

The Crank Calls



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MEMBERSHIP \$25.00 US

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NEXT MEETING

**Saturday, February 15, 2025, 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

- February 15: BAEM meeting at GGLS
- March 15: BAEM meeting at GGLS
- April 15: BAEM meeting at GGLS
- May 3: STEAM Discovery Festival, Solano

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

The Bay Area Engine Modelers met at the Golden Gate Live Steamers clubhouse on January 18, 2025. Weather was clear and chilly, and the fire in the wood stove was most welcome. 12 members were present.



January meeting

NEW MEMBERS/VISITORS

The club was pleased to welcome new member Aaron Hall. Aaron has an ambitious machining project in mind: a working model of the newly patented Porsche six stroke IC engine. Aaron is seeking someone with machining expertise to partner with him on this project.

BAEM members are reminded that visitors are welcome at our club meetings, and we're always looking for new members, whether or not they have a specific machining project in mind.

TREASURER REPORT

Paul Denham reported that club finances are in good shape. He pointed out that insurance is our main expense item.

Annual \$25 dues are payable for 2025. Please give your check to Paul Denham, or mail it to Deirdre Denham at 1937 Merchant St, Crockett, CA 94525. Make checks payable to "BAEM".

CLUB BADGE

If you are a member in need of a badge, contact Mike Rehms (editor@modelenginebuilder.com) who has offered to produce them.

SHOWS AND EVENTS

Shows present an opportunity to show off our fine engines and meet potential new members of our club. After all, what could be better than spending a day hanging out with people who are fascinated by our model engines, and want to hear all about what we've been doing?

Coming up on Saturday, May 3, we have the S.T.E.A.M. Discovery Festival at Solano Community College. (S.T.E.A.M. stands for Science, Technology, Engineering, Arts, Mathematics. Nothing to do with that product of boiling water.)

<https://steamdiscoveryfestival.com>

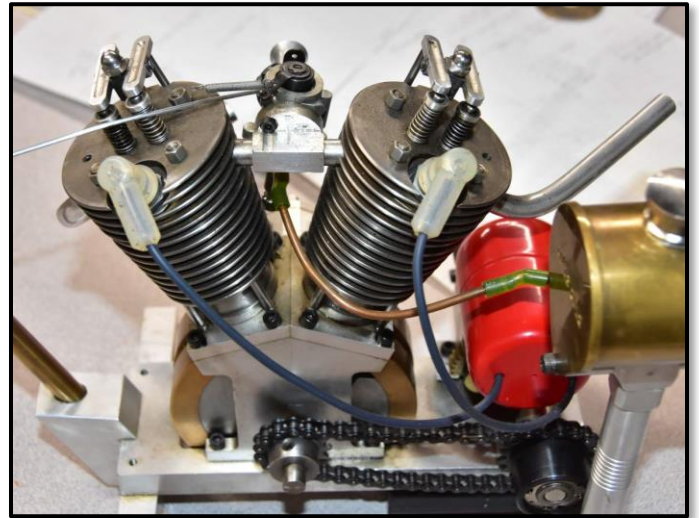
A bit closer to home, on May 31-June 1 we have the GGLS Spring Meet and Open House. Saturday is just for the GGLS folks, who always appreciate our work. Sunday is open to the general public.

FIRST POPS

No first pops at the last meeting.

BITS AND PIECES

Paul Denham showed the progress he had made on his custom four-cylinder "Double Ducett." The name is grounded in model engine history: the "Hoglet". The Hoglet was a model of a Harley Davidson four-stroke twin, originally designed by Randall Cox. The Hoglet build was featured in issues #10 and #11 of Model Engine Builder magazine and remains the most popular of all the back issues of that magazine. The other design influence is the Ducati 90° V-twin.



Paul's Hoglet

Paul shared his version of the Hoglet that he fabricated several years ago. It is easy to see why this is a popular build. It is an interesting engine. The external pushrods/rockers add visual interest. The compact nature of the design adds to its appeal. And, of course, the Harley Davidson name is legendary.

