

The Crank Calls

MAY 2006

DUES ARE DUE
\$25.00
CONTACT
LEW THROOP AT
(650) 941-8223

President.....Pat O'Connor.....(408) 733-3710.....pat1650@yahoo.com
Secretary.....Carl Wilson.....(650) 967-7715.....tallyho123@yahoo.com
Treasurer.....Lew Throop.....(650) 941-8223.....lthroop@aol.com
Events Coordinator...Dick Pretel.....(408) 732-6507.....RPM10K@SONIC.NET
Tech Topics.....Dwight Giles.....(707) 648-1481
Editor.....Bill Nickels.....(408) 739-2407....whnickels@aol.com

NEXT MEETING
MAY 20, 2006 AT
Robert Schutz's Shop,
366 40th St. Oakland, CA
Doors open at 9AM
Meeting starts at 10 AM

Events Coordinator Report -Dick Pretel
Here are show dates that are tentative.
. .
.TBD

MEETING NOTES
4-15--06
Carl Wilson

Well, ladies and gentlemen, it seems that our reputation is spreading wider than we might have guessed. Both of our guests, George Hawks and Gene Ellerbusch, learned of BAEM at a woodworking club! George has "a fair background in automotive areas," and Gene is a steam engine modeler.

Lew Throop gave the treasurer's report, and we must be solvent as I have no notes of an impending bankruptcy proceeding against us!

First Pop honors were awarded to Dwight Giles for his Gray engine and to Roger Butzen for his 1/4th scale Dodge Hemi engine. Dwight said that he made the engine but George Gravatt got it running.

Bob Kradjian had his long suffering Challenger V8 engine in for some repairs. Long-suffering is the word because he has taken it to club shows since 1997 and it has performed very well. Dwight's brief words last month on cleaning the fuel filter screen on the Walbro carburetors encouraged Bob to undertake this maintenance task. Bob made a brief report on how he did the job: remove the Phillips head screw and take the screen out; clean with your favorite solvent, and use a nicely fitted stick to push it back in.(No photo)

Joe Tochtrop made the patterns and poured the castings for this small centrifugal pump which he is selling as a kit for \$28. Dick Remington displayed a 4" digital caliper. He said that it is a handy size for our model making machining. (No photo available)



This bit of bright brass is Dwight's fuel tank made from 3" tube complete with a foot (check) valve to prevent fuel from flowing back into the tank. Carl Wilson displayed a fabricated steel crankshaft to re-



place (temporarily) the cast iron crank turned from a casting included in the kit for the Mery Explosive Vapor Engine. The engine runs very rough and I was concerned that the forces imposed on the crankshaft by the large amount of unbalanced rotating and reciprocating weight might damage the keyways in the mainshafts. The steel crank is stiffer,

and has balance weights. It was pressed together and pinned with #2 taper pins. A temporary flywheel turned from a 10 lb weight from a weight-lifting set will be connected to the crank with a taper-lock bushing from an industrial vee-belt sheave. This should hold together until I can get the engine to run smoothly.

My apologies to Don Jones for the lack of photographs of his engine. Don, please bring it back so we can do things right for you.

TECH TIPS

(small shaft resizer conceptual here)

Scott Oversteet had a problem: how to reduce a piece of 3/32" drill rod by about 0.0002" while maintaining roundness and concentricity with the unreduced portion.

His special lapping tool was folded from sheet metal and a piece of wet/dry paper was placed inside the fold. The shaft was placed inside the folded assembly and the open end was pressed with his fingers. Scott noted that if pressure is applied in the center of the sheet metal the tool acts as a "long lap" and a wide area of the shaft is lapped. The tool acts as a "short lap" if one corner is pressed. The procedure was to lap with the "short lap" technique at the end until the mating part just started on. Then he lapped with the "long lap" testing frequently. Small areas that remained oversize were carefully worked with the "short lap."

With this tool and technique Scott was able to push-fit a 3/32" ball bearing over a length of 1 7/16".



