

Circulator
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Newsletter of the Circle Masters Flying Club
Milwaukee Wisconsin
Academy of Model Aeronautics Chartered Club # 662

May 2016 Volume 13 issue 5

At The Handle

Ramblings from your Editor



If you would like to contribute material, please submit to the address on the cover or contact me at (715) 697-8458 I may be reached via e-mail at clmodman@wctc.net

Welcome to today's episode of the *Circulator*, the story of a meeting that's gone to the dogs. Don't forget, the May meeting is a week later than normal, due to the dog show at Sussex Village Park. You have been notified. If you show up on the 7th, that guy who just whizzed on your car tire and tried to slobber on your face is *probably* not one of your fellow club members. That having been said, the weather is showing some signs of warming up. Maybe we will be fortunate enough to get some flights in on the 14th. I hope you have been checking all of your planes and equipment to be certain they are ready and more importantly, safe to operate. We don't need any big, unfortunate "incidents" to ruin our reputation around Sussex that we are all responsible, stand up folks. After all, we bamboozled the locals for all these years, why ruin a good racket? Seriously, safety should always be on our agenda as item number one while flying. As the doggy deal demonstrates, if we lose our spot in the park, somebody else will always be willing to take it over.

I stopped by the museum in Oshkosh a few days ago and they had a very inspiring exhibit set up in the Eagle Hangar: Nose Art. This was a pretty cool display, there seemed to be a common theme running through most of the panels, I just couldn't quite figure it out. HA! Any red blooded American boy knows what nose art on military aircraft is all about, Chicks, and the racier, the better. All I can say is, hats off to the artists who produced these masterpieces. There is even a back room for the stuff that might be a little too spicy for the youngsters. Who are we kidding? In this era of music videos that would have made a sailor blush thirty years ago and the wonders of the internet, Kids have seen more evil temptresses by age 10 than we did even after finding grandpa's *Playboy* collection out in the garage when we were in high school. At least the EAA has enough class to warn families what's in store if they wander into the forbidden zone. I think you can handle it. In a whole nother direction here, the way these panels appear to have been hacked off of the donor airplane with an axe or some other such precision instrument is quite startling. Only a real airplane nut would notice that. Even if you aren't a full scale aviation enthusiast, check it out. The Mrs. will wonder what got into you when you get home. There's some pictures in here somewhere.

Also in this issue, for you motorheads, is another do-it-yourself project from your editor's shop. This one is a little more involved, but anyone should be able to get some good results if you apply a bit of patience and craftsmanship. Give it a look.

The other day, I was scanning through some of our issues from past years on the interweb. I noticed that 2011 was the last time we made a concerted effort to polish up our demos so they came off as a bit more organized and less hit or miss. Is anyone thinking this might be a good idea for this year? The problem is, it takes participation by a maximum number of members. The steam show is our big event for showing off, but what about using Lisbon (whenever that goes down) as a warm up? Spectators seem to get a kick out of the mass fly, but two guys out in the circle stepping on each other's toes and cussing doesn't have the same entertainment value as half a dozen. The jet also draws a crowd. We need our crew practiced enough at getting it into the air so that the crowd doesn't sit there wondering why some nut is trying to inflate a model airplane with a tire pump. We don't have to keep up non stop action all day, but if we pick an hour or two, it shouldn't be too difficult to maintain some semblance of fluidity.

One last bit: If you like the Evolution brand .36 control line engines that came out a few years ago, Horizon Hobby has been unloading them on ebay. This likely means they are already out of production and won't be available in the future. The price is good, especially for such a complete engine package. Get them while you can if this is a favorite of yours.

If you are planning to volunteer at Kidventure this summer, please remember that your sign up sheet is due by May 15th.

That's all for now, signing off from Circle Masters outpost North.

BigHow



CIRCLE MASTERS FLYING CLUB

Meeting Minutes for APRIL 2016

The April meeting of the Circle Masters Flying Club was held at the Pauline Haas Public Library, in historic downtown Sussex, Wisconsin on a sunny/snowy April Saturday. The date was the 2nd. If you were not there here is what you missed.

