

<u>MEMBERSHIP</u>
<u>\$25.00 US</u>
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The Crank Calls

April 2008

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<p align="center"> NEXT MEETING April 19, 2008 at Hiller Aviation Museum Doyle Room 601 Skyway Rd, San Carlos 94070 Doors open at 9 AM Meeting Starts at 10 AM </p>

<p><u>Upcoming Events</u></p>

MEETING NOTES

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3-15-08

Carl Wilson

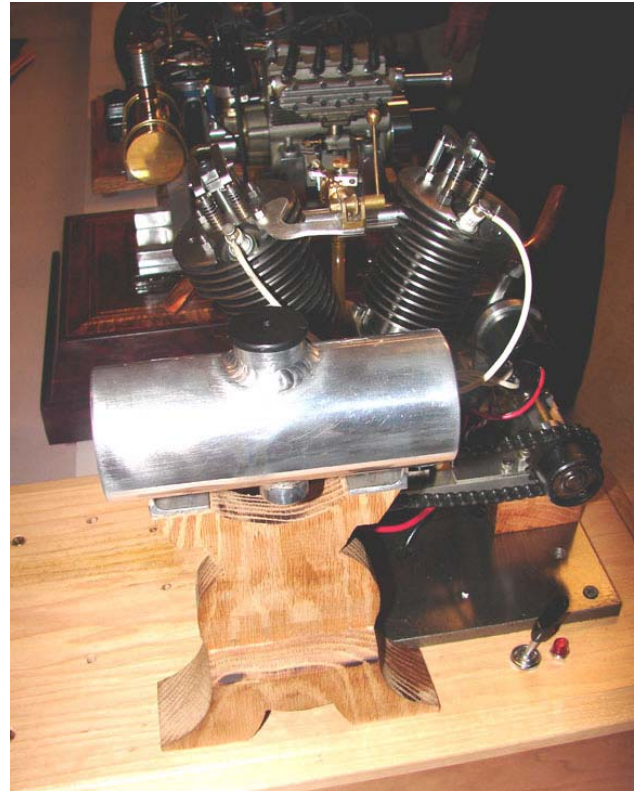
We had our first meeting at what hopefully will be our new home for a long stay at Chabot College. On behalf of the club, thanks to our president, Don Jones, for arranging our new "digs."

Free Staff Parking passes are available if you come by the entrance to the automotive shop and identify yourself as a BAEM member.

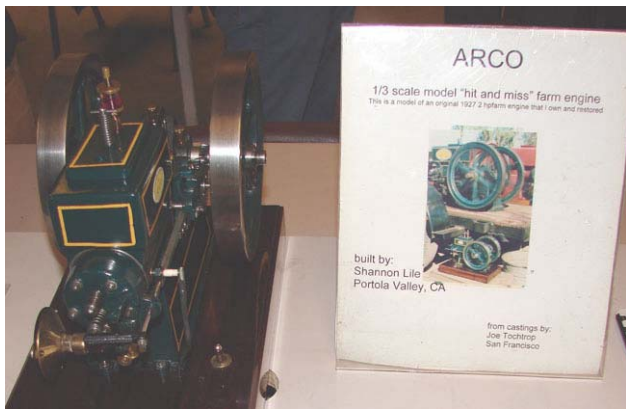
Mike Rehms introduced a piece of "new business:" incorporating Bay Area Engine Modelers as a non-profit corporation. Because the club sponsors the Western Engine and Model Exhibition show, we have new responsibilities: income taxes and liability for injuries at the show. Incorporation as a non-profit will allow us exemption from income taxes and give club members additional protection against legal action arising from club activities such as the show. More information will be given at the April meeting.

BITS AND PIECES

We hold a show and tell for the machine technology instructors and students at Chabot.



