

# The Crank Calls



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**MEMBERSHIP \$25.00 US**

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**2015 Dues are now due!**

**NEXT MEETING**

**December 13, 2014** at  
Chabot College, building 1500  
25555 Hesperian Blvd, Hayward 94545  
Doors open at **10:00 AM**  
Meeting starts at **11:00 AM**

**Upcoming Events**

BAEM meetings: 3rd Saturday of the month  
**except December when we meet for our  
BAEM Annual Potluck luncheon on the 2nd  
Saturday of the month**

**MEETING NOTES**

November 15, 2014

Bob Kradjian

President, Don Jones called the meeting to order at 10:00 am.

**VISITORS:** There were no visitors. Welcome to new member Stan Lakezic!

**FIRST POPS:** There were none reported.

**EVENTS:** **Our annual Christmas meeting will take place on the 13<sup>th</sup> (a week earlier than our usual) and an hour later. Therefore, let's meet on December 13 at 11 am with a short club meeting followed by our annual potluck luncheon.**

Remember to bring a running engine to spark up the meeting portion. Just try to not spill fuel on the casserole. These meetings are great fun, informal and more of a chance to talk to each other than during our other meetings. Someone once called it "Snack and Yack".

There are no scheduled engine show events in this off-season.

**TREASURER'S REPORT:** John Gilmore has not yet purchased the club trailer, maybe in early 2015.

BAEM Club dues are now due. Please mail you check to:

John Gilmore  
1414 Linton Place  
Martinez, CA 94553.

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

**WEB SITE ISSUES:** Should we continue with two web sites (baemclub.com and wemeshow.com) as we now have it? Alternatively, should we combine them? A third possibility is to simply drop the wemeshow site. Considerable discussion followed these questions. No definite action will be taken before additional study. We are cautioned to not cancel our current, very beneficial, long-term arrangement with "Network Solutions" for our club web site.

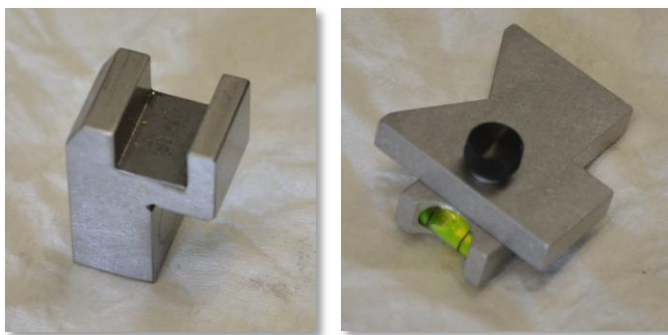
We all agreed that Jim Piazza deserves our highest commendation and thanks for his many years of service maintaining our web site. No other member

has provided longer service to the club! Mike Byrne is taking over Jim's duties, thanks to Mike as well.

### **BITS AND PIECES:**



Mike Rehmus gave out a large outer bearing race for "trammig" a milling machine. This led to an extended discussion of centering practices. He showed us a "Toolmaker's Chair" (see photo below), an edge finder for centering and locating tools. It is also known as an "Indicating Chair". This device has a magnet that affixes it to the edge of the work piece and the center of the two hundredth-inch channel facing up is the center of the edge of the work piece. A variation of this device is the corner chair that has a 90-degree angle.



The care and feeding of dial test indicators and magnifying devices was discussed. We also had an explanation of jig boring techniques and tables for locating bolt-hole circles. A discussion of cutting metric threads followed. This involved some esoteric remedies and mathematics. You had to be there. Our show and tell turned into a tech topic 45 minutes later.



A clever stepped adapter was shown (see photo above). It allows the machinist to insert the device into a collet and move to other sizes without removing and replacing. This will be featured in an upcoming magazine article.

Last month, Paul Denham described starting problems with his Wall Wizard Twin. Those problems were solved by a larger coil and greater plug gap. I had the same experience with a Seal Major. A Volkswagen coil and a new six-volt gel cell made a world of difference.

