

# Bay Area Engine Modelers Club

## The Crank Calls



February 2016

President		
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Tech Topics		
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### **MEMBERSHIP \$25.00 US**

Contact Paul Denham at  
pedenham@comcast.net

DUES ARE NOW DUE

### **NEXT MEETING**

February 20, 2016 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



We mourn the passing of BAEM President Don Jones. This unexpected event shortly followed the events of the January meeting described in the following paragraphs. Don was a steady and constant source of strength and friendship for many years. His immense knowledge of computer design and computer aided machining was added to his already solid skills as machinist of many years experience. His faithful support at Chabot was the reason for our long and happy association. Many generations of machining students give high praise for his teaching skills. A few may know that he was an exceptional and skillful motorcycle rider. Our club sends our sympathy to daughter Lisa and her family. A memorial will be announced later. It just won't be the same without Don.

### **NEW MEETING PLACE FOR MARCH 19**

We have been invited to use the meeting room of the Golden Gate Live Steamers for our March Meeting. This kind offer was just received on February 14. More details will be included in your next newsletter. Please go to: [goldengatels.org](http://goldengatels.org) for a map and directions. Be sure to review their excellent web site for information on this remarkable group. Our thanks to the Golden Gate Live Steam group for this kind offer.

### **MEETING NOTES**

January 16, 2016

Bob Kradjian, Secretary

President Don Jones called the meeting to order at 10:00 am with the words, "Welcome to 2016".

**VISITORS:** There were no visitors.

**FIRST POPS:** Paul Denham brought a video of his latest miniature magneto running. This uses elliptical gears that generate a ramp up of speed up at the correct time of shaft rotation. It also generates a charming sound reminiscent of an old Maytag washing machine for those of you old enough to remember. Paul also went to the trouble of converting his engine to propane after seeing

how nicely John Palmer's "Executive Pencil Sharpener" runs.

**EVENTS:** There are no planned events for the near future. Only the WEME show in late August is firmly scheduled at present.

**TREASURER'S REPORT:** Paul Denham says that we are solvent. **He is accepting dues for those who need to re-enlist for 2016. Dues are \$25.00 per year.**

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

## BITS AND PIECES



Dwight Giles made a new set of gasket cutters up to one-inch diameter. Mike Rehmus made a very nice custom wooden box to showcase this latest version.

It will all be fully detailed in Model Engine Builder in issues to come.

Paul Dedham gave us a primer on the wonders, and difficulties, of winding coils for these tiny magnetos. This process is not for the insincere or the faint-hearted. It involves gossamer-thin wire, many thousands of turns, layers of separation, epoxy impregnation, delicate wire feeders, and much more. This task is best left to worthies such as Paul and his brother (who is a professional coil winder) or John Vietti across the country in Wyoming.

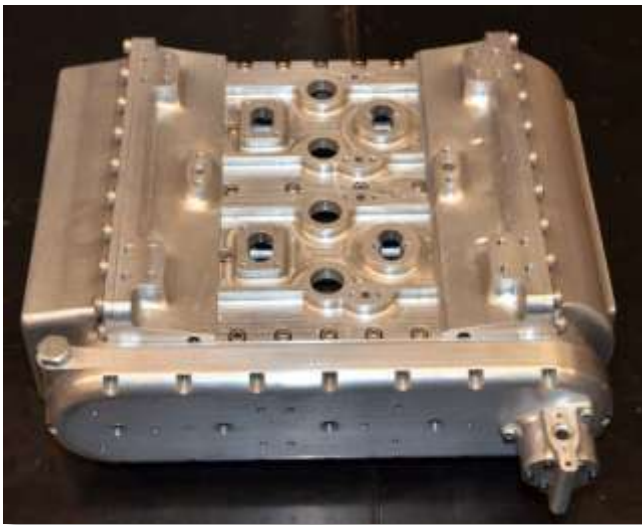
Mike Rehmus also showed us several very inexpensive, but powerful, pieces of electronic gear from China. These included a rev counter, a rotation counter, a computer chip, and other tiny devices that require additional electronic additions and some electronic knowledge before being useful.

Jim Piazza showed us a tool post chuck that costs about a hundred dollars to use with a DRO. It has the advantage of being controlled by both the DRO and hand wheels and returns accurately to zero after setting a setscrew. No details were given on the vendor.

