

The Crank Calls

March 2007

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

Upcoming Events

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MEETING NOTES

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2-17-07

Carl Wilson

Our guest, Don Huseman, a member of Southern California Home Shop Machinists attended our meeting to encourage us in our engine and model show. See www.schsm.org for information on the Southern California group. [Ed note: Their web site is excellent, check out the links page]

Lew Throop, our esteemed and widely traveled treasurer, reminds all members that we have reached the cutoff date for renewal of club memberships. **Pay up or be dropped!**

There will be a Hot Air Engine show as part of the Antique Farm and Engine show in Tulare on Apr. 20 - 22, featuring engines from models to 15hp. for more info, see:

<http://www.rustyiron.com/hotairshow/info.html>.

A mystery: I have only one brief note about a 1/3rd scale '32 Ford chassis and body suitable for the V-8 engines that some of our members have built. Talk with John Vlavianos for more information.

Pat O'Connor called for volunteer chairpersons for the four major committees required for the upcoming show. To say that he had a tough time getting a response would be to understate

the case. I hope that it will be easier to get followers to volunteer now that we have the leaders. The roster of chairmen is:

Registration:	Joe Landau
Publicity:	Tom Hare
Facilities Management:	Tom Armstrong
Facilities Planning	Carl Wilson

There will be a club raffle of your donated items at the March BAEM meeting. Proceeds will be used to fund the engine show. Bring your unused and unwanted items and see them go to a new home and good cause.

Don Catalano and John Vlavianos are building several versions of a simple IC engine. This month they showed the castings for the two-cylinder version; last month they presented the single cylinder.



Tom Armstrong is building the scale model of the Snow pumping engine that is currently being serialized in Home Shop Machinist. These are the water-cooled cylinders fabricated from steel stock by silver soldering. The cylinder on the right shows where two broken taps were removed by EDM. The tapped holes were repaired with Heli-coils. Tom later discovered that the holes in this end of the cylinder were not drilled to full depth causing the tap breakage. He has since changed to roll forming taps with excellent results.



Some of our members looking closely at the models presented at the February meeting.



Grant Savier presented this fine example of the PM Research Steam Drilling Engine, a 1/8th scale model of engines used extensively for drilling oil wells. It has a double acting 1" bore cylinder driving a 1 1/2" stroke crankshaft. The flywheel is 6 1/2" in diameter. This is his first engine: well done. More info:

<http://www.pmresearchinc.com/store/customer/product.php?productid=3083&cat=4&page=1>





Jerry James's son, Micah has an early start in the modeling hobby with this visible OHC 4 cylinder engine.



Dwight Giles and George Gravatt are at it again: this time building 1/3rd scale models of the Red Devil engine. The flywheels Dwight's work.



Steve Jasik recommended this inexpensive digital multi-meter 2030-C made by Triplet. \$25 at Fry's.



Dick Remington is also making a Red Devil and it looks almost ready for its first pop! Some of the unique features of this engine are clearly visible. Starting at the crankshaft: helical gears driving the tower shaft, partway up the flyball governor, and at the top a face cam operating a cam follower. The flywheel on this end of the crankshaft has been removed to make these details easier to see. Also note that the intake and exhaust valves are located in a chest to the side of the cylinder. For more info on this engine: <http://www.shelfpetmodels.com/>

Shannon Lile showed his 1/3rd scale model of the 1895 Rider-Erickson water pumping hot air engine, but no photos are available.

TECH TOPICS

Jerry James and his son Micah presented this month's Tech Topics: Making the patterns for the four-cylinder in-line aero engine currently under development. The pattern started as an Alibre CAD file exported in .stl format and sent to a commercial stereo-lithography house. Jerry received back a rigid plastic pattern that would have been suitable for direct molding in plaster, except that the original drawing did not incorporate draft at the parting line and the pattern could not be removed from a mold. The solution was to create a flexible pattern of the same exact shape as the rigid plastic pattern by a two-step process using silicone rubber. Jerry made a rectangular mold frame from Micah's Lego blocks, placed the pattern inside and poured a silicone mold. The pattern was removed and silicone rubber poured into the resulting cavity to produce a flexible pattern that was exactly the same as the original. Although it did not have draft, it could be stripped from the plaster mold because of its flexibility and strength.

The mold material was Hydroperm, a product of US Gypsum:

<http://www.gypsumsolutions.com/brand.asp?brand=HYDROPERM>

This material is an unusual formulation that incorporates an air-entraining agent to create a permeable mold. Most plasters are mixed carefully to minimize entrained air: the mixing of Hydroperm incorporates sufficient air to nearly double the volume of the mix. The air forms connected "bubbles" that allow easy venting of gases from the mold. This formulation is used for non-ferrous castings.

Jerry also used Hydroperm to make an electric melting furnace. The insulating properties of the plaster make it an efficient furnace, but the temperature of the elements is higher than the calcination temperature of the plaster and it disintegrates. Jerry figures the furnace will last about 10 firings and being cheap to build, is easily replicable.



Stuff for Sale

Steve Jasik (your editor) has some 0 – 1” micrometers this month.