



SCHSM

Southern California Home Shop Machinists

April 1, 2017

OFFICERS

President	Charlie Angelis
Vice President	Michael Vulpillat
Secretary	Fred Bertsche
Treasurer	Jim Endsley

COMING EVENTS

Edelbrock Shop Tour

Fri, May 5, 2017, 10:00 a.m.-2:00 p.m.

Edelbrock Headquarters

2700 California Av., Torrance

Edelbrock Car Show

Sat, May 6, 2017, 8:00 a.m.-4:00 p.m.

510 Madrid St., Torrance

May Meeting

Sat, May 6, 2017, 2:00 p.m.

El Camino College

AMETLL School Maker Faire

Hawthorne High School

4859 W. El Segundo Av., Hawthorne

Sat, May 13, 2017, 10:00 a.m.-2:00 p.m.

<http://hhsmakerfaire.weebly.com/>

Taylor's Steel & Welding Open House

Sat, May 13, 2017, 8:00 a.m.-4:00 p.m.

1212 Commercial Av., Oxnard

June Meeting

Sat, June 3, 2017, 2:00 p.m.

El Camino College

Picnic

Sat, June 10, 2017

Alondra Park, Torrance

Preface

The April monthly meeting of the Southern California Home Shop Machinists convened at 2:00 p.m. on Saturday, April 1, 2017. We met in classroom AJ115 on the first floor of the Industry and Technology Building at El Camino College in Torrance, California. There were approximately 27 members in attendance, as well as one visitor, Lee Carlstrom, who has built two full-size airplanes in his home shop.

Club Business

The 2017 Club Picnic was briefly discussed. The cost to attend still appears to be \$12.00 per person, which includes approximately \$2.00 toward the site fee. President Angelis proposed for consideration an option to stretch the food budget, which is to have everyone bring their own beverages. Everyone would get what he or she prefers to drink, and the money originally intended for beverages would be freed up to buy additional food, or a wider variety food.

One member voiced a concern that the PDF attachment containing our monthly meeting agenda did not come through with the Club's Yahoo Group message. President Angelis encouraged anyone experiencing this problem to contact him and he'll send the attachment directly to you using conventional email. Meanwhile, he'll ask our Yahoo Group Administrator to look into the matter.

President Angelis reminded everybody about the upcoming Edelbrock Shop Tour and Car Show. The Shop Tour is well worth taking. Highlights include access to their enormous machine shop facility, research and development department, dynamometer section, and quality control department. There are also some give-away items, and a concession where you can stock up on t-shirts, hats, and other Edelbrock collectibles. Anybody planning to attend is required to register



Lewis Sullivan showing a repair he made to a Caterpillar trackloader component.



Michael Vulpilat (L) in the R&D Dept during the 2015 Edelbrock Shop tour.

ahead of time and reserve a time slot by going online to <https://www.eventbrite.com/e/2017-edelbrock-headquarters-shop-tours-registration-30542047085>. The car show is a benefit held in a nice industrial park surrounding Vic's Garage, Edelbrock's company museum. It's only a few blocks from the site of the shop tour. Visitors can view a wide variety of hot rods and custom cars. See side bar on Page 1 for time and location, or go <http://www.edelbrockcarshow.com/> for additional details.



Presentations

SQL Programming Language

Jim Endsley took the lectern under the pretense of imparting his knowledge of SQL Programming Language as it would apply to the home shop machinist. What followed was a video of Jim himself in a classroom setting, giving what appeared to be a lecture on the subject to a group of students. You had to see it to fully appreciate it. The presentation turned out to be a ploy to lure us in and set us up for a clever April Fools' Day prank.



Knight Foundry Open House, March 4, 2017

Knight Foundry

Eldon Barkley narrated a very interesting slide show of photographs he took while attending the March 4, 2017 Knight Foundry Open House. The Knight Foundry, located near Sutter Creek, California, is a historic water-powered foundry and machine shop, established by Samuel Knight in 1873 to support the region's gold mining industry. The City of Sutter Creek recently acquired title to the land, buildings, and contents after 20 years of negotiations, and has



Cupola Furnace in background, Knight Foundry



Lineshaft and leather belts.

launched a program to preserve the facility for future generations.

The original machinery, which is driven by patented Knight Water Motors via a system of line shafts and belt drives, remains as it was when it was first installed. Period hand tools lay idle on original work benches, as if waiting for the next shift to begin. Racks full of elaborate wooden patterns and core boxes remain as a testament to the high standard of craftsmanship and ingenuity of the craftsmen who made them.