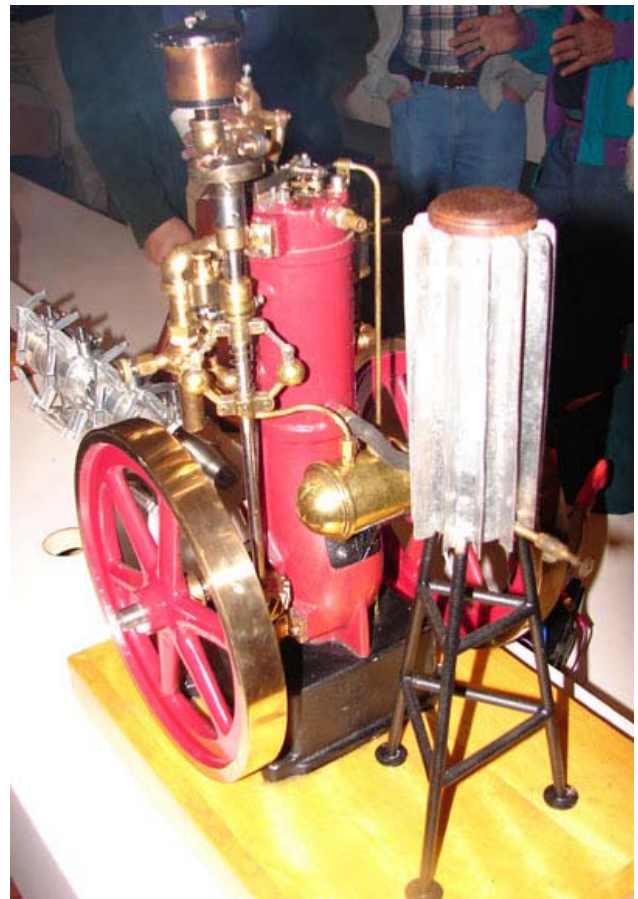
Hoglett by Randall Cox, shown by Bob Kradjian



One third scale Arco engine by Shannon Lile using Economy engine castings by Joe Tochtop



Low delta-*t* engine by Shannon Lile; Coffee Cup Engine



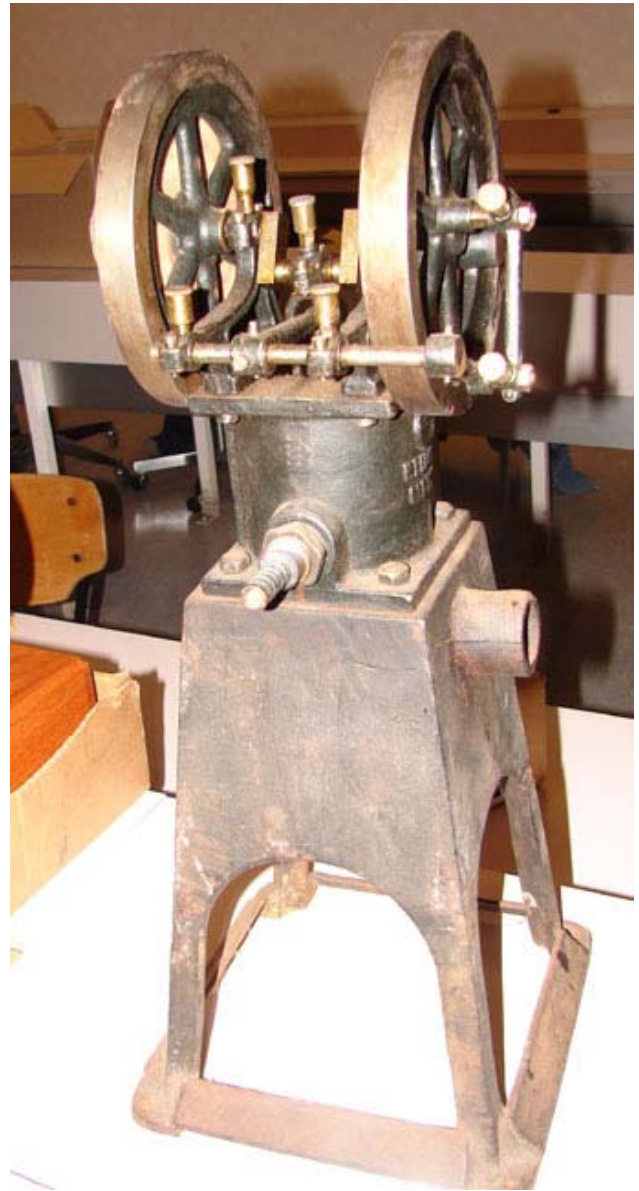
Red Devil by Dick Remington. In the background is the Snow pumping engine by Tom Armstrong