The meeting was brought to order by Pres. Greg at 1:02 PM. All members (12) had received the March newsletter and had reviewed and approved the minutes from that months meeting despite one measly mistake.

Ralph K. presented his treasurers report and included an update on dues payment. All but one member has paid and that member knows who he is and needs to step up now. Ralph's report was approved.

REPORTS & ANNOUCEMENTS: Don reported on an email which he received from Roger Beltman regarding a proposed fun fly event to be held in Whitewater. It seems that due to local construction the flying field been filled with construction debris, making it unusable.

Greg & Don reported that at the Lisbon/Sussex Easter event they also gave away small gliders provided by Jason. The gliders had the club logo as well as some info on the club. It was voted to purchase more of the gliders to give away at other public events the club participates in.

OLD BUSINESS: Don has finally finalized the date for the Lisbon Heritage Weekend Fun Fly event. It will be held on Sunday August 14th, probably.

NEW BUSINESS: Greg read correspondence from the president of the Pebble Creek R/C club regarding our members flying during one of their R/C scale events as a C/L flight demonstration. It was agreed that a few of us check out their location to be sure it is suitable for C/L operation and report back at the next meeting.

WEB BUSINESS: The web master was not in attendance.

All business having been discussed, Greg asked for a motion to adjourn. It was moved and seconded to adjourn the meeting at 1:55 PM.

SHOW AND TELL: There was no show and tell.

Submitted by: Wayne M. Schmidt, Secretary

04/21/2016

Upcoming Events

Go to the meeting...or else

May Meeting: Saturday May 14th, Sussex Village Park flying field, weather permitting, Meeting at 1:00 PM with flying before and after. Dog show is on the 7th.

June Meeting: Saturday June 4th, Sussex Village Park flying field. Meeting at 1:00 PM with flying before and after the meeting.

July Meeting: Saturday July 2nd, Sussex Village Park flying field. Meeting at 1:00 PM with flying before and after the meeting.

Wisconsin Control Line Championships: Sunday June 5th, Mukwonago High School. Stunt, Scale and Combat events. See contest flyer.



Nose Art Exhibit

Go check out the display at the EAA museum in Oshkosh.





Making a custom venturi for your engine- with your host, BigHow

If you are going to hear that sweet music of a well tuned internal combustion engine, you need to get the air in somehow. If you fly control line, that is usually going to mean an intake venturi. We already covered some of the topics dealing with throttled engines, here we are talking about a straight on through, run until you're out of fuel, all or nothin' venturi. If you purchased your engine all set up for your intended purpose, you don't need to worry much about the stock intake. However, what if you buy some gem at a swap meet and it has an R/C carb? Maybe you need to fine tune a stunt engine so it will behave just the way you like through the pattern. Sometimes, a guy might want to squeeze every bit of power out of his mill and the factory intake is strangling its potential. Whatever the situation, a venturi change could be in order. Since there aren't typically a whole lot of choices available for a particular engine, you might be tempted to think you are stuck. Not so. Make the venturi you need, it's not super difficult. Since you have tons of hands on skills from building ukie ships already, you can do it. For a project like this, it might be a problem if you don't have access to a lathe of some kind. In desperation, you can get by with a drill press and files. I know that it can be done, I have seen it and it can work.

Let's start planning this out. First we are going to consider what size of intake we need for the purpose at hand. Your buddy BigHow can't help you much here, this variable will be dictated entirely by the use you have intended for your engine. I will go out on a limb here and try to help you a little, then you may need to do a bit of trial and error if this is new to you. For a 35 or 40 sized engine, with the spray bar passing through the venturi ah la Fox and O. S. stunt engines, keep it down to a hair under a quarter inch for the final inside diameter. It will run, how thick your spray bar is will be another factor to figure into the mix. You also need to consider that you need to start a bit smaller, when your venturi is shaped and finished up nice, the I. D. will have enlarged from the process. Stunt intakes can end up being amazingly small. The aerobatics nuts are after fuel draw and often a four –two cycle break. Both of these favor an opening on the small end. Speed mongers on the other hand, want a gaping intake to let in big air. No fuel draw here, this screamer will need some kind of pressure feed system. A really good place to start, if floundering in the dark isn't your style, is measuring the venturi on another engine that runs the way you want yours to go and start there.

