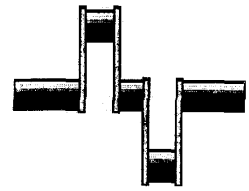


The Crank Calls

The Bay Area Engine Modelers Club, Branch 57 of EDGE&TA

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April 2001

www.baemclub.com

NEXT MEETING
April 21, 2001
AT 10 AM
AT
Robert Schutz's SHOP
366 40th St.
Oakland, CA



Don't forget this a
Saturday morning
meeting.

BAEM Meeting Notes, March 16, 2001
Bob Kradjian, Secretary

President Peter Brooks called the meeting to order at 8PM.

For the first time in many years, the venue for our monthly meeting was different. Member, Robert Schutz, at his excellent facility in Oakland, California was our gracious host. Robert stepped up with a wonderful venue for us, provided coffee and snacks for the group, and made us feel welcome. The club extends heartfelt thanks to Robert.

The meeting started with a tribute and thanks to Paul Bennett for his many contributions to BAEM over the years. It is worthy of note that we were comfortably seated on chairs donated by Paul and transported by Robert's business associate, John. BAEM members again give thanks to all three.

Lew Throop, treasurer, tells of \$1500 in the kitty, but dues and insurance to EDGE and TA are to be paid.

Visitors included Ken Brunskill and Harry O'Neil. Welcome to new member, Mathew Keveny of Oakland (Here's one sure vote for our present meeting location). I am pleased to report that our highly respected member, Al Ingersoll, had successful gallbladder surgery on March 19 and is recovering well at home.

As special events coordinator, I was pleased to report that we are booked for two very high quality car shows in 2001. We are also highly likely to exhibit again at the West Coast Nationals (GoodGuy's) in Pleasanton, late August.

The first is the Hillsborough Concours on May 6. We will be exhibiting in the same place as last year. This is a classy show and a great outing for the whole family. This is only a few weeks away. Those of you with running or display engines who wish to participate---please let me know and I will arrange for passes. For those who haven't exhibited engines, please know that it is great fun! The engines don't have to run and they don't have to be completed. Partially completed engines generate tremendous interest as the "chitlins" are easily visible.

The second showing will be at the Palo Alto Concours, late June at Stanford. This will be our third time at Palo Alto.

Other showings for the whole club, or just a few of the members, may materialize. I will arrange for the EDGE and TA insurance for all events.

We then devoted considerable time to the subject of a permanent meeting place. Robert has kindly offered to continue with his Oakland facility, which is satisfactory in all respects with the possible exception of the driving distance for some of the members.

There are only two other probable sites under consideration at the present.

The first is the Hiller Aviation Museum at the San Carlos Airport. The second is the huge workshop and development facility at a company called *Syneon* in South San Francisco.

The owner of *Syneon* is Charles Taylor, an energetic medical devices entrepreneur and radio control aviation enthusiast. Bob Allen and I visited his facility and it is eminently satisfactory and quite elegant. Potential problems with janitors, landlord, parking, and insurance should be solvable. Charles will attempt to attend our next meeting and any further plans can be discussed then. This facility is located in an industrial park East of Grand Avenue and Highway 101 in South San Francisco.

Jim Piazza is exploring the Hiller Aviation Museum as a possible meeting site. Problems to be worked out here: are meeting times, possible payment for janitorial, cancellation of meetings if paying groups schedule for the same time slot, and a request that Jim Piazza donate computer consultant time to the museum. Mr. West of the Hiller Museum and Jim are discussing these matters. The meeting time offered is Saturday morning. Jim will keep us informed on developments. The Hiller Aviation Museum is located on Highway 101 near the Holly Street exit at the San Carlos Airport.

It is abundantly clear that there is no single location that will be satisfactory to all members. Former newsletter editor, Bob Allen, has agreed to make up a Bay Area map with a "stick pin" marking the home of each member. This will help us in identifying a central zone to shoot for if it is possible to find a meeting place close by.

The matter of splitting the club into a Northern and a Southern division, holding separate meetings, and meeting jointly at wider intervals, was again mentioned. There seems to be little support for this approach.

The next important subject was the timing of our meetings. It was decided, after debate, to select SATURDAY MORNING as the time for our next meeting. This, of course, is intended to help avoid the horrendous Friday afternoon and evening "get-away" traffic.

PLEASE NOTE: Our next meeting is at Robert Schutz's Oakland site at 10:00 am, Saturday, April 21.

