

The Crank Calls

June 2007

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NEXT MEETING

June 16, 2006 at
 Robert Schutz's Shop
 366 40th St. Oakland CA
 Doors open at 9 AM
 Meeting Starts at 10 AM

Upcoming Events

SWAP Meet – June 16 at club

Bring your goodies to sell

July 29 1st B.A.E.M. engine show in Vallejo
 Aug 3 – 5 Goodguys @ Pleasanton

Western Engine and Model Exhibition

The managers have completed most of the planning for the show. With your help it will be a big success. At the June and July meetings we will pass a "Help Wanted" sheet around and ask members to sign up to help with the operation of the event. This request will also be available on the show web site for those who cannot make the meeting.

There are several items that we have not been able to scrounge or borrow and we are looking for help with these: we need several (4 or 6) 5 lb dry chemical fire extinguishers; and we need several (the number is not yet known) of the stands that banks use to create lines to the tellers. These can be shop built of metal or wood, actually we need both. If you know a source of the metal stands or could make some simple wood ones, please let me know. Carl Wilson

MEETING NOTES

5-19-07

Carl Wilson

Our guest at the May meeting was Dick Bright, a woodturner from Clio, CA.

Lew Throop reported that we have 66 dues-paying members, and that the treasury is healthy.

April and May have been busy months for shows, what with the auto show at Hillsborough, NAMES, Make Faire, Legend of the Motorcycle, Dream Machine, and the EDGTA show at Corralitos. Pat O'Connor waxed enthusiastic about the engines he saw at NAMES: Ron Colonna's Novi V8, another Novi V8 in a midget car, and an OHC 4 in a speed boat. Another Colonna design (built by Ron Rement) was an Offenhauser 270 with Hilborn style port fuel injection that used a gear

pump to push fuel at 12psi through a 0.004" hole. Pat also mentioned the large railway gun about 5 or 6 feet long made in brass, and a Maserati straight 8 engine done in beautiful sand castings. He was a little disappointed to learn that the engine was non-operable as it lacked the interior parts. The builder's intent was to model the appearance rather than the operation of the engine. Tom Armstrong displayed parts for the Snow engine currently featured in a build article in Home Shop Machinist. Gene Corl always had a crowd admiring his Chevy V-8, the patterns and tools which Gene made as part of the project.



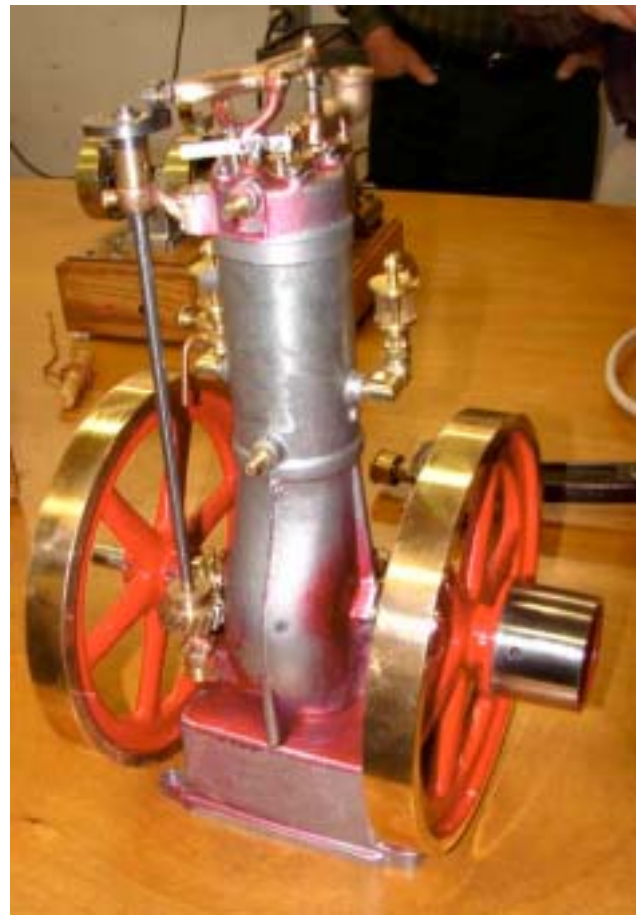
Bob Kradjian brought two of the very nice engines made by George Luhrs. Our photographer forgot to say cheese and consequently Dr. Bob is looking rather serious. Not the usual state of affairs, I assure you. The engine is a model of a Briggs and Stratton with a 7/16" bore and 1/2" stroke. This view features the gas tank: the other side has a marvelously well-formed sheet metal shroud on the flywheel.



Bob also showed George's model of a Stover 2 hp hit-n-miss. George Luhrs' website is <http://minimodelengines.com>



Alan Zulbeti built this fine RC model (over 5 feet long) of a WWII PT boat complete with sound effects, working torpedos and machine guns. It was shown at the Make Faire.



George Gravatt brought one of the three Red Devil engines that he and Dwight Giles are building. This one is almost ready to run, but is suffering from low compression. George says it should be running next month.



