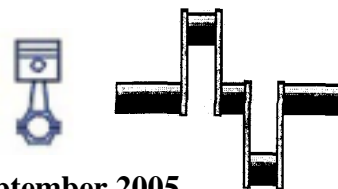


The Crank Calls



September 2005

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Secretary.....Bob Kradjian.....(650) 343-7585.....bkradjian@aol.com
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**NEXT MEETING September 17, 2005 At
Robert Schutz's Shop, 366 40th St. Oakland, CA
Doors open at 9AM
Close at noon**

**TO JOIN THIS CLUB OR
RENEW YOUR MEMBERSHIP**

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

**Club members can obtain a badge by contacting
Mike Rehmus at michael.rehmus@byvideo.com
707-643-6396 or at the club meeting.**

Meeting Notes

August 20, 2005

Bob Kradjian, Secretary

Club President, Ken Hurst, called the meeting to order promptly at 10:00 am.

We had a great summer turnout as well as several guests. The club extends a welcome to them.

Chris Ramstad and Ian Walker are interested in making miniature engines. They mentioned a single-cylinder 2-cycle as a starting point.

Scott Rogers and his son, James, attended. Larry Sugar and Jim Stewart were also visiting. Welcome to all, please come back.

First Pops: This feature, if you haven't heard of it, is devoted to members or guests who have fired up---or tried to fire up---an engine for the first time.

The featured engine this time was the ancient Indian tractor belonging to Shannon and Irene Lile. This is a three-wheeled device manufactured in Alameda in 1937. With an Indian motorcycle engine, it was used for light duty plowing and traction chores. The Liles have shown it at a couple of antique farm equipment meetings. The color? Beautiful, original rust!

Treasurer's Report: Lew Throop says that we are still solvent at just less than \$2,000. For any new members joining for 2005, the rate has dropped to \$15.00.

Special Events: Coordinator Dick Pretel gave a report on the Quail Lodge "A Motorsports Gathering" event the day prior to the meeting. This was only the third year for this elegant show, and we have been at the last two. Our showing of a dozen engines was extremely well received by a knowledgeable crowd.

Although we are a Bay Area based group, our club has been busy with shows in Nevada and Southern California as well.

Eugene Corl showed his fabulous 1/3 scale small block Chevy engine at the Summit booth during the Hot August Nights in Reno, and again last weekend at a show in Minden, Nevada.

Roger Butzen and Bob Haagenson displayed engines to an appreciative street rod group in Big Bear City, California.

In September there is a small showing planned for the Gotelli Speed Shop in South San Francisco.

Public showings are the GEARS in Portland, Oregon (September 24 and 25). Our member, Dave Palmer, won "Best of Show" last year with his "Palmer Rectilinear" steam engine at this show. This may be a chance to see our out-of-state members: Vietti, Cox, and Moyers.

Finally, there is the third annual "Men, Metal, and Machines" show in Visalia, California (October 22 and 23). The Visalia Radisson is the host hotel and it is conveniently connected to the Convention Center. Call for reservations at (559) 636-1111 and mention the show for a special rate.

Bits and Pieces:

George Gravatt was given a construction kit for a Stirling Engine that was offered in a Micro-Mart catalog. He put it together and says it runs just fine. The kit is from China and not only are the plans in metric, but the stock is also metric. George had to substitute stock to fit his collets on hand.



Cor Langewis showed us yet another of his



wonderful collection of steam engines. This one is a vertical style built as an original design from an English casting set. He built it in 1995; it is nicely finished, as are all of Cor's models.

Dwight Giles showed his Bob Shore's "Silver Bullet" finished several years ago. He has run it only once. Of particular interest is the very nice radiator. Dwight makes these from a particular heater core found only in Chrysler vans (1987-1992). It seems



that these cores had a very fine "mesh," and adopt well to use in miniature engines. Giles cuts the core material to size on a band saw, then fashions top and bottom tanks out of 0.016" sheet brass shim stock. Not easy, but the result is spectacular. It is difficult to get the core clean enough to solder. Dwight found that a fine sandblast was the answer. The tanks are silver soldered and the header plates and sides are soft soldered so that the tanks don't come apart. Carl Wilson will expand on this subject in a later newsletter. Stay tuned!

