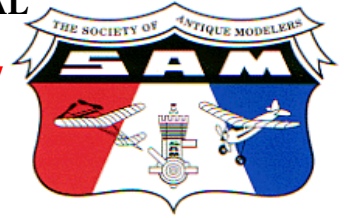




**THE NEWSLETTER OF SAM 26, THE CENTRAL
COAST CHAPTER OF THE SOCIETY OF
ANTIQUE MODELERS. FEB. – MAR. 2020 #347**



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THE NEXT CHAPTER BUSINESS MEETING is normally bi-monthly, so it should happen in early April, since we last met in early February. We mostly planned for the upcoming John Pond Commemorative contest which is scheduled for the spring this year instead of the fall.

The flyer for the event was in the December newsletter. It's coming up quick, on March 21 & 22, so mark your calendar and tune up your models.

THE EAA IS ON OUR SIDE in the power struggle with the FAA as they impose unnecessary regulations on our hobby. I was handed the February edition of Sport Aviation Magazine, which is the official publication of the Experimental Aircraft Association. Many EAA members are also active or former model builders.

Sean Elliott, the VP of Advocacy and Safety for EAA wrote an essay titled "Preserving Legacy Model Aviation", which outlines their interactions with the FAA, pointing out the difference between conventional (legacy) RC flying and drone flying.

Few if any motorized vehicles or hobbies have a better safety record than model airplanes insofar as being a hazard to full scale aircraft. FAA can effectively ground us, but they can't ground the millions of wild ducks, geese and other birds which regularly strike airplanes. Nor can they control them to fly below 400 feet. At least we have eyes, ears, and the intelligence to recognize the hazards, plus guidance to avoid them.

Most FAA officials are bureaucrats, not model builders, so we need to court and educate them. Unfortunately, the primary line of business of any bureaucracy is organizational growth, not suffering the effects. There have been some really wild and scary proposals tossed out. One example put forth 5 or six years ago was a proposal to tax each model flight \$5. Imagine writing and mailing a check for 5 bucks to the federal treasury, or possibly the FAA itself every time you launch your 1/2A ship. That one was so ridiculous, it crashed before takeoff.

A more likely proposal to be enacted is a requirement for model aircraft to be equipped with a transmitter to broadcast exact location, altitude, etc. whenever in the air. Never mind that the electronics hasn't yet been invented, nor have the added cost and weight to a model even been estimated. The closest analogy I can think of is if the Coast Guard was to require every row boat, canoe, dory, etc. to be equipped with approved radar and sonar units to protect ocean liners, submarines, etc., from collision with those potentially hazardous threats.

MODEL AVIATION MAGAZINE arrives at my house about last each month, even if my surname begins with an “A”. So today (Feb.28) the March issue came with several articles detailing the things the FAA potentially has in store that would effectively put model building out of business and/ or make it an outlaw activity.

One of the craziest proposals is that after flying sites have been initially registered there will be no new ones allowed to be established – ever. Other than very high dollar “owned” flying sites, the average site probably has a lifespan of well under 10 years. Obviously some of our “Governors” want to eliminate model building entirely.

A NEW NEWSLETTER: Finally! After years of watching the disappearance of club newsletters, there’s a new Newsletter from CAAMA or the Capital Area Antique Modelers Association, SAM Chapter 10. Jim Coffin is the Editor. It’s starting as a quarterly, with no dues until their treasury gets low enough to need probably \$10/ year. The initial issue is just three sheets of 8 ½ X 11 paper but it will probably grow with time.

Their organization seems to be allied with the Flying Aces club and the DC Maxcutters. Their emphasis is be toward free flight and rubber power, although there are RC fliers among them. The first issue has a roster of 28 names, a small scale plan for a “Senator” rubber model from Keil Kraft Kits, and a couple of technical articles.

I’ll send them an exchange newsletter, and for anyone wanting to get aboard, Jim Coffin is both Editor and Secretary –Treasurer. He can be reached at 4604 Hillbrook Dr., Annandale, VA 22003 or 703-256-3865.

