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

The Crank Calls

August 2013

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MEMBERSHIP $25.00 US
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NEXT MEETING
August 17, 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

August 23-25 – WEME @Goodguys Pleasanton

BAEM meetings:
3rd Saturday of the month except December

MEETING NOTES

July 20, 2013
Bob Kradjian, Secretary

President Don Jones called the meeting to order at 10:00 am

VISITOR: Barry O'Connor is our welcome visitor and accompanied his Dad to the meeting.

FIRST POPS: There were no first pops reported.

EVENTS: Our club appearance at the Palo Alto Concours, June 30, at the San Mateo Fairground was a success. Members Aldrich, O'Connor, Throop, and Kradjian had a great time showing engines in a lovely grassy area under a huge oak tree. The reception of the attendees was gracious and a good time was had. The Concours managers were very pleased with our participation and want us back next year. Our only problem was a very loud Public Address speaker that shattered our eardrums and made conversation impossible. Al Aldrich definitively solved this problem by yanking out the wires.

John Palmer says there is a Cars in the Park Show September 8 at the San Jose Historical Museum for both autos and motorcycles. Branch 3 of EDGE & TA will have a display as well. For details, contact John.

Ken Hurst and George Gravatt displayed engines at a Napa show last Saturday. These gentlemen deserve recognition for putting on mini-shows such as this for many years.

Our big one, the annual WEME Show is scheduled very shortly after our next meeting! August 23, 24 and 25 are the dates at the Pleasanton Fairgrounds in conjunction with the GoodGuy's West Coast Nationals.

We are very pleased to report that member Jim Moyer plans to make the long trip to Pleasanton from Boyd, Washington! His magnificent, tiny, engine is to be our show headliner. For those who haven't seen this gem, it is a one sixth (!) scale rendition of a small block 327 Chevy engine. The bore is 0.600", the stroke is 0.487" and the displacement is 1.1 cubic inches. This little marvel

has the tiniest spark plugs you've seen, and runs like a sewing machine. For a sneak peek at what you'll enjoy later, you could preview a 35 second video on You Tube. Type in: World's smallest running Chevy V-8. Note the size of Jim's hand on the throttle.

Event manager, John Gilmore is urging all members to plan to bring engines, even if they can't stay for the full three days. Also, bring engines under construction. Partially completed engines are often more interesting than completed "buttoned up" engines. Remember that the Street-Rodders are always our most enthusiastic and knowledgeable visitors. The Fairgrounds is entirely open on Thursday. You can drive right to the exhibit hall (The Agriculture Building, building P) to download. Security will be provided by club members and the Goodguys organization until Sunday afternoon closing. VIP parking permits and show passes will be provided Thursday at the Fairground, or at the club meeting six days earlier. If you haven't exhibited engines before, just do it! It's a lot of fun. Let's make this show even bigger than last year. Get your table requirements to Pat O'Connor as soon as possible. Our featured full-sized car this year will be Michael Cooper's legendary "Tubester" pick-up truck recently shown at the San Francisco Museum of Craft and Design.

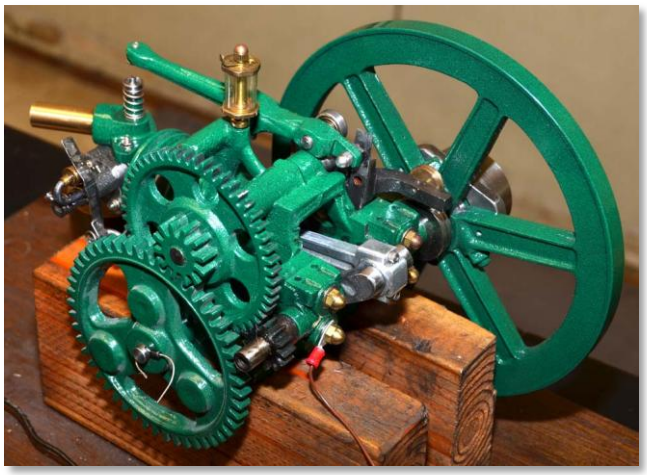
CORRESPONDENCE:

Karen Palmer reports that Dave Palmer exhibited his models again this year at the Phillips Ranch show on July 13th. This is the Phillips Ranch on Phillips Dr. in Penngrove, also known as the Penngrove Power and Implement Museum (PPIM). There was a large crowd enjoying the show which is always such a hit. And owner Steve Phillips was having a great time running all the engines on his ranch, most of which are quite large. Rounding off the day were old vehicles on display, a great turnout of Branch 31 members with their engines, old tractors, and much more.

TREASURER'S REPORT: John Gilmore reports that the transfer of the club's account has been completed.

MEETING NOTES: I reported on a June visit to the Sherline Museum in Vista, California. The facility is absolutely beautiful and owner Joe Martin and Craig Libuse furnished a warm welcome and a tour. This is a worthwhile destination while also looking over the rest of the San Diego attractions. The Sherline museum is extensive, perfectly maintained, and chock full of fabulous exhibits. Did I mention that admission was free? Joe Martin is giving the entire modeling fraternity a wonderful boost with his museum as well as his precision small lathe, milling machine, and a large variety of quality accessories. A number of the fabulous engines on display were made entirely with Sherline tools. Paul Knapp's amazing collection makes up a substantial and comprehensive portion of the engine displays.

