

Bay Area Engine Modelers Club, Branch 57 of EDGE&TA

The Crank Calls



October 2013

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|----------------|----------------|----------------|-------------------------|
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MEMBERSHIP \$25.00 US

Contact John Gilmore at
jpgilmoreco@aol.com

NEXT MEETING

October 19, 2013 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 except December

Note from your Editor: We will be going digital on the Crank Calls Newsletter. Why are we doing this? To save the cost of ink, paper, envelopes and postage and the time to print, stuff envelopes, and mail paper newsletters we would like to email BAEM Club members that the current version of the newsletter is available for download from the Club's website. Please make sure that the Editor has your current email address by sending him an email at baem_editor@pacbell.net

MEETING NOTES

September 21, 2013
Bob Kradjian, Secretary

Don Jones called the meeting to order at 10:00 am. He then projected a three-minute video made by the Goodguys publicity team featuring our WEME show appearance.

The video can be seen on You Tube. When you've accessed YouTube, type in: goodguys Pleasanton 2013. It does not seem to be case sensitive and spaces are OK. It's about the tenth video down in the list.

Has our newsletter gone digital? Our fabulous Editor, Larry Zurbrick says that only one e-mail bounced back to him. So far, so good!

VISITORS: John Ilmberger and Caroline Witten visited. John's son is taking Solid Works and machining classes at Chabot. We hope all three join us.

FIRST POPS: There were no first pops.

TREASURER'S REPORT: John Gilmore reports we are solvent and the Goodguys have paid us for WEME expenses.

EVENTS:

WEME Show Report: Jim Moyer and his one-sixth scale Chevy motor was the star of our show and was nicely featured on the Goodguys video mentioned above. A great job, Jim! His sturdy little Chevy (car that is) performed well for the 1800 miles, to and from the show, until just after Jim and Bonnie arrived home. Then, and only then, did it shove a push rod through a rocker arm just like the big Chevy engines. Of course, Jim had a spare and all was made well in a few minutes. Jim also sent

two nice letters to club officers thanking us for our hospitality.

Our vendors at the WEME show reported a good experience. Skip Adrian with his nice laser edge finder and the Little Machine Shop crew also reported profits. We truly appreciate our excellent vendors.



Roy Anderson fashioned a lovely plaque honoring John Gilmore for his outstanding work as the WEME show director. John, for his part, thanked his many volunteer helpers at the show.

The Goodguys staff is very interested in a Doughboy-type pool for powered boats for next year's show. They are willing to meet the expenses involved. The perennial question about liability for injury or water injuries was mentioned. Perhaps the Goodguys's blanket insurance will cover that issue.

The tank show was a great success. The tankers liked the outdoor location and plan to beef up the show for next year with fifteen new tanks---the indestructible type, for the kids to run.

WEME Facilities Problem - We have had a persistent problem with water condensing in the hoses supplying air to the steam engines at our show. John Gilmore and I want to fix this before the next show. I am looking for an aftercooler, essentially a radiator and an electric fan unit, to connect between the trailer mounted compressor and our manifold board. They are available from air

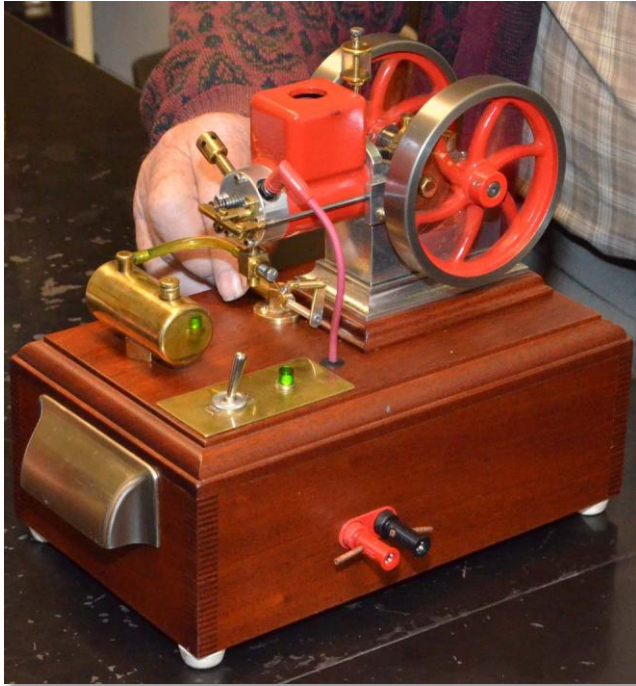
compressor supply houses, or may be made from transmission oil coolers and similar radiator type units. Of course, they would have to be rated for the supply air pressure of 100- 125 psi. Dig deep into your junk piles and see if you have something useable. Thanks, Carl Wilson

IRONSTONE WINERY CONCOURS: Is this the last show for the year? Ken Hurst and I tested the waters at a new show---for our club, that is. It was the 17th annual Concours d'Elegance at the Ironstone Winery near Murphys, California. It's about a three-hour drive from the Bay Area in a lovely site. We were welcomed by the organizers and showed our engines to the appreciative attendees of the car show. The organizers mentioned our contributions in a Hemmings Daily blog. See:

<http://blog.hemmings.com/index.php/2013/10/09/aurburn-boattail-speedster-wins-best-of-show-at-ironstone-concours/>. It's a lengthy URL but has nice photos and a paragraph devoted to our BAEM appearance. We plan to discuss this at the October meeting.