DOUBLE ISSUE OR ½ ISSUE? Around this season each year, the news grows a little thin and we come up with a two month issue. At least we haven’t gone to quarterly. It’s been even a little tougher this season, as your Editor and the local guys haven’t gotten out to fly very often. It’s partly the long commute and partly the cool weather. Yes I know, many fliers would be happy to fly in our average temperatures, but we do sorta turn into pantywaists when global warming keeps failing to show up as predicted.

RE-RUNS will also be featured this time, or should we call it “the best of” as they do on radio and TV whenever they do re- runs. Actually I like an occasional reminder of past technical problems and their solutions, so I’ll be quicker to recognize the same thing when it happens again. I’ll reference the original issue # and date to flag re-runs, (as per below) and I may edit them a bit to bring them up to date.

#244 (2-10) From **Gerald Martin** (RIP). I’m recommending this oil which my Son Lance found for me at an Amarillo gun shop. It’s **Hoppe's Bench Rest 9**. I’ve gone through my engines and it's been some time from first to last. Some of the engines that were stuck fast not only freed up in a couple of weeks, they are staying free. Having been run on glow fuel (castor) or just stuck from being NIB, they all have responded well to the oil. It’s the best I've tried. GM

#242 (12-09) **REMOVING MICAFILM:** Hint suggested by Ralph Cooke.

It was finally time to replace the Micafilm covering on the 20+ year old Kloud King. The Balsa-Rite adhesive used on the wood had turned brown in the sun years ago and the discoloration showed through the translucent covering. So for years, I've been telling anyone who was curious that the ship was built in 1938, which is (sort of) true.

It's a pretty straightforward job with Monokote and other heat shrink plastic coverings, but Micafilm is one of the messiest coverings to remove. With most films, you just apply heat and tug the material loose. But with Micafilm the fibers tend to hang on to the adhesive that was applied separately to the wood. As the film separates it usually leaves a fuzzy mess of fibers hanging onto the wood, to be dealt with later at a slow tedious pace.

So I posted a question on SAM talk asking for any helpful hints. Ralph Cooke answered, suggesting using lots of heat. I'd been using heat, but just enough to release the covering. Most of it that is. So I found the secret, as Ralph suggested, was lots of heat, plus more patience. I worked the heat gun in close at 1 or 2 inches and pulled the covering away much more gently, allowing more time for the adhesive and the wood itself to be heated more completely under the covering.

It worked out well. I found the slower I hurried, the faster and cleaner the job went. The clear (whitish translucent) film comes away most cleanly. On some of the colored films the color coat tends to separate itself from the fiber base, sort of like a layer of paint that didn't adhere well to the fiber. This makes it harder to heat through to the adhesive, and requires even more time and patience. I slightly charred the wood in one spot so the process takes some experience.

