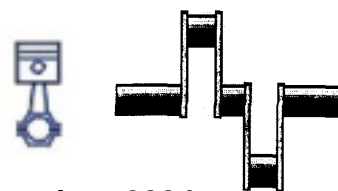


The Crank Calls



November 2004

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 Secretary.....Bob Kradjian.....(650) 343-7585.....bkradjian@aol.com
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 Tech Topics....Pat O'Connor.....(408) 733-3710.....pat1650@yahoo.com

NEXT MEETING

The Blackhawk Auto Museum event has been canceled.

NEXT MEETING

November 20, 2004 – 10AM
 At Robert Schutz's Shop
 366 40th St. Oakland, CA

POT LUCK HOLIDAY PARTY

December 11, 2004 – 11AM At
 Robert Schutz's Shop
 366 40th St. Oakland, CA
 Bring your favorite engine
 and food dish

Check out the BAEM Web Site at
www.baemclub.com
 Send your project photos to the
 Web Master Jim Piazza.
 Phone: 408-446-4825
 Email: jpiazza@ix.netcom.com

DUES ARE DUE

TO JOIN THIS CLUB OR RENEW YOUR MEMBERSHIP

Contact Lewis Throop at
 27272 Byrne Park Ln.
 Los Altos Hills
 94022-4324
 650-941-8223
lthroop@aol.com

MAKE CHECK
 PAYABLE
 TO LEWIS THROOP

Meeting Notes

October 16, 2004

Bob Kradjian, Secretary

President Ken Hurst called the meeting to order at 10:04 am. He started by reminding us that we have to be immaculate in our use of Robert Schutz's facility for our meetings. If you spill coffee, please wipe it up. Put all furniture back, and keep the rest room clean. We will detail some of our members to help with sweeping and removal of trash.

Visitors were Darek Garnier, Lance Barnett, Scott Rogers, and Glen Rogers. Welcome to all. There were 52 members and guests in attendance.

Treasurer's report:

Lew Throop reports that we have \$1360 in the treasury.

Mike Rehmus gave us the latest scoop on his new magazine, the *Model Engine Builder*. The first publication is scheduled for March 1, 2005. Mike and Toni are talented publishers and this should be a great publication. It will have something for both beginners and experts. There will be a section for hobbyists using miniature mills and lathes. Advertising will be included and they plan four issues for the first year. Mike plans eight color pages with a cen-

terfold. The US subscription will be \$29.95 for 4 issues in 2005 or \$32.16 for California residents. Check details at modelenginebuilder.com. See page 7 for Mike's application. This should be a terrific contribution to our hobby.



Pat O'Connor gave a report on a ten-member BAEM field trip to the Ryan Falconer engine-building facility in Salinas. This legendary builder made the Ford Indy engine that Graham

Hill drove to victory in 1966. He also made winning engines for Al Unser and Mario Andretti as well as helping in the development of the legendary Novi Governor Special.

His 90-degree V-12 in a race version puts out 1200 horsepower at 7,000 rpm! A street version pumps out less power but is a tractable, stable performer. He also has developed aircraft and marine engines. For a real treat, review his web site at falconerengines.com. Falconer is even working on a tiny Fiat Topolina four-cylinder engine. The usual 13 horsepower is expected to swell to 40 under his massaging.

Bits and Pieces:

Tom Armstrong showed us an oscillating steam engine design by the late Henry Cranna. Mr. Cranna was an active machinist in the San Jose area and a member of the West Bay Live Steamers as well as other groups. The nicely made engine runs well on compressed air.



One rarely discussed aspect of miniature machining is that our engines will likely long outlive the builder. This is about the closest we will come to a perpetual memorial in this troubled world. When I was doing surgery, surgeons in operating rooms around this country, surgeons would ask for Mixters, Foleys, Kitners, and Mayos. The ingenuity of these long-dead innovators in developing instruments is commemorated daily. Better than a pigeon-drop tribute to a statue in the local park. In the meanwhile, watch the fuel you put into your most important machine—your body—and stay well.

Carmin Adams brought his ambitious Fairbanks-Morse project for viewing. He had hoped to complete it by Visalia, but the calendar caught him. Those familiar with Carmin's work know that he will not cut corners. This engine, when completed will be beautiful. Remaining pieces include the carburetor and a few odds and ends. This engine has an igniter driven from the camshaft. The valve lifters have rollers and keys to keep the lifters from revolving. The 1.4 inch bore, three cylinder, engine will weigh 60 pounds when finished. It features a complex air-start device.



