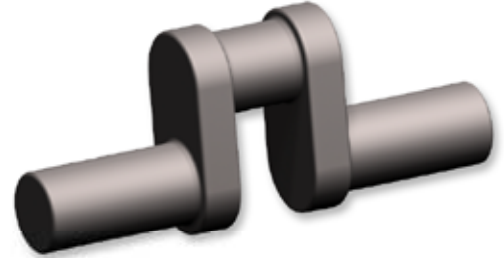


The Crank Calls



President	Don Jones	(510) 812-7006	dj712@sbcglobal.net	December 2009
Secretary	Carl Wilson	(650) 967-7715	talleyho123@yahoo.com	
Treasurer	Ken Hurst	(707) 257-2481	icengine@comcast.net	
Events	Ken Hurst	(707) 257-2481	icengine@comcast.net	
Tech Topics	Your name here!	Contact Don Jones if you're interested in volunteering.		
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<p>MEMBERSHIP \$25.00 US Contact Ken Hurst at (707) 257-2481</p>
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<p>NEXT MEETING December 12, 2009 at Chabot College, building 1400 25555 Hesperian Blvd, Hayward 94545 Doors open at 11 AM Pot Luck starts at 12 PM (noon)</p>
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<p>Upcoming Events Annual Pot Luck Brunch at December 12 meeting. Gathering at 11:00 AM, Pot Luck at 12:00 PM (noon)</p> <p style="text-align: center;">      </p> <p>2010 ANNUAL DUES ARE NOW DUE</p>
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Bring a dish to share at the December Pot Luck. Unsure what to bring? Contact Irene Lile for ideas on what to bring at Slile@aom.com Spouses and guests welcome!

MEETING NOTES

Carl Wilson 11-21-09

BAEM had three guests this month: Jack Hamperle, retired from the American Honda Corp, came down from Nevada with Marc Cave. Bob Hettinger restored old cars but is looking for something smaller to do: model engines. He has completed a Kiwi Farm Hand and a Sealion. Mike Stimmand, from Sebastopol, makes Stirling and IC engines. We'll see one of his engines below.

Pat O'Connor reported the death of Dan Isaiah, a friend of Al Vassallo's. Dan exhibited a large electrically heated Stirling hot air engine at the first WEME show.

Speaking of WEME, the Board of Directors agreed to move the show date to the second weekend of July, 2010. This was done to avoid

a conflict with another event. We added a new show manager, Gary Moore, who will be the floor manager. If he contacts you asking for help at the show, please say yes.

The Board of Directors has decided that BAEM will obtain a state resale permit so that we can sell items such as refrigerator magnets and T-shirts advertising BAEM and WEME. We need a small cash register with at least two categories. Anybody have one they can donate?

Steve Hazelton, one of the partners in Pro-Motion Video, has a video of this year's WEME available. Ordering information is at the end of this newsletter. Steve is organizing the Vallejo Speedway2 Reunion and 2010 Racing Expo at the Solano County Fairgrounds on Feb. 27, 2010. BAEM has been invited to display our engines and attend the show.

Steve Jasik talked about a "do-it-yourself" rapid-prototype machine that is available in kit form for about \$750. This is a CNC controlled three dimensional printer that will make small parts out of a thermoplastic material. More at: <http://reprap.org/bin/view/Main/WebHome>

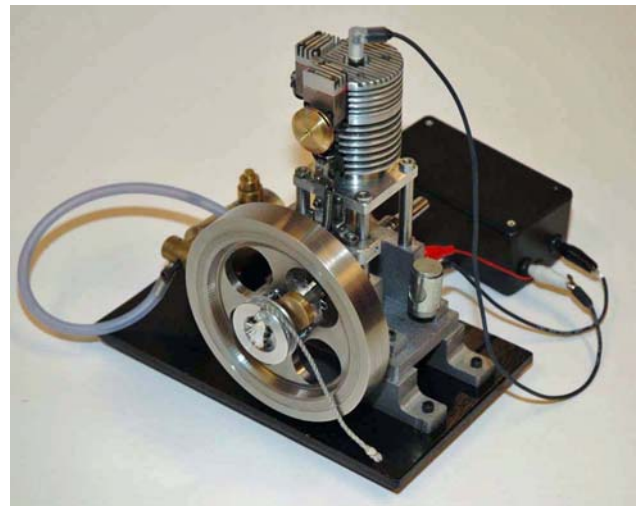


Jim Kipp (center) received the Hired Man Engine for his generous donation to the BAEM Club. With him are Ken Hurst (left) and George Gravatt (right).

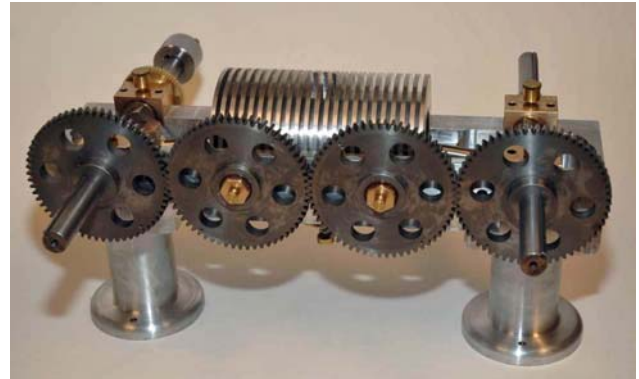
Bits and Pieces



Bob Kradjian purchased this “what’s-it” engine at a collectors’ meet. It is an unusual design with no identification on it. Intended for a boat, it has two intakes; the intake with a throttle is visible at right-front. The engine is missing the piston and connecting rod.



