



SCHSM

Southern California Home Shop Machinists

September 1, 2018

OFFICERS

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

COMING EVENTS

October Meeting
 Sat, October 6, 2018, 2:00 p.m.
 El Camino College

Achates Power Tour
 Tuesday, Sep 4th 1:00
 San Diego

November Meeting
 Sat, Nov 3, 2018, 2:00 p.m.
 El Camino College

PREFACE -

The September meeting of the Southern California Home Shop Machinists was called to order at 2:00 p.m. on Saturday, September 1, 2018. We met in classroom AJ115 on the first floor of the Industry and Technology Building at El Camino College in Torrance, California. There were 33 members in attendance. We had two visitors. The first was Ira Snyder, Dan Snyder's son. He works for Las Cumbres Observatory in Goleta Ca, doing SW and IT work. The company provides a world wide grid of observatories that can be accessed by anyone so at any time of the day somewhere in the world a telescope is in the shadow of the earth and aiming into the heavens. The other visitor was Joe Barnes, a long time friend of Eldon Barkley.

CLUB BUSINESS -

John Miller – John passed out information sheets to the six members who had signed up for the trip. It was very likely that only these six members would be allowed into the building for the tour because they had been cleared in advance by the company. The info again is as follows:

Date:	Tuesday Sept 4th
Time:	1:00 PM
Duration:	1 to 1-1/2 Hrs
Address:	Achates Power Inc. 4060 Sorrento Valley Blvd Sand Diego 92121

John reiterated that all six must bring either Golden Bear driver licenses or US Passports to be allowed in the building.

Charlie Angelis (el presidente) – Charlie presented two ideas for members to think about. His intent was to throw the ideas out and promote discussion among the members. Action was then dependent upon the general reaction and acceptance of the ideas.

Idea #1 A Facebook Page for SCHSM

- A motion was made and seconded to discuss the pros and cons of creating a Facebook presence for the club to help reach out to new members and give existing members a different venue to share ideas and info.
- The general summary was that there was a significant amount of push back from members
- Though there was some neutral to positive commentary the negative responses were, by far, the prevailing sentiment
- A NO vote was easily passed which terminated any further

consideration for this idea.

Idea #2 A personal lap top computer for the use by any future SCHSM presidents

- Charlie noted that many members were making good use of digital media for making presentations, showing videos and still pictures.
- This is a departure in recent years from the more archaic methods used in the past
- Though nearly everyone agreed that these newer presentations were helpful and appreciated, it was felt that the club does not need to purchase a laptop.

- Those members that create these presentations will likely have a means of presenting them at meetings if the standing president at the time does not have a lap top of his own at the meeting.
- It was further felt that the no one wanted to open the proverbial can of worms regarding what type of lap top to buy, what SW would be needed and how much should be spent.
- There was no formal vote on the topic but the general consensus was that no further effort would be applied towards this idea.

PRESENTATIONS –

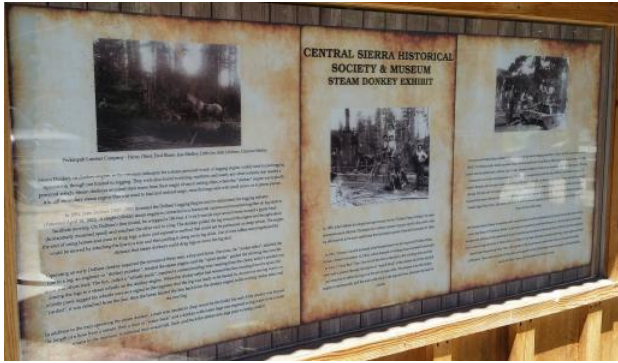
Larry McDavid Fish, Steam and Hydroelectric Power at Shaver Lake



Larry recently accompanied his family to Shaver Lake in the Sierra Nevada mountains of central California for an outing and was pleasantly surprised to discover there was not only a museum