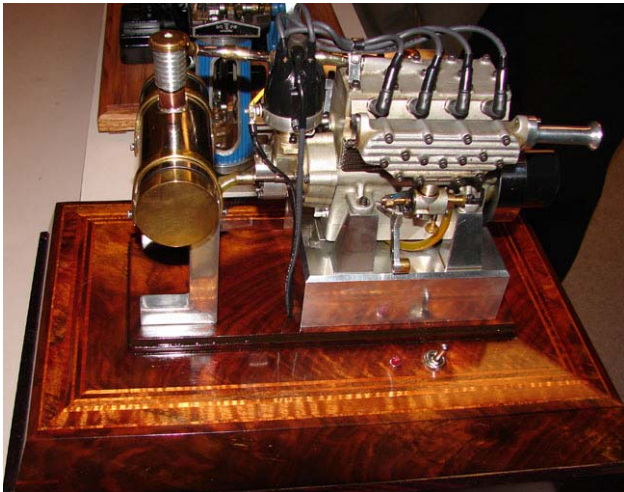
This is only about half of the engines shown at the March meeting



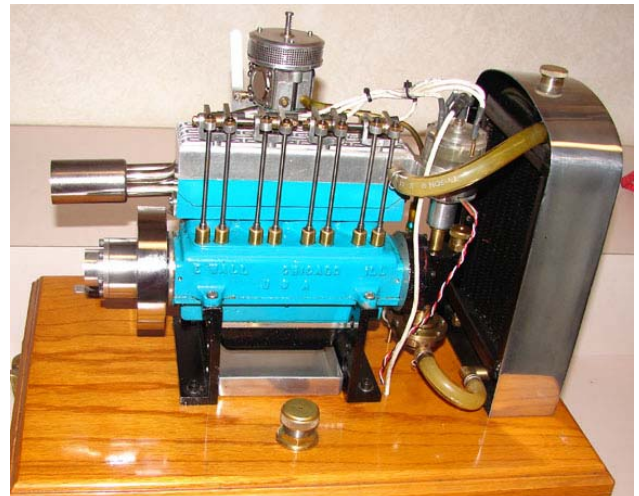
John Palmer driving his model of the Rumley Oil-Pull engine



Irv Stevenson found this unknown hot air engine in a neighbor's garage.



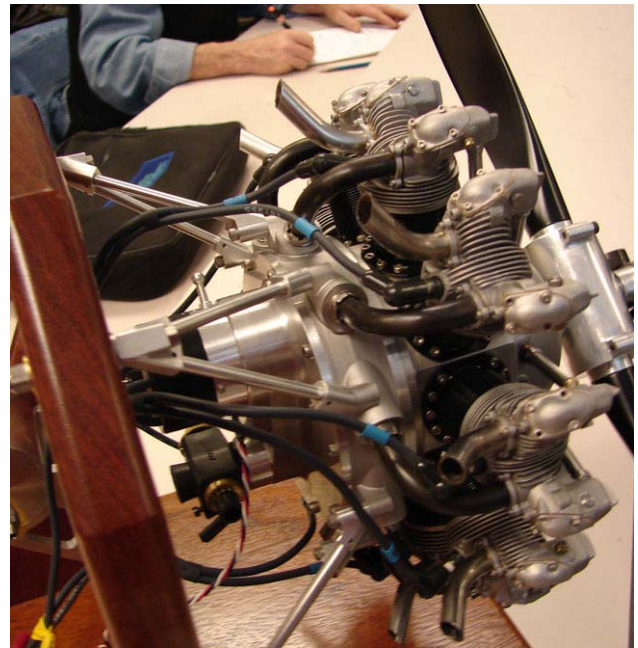
Seal, designed by Edgar Westbury, shown by Bob Kradjian



