

The Crank Calls



July 2014

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MEMBERSHIP \$25.00 US

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NEXT MEETING

July 19, 2014 at
Chabot College, building 1500
25555 Hesperian Blvd, Hayward 94545
Doors open at **9:00 AM**
Meeting starts at **10:00 AM**

Upcoming Events

BAEM meetings:
3rd Saturday of the month except December



MEETING NOTES

June 21, 2014
Bob Kradjian

Acting president, Pat O'Connor called the meeting to order.

VISITORS: There were no guests or visitors.

FIRST POPS: There were no first pops other than the GEM 1 that will be discussed later.

Webmaster Issue - Carl Wilson tells us that the information on our web site is badly dated. Jim Piazza needs relief as web master after years of devoted work. A volunteer is needed, but must have computer skills.

EVENTS: Only the WEME show in late August is scheduled at present. John will automatically assign last year's table spaces to make the sign-up easier. All new table requests will be welcome. Randall Cox and John Vietti are planning to make the trek from Wyoming.

The club had a good showing at the Blackhawk Auto Museum Father's Day event. Members Jones, Gilmore, Aldrich showed engines. They were pleased with our offerings and have asked us to return next year. If we return, we will re-locate to the lot below the Plaza with a better flow of visitors. Dwight suggests that we give club information to interested viewers. We have been using older printed Vallejo folders that have the web addresses.

The Ironstone Concours d'Elegance on September 27, following our WEME show has invited our participation again. This show is in Murphys, California. It would require an overnight stay to avoid a strenuous, early morning trip from the Bay Area.

TREASURER'S REPORT: The insurance issue reported on last month has been resolved. Thanks to John Gilmore and Mike Rehms for their efforts.

Club dues are payable. Please remit dues to treasurer John Gilmore at 1414 Linton Place, Martinez, 94553.

CLUB BADGES: If you need a badge, contact Mike Rehms (mrehms@byvideo.com) who has offered to produce them.

BITS AND PIECES:

Joel Cohen brought us up to date on his endeavors with several engines. He has two versions of the 15 cc Seal engine, the last on machined from solid. He is making accurate drawings for this latter prototype that will be available, when finished to his satisfaction, to the membership. He also has a twin Kiwi and a single cylinder Kiwi. If that isn't

enough, he built a Sea Gull that has popped, but doesn't run well. All these are Edgar Westbury designs.

On the subject of coaxing engines to run, our late member Bob Haagenson said: "You need 80 pounds of compression". They'll run at less, but that's a nice goal.

Pat O'Connor described the problems of carburetors and manifolds for a four-cylinder engine. Flow distribution, manifold diameters, and branching were discussed. Equal distance manifolding to all cylinders is the goal.

Roughness versus smoothness of manifold passages was discussed. Roughness and resultant turbulence in manifold passages, previously thought to be undesirable, are now recognized to have advantages.

Next, the issue of changing brands of oil in automobile engines came up for discussion. It seems that a change of oil type can cause seals to harden and leak. A return to the original brand can often cure that condition.

Dwight's single cylinder, original engine, the GEM 1 was presented next. The details are reported fully by Carl Wilson below. A noteworthy feature is Dwight's technique of welding joints that fully simulate a casting. It is always a pleasure to see how Dwight solves problems in a unique and masterful way.

Dwight's flywheels are built up. John Palmer is also a master of the built up flywheel. His sage advice is to withhold the final sizing of the flywheel bore until all welding and machining is finished. The wheel should then be accurately chucked and centered from its periphery. Only then, should the final sizing of the central bore be completed. This will result is a true-running flywheel.

Jim Freel told us of his cam grinding experiences at Dwight's shop with additional supervision by John Gilmore. The cam is for his ongoing Black Widow V-8 build.

He describes a format-changing feature of Auto desk that can convert GIFF to DXF files that can then be opened in SurfCam or AutoCad. He used this to make a lovely black widow spider engraving for the engine's valve cover.

Paul Denham tells us that Desk Engrave is a free program (found at deskam.com) that can be useful in these applications.

Steve Jasik showed us a 20X magnifier he bought from dx.com. These are very inexpensive, less than \$10.00, and ship from Hong Kong. They also have flexible endoscopes that connect to your computer via a USB port.