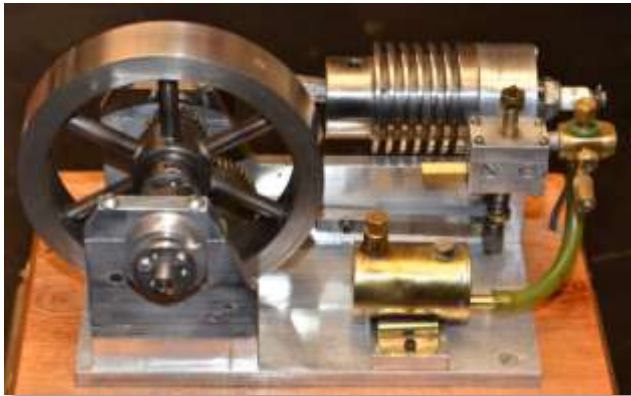
Jamie Iriki showed us some Keo cutters and wondered if they were a good buy. The members agreed that Keo is a good brand. Jim Freel reminds us that they are also good for cutting chamfers. There were other comments about center drills with oversized tips for the very smallest sizes. When to use spotting drills and when to use center drills or counter sinks was discussed.

For metric supplies, Roy Anderson recommends "RT Fasteners" for good prices and wide coverage. They are located in Virginia and sell only over the Internet. The URL is: [rtfasteners.com](http://rtfasteners.com), logically enough. The phone number is: (800) 239-6010. They describe their prices as "very fair". They also have a fine assortment of high quality small tools.

Unbrako certified fasteners were mentioned for critical applications. An example is the connecting rod cap for Ken and Dwight's V-8. A garden-variety bolt fractured under stress, fortunately without disastrous consequences. See Unbrako ([unbrako.com](http://unbrako.com)) for details. Expensive but well worth it when protecting an engine that took many months to build.

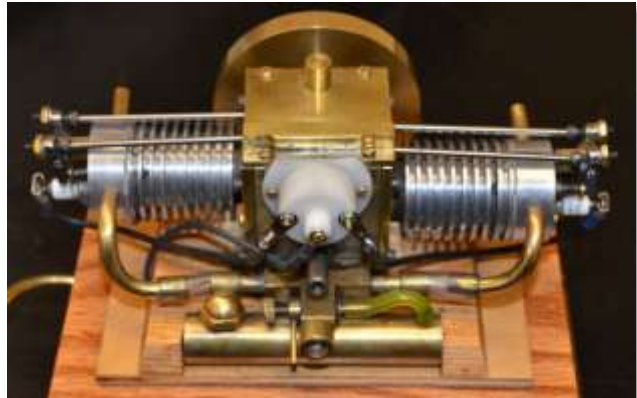


Pat O'Connor brought us the wonderful world of Volstro Rotary Milling Heads. He has done some fine work on a four cylinder original, opposed-piston engine using a Volstro head. For details on the Volstro story, "Google" it. It's a fascinating look at innovations prior to the advent of computer aided machining.



Mike Stimmann showed us his "Webster engine". This was the work of Joe Webster who designed an inexpensive, easy-to-build engine to be made from bar stock. You can find the plans for no cost, and the whole story at: [websterengine.com](http://websterengine.com). He describes it as an easy build. Mike used a small RC carb he had in a parts box.

I strongly recommend a long look at a wonderful building thread on this very engine. Start by going to Google and enter: "Building the Webster i.c. engine". This lengthy thread is by Brian Rupnow. This was his first i.c. engine and has delightful Solidworks images, excellent photos, and some amusing commentary. It is well worth a look. For new members such as Jerry Franklin just getting involved in machining, this thread will be a revelation.



Mike also ran his Upshur twin from "Model Engine Builder". Both engines ran well to a deserved round of applause.

Mike then delved into a discussion of coils for our little engines. He described poor results with motorcycle coils, and wonders what the rest of us are using. Paul Denham spoke of the "coil over plug" type that is working well for him. Paul prefers to use his self-made electronics that will "time out" and protect the coil and the chip if it stalls with points closed. Several of his systems are in use, I have one that functions well, but it's still in fine-tune mode.