NORTH AMERICAN MODEL ENGINEERING SHOW

NAMES was held at the convention center in Toledo, OH June 22, 23. The hall was packed with exhibitors, vendors, and visitors. Bay Area Engine Modelers was ably represented by Gene Corl. His large table was packed with patterns, castings, and special tools. There was a crowd around his display all day long. Other members of BAEM included Mike and Toni Rehmus, Bob Kradjian, John Meredith, Tom Armstrong, and Carl Wilson. Errol Groff of the New England Model Engineering Society posted his photos on the club website: http://neme-s.org/NAMES_2006/NAMES_2006_1.htm

Other photos of engines taken at various times by Bob Kradjian are here:

<http://web.mac.com/lilenginebob/iWeb/Site/HOME%20PAGE.html>



First Pops

After 14 months I have managed to complete my ¼ scale 426 Hemi. I modeled the exterior after the Testor's plastic visible V8. The engine was whittled entirely from billet (no CNC was used) with the exception of the water pump witch Eugene Corl was good enough to cast for me. The block is water jacketed with cast iron sleeves. The bore is 1.012 with a one inch stroke. The crank is drilled for oil and runs on **babbitted** bearings with ball bearings forward and aft. The cam is also pressure oiled running on the aluminum block with a ball bearing in the rear. Dwight Giles supplied the oil rings and I added two compression rings. It took twelve hours run in time on the lathe to get them to seat but it was well worth it because it does not smoke at all. The heads were by far the most challenging. Half the build time was spent on them. The valves are 7/16 stainless with .100 lift. I am running C&H electronic ignition triggered by a Hall effect sensor from the crank. The plugs are Paul Knapp's 10-40s. The distributor cap (Satra) is a little out of scale but necessary to keep the spark under control. The distributor and oil pump run on a common shaft driven one to one off of the cam. The two Walbro carburetors are controlled by semi progressive linkage attached to a Eugene Corl "Moon" pedal.

My special thanks to Bob Haagenon for the use of his cam grinder, his help and advise for without I could not have managed.

Roger Butzen



WHERE ENGINES GATHER – updated 04-17-06

On Monday April 10th at 4: AM Paula and I left home with two fully loaded vehicles and headed toward Denver International Airport in Colorado. Exactly 13 hours and a few minutes later we arrived in Denver and checked into our hotel room for the evening.

The following morning we drove to Denver International where we were greeted by Colleen Fanning and her assistant Beth at the main entrance to British Airways. We proceeded to unload our precious cargo and wheel into the terminal in the direction of the "Bridge". The Bridge, as they call it, is the glassed-in walkway leading to the International concourse. Along each side of the moving walkway are the stationary walkways and a total of 29 glass display cases strategically placed between decorative support pillars that extend up to the ceiling. Until September 10th, 2006 these cases will house our MEM exhibit- the largest collection we have displayed at one time.

The first day was spent unpacking and randomly placing the 140 engines into the cases where we thought they might fit well. By the end of the day we were ready for a break, so Paula and I departed the airport and drove to nearby Longmont to have dinner with Harold Beckett and his lovely wife Luba. Harold, a pilot from Denver International, contributed two of his engines back in 1999 when we first exhibited at the Champlin Air Museum in Mesa, AZ. He made a point to visit our exhibit at the airport the next morning and to see his engines for the first time since 1999.

Early the next morning, with a fresh outlook, Paula and I jumped onto the moving walkway and reviewed our initial setup. By the time we reached the end we had a pretty good idea of what we wanted to move around to balance out the display. We spent the entire day arranging and rearranging until we were satisfied with the results. Colleen's crew worked quickly to print all of the missing placards needed for the exhibit while two of her employees helped us move engines. Toward the end of the day with all engines and placards in place we reviewed our work with Colleen and her crew. In the process we found two engines without placards and made a few more minor adjustments in engine locations. At that point we called it a day and departed for the evening.

