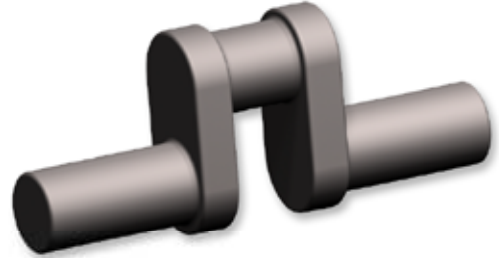


# **The Crank Calls**



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April 2009

## **MEMBERSHIP**

**\$25.00 US**

Contact

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### **NEXT MEETING**

April 18, 2009 at  
Chabot College, building 1400  
25555 Hesperian Blvd, Hayward 94545  
Doors open at 9 AM  
Meeting Starts at 10 AM

### **Upcoming Events**

April 17-19 N.A.M.E.S. in Ohio  
April 18, 19 Calif Antique Farm Eqpt  
May 30, 31 /www.sturgeonsmill.com/  
June 28 Palo Alto Concours  
July 18-19 WEME in Vallejo

### **MEETING NOTES**

#### **3-21-09 Carl Wilson**

Our guests were Dave Caruso and Stan Oron.

Treasurer Ken Hurst reports \$5926 in our club account. EDGETA dues will be paid this month; speaking of dues, this is your last reminder to pay your BAEM dues.

Mike Rehms reported that Mike Neal is no longer building and selling ignition systems. S/S Machine and Engineering sells systems for large radio controlled aircraft engines that might be suitable for our engines. More info at: <http://www.cncengines.com/>

Mike also showed a student project from the University of Idaho (Moscow): a complete redrawing of Randall Cox's "Hoglet" V-twin engine in SolidWorks. Very impressive job. Also, thanks to Mike for our newsletters new header.

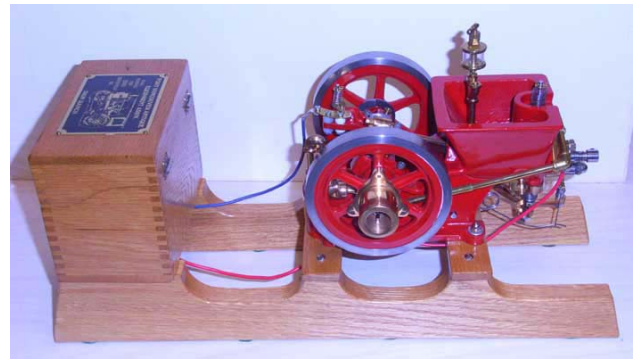
Jaime Quevedo built this carburetor from the design by Edgar Westbury for the petrol engined locomotive "1831." It is more complex than the usual carb for model engines because

the 1831 engine worked a real load under widely varying conditions. "1831" is a two cylinder four stroke with 1" bore and 1 1/4" stroke.



Jim Bove bought this half-beam engine, aka a grasshopper engine, on eBay. He bought the PM Research BLR-1 boiler kit and he did a great job on it. The boiler is 3 1/8" diameter by 12 5/8" overall height and features 13 flue tubes fired by "Esbit" solid fuel tablets. Jim has run it

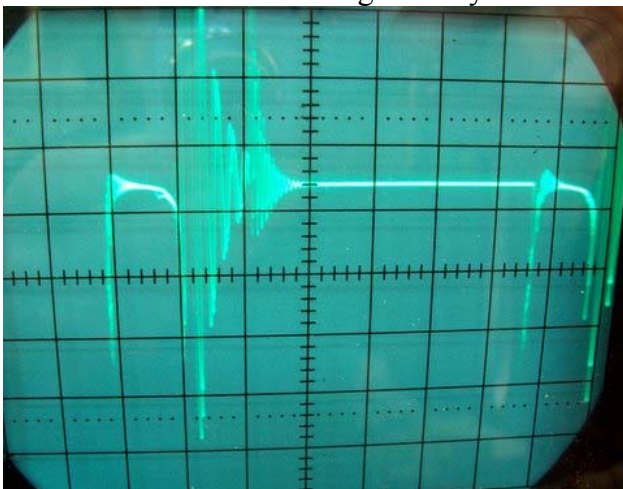
on air, but has not yet fired the boiler. The pump circulates water into the hot well.



Bob Kradjian's New Holland hit-n-miss engine is on its way to being loaned to George Gravatt who is building one. This model, built by Bob Eaton of the Emerald Valley Model Engineering Society, features a low tension igniter giving the "burn" to fuel supplied by a simple vaporizing carburetor.



This is Carl Wilson's ignition demonstration board built around a distributor from a MG Midget driven by DC motor. It can be configured as a Kettering ignition system with conventional points and condenser, or as a transistor switch without the condenser. This kludge demonstrates how to use an oscilloscope to test and troubleshoot an ignition system.



Dennis Mead did the artwork and donated the cost of photoengraving these builder's plates for the two engines that BAEM will be selling. The plate for the Young engine is his design and two of these will be mounted on the cooling hopper before the sale. The plate for the Associated engine was considerably more work. Dennis found an image of an original plate on the

Internet and imported it into AutoCAD. He then very carefully traced the image to produce the original artwork in a .dxf file which the photoengraving service then converted to a Gerber file before doing the etching.



The Young Engine, ready for sale. The nameplate will add a nice touch. Be sure to enter your bid on this jewel. Sealed bids will be opened before the April meeting.

of information on the Associated Manufacturers Company. Information on the sale will be forthcoming. The B cast into the frame suggests that the castings were by Paul Breisch.



Dwight Giles and George Gravatt have once again worked their magic on this model of the Associated Hired Man engine donated for sale by Bob Kradjian. It features an 1 1/4" bore over a 1 3/4" stroke powering 6" diameter flywheels. Engine is complete, running, and includes a bit

## TECH TOPICS: Dwight Giles on Making Poppet Valves



1. Borrow, buy or build a female live center.
2. Use water hardening drill rod: it machines better than oil hardening. The valve will not be hardened.
3. Chuck or collet workpiece with enough length to make one valve: do not remove from chuck.
4. Turn a length of about 5/16" to finish diameter. Retract the tool smoothly from the work before stopping the spindle to prevent marking the work. Use a narrow parting or grooving tool to mark the length of the valve and the width of the head.



The stock at the top of the photo shows the workpiece (left hand end) at this stage. Dwight has turned a taper on the stock while retracting the cutting tool.

5. Support the end of the valve stem with the live center and continue turning the stem to its finish diameter. Use a form tool with a 20 degree side cutting angle and a nose radius to form the junction between the stem and head.

6. Use a sharp well finished 45 degree tool to turn the seat. This method insures that the seat and stem are concentric. The valve at this stage is the right hand end of the stock at the top of the photo.

7. Part-off the valve, chuck (collet) by the stem and face the head to length. The groove in the face of the head for the lapping tool can be machined in a similar setup on the mill. Dwight uses narrow slitting saws sold as commutator undercutting saws.

8. Insert the valve into the back of a collet, then insert the collet into its spindle adapter. Turn the groove on the stem for the spring retainer e-clip with a narrow parting/grooving tool.

Just below the right end of the stock in the photo is a valve inserted into its aluminum bronze cage. Dwight uses bronze (or cast iron) for the seat rather than running the valves directly in the aluminum cylinder head.



Two of Dwight's piloted valve seat cutters. He uses very narrow seats, only a few turns of the cutter, so that lapping the seat is easier.

PS: George Hawks has offered to help local club members with the design, construction, and installation of phase converters. Talk to him a meeting.