

SOUTHERN CALIFORNIA HOME SHOP MACHINISTS

www.schsm.com

Newsletter

March 2, 2024

OFFICERS

President	Douglas Wlker
Vice President	Michael Miller
Secretary	Ken Rector
Treasurer	Frank Schettini

COMING EVENTS

April Meeting
 April 6, 2024
 2:00 P.M.
 El Camino College
 ZOOM
 Meeting ID: 405 927 9043
 Passcode: 681409

Picnic
 June 8, 2024
 Alondra Park
 Manhattan Beach Blvd.

Preface

The March 2, 2024 meeting of the Southern California Home Shop Machinists was called to order at approximately 2:00 pm by Club President Douglas Walker. The meeting was held live at El Camino College and online via Zoom. Attending were thirteen people present in the classroom and fourteen present online via the Zoom application. That is 27 total present. There was one visitor this day.

Club Business

Treasurer Frank Schettini presented the financial report. We have \$2,535 in the treasury. There are 24 paid members. Frank also reported on reserving space for the June picnic. He has had some dealings with the park people concerning reservation and deposit. We are confirmed for space on June 8 and they have not asked for a deposit yet.

Frank introduced a visitor, his friend Max ----. Max has a significant home shop with a couple of lathes, a milling machine and a shaper. He has built 21 model engines of various types. This includes an Otto-Langen, an Atkinson Differential and some hot-gas engines. Don Huseman asked him about his use of the shaper and he said it is a most enjoyable machine.

During the meeting, President Doug Walker voiced a plea to members regarding off-topic subjects on the SCHSM groups.io platform. Doug asked that we refrain from starting off-topic threads and that we refrain from complaining about them.

Presentation

Dan Snyder spoke about connecting and using a touchDRO controller with the existing glass scales on his Tree milling machine. At a previous meeting some time ago Dan told how he attached the glass scales to the mill. This required fabricating brackets and some careful fitting to get the scales tucked safely away and accurately aligned. He made X and Y control boxes with digital displays to interface the scales. He has been using that system since then.



Now he is back to describe replacing the controllers with a touchDRO system

that uses an Android tablet for the graphical user interface.

TouchDRO is a DIY DRO project designed to help hobbyists, machine shop enthusiasts, and makers to build an easy-to-use versatile and powerful digital readout system. The DRO uses a DIY wireless scale interface adapter in conjunction with an Android tablet to offer a touch-based graphical user interface and can be used with the vast majority of modern capacitive, magnetic, and glass DRO scales.

Becoming interested, Dan realized that he had an unused Android tablet in the back of his closet and he was happy to find that his tablet met the system requirements for the touchDRO system.

The touchDRO interface adaptor connects up to four scales with cables to an ESP32 microcontroller and communicates to the Android display using Bluetooth wireless technology. Electronics in the adaptor consists of two dip integrated circuits, a small number of resistors and capacitors and an ESP32 microprocessor mounted on a support module. It is available assembled, as a kit or by buying individual parts to be assembled as Dan did. Dan showed us the interface schematic to illustrate how straightforward the electronics assembly process is. He assembled the components on a perforated board using small wire and point-to-point soldering. This fits into a small plastic box with DB9 connectors attached.

After the interface is assembled, the ESP32 is loaded with proprietary firmware available free from the touchDRO store using a USB cable and the Arduino development system on a host computer. Alternatively, the Espressif ESP-IDF development framework may be used instead of the Arduino system. The firmware provides programming to process input data from the scales and communicate with the Android tablet over the Bluetooth link.

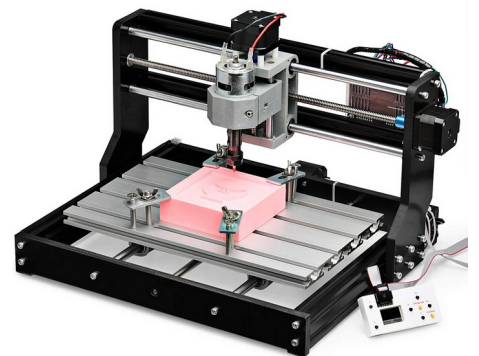
The free Android tablet app is also downloaded from the touchDRO store. The app provides a generous set of features controlled by various menus accessible on the tablet touch screen. The screen display changes as different features are selected and scale data is presented. The touchDRO is thoroughly described by a user reference manual on their web site at www.touchdro.com.

Dan described how to use the Android touch screen graphical interface, how to initialize the scale location values, and the touchDRO bolt circle feature.

Thanks to Dan for another informative presentation

Show and Tell

Bill Nelson showed more work he has been doing on the re-creation of the GALCIT rocket motor for the people at JPL. He is making a long thin boring bar to cut a 3° taper in the motor exhaust nozzle. This is tough work as the chamber is stainless steel and the nozzle is 4" long and about 3/8" diameter at the small end. Mike Van Overbeck is going to help Bill with some cnc work to form the parabolic shape of the lower combustion chamber in the other end of the stainless steel part.



Bill also showed a circular gasket made from some .030" thick graph-oil gasket material. He showed a pair of drafting dividers with the pencil point replaced by a #11 exacto blade used to cut the gasket.

Don Huseman asked for advice on drilling holes in a telescope sighting device.

Mike Miller showed a small PCB milled on his Genmitsu 3018 CNC router. This machine is available for ~\$160 from various online sources. The Genmitsu is capable of cutting all types of plastics, soft aluminum, woods, acrylics, PVCs, PCBs, and a wide range of other materials. The effective engraving depth is 1.8 inches. Mike used kicad to design the circuit and pcb board and fed the pcb design to the genmitsu.

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 or video, or physical displays. Probably every member has some experience they can share and this is the purpose of the SCHSM. Please contact President Douglas Walker to make arrangements to give a presentation.

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

You can also attend meetings via the internet using the Zoom application. The zoom meeting ID and Passcode are found in the Comming Events sidebar on this newsletter.

If you would like to contribute an article to this newsletter or make a comment about the newsletter, contact the editor, Ken Rector, via the SCHSM groups.io platform , or at kdrhoo@yahoo.com.

Find us on the web at www.schsm.org.