Bits and Pieces

Robert Schutz showed us a pry bar that he used to move and lift his large mill and lathe. The bar in association with hardwood wedges will allow a remarkable amount of ease in moving heavy objects. He has done a wonderful job of refinishing the lathe and the milling machine.

David Palmer brought his finished *Monitor*, built from a kit, and fired it up several times for our enjoyment. It runs and looks great! The kit comes from Pacific Model Design in Bend, Oregon. Unhappily, they do not currently support a web site.

Bill Nickels has finished a nice working model of an 1800s steam drilling engine. Bill is becoming one of our most active builders and is contemplating a Bob Shores *Silver Angel*. Good work, Bill!

Carmin Adams showed us his first rate castings for his 1910 Union. Carmin made the patterns and had a foundry do the pouring. The Union is a rare engine, only one original is known to exist (in Los Banos, no less). Carmin feels that the original was a marine engine. He has completed the igniter for this spark plug-

less engine.

Visitor Ken Brunskill shared his Stirling traction engine with the group. He obtained the castings from a club in New Zealand. Ken changed the design, thus eliminating him from the competition for completed engines. We'd love to have you return, Ken.

Dwight Giles brought in a pretty, green, horizontal single. He used lapping techniques to obtain a lovely finish on the cylinder bore. This will probably be the focus of a future tech topic presentation. Dwight feels that lapping is one of the keys to avoiding oil consumption.

Lew Throop got the bent crankshaft award for his curvaceous Offy shaft. His ambitious work on CNC application continues and he'll update it next month.

"Our "Tech Topic" for the evening was crankshaft making techniques. Ken Hurst did a dandy job of sharing his approach to this task, as did several others that followed his lead. See Scott's "Tech Topics" for details of this lively session.

Next month's "Tech Topics" will feature Chris Leggo on engine balancing. Chris has the unusual ability to tackle a complex subject and reduce it to its basis elements. Again, see "Tech Topics" for details."

A final thought. We are incredibly fortunate to have the support of a congenial group such as ours. We possibly have the best model engine group on the planet! In my travels I constantly find that other engine builders work in frustrated isolation. When I describe our club and its activities, they are deeply envious of what we have. If it takes some sacrifice to maintain the group in this period of readjustment----well, it's worth it.



TECH TOPICS

BY
SCOTT OVERSTREET

Those of you who missed our last meeting for whatever reason - well - you missed a really good one, and Tech Topics really clicked. Crankshaft making was the topic.

Ken Hurst led off with an extremely well organized and presented step by step procedure that he follows in making a "flat" crankshaft by the "between centers" approach. He stiffens the crank via a series of flat plates and journal width spacers placed so as to maintain both torsional and compression strength through all machining and grinding steps. Ken also showed a neat driving center fixture which I think he credited Dwight Giles for the design thereof and a special two or more points tool he uses to machine the journals. Seeing this tool alone was well worth the long drive to me. Ken distributed a handout which describes his machining steps in an easy to follow narration and also got us thinking about steel types by stating that a mild steel crank is good enough for an unloaded engine.

Bob Kradjian was up next. He presented the competing round crank design and requisite machining processes. In his approach, the crankshaft, which starts out as a length of round stock, is held for rod journal machining by a fixture that seems to be used by many in various forms. Bob's fixture is a piece of round stock large enough in diameter to accept a longitudinal bore (end to end) of diameter to accept the crank blank away from center by one half the stroke of the crank being made. Set screws are placed axially to hold the crank blank in position. Reference marks are scribed on one end of the fixture to allow indexing a longitudinal scribe mark on the crank blank as required for the crank being made. As you can see, this system can be used to accurately make multi plane cranks quite easily. In machining each rod journal, the crank is simply rotated in the fixture to bring the journal being machined to its on center position and extended out from the fixture enough for tool access. Main journals are done with a similar on center fixture or simply by

holding the crank directly via a 3 or 4 jaw or collet chuck.

Lew Throop's contribution to the session was first hand evidence of what can happen when a suitable stiffening fixture isn't used. Somebody came forth from the show & tell table with a beautiful little four cylinder Offy crank that Lew had put a lot of time and effort into that was bent and twisted not quite horseshoe like but close. Lew's only comment was to take the time required to make a good fixture and use it.

Paul Bennett came to the front next and immediately got us deeper into the subject of suitable steels. His words of wisdom were to stay away from cold rolled steels - too much or many buried stresses get turned loose as the crank is machined - serious warping often being the result. Paul conceded that if cold rolled is first annealed - heated to cherry red and slow cooled - it could be used but that starting with 1018 is his preference. Ken and others agreed. Lew Throop added that he likes 1144 "stress proof."