Paul Bennett and Karl van Dyk have teamed up on an ambitious project. This is the four cylinder, in-line four that Paul started some years ago. Karl had a pair of blocks CNC'ed for prototype development. Paul also showed his latest brainstorm. This is a six-cylinder, in-line block, complete with heads for a Jaguar 6-like DOHC layout. Paul has devised a modular plan so that a builder can develop the engine into an in-line four, a six, or even a V-8. Stay tuned; these projects should be fun to watch.



Dick Pretel showed his latest development on a highly modified Wall Four. The camshaft was deficient, so Roger

Slocum made a new one. It ran well and features an oil and water pump, both run by electric power.



Dick announced that Mike Neal in Florida is developing new ignition modules for our applications that will use automotive coils and handle more line voltage.



George Gravatt, always busy, ran his latest. This is a 1914 Novo hit and miss. The bore is 1.25", stroke 1.5" and it runs at 625 rpm with an estimated horsepower of 1/8th. The camshaft drives a fuel pump that delivers the fuel into a bowl. As with all of George's engines, he refines them until they run well--or else! Plans are available from *Pacific Machine Design* in Bend, Oregon (503-382-5926).

Cor Langewis continues to surprise us with nicely made models from his previous work. This model of an English coalmine engine was made on a one foot to one-inch scale. The original developed 20 horsepower. Cor built the engine in 1991 from an English casting set.



Ken displayed several casting sets, the *Golden Eagle*, in bronze. These are a memorial to our friend, the late Bob Shores. Sets are available at 200 dollars. Proceeds after expenses are donated to the club.



Lew Throop is developing voltage sources for ignition modules, chiefly the modified TIM4 by Floyd Carter. He has made them in 6 and 12-volt versions and describes the spark as "very powerful, the cat is still running."

He developed some of his ideas from a fantastic web site called 5bears.com. This is the best presentation of one man's modeling that I've seen on the web. Visit this web site, and you won't be sorry, gare-un-teed!



The National Air and Space Museum is now open at the Dulles Airport in Wash-

Second Annual “Men, Metal, and Machines Model Engineering Exposition” held at the Visalia, California Convention Center on October 23 & 24, 2004.

ington. It is an overflow from the larger unit at the Smithsonian. Named the Steven F. Udvar-Hazy after a man who donated 60 million dollars to the museum, it opened just a year ago. There are fabulous aircraft and engines to be seen. If you don't plan a trip farther than to your computer room—hook up to the web and try: www.nasm.si.edu/events/pressroom. Also, check out the Google listings for a lot of nice photos from other museum visitors. A good spot to start is <http://www.avsim.com/nasm/> There is also a lot of general science stuff for general knowledge dealing with earthquakes, geology, astronomy, etc. Recommended.



has an authoritative bark. Carmin drew good reviews on his Fairbanks-Morse project mentioned above. Eugene Corl wowed them with his 1/3 scale small-block. He then topped this off by winning a Dinky Deere casting set in the exhibitor's raffle. He then promptly sold it to Haagenson who will probably finish it in a month. Virgil Jeffries came down from Corbett, Oregon to show his nice ready to run Harleys. He planned to motor down to Southern California and sell a few of them. Members Hurst, Gravatt, Giles, Meyers, Armstrong, Nickels, Mecchi, Pretel, Bennett, McMillen, Throop, Garlough, Palmer, Lile, O'Connor, Garis, Remington, Jasik, Chernoff, Knapp, Levesque, Tochtrop, Jared Schoenly, and quite a few others also made the trek and contributed to the jollity. Mike and Toni Rehmus had a nice booth and took many subscriptions to the new *Model Engine Builder* project.

The second *Men, Metal, and Machines* show is history. Our club members had a great time and we made a strong showing. There were about 35, or more, of us--not counting the better halves. Standouts were the wonderful array of engines from our Southern California contingent, Bob Haagenson, and Roger Butzen. Bob has a new Corvette-style engine and a tiny new, original V-8. The man spends quality time in his shop for sure. Roger has finished the Harley engine and has it nicely mounted in a partial frame. It's a big engine and

The club sends its congratulations to the promoters of this fine show, the Gary and Jared Schoenly, and hope that there are more and even bigger ones ahead.



Photos by Ken Hurst

TECH TOPIC AT THE OCTOBER MEET BY PAT O'CONNOR

The Blackhawk meeting was canceled. Since no Tech Talk was scheduled we will have an open forum discussion on any topic of interest.

