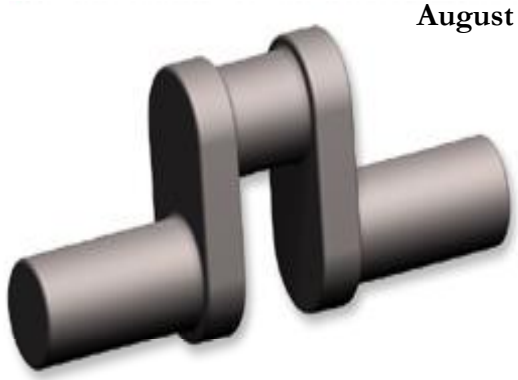
Bay Area Engine Modelers Club
www.baemclub.com

August 2022

The Crank Calls



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MEMBERSHIP $25.00 US
Contact Paul Denham at
pedenham@comcast.net

NEXT MEETING

Saturday, August 20, 2022, at the Golden Gate Live Steamers clubhouse site in Tilden Park, Orinda, CA

Gate opens at 9:00 am

Meeting starts at 10:00 am

Upcoming Events

- Aug 20: BAEM meeting at GGLS
- Aug 26-28: Goodguys Show, Pleasanton
- Sept 17: BAEM meeting at GGLS

See below for more details regarding events. Watch Crank Calls, BAEM emails and BAEM web page for updates. BAEM meetings are usually 3rd Saturday of the month except December.

MEETING NOTES

Monthly Bay Area Engine Modelers meeting was held a Golden Gate Live Steamers site on July 16, 2022. Twenty-two members were present including several new members.

Ray Fontaine mentioned that Early Day Gas Engine & Tractor Association Branch 13 would be showing engines at the Amador County Fair July 28-31. BAEM members were invited.

NEW MEMBERS/VISITORS

Mark Baker paid us a visit.

BAEM members are reminded that visitors are welcome at our club meetings, and we're always looking for new members.

TREASURER'S REPORT

President Paul Denham reported the club is still financially sound, with annual insurance the principal recurring expense.

Reminder: 2022 dues of $25 are due. Give your check to Paul Denham at the next club meeting, or mail to Deirdre Denham at 1937 Merchant St, Crockett, CA 94525. Make checks payable to "BAEM".

BAEM's YouTube Channel: https://www.youtube.com/channel/UCZ7VbDw_y0GtNm1n6KWiQkg

CLUB BADGES

If you are a member in need a badge, contact Mike Rehmus (mrehmus@byvideo.com) who has offered to produce them.

UPCOMING SHOWS/EVENTS:

The Goodguys West Coast Nationals custom car show is scheduled for Friday – Saturday – Sunday, August 26-28 at the Alameda County Fairgrounds in Pleasanton. We have decided to accept the invitation and will be showing our model engines.

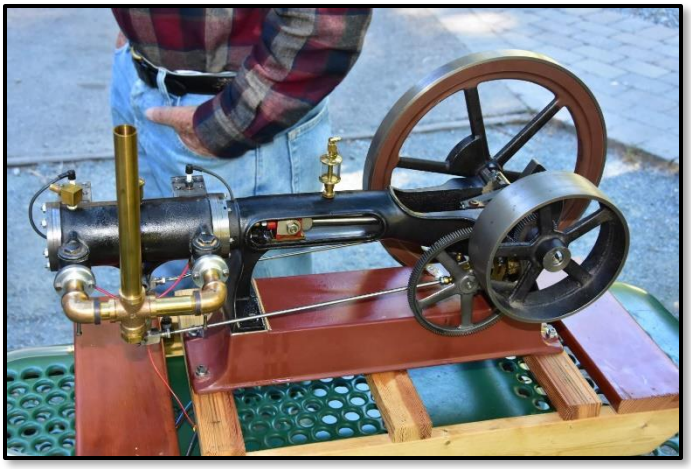
Steve Hazelton is coordinating our show logistics. It is essential that you contact him if you are planning to attend. Thursday afternoon is for setting up. If you don't want to show your work, you can still attend and help out.

Steve Hazelton: steve.hzltn@gmail.com 707-501-3535
Paul Denham: pedenham@comcast.net 925-917-1987

FIRST POPS

We were excited to be able to view two different "first pops" at this meeting.

The first was a joint effort between Paul Denham and Carl Wilson. Paul ran a *Mery Explosive Engine* that Carl Wilson built from a Martin Models casting set (https://www.martinmodel.com/collections/model-engine-casting-sets/products/mery-engine-casting-set). This model is a replica of the double acting gas engine patented by Michael Mery in 1895. Envision a spark plug and combustion chamber on both sides of a single piston - similar to a double acting steam engine.