Pat O'Connor showed us a very old and very simple camshaft grinder made by member Ed DeGear. He used this many years ago, for the 15 cc Seal that Dick Pretel has now restored. It is very simple and compact. The device was headed for the dumpster, our thanks to Pat for rescu-



ing it and sharing with the club. Carmin Adams also has an old cam grinder built by the late Alan Ingersoll. This one is the op-

posite of Ed's grinder, as it is complex, heavy. Carmin has nearly completed his restoration of a 50-year-old grinder. He needs only a light regrind on a spindle shaft to complete the job.

John Vlavianos has developed another set of castings for the hobby. This one features the Upshur T-Head Marine Pamer ZR-1. John and Don are arranging, with the Del Vecchio Foundry to produce these for about \$150,00 a set. This will save a



bunch of time if you are considering this build. John has fabricated an ingenious crankshaft using a mild steel or 4140 shaft that passes through both crankshaft discs. The connecting rod journal and the discs are silver-brazed to the larger, central shaft. After all is complete and the discs are cut away to create counter weights, the portion of the central shaft is cut away, and "voila", a finished crank. A picture is better than words for this task.

I showed a 16 valve, 4 cylinder, in-line Schillings engine. This German-built, CNC fashioned machine suffered from being too expensive and being fired by glow plugs instead of spark ignition.



Lew Throop shared his experiences with fabricating small clamps for his rotary table. These self-designed clamps look professional and useful. He also announced that the club was gifted a set of detailed plans for a 10 barrel Gatling gun. It uses a .22 cal long rifle shell. If you have been sheltering a life-long yearning to build such a weapon, contact Lew for a half price sale (\$25), the proceeds to go to the club treasury.



Dick Remington had a nifty knurling tool made by SPI (Swiss Precision Instruments). It uses a pair of knurling wheels set at an angle with only the sharp edges contacting the work piece. It produces an extremely sharp and fine knurl. The bad part is that is expensive, fussy to set up, and fragile (it comes with extra wheels).

John Palmer located an ancient boring bar holder at a flea market. This American made device was titled a JCS Holder. It was designed by that most famous of all inventors, Pat Pending.

Steve Jasik fired up his huge CNC lathe turn out some very nice miniature loving cups. With a 5/8th inch diameter, he fashioned a flat area for engraving around the waist of the cups.

Pat O'Connor described a rotary-valve engine that used crankcase induction. Well, that isn't unusual, but this engine inducted air/fuel through the edge of the crank disc. This must have necessitated some close clearances. (In recent years, the model racecar engine rear end-plate rotary valve set-ups as seen on McCoys, Hornets, Rossis, etc. failed--because the centrifugal forces simply blew them apart. They solved the problem in these 30,000 + rpm engines by using a shim stock cage with minimal mass that could stand the rotary speed).



Club members honored. In a departure from previous practice, the club is starting an annual recognition of a member, or members, who have made contributions to the club and the hobby. The first honorees are Dwight Giles and George Gravatt. These gentlemen were given nicely engraved plaques as Craftsmen of the Year and hundred dollar Orchard Supply gift certificates as tokens of our respect and gratitude.

GoodGuys Report, West Coast Nationals. August 2005

Three days of incredible activity, noise, smoke, heat, and---talk, talk, talk about engines is over. As in previous years it was a rollicking success. An even dozen of our members participated during the show. I won't list them all, but a thank you to them. We received dozens of unsolicited "You guys are the best thing at this show" comments from show attendees. Once again, we found that street-rodders are our most knowledgeable viewers. Most of them do their own mechanical work and cannot imagine actually making the parts they wrench together.

