SCHSM

Southern California Home Shop Machinists   October 1, 2016

COMING EVENTS

LMS Open House

October 15, 2016

10:00 A.M

396 W. Washington Blvd.

Pasadena

November Meeting

November 5, 2016

2:00 P.M.

El Camino College

December Meeting

December 3, 2016

2:00 P.M.

El Camino College

Preface

The October monthly meeting of the Southern California Home Shop Machinists convened at 2:00 P.M. on Saturday, October 1, 2016 in classroom AJ115 on the first floor of the Industry and Technology Building at El Camino College in Torrance California. There were 35 people in attendance including one new visitor.

Little Machine Shop Open House

Willie Jordan and Fred Bertsche spoke about our participation in the LMS Open House to be held on October 15th this year. Allthough the event opens to the public at noon, we have been asked to setup our display between 10:30 and 11:30 that morning.   Tables and awnings will be available for our display but we may need to bring our own chairs. Willie and Fred will coordinate our display and arrange for the compressor and banners to be brought by members. This is a great opportunity for our club to present ourselves to the hobby machinist community here in the Los Angeles area. The event is well advertised and attracts many home shop machinists that could be potential members of the SCHSM. Members are encouraged to bring something for our display and to participate. Please contact Fred or Willie about how you may help and please plan to participate.

You can read more about the open house on the LMS web site at http://littlemachineshop.com/info/event.php

Micro Controller Presentation

President Michael Vulpillat delivered a presentation about his experiences with a micro controller called the Raspberry Pi. The Raspberry Pi is a series of credit card-sized single-board computers developed to promote the teaching of basic computer science in schools and developing countries. Several generations of Raspberry Pi have been released and Michael used the latest of these, the Raspberry Pi 3, Model B. All models feature a Broadcom system on a chip (SoC), which includes an ARM compatible central processing unit (CPU) and an on chip graphics processing unit (GPU). CPU speed for the various Pi models ranges from 700 MHz up to 1.2 GHz for the Pi 3 and on board memory range from 256 MB to 1 GB RAM. The pi provides an SD card for file memory, HDMI and ethernet connections and USB for peripherials like a mouse and keyboard. The Pi 3 includes bluetooth and wireless LAN. Lower level output is provided by a number of GPIO pins which support common protocols like I²C. The Raspberry Pi Foundation provides Raspbian, a Debian-based Linux distribution for download, as well as third party Ubuntu, Windows 10 IOT Core, RISC OS, and specialised media center distributions. It promotes Python and Scratch as the main programming language,

with support for many other languages. As you can see, the Raspberry Pi is a complete computer system.

Michael mentioned that there are other micro controller systems such as the Arduino, Beagle Bone and Programmable Logic Controllers (PLC) that one might use.

Michael obtained the Pi 3 and accessories he would need, including an enclosure, a power supply and connectors, for a little more than fifty dollars. This is less than the cost for similar earlier Pi configurations because of the presence of embedded wifi and additional USB ports. He described the ease of software installation and setup.

The Pi provides a General Purpose Input/Output (GPIO) interface accessable through program control. This is a 3 volt interface and cannot be connected directly to TTL logic without level shifting hardware. The GPIO pins are connected to the ARM cpu and accessable through higher level language library functions.

Michael's equipment included a development board on which he wired an LED indicator connected to GPIO pins. He demonstrated a simple Python program to turn the led off and on. He told how easy it was to write the program using sample code from the internet and adding his own features.

Michael showed an example of a radar simulator program running on the Pi which featured a scanner ray, target blips and data display. He also mentioned the availability of Node Red, a visual editor for wiring the Internet of Things (IoT).

As you might expect, there is a staggering amount of information about the Raspberry Pi and its GPIO features, Python, Scratch, C, I²C, IoT and Node Red on the internet.

Michael's talk was well received, There were a lot of questions and discussion about the Pi and the other things he mentioned.

Show and Tell
Norm Wells brought in a small brake he has been using for many years. It will bend 20 ga steel a foot wide and narrower strips of 18 ga. Norm said it is similar to a HF tool but of better quality. He also showed a heavy soldering iron to be attached to an acetylene tank to provide an air acetylene heat source.

Ron Gerlach is working on another fairly large engine, This has a 5-3/4 inch bore which is badly worn and needs to be rebored. Ron showed a tool holder he made for line boring the cylinder on his 17 inch lathe. The tool holder holds a 1/2 inch tool with the shank turned and threaded to 1/4-20 with a 1/4-20 adjustment wheel to move the tool in and out to obtain the correct bore diameter. Ron described problems with chatter and there were numerous suggestions from members for overcoming this.

Butch Sherrick told about the Taylor Steel and Welding Open House in Oxnard. The event takes place on the Saturday before Mothers Day and they provide some hot dogs and orher treats. The attraction includes a display of antique engines and equipment in the yard. The local Model A Club brings cars and local farmers also display their stuff. Butch showed slides from last years event and it looked very interesting. They welcome visitors. Butch suggested that we might be welcomed to bring a display of our stuff.

Matt Rulla spoke about his experiences with an anvil he bought from Larry McDavid, and a coal fired forge. He brought in some coal and coke samples and told about sources of coal in Southern California. He is

making tongs and other tools to use in his forge from scrap iron, old auto springs, axles and the like.

Matt also told about working with his neighbor to install and setup a 100 watt CO_2 laser made by Full Spectrum Laser in Las Vegas. He passed around samples of engraving on tools, metal, corian, leather and wood. The quality of the engraving on these samples was excellent.   Full Spectrum Laser offers the P-Series 24X16 CO_2 laser system with a 24" x 16" engravable area and Z depth of 6.5 inches. This system is capable of cutting 1/2 inch thick acrylic or wood and includes an autofocus sensor and alignment laser for setup. They have a smaller machine they show on their web site being used for model making.

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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 Michael Vulpillat 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.

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 Yahoo Group, or at kdrhoo@yahoo.com.