THE NEWSLETTER OF SAM 26, THE CENTRAL COAST CHAPTER OF THE SOCIETY OF ANTIQUE MODELERS. LATE JUNE 2010 #247

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NEXT CHAPTER MEETING will be at Dick Fischer's on August 18.

SHOW AND TELL at the last meeting featured the framed up fuselage of a Custom Cavalier that's under construction. It's a joint Bierbauer/Fischer project and will be powered by an OK twin most of the time, and possibly a Forster 99 at other times. They're not sure it will be a serious competition ship, but we're all sure it will draw some serious attention when it makes its appearance at most any flying field.

THE RULES CONTEST mentioned last time has an extended deadline, assuming we don't yet have a winner. Ed Hamler who is the sponsor has departed for the European SAM Champs and will not be back for a few weeks. So far I Haven't heard from Ed that we have a winner, or for that matter, that we even have a contender.

1941 AMA RULES: Your Editor is a professional string saver. So out of my files the other day emerged the 1941 edition of the AMA rule book. It's just 12 pages long! Not only that but it's a shirt pocket sized pamphlet measuring just 3" X 8". That makes it equivalent to just over three single sided pages of standard size typing paper. But it is rather fine print. Some sort of philosophical comment may due here but I can't think of one and the thing speaks for itself.

MODEL SPEED RECORDS: Sailplanes have held many of the absolute model speed records for some time. I recall the flat course record of around 240 MPH, set in Australia some years ago. It was done by thermaling to high altitude, diving straight down and pulling level to go through the closed course.

More recently, Eut Tileston sent an Email that: Spencer Lisenby's Dynamic Soaring world record has just been broken by John Buxton. Flying in the California hills over the last weekend, John pushed the record to 445mph using a 100" span Kinetic glider.

John and Spencer have been steadily breaking records records over the last year and with R/C gas turbine powered models yet to break the 400mph barrier; it seems the gliders are out in front at the moment.

Editor: Dynamic soaring is a form of slope soaring that would require most of this newsletter to explain. And it would take a better explainer than me. But basically it involves some complex wind shear conditions found around certain slope soaring hills. Internet users can see an explanation at **rcspeeds.com**.

RESULTS OF SAM 21 34th ANNUAL OLD TIMER CONTEST-
- SCHMIDT RANCH. MAY 22-23, 2010

ANTIQUE (combined)	Flt 1	Flt 2	Flt 3	Flt 4	Total
1) Dave Warner Bomber/K&B 40 839	5:36	6:01	10:00		18:30
2) Stan Lane And.Pylon/OS 61	4:49	l:00	7:39	5:39	13:18
3) Mike Warner R/C .l	3:40	1:53	3:08	---	6:48

OHLSSON SIDEPORT					
1) Stan Lane Clipper	7:00	5:48	4:37	--	12:48
2) Gary Leopold Miss America	7:00	3:20	5:02	4:08	12:02
3) Von Warner Scram	2:40	--	--	--	2:40

OLD TIME GLIDER				
1) Dave Warner Oly 100	4:38	--	--	-- 4:39
2) Von Warner Spirit	3:09	--	--	-- 3:09

100 PLUS TEXACO Not Flown

SPEED 400 LMR					
1) Rob Warner Playboy Sr.	8:17	5:00	4:46	15:00	23:17
2) Dave Warner Miss America	11:59	5:10	6:31	--	18:30
3) Steve Roselle Dallaire	9:57	6:13	--	--	16:10
4) Mike Warner Record Breaker	9:16	4:28	5:00	4:40	14:16
5) David Saso Rambler	:04	:02	--	--	:06

TEXACO -- GLOW & IGNITION COMBINED				
1) Dave Lewis Bomber/OS 60-4S	4:08	39:24	--	39:24
2) Monty Pate Dallaire/OS60-4S	28:09	17:11	--	28;09
3) Dave Warner Bomber/ OS21	-4S 3:34	11:29	--	11:28
4) Von Warner Scram/??	3:54	5:19	9:04	9:04
5) Mike Warner Dallaire/??	:12	2:46	2:40	2:46

½ A TEXACO and 1/2A SCALE COMBINED				
1) Jake Chichilitti Baby Playboy	4:12	15:00	12:26	27:26
2) Mony Pate Dallaire	15:00	0	5:07	20:07