Saturday is always the peak day, and this year there were viewers stacked up 4 and 5 deep to listen to, watch, and smell, the roaring engines. Other times were quieter and a chance to delve into interesting conversations with the public and chat with old friends. There were times we slip off and see some of the fabulous cars and buy various "goodies" from the vendors. Some of these will doubtless surface at future club "show and tell" events.

All of our engines were hammered hard during the weekend, but except for one minor ignition failure on a small hit and miss, all survived.

With the exception of small open house this was our last club-sponsored event of the year (not counting Gears and Visalia). Thanks to all who made these events a success.

Big Bear Fun Run

The Southern California branch of BAEM was in full force on Saturday August 13. Bob Haagenson and I (Roger Butzen) displayed eleven engines at the Big Bear Fun Run. We were treated like royalty. Our accommodations were paid for as well as the booth which was all set up for us. We went up the mountain on Friday and spent the afternoon with some friends and had dinner overlooking this beautiful mountain lake.

The next morning we went to set up. They allowed five hundred cars in the show and ended up turning away two hundred. I have never seen so much interest at one show. Most of the spectators said they had never seen miniature engines before and most were absolutely blown away. From the time we arrived the crowd was continuous and most of the time several deep. We literally did not have time to do anything but run our engines and answer questions. I don't think we sat down more than ten minutes the entire day.

There was much interest in BAEM and I expect some new members will be popping up before long.