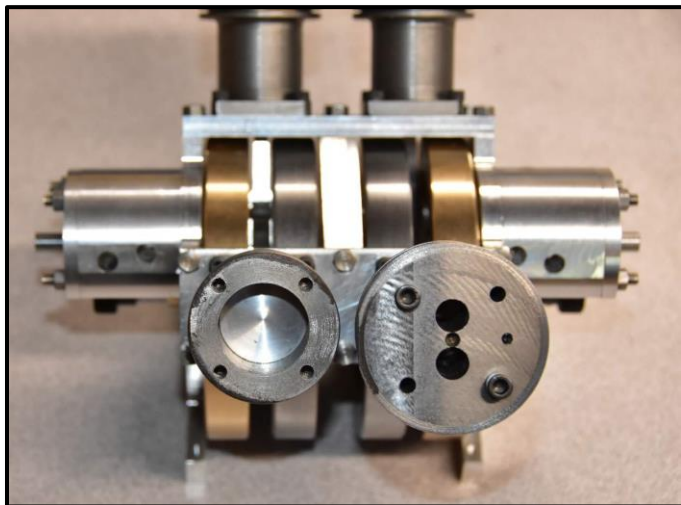


Paul's Double Ducett

The Hoglet is Paul's inspiration for the new engine he is designing and constructing, using the cast iron cylinders he got from Dwight Giles.

Paul's engine is a 90° V, four cylinders, pushrod operated overhead valves. Bore is 1.0", chosen due to the availability of Dwight's cast iron piston rings to fit that bore. Stroke is 0.725". The crankshaft, which turns on plain bearings, is fabricated from brass, 4140 steel, and hardened dowel pins.

The major machining operation was the fabrication of the crankshaft with its massive flywheels, made of 4140 steel. According to Paul, the 4140 was challenging to machine. Paul began with round stock, and it required a large bore to fit the crankshaft. Paul chain-drilled out a series of holes to define his cut-line, preserving a lump of 4140 for a future use.

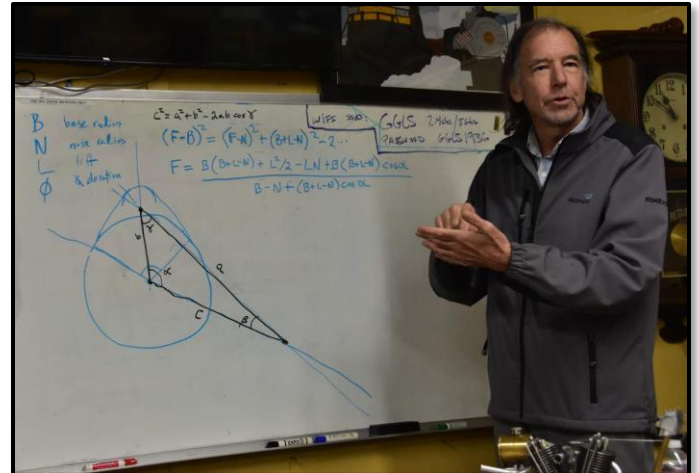


Paul's Double Ducett, viewed from top of cylinder

Paul's build proceeds. We look forward to his progress report at next month's meeting.

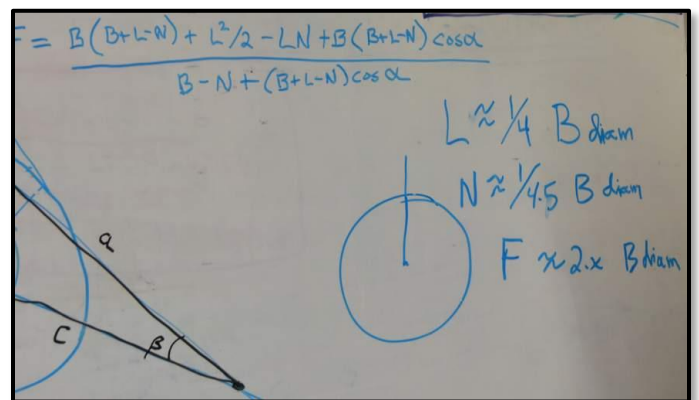
Tech Talk Re Camshaft Profile Grinding

Peter Lawence is currently in the midst of fabricating several four-cylinder, four-stroke engines. These include his Merlin 4-cylinder, his 4-cylinder Dusenbergs, and his Dehaviland cirus 4-cylinder engine. All of these require camshafts to operate the valvetrain, with appropriate mechanical timing. The camshaft lobes create lift for the intake and exhaust valves and define the timing of the opening and closing of these valves. Peter provided the club with a technical talk regarding how to calculate the profile for a 3-arc cam.