Large planer, Knight Foundry

To categorize the Knight Foundry as an industrial ruin would be an injustice. This facility is remarkably well preserved, and gives a crystal clear snapshot of 19th Century industry. For additional background on the Knight Foundry, as well as a wonderful gallery of photographs and schedule of future Open House events, go to <http://knightfoundry.com/> .



Large herringbone gear pattern



Misc castings, Knight Foundry

Show and Tell

Norm Wells brought in an impressive arsenal of hole punching and hole cutting tools that he has acquired over the years for use in his home shop. Among the items shown was a Whitney-Jenson No. 5 Jr. hand punch with seven sets of punch and die inserts ranging in size from 3/32" to 9/32", all contained in a sturdy stamped metal case. He showed a Pittsburg brand punch set, similar to the Whitney-Jenson, but with a deep throat for reaching farther in toward the center of the material. Norm also had a nice set of individual hand punches, a large leather punch, a bi-metal hole saw, square and round knockout punches, a specialty twist drill, and nibbler to cut custom shapes in sheet material. Norm's presentation generated a lot of interest and member participation.



A sampling of Norm's punches and hole cutting tools.

Eldon Barkley advised that if a punch insert becomes wedged in the material when using a Whitney-Jenson or similar style punch, the punch should be gently and patiently worked out of the material rather than try to force the tool's handles in the opposite direction. Doing the latter may snap small diameter punches and render them useless. Eldon also suggested that when using individual punches of the type typically struck with a hammer, back up the cut with the end grain of a block of wood. Doing so results in a cleaner cut and protects the cutting edge of the tool. The edge can bend or curl if it's driven into wood while going against its grain.

Ed Hoffman gave a brief demonstration on how to quickly access the schedule of upcoming Machine Tool Technology classes on the El Camino College website, <http://www.elcamino.edu/> . Ed recommended that we click on the "Class Schedule" link, which can be found on the

homepage. Once on the Class Schedule page, don't select the appropriate printed class schedule link, but instead click on the "Search Online Now" link at the top of the page, or on the "Search For Classes" link in the left sidebar. Once on the Search page, select "Machine Tool Technology" from the drop-down menu located in the Subject column. You'll also have to select the appropriate term, for example Fall 2017, and location, in this case El Camino College. Clicking on the "Submit" button will isolate all of the Machine Tool Technology classes and display them on a single page. By using the Search feature, you will avoid having to page all the way through the printed class schedule looking for the class you want.

Lewis Sullivan showed a commercially made ClampTite wire clamp making tool, as well as a larger, home-made version. These clever little tools enable you to make very small hose clamps out of small diameter wire. The finished clamps look professionally made, and hold very securely.



Clamp making tools

Lewis also showed a repair he is performing on the track system of his Caterpillar 931 trackloader. A very large, heavy spring had broken and, over the years, destroyed the threads on its 1 1/4" diameter retaining shaft. Approximately 1/4 of the shaft's diameter had been worn away. Lewis made a heavy duty spring compressor out of stock from his scrap bin and used it to safely control the spring while he removed its retaining nut.

Using his MIG welder and a make-shift guide made out of angle iron to keep his beads straight, Lewis restored the worn shaft to its original diameter, plus a bit extra to allow for machining. After some careful chucking in his lathe to average out some runout in the welded shaft, Lewis turned it to the maximum thread diameter. He painstakingly aligned his thread cutting bit to pick up the original

threads, then restored the threads in the welded area. He is awaiting delivery of an aftermarket replacement spring, as well as some other needed parts. When they arrive, he'll use the same spring compressor to install the spring back onto its shaft.



Left: Restored shaft, Upper Right: Piece of broken spring - 6" diameter, Lower Right: Damaged retaining nut

Lewis also shared a template plate he made for use with his Victor portable shape cutting machine. This machine is a template-guided, oxy-acetylene flame cutter, used to cut complex shapes out of steel plate. He will be fabricating a similar template plate to make a replacement flange for his trackloader.



Home-made template plate containing various templates for use on Lewis Sullivan's Victor portable shape cutting machine. Note the finished piece in the upper right, resting on its pattern.

Don Huseman brought in a KDK quick change tool holder, which had a worn locking mechanism. He was seeking advice on how to safely disassemble it for repair. Fortunately, another member had already been down that road and was able to give him some tips.

Millar Farewell described a problem he is experiencing with the drive lug on the bull gear of his Atlas/Craftsman 10" lathe. The lug works its way out of engagement when the lathe is running. He wanted to know how to remove the lug for inspection and repair. Two other members said they, too, had that problem with their lathes. Unfortunately, neither one could remember how they removed the lug! Both said they'd look at their lathes and try to refresh their memories.

