1 at East Delta Park, Portland
January 13	WOLF A.G.M. (see flyer this issue)
January 26 - 28	2018 Northwest Model Hobby Expo, Monroe, Washington
March 3	Oregon Flying Fun No. 2 at Sunshine Park, Roseburg
March 10	Swap Meet, McMinnville Aeromodelers, McMinnville, Oregon
April 7	Oregon Flying Fun No. 3 at Bill Riegel Model Airpark, Salem
April 20 - 22	Jim Walker Memorial Spring Tune-up, East Delta Park, Portland
May 25 - 27	Northwest Control Line Regionals, Roseburg Regional Airport
June???	NW Skyraiders Stunt-a-thon????
July ???	WOLF Lucky Hand Fun Fly????
August???	Bladder Grabber combat contest, Snohomish, Washington
September???	NW Skyraiders R.F. Stevenson Raider Roundup
September ???	Northwest Control Line Speed Champs, Salem ????
October	World-wide Ringmaster Fly-a-thon
October ???	Fall Follies, Salem
October???	WOLF fun fly???

This is the initial lineup of events for the year. Many details yet tentative and more events will be added. As always, go to flyinglines.org and check out the "Where the Action Is" feature for the latest updates.



**WESTERN
OREGON
CONTROL
LINE
FLYERS**

**The Annual General Meeting
of the Western Oregon Control Line Flyers**

January 13th, 2018

**11:00 am at the Flight Deck Restaurant at the Salem airport
We will be in the downstairs meeting room
(take the outside steps down to the left of the entrance bridge)**

**Cold Deli Sandwich lunch with all the trimmings,
plus soda, iced tea & coffee.**

Cost is fifteen bucks, pay at meeting.

AGENDA

**2018 club officers
Treasurers report
Discussion of club activities
Update on Field status
Door prizes
Misc. presentations
Other business as appropriate**

Guests are welcome!

**For more information and to confirm attendance:
Mike Hazel 503-871-1057
or zzclspeed@aol.com**

Following are reports on WOLF area activities from the last few weeks.

**Big day of flying and feasting at the
Zoot Ranch Fun Fly
Mehama, Oregon, Sept. 2, 2017**

A good-sized group of Oregon control-line fliers who braved the surrounding wildfire smoke to trek to Mike and Laura Hazel's Zoot Ranch were greeted with warm, sunny skies, almost no wind, and – best of all – only a very light intermittent haze of smoke.

The result was a full day of flying and eating – and we mean eating, because the potluck lunch and barbecue was outstanding.

A wide variety of sport, stunt and combat style airplanes were flown. There were crazy maneuvers, a few minor crashes, and just lots of just plane fun and fellowship.

Attending were: Barbara White and Richard Entwistle, Gene and Carole Pape, Floyd and Phyllis Carter, Don and Margaret Dotter, Doug Powers, Bill Lee, Dave and Peggy Shrum, John Thompson, Mike and Laura Hazel, Craig and Laurie Bartlett, Jim Harper, Robin and Matt Mason, and possibly some others.

The only question that remained after the flying and eating ended was, when is the next one? We'll all be there

(report from flying lines)

**R.F. Stevenson Raider Roundup
September 16 & 17, 2017
Chehalis, Washington**

A number of WOLF members made the trip up to the Chehalis airport for a weekend of Stunt and Combat competition. Weather was good on Saturday, but Sunday not so much.

In Expert PA John Thompson placed 5th. In Profile Stunt, Fred Underwood, Jerry Eichten, and John Thompson placed 2nd, 4th, and 5th, respectively. John also placed 3rd in Classic and took a victory in Old Time Stunt.

Over in the Combat circle, John also grabbed a second place in the 1/2 A event. Gary Harris and Gene Pape finished out of the money. The 80 mph Combat event was also flown, but looks like most everybody bailed out early due to the worsening weather conditions.

This contest is put on the Northwest Skyraiders, and has been a September tradition for many years.

**2017 Northwest Control-Line Speed
Championships
September 23-24, Bill Riegel Model
Airpark, Salem, Oregon**

By Mike Hazel, contest director

Weather was nearly perfect for this go-fast weekend, nice mild temperatures with some nice sunshine and calm air. All that was missing were contestants! Only five speedsters signed up and flew in these great conditions. Several other Northwest speed people were missing in action for various reasons and excuses, some probably good and some probably not.

We had a few spectators over the weekend to watch the action. Most notable was Steve Lindstedt, who is making a return to control line action after a several decades layoff. Steve brought out some new planes he has built for us to take a look at. Some good stuff!

Something new was added to the contest: Although the original plan was for no prizes, we decided to add a perpetual-type trophy. This trophy will award the best record ratio performance, with the Flying Lines Northwest Speed records as the basis. It is hoped that this will create some extra interest in some of those classes that need to have the times upped a bit.

Here are some blow-by-blow notes: Jim Booker kicked off the action in Sport Jet with a 151-mph romp. He put in several more flights testing trying to best that. These flights were very close and consistent but none were any faster. His plane starts amazingly quickly. Mike Hazel had a brand new Pod Racer from the Booker kit to sort out. The new setup had some problems in getting the engine to light off, but

after some troubleshooting it was starting right up easily as well. Several test flights in the mid 140-mph range were flown. This design flies very well.

The very popular Northwest B Proto should have had a flurry of entries because there are a flurry of planes out there. But the planes' owners didn't show up! Chris "Partner" Sackett put up several flights testing and managed to squeeze up the Northwest record up a few hundredths, taking first place in that class. Mike Hazel put up the second-place flight with a really lean run but was then done for the day due to an unrelated problem. Ken Burdick tried out his trick-looking full-fuselage plane but it dorked.

Ken Burdick came back strong in the Northwest F2D Proto class very close to the record. Bruce Tunberg also had a pretty good flight.

