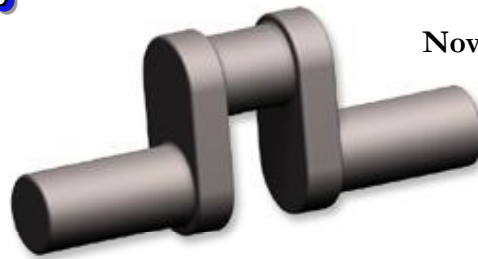


## The Crank Calls



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### MEMBERSHIP \$25.00 US

Contact Paul Denham at  
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### **NEXT MEETING**

**November 17, 2018 at  
Museum of American Heritage  
351 Homer Avenue in  
Palo Alto, CA**

Doors open at 9:00 AM  
Meeting starts at 10:00 AM

### **Upcoming Events**

BAEM meetings 3rd Saturday of the month

- November 17, 2018 @ MoAH, Palo Alto
- December 8, 2018 @GGLS, Tilden Park

**Note that our December meeting is our  
Annual Potluck Luncheon. Brins a dish to**

### **IMPORTANT NOTE!**

**The November 17, 2018 meeting will be at the Museum of American Heritage in Palo Alto. The address is 351 Homer Avenue in Palo Alto. Go to: moah.org for driving instructions and information on this fine facility.**

### **MEETING NOTES**

October 20, 2018

Bob Kradjian, Secretary

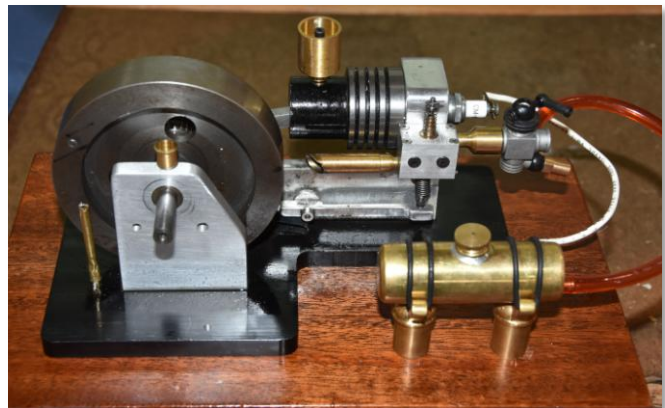
President Paul Denham called the meeting to order at 9:59 am. We are meeting at the Museum of American Heritage in Palo Alto. Thanks to the good folks here who have generously offered us their fine meeting room.

Our president decided to mix up our usual order of events and kick off the meeting with "first pops".

### **FIRST POPS:**

Steve Hazelton gave us a history of the two-year group build of a Webster engine with Aaron Keller and Wes Wagon. You will recall that we had step-by-step reports on this project over about two years. One early report was of a broken-off tap. This resulted in a You Tube search, and the technique of dissolving the offending tap with alum. After buying a pound for eight dollars on Amazon, he

mixed a saturated solution of alum and cooked the piece in a one-dollar garage-sale crock-pot overnight. This resulted in a You Tube posting of the event and complete dissolution of the tap. However, staining of the aluminum caused the entire piece to be scrapped and a new, shiny one made. Then followed: compression problems, a too-lengthy "break-in" with an electric (that suffered from over use), re-honing of the cylinder, a new piston and rings---and finally good compression. But wait, it needed a Denham ignition system re-work, a fuel tank repositioning (too high) and finally---it ran. This occasioned another You Tube video.



Today Steve fired it up for us, to warm applause. There was just one minor glitch that caused a slight delay. Without mentioning names or times, here is just a partial listing of other “First Pops” snafus at our meetings:

Ignition switch not turned on (times 3), cranking engine in the wrong direction, no air vent for the fuel tank, fuel line clogged, battery dead, forgot to fill fuel tank, fuel stale, starter battery dead, no matches to fire up the alcohol burner for a flame lick--and finally, the darn thing just wouldn't run!