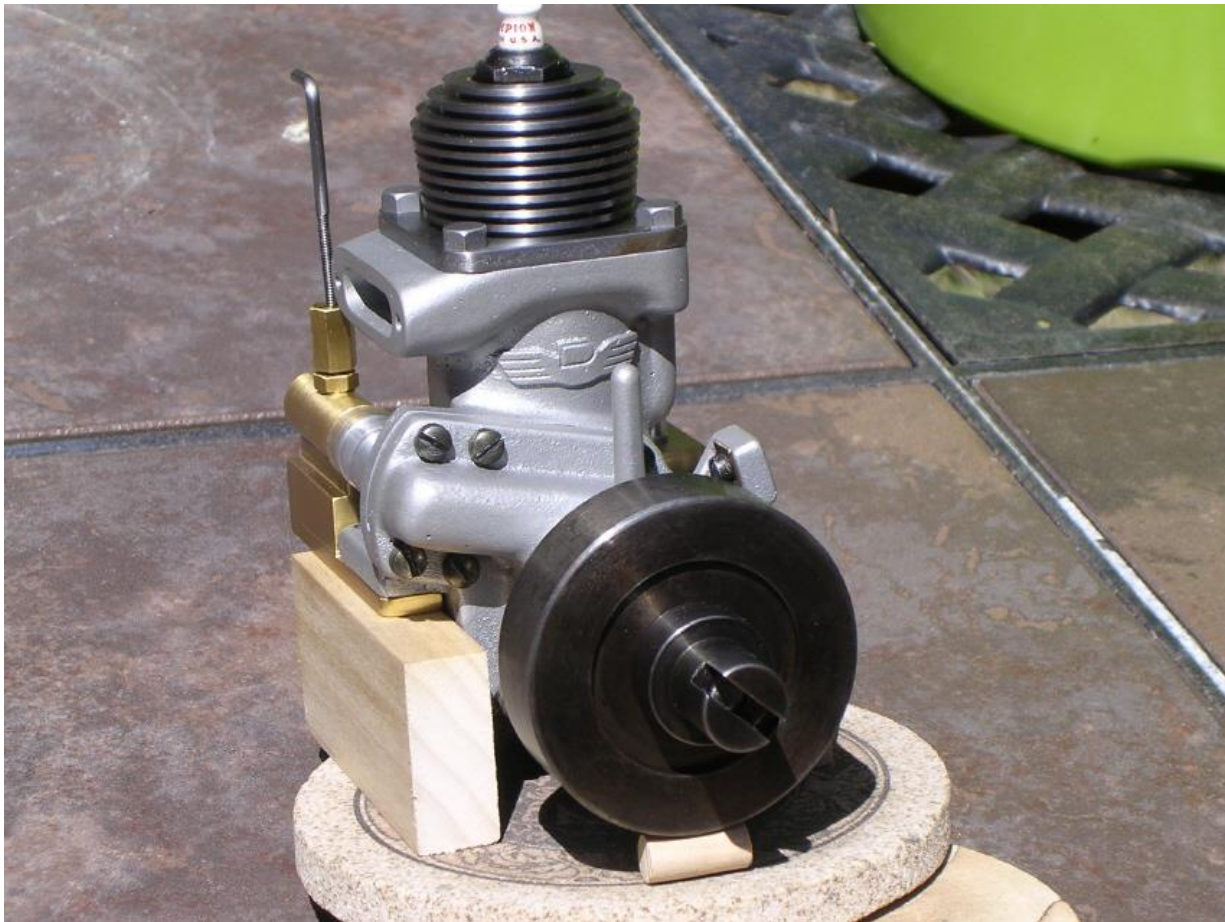
Most of you know this already, but much of the secret of removing any heat shrink material is to cut the film into smaller sections with a sharp knife, so you're removing reasonable bite sized chunks at a time. I find a single edged razor blade does this best with little or no damage where you have to lightly score across the wood backed areas. Open bay areas can of course be sliced all the way through for removal.

If I work with Micafilm again, I'll use Sig Stix-It for adhesive instead of Coverites' Balsa Rite. The Sig product has fewer problems. Micafilm comes closer to resembling a tissue & dope job, but I think I'll go with a regular plastic film for the re-covering.

Incidentally, I once found that Micafilm doesn't support combustion. A backfire ignited a little fuel on the covering, and as the fuel quickly exhausted, the Micafilm just snuffed itself out. Later testing showed that the film will shrivel and burn while held over a flame, but will stop right away when the flame is removed.

#245 (4-10) **DEFENDING THE LATE RISER:**

Some of us sleep later than others, and are often criticized by obnoxious "spring out of bed types" as being indolent. But there's a good scientific basis for rising close to high noon. It involves conservation of energy, which can be used later in the day to help accomplish more work. Consider this: The little old moon's gravity can pull an entire ocean to one side causing the tides. So think what the much larger mass of the sun can do when straight overhead to help lift your little old body out of bed.