Ken's big asymmetrical class 'C' sports a powerful Nelson .40 engine, which really shows some promise but had some fuel feed problems which kept it below potential.

Ken had the fastest flight of the contest with his class 'D' going 168+ mph. Wonder if that new fresh coat of orange paint helped?

As mentioned previously, there is a new perpetual award and that goes to Chris Sackett for 2017. His Northwest B Proto performance came in at 100.2% of the Northwest record. Ken Burdick was close behind at a 99.1% mark with his F2D Proto flight.

Here are the complete results.

NORTHWEST SPORT JET SPEED (2 entries)

1. Jim Booker, LaGrande, Ore. – 151.89 mph
2. Mike Hazel, Mehama, Ore. – 145.92

NORTHWEST B PROTO SPEED (3 entries)

1. Chris Sackett, Maple Ridge, B.C. – 113.09 mph (New Northwest record, eclipsing Sackett's 112.87 mph set on Sept. 11, 2016, in Salem)
2. Mike Hazel – 90.53
3. Ken Burdick, Kamloops, B.C. – attempt

NORTHWEST C SPEED (1 entry)

1. Ken Burdick – attempt

D SPEED (1 entry)

1. Ken Burdick – 168.47 mph

NORTHWEST F2D PROTO SPEED (2 entries)

1. Ken Burdick – 104.85 mph
2. Bruce Tunberg, McMinnville, Ore. – 95.96

(report from flying lines)

Fall Follies brings stunt season to a close Oct. 7-8, 2017, Bill Riegel Model Airpark, Salem, Oregon

The 31st annual Fall Follies lived up to its reputation as a delightful finish to the long Northwest stunt season, with a good turnout of fliers enjoying a weekend of friendly competition and a tasty Sunday barbecue. The 2017 contest also marked the return of Racing to the Follies, with an encouraging turnout of teams participating in Northwest Sport Race on Saturday afternoon.

A wet field greeted the fliers on Saturday morning, but no significant rain actually fell during the contest. Wind was mild but shiftier on Saturday, increasing to a bit blustery in the afternoon. Sunday was partly sunny with very light and steady breezes – perfect stunt flying weather.

A few Ringmasters were around the venue for possible participation in the annual global Ringmaster Fly-A-Thon, but the fliers concentrated on Follies competition and only one Ringmaster actually flew – that was Pat Chewning's Old-Time Stunt entry.

Howard Rush captured the Follies Expert Precision Aerobatics for the second year in a row, topping a strong field with a narrow victory over Paul Walker and Chris Cox. Dane Covey topped Advanced PA for the second straight year.

In Saturday's preliminary events, Dave Royer topped Old-Time Stunt (another repeat victory), Pat Johnston won Classic, Covey topped Sportsman Profile (another repeat!) and Fred Underwood captured the Expert Profile title.

The Follies is the contest at which the annual Don McClave Vintage Stunt trophy is awarded to the top scorer in the *Flying Lines* Northwest standings in combined Old-Time and Classic Stunt. And, speaking of repeat victories, Mike Haverly was awarded the trophy for the second year in a row after a strong season flying his Chizler in Classic Stunt. Previous winners have been Bruce Hunt (2006, 2008, 2009, 2010), Scott Riese (2005), Pat Johnston (2007) and Pete Peterson (2011, 2013), Alan Resinger and John Thompson (2012, tie), John Thompson (2014) and Dave Royer (2015). The trophy is sponsored by *Flying Lines*.

Contest staff:

Field mowing: Mike Hazel

Field setup: Mike Hazel and Craig Bartlett

Registration: Barbara White

Pull-testing: Steve Helmick and John Thompson

Tabulation: Barbara White

Sunday barbecue: Mike Hazel

Contest director: Mike Hazel

Fall Follies Results

CLASSIC STUNT (5 entries)

1. Pat Johnston, Boise, Idaho, Shark 35, electric – 540.5

2. Mike Haverly, Auburn, Wash., Chizler, Ro-Jett .40 – 531.5

3. John Leidle, Kirkland, Wash., Olympus, Merco .61SS – 520.5

4. Dane Covey, Tacoma, Wash., Profile Nobler, electric – 501

5. John Thompson, Eugene, Ore., Blackbird, Aero Tiger .36 – 443.5

Judges: Jerry Eichten and Tim Wescott

OLD-TIME STUNT (4 entries)

1. Dave Royer, 1949 Humongous, Merco .61 – 253

2. John Thompson, Barnstormer, O.S. Max .25 – 241

3. Pat Chewning, Beaverton, Ore., Ringmaster, O.S. .25LA – 232.5

4. Russell Shaffer, Klamath Falls, Ore., Boxcar Chief, Fox .35 – 110

Judges: Mike Haverly and Steve Helmick

SPORTSMAN PROFILE STUNT (3 entries)

1. Dane Covey, Pathfinder, electric – 483

2. Mike Hazel, Mehama, Ore., Corsair, Saito .40 4S – 451.5

3. Russell Shaffer, No Name, O.S. .25LA – 323 (1)

Judges: John Leidle and Steve Helmick

EXPERT PROFILE STUNT (4 entries)

1. Fred Underwood, West Linn, Ore., Shark S2, Cobra electric – 539.5

2. Pat Johnston, Epiphany 557, electric – 518

3. John Thompson, Scrub J, Evolution .36 – 501

4. Jerry Eichten, Newberg, Ore., Pathfinder, O.S. 46, 490.5

Judges: John Leidle and Steve Helmick

BEGINNER PRECISION AEROBATICS (0 entries)

INTERMEDIATE PRECISION AEROBATICS (0 entries)

ADVANCED PRECISION AEROBATICS (3 entries)

1. Dane Covey, Pathfinder, electric – 514.5

2. Dave Royer, Magnum Plus, Stalker ST60 Pro – 500

3. Russell Shaffer, Medic, O.S. .25LA – 483.5

Judges: John Leidle and Tim Wescott

EXPERT PRECISION AEROBATICS (9 entries)