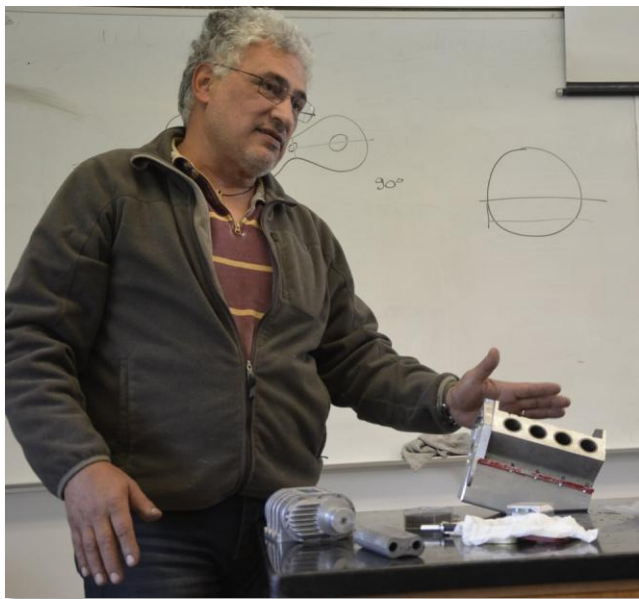
Carl Wilson mentioned the earliest human use of compression-ignition as the "fire piston". There is an abundance of You Tube videos of these very interesting devices which, are indeed, very ancient.

Mike then initiated a discussion of the machining of split bearings featuring Dwight's procedures on a series of bearings for Black Widow V-8s. This discussion will be featured in upcoming articles in "Model Engine Builder". The detail is sufficiently rich that reference to the upcoming article is recommended.

Continuing with bearings, assembly lube was strongly urged for initial runs. Jaime warned that us that Molybdenum additives are capable of etching brass and that the molybdenum also oxidizes.

Dick Pretel told us of his use of oil filters and electric oil pumps for pre-run lubrication in his model engines.

Another approach to making bearing inserts was mentioned. This is the one that member Jim Moyer has developed. He wanted to use the advanced metal technology used in automobile usage. He takes new, split bearing inserts and uses a worm gear hose clamp to clamp in securely to a mandrel of the exact size of the auto journal. Additional security comes from tacking it to the mandrel with a TIG. He then turns down the tri-metal brass backing to about 0.0015" (he thinks that more thickness would be appropriate for our larger V-8's). Strips of the bearing as thick as the bearing cap for the model engine are parted off. Segments of these strips are formed by hand over a new mandrel turned to the size of the model journal plus 0.0015" for oil clearance. The finished insert is prevented from rotating in the cap and the block by a small hollow brass tube that also carries oil from the pump and the drilled crankshaft. When he checked his engine recently, the inserts and the journals were in good condition and there was no scoring of either surface. Jim is also making steady progress on his 409 Chevy block. He will attempt to send us a photo.



Jaime Quevedo showed us his progress on re-vamping a Black Widow block to an overhead cam engine. Problems with machining the gears for the cam drive were discussed. He is using a slot system to allow for fine adjustment. The slotted gear is securely pinned to the shaft.

## THE HISTORY OF THE CARBURETOR

Last month's newsletter described the very earliest carburetors developed in the 1800's. They did not use liquid petroleum. Instead, they used gas in vapor form as in our present day heating gas or illuminating gas.

Credit for the earliest carburetor that used a petroleum-based, liquid fuel is disputed. A strong possibility for that honor is Jean Lenoir (France) and the date was 1863. Lenoir had previously constructed an engine that ran on coal gas. He later fitted it with a carburetor using petroleum. The details of the carburetor are not available. By the next year, Siegfried Marcus (Germany) produced a single cylinder, two-cycle engine with a "crude carburetor" that used a rotating brush in a fuel reservoir. In 1886 he filed a patent for this "vaporisater".

Nearly all of these very early carburetors used a wicking system to convert the liquid into gaseous form. These devices introduced wicks of cotton or other fabric immersed into a container of gasoline (or benzene or naphtha, etc.). As the gasoline wicked upward by capillary action, it passed through a gauze filter and was converted to gaseous form before entering the intake manifold. The gauze or metal filter proved to be an essential flame arrestor. To increase the volume of the gaseous material, rotating brushes and other mechanical devices stirred the fuel reservoir.

It was Karl Benz in 1885 that combined two important components of modern carburetors, the float chamber and the atomizer nozzle. He patented this carburetor in 1886 and therefore receives most of the credit for these important advances. However, Enrico Bernardi (Italy) claimed he invented a carburetor in 1876. By 1882 one was fitted to his "Motrice Pia" and a patent was issued a few months before the Benz patent. Motrice Pia was his daughter's name and the vehicle was not much more than a motorized child's toy. His invention was a tricycle with a 122 cc four-stroke engine that probably would not go over ten miles per hour. The next installment on carburetion will feature spray jets and venturis.