Overhead valve modification of the Wall 4 by Dwight Giles



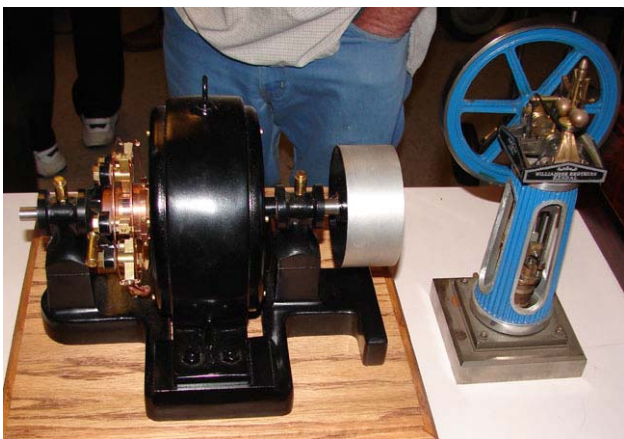
Don Jones, BAEM president



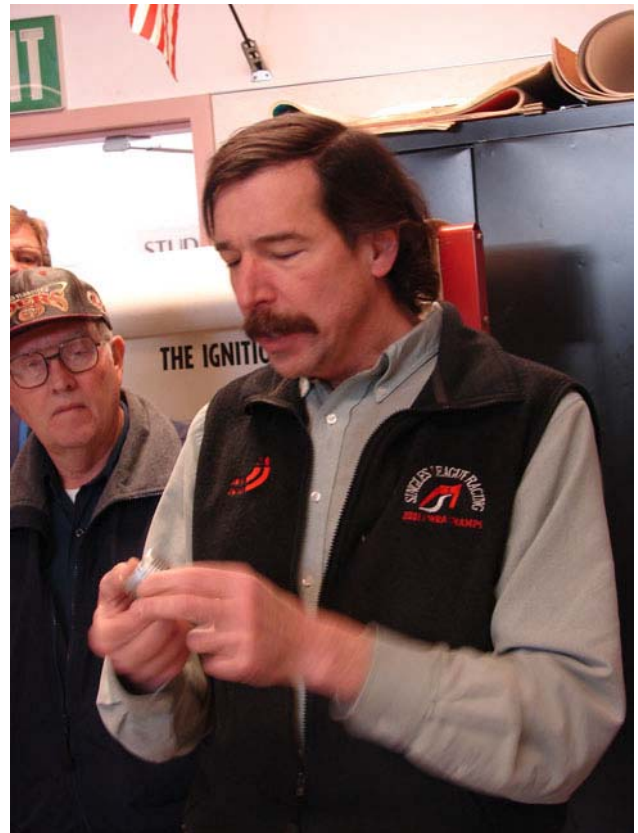
John Meredith's magnificent Pratt-Whitney R985 9 cylinder radial



Our guest, Charles Thompson, built these engines designed by Jerry Howell



On the right is Williamson built by Steve Jasik
On the left is Proteus, an 80watt dynamo by Carl Wilson



Peter Lawrence shows his prototype cylinder and head for an aero engine

Unfortunately some of the models displayed at the meeting were not photographed. George Gravatt brought his Silver Bullet and the Red Devil which is now running. Robert Schenk showed his epicyclic engine designed by Bill Reichart. John Palmer brought his J&E Jr. hit-n-miss.

Photography for Bright Shiny Things

Many of the things we build are made from bright shiny bits of metal and consequently hard to photograph, especially with digital cameras. Film had more "latitude", that is, could accommodate a wider range of light and dark than digital. For this reason more care must be exerted in the lighting of objects photographed with digital cameras.

Mike gave this example of a very difficult photograph to process for publication: a lathe with a freshly turned piece of steel, a fluorescent light overhead and an un-covered window in the background. Additional incandescent lighting was placed near the headstock, and the camera flash was used. There was plenty of light, but it was of various colors, too concentrated, and in the wrong places. Natural light (bluish) came in through the window behind the lathe, yellowish incandescent light from a work light beside the lathe, greenish light from the overhead fluorescent light and bluish (close but not the same as daylight) light from the camera flash. The background was dark which makes it difficult to visually separate the object from the background..