#249 (9-10) **IT'S A DOOZY!** We're all aware of Duesenberg's fine automobiles and engines. But did you know they also made this fine looking model engine along with model race cars? High quality is very evident here. And the early 20th century expression "It's a doozy" actually did stem from the high quality of the Duesenberg autos. Like their bigger engines this one was supercharged with a blower hiding behind that flywheel. And that blind cylinder says they planned to have no blown head gaskets due to the higher compression.

244 (2-10) **DEANS ULTRA** electric connectors: These are good solid connectors, but they aren't too easy to connect and disconnect, especially in tight places. The hint is to put a very thin coating of Vaseline on the conductors for ease of use. A toothpick works fine for application, but wipe away any excess afterward to keep from accumulating grit. I've used silicon dielectric grease with comparable results. But Vaseline might be slicker, cheaper and probably already on hand. Neither Vaseline nor silicon grease showed any conductivity on my Ohm meter. After wondering how an apparent non-conductor aids conduction, I read up as best I could on dielectrics. Dielectric suppresses static sparking on mating conductors, but apparently allows plenty of metal to metal contact as applied in a thin layer. It also suppresses corrosion as it's been doing for ages on auto battery terminals.

TWO VERY ODD ignition problems are solved on this page:

#246 (5-10) **IGNITION PROBLEM SOLVED!** One of life's great adventures has to be operating spark ignition engines. There's always some unique glitch popping up which may or may not get solved during one's lifetime. It once took me two years to find a "no go" ignition problem in a B class ship. That was mostly because I gave up, flew it with a glow engine for the two years, but finally came back with more resolve. It turned out to be a hidden wire connection to a micro-switch. Since I couldn't see the connection, I'd relied on a continuity test with an ohmmeter. That test indicated it was switching ok and had continuity. What was hidden was that the multi strand wire had broken down from vibration to a single small strand attached to the switch. That wisp of wire was able to handle the small current for the ohmmeter, but not enough to pass the heavier current needed by the coil to run the engine.

#246 (5-10) **BUT THE CURRENT ADVENTURE** concerns an **O&R 60**, which started biting me most severely while hand propping. It wasn't backfiring; it was "front" firing. That is; firing very early with the prop coming on around at high speed and returning me one severe whack for every flip I gave it. I do wear a leather glove when hand propping, but it wasn't enough. Dick Fischer forwards a quote that's appropriate here: *"Propellers are notorious for inflicting serious bodily harm while vigorously defending their space" George Aldrich.*

This behavior isn't normal for an O&R 60, as you can usually hand prop them at full advance without retarding the timer and losing the previous setting. But in this case, even retarding the spark didn't help, and actually seemed to add to the engine's enthusiasm about whopping my poor finger even harder. Even retarded to about top dead center, as verified with a timing light, it was doing its thing on my fingernail. It seemed unlikely that the timer could be the problem. Something seemed to be disconnecting early, setting off the spark early. So I began looking for a loose connection or other glitch in the wiring or ignition components. This went on sporadically for a couple of weeks, but it was a wild goose chase.

Putting an O&R timer back together and adjusting the gap is a tedious little job, so I'd ignored that teardown as long as possible. Besides, the symptoms didn't seem to lead to the timer anyway. Wrong! When I finally pulled the timer, I found the problem. Whoever the Neanderthal was that owned the engine before me had used an electric starter on the poor thing, repeating the crime often. I had hand started it for some time before the problem began. It had taken awhile for the delicate little timer parts to wear in just so and create the problem.

The back side of an O&R steel drive washer has a flat that's smaller in diameter than the case front. Starter usage had ground slop into the case front, allowing the crankshaft to back up into the case when hand propped. The front shoulder on the crank's timer cam cutout was backing up against the outer end of the moving point and kicking the points open early.

Detecting the problem is 95% of the solution. I lucked out by finding a couple of .010" steel shims with just the right diameter in my collection of miscellaneous junk. I epoxied the shims to the rear of the drive washer so they'd be properly centered to slip over the crank splines without dropping into the groove behind them. Next week at the field the engine hand started on the second flip. For any of you guys using starters on O&R engines I'd advise you to stop. If not, you should at least install a proper shim behind the drive washer.