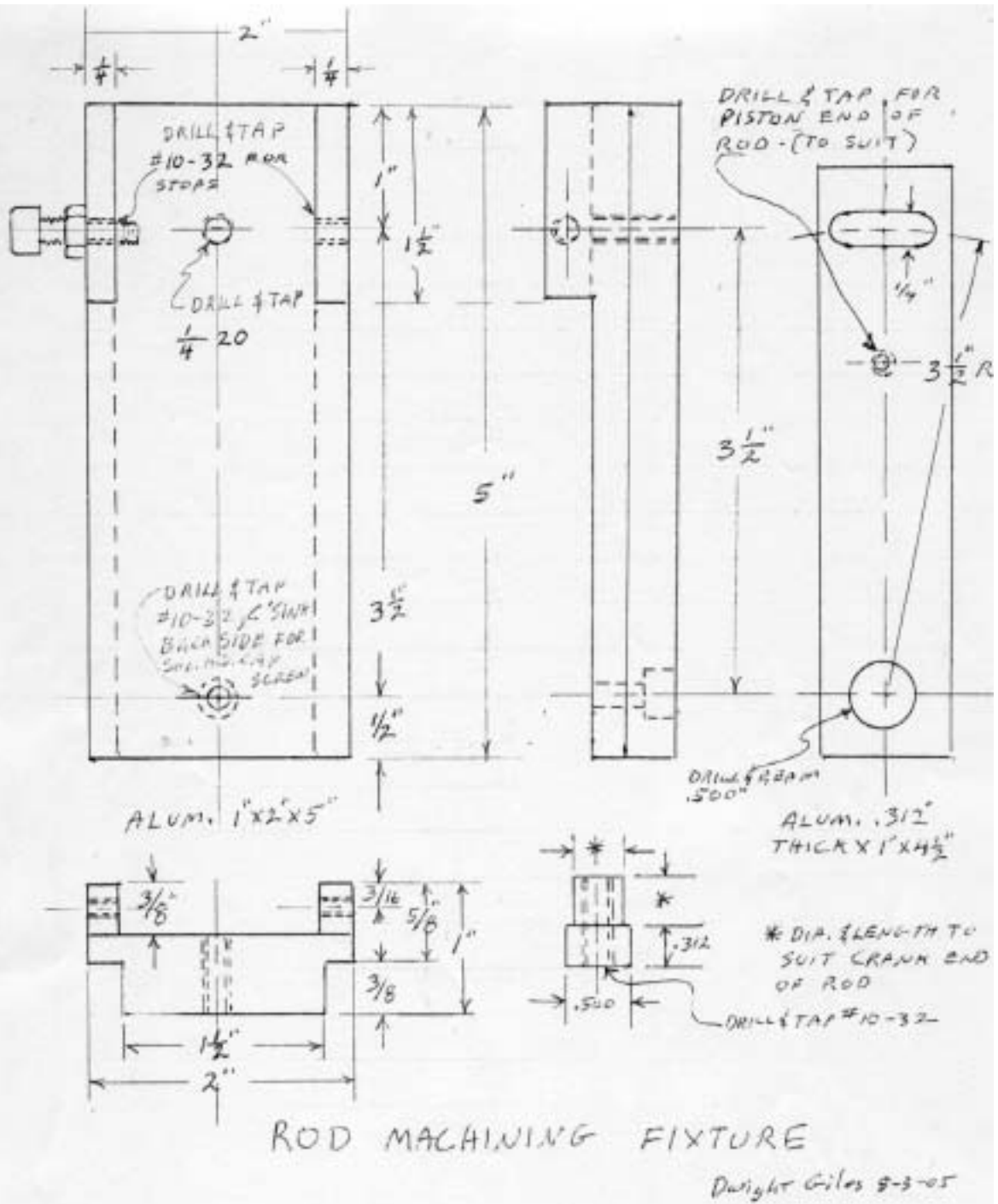


Big Bear Fun Run



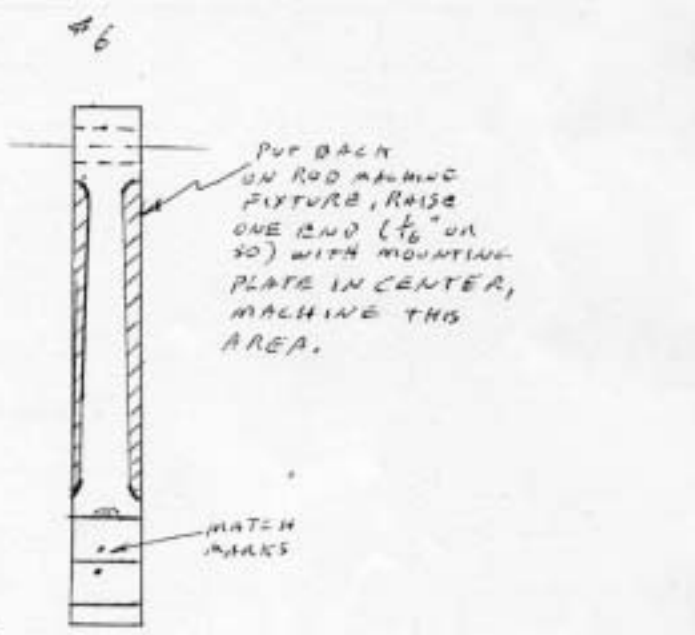
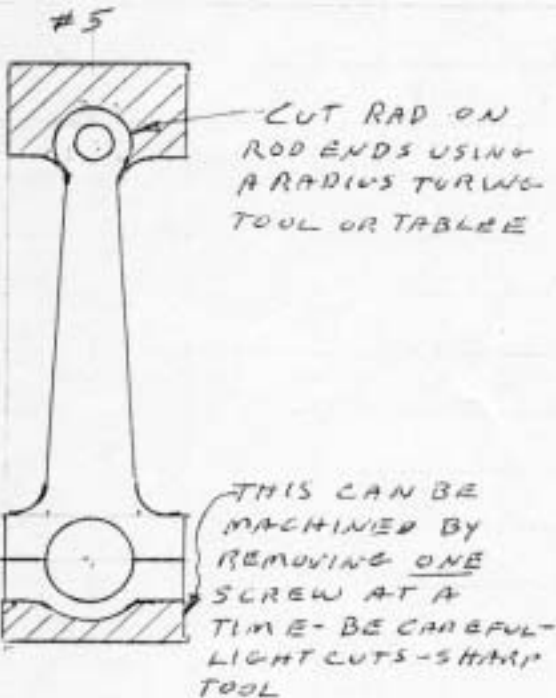
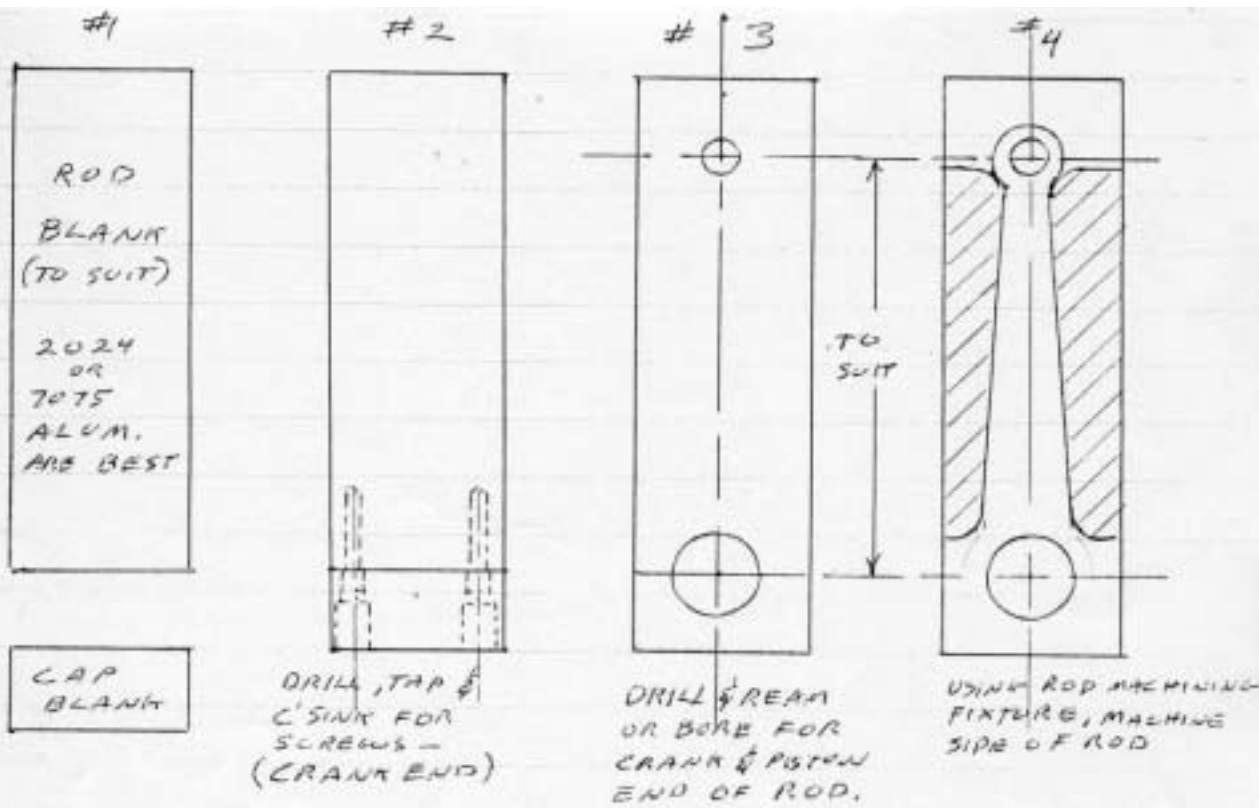
GOODGUYS WEST COAST CAR SHOW AT PLEASANTON





TECH TOPIC for SEPTEMBER MEETING

Continuing with our discussion of engine design/fabrication.



IN THE LATHE, MACHINE SPINDS TO FIT PISTON AND CRANK END OF ROD. MACHINE THE WASHER FACES ON BOTH ENDS AND BOTH SIDES. SPND FOR THE PISTON END SHOULD BE VERY TIGHT.