Some basic rules:

Always take several pictures of the object. Take at least one at an exposure value above the optimum, one at the optimum and a third at one exposure value below the optimum exposure. An Exposure Value is a way of saying one full F-stop on the aperture or halving or doubling of the shutter speed.

You should strive to keep detail in the lightest highlights and the darkest shadows. If there is no detail, the range of light reflected by your subject matter has exceeded the capacity of your camera. Solutions are to get some light in the shadows, dim the light on the highlight areas or if you can, use a Light Tent.

1. Use multiple light sources of the same color temperature. Daylight can be as high as 9,000 degrees Kelvin whereas incandescent lamps are normally around 3,000 degrees Kelvin. Daylight is blue, incandescent is yellowish, Halogen is 'whiter' than incandescent but they will normally mix reasonably well. A test shot will tell you a lot.
2. Use a light tent to diffuse the light sources and fill in any shadow areas on the object.
3. Turn the camera flash off
4. Cover the background with a white cloth or board
5. Use a tripod
6. Use manual focus
7. Use a remote trip or delayed shutter operation to avoid camera movement
8. If you can, feed a television from your camera so you can see the focus and frame the shot easier than if you did it on the camera.

A Light Tent is a white translucent enclosure that surrounds the object we want to photograph. A white sheet draped over a plastic pipe frame works well, a white 5 gallon plastic bucket makes a

good on-lathe Light Tent. The open end goes over the workpiece, chuck and headstock. You cut a hole in the bucket to allow your camera a line of sight to the workpiece. You can also purchase pop-up Light Tents on e-Bay in various sizes.

All of the light tents are illuminated from the outside with, (usually) shop lights with incandescent bulbs. End-table lamps work well for this if you have a willing wife or husband. You need a light on the sides and back. An additional light over the top will work well if you have enough lights to do this. If your object is very shiny, you may have to enclose the front of the tent and poke just the camera lens through a small hole in the cover.

Look here for instructions in building an inexpensive Light Tent. <http://digital-photography-school.com/blog/how-to-make-a-inexpensive-light-tent/>
Commercial pop-up light tents are available starting at about \$40 and increasing in size and cost. The largest pop-up light tent I could find cost \$150.

Recommendations for a basic digital camera:

- 5-7 megapixels
- 3:1 zoom or better
- Close focus or Macro capability
- Manual focus
- Adjustable exposure using either aperture or shutter speed
- Adjustable 'film speed'
- Tripod socket OR make your own cradle to mount on a tripod
- Remote shutter release or self-timer
- Big sensor. For better image quality (you may not know how large it is)
- Lens hood
- Multiple flashes or at least the ability to turn off the puny flash put on most cameras.

Image files

Not all image files are created equal. JPEG, the most popular of file types uses a destructive compression to make the image files smaller. The original file from the camera is OK. But if you open and then save the file a few times, its quality will degrade too much for use in a magazine. You can safely copy the picture file as many times as you want as the image does not undergo multiple compression processes. Even better is to deliver a Camera Raw image if your camera can supply them. These have no image processing and usually have more color and black and white information than the JPEG files.

When you submit an image to a magazine, they have to modify it for printing on a press. So don't edit it in any way as you may degrade the image. Raw files are always best.

If you do have to manipulate the files in any way, save them in a non-destructive file format such as TIFF or Photoshop.

When you send a file via the Internet, be careful of what your image management software may do to the file size. Many automatically scale the image down to 640 x 480 pixels which is just enough to print a 2 X 1.5 inch image. The automatic scaling can be turned off.

Backgrounds

Colored backgrounds may look nice but they reflect onto your models and give them a color cast that you won't like. Backgrounds should be white if at all possible or a light gray. And the material should be smooth, not fuzzy or rough. The reason is that fuzzy and rough materials may allow the model to sink in a little bit and now the bottom of the model is obscured by the background material.

What does a 'good' picture look like?

1. Interesting subject
2. In focus where it should be
3. Proper exposure overall and especially in the area of interest otherwise the color will be off and the image fuzzy.
4. Human skin color is correct (nobody knows what the exact color of your Ferrari really is)
5. No all-white or all-black areas ...detail in all areas except specular shine
6. Object of interest takes up most of the image space or you are throwing away resolution.