#### **VISITORS:**

Adrian Sfarti came with friend, Jim Piazza. Adrian has just finished an O.S. kit of a Shay Loco, live steam, four and three-quarter inch gauge. He hopes to operate it at the GGLS track. It runs nicely on compressed air. Anthony Rhodes gave him information on re-gauging the wheel trucks to the GGLS standard, where to get char or coke for fuel, when to visit the track, and who to contact. Jim reports that the build is beautifully done.

**TREASURER'S REPORT:** We are solvent; there were no unusual expenditures.

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

#### **EVENTS:**

Paul Denham reported on the Galt show. It was a fine occasion, and he reported a warm reception. He recommends that we consider attending future meetings.

#### **CLUB BUSINESS:**

A discussion concerning the disposition of the club Allman engine followed. The great-granddaughter of the Allman who invented the engine contacted us, and offered to buy it. At present, it is a “club engine” being cared for by Tim Horn. Tim devoted a good bit of time and effort to restore it to excellent running condition and appearance. He is also willing to show it at events. The immediate sense of the club is that we do want to retain excellent engines and show them. The matter is shelved until Tim can attend a meeting.

Mike Byrne spoke of plans for the John Palmer J & E engine. He was in contact with John's son who has kindly given us permission to publish the digital plans. It is now listed on the BAEM club website on the upper right of the page.

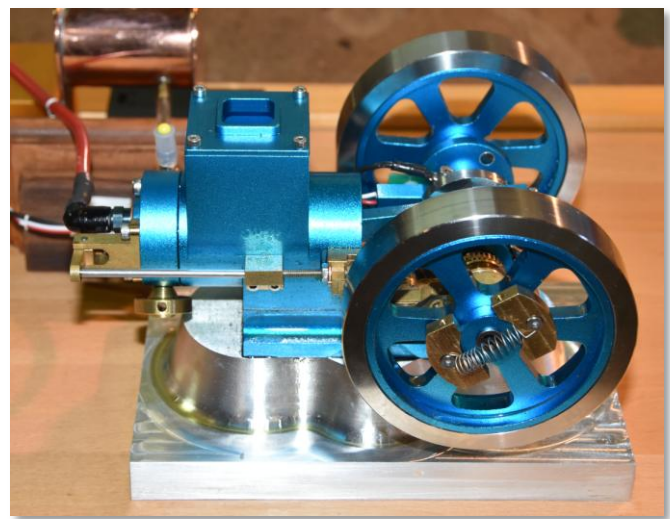
Recall, that this is not a small engine. The flywheel diameter is around twelve inches. Believe me--it's at least a two-man lift, I used to own one. It's a wonderful runner and a lasting tribute to John's ingenuity and skill.

#### **TECH TOPICS:**

We need topics for future meetings. Send suggestions to Paul Denham. Thanks to former Tech Topic leaders, Carl Wilson, Dwight Giles, Scott Overstreet, Pat O'Connor, and the late Chris Leggo and Paul Bennett.

Mike Rehms tells of CAD programs he's used. He started with Alibre, which he likes. Alibre has now added Atom 3D to their line. Mike is thinking of adding tutorials on CAD to his magazine articles. In his opinion, these systems are easier to use than SolidWorks. Atom 3D is \$199 with a permanent license. It is free for a thirty-day trial at: alibre.com. SolidWorks is very expensive; however, Veterans can buy it for twenty dollars for a non-renewable one-year term.

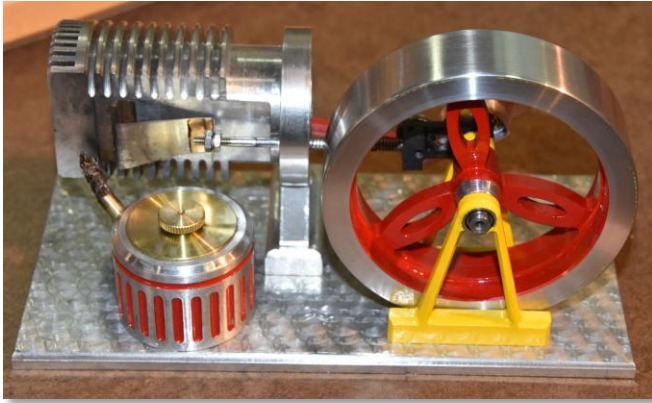
#### **BITS AND PIECES**



Tim Horn used a Chinese hit and miss engine purchased from Banggood for his oil field derrick. I decided to try the same engine and found it quite