Tech Topics

October 15, 2004

Carl Wilson

Anodizing

Prepared by Corey T. Renner for the **Bay Area Engine Modelers**

This is supplemental information to be used with Ron Newman's procedure found here:

<http://www.focuser.com/atm/anodize/anodize99.html>



Corey Renner presented the October Tech Topic: Anodizing and dyeing aluminum. Anodizing is an electrical and chemical process that creates a hard protective surface coating on the aluminum part that can be left clear or colored with various dyes. Corey showed some black anodized parts done in his home shop that were as good as a commercial job. You can do it, too. But first

I have to insert this: **DISCLAIMER**

This is a report on the methods used by Corey Renner in his home shop. This article is not intended to be do-it-yourself manual for home anodizing. Anodizing uses hazardous chemicals and electricity. Neither Corey nor myself are experts in the safe use of chemicals and electricity. We include no safety recommendations and requirements in this article. There is no information on the safe and legal transportation, use, and disposal of the chemicals. Your use of this information is at your own discretion and risk. You must inform yourself of all safety and environmental requirements before attempting to anodize aluminum in your shop.

Corey has prepared a list of parts and materials that you will need, also the web site that has more information.

Safety gear:

Safety glasses

Gloves

Baking soda (to neutralize spills)

Required Supplies:

Distilled water, 1 gal (\$1.50 Orchard Hardware)

Sulfuric Acid, 1qt (\$8 Orchard Hardware)

Aluminum Wire (\$6 Radio Shack p/n: 15-035)

Glass, stainless steel or HDPE container for anodizing
Aluminum or lead cathode

Battery charger

Thermometer

Funnel

Small pot to boil and seal part

Wires to connect everything

Optional supplies:

Anodizing dye (www.caswell.com) or Rit dye if you are cheap and don't care about UV resistance

Lye (used to strip parts and re-anodize if you mess up)

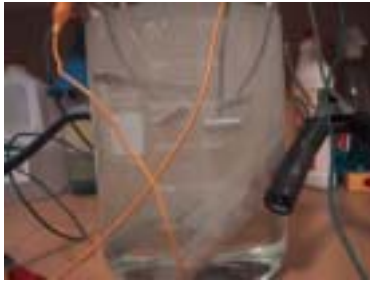
Source of steam such as a tea kettle (only required to seal a color anodize without fade)

The aluminum parts have to be connected to the battery charger. Corey recommends drilling and tapping a 4-40 hole in an inconspicuous location. A piece of the aluminum wire is threaded 4-40 with a die. This wire is screwed into the part and is used both for the electrical connection and to hang the part in the acid bath. Use only aluminum wire for this connection; other metals may contaminate the bath.



The first step is good looking and clean parts. All imperfections in the bare part will be visible. After polishing, the parts must have all oils and polishing compounds removed. This photo shows finished parts and the wires that will connect them to the battery charger and hang them in the bath. Wrought aluminum (bar stock such as 6061 or 7075) is the most suitable alloy for anodizing; some cast alloys cannot be anodized.





The parts are suspended in a dilute sulfuric acid bath in a glass or polyethylene container and connected to a 12 volt DC battery charger. For the details on this step, please refer to the

web site or to a manual on anodizing or surface treatment of metals.

Corey used a low temperature process. The bath is maintained at 75 to 78 degrees F. The temperature can be regulated by turning the charger off until the bath cools down, or ice in plastic bags can be put into the bath. The parts should be in the bath for 45 minutes. Bubbles will form on the part during anodizing. The rate of bubbling will slow down when the process is finished and there will be a slight change in the color of the part. Remove the part from the bath and clean thoroughly in water.



Anodized aluminum can be dyed many colors. Rit dye may be used but does not have any protection from ultra-violet light and may change color after some time. Corey recommends commercially available dye. The dye is dissolved in water, heated to 140 deg F, and the part immersed for 3-4 minutes. Skip this step for a clear anodized finish.



The dye is sealed in the anodized layer by steaming. This prevents the dye from bleeding out during the following step of sealing.



The protective layer must be sealed by boiling the part in water for 5 minutes.



Remove the part from the sealing bath, wipe with thin oil, and allow to cool.

Second Annual "Men, Metal, and Machines Model Engineering Exposition" held at the Visalia, California Convention Center on October 23 & 24, 2004.



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Upcoming 2004 Club Events

By Dick Pretel,
Events Coordinator

CANCELED

The BAEM club meeting at Blackhawk Automotive Museum, on November 20, 2004 has been canceled.

West Coast Engine Exhibitions For 2005

3rd Annual Men, Metal, & Machines! Visalia Conventions Center. Visalia, CA
October 22 & 23, 2005. Phone: 1-800-789-5068.
Web Site: www.cabinfeverexpo.com/MMM

East Coast Engine Exhibitions For 2005

Cabin Fever Expo in York, PA. York Fairgrounds Expo Center
January 15th & 16th, 2005. Auction January 14th 2005
Web Site: www.cabinfeverexpo.com/CFE

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