This is my “80 watt multipolar dynamo” designed by Alfred Avery and published in Model Engineer in 1902. This is not a model but a dynamo designed to do real work and intended to be driven by a Stuart-Turner steam engine or other prime mover. The castings were by D&M Model Engineering (now out of business.) Construction of this dynamo required a variety of techniques including punch and die construction, metal spinning, wire-drawing, and coil winding. Machining the commutator was a most interesting exercise. Shown in front of the dynamo is a spare field coil showing its construction.



Robert Schutz, our host for the meetings, is fueling up on coffee. In front of him are some of his engines.



Steve Jasik is building a Cole’s Corliss steam engine. From the top left: the dark object is a tryout in delrin of the machining procedure for making the oil grooves in a main bearing shell. If you look closely you can see an “X” shape in the semi-circular groove. This was CNC machined with a 1/8” ball end mill. At top right is Steve’s chuck spacer spider copied from a Royal Tools design and made on a CNC mill. It is used to hold thin items in a 3 jaw chuck to be faced. There are magnets in the back of the arms to hold the spider to the chuck. On the bottom right is a set of links for the cam rod on the Corliss and on the right is a boring tool used to make a groove in a special oiler.



Bathsheba Grossman makes these astounding geometric creations with rapid prototyping. You have to see them to believe them. These were seen at the Make Faire. Bathsheba’s web site is <http://www.bathsheba.com/>



Members of BAEM displayed their engines at the recent Make Fair in San Mateo. Shown in this photo are (left to right): Lew Throop, Tom Armstrong, Steve Jasik, and Pat O'Connor.

Pat O'Connor's NAMES Picts



Flore Di Bernardo built the Maserati Tipo 8CL straight 8 seen at NAMES. Note the fine level of detail in the sand castings.



James Riggle put his Novi V8 into a midget car and the OHC 4 into a speedboat.



Louis Chenot, builder of the fabulous Dusenber model, is seen here examining Ron Colonna's Novi V8 at NAMES

Tech Topic: Single point Threading **By Tom Armstrong**

Single-point thread chasing refers to the practice of cutting threads in the lathe with a single point tool, suitable ground for the desired cutting angle. This method is extremely flexible in that a single cutter is suitable for a large variety of pitches. With one cutter ground for external and one ground for internal you are pretty well set for tooling.

Many, if not most, model builders have a lathe that is suitable for cutting threads. Most of the lathes have quick-change gear boxes making it quick and easy to setup the lathe to cut a desired thread pitch. A typical gear box will allow cutting most standard machine screw pitches. The maximum diameter is limited only by the clearance to the saddle. See the latest issue of Home Shop Machinist for an excellent article on how to add change gears in order to obtain virtually any pitch, even odd-ball ones.

Thread geometry for the most common threads is well detailed in "Machinery's Handbook". Use that information to grind the cutter to the thread shape. This would typically be a 60 degree included angle. Do not grind any rake angles. Use about 20 degrees relief on the leading edge. Relief is not required on the trailing edge. After grinding to a sharp point, a better thread form will result if a small amount of the point is ground off. The amount to grind off is different for each different pitch. A screw cut with this cutter will be stronger than one cut with a sharp pointed tool. However, a thread cut with the sharp pointed cutter will mate with a standard thread.

Set the top slide over at an angle of 29.5 degrees measured from the perpendicular to the spindle. The set-over is made so that advancement of the top slide is in the direction of feed as the thread is cut. Mount the cutter with the top very accurately set to center height of the work. Use a gauge to position the cutter. Set the top-slide gauge to zero. Move the cross slide in until the point of the tool just touches the work. Set the cross-slide gauge to zero.

Select the TPI (Threads per Inch) on the gear box or install the appropriate change gears. You

are ready to start cutting. Assuming you are cutting a right hand unified thread, move the carriage so that it is just a little to the right of the right end of the work. Set the cross slide to zero and the top slide to about 0.010 in feed (This is light for a first pass. On coarse threads, the in-feed will probably need to be reduced on subsequent passes.). If your lathe has a thread dial, start the spindle at the lowest speed and engage the half nut when the dial mark lines up with the desired number. There are a couple of techniques for ending a pass:

- a. Stop the spindle one or two turns from the desired end. Finish the cut, rotating the spindle by hand. Withdraw the cross-feed simultaneous with the last few degrees of rotation. Back the cross-feed out (like one turn).
- b. Prior to any threading, prepare the work by turning a flat-bottomed notch to the left of the end of the desired thread. While under power, disengage the half nut just as the cutter enters the notch. Back the cross-feed out.

Move the carriage back to starting point. If the half nut is left engaged as in a., reverse the spindle and move back under power. If the half nut is disengaged, it is faster to move the carriage by hand. However, this necessitates re-engaging the half nut at exactly the right number on the next pass. As far as I know, this is not possible with a metric lead screw. Finish with repetitive passes until the correct depth is reached. Dwight says he sets his top slide to 30 degrees and for a final pass advances the cross slide a tiny amount. He also deburrs the threads with a rubber abrasive like Cratex™.

Stuff for Sale

It is Swap Meet month so bring your stuff to sell.

Steve Jasik will have a retractable air hose reel (by Lincoln) with a new 50' air hose for sale among other things.