ELECTRIC TEXACO				
1) Rob Warner Playboy	43:20	--	--	43:20
2) Von Warner Playboy	9:35	10:20	--	10:20
3) Mike Warner Buzzard Bombshell	4:36	8:35	8:35	
4) Dave Warner Playboy	8:33	6:21	--	8:33

BROWN JR LER

1) Gary Leopold Poly	6:15 4:00 -- --- 10:15

A LER --- GLOW & IGNTION COMBINED

1) Mike Warner RC-1/??	2:14 4:17 7:00 7:00 14:00
2) Dave Warner Bomber /OS 19	4:39 4:16 5:14 7:00 12:14
3) Dave Lewis Bomber/ST19	7:00 4:15 :29 2:39 11:15

B & C LER --- GLOW & IGNITION COMBINED

1) Don Bishop Bomber/McCoy 60	9:00 9:00 --- --- 18:00
2) Don Bishop Bomber/McCoy 29	5:24 8:00 3:20 8:00 16:00
3) Dave Warner Bomber/OS 29	1:57 4:02 5:20 2:09 9:22
4) Mike Warner Dallaire/??	1:24 6:19 2:08 1:58 8:27
5) Stan Lane Ander.Pylon/ED Hunter	3:31 3:30 4:47 3:17 8:18
6) Dave Lewis Bomber/K&B 40RR	3:13 2:52 --- --- 6:05
7) David Saso Sailplane/OS40-glo	3:16 1:57 1:40 --- 5:13

The Overall Points Champion was **David Warner**
High Time Ignition Trophy went to **Don Bishop.**
High Time Electric Trophy went to **Rob Warner.**
High Time Glow Trophy went to **Dave Lewis.**
Concours winner was the Miss America of **Gary Leopold.**
On behalf of SAM 21, I would like to thank the Warner family for their attendance at our contest. When it was blowing Sunday, they were out there getting their flights in: really amazing . Also, the club would thank all those who attended.
Jake Chichilitti, the CD, mowed the take-off area on Friday to make it as smooth as possible.
Thanks as always to Miriam Schmidt, our host lady, for providing a great contest venue; Schmid.s Ranch just gets better all the time. Now, If only we could find a way to control the wind. Dave Lewis --- - SAM 21 Competition Director

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Short report by Steve Roselle
Saturdays weather was that one in a zillion combination of calm winds, balmy temperatures and puffy white clouds that all harbored a model-sucking thermal. One could hardly do wrong if one.s model was able to take to the air at all. Dave Lewis took his Bomber thru 3 successive thermals to take 1st in Texaco, while Rob Warner did even better with his Electric Texaco ship. Alas, about 3pm the Wind Switch was turned on and the increasingly dark looming clouds on the western horizon arrived, effectively shutting down modeling operations for the day. By then most flyers had completed their contest tasks, and quickly packed up and left. Saturdays evening Lasagna banquet was attended by very few stalwarts but was a cozy chat-and-munch session all the same. Sunday dawned breezy and few flew until later in the day.
Lunches both days were very well attended especially Saturday when we ran thru all our Sundays fixing as well. Miriam kindly went out and purchased more dogs, burgers, etc for Sundays meals. The club opted to try out the new combined Contest/FunFly rules but there were few FunFLy entrants and all those were hardened contest types as well. SO the test did not attract any flyers that weren.t already coming to the event. Oh well. The reduced contest event set was done to facilitate expected Fun Flyers who never materialized. But that did result in a streamlined awards ceremony on Sunday. The Fly-Either-Day format also reduced the official duties. C.D. Jake did an excellent job again this year as did all those who helped setup and take down the equipment, and generally assist in other ways. Many Thanks to Bill Vanderbeek for providing the Trophy Plaques this year. Snr

Here's what the opening day looked like on Saturday at "The Ranch". The weather obviously made for a laid back approach to conducting serious business.

APC PROPELLERS should be drilled or reamed from the backside according to information Dick Fischer received from the manufacturer. That's because the hole is precisely centered and aligned from the rear, but it's not necessarily true in front. Reaming would be OK, but it seems to me that drilling could result in more misalignment because the front face is irregular and would not lay flat on a drill press table.