SFMCD is still interested in us. The San Francisco Museum of Craft and Design maintains contact with the club and possibly will ask us to mount a display in 2014.

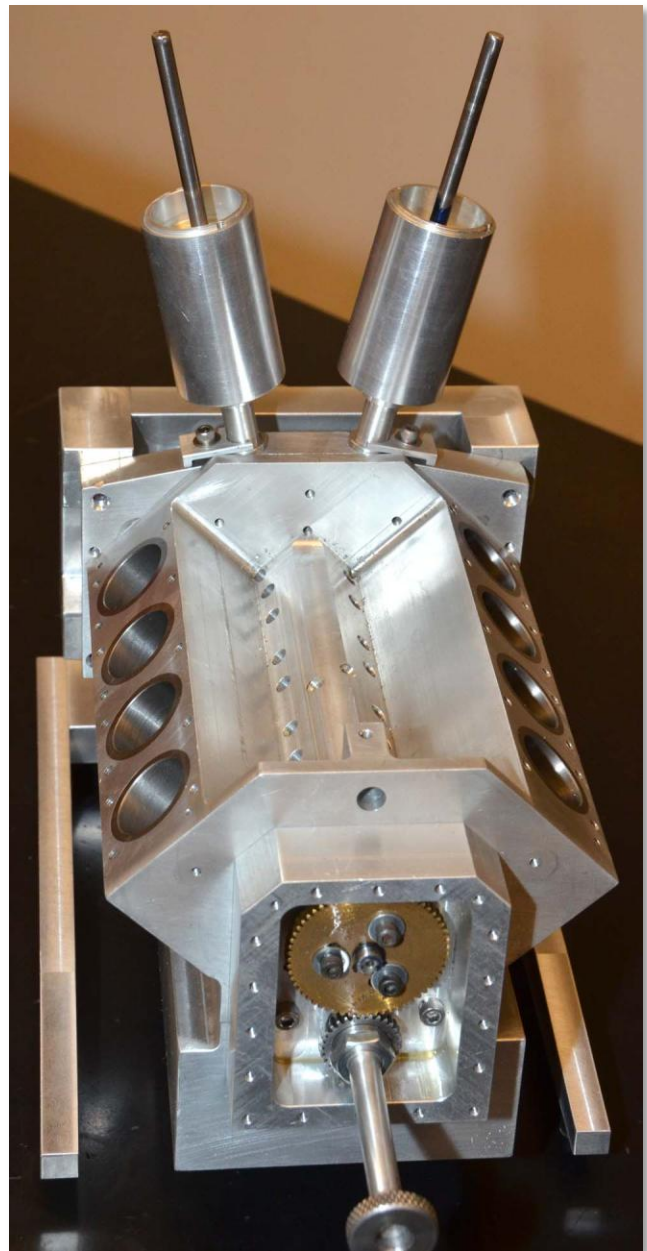
BITS AND PIECES:



George Gravatt fashioned a nifty throttle mechanism for John Gilmore's Upshur engine. John fired up the little beast and it functioned perfectly. This is just one of the nice things about our group. We have helpful and knowledgeable folks who pitch in with assistance when needed. I have enjoyed a great deal of help from Dwight Giles, George Gravatt, Ken Hurst, and the late Carmin Adams.

John also brought us up to date on his Black Widow V-8 project. He has finished the timing gears. The camshaft gear is slotted for the fastening bolts. This will allow for precise small adjustments of advance and retard when "degreeing-in" the cam. The distributors will be fashioned to look like magnetos, there will be two of them. Each will have four wires, no dual spark plugs. The twin approach is chiefly to provide a racing engine appearance, however an advantage is a greater gap in the distributor cap brasses.

Paul Knapp will provide two new ignition systems with built-in advance and retard capability. The coils are extremely small and John believes that he can incorporate them within the distributor housing. Helical gears for the distributor drives have been made. Accurately locating them was a challenge. Progressing to the pistons and rods will be next phase of this ambitious build.



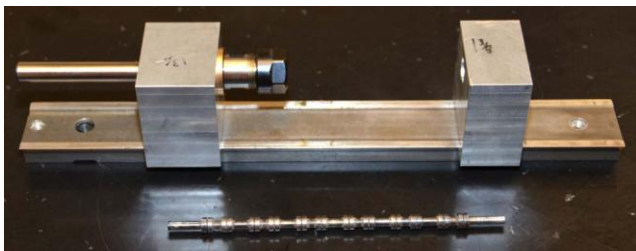
Peter Lawrence showed us his progress on a nine-cylinder radial that is a highly modified Hodgson build. He has designed his own cylinder heads using some of Bruce Satra's ideas to reduce the vertical height. He used 1144 stress proof steel for the cylinders. He used an Iscar parting tool for machining the deep fin slots with a nice rounded end to reduce stress. He is putting his Merlin V-12



project “on the shelf” for a time before fully launching into the camshaft phase of the build.