Paula and I hoped to have everything set up on Tuesday and Wednesday and head home on Thursday, but we still had an inventory list to check, recheck, and finally sign off with Colleen and Denver International. Early the next morning, with a fresh pair of eyes, we boarded the moving walkway again. We added the missing placards and rearranged a few more engines long before Colleen and her crew arrived for the day. As the sun rose it backlit the engines on the east side of the walkway and they sparkled like diamonds. I tried to capture it in pictures, but as we all know you just cannot do so successfully- you must see it in person. In the late afternoon as the sun sets behind the Rockies it does the same to the engines on the west side for a short period of time- and it is a sight to behold.

Since the first engine was placed into the first case we were inundated with comments, compliments, and questions. I believe we lost a couple of hours each day answering questions and visiting with travelers and airport employees. Everyone assured us it was one of the best exhibits they had seen and hundreds of travelers commented as they passed by on the moving walkway. Time and time again we heard such comments as "Wow, Marvelous, Exquisite, Unbelievable, How long will they be here?", and of course, "Do they run?". Thursday afternoon we finalized and signed off the inventory list and photographed each case numbered from 1 to 29. All of us made one final pass through the exhibit (a walk through paradise), said our goodbyes, and then we began our journey back home. What seemed like too much work for only a five-month stay became well worth the effort when it was finished. Colleen and her crew were very excited and Paula and I were thoroughly impressed with the layout and exhibit on the "Bridge". The title of the exhibit is "Horsepower in Small Packages" and it will be seen by 30 to 45 thousand people every day.

Personally I could take that trip down the moving walkway several times a day and never tire of it. This exhibit is most impressive.

We want to thank all of you who contributed your wonderful works of art, time, and effort to make this exhibit possible. Thank You:

Paul and Paula

TECH TOPICS

4-16-06

Leonard Higgins

George Gravatt: Igniters

George brought in four samples of igniters with associated electrical components. The igniters were used in the early Hit and Miss engines instead of spark plugs. The igniter is a machined unit with a set of points that operate within the combustion chamber of the engine. It is usually installed to the side of the combustion chamber at the upper end of the cylinder. This allows a more direct route for the mechanical mechanism that operates the igniter's spring loaded tripping system.

The electrical system consists of the igniter and a coil, battery and a switch to activate it. The internal points of the igniter remain open through most of the engine's rotation and then, near or at the top of the compression stroke, the points close and are opened quickly by the spring loaded tripping linkage. The electrical arc across the points causes the fuel and air mixture to burn.

George demonstrated this action by using one of the igniters, attaching the electrical system and then tripping the spring mechanism with his finger. The electrical arc produced was easily observed. He used a battery with 6 volts and explained that a battery of 12 volts would also work, but it might require a ballast resistor to adjust for the higher voltage. Different types of batteries may be used, such as the rechargeable hobby battery, lead acid or carbon type.

The igniter is made of several parts and has two actions taking place on the same axis. The stationary parts of the points are insulated. This part is where one electrical lead is attached from the outside. The points are either flat, or round as a rod. The movable points are flat and attached to a short metal arm rotated by a shaft, and on the axis of this shaft, outside the combustion chamber, are the levers and springs operated by the trip rod and cam. The layout of trip systems, are basically the same, but with variations depending on the manufacture or design of engine. The points can be made from uncoated nails or other types of metal that allow low resistance to current flow. A metal that allows a good arc is the best.

The other electrical connection for the igniter does not have to be attached to the igniter itself, since it is a ground connection, but it is to great advantage if it is. The rotating shaft that the movable points are attached, become an area of resistance due to the blow by of gases, carbon buildup and oil that accumulates around and along the shaft. This creates poor contact for the circuit. Attaching an electrical lead directly to the shaft will insure a good connection for the system.

The coils used to power the igniter can be from various sources. Doorbell transformers were mentioned, home made windings or purchased from Mike Neal's company.

George passed four igniters around for the members to handle and see the different methods of operation. Two were from a 1917, 5 horsepower and 1 ½ horsepower Economy. Another was from a 1914 1½, horsepower Alpha and one made for a New Holland reduced scale size, hit and miss engine.