This all started when Dick needed to enlarge a couple of props **to fit a McCoy 60**. That big 7/16" hole required by the McCoy doesn't leave much meat on the prop hub. And the APC hubs aren't solid, but are recessed around the hole, making things look even flimsier.

Here's some help: Fox makes prop shaft extensions for both 5/16-24" threaded shafts (Mac 60's) and ¼-28's (McCoy 29's). They are the same general form as the McCoy prop drive units, but slightly shorter and with the threaded sleeve nut 1/16" smaller diameter in each case.

One sixteenth doesn't sound like a lot, but when you compare a couple of drilled props side by side, there's a noticeable improvement. Some fitting is needed to adapt the Fox drive sleeve. A 1/16" slot needs to be added to mate with the McCoys'1/16" square shaft key. Like most of us, I don't have a 1/16" broach handy, but I did find a suitable small file and found it to be just a few minutes' job to slot the inside of the aluminum sleeve.

The Fox 60 size part is a 5/16'-24 X ¾" prop shaft extension, part #6545, and for the 29 it's ¼-28X ½", #6530. Each set has three parts, a drive sleeve, sleeve nut, and front prop washer.

Here are a couple more engines you will probably never see on the flying field. This one is a Bond BRL “A” model. I believe it had .56 C.I. displacement. Notice the apparently simple adjustment on the enclosed fixed point.

This engine looks like it might have pretty fair performance compared to its contemporaries.

But it’s much more valuable as a collectible than a runner. This one is not in my collection, and I can’t remember ever seeing one.

And here we have a Condor Copper King. It’s maybe a little less rare than the Bond above. It looks to have a similar adjustable enclosed fixed point. Notice how the throttle lever advances the timer through a linkage and gear arrangement.

The photo comes from “rureelybob” who’s a regular seller on EBay.

SPRAY BAR ORIENTATION in the venturi was a subject brought up on the SAMTalk 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 most 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

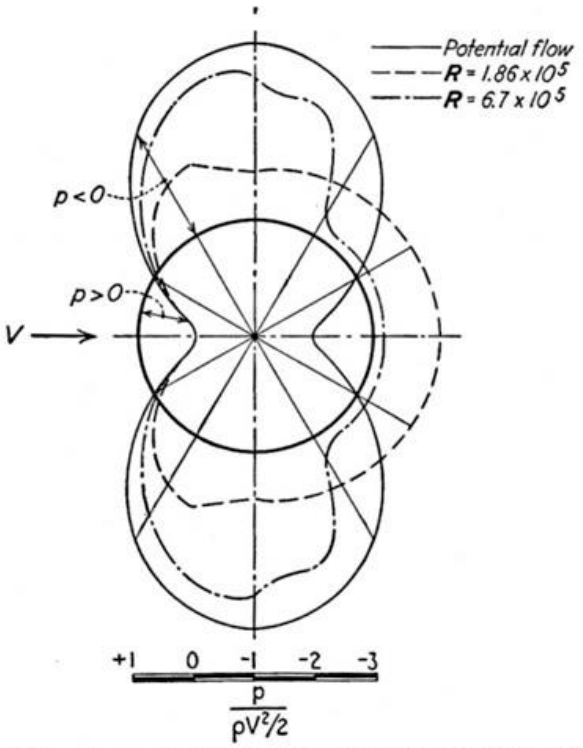


FIG. 100.—Pressure distribution around a circular cylinder.

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.

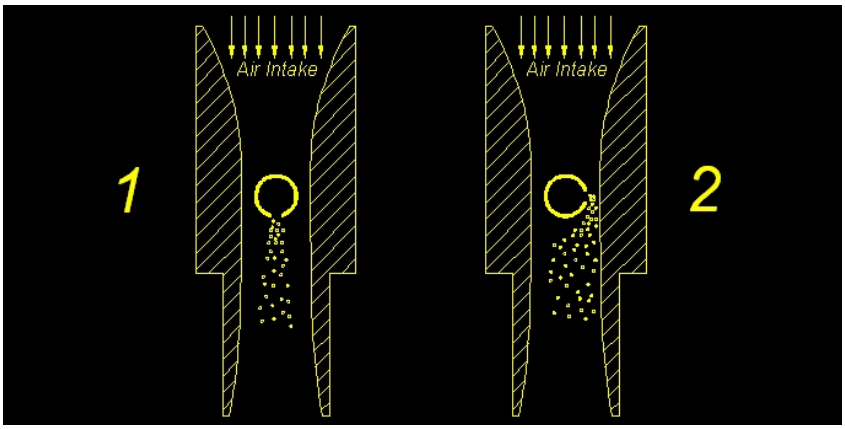
Many respondents to the Email chat reported that fortunately, the orientation didn't seem to affect running much, if any, as long as the single hole was some where between 90 and 180 degrees into the airstream. Later engines that were furnished with two spraybar holes were, of course always oriented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