The topic of knurling, which was discussed at length at our last meeting, was re-introduced. Knurling a taper was the subject this time around.

Pat's described a two-throw crankshaft project he is machining. This led to a discursive discussion amongst the membership on tapers, dead centers, live centers, gauge lines, crankshaft fixtures, lathe dogs, and a host of other topics. You'd have to be there to get the full flavor of the conversation, but there was a lot of good information. We also discussed epoxied radiator tanks, epoxied cylinder heads and even member Bement's machining of a solid aluminum '32 Ford radiator shell.

Carl Wilson showed us his new air horn. He found plans on e-Bay on how to make air horns out of PVC or ABS. Using only lung-power, Carl gave us a lovely demo of the sound. His horn is tuned to a full tone higher than the usual locomotive note. It can be heard three blocks away. We were surprised to learn that a Horn and Whistle Magazine exists. It can be found as hornandwhistle.com. It is an on-line E-Zine quarterly for \$10.00 per year or \$25.00 in print. Some of the articles are extremely interesting. When we contemplate the value of horns in warning people of such important events as approaching trains, air-raids, or tsunamis such devices are indeed useful.

TECH TOPIC:

Carl Wilson



The nameplate says GEM 1. It was engraved by Mike Rehmus on his TAIG CNC – the first of what should be many successes. Mike explained the acronym is for Giles Engine Model 1, the first of Dwight's own engine designs. It is based upon the Upshur Farm Engine but Dwight says there are so many changes that it is mostly his own.

There are no castings but careful welding and finishing of bar stock has yielded an engine that *looks* like parts of it were cast. The base is flat stock, cut to size, and assembled with corner welds. Some grinding and sanding later it looks like one piece.

Likewise the flywheel: the rim is heavy wall pipe and the spokes and hub were welded in. The spokes were first welded to the center hub, then the ends of the spokes were turned to fit into the rim, and finally welded into place.

The crank is balanced for the reciprocating weight of the piston and rod. Ignition is coil and points.

The gas tank starts with a piece of brass tube. The ends are pressed in a die from brass sheet, machined to suit, and silver soldered to the tube. The other fittings are soft soldered using pre-formed rings placed around the joint. The assembly is heated just enough to flow the solder into the joint. This method prevents unsightly messes of solder around

the joint that is frequently the result of trying to feed a length of solder by hand. Dwight reminds us that if the position of the parts is maintained by a fixture that could become a heat sink, it should be isolated from work. Another useful technique is to tin the pieces to be joined, then assemble and heat. The solder is already in the joint and will not run.

Paint starts with a two part epoxy primer, several coats, sanded smooth. This fills any imperfections remaining from the grinding and sanding. Dwight noticed that the color of the primer affected the color of the finish coat, so he recommends that all parts have the same final prime color. The finish is a two part automotive enamel.

John Palmer uses the same method for making much larger flywheels. He leaves the hub bore undersize and welds the flywheel. He then chucks and indicates the weldment by the rim and bores the hub concentric to the rim.

President pro tem Pat O'Connor then moved the subject of Tech Topics to machining crankshafts. There was considerable discussion from the floor but Mike came to the rescue by reminding us that Model Engine Builder magazine issue #30 has the definitive article on this subject. I ceased taking notes at that point.



WESTERN ENGINE & MODEL EXHIBITION

Print this form, fill it in and send it to:

WEME
1521 Queenstown Ct.
Sunnyvale, CA 94087

If you have any questions please contact the Exhibit Coordinator at
opoconnor@aol.com or 408-733-3710

Name: _____

Address: _____

City _____ State _____ ZIP _____

Telephone _____

Email Address _____

Guest Name _____ (Limit one per exhibitor)

Are you a member of a club? _____

If yes, which club _____

Check the amount of table space you will need. Tables are approximately 8 feet long and 30 inches wide.

____ Half Table ____ One Table ____ One and a half Tables ____ Two Tables ____ Three tables

note that the show management reserves the right to limit the amount of space for each exhibitor.

Additional needs: ____ Air ____ Electricity ____ Other

Please indicate the type of models you will be displaying

Please read the WEME Exhibitor Information pages at <http://www.wemeshow.com/>