

The Crank Calls

July 2008

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NEXT MEETING
 August 16, 2008 at
 Chabot College, building 1400
 25555 Hesperian Blvd, Hayward 94545
 Doors open at 9 AM
 Meeting Starts at 10 AM

Upcoming Events

July 19 – 20 WEME show in Vallejo

MEETING NOTES

6-21-08

Carl Wilson

Two guests signed our register this month: Chuck Gorich, a boatbuilder who builds radio-controlled boats, and Coleman Olken who noted that he is interested in Live Steam. Welcome to Bay Area Engine Modelers.

Our treasurer, Ken Hurst will have surgery to repair a broken hip this month and he expects to be able to continue in office. At the time of writing this newsletter, Ken is home and doing well.

First Pop honors went to Dwight Giles: his Red Devil is running after a bit of difficulty sorting out the details.

Pat O'Connor reported briefly on the WEME show: we have covered our expenses, but at the time of this meeting we were a bit short of exhibitors. Please come out and support the show by exhibiting something and helping with the setup and operation.

Our major piece of business was the approval of the incorporation of the club as a non-profit public service corporation. There were no dissenting votes, the mail-in ballots likewise, so president Don Jones declared it unanimous. The existing officers were continued in office and the first board of directors will be Don Jones,

Ken Hurst, Mike Rehmus, Bob Kradjian, and Carl Wilson.

I have talked with the executor of the estate of Robert Schutz. The lathe and mill will not be sold, but the engines belonging to Robert may be sold. I will pass on that information in a future newsletter.



Paul Bennet brought his mirror image, reverse rotation Wall 4. This was intended to be one of two Wall 4's in a large cabin cruiser – a project that has not been finished. Paul did not do the initial build of the engine, and there were a number of problems that had to be corrected. The ports and valve seats were very poorly done and Paul repaired this area by milling the block to remove the ports and seats, then installing a block of aluminum and cutting new details. One of the mounting screws can be seen to the right of the intake/exhaust manifold. Paul also

noted that in all of our ignition systems the condenser must be mounted as close to the points as possible.



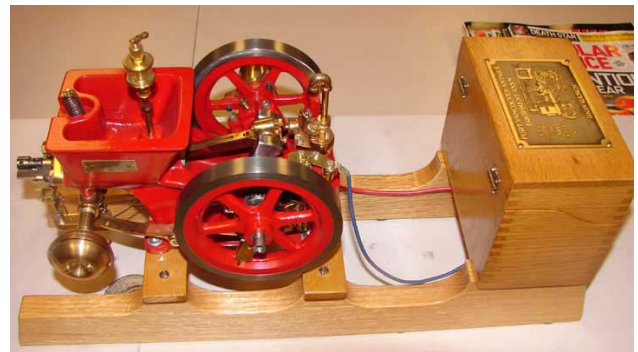
Mastiff, highly modified by Dick Pretel. He bought the partially finished engine from a model engineer in Bermuda and has brought it to this state of perfection. Some of the modifications accomplished so far are oil filter and gage, new manifolds with larger exhaust ports, modified combustion chambers, electronic distributor and ignition system, and twin carburetors. Dick modified the oil pump to provide higher oil pressure, but this will build up pressure in the crankcase and push oil out of the main bearings if the crankcase is not ventilated. The breather filters are on the top of the crankcase.



This is Mastiff in the raw castings from England and purchased by Jaime Quevedo. He is a Volkswagen enthusiast and when he saw Dick's Mastiff he had to build one.



Red Devil: the First Pop Honors holder by Dwight Giles. It's been a real devil to get it going.



This New Holland engine, built by Bob Eaton, was exhibited by Bob Kradjian who said that the engine has never been run. It features igniter ignition exploding fuel provided by a primitive gravity drip evaporative carburetor: an early design.



Joe Tochtrop has castings and drawings available for both a 12" and 18" pump jack kit. See him for details.



Jim Piazza reached into his pocket and brought out his latest effort: the aluminum connecting rods for the four Upshur single cylinder engines that he is building. These were CNC milled on his Tree Journeyman mill and tumble finished. Given the cost of the mill, each rod cost him over \$1000, not counting the time and material. But he noted with a chuckle, that is trying to amortize the cost over the first 4 parts. Looks good, Jim.

Mike Rehms demonstrated a carbon fiber tube that was amazingly light and stiff. They are available from hobby stores, plastics vendors, and kite shops.

TECH TOPICS

Dick Pretel, master builder of internal combustion engines, gave us words of advice for achieving better accuracy in our work, knowledge gleaned from his experience.

Note that most of the mill hints apply to Bridgeport style knee mills.

1. Check the alignment of the milling machine head to the bed of the vise regularly, especially after flycutting. It is best to check the vise rather than the table because the vise may not be parallel, and the work is referenced to the bed of the vise. Dick recommends using the outer race from a large ball bearing that has been ground

parallel on both on both sides as the gaging surface.

2. When you are satisfied that the head is within at least 0.0005" TIR over the opening of the vise, begin incrementally torquing the head clamping cap nuts in an "X" pattern just like torquing the head bolts on an automobile engine. Final torque is 50 ft-pounds.
3. Stone your parallels occasionally: they will accumulate dings that affect their accuracy. Stone the vise bed and jaws also to remove dings and burrs.
4. Check your spindle collet seat runout: an average figure for a decent mill is 0.0003" TIR. Most R8 collets can be expected to hold 0.0005" TIR: the assembled runout would then be somewhere between zero and 0.0008" TIR. If you have more than that you should consider having the spindle rebuilt with new bearings and the collet seat re-ground.
5. Take the collet alignment pin out of the spindle. The key has two functions: one it aligns the collet in the same orientation each time it is installed and its runout should be the same after being removed and replaced. Second, it prevents the collet from rotating as the drawbar tightens it. Dick noted that the key must be in place if you are using an air-powered drawbar. These are important functions in the operation of the mill, but on the other hand, removing the key allows the collets to seat at a random location each time and averages the wear on the collet seat. It's your choice.

(Editor's note: A drawbar that seizes in the collet thread can be difficult to remove. I use an anti-seize compound on the drawbar threads.)

6. Adjust the gibs on the knee, saddle and table. A slide that wanders around during the cut will not produce true work.
7. Do not use motor oil to lube the slides: use way oil for the sliding bearings and medium spindle oil for the head.
8. Leveling a mill is not necessary unless the floor is way out of level.
9. Leveling a lathe is necessary to eliminate twist in the long narrow bed. Adjust all gibs.
10. Replace old belts: those that are older than 5 years. Rubber deteriorates with age and becomes harder and stiffer and increases vibration. Align the pulleys and check the belt tension.
11. Don't lean on the machine during the cut – especially lathes. The extra weight on the machine can cause it to twist out of alignment.
12. Don't park the mill table extended to one end, but don't always park it the middle either. Vary the position to either side of the vise at random.
13. If you are using a Variable Frequency Drive install a cooling fan on the motor to insure sufficient air flow at low motor speeds.

Stuff for Sale