

The Crank Calls

February 2007

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NEXT MEETING
Feb 17, 2006 AT
Robert Schutz's Shop
366 40th St. Oakland CA
Doors open at 9 AM
Meeting Starts at 10 AM

Upcoming Events

???

MEETING NOTES

1-20-07

Carl Wilson

The first order of business at BAEM is the introduction of guests. At the January meeting we welcomed three: Sebastian Peter, Ken Fitchhorn, and Steven Gravatt, George Gravatt's son.

Our treasurer, Lew Throop, reminded us that January is time to renew our memberships. Lew had a box of the 50th anniversary EDGETA membership badges and invited us to take one home and wear it to the meetings.

Don Catalano brought an issue of "American Iron", a magazine devoted to American made "big iron" motorcycles. The article of interest was the custom motorcycle by Jesse James using a Rotec radial aircraft engine. It was shown at the Legend of the Motorcycle show in Half Moon Bay last year. Photos and more info here:

<http://www.bikernet.com/bikebarn/PageViewer.asp?PageID=912>

A feature of our January meetings is the "election" of officers for the year. I set off "election" on purpose, because our elections have little of the formality of "I move....." and "I second...." Our attention to Robert's Rules is a bit perfunctory, and in fact some of our

officers have complained of being railroaded into office. We happily returned Pat O'Connor to the honor of being President, and yours truly, Carl Wilson, to Secretary. Lew Throop will serve one more year as Treasurer and has asked to be replaced next January. Dwight Giles agreed to serve one more year at Tech Topics, and likewise would like to be replaced next year. Steve Jasik will continue as Editor of our newsletter, The Crank Call, and Tom Hare continues as its Publisher. The one "new" face in this slate of officers is Ken Hurst as Events Coordinator, and of course you should recognize him as our long time previous president.

Tom Hare stood in for Mike Rehmus who was at Cabin Fever and talked about the proposed engine show in Vallejo the third Saturday of July. We will have to set up the necessary committees at the February meeting and will be asking all of our members to sign up for some task. This is a club project and your help will prevent the burden from falling upon just a few of us.

The suggestion was made from the floor that we bring in white elephants from our shops for a raffle to be held at the March meeting. The proceeds will be used for the engine show.



Some of our members gathered at the display table before the meeting. Immediately behind the engine is our host Robert Schutz. Looking to the left is Bob Kradjian. At the right is Tom Armstrong.



Bob Kradjian brought this model of the Harley-Davidson 1937 Knucklehead made by Replica Engines: <http://www.replicaengines.com/>. One of the cylinders is loose because some of the cap screws holding it to the crankcase are stripped, but Bob started it right up.



Don Catalano and John Vlavianos got together and designed this engine that can be built in several configurations. This set of castings, of course, would make a single cylinder engine, but Don pointed out that a second cylinder could be easily added. This casting tree is from the first pour: there are some changes to be made in the patterns and then it will be ready for production.



Paul Bennet built this Wall Four 50cc many years ago. Bob Kradjian now owns it, but it is going to return to Paul to be installed into a boat. Bob made a few changes: the small distributor cap and the electric starter driving onto the crankshaft via a sprag clutch are notable improvements.



Carl Wilson showing the handwheel collet closer he made for his lathe. The main point of interest is the thrust bearing housing behind the handwheel is secured to the drawtube with two “dutch screws”: set screws that are drilled and tapped into the joint between the housing and tube. This is an effective way of securing parts where there is not enough room for a keyway. The drawtube is nearly 3 feet long and that would have required a special setup to drill and tap in the vertical mill. The job was done with a Quick Change Drill Attachment (QCDA).



A spare boring bar holder for the Aloris quick change toolpost became the body of the QCDA. Two oilite bearings were pressed into the toolholder; a shaft was turned from precision ground mild steel to mount the drill chuck at one end and the drive sheave at the other. There is a Torrington needle bearing at each end of the toolholder to take the thrust, a small motor was mounted on the cross slide and the job was quickly done.



This view of the January meeting is a bit ambiguous: are we giving rapt attention to the presentation, or slowly falling asleep!

Editors special:

The first real issue of Digital Machinist (Winter 2006) showed up in my mailbox last week and it has some interesting articles. The cover features the classic box within a box within a box project. I may show off a completed version of it in a future meeting.



Members of Bay Area Engine Modelers showed their engines at the Good Guys Hot Rod Show last year. The Good Guys newsletter featured this photo of our display.

TECH TOPICS

Paul Bennet discussed the ignition requirements of modern engines that are required to meet emissions standards, and about ignition for our models, particularly the multi-cylinder engines.

(At this point I'm going to cop a plea, namely that I did not have time to write an article on this topic. This will be a short summary of my notes taken during the meeting.)

1. Compress a mixture, in the proper ratio, of air and fuel; ignite it with a spark = explosion and useful energy
2. The spark has to have sufficient energy to raise the air-fuel mixture to the ignition temperature under a wide variety of conditions within the cylinder
3. Spark requirements vary with load, speed, and mixture
4. Emissions research revealed that ignition is more critical than had been previously assumed.
5. Reduction of emissions require improved "completeness" of combustion, i.e., no fuel left over
6. The fuel has to be completely vaporized and thoroughly mixed with the air in the proper ratio for complete combustion.
7. The combustion chamber cannot have dead spots where the flame front is quenched by the contact with cool surfaces, nor can it have hot spots, which spontaneously ignite a portion of the charge (detonation, or pre-ignition = knocking)
8. The ignition coil has to supply high voltage at the spark plug gap to cause sufficient current to flow to ignite the fuel
9. Our models: the energy requirement at the spark plug does not scale: for the same mixture and cylinder pressure as full-size, the spark needs the same energy

Stuff for Sale

Steve Jasik (your editor) has a box of Live Steam Magazines, 1979 – 1986 (complete) and a few other issues, \$20

Bill Nickels will offer the following as part of the March Raffle: CRAFTSMAN WELDER model# 113.201372 115V AC In, 30 TO 230 AMPS, AC OUT, cables, gloves and a box of assorted welding rods included.

Metal Cutting Band Saw----\$1750

16 Inch Jet VBS 400 Metal Cutting Band Saw. Don't let the JET name or price turn you away--this saw was and looks to still be the Mercedes-Benz of small to mid sized industrial band saws---4 speed transmission and variable speed with chip blower and blade welder---built heavy and it is brand new---on the original shipping pallet---in storage since 1979. For more details, call Scott Overstreet on 650-941-3714.