1. Howard Rush, Bellevue, Wash., Impact, Plettenberg 20-16 electric – 601

2. Paul Walker, Deer Park, Wash. P-47, Plettenberg 15-22 electric – 595

3. Chris Cox, Delta, B.C., Defiant, Cobra 3520-14 electric – 590

4. Pat Johnston, Bearcat 617, electric – 547.5

5. Mike Haverly, Fifth Element, E-Flite 32/Igor timer – 528

6. Fred Underwood, Shark S2, Cobra electric – 524

7. John Leidle, Olympus, Merco .61SS – 514.5

8. Mark Scarborough, Pullman, Wash., AAE, E-Flite electric – 510

9. John Thompson, Vector 40, O.S. .40LA – 497

Judges: Bruce Hunt and Steve Helmick

NORTHWEST SPORT RACE (5 entries)

1. Mike Hazel, Artesian, O.S. LA .25-- 9:13
2. Gene Pape, Eugene, Ore., Super Clown, ASP .25 -- 11:12
3. Doug Powers, Portland, Ore., Super Fly, O.S. LA .25 -- DQ (overrun)
4. John Thompson, Super Clown, Fox .35 -- 6:26 heat
5. Gary Harris, Banks, Ore., Super Fly, Fox .35 -- 7:15 heat

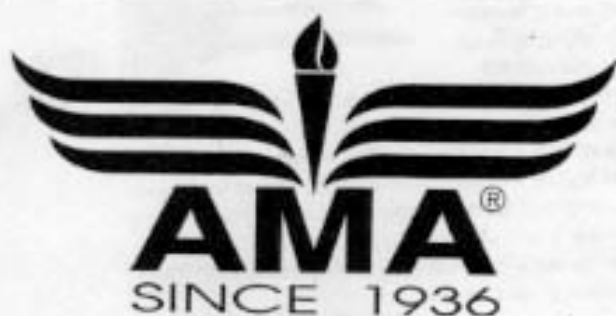
(report from flying lines)

The WOLF Fall Finale Fun Fly was ... Fabulous!

**Bill Riegel Model Airpark, Salem,
Oregon October 28, 2017**

The conditions were perfect for this event, clear skies with calm air and 70 degree temperatures. Several control-line pilots were on hand at the Bill Riegel Model Airpark in Salem to put up flights with various Stunt, Combat, and sport planes. Most of the flying was done on the asphalt circle, but a few flights were done on the grass circle which is slated for improvements in 2018.

There was a pot of hot chili on the stove for lunch, and a table full of prizes with something for everybody who put in a flight during the day. WOLF members in attendance were: Craig Bartlett, Gene Pape, Gary Harris, Mike Hazel, Conrad Anglin, Jerry Eichten, Dave Royer, Dean Singleton and Steve Lindstedt. Also attending were Roy DeCamara, Tim Wescott, Richard Entwistle, Dave Shrum, Bob Lewis, Pat Chewning and Jim Corbett. Nearly everybody put up at least one flight.



Big field shows up for Second November NWSR contest at Delta Park Jim Walker Memorial Control-Line Flying Field, Portland, Oregon November 25, 2017

The Northwest Fireballs' idea of hosting a Northwest Sport Race contest in November to cap off the region's contest season caught on with racers in a big way, with a far larger turnout for the 2017 running of the event. Gary Harris directed the contest with the help of several Fireballs members. About 10 airplanes were on hand, including entrants and backups, and seven official entries fought for the victory.

Three preliminary heats were run, followed by a split feature race featuring four entries in two-up races.

Mike Hazel completed a sweep of all the NWSR contests he entered in 2017, with a winning time of 9:03.97.

The contest also served as a final demonstration of the ASP .25 engine as a possible addition to the Northwest Sport Race allowable engine list. Gene Pape's ASP-powered entry posted a third-place time, but did not receive an official score as it was outside the rules currently in force. In the air, Pape's ASP-powered Super Clown had identical airspeed to Hazel's O.S. LA .25-powered Artesian. Currently the legal engines are the Fox .35 and the LA .25.

Contest director's report

By Gary Harris

A big thank you to: Richard Entwistle and Barbara White (canopies, food, cooking, and officiating), Darrin Bishop, Don Curry, Dave Royer, Pat Chewning and Dave and Doug Powers (helping and officiating).

Thanks to the pilots and pit men for showing up and making it happen. This thing got started a year ago at the weekend of the worldwide Ringmaster fly-a-thon. I had such a terrific flight on a Fox .35 stunt-powered GX Combat plane that I thought that that engine should go on a Northwest Sport Race plane. It just ran so well!

The Northwest Fireballs club humored me and we set a date for a Northwest Sport Race to take place two days after Thanksgiving (2016). We got lucky on the weather and two teams showed up to fly. Apparently it went well enough that the club members wanted to do it again this year.

This year on race day we were treated to good weather and with the good weather came 10 competitors ready to play. We began by having three planes flying in the first 70-lap heat race to be followed by two heat races of two-up each. Then the final would be flown by the four fastest planes. This would be done with two pilots in each of two 140 lap races.

When the smoke cleared the fastest plane of the day was Mike Hazel's OS LA .25-powered plane turning in a time of 9:03.97.

Before racing began it was agreed that there would be one winner and he would get the money that came from entry fees. \$35 cash went to Mike for his fastest entry flown by John Thompson and Mike pulling pitting chores.

Jim Cameron - piloting

Pat Chewning - piloting and officiating

Richard Entwistle - pitting and officiating

Gary Harris - pitting and officiating

Mike Hazel - piloting and pitting

John Knoppi - pitting

Leighton Mangels - pitting and piloting

Gene Pape - piloting and pitting

Doug Powers - pitting and piloting

John Thompson - piloting and pitting

I'd like to add that a proposal to make the ASP .25 engine legal for Northwest Sport Race is now in the debate stage with voting to happen soon.