Gene Corl was last to speak and described two fixtures he used in making the crank for his Chevy V8. One was a plate with "V" stands and clamps at either end and the other was a precision 90° "L" made from a length of angle iron. He had clamped the crank into the "L" and used this arrangement somewhat like the square and hex 5C chuck blocks in the tool catalogues are used - great flexibility between mill vise and table for various machining operations. Gene also added to the steel discussion in stating that he had used 4140 for his crankshaft. Gene said that this leaded steel looks like stainless, and in annealed form is not only free machining but is also both very strong and stiff, and that it can be heat treated if you wish. Ask Gene for more details.

There were lots of questions from the floor and much technical discussion and understanding followed each - the end result being that a lot of technical knowledge about making crankshafts as well as about other diverse subjects was spread around. It was a great session, many thanks to all.

April's Tech Topics will, in a way, continue our focus on the crankshaft - Chris Leggo will talk about balancing single cylinder and two cylinder 90° "V" engines. He will present a procedure for calculating the amount and position of crankshaft counter balance weights required for balance and, via a demonstration of his own doing, show how and why his procedure works. Also, Chris will discuss the balancing requirements of various multi cylinder configurations. Don't miss this one. I am sure that Chris will, in his unique manner, explain the complex art of designing balance into an engine in a way that you (and I) will understand.

Scott



From the ed.

A note from Roger Butzen

Hi Jim,

I got my copy of the news letter last night and I must commend you on a fine job. The pictures are REALLY great! My Silver Bullet is running great. I have it on my desk at work and it starts with a slight touch of the starter. Customers love it.

I have attached a photo of my wall wizard, I thought John Meredith and the rest of the guys might like to see mine. It has a fantastic bark. Maridee and I are meeting Paul Knapp at the Champlin Air Museum after he gets back from NAMES in May to drop off my Anzani radial. I am really looking forward to seeing all the new engines that have been added as of late.

Best Regards,
Roger Butzen





Four cylinder engine



Bob Kradjian "Cams and crank"



Ken Hurst "Driving Fixture"



Carmin Adams "Union engine castings".



Bob Kradjian
Engine block.



Bob Kradjian "Round crank fixtures".



Ken Hurst
"Crank
stiffening
fixture".



Bill Nickels "Crank
holding fixture".



Steve Myers



Dave Palmer "Monitor"



Ken Brunskill "Stirling tractor"

Bill Nickels "Steam drill engine"



Sparks

From the Editor

If you haven't received the month of April Crank Calls you probably haven't paid your dues.

FOR SALE

Atlas 7" Shaper on metal stand.
Ex-school shop. Excellent condition
except one broken handle.
Best offer over \$500.

Carl Wilson
650-967-7715

Surface Grinder
Brown & Sharp model 618
Micromaster
6 x 18 electromagnetic chuck
excellent condition
\$3,000

Cylindrical Grinder
Landis
Ask for details

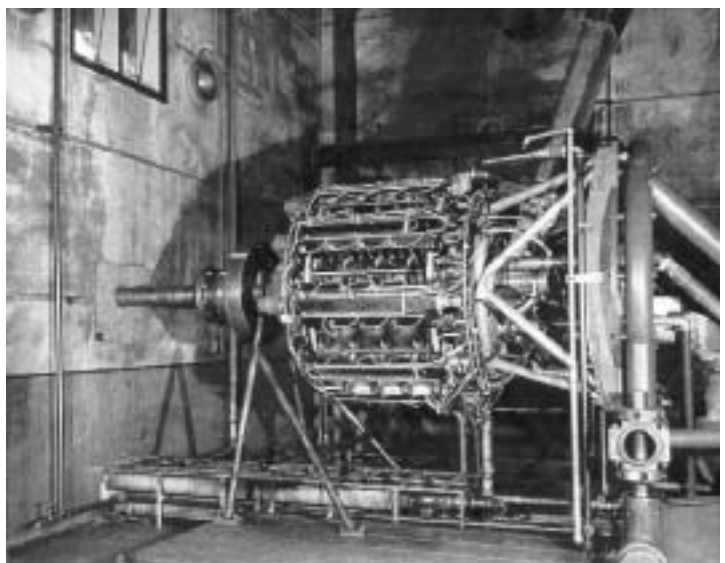
Owner can deliver and place as desired

Dwight Giles "Horizontal"



WANTED

Robert Schutz has an extensive want list
that can be accessed at <http://www.ob.com/engine/index.htm>



Engine in test cell

Club photos by Mike Rhemus