I spoke up for the very old Kettering technology using easily obtained, relatively inexpensive automotive coils, condensers and points. Gel-cell 6V batteries are inexpensive and rechargeable. Pre-

1967 Volkswagen coils are six-volts and available at your local auto supply store.

Anthony asked about the possibility of sparks per minute limitation. Paul, from memory, told us that the dwell time is 1.5 milliseconds to charge at 12 volts and 3ms at 6 volts. It takes 2ms for the spark to occur.

From another source, Mike Rehms tells us that it takes about 830 microseconds dwell time to reliably fire a spark plug. A tech topic on this subject from Paul is promised for a later date.

Jim Piazza's engine part project got a boost with another batch of very accurate small-scale Offenhauser die-castings from Georgia Model Products. More parts are on their way to Jim.

Your secretary gave a tribute to Gary Meadors who passed away unexpectedly in December. Gary has been a friend and supporter of our club dating to 1998. He has been more than gracious in supporting our group and befriending our members. Our participation in his shows has been a key factor in maintaining our membership. We are most grateful to the Meadors family and the Good Guys management team, and offer our sincere sympathy on the passing of a great entrepreneur.



Dick Pretel looked around his shop for some pieces in order to build a "last" engine. (He foolishly thinks that he'll never make another engine. He doesn't realize that engine building is an incurable disease).

He found two Moki crankshafts with a 20 mm bearing inside diameters. He has finished the liner, piston, and head with overhead cam. He is

considering water-cooling and perhaps a marine-type installation. The pulleys he bought from China were very well built and inexpensive. Carl Wilson will do the balancing. A rough casting from Ed DeGear will serve for the flywheel. Ed poured these blanks at home many years ago and there is the expected porosity. He will keep that as a tribute to Ed. I promised to bring several castings poured and partially machined by Ed DeGear for two very small V-8 engines for the membership to review at our next meeting.

Steve Hazelton reported on an upcoming club visit to a Model "T" Group. Anyone wanting to run an engine there with Dick Pretel should let Steve or Dick know.

Bobby May showed us an inside diameter dial indicator that he picked up at the monthly flea market just North of our meeting place. He paid \$2.00 for this treasure. It is marked with a Pratt-Whitney part number with a Morse taper shank.

Bobby also experienced a "smoke problem" with his CNC resulting in blowing out the AC to DC power supply. Bobby found that the vendor gave him the exact wrong information concerning a terminal on the power supply. He also found a needed part from the original vendor for \$400. He was able to duck this offer and pay \$75 from another vendor.

He then told us of the intricacies of chucking a 0.006" diameter end mill and making four of the smallest imaginable cross holes in an extremely small tube. Bobby is not only a heck of a machinist; he's a fine stand-up comedian. He had us all chuckling for a half hour.



Jerry Franklin showed us his latest efforts at machining, as he is setting up his first shop. He is even experimenting with some blacksmithing!

## SHERLINE AWARD

Prior to our February Meeting, we received very welcome and pleasant news from our friend at the Shoreline Company, Craig Libuse, Director of the Joe Martin Foundation.

It is the “SPECIAL ACHIEVEMENT AWARD for CRAFTSMANSHIP---2016”.



It award states that our group was:

“Selected as a group for exemplary contributions to the pursuit of excellence in model engineering and metalworking with special emphasis on working engine projects small in size yet exhibiting the highest level of finish and performance.”

Craig explained that all previous foundation awards had honored individual achievement, this award is the first presented to a group. He also recognized our demonstrations at car events and engine shows that put the hobby before a public that might not even know it even exists. Craig concluded: “...the

club is a major force in the advancement of Model Engineering throughout the world.”

Along with the handsome plaque comes a check to BAEM for five hundred dollars.

We are honored to receive this unique award and thank Craig and the Joe Martin Foundation. Most of us have used and have great respect for the line of Sherline Products.



Please keep current with Craftsmanship Museum news at: [www.CraftsmanshipMuseum.com](http://www.CraftsmanshipMuseum.com). Note the photo of Joe Martin at his museum taken in 2013.

**PLEASE JOIN US AT OUR  
IMPORTANT FEBRUARY 20<sup>TH</sup>  
MEETING.**

THE PICTURE PAGE

In remembrance of Don Jones