Initially I was dubious about adding this engine but have changed my mind and am now an advocate for it's being allowed. A very good quality product which is at this time selling for under \$50. This could add new life to racing here in the northwest. ABC, good fit, currently manufactured and affordable.

Yes, everybody, **start your engines!**

Results

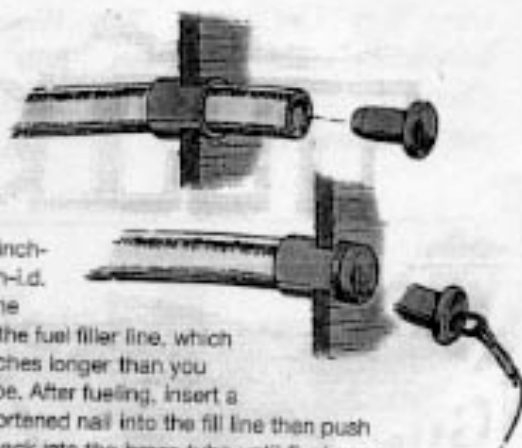
NORTHWEST SPORT RACE (7 entries)

1. Mike Hazel, Mehama, Ore. - 9:03.13
2. Doug Powers, Portland, Ore. - 9:47.13
- X. Gene Pape, Eugene, Ore. - 10:22.00
(Demonstration of ASP .25 engine)
3. John Thompson, Eugene, Ore. - 10:52
4. John Knoppi, Renton, Wash. - 7:09.66 heat
5. Gary Harris, Banks, Ore. - 7:20.38 heat
6. Richard Entwistle, Scappoose, Ore. - 65 laps

(report from flying lines)

POOR MAN'S DOT

Use CA to glue a 3/8-inch-long piece of 3/32-inch-I.D. brass tube through the fuselage side. Insert the fuel filler line, which should be about 3 inches longer than you need, through the tube. After fueling, insert a plug made from a shortened nail into the fill line then push the fill line and plug back into the brass tube until flush, as shown. Solder a soft wire loop to the nail and secure the plug to the model with a fine wire fishing trace, then paint the nail to match your plane.



Clair Sieverling, Phoenix, AZ

The following article is from a recent issue of the M.E.C.A. Bulletin & Swap Sheet. (Model Engine Collectors Association). Always lots of great and interesting info from those pages. If interested in subscribing I can supply contacts to do so.

From: Bill Mitch MECA 0764
668 West 725 South, Hebron, IN 46341-8871
Working at Grish

Editor's note: Grish Bros. made the Tornado Plasticote props for years; here is one of their early ads from the 1952 Flying Models

more thrust per r.p.m.

Tornado

nationally famous

PLASTICOTE PROPS

HEAT-FUEL PROOF

"not a plastic.....but a plastic coated wood"

Examination will prove! Run your fingers along a TORNADO prop. Feel the smoothest finish ever developed. Look at the perfect air foil section.... true pitch and extra thin blades- You'll agree, TORNADO props are engineered to deliver the most thrust at minimum torque for top performance!

For consistent high quality, ask for TORNADO props at your dealer

GRISH BROS. • ST. JOHNS I. INDIANA

Now back to Bill Mitch's words:

OK. Finally found time to tell you my story. I thought I'd have plenty of time after I retired. Guess not.

I graduated from Lowell High school in 1955. I lived in Cedar Lake Indiana for 25 years till I got married. My first job out of high school was working at Grish Brothers in St. John Indiana for a year. They were making the Plasticote propellers at that time. When Tony (Owner) first produced the Plasticote props he went around to different contests and gave out his props as samples. The flyers noticed an increase of 100 to 200 RPM plus while using his props. So the Plasticote props were born. When he was first producing them, Bob Roberts of Right Pitch props (Gary Indian) tried to get their formula. It wasn't written down. It was in the brothers heads. Tony had guards around the factory and if he didn't know you, you did not get in. I used to get his seconds when I was flying C/L.

Tony's operation was really something. They would start out with blocks of wood (Don't remember what type) cut to the props length and width and thickness enough to cut maybe a dozen blanks. Then they would go to a person on the table saw with a dozen blades to cut the blanks. Then to the person on the drill press to drill the holes in the blanks. Then to the pitch cutting machines. These cut the front and back pitch on the blanks. They had several machines. One cut the back shape and the other cut the front. Now we have props sort of. They were then put in a tumbler. Looked like a big wooden barrel with little wood blocks in it to get the fuzzies off the blanks. Now they went to the Plasticote machine where they were dumped into a hopper on top. The props slid down a pair of rails and two fingers came out and picked them up and set them in the dies. They closed and very hot plastic was injected into the dies at a very high pressure. In about four to seven seconds the dies opened depending on the prop size and they tipped to drop the props in a box. The girls that worked there boxed the props up. They also made regular wood props. In the late fifties they changed to making nylon props. The engines were getting more and more powerful and the Plasticote props were flying apart. End of a era.

For your info: If you use any of the Grish yellow nylon props boil them in water at least twenty minutes and store them in a freezer bag with a wet paper towel in with them. The regular white nylon props are OK. For some reason the yellow dye affected the nylon. The really white props are polyester do not need to be boiled.



editor's note: the following piece was lifted from the Stunthanger forum. The thread is titled: Fuel, Glo-plug and running tips and was posted by Randy Smith ten years ago.

I have been asked many times to help explain why we have so many things that can affect the run quality of Stunt engines. I will touch on a few of them, and hopefully help to eliminate some of these problems. Among them are tanks and fuel systems, glo plugs, fuel, and overheating.