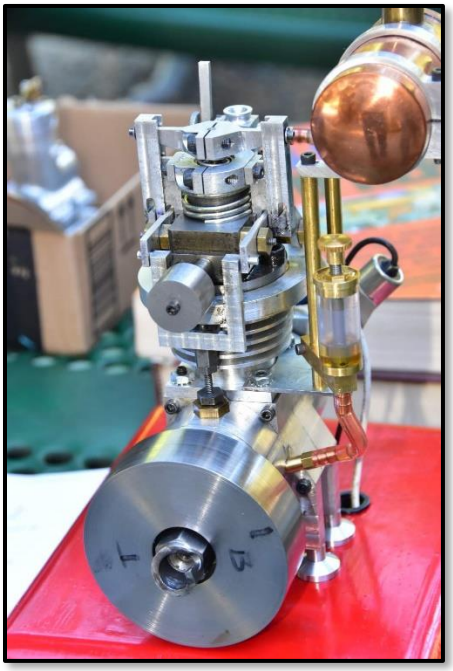


Mery Explosive Engine

Close-up. Note the single cylinder, dual combustion chamber design.

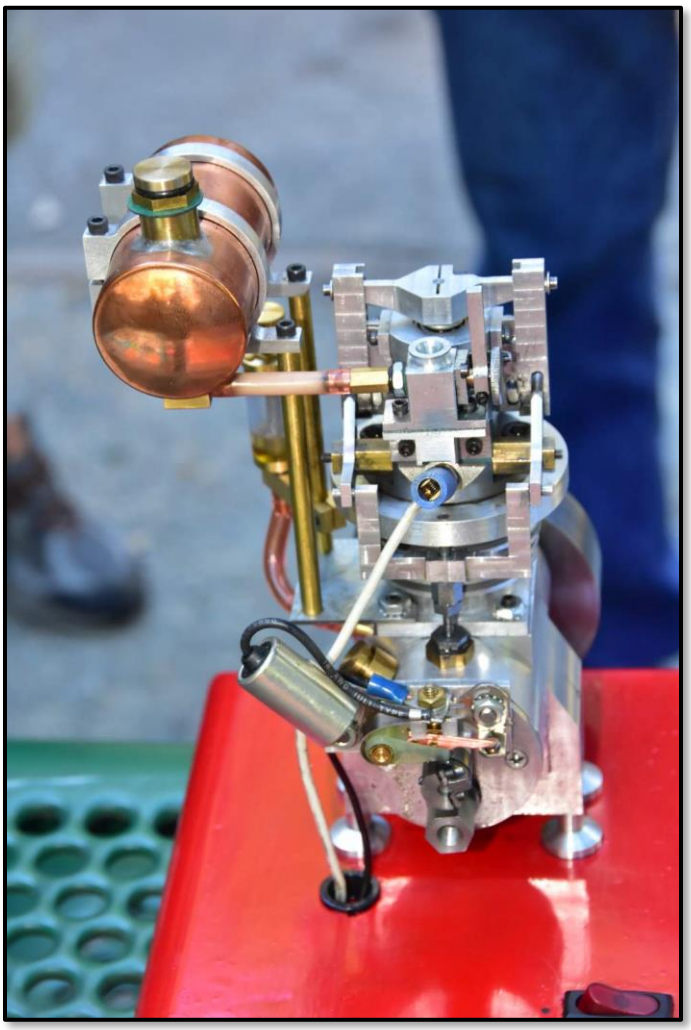
The Mery is a 6-cycle engine, achieving smooth power equivalent to a two-cylinder engine, yet having only one cylinder. Paul noted that the engine was very well machined, but Carl had not gotten it running. Paul tuned the on-demand propane carburation, ignition, and timing and had it running very well.

In a side note, Paul put together a high-powered CDI ignition to help with starting. He had to switch ignitions when he realized the FCC no longer licenses spark gap transmitters.



Kiwi Coaxial Valve Engine

The second “first pop” was a unique, original engine designed and built by BAEM member Joel Cohen. It consisted of a 15 cc single cylinder throttle governed vertical configuration. He called it a *Kiwi Coaxial Valve Engine* to reflect the unique valve configuration, consisting of a smaller diameter intake valve located inside the larger diameter exhaust valve mechanism, both valves sharing the same vertical center axis, but operating with independent timing. Engine ran well. Congratulations Joel, on the successful running of a new original engine design!