#246 (5-10) **BROWN JR. TUNEUP:**

SAM member Bob Slater E mailed a series of questions beginning with a fuel question to the SAM talk group. I answered it and then ended up with a series of personally addressed Email questions regarding setting up his new Brown Jr. E Bay acquisition. Here's an edited down version of some of his questions and my answers. Jim Hainen also answered some other of Bob's questions to help get him started in Brown Junior flying.

Q: I have a gallon of Aerodyne fuel marked 70/30 for Super Cyclone, red color. I think its alcohol based but can't tell for sure by smell. Does anyone know what it is or how to tell?

A: I'm 95% sure it's alcohol based. The red indicates synthetic oil and 70/30 is usually a standard FAI alky/oil mix. Put a little in a suitable dish outside and light it on fire. Alky based will burn almost invisibly, even with oil added. Gasoline based will burn bright orange or red with some black smoke.

Q: its alky based and burned like you said. Should I add castor to use it in a Brown?

A: Probably not needed, as 30% is an oil rich mix.

Q: I received the EBay Brown and the points don't quite close. Should I bend the moving point to adjust? What's a good gap?

A: Spring steel points break easily if bent. The Brown has a method of point adjustment that you can see better with the drive washer removed. Loosen the timer's clamp ring and you can rotate that eccentric insulator inside it, which will move the fixed point in and out for adjustment. Gap isn't critical on a Brown because the cam shape opens and closes the points so abruptly, that gap has little effect on dwell. And the Brown doesn't run fast enough that a long dwell is critical.

Q: Actually my EBay buy was for two Browns, one for parts. How hard is it to remove a Brown cylinder? Thanks for your tips.

A: I take the cylinder off a Brown by just clamping two short lengths of 1/8" music wire into a strong vise. You space the wires just right to fit the holes in the head with only short stubs of wire sticking up. It makes the vise and music wire into a wrench. You can then turn the crankcase off the cylinder by hand.

Q: New problem. The prop drive washer on my Brown is absolutely smooth. It is hard to get it to grab a prop for tightening. How do I get it to do that - friction tape? Emory paper glued on to it? What? Thanks

A: Rough threads and friction are the main problem. Chase the threads on the crankshaft and the prop nut with 1/4-28 tap and die, which will relieve the friction and allow the prop to tighten normally. To run a die over the crank threads, invert the engine and fill the cylinder with fuel or oil in the exhaust to keep the crank from turning.

Q: It runs! Thank you for all your help. Know where I can get one of those exhaust manifolds for it? Mighty messy straight back...Many thanks again!!!

A: The skinny small diameter (Factory?) exhausts cut down RPM and run hotter according to my tachometer and infra-red thermometer. I made a couple extensions out of larger diameter but shorter K&S brass tubing, squashed slightly oval and held on with a garter spring around the cylinder. That was better. But I finally ended up with just the aluminum exhaust deflector shown in the Email attachment. (*ED: See photo on next Page.*)

Apr 28, 2010 06:39:25 AM, Bob Slater wrote:

Bob and Jim, Thanks much for your help. As I said, I'm getting a real kick out of my Brown.



Here's that Brown junior exhaust deflector mentioned earlier. It doesn't restrict exhaust flow nor cause hot running as did those restrictive little clamp-on exhaust pipes. It's held on by the spraybar nut and has extended "legs" down around the intake tube to prevent rotation. It's all formed from one piece of aluminum sheet.



And here's a simple little wrench I made from 1/8" music wire to remove the brown cylinder. You place the tool in a vise with the legs up. Invert the Brown over the legs and unscrew the case by hand.

Caution! First be sure the piston is free inside the cylinder, or you'll bend or break the con rod.

#244 (2-10) **CERROBEND** from Van Wilson: Guys, I just stumbled on this info, which I'd never heard of before. What brought it up was a stuck glow head in a Cox engine. One that had no tool flats to hold the head with the Cox wrench.