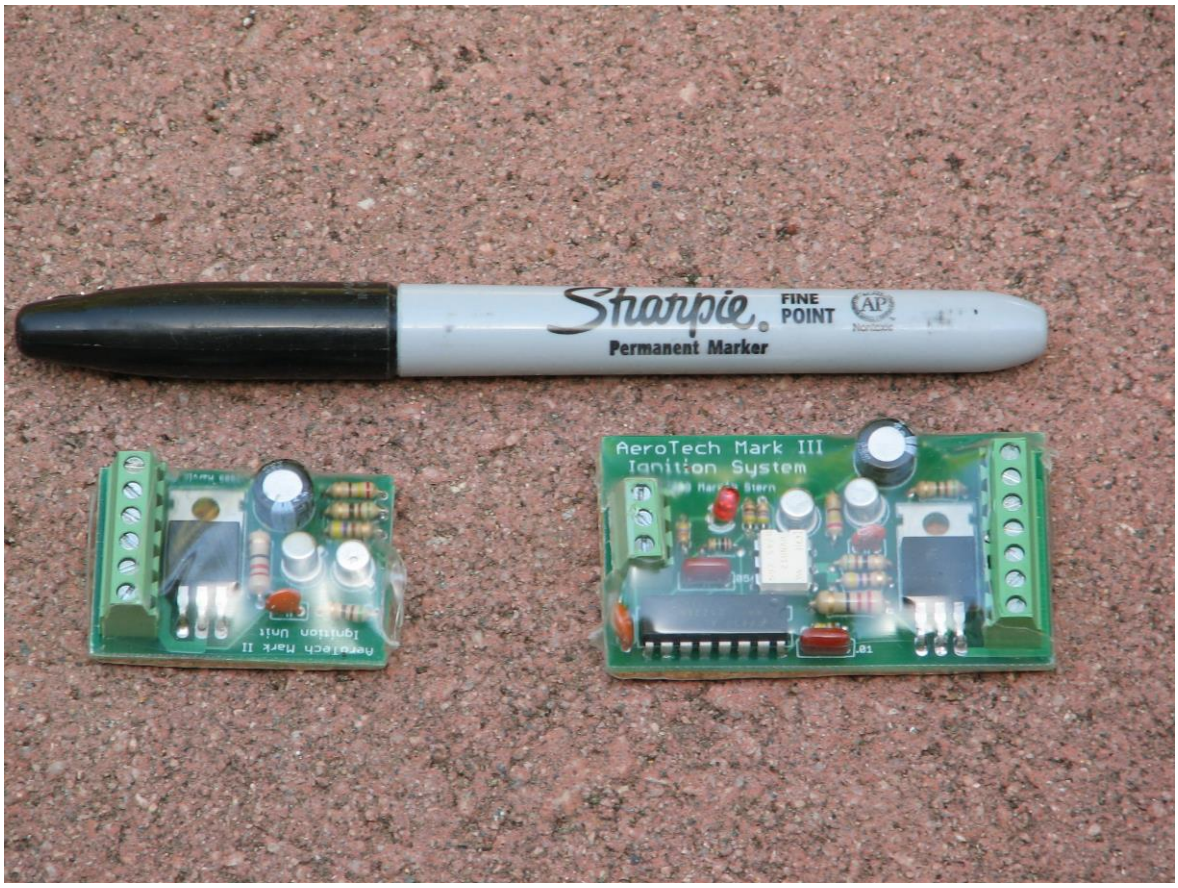
Several people favored an angle of 45° between straight across and downstream. That would of course be for a single hole spraybar. And it would seem to nicely split the difference between direct suction and Bernoulli effect. Ralph Cooke, for one, cited lots of good experience with this orientation.