"Easy CNC" by David Benson. A Book Review by Roger Butzen

As the title indicates, the author's objective is to make it easy for the home shop machinist or other hobbyist to draw either "artistic" looking parts or machine shop/engineering parts and easily translate the information contained in the computer drawing file to toolpaths and G-code to drive the machine. Following the step-by-step instructions in the book, the reader can use software to easily create both the toolpaths and G-code. Simple flat parts may be cut out. Complex machined parts may be contoured or pocketed out using the code generated automatically by the software.

Suppose you would like to machine "interesting" looking parts with features such as curves or pocketed-out areas. Turning the cranks simultaneously is out of the question. Desktop CNC mills are available. Building a mill or a tabletop router from scratch is a possibility. Perhaps you are interested in engraving, lathe applications or using a plasma cutter.

How would you create the drawing and what software would be needed to get from a drawing to making chips? A variety of computer software is available to perform the various tasks involved which include:

- Creating a drawing of the part.
- Creating the paths for the tool to follow (toolpaths).
- Generating the code to drive the CNC machine (G-code).
- Driving the CNC machine.

Categorizing and comparing programs designed to do one of the tasks or perhaps two or three of the tasks can be confusing. Dave says that some of the available software works well and some does not.

For making simple parts, writing G-code by hand using Notepad is also described.

The author assumes that the reader is not a computer guru (not necessary), that the reader's typing skills are at least comparable to the author's (types with one finger), and that the reader would rather have the software draw all those toolpaths (multiple depths, finishing cuts, etc.) than do it him/herself.

"Easy CNC" contains chapters on such topics as:

- Bit map draw programs (artistic/image).
- Engraving, carving and more (artistic).
- Computer aided drafting (CAD).
- Machining engineering/machine shop type parts.

The software used for the examples was chosen by the author as fitting the "easy" criteria, assuming using the instructions provided in the book.

The book sells for \$34.95 and is available directly from the publisher, Square 1 Electronics, at <http://www.cncintro.com> or (208) 664-4115 (Idaho). The complete table of contents is on the web site.

Upcoming 2005 Events

By Dick Pretel,
Events Coordinator

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

GEARS 2005

September 24-25, 2005
in Portland Oregon

BAEM is invited to the following events

By Dick Pretel, Events Coordinator

Gotelli car show Saturday Sept 24, 2005, 9AM-5PM

Model Crankshafts and Camshafts

By Roger Slocum

Hardened and ground alloy steel crankshafts
Web Site www.cranksandcams.com
Email: roger@cranksandcams.com.

FOR SALE

Emco/Mier CNC lathe for sale. Compact 5
with automatic six position indexing head
and all accessories for operation.
Mounted on roll around stand. Lathe has
hardly been used and is tape
driven. Lathe can be updated with a new
board and software to accept G codes
from your computer. Original cost was
\$14,000 purchased in 1992.
Asking \$3200/best offer.
Dick Pretel 408 732 6507

WANTED

a Wall side draft carburetor with float to
restore old engine. Also a bronze casting to hold ignition
points. These were used on many wall singles.

I also need some 1 1/4 piston rings .065. to
.070 wide to restore a old engine.

Dick Pretel 408 732 6507

FOR SALE

"Model Engineer" magazines, 1898 through
2004, many bound, some hardback, 3 issues
missing, plus 2 indexes. \$2750 Chris Leggo,
(510)247-0961. oinck1@aol.com

Check out the BAEM Web Site at [www.
baemclub.com](http://www.baemclub.com)

Send your project photos to the
Web Master Jim Piazza.

Phone: 408-446-4825

Email: jpiazza@ix.netcom.com

FOR SALE

Tree Journeyman 310 – 3 Axis CNC Mill
DynaPath - Delta 10M Control
Table 10" X 44"
Spindle Taper 30NMTB With some tooling &
manuals
\$4500.00

David Palmer 707-938-2181
Brian Palmer bdpalmer@sonic.net

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