It melts below the boiling point of water, 153 degrees F. You melt it, insert the part, let it cool, unscrew the part, put the part and Cerro bend back into hot water to melt it again and remove it. It comes off cleanly. I've used this on many a stuck part, and use it to fixture difficult to hold parts for machining on occasion. Cerro bend can be found at most machine tool on-line sellers, and you'll find it on eBay. The folks at MicroMark sell it, too, but at a premium. Van *ED NOTE*: I bought the same or similar material years ago from Brownells gunsmith suppliers. I think it may have had a different name, so was possibly a slight variation in alloy. But it's probably available online under more than one name, probably just listed as "low melting point alloy".

#247 (6-10) **SPRAY BAR ORIENTATION** in the venturi was a subject brought up on the SAM Talk chat site by Tandy Walker. It opened up a flood of Email discussion eclipsed only by the Gulf oil spill on TV. Tandy's basic question was where should the spraybar hole be placed inside the venturi? Some of the answers were scientific to the point of being incomprehensible to many of us. Here's an example:

"I believe that the apparently different opinions on this matter can be reconciled by looking at the attached figure. But before that a quick explanation. In the figure, air flow from the left is assumed to go around the cylinder (spraybar) and there are three curves for the pressure distribution around the cylinder. The pressures are measured in the radial direction, as shown in the figure, the positive pressures inward from the cylinder, negative pressure outwards. The outer pressure curve, in solid line is the theoretical pressure distribution assuming flow with no viscosity, in essence a very high Reynolds number of the flow in the intake. In that case the minimum pressure is located at 90 degrees with respect to the flow. Yes, but the flow in the venturi is not very high velocity flow and its Reynolds number (*) is probably quite modest, so this outer line result does not necessarily apply here. If one looks at the figure, you can see that as the Reynolds number of the experiments decreases, the negative pressures on the rear part of the cylinder become more uniform. In other words, it does not matter where you orient the hole in the spraybar to. The engine will suck fuel equally well at 90, 120 and 180 degree positions, and we know from experience that engines run quite well with the carburetor in such orientations."

Note: Reynolds number = air velocity x venturi diameter/ kinematic viscosity of air
 The figure below comes from the experiments of Eisner in Germany and is quoted in the Fluid Mechanics book by Hunter Rouse

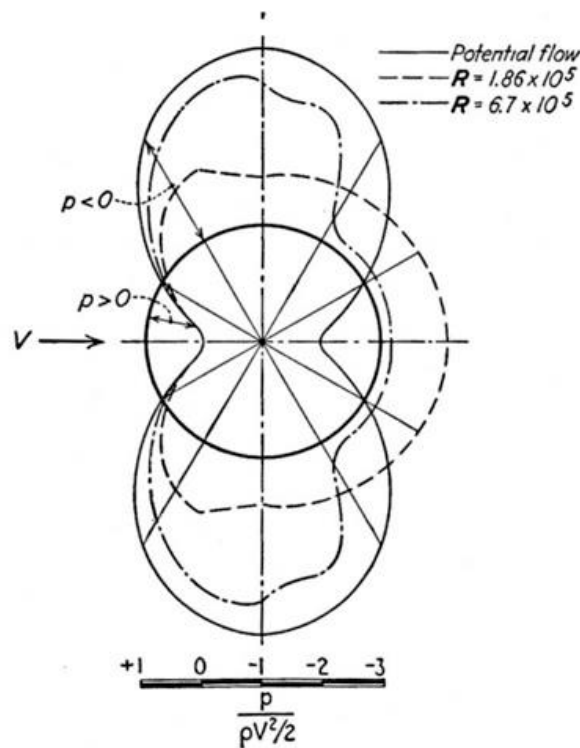


FIG. 100.—Pressure distribution around a circular cylinder.