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 MK II AND MK III ignition units above are new offerings from Marvin Stern. The MK II at the left performs functions similar to Larry Davidsons " SSIGNCO" solid state spark trigger which we tested and reported in our Feb. 2010 issue #244. The units may have been developed in response to a need pointed out in the Old Timers column in Model Aviation.

The MK II is a transistorized spark trigger with a built in coil saver safety feature. It automatically shuts off current to the coil within a second or so after an engine stops with the points closed. It's best suited to either free flight, control line, or an RC ship that has a separate RC cutoff switch installed. A FF or CL flier uses an auxiliary arming switch and wouldn't need or want the extra circuitry of the MK III model.

Those small screw heads you see are binding posts for the hookup wires. Using a wiring diagram printed right on the back of the units, you just tin the wire ends, slip them into the slots and tighten the screws.

The larger MK III unit adds a couple features useful to the OT RC flier. The three binding post screws you see on the left are for leads going to a receiver plug. You plug into the receiver shutoff channel to switch the unit on and off. The unit also adds a feature that allows one to plug in a booster battery to test run an engine without having to use the transmitter.

Marvin Stern advertises in SAM Speaks and can be reached at:
7 Abbot Ct., Jackson, NJ 08527, Phone 732-928-0884 or ign-sw@optimum.net

OUT OF CURIOSITY, after I tested Marv Stern's new units, and found them to operate as advertised, I ran another test. You may recall the troubleshooting item in the last issue involving an O&R engine that was firing early and beating up on my starting finger. The cause was a timer mechanical problem that made the points open early, creating a "frontfire" as I called it.

A backfire is usually thought of as an early ignition firing, causing an engine to back up against the normal running direction. What I call a frontfire is when an engine fires early, but has enough momentum to move on past top dead center and in the case of a model engine, bang into you when hand starting.

That front fire condition can hit harder than normal, because the pressure is starting to build up early in the cycle. The earlier it fires, the harder it can hit anything (such as a finger) in its path. The reason is that the cylinder pressure is building early while also still being compressed. So by the time it reaches top dead center it has higher than normal pressure and is poised to really whop you a good one.

You may also recall an article about how a two speed ignition system can backfire, (or frontfire) at switchover unless the switch is wired properly. That can happen because the switching action can open the circuit momentarily which at just the right (wrong?) time acts the same as the points opening, causing the coil to fire.

With the above two facts in mind, it occurred to me that if one were to be turning the prop over slowly with the ignition circuit hot, the new auto shutoff units might induce a firing spark at an inopportune moment.

So I rigged up a point simulator to make a steady spark in my spooky darkened laboratory. With the spark running, I shorted across the points to induce auto shutoff and watched for an extra spark when the system shut down. The extra spark never happened. I discussed the reason with the unit's designer Marv Stern. He gave me an explanation that he probably understood thoroughly, but I'm not sure I did. At least I couldn't repeat it for someone else to understand. Anyway, my imagined potential problem does not seem to be a problem at all, so I'll just have to find something else to worry about.

AHA, I HAVE IT:

MENTAL MUSINGS: A good model builder often adapts new techniques and mechanisms to improve the way our finicky systems operate. But in so doing we also need to do a lot of thinking ahead about unexpected consequences. Mixing computerized radios with spark ignition systems, and other gadgetry for example can and does cause surprises.

So when I read that some so-called high end motor vehicles are now using radar to avoid collisions by applying brakes automatically and faster than a human can do it, I immediately shuddered. I wonder what might happen when a piece of flat cardboard, a newspaper, or other piece of debris flies up in front of the radar sensor. Would that activate the radar brakes? Or could a stray current of any kind such as was suspected in the recent Toyota recall cause activation?

Here you are flying down the freeway with heavy California traffic and some cretin tail-gaiting on your rear bumper. Suppose those faster than human brakes were suddenly applied. The moron on your bumper chattering on his cell phone isn't going to respond nearly as fast as your high-tech radar braking system. At rush hour could the result be a massive 50 car pileup?

Bob Holman was on a roll after coming up with his building triangles, then the wing rib alignment aids, both made from precision laser cut plywood. He now has laser cut building boards, for construction of fuselages in truer alignment than you can do by eyeball. These are hard to describe, but users so far report them useful and he'll probably be bringing examples to contests for inspection.
Contact Bob at www.bhplans.com or 909-885-3959. He advertises in SAM Speaks.

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