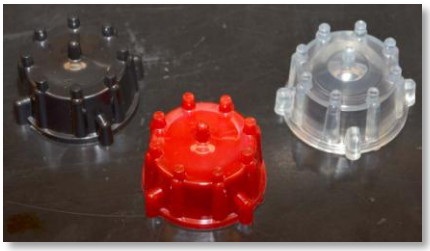
BITS AND PIECES:



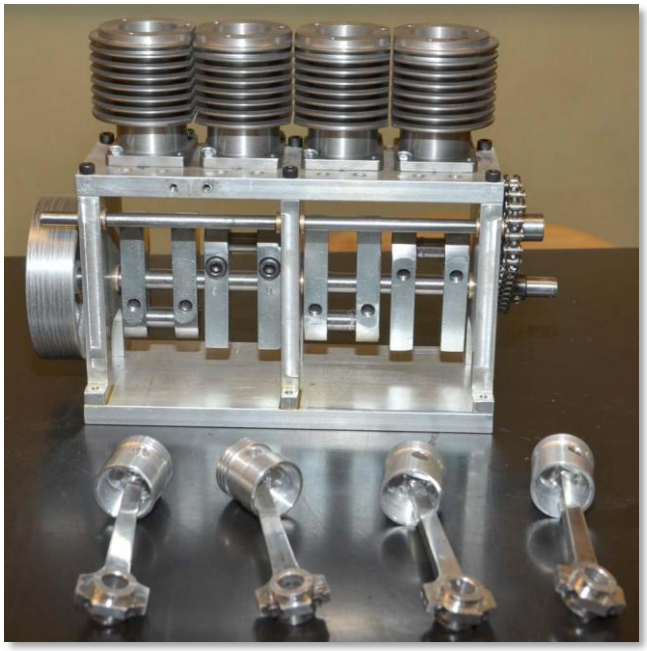
Paul Denham showed his Aeromotor 8-cycle. He started this engine with encouragement from his father who was a skilled machinist and an antique engine expert. It was a "fussy" build with a lot of monkey-motion bits that are tricky to build. He had trouble with the flywheel sheering both keys and set screws and finally resorted to Lock-Tite to solve the problem. Paul thinks that the 8-cycle design was contrived to avoid the Otto patent. However, it does have the advantage to keep the engine cooler than 4-cycle operation. Most full sized Aeromotors

have be converted to spark plug ignition. The original design uses an ignitor. Paul did some bench testing on the ignitor bar and found that a blob of silver solder made a far better contact than tungsten. The "best metal" issue has been a topic of conversation and controversy at our meetings in the past. The metal in a simple nail has proponents as well as the use of hard tungsten contacts. Maybe Paul's silver solder blob is the best. Paul used powder coating for the first time and reports mixed results. This was because he mixed some black powder in with the green. It didn't actually mix, and the result was green with black polka dots. A short video showed the engine popping along nicely, although a little noisily as well. The use of videos is a new wrinkle for our club and certainly cuts down the exhaust fumes in the meeting room.

Dwight Giles showed us three absolutely beautiful V-8 distributor caps he had just received from Chet Barker in Florida. They are in jet black, bright red and clear. That gentleman is in the die and molding business and furnished caps that look as good as anything from Delco. They need to be drilled, then finished with 1/8th inch brass inserts, as well as some interior facing work on a lathe. Dwight has no information on availability, further production, or pricing. If they become available to the hobby, they will be of the same high quality as the four-cylinder Woking caps (English) for the Sea Lion and the Seal engines.



Roy Anderson bought a mystery "What's-It" from John Gilmore last month. It had a model number "672" stamped on one piece. Armed with this tiny scrap of information, Roy went to the Internet and found that it was a 1935 Browne and Sharpe tool initially selling for $20.00 many years ago (the same catalog offers a one inch micrometer for $10.00). It is a bore gauge. The range is from a quarter inch to one inch. He also demonstrated a whistle described in Model Engineer with an associated sounding chamber. Carl Wilson brought us back to school days when he mentioned the Helmholtz resonator (or oscillator) as the proper name for Roy's whistle.



Ray Fontaine saw my Cox "Open Four" engine at an earlier Pleasanton show, and that inspired him to start his own build. He modified the plans from Model Engine Builder on the Cox six-cylinder project. His modifications are ingenious and nicely done and are resulting in a nice four-cylinder version. He will avoid Randall's "atmospheric" intake valve and use the pushrod and rocker arm arrangement. One of the joys of seeing an established design being interpreted by a variety of builders is the ingenious variation often used. Imagine the number and variety of different Wall Four engines produced since the 1930's.