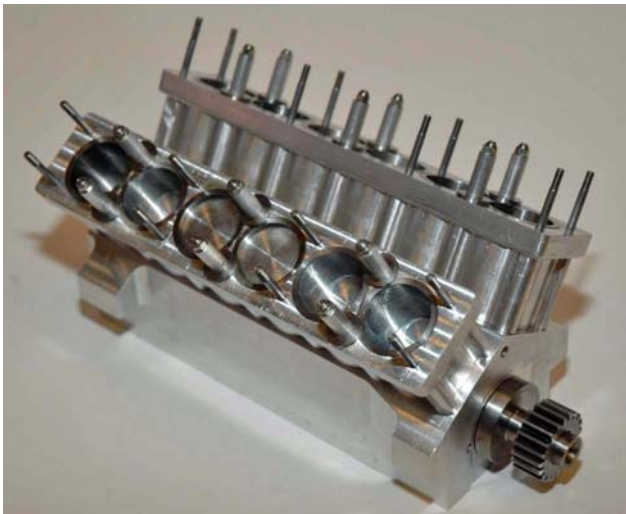
This is Mike Stimmann’s build of the Duclos gearless hit-n-miss and is his first IC engine. Mike was not satisfied with the cast iron piston rings that he made so he substituted an o-ring: works great so far. Fuel is fed via a vaporizing carburetor to the design of Jan Ridders (Model Engine Builder #14). It started on the first pull, well, that is, the first pull after Mike turned the ignition on.



George Gravatt wanted an opposed piston engine and he figured the best way was to design and build one. It features two cranks, rods and pistons in one cylinder: the cranks are connected via the gears on the near side. Barely visible in the top-center of the cylinder is the spark plug hole. One of the cranks will drive the timing gears (on the far side) and distributor; the other will drive a fly ball governor. The two aluminum frame pieces are bolted to the cylinder which has a cast iron liner. We’re looking forward to First Pop, George.



Jim Piazza continues his quarter scale model of a GMC 471 Roots supercharger. The rotors which we saw last month have been fitted into a mockup of the blower case – there is a bearing plate on the back side of the case. Jim hopes to be blowing air at the December meeting.



The short block of Peter Lawrence's Merlin V-12 engine is nearly complete but it has been a step forward/step backward process. His beautiful fluted connecting rods were too wide at the eye and bumped into the bottom of the cylinder liners. That necessitated a complete new set of rods. Peter used 7075 aluminum this time and decided to run the rods directly on the crank journals: this required refinishing the journals to fit. The new rods – the pair on the left-bottom of the photo above right – were not fluted to save time. Even with the new rods Peter had to devise a fixture to mill clearance pockets in the side of the crankcase. He had anticipated this problem, but it was another job and more time.



Peter machined the rings using the approved George Trimble method (Strictly IC #7, 8, 9). At the top left is the ring cleaver, directly to the right is the heat treat clamping fixture and at the right is a cup with the rings. Three pistons and two cylinder liners are also shown.

The cylinder/head studs were another problem. Peter said that it was a real challenge to match the stud pattern from the crankcase through the cylinder block and head. A small error anywhere will make assembly difficult or impossible.

Tech Topic



Mike Rehmus talked briefly about electrolytic rust stripping. This process will remove rust and paint from any ferrous metal except stainless steel. It will eat aluminum and pit brass and bronze so those metals must be cleaned by another method. Stainless steel is a problem: if used in the electrolytic bath as either the work piece or the anode, stainless steels generate hexavalent chrome: a nasty poison. Do not under any circumstance place stainless steel in the tank.

The process uses an electrically conductive water bath. A popular electrolyte is washing soda, available at your friendly grocery or hardware store. About ½ cup dissolved into 5 gal of water works great. The tank can be the ubiquitous 5 gal plastic bucket. A battery charger supplies the “juice”: the negative terminal is connected to the work piece and the positive to a sacrificial steel or graphite electrode in the bath. The cleaning action is directional, that is, most of the work is done in the direction of the anode. A piece of sheet metal lining the tank is best, but several distributed electrodes connected together also work.

The current is determined by the conductivity of the bath together with the surface area of the

two electrodes. Do not overload the battery charger. If it is drawing too much current, pull some of the work piece out of the bath. The work can be done in stages. If the current is low, add electrolyte to the bath or more surface area to the anode.

When the work looks evenly black, that is, the rust and paint are gone, pull it from the bath, rinse in clean water and scrub it with abrasive pads, or wire brushes. Dry with compressed air and heat: setting in the sun or an oven works well.

Holes are a problem due to the directional action of the cleaning and may require more electrolytic cleaning and hand scrubbing. In tough cases, an anode can be fixtured inside the hole, but be careful not to short the electrodes.

Electrolytic rust cleaning removes the rust: it does not remove or etch the base metal so it can be left running as long as necessary to completely clean the part.

For Sale

WEME 2009 DVD from Pro-Motion Video
Cost \$15 plus \$3 shipping and handling,
contact Steve Hazelton at 707-554-3140 or
707-563-4308 (cell).