He showed a lathe bed from a Sherline that he is modifying to hold a collet with a bronze bearing at one end and dead center to be built for the other. When completed, this will be the basis of his rocking-style camshaft grinder.



To all members: bring in your project for us to see. This is a valuable part of our meeting.

Pat O'Connor visited Jacques Littlefield's military museum in Portola Valley and showed us photos of a German Panzer IV (Panther) tank engine from World War II. It's remarkable design of amazing complexity. Along with Pat's photos and explanations, a lively debate was sparked. It also highlighted the difficulty in repairing and maintaining this machine under combat conditions.

This remarkable museum with over 240 military vehicles is seen under: mvtf.org on the Internet. This all stands for: “Military Vehicle Technology Foundation”. Under “Collection” at that web site, you will find colored panoramas that you can control with your mouse. Many of us remember seeing some of the lighter military vehicles from that

collection being repaired at Paul Bennett's shop in Hayward. For a truly remarkable photo tour of the amazing museum without leaving home, see: mishalov.net/militaryvehicles/pictures/img. Tours are arranged using e-mail forms available on the web site. The cost is twenty dollars, ten if you're an old-timer like most of us.

Steve Hazelton then favored us with just a portion of a lengthy video that he filmed at our Pleasanton show. It's very nicely done and features detailed explanations of displayed engines. Especially interesting were segments on Dick Pretel and Jim Bove's engines.

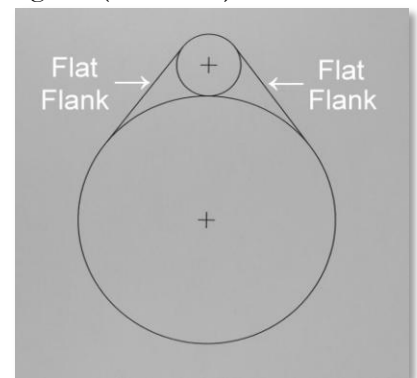
Carl Wilson then gave a Power Point display supplemented by mocked up working models to augment his five articles in Model Engine Builder. The subject is camshaft design, function and how to grind cams. Videos will be made that can function as a supplement to the magazine articles. Carl's presentation of a complex subject was nicely done and helps to explain the wonderful world of cams, lifters and their function.

TECH TOPIC: CAMS AND FOLLOWERS

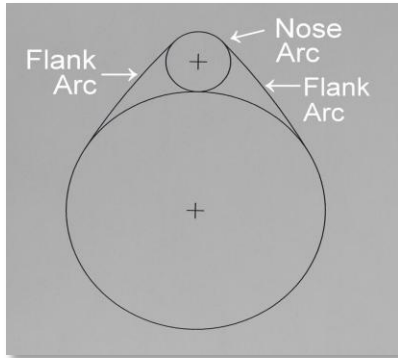
Carl Wilson

A cam and its follower are a mechanism for converting motion from one form to another. Internal combustion engines typically use rotation to reciprocation using lifters or buckets, or rotation to oscillation using rocker arms or finger followers.

Two types of cam profile are used by model engineers: the flat tangent (flat flank) cam or the three arc cam. The difference between them is the shape of the flank. The flat flank cam was widely used with roller followers for early automotive and farm engines because it is easy to design and build. It is less suitable for use with flat followers because this combination imposes high acceleration on the valve gear causing high forces, vibration, and wear. Stiff valve springs are required to control the motion of the valve gear.



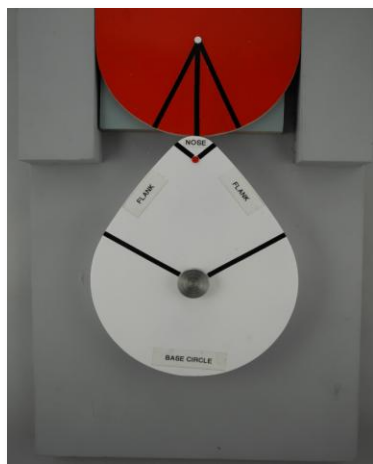
The three arc cam – nose arc and two flank arcs – has lower acceleration when used with flat followers. This decreases forces in the valve gear and allows the use of lighter valve springs. This cam profile is suitable for pushrod and higher speed engines.



The last three slides illustrate the principles that underlie the process of cam grinding and will

be used in the next Tech Topic at the October meeting of BAEM.

Cams and followers interact at their point of contact and there are two rules that govern this interaction: two circles contact each other along the line which connects the centers of the circles



FOR SALE:

Themec J35 Tool Post Grinder. New, in box with extra wheels. Costs \$2500.00. Asking \$1750.00. Contact John. (925) 228-8483

WANTED:

Looking to purchase a miniature model Ford Model A engine in operating condition similar to the one pictured in the January 2012 Crank Calls newsletter. Please contact Ron at rludford@pacbell.net or call 530-885-0171 or my cell at 530-906-6183



And the line of contact between a circle and a flat surface is at right angles to the flat surface.

The shape, size, and position of the follower affect the conversion of motion.