ODDLY ENOUGH, Reynolds number was mentioned in several of the responses, but I don't recall Bernoulli being mentioned by any of them. With the hole placed across the incoming airflow there is a reduction in throat diameter at that point, and consequently a speedup of the flow, resulting in a venturi vacuum effect. What we're after of course is maximum vacuum for maximum fuel draw.

The spraybars for many early engines came from the factory with the single orifice oriented directly downstream in the intake. Brown Juniors for one used that setup and even recommended it in their instructions. If we ignore Bernoulli, their theory was probably sound that direct intake suction in a restricted chamber would provide good fuel draw.

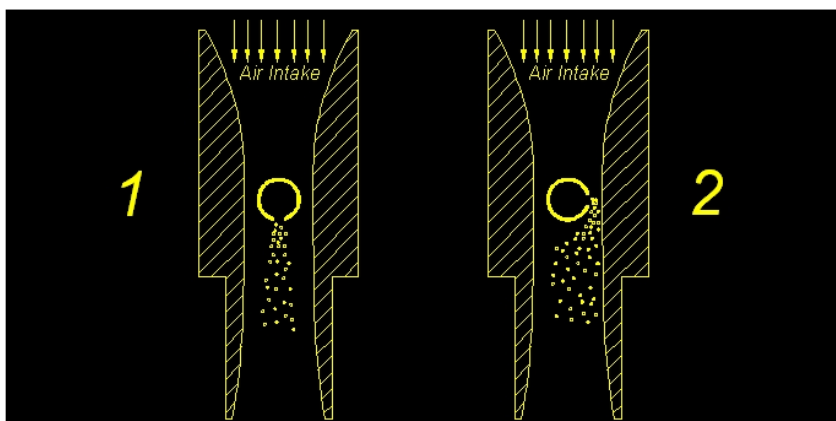
Many respondents to the Email chat reported that fortunately, the orientation didn't seem to affect running much, if any, as long as the single hole was somewhere between 90 and 180 degrees into the airstream. Later engines that were furnished with two spraybar holes were, of course always oriented crosswise to the airstream.

Several people favored an angle of 45° between straight across and downstream. That would of course be for a single hole spraybar. And it would seem to nicely split the difference between direct suction and Bernoulli Effect. Ralph Cooke, for one, cited lots of good experience with this orientation.

But I place my trust in a practical experiment conducted years ago. I forget lots of stuff, but a few things pack into my memory more tightly; especially if there are pictures. Some early non-RC engines came with dual needle valves for two speed operation. A competent modeler set up a twin needle K&B with a fuel feed to one spraybar and a water manometer to the other. The water manometer was just a length of clear plastic fuel line partly filled with water and drooped into a U shape below the engine. The spraybar with the manometer attached was set up for rotation and precise measurement of the single orifice position.

The engine was run at a steady speed via the "fueled" spraybar while the test spraybar was rotated into various positions. By watching the change of water level in the manometer, the best angle for maximum suction could be observed directly. The test found that an orientation of 90° to the airstream was best, but with little change up to about another 15° rotation downstream.

Duke Fox may have read and heeded that report also, because he supplied some engines with spraybars having two holes, but not exactly 180° from each other. That allowed placement of both holes at almost 90° to the airflow, but both slightly downstream; which allowed for some slight misalignment with no ill effects. However it did mean that we engine mechanics need to be aware of this, or we'd end up seeing parts of each hole when peeking into the intake. That's a little nugget to remember when dealing with engines that have been disassembled.



THE FINAL WORD IS: The neat little Arden 09 engine that Dale Tower was given at our Christmas Banquet isn't going to waste just sitting on a shelf. Dale's building a ship for it, and depending on progress, may fly it for fun at our upcoming John Pond contest at Bakersfield in less than three weeks.

A FINAL DUES DUN will be coming your way for those few who still haven't anted up for 2020. We'll do it privately to avoid any embarrassment to anyone who actually doesn't remember whether paid or not. But you certainly don't want to miss the big annual April Swimsuit edition of the newsletter do you?

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