John Meredith showed us a lovely Wright J-5 quarter-scale nine-cylinder version of the Spirit of St. Louis engine. This engine was featured in Strictly Internal Combustion many years ago. It has a one-inch bore making it a very large engine. John modified the design to make it more faithful to the

original design. Using the diffuser and fuel intake as described on the plans, John was unable to get the

engine to run. He then completely redesigned the impeller and intake chamber and also relocated the carburetor position. He settled on a Jerry Howell

carburetor design that works well replacing a Super Tigre version. He says the engine starts easily with hand propping and runs well. John says the engine is too stiff for even geared-down electric starters. He started this project in 1992. Unfortunately the casting sets went off market about five years ago. The castings are of superlative quality and are chiefly of the lost wax type. Note the crisp lettering of "WRIGHT" on the rocker arm covers. The entire

engine shows John's meticulous craftsmanship down to the finish on the running stand and the base.

Pat O'Connor visited the nuclear site at Hanford, Washington and gave us a fine mini-history of nuclear research and development during World War II. This led to the bomb dropped over Nagasaki on August 9, 1945. (The Hiroshima bomb was a uranium device from Oak Ridge.) We received an interesting explanation of the term "SCRAM" which describes an immediate shut down of the nuclear reactor. Pat was told that the acronym is for: "Sam the Control Rod Ax Man". According to legend, Sam was a tough logger whose job it was to ax the rope holding up the control rods. It's a great story, except……the real ax man was named Norman Hilberry. But, yes Virginia, there really was an ax man! Norman stood by, but was never needed, as the mechanical rod dousing mechanism worked perfectly. *(An alternate version of the SCRAM term origin history can be found at http://public-blog.nrc-gateway.gov/2011/05/17/putting-the-axe-to-the-scram-myth/ - Ed.)*

This is a rich story of an amazing crash effort to produce plutonium for the first full-scale plutonium reactor in world history. Eventually, 68 tons of

plutonium was produced. For a wealth of fascinating details, I recommend the "Hanford Site" on Wikipedia.org. Another good site is: www.b-reactor.org. At present, the area is largely deserted except for a commercial nuclear power plant for electricity along the Columbia River. Thanks to Pat for a detailed presentation and slides.

BAY AREA ENGINE MODELERS AND THE HISTORY OF THE AMERICAN RACING ENGINE – Written by Bob Krajian

Does our little engine club have a valid connection to the development of the modern racing engine? Well, indeed it does! Yes, the connection is a bit tenuous and over eighty years old---but it is very real. Here is the story.

The connection is through our friend and club member, the late Jay Eitel and his uncle E. J. Hall of Berkeley.

Jay's favorite uncle, his mother's brother, was an engine designer without any formal training. As a young man, he founded a business, with his friend Bert Scott that we now know of as the legendary "Hall-Scott". The West Berkeley Hall-Scott factory was where Jay would spend as much time as possible with his busy uncle giving him instruction and encouragement.

E. J. Hall had developed a relationship with the Duesenberg brothers in developing aircraft engines. Shortly after the Duesenbergs introduced their 183 cubic-inch automobile racing engine in 1921 they asked Hall for help concerning low power output, and catastrophic valve spring failures. Hall received an engine, made a test bed, and found that the cam lobe accelerations were far too violent. Valve springs often broke in only a few revolutions. Hall completely re-designed the camshaft timing and lobe contours. These changes immediately increased the power, reliability, and speed of the Duesenberg engines. Those engines quickly rose to the top ranks of American racing engines.

Meanwhile, in Southern California, Harry Miller had built his version of the 183 cubic-inch engine. He too, was experiencing very poor performance. Tommy Milton, a former Duesenberg driver and employee stepped up with a startling example of industrial sabotage. He persuaded another disgruntled Duesenberg employee to furnish him with the drawings for the new Hall camshaft. When this was adapted to fit the Miller engine, the results were startling. Miller engines with the Hall cams were untouchable. This was in spite of the Duesenberg monopoly on supercharging that lasted until 1925.

A subsequent American rule change was to limit displacement to 122 cubic inches. Jay's uncle stepped into the picture again. Now consulting for the Miller-Offenhauser group, he learned that they were struggling again with poor output and reliability.

He suggested a shift to two valves per cylinder instead of the previous four. He also advised a change to a 180-degree hemispherical combustion chamber that he had been using for years. Finally, he specified five main bearings instead of three. These changes helped to vault the Miller-Offenhauser engine line to an enduring pinnacle of racing success. As an example, the final tally of wins at Indianapolis for Duesenberg was three. For Miller-Offenhauser and successors, it was thirty-nine!

The gifted E. J. Hall taught his nephew, BAEM member Jay Eitel, well. We enjoyed Jay's knowledge, counsel and friendship until his death in June 2012.

Sources:

Jay Eitel, Personal Communication, 2000-2012.

Griffith Borgeson, The Classic Twin-Cam Engine, Dalton Watson Ltd, 1981.

Griffith Borgeson, Miller, Motorbooks International, 1993.

Griffith Borgeson, The Golden Age of the American Racing Car, 1966.