Another view of Joel’s unique design

BITS AND PIECES

Peter Lawrence gave an update on his Merlin rework after its first run at the June meeting. He discovered some swarf in the intake that required cleaning and valve reseating. Peter reports that the engine now starts reliably after pinning the slipping cam gears.

Peter is also pursuing his version of the Hansen vertical diesel (https://www.youtube.com/watch?v=xh0Vzq6_C2s) that he is reverse engineering based on what can be seen in the video, because drawings are not available. Using the fixture he showed at the June meeting, he assembled the base using a combination of silver soldering and TIG-brazing using silicon bronze rods. Peter reported that he was successful in his first attempt after cutting enough material to fabricate four sets, anticipating some scrap during his learning curve.

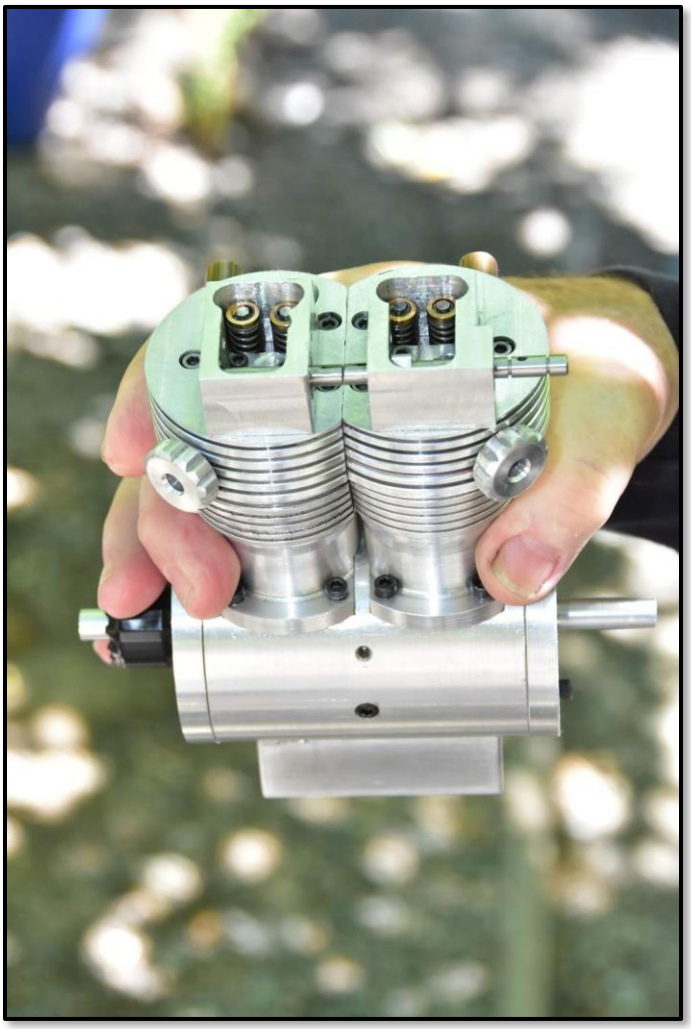
Brazing, an efficient way to join thin metal pieces

[Ed: here are some references that explore the differences between soldering, welding and brazing:

https://www.machinedesign.com/fastening-joining/article/21831910/whats-the-difference-between-soldering-brazing-and-welding
https://www.millerwelds.com/resources/article-library/tig-brazing-with-silicon-bronze
https://www.youtube.com/watch?v=wf-Cq5eQmt0]

Looking ahead, Peter is expecting that machining the very small aperture fuel injector will be challenging.