What are things that make for a great, or bad engine run. We see these things most every weekend, and it is a very big point of frustration to many modelers. We all want our engines to run right, and it is nice when it goes through the pattern smoothly, coming on and off, exactly when and where you want it. Unfortunately, a lot of times, they growl, belch, shut off, seem to have a mind of their own, and are a total pain to deal with. One of the biggest causes of this that I have seen is improper fuel. Fuel is one of the most critical aspects in running model motors. Use the right fuel and you will probably notice nothing; the wrong fuel will have you grumbling, or worse, will have your motor screaming, belching and running with absolutely no consistency whatsoever.

Most fuels on the market today use a synthetic base and are blended for the R/C sport flier. These are typically very low on oil content, usually in the 12% through 15% range. This is never acceptable for our use in C/L Stunt. There are many reasons but the most important is the fact that we normally do not run our engines in a peaked two cycle, but rather a broad range of four cycle and rich two cycling. Any time you run with the motor set to come on and off in the maneuvers (like a typical 4-2 break) you are not only asking the fuel to lubricate the motor, it also has to cool the engine. The only way you can run in a 4-2 is to heat and cool the parts in the combustion chamber very rapidly. This makes the oil content critical, because it's the unburned oil that helps carry away the heat.

Years ago, most fuels had only one oil, castor. This is still a very good oil with many good but some bad points. Some of its good points; it carries heat out of the motor and gives a good

plating action on all surfaces, especially when they're hot. It also has tendencies to move toward hot surfaces, helping to protect them. A few of its bad points; it burns and sticks to the piston sides and the ring groove and all other parts that are hot enough, and will carbonize the chamber. It will stick rings in their grooves, freeze wrist pins and build up ridges on sleeves. This causes excess friction and heat and will ruin your motor in time.

The alternative to castor is synthetic oil and almost all fuels have these in them; the vast majority has all synthetic. Virtually all fuel manufacturers use one type of synthetic; these are normally polyalkylene glycol based oils. They are mostly made up of alcohol started linear polymers, of oxypropylene groups. These are made by several companies and are available in a large range of molecular weights and viscosities.

This group of oils is the modern version of the old Ucon oils and also have good and bad points. Some of the good points; they are very good lubes without containing any wax; they have outstanding load carrying capacity, film strength, anti-wear properties, are resistant to sludge formation, and will help keep your engine clean. The bad points are they give no rust protection by themselves, they don't plate hot surfaces as well as castor and they burn at high heats.

As you can see, both oils have advantages and disadvantages to them; it's for these reasons that they work much better blending together than they could ever work alone. Throughout many years of flying, testing and other research have proven this to me beyond any doubt; plus you can see this for yourself.

Recently, a friend of mine had a motor that would go into the pattern and lean out and act very inconsistently. The only change that was made was to substitute one tank of my fuel in the model. The results were drastically different; the motor now ran very smoothly, going into a two cycle instantly when the nose was raised and back into a four cycle instantly when the plane was leveled. This was tried back and forth both fuels; his and mine. The results were the same every time. I see this type of thing happen much too often, and it is extremely frustrating for Flyers to deal with. They often blame these fuel problems on

cooling, cowlings, motors, fuel filters, and unfortunately some don't have a clue how to recognize or solve this problem. This is a frustration that you can live without!

I would like to tell you there is one Stunt fuel formula to run in all motors, I said I would like to tell you that...unfortunately this is not the case, and will never be as long as we have such a wide range of motors and running styles. What I will tell you is a good formula for the most common types of engines. Make sure you pick a fuel supplier who will give you consistent fuel day to day, and will blend fuel for your motor needs or has fuel to match your needs. Stay away from any supplier who will not tell you the oil percentage, or who say one type works for all motors. I see this much to often also, It is unfortunate, but a lot of fuel manufactures will try to fool you about the oil and nitro percentage. One trick is to measure by weight and not volume. Doing so, they can claim that the fuel is for example 18% oil, when in reality it is only 14.9% oil content. Using weight for ingredient, they can put in a lot less oil and nitro. Other things are changing oil types, going to cheaper Nitro's, and adding in other types of Nitro paraffins.

So what percentage do you try? For motors like Fox .35s, OS Max 35s or the old McCoy's and K&B's, use a fuel with 26 to 28% oil content; preferably half castor and half synthetic, up to 75% castor is OK. These motors have very small bearing surfaces, and are subject to much wear and heat, most are all plain bushing motors and most have unbushed rods. They need a lot of oil to help cool the engines. Since these motors run hot, they need extra oil to keep them lubed, clean, and to carry out heat. If you have one of these that is in very good shape but, is just starting to get some brown or black varnish plating on it, the synthetic mix will clean it up for you, resulting in increased life.

Do not use the synthetic blend in an old motor that has a lot of time on it with all castor fuels; the synthetic will remove the castor varnish off the piston and sleeve and will in some cases, leave you with the worn-out motor that had to start with. Also always try to NOT use prop shaft

extensions with these engine, as it adds a lot of wear on the crankshaft bearing.

For motors with larger bushings and bushed rods like to OS FP, Magnum GP series, Tower, and Brodak's a 22-25% half-and-half oil mixture works the best. For S.T. .46 51, and .60s and most all ball bearings Stunt motors, a 23% half blend works best. Again the Synthetic blend will help keep the engine clean, and insure long life. If you use all castor in these types, it can stick the ring in the groove, resulting in poor compression and shortened engine life. If you have a ringed engine that castor has gummed up badly, most times running the synthetic blend will free the stuck ring, and the engine will return compression and power for you.

The tuned pipe motors like a little more synthetic and I recommend a 15% synthetic, 7% castor blend or a 20% half and half with 1 ounce of Aero-1 fuel supplement, although many use 1 1/2 + 1 1/2 with great success. This works very well in the Precision Aero, OPS and Max VF engines, Super Tigre, Thunder Tiger, AERO TIGER and most all of these type engines..

