

SCHSM

Southern California Home Shop Machinists



Gorton Pantograph (see pg. 4)

Club Officers:

President:
Douglas Walker

Vice President:
Michael Miller

Treasurer:
Frank Schettini

Secretary:
Butch Sherrick

Ron Gerlach
Webmaster

Larry McDavid
SCHSM groups.IO Manager

Club Events:

Model T Club Auction
Saturday, July 15, 2023
Long Beach City College
Veteran's Stadium
General Admission \$5.00
(Club members will be
attending and displaying,
and generally get in free)

Annual Club auction/sale
At August club meeting

SCHSM Newsletter June 3, 2023

Call to Order: The June 3, 2023 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.

Club Business

Doug Walker discussed final details of the club picnic, which was to be held the following Saturday, June 10, at Alondra Park in Torrance. Club Treasurer Frank Schettini then gave a report on the state of the club's finances.

Doug thanked member David Brown for arranging a guest speaker from the Lawrence Livermore National Laboratory to speak on the subject of Fusion Ignition.

Upcoming events were discussed:

Antique Engine and Tractor Show

Date: June 17-18, 2023 / June 24-25, 2023

Location: Antique Gas & Steam Engine Museum
2040 N. Santa Fe Ave., Vista, Ca. 92083

BAR-Z Summer Bash

Date: Last weekend in June (See website for exact dates)

Location: Rancho Cucamonga, CA

**Model-T Club Swap Meet

Date: Saturday, July 15, 2023

Location: Veteran's Stadium at Long Beach City College
5000 Lew Davis St., Long Beach, Ca.

Website: www.lbmtc.com

****Note: Club members will be attending and displaying at this event. Flyers are available from Eldon. Club tables are 1019, 1020, and 1021. Club members generally get in free.**

Presentations — Dr. Clement Trosseille—NIF

Dr. Clement Trosseille, a Research Scientist at the National Ignition Facility, which is part of the Lawrence Livermore National Laboratory, was introduced as our guest speaker. His topic was the recent ground-breaking fusion reaction experiment where for the first time more energy was produced than put in to create the reaction.

Presentations (cont.) — Dr. Clement Trosseille—NIF

On Dec. 5, 2022, the National Ignition Facility demonstrated fusion ignition in the laboratory for the first time

- On shot this shot, NIF delivered 2.05MJ of laser energy to the target to create a plasma with a temperature of 130 million degrees, that produced 3.15 MJ of fusion energy
- This shot met the 1997 National Academy of Science definition of fusion ignition
- This accomplishment was built on decades of hard work and dedication by many people at LLNL, in partnership with the whole fusion, plasma, and High Energy Density Science (HEDS) community

Ignition enables a new era of applications for Stockpile Stewardship and the foundation for Inertial Fusion Energy

Fusion is the process that powers the sun and the stars

On NIF, we use deuterium and tritium, the easiest hydrogen isotopes to fuse

For the same mass of fuel, fusion produces 4 million times more energy than burning oil or coal

The NIF uses a laser driven hohlraum to compress a fuel capsule to achieve the conditions for ignition

Ignition shots require some of the most precisely engineered targets made by our target fabrication team

The capsule is a diamond shell containing a layer of frozen hydrogen fuel at cryogenic temperatures

Diamond Capsule (High Density Carbon)
≈ 2 mm diameter (1/16 inch) smooth to 10 nm

Capsule with DT Layer 19 Kelvin (-425 °F)
C Layer
W Doped C Layer
DT Ice

Capsule production is a multi-step process that takes almost 3 months

Shot data: A unique set of diagnostics is applied to each experiment to improve our understanding of the implosions

Microscopic capsule imperfections amplified by hydrodynamics instabilities are an important degradation mechanism

Understanding motivated capsule design tweaks to use new 2.05MJ laser capability to drive heavier, more stable capsules, and additional impetus to deliver improved targets in 2023

Note: This presentation, as most that are shown in the newsletter, has been edited for brevity. Members are encouraged to attend monthly meetings to enjoy the entire presentation. Additional presentations on this topic are available on YouTube.

Show and Tell



Bill Nelson shared a couple new projects he completed: Bill displayed two chuck keys he made for his Delta wood mortiser. The key on the right he has Parkerized, the other he has not. The usual top notch quality that we're used to seeing in his projects!

Bill's woodturning guild had a challenge to create a pot for a single flower or attractive weeds, they dubbed a "weed pot". Bill decided to have some fun with the name of the project and made the creation in the right-hand photo above.



Don Huseman shared multiple pieces of equipment he has acquired over the years and is willing to loan out to club members. See Don for details.

Featured Equipment (see last page)

Members are encouraged to participate in the monthly Featured Equipment by emailing a few photos and a brief description to Butch Sherrick, club Secretary. The equipment can be new or old, perfect condition or a scrap-yard find. The intent is to share knowledge, generate interest, and encourage conversation between members.

When and where we meet:

First Saturday of every month,
2:00 p.m.

El Camino College
Classroom AJ115
1st Floor of the Industry and
Technology Building
16007 Crenshaw Blvd
Torrance, CA 90506

The building is near Parking Lot
B. Enter the campus from
Manhattan Beach Blvd.

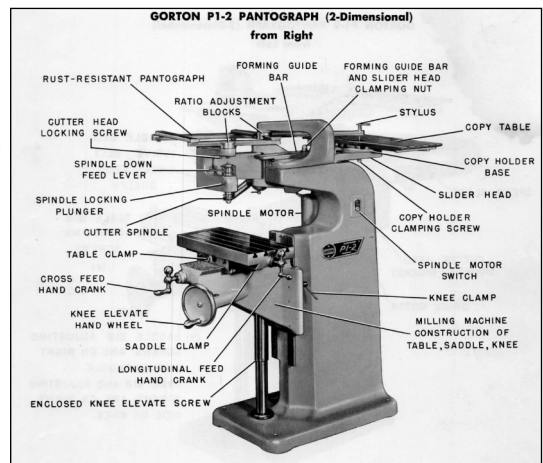
This Month's Featured Equipment (from top of first page)

Pantographs cut parts using a stylus to follow a master pattern, and controlling the movement of the cutting head through an adjustable linkage. The linkage can be adjusted to create parts of a different scale from the master pattern.

Matt Rulla's Gorton Model P1-2 Pantograph was purchased off of Craig's list, and per Matt it was in sad shape. He completely refurbished it, including bearings, electrical, paint, and hand-scraping the ways with skills he acquired in a class on scraping. This 2-dimensional model is for general engraving, die, mold, or stamp cutting and profiling. 3D pantographs were used in such places as the U.S. mint to create dies for coins from sculpted masters. Pantographs have largely been replaced by CNC machines



Note Matt's beautiful scraping



Participation

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 who 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. Please contact President Douglas Walker to make arrangements to give a presentation. If you would like to contribute an article to this newsletter or make a comment, contact the Secretary, Butch Sherrick. He can be reached via the SCHSM Groups.io Group. Please note that presentations submitted for the newsletter may be edited for brevity. To enjoy the entire presentation members are encouraged to attend the monthly meetings.