John Miller said he has an inoperable Thordarson Electric Spark Apparatus, circa 1904, Patent Number 751574A. He asked if anybody had experience with, or documentation for, this gadget that might help him get it working again. He was advised to take a look at the capacitor, which is often the culprit.

Dan Snyder showed a leadscrew he purchased, and an anti-backlash nut he made, for use in a CNC machine he is building. Not happy with the sloppy, commercially made anti-backlash nut that came with his leadscrew, Dan designed and machined an improved one out of composite material. He is much happier with the result.



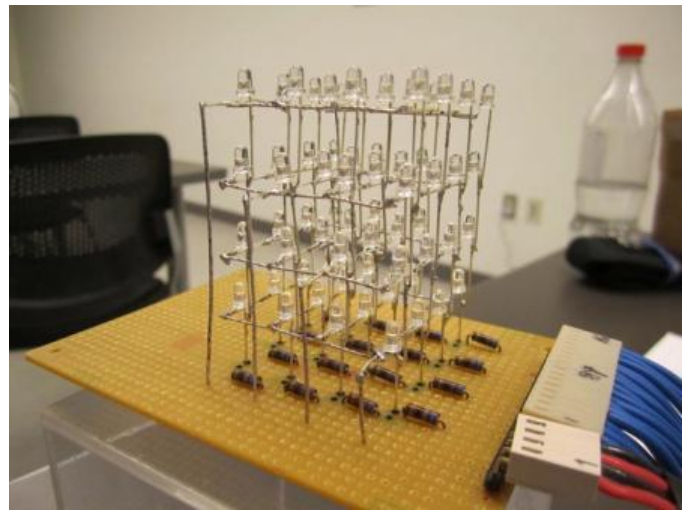
Dan Snyder's improved leadscrew nut.

Michael Vulpillat gave an update on a flight simulator he is working on, which is to be used as an attraction on the Battleship USS Iowa Museum, located at the Los Angeles Waterfront in San Pedro. This interactive exhibit is based on a retrieving, or rescue, helicopter. Michael has already modeled the project with 3D CAD software, and will be making the actual simulator soon.

Butch Sherrick reminded everyone about the upcoming Taylor's Steel & Welding Open House to be held in Oxnard, California, in May. See sidebar on Page 1 for details.

Douglas Walker showed a 4x4x4 LED array that he made using an Arduino Uno microprocessor board. The cube works nicely and can be programmed to flash the LEDs in any number of sequences. Douglas

did a great job on the soldering and assembly portions of the project, and is now focusing on the programming aspect.



Douglas Walker's 4x4x4 LED Array

Ron Gerlach showed a small hammer that he made for delicate work. It has a brass head and an aluminum handle, and it was designed by long-time SCHSM member, Howard Weimer. During a recent visit with Howard, Ron was shown the prototype, which was worn and well past its prime. Howard produced the drawings, fixtures, and a hand-full of barstock. He told Ron to make two hammers and bring one of them back next time he visited. Ron also showed the fixtures Howard made to hold the handles for machining of their tapered surfaces. Howard used a series of pins and holes to change the cutting angles.



L: Brass hammer - Howard Weimer design, C&R: Fixtures used to machine handle.

Howard, a very accomplished tool and die maker, used fixtures quite extensively during the course of his work. He used these little hammers to gently tap his work pieces, jigs, and fixtures into alignment while using sophisticated optical equipment to check his measurements.

The SCHSM welcomes presentations by members or guest speakers on any subject related to metal working activities. If you have some knowledge or experience you feel may be of interest to our members, or if you know someone that may have something interesting to relate, please consider making a presentation at a meeting. Presentations may be a little longer and more detailed than a show and tell, and may be accompanied by slides, video, or physical displays. Probably every member has some experience they can share, and this is the purpose of the SCHSM. Please contact President Charlie Angelis to make arrangements to give a presentation.

The SCHSM meets in Classroom AJ115 on the first floor of the Industry and Technology building of El Camino College, 16007 Crenshaw Blvd. Torrance, California, at 2:00 p.m. on the first Saturday of every month. The building is near Parking Lot B. Enter the campus from Manhattan Beach Blvd.

If you would like to contribute an article to this newsletter, or make a comment, contact the editor, Fred Bertsche. He can be reached via the SCHSM Yahoo Group, or at fbschsm@yahoo.com.