Ok you have an idea formed on how you want your engine to perform and you decided on what size your first effort will be. What should you use for materials? There are two directions to go here. First there's metal and then there is some type of plastic. Metal, aluminum is your most likely choice. You will need a piece of aluminum rod, as close as possible to matching the final outside diameter that your engine requires. 2024 aluminum alloy is the way to go. It will have some suffix that denotes the treatment applied to the alloy, T3 or some such. Don't worry too much about this, but 2024 is about the sweetest machining aluminum there is. On the other hand is plastic. Unless you like to suffer, go the synthetic route. The logical choices in plastic are nylon and a wonder material named Delrin. Do yourself a favor, use delrin. This stuff machines beautifully, even with very basic tooling and polishes up like glass. Delrin is also extremely heat resistant. If you can't get your grubby paws on delrin, you might scrounge up some nylon and get by. Once again you need to get a piece of plastic rod that approximates the outside diameter you need to work with your engine, or turn off a whole bunch of excess material. Waukesha county has suppliers for both metal and plastic, in case you are uncertain where to get the good stuff. Midland Plastics can supply delrin rod in a multitude of sizes, in black or white. SpeedDee Metals can fix you up with aluminum rod in nearly any diameter or alloy. Both places will sell you an inch, several feet or anything in between. Look them up on the internet to get locations.

Now down to the tools you will need. I have a small lathe, a Shure Line that works great for this type of project. Some hardcore machinist types don't like Shure line stuff but, Boeing uses a fair number of them to make some small prototype parts. We also have a couple certificates hanging in the family room that say AMA national speed record on them. Convincing me that the little Shure Lines are just fine for toy airplane engine parts. Harbor Freight sells some smaller machine tools. You don't need the best in the world for this type of job, simple and cheap should work fine. No lathe? The old drill press method will work. Use some common sense and be careful. You are also going to need some appropriately sized drill bits and several grits of wet or dry sandpaper. Drill press warriors are going to need a couple files. Some polish would be a nice touch. This could be as simple as Du Pont white rubbing compound or as fancy as flitz metal polish. I use some stuff called "Blue Magic", it's a kind of knock off of Flitz. There are even higher end polishes designed especially for plastic, the Novus brand is fantastic, but, expensive and hard to find. For what I consider the most important tool in making plastic venturies, I swear by a special knife like device called an Intalio printing plate scraper. Some art supply stores carry them. The scraper makes shaping the opening of an air intake sooo much easier. Oh yeah, you need a nice precision hack saw too. Time to quit talking and start making.

Ok, we are making a sport flying intake for a .35. We need a nice length of our Delrin rod, in this case, it's 1/2 inch O. D. X 1 inch in length. Use the hack saw Grandpa left you in his will and cut it off to length.

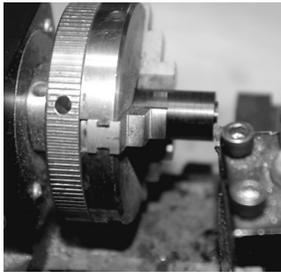
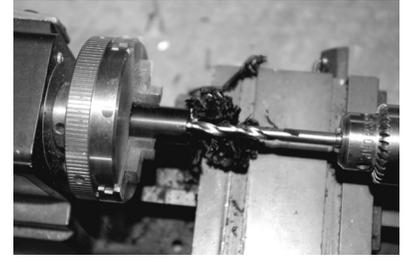


Next, we need to face our blank to make the ends flat and true. No picture here, I'm sure you can figure this part out for yourself!



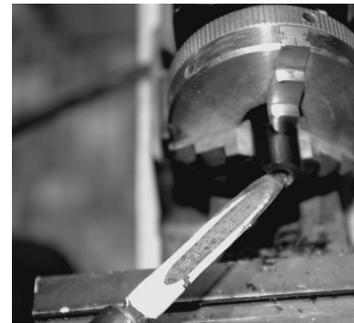
A center drill is used to mark the center for through drilling. A small diameter standard bit can be used as a substitute

Here we are through drilling with our slightly undersize bit. This example is a #6 drill. This will give you a starting diameter of .2040" inside. Size to suit your project.