Four Strokes engines also like the blend, I have found that a 15% synthetic +3% castor blend works well for them, normal oil percentage is 18 to 20%. This will vary some from engine to engine, but is a good starting point. Most like 10 to 20% nitro, going up to 25% to 30% in the hot summer weather. Aero-1 Fuel additive can help 4 strokes tremendously, as these engines are lubricated mostly by "blow by" and can run very hot. Fuel and tanks are also very critical for 4 stroke operation. Make sure you have a tank that delivers fuel easily to the engine, as four strokes don't seem to like having to pull fuel from the tank. Use as short a fuel tank as possible and keep it close to the engine. A lot of people use muffler pressure or pumps to help feed the 4 stroke engines. I have used OS VF pumps, Perry vibration pumps and Perry pressure pumps with my test on 4 strokes.

I would suggest, as we do with 2 strokes, to use a Sullivan "Crap trap" fuel filter. They hold a lot of junk, and have a very good double cone design that pushes the debris away to the sides and almost never stop up. If you get a stopped up filter

on a four stroke (or 2 stroke for that matter) you can burn the engine up in one flight

When you use motors for the first time, you should also make sure you have the motor properly broken in. This will range from six tanks of fuel for one engine to almost two gallons for others. OS, for example, says two hours running time for their motors. A good break-in procedure is to use the same fuel as you will for your Stunt run, and try to do your break-in on a bench; this is a lot better and an easier way to do a proper break-in.

A diameter, one inch smaller than you plan to run at, at a 3 or 4 pitch, should be the prop to use. This will let the motor turn many revolutions more per motor run time. Start out in a very sloppy four-cycle for cast iron lapped piston and most ringed motors, slowly progressing to the fastest it will run in a four-cycle, then put it in a short two-cycle burst for short times. After the correct amount of time it should be able to run in a two-cycle without heating up and going leaner. Using 3 to 6 ounces per run with 5 to 10 minutes cool down time in between.

For ABC, AAC, ABL, ABC-R and ABN motors, start out in a very fast four-cycle and about every 45 seconds; pinch the fuel tube to kick the motor into a momentary two-cycle. These types of engines normally take more break-in time than do their iron lapped piston cousins. If you can run the motor in a fast four-cycle and without touching the needle, pinch the tubing to lean the motor into a two-cycle for 20 seconds or so, then it should go right back to a four. After breaking in the engine with a few tanks of fuel, you can start using the needle to cycle back and forth from 2 to 4 cycle. When it is broke in you should be able to hold a 2 cycle for 30 seconds or so, and come back to a 4 quickly by turning the needle richer. If not, it probably needs more running time.

Plugs can also be a major cause of trouble, and poor runs. When you first crank the plane, notice if it goes rich and sags slightly when the battery is removed; if so, the plug is normally too cold. This is critical to getting a proper Stunt run.

Most plugs are designed to provide a colder range than we want in C/L aerobatic engines, and you should try to get the right range

for the motor. Many days of testing and much time and expense buying almost every plug on the market has yielded these results: Thunder Bolt R/C long, T-Bolt #3, T-Bolt 4 stroke, Glo Devil RC #300 long, Enya 3 & 4, Fireball RC long, the Hobby Shack RC long, SIG RC long a few of the OS hotter plugs and some of the FOX long and Miracle plugs are best plugs for our use. In almost all instances, use a long plug, as they will be substantially hotter than the shorts, plus they are deeper in the combustion chamber and this tends to keep things hotter and keeps the plug elements cleaner.

A lot of times the plug problems show up as rich inside maneuvers and leaner outsides; this happens because gravity and centrifugal force, forces the oil-fuel charge down on the element on insides, thus cooling the coil and pulls it away on the outside maneuvers, letting it naturally go leaner. I have seen this problem instantly cured by simply changing plugs. Please do not be afraid to put in a new glow plug, or try different types of plugs.

All of this assumes you have your tank height perfect (you did adjust your tank height, didn't you), your right side up and inverted lap times are the same. This is important; don't skip this step. If you're using a profile sometimes you will need to have the tank center higher than the engine center. The 3/16 to 3/8 range will do for most fox 35s. Others will run on center line, or just off of it. Another case of run problems are tanks or fuel delivery systems, which includes the tank, fuel tubing, fuel filter, and anything else connected to the fuel system. When these problems arise in most cases, the engine changes speeds in flight, either faster or slower, and is generally inconsistent in the needle setting. This is almost always blamed as an "engine problem" when in fact it almost always turns out to be a tank problem, or fuel delivery system problem. I find most every time I see this, it is one component of the fuel system that is at fault. Either a hole in the fuel tubing, junk in the filter, a hole in the tank, a tank with an internal crack in the pick up or feed line.

The next most common problem of this is water in the fuel. Water will give a very inconsistent needle setting, and will change at random back and forth from lean to rich. There are

a few other things that cause problems with fuel delivery, muffler or pipe pressure will, most times magnify any little leak or problem you have and make things much worse than they were. A few other causes are an engine with a leaking backplate gasket, or an improperly cooled engine. A basic rule of thumb is to have a good intake area, with double the size of the exhaust area. Make sure your model (if fully cowled) has the air blowing all the way across and past the engine before the air flow exits the cowling. If your plane goes lean in maneuvers and comes back to a four-cycle slowly, it can be running too hot, you most likely need more oil, or less back pressure from the muffler. I have seen a lot of fuel with water in it (methanol attracts water) and this will cause erratic runs and needle settings. Always use fresh fuel and don't be afraid to try another fuel if you think this is the problem.

Never try to put a brand new engine in a plane and try to break it in, trim and fly at the same time. I have seen this too many times with disastrous results. It is very hard to richen a too lean needle when the plane goes lean in flight. Keep good care of your equipment and it will usually take care of you; abuse it and it will most times let you down.