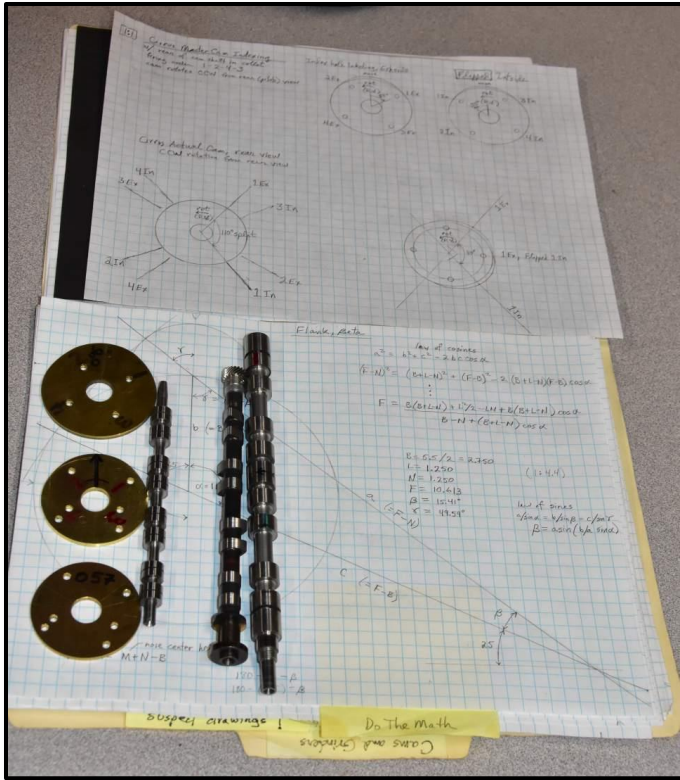


Peter utilized the whiteboard

The camshaft profile consists of a base circle and an offset nose circle that provides the valve lift, which is the amount of the displacement of the cam surface as the cam rotates at 1/2 engine speed. The "3-arc" profile consists of the base circle arc, the nose circle arc, and a third arc that joins the other two arcs. By application of the law of cosines, Peter was able to calculate the length of the third arc, and the location of its vertex.



Peter's formula for F, the radius of the 3rd cam arc



Peter's calculations, cam shafts, and cam profile master discs for grinding cam profiles.

Peter has a cam grinding fixture that utilizes brass discs to control the position of the cam in relation to the grinding wheel. These brass discs serve as masters, to control the grinding of the cam profile. The discs maintain appropriate indexing of the cam. The position of the disc is controlled by 1/8" holes that utilize 1/8" steel pins to lock the position of the disc.

Camshaft grinding is a complex topic. The club thanks Peter for his efforts to create a grinding procedure that is relatively easy but manages to provide decent engine performance.

Those present were relieved to find that cam grinding profile calculations were not going to be on the test.

RAMBLINGS

Got a favorite YouTube machinist that you'd like to recommend? Let us know. Think this topic should be omitted from future newsletters? Let us know.

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.

FOR SALE

Longtime BAEM member Carl Wilson is offering for sale a huge chunk of model engineering history.

Long before Mike Rehmus started publishing *Model Engine Builder*, long before *Strictly IC*, long before Village Press began publishing *Machinist's Workshop* and *Home Shop Machinist*, there was the first of this kind: **Model Engineer Magazine**.

Per Wikipedia: "**Model Engineer** magazine was first published (in the [United Kingdom](#)) to support the hobby of [model engineering](#) in 1898 by [Percival Marshall](#), who was to remain its editor for over 50 years. The magazine addressed the emergence of a new hobby — the construction of models (often working) and experimental engineering, largely in metal. It transcended class barriers, appealing to professional engineers, jobbing machinists and anyone interested in making working mechanisms."

Carl Wilson is offering for sale his extensive collection of *Model Engineer Magazine*. Vols 1 – 11 hardbound reprints; 68, 80, 84 original hardbound; and 82 – 173 loose in boxes. Approximately 104 vols @ 2 vols per year = 52 years. These occupy about 23 lin ft of shelf space. Best offer, local pickup only. These are on the second floor and will have to be carried downstairs. Located in Mountain View. Carl Wilson talleyho123@yahoo.com

But wait, there's more!

Carl's shop has been sold and the buyer has allowed him to advertise and show some of it to members of Bay Area Engine Modelers. Specifically:

--a **Sunnen hone w/ mandrels**. This is a mix of an early Sunnen body and a shop-built oil pan and pump. Also included are several external hones.

--a **DIY tap burner**. All the electrical and vibrator parts are OEM but from different machines and assembled into a working machine. I have successfully burned out 4 – 40 to 5/16 – 18 taps.

--a **Taiwan vertical mill**, 8" x 30" table, Bridgeport J head w/VFD, and BP slotting head.

--an **electronic dividing head** based upon a SpinDex w/40:1 worm gearing driven by a stepper motor and a micro-stepping Division Master drive. This is mounted on a ball bearing linear slide driven For and

Rev by a DC motor. This was used for cutting clock gears.

--**Other small tooling** including measuring tools may be available.

Pictures on request and you may see these items in his shop. Carl is acting as the agent of the owner. You will be buying from the owner, not from Carl.

Located in Mountain View. Carl Wilson
talleyho123@yahoo.com

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

NEWSLETTER CONTRIBUTION

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