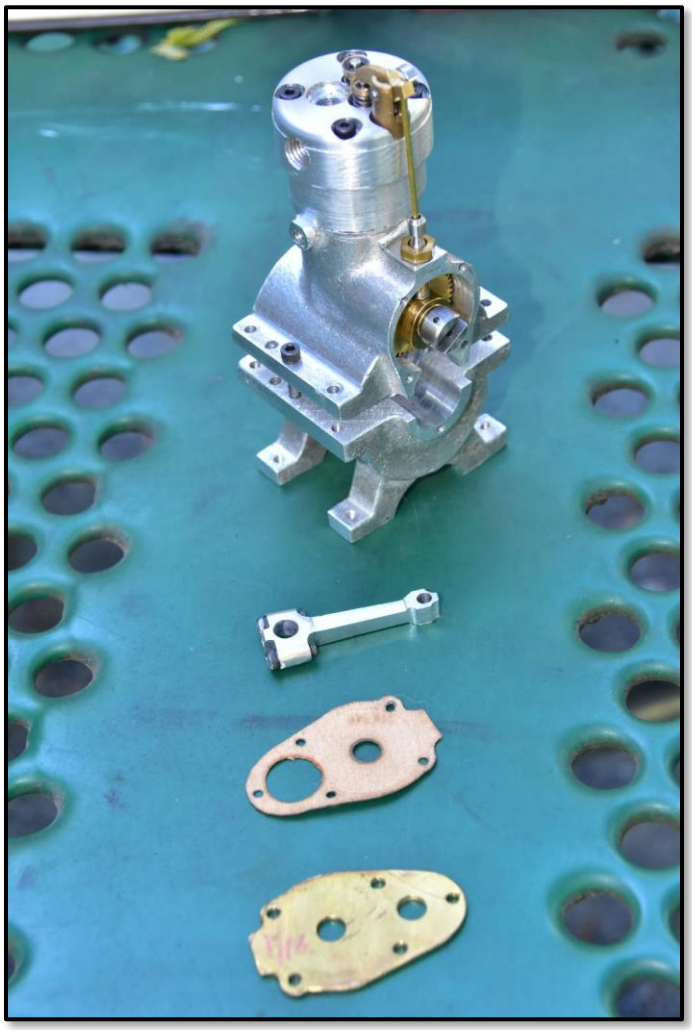
George Spain showed his progress on a two-cylinder engine he is building from his own design. He calls it *Double Trouble*. It has parallel pistons (moving together) timed for compression on one cylinder while the second exhausts.



George Spain's Double Trouble

George described an aluminum brazing technique he found on YouTube. What appeared to be a rectangular oil sump was joined to the round block with a brazing process. The block and sump were heated to 825ºF with a propane torch and joined with 800º rods that flowed nicely into the seams. With careful cleaning flux is not required.

Jerry Franklin showed his continued progress on his Bob Shore designed Little Devil single cylinder hit and miss. He described how he machined the head to achieve a reduced compression ratio, and described his method for laying out gaskets.



Jerry makes progress on his Little Devil

RAMBLINGS

BAEM member Jim Piazza reports that he completed work on a CNC spindexer, using a World of Ward controller.

Jim's CNC Spindexer

Jim explains his decision: "I went for the ready-made controller because I didn't want to take the time to build one up. The unit is well made in a diecast box. I used a 4 to 1 ratio cog belt. Front seal was cast from 60 dur RTV."

"I used rule #1 and 2 when assembling it.
-Rule 1: Use what you have.
-Rule 2: Work with what you know."

Thanks for sharing, Jim. Keep up the good work.

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Who says modelers can't contribute to scientific endeavor?

Club member Paul Knapp's spark plugs are in space! Dawn Aerospace of New Zealand has been using Paul's spark plugs to ignite thrusters for satellite propulsion systems. His are the only spark plugs that have been up to the task of performing flawlessly under wild extremes of temperature.

Dawn Aerospace of New Zealand has been flinging his little masterpieces into orbit for some time and are very pleased with their satellite mobility performance.

The thrusters are beautifully crafted as a single structure using inconel 718. They are supplied as single, four, or eight thrusters to be easily configured to a variety of satellites.

The fascinating details and photos can be found at: https://www.dawnaerospace.com

But far better is to go to You Tube and type in: "Dawn Aerosystems" for a variety of excellent videos of the thrusters in action. There is even a musical production with B20 thrusters playing a waltz!

As they say down under: "Good on you Mr. Knapp!"

--Bob Kradjian

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Working on an interesting project? Got a great BAEM story? Share it with us here. Send us pics and project details, and your hard work will be shared with the entire club.

WANTED

BAEM member Larry Bunch wants to purchase a Logan 11 x 36 Lathe and asks that anyone who knows of one for sale please contact him.

Larry Bunch 209-404-6700
wendyrocky2@gmail.com

FOR SALE

Dwight Giles has a vintage motor he is offering:
-**1.5 hp electric motor.** 1750 rpm. 110/220v AC single phase. Heavy! Price: Free!
Contact Dwight at jig313@aol.com or ph: 707-648-1481

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Got something you'd like to sell? Your ad is free and will be seen by likely customers.

NEWSLETTER CONTRIBUTIONS

Your contributions to this newsletter are appreciated: workshop reports, tech articles, reviews, historical pieces, whatever. You contribute, we'll figure out how to post it. Send your contributions to either or both of us. Thanks!

-Mike Byrne at mgbyrne3@comcast.net
-Wes Wagnon at weswag@ix.netcom.com