Now, a little more about fuels. For you guys who absolutely gotta buy the bargain R/C sport fuel...No amount of persuading will convince you otherwise; you at the very least need to add a healthy dose of castor oil. You can roughly figure 1.3 ounces will raise the oil content one percent (i.e. 13 ounces of oil to make 15% oil fuel into 25% oil fuel). This is not recommended and at the very best will usually be a guess, but it is much better than not adding anything at all, and I know people that do this all the time and get it to work for them. Example: using Fire Power Cool 15%, pour off 13 ounces and add 13 ounces of Castor, this will be close to 11% nitro, and 24 to 25% oil, this would make an OK fuel for plain bearing FP type motors, add a little more oil, and you have a fuel that you could run in your Foxes.

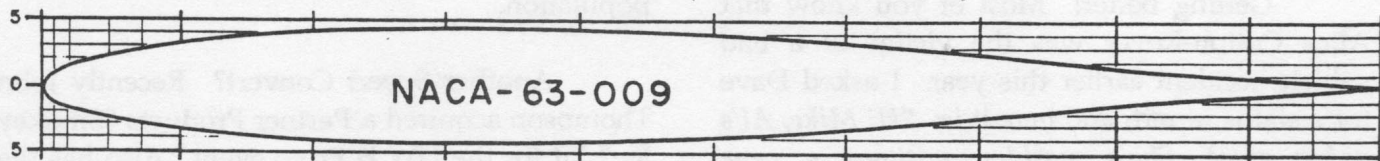
The final thing I would like to say is to make sure you use an after-run oil between sessions and when you store the motors. This is another must do, because of the nature of the fuel

we use. Then nitromethane or any nitro paraffins burn, they leave behind, in your motor, acid and water, this, along with the water carried in partly by the alcohol, gets together and eats your bearing and other parts. Good quality after run oil is easy to get; don't skip this step. If you can't find a good after run at your local hobby shop, there are many available that are made by several companies... then try Prather's. They make a good one and so does RJL and Aero Products. Do not use motor oil, Marvel Mystery oil; this is not after run oil.

Marvel makes excellent oil that can be used and as an after run oil and it is available from most auto parts stores and is called Marvel Air Tool oil. As a matter of fact, most air tool oils can be used as an after run oil; they are designed to fight corrosion in metal air tools and this is exactly what we are looking for. Another good place to get these types of oils are the large home supply stores like Home Depots and Builders Square type stores. Look in the department where they carry air compressor and paint guns. There are many brands of these oils so you see you have no excuse not to use them.

As for fuels, there are many good companies out there that will supply you with a good usable Stunt fuel. You will need to search them out in your area. If you are using some of these suppliers, call them up. I'm sure most of them will oblige you. The model magazine are full of 800 numbers for fuel suppliers and the ones that I have mentioned come highly recommended; however, this is by no means all of them.

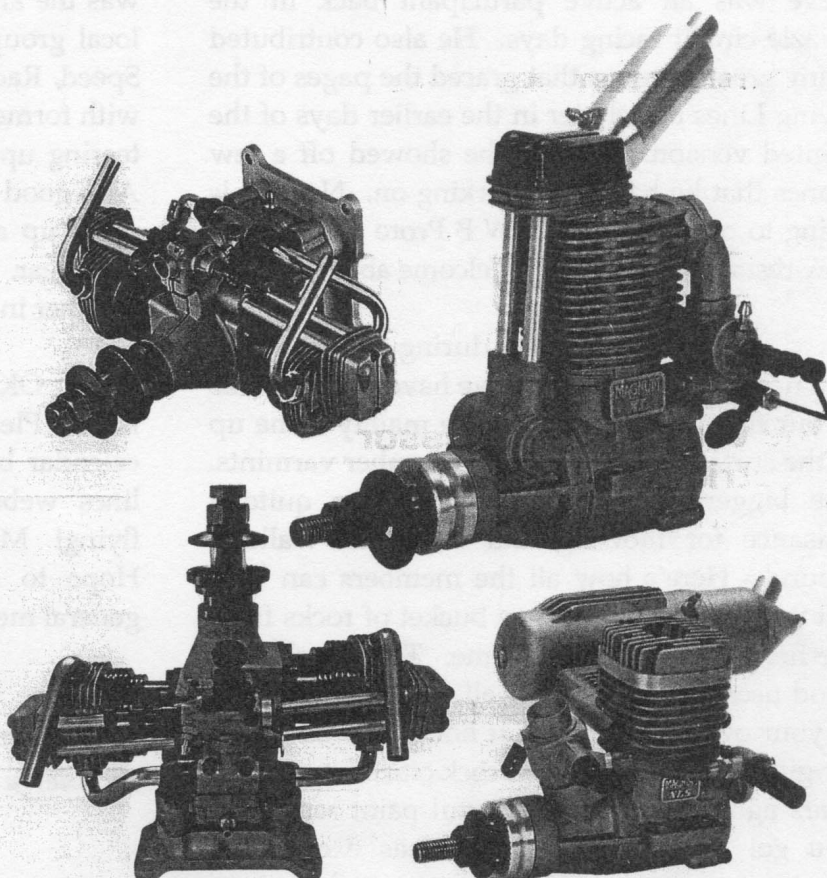
SIG for example has a very high quality fuel that is stocked by dealer all over the country; their Champion is 20% blended oil and with extra castor or oil supplements, such as AERO-1, makes an excellent Stunt fuel. Sig and I believe Power Master also make 20 or 25% all castor fuels, as well as good 4 stroke fuel. Power Master is now making fuel for control line aerobatic planes, as are many other companies. There are more companies making good C\L stunt fuel such as S&W and others. I just don't know them all and have not used their fuels in a while. Keep in mind things will vary slightly, so don't be afraid to try something new, or your buddy's fuel if you suspect you have a fuel problem. — Randy Smith—



THE PERFECT C/L SPEED AIRFOIL - NACA-63-009; How many times have you had a 'funny' flying speed job and looked at everything else except the lousy airfoil you carved in the wing? A true straight wing with an accurate airfoil are essential to high speed flight. Although speed models are fast, they are not really considered 'high speed' in the overall scheme of aeronautics, but they are still fast enough to react to bad airfoil sections. The section shown above is as perfect a section as you can get for C/L speed work. Note that while the section is sharp the leading edge is somewhat blunt....this is important! You don't want a razor sharp L.E. as it will actually slow you down. The NACA did not spend considerable sums of money and time coming up with inconclusive results so you can be sure these sections work. Photocopy this section and hang it over your workbench to refer too. Even better make up a template to the size of your wing and check carefully when building. your efforts could be worth a few MPH!!!