After drilling through the piece, we need to turn the shoulder of the venturi to fit the engine crankcase opening. Carefully measure the diameter this portion needs to be and then turn the diameter a thousandth or two OVERSIZE to achieve an interference fit into the case. This will form a good seal and eliminate the need for an o-ring to seal the venturi to the engine. The shoulder must also be the correct length to fit your engine. Sorry I can't help you much here, length and O.D. of the shoulder will depend entirely on the engine being fitted.

Here is where your inner artist gets to shine. Use the print scraper to carefully bell mouth the inlet end of the venturi. You could also use a countersink or a tapered reamer to accomplish this step. Be very careful here. You want the point where the spraybar introduces fuel into the airstream to be the smallest inside diameter of the entire length of the venturi. This is critical for good fuel draw. Don't bell the opening too far into the venturi!

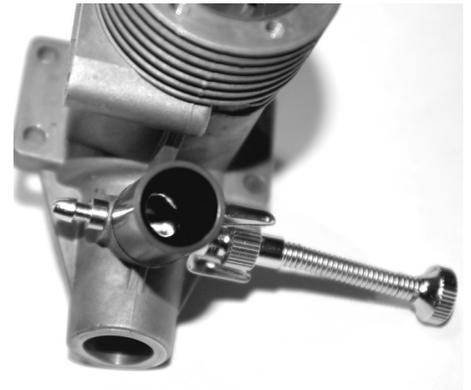


Now it's time to smooth out the interior surface. Try to control this step so you don't end up boring out your venturi by over sanding. That being said, it will take some substantial work to smooth the venturi bore. Go in steps from 220 up to 600 grit sand paper, used wet. Even finer grit will make your venturi function and look better in the end. Take your time, you need to get a feel for this process.



After your venturi is smooth on the inside, use a mildly abrasive polish to really make it shine and give the air a smooth path into your engine. Here Blue Magic and Novus brands are shown. It should be mirror like when you're done!

There you have it. Cross drill for your spray bar and go start 'er up! Enya makes very good needle valve assemblies, often sold new on ebay. I like the .29 to .40 models with the spring type shaft best. Have at it!



WISCONSIN STATE CONTROL LINE CHAMPIONSHIPS

June 5TH, 2016

Presented by the Circle Masters Flying Club

CONTEST DIRECTOR: PETER MICK 262 377-6137 pmick82541@aol.com

WHERE: Mukwonago High School, Mukwonago, WI

- ALL PAMPA CLASSES WILL BE FLOWN ON PAVEMENT
- SCALE JUDGING WILL BEGIN AT 8:30 am. OFFICIAL FLIGHTS WILL BEGIN AT 9am. Note to Scale participants: the Scale circle is shared with Stunt contestants, so static judging will begin at 8:30 am. Please try to register before then.

OFFICIAL EVENTS

All PAMPA stunt classes, Combined Old Time, Classic and Classic 30 event, Sport Scale, Profile Scale, 75 MPH Combat (4 rounds).

UNOFFICIAL EVENTS

Half A Scale using Brodak fly-in rules available on the Brodak Fly-in web site (Mufflers are not required) and ½ A Stunt (Two classes, Beginner and Expert. Standard PAMPA patterns will be used).

**New for 2016 – Profile Stunt (Expert, Advanced and Beginner) and ½ A Combat

A PRACTICE CIRCLE FOR PAMPA STUNT WILL OPEN AT 8 AM.

OFFICIAL FLIGHTS WILL BEGIN AT 9 AM.

MUFFLERS FOR STUNT AND SCALE (OTHER THAN HALF A) ARE REQUIRED. THE MUFFLERS MUST BE STOCK, TONGUE OR AFTER MARKET MUFFLERS

Registration begins at 8 am.

Events: All Scale Classes

Registration fees: \$10.00. No additional charge for second or third individual entries.

Events: All PAMPA Stunt Classes

Registration fees: \$10.00. No additional charge for second or third individual entries.

Events: 75MPH Combat

Registration fees: \$10.00.

There is no entry fee for Junior contestants.

HWY I-43 to WI State HWY 83

North 2 miles to County HWY NN

West ½ mile to Mukwonago High School