good. It comes with an electronic module and a Hall effect sensor. It definitely needs weaker springs on the flyweights to allow a nice and slow tick-over. I removed both stock springs and replaced them with a single, weak spring.



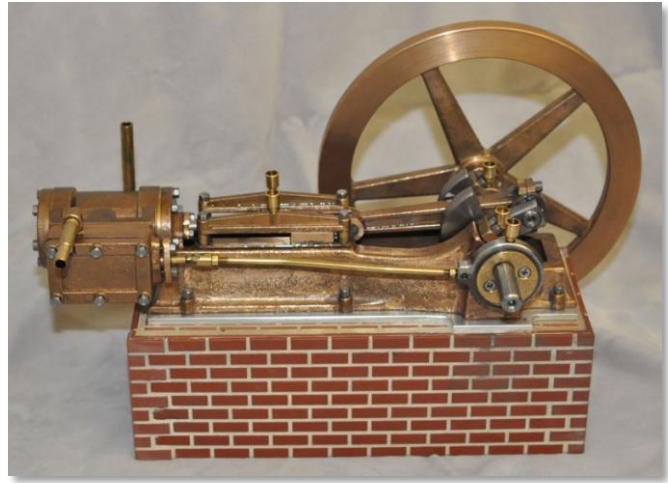
Paul showed us his just-completed flame licker. It features a magnet base for the burner to slide that allows precise maneuvering for optimal running. It runs nicely, but in our drafty environs, it was a little dodgy.



Carl Wilson prefers castings over bar stock for building our little engines. He showed us the very nice pattern he developed for a small engine.

Carl then nicely developed the principles of the casting process. He introduced terms and items such as: gating, risers, runners, sprues, flasks, match plates, natural sand, sand with clay/water as a

bonding agent, oil bonded sand, natural bonded sand, flux, porosity, and de-gassing. Carl brilliantly, and off-the-cuff, gave us a delightful summary of the casting process. Well done, Carl!



Jim Piazza has finished his PM research #1 Drill steam engine. He developed scale-looking bolts out of hex stock, used faux brickwork for the base and pedestal. This is available from PM Research, easily worked plastic and looks very scale and authentic. He is planning to work with Tom Armstrong to develop a steam boiler and run it as it was intended! He substituted a built-up crankshaft for the cast version supplied with the kit. He also changed the eccentric design to a more substantial one-piece design.

Mike and Dwight are developing the plans and the patterns for a one-third-scale model 'A' Ford engine. Dwight has already made the very fine crankshaft complete with gearing for the oil pump. Mike is experimenting with lost 3D PLA (standard 3D material) and lost wax deposited by 3D for the cores. His experiments with wax printing have been tricky with the wax warping or sticking to the platen base.

Larry Zurbrick, our excellent newsletter editor keeps up on free CAD software. One such site was: [rs-online.com/designspark/mechanical-features-and-benefits](https://rs-online.com/designspark/mechanical-features-and-benefits). This is a relatively easy software package.

A more full featured and longer to master CAD package is from Creo Elements: [ptc.com/en/elements-direct/modeling/express](https://ptc.com/en/elements-direct/modeling/express). This limits you to 60 unique parts in an assembly.

We have received the very sad news that Mrs. Hettinger has passed away. All of us send our deepest sympathy to Bob. She was always a wonderfully cheerful and supportive presence at our many meetings.

Remember that our December meeting will be on the second Saturday, the eighth. It will be held at the Golden Gate Live Steamer Club House. Bring food and engines to run for an early Holiday event!