Mike Goes Flying Magnum Engines

The popular line of Magnum engines is again available to modelers in the United States. Everyone knows Mike Greenshields, who has been involved with the RC hobby and with Magnum engines for years. Mike has now made distributing the Magnum engine line a family affair. Mike and John Greenshields have formed a new company, Mike Goes Flying, to again offer the top-quality engine line, which will include the .15, .25, and .52 two-stroke engines as well as the four-stroke .52, .91, and 1.60 flat twin engines. Prices for the two-stroke engines range in price from \$54.99 to \$79.99, and the four-stroke engines are \$154.99 to \$489.99. mikegoesflying.com



*More Miscellaneous Ramblings from
Ye Olde Editor*

Getting Better! Most of you know that Alice Cotton-Royer was the victim of a bad vehicle accident earlier this year. I asked Dave for a status report, and here it is: *"Hi Mike, Al's doing great. She's walking without a cane occasionally now and continues to steadily improve. She has one more surgery scheduled for her eye in the spring and we are optimistic of the outcome. Hope all is well down your way. Dave."* Thanks for the report, Dave. We are all glad to hear Alice is continuing to recover.

New Member Department. WOLF has the privilege of adding to it's roster Mr. Steve Lindstedt. Steve showed up at the last couple of events and decided he should throw in with us. He is an experienced "retread", having been away from control line for several years. If the name sounds familiar to some of you, it should. Steve was an active participant back in the drizzle circuit racing days. He also contributed many great cartoons that graced the pages of the Flying Lines newsletter in the earlier days of the printed version. Last fall he showed off a few planes that he had been working on. Next he is going to put together a NW B Proto ship. Steve now resides in Silverton. Welcome aboard!

On The Rocks..... during the last year you no doubt have noticed we have a lot of rocks in our flying field. These have mainly come up to the surface courtesy of those gopher varmints. The bigger ones (rocks that is), are quite a nuisance for mowing and even just walking around. Here's how all the members can help out with this: take home a bucket of rocks from the field every time you come. There are many good uses for them. After all, you can use them in your own landscaping at home. Or use them for gifts, remember the pet rock craze from many years ago? Just a little colorful paint and there you go! If neither of those ideas excite you, maybe you can distribute them in ditches along the highway. Or, just toss them over the fence into your neighbor's yard! Seriously though, we

should have a work party to get some of these picked up. Actually, it should be an ongoing effort until we can get rid of the gopher population.

Another Speed Convert? Recently John Thompson acquired a Partner Products "Smokey Joe" kit for the NW B Proto event. Also has the "partnerized" engine to power it. Hope to see it in action in Portland next spring. Unlike many events that seem to be dwindling, this one keeps getting new participants. Can't wait till next year for that action! If you haven't already, check out the rules for this event on the flying lines website, and consider joining the fun in this fun easy speed event. Plenty of help is available for anyone interested in putting one together. (Hey Craig, got Mr. Orange finished yet?)

Ye Olde Editor got to escape the local weather earlier this month by heading south to attend a contest in Los Angeles area. The event was the annual Toys for Tots contest put on the local group down there. Events featured were Speed, Racing, and Combat. Got to briefly visit with former NW combat flier Jeff Rein, who was tearing up the sky both days during the event. Also good to visit and fly with several folks who come up and fly with us at the NW Regionals each year. Sure was nice to enjoy some 70 degree weather in December!

OK folks, that just about wraps up this issue. Please remember to check out the event calendar both in these pages and on the flying lines website and put aside those dates for flying! Meanwhile, get busy in the workshop! Hope to see everyone at the WOLF annual general meeting next month.

Until then, here's wishing everyone a wonderful and blessed holiday season.

— mwh —

Northwest Fireballs, Western Oregon Control-Line Flyers and Roseburg area CL fliers
present ...

Oregon flying fun!

A trio of control-line fun-fly events

Everyone invited — No entry fee! 10 a.m.-3 p.m.

If the weather is bad, go to the alternate site listed for "hangar flying" socialization!

Monday, Jan. 1 at East Delta Park, Portland

Pot luck lunch, plus coffee and doughnuts

Bad weather meeting site: Elmer's at Delta Park; cell 503-867-2101

Info: Northwest Fireballs, [Richard Entwistle](#), 503-867-2101

Saturday, March 3 at Sunshine Park, Roseburg

Bad weather: Elmer's restaurant at I-5 Exit 125; cell 541-537-0061

Info: [Dave Shrum](#), 541-672-8893

Saturday, April 7 at Bill Riegel Model Airpark, Salem

Bad weather: Flight Deck restaurant, 1 block south of the flying field; cell 503-871-1057

Info: WOLF: [Mike Hazel](#), 503-871-1057

- Bring any and all airplanes ... do any kind of flying!
- Every flight is an entry in the "flying raffle."
- Flying raffle prizes will be awarded after a drawing

Come to all three fun-flies and support three great Oregon CL flying groups!

Academy of Model Aeronautics membership required



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Po Box 505
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WOLF MEMBERSHIP FORM 2018 (NEW OR RENEWAL)

Membership Categories:	Adult	\$25 year
	Youth	\$5 year
	Family	\$40 year

Name (s)

D.O.B.

A.M.A. Number

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Mailing Address: _____

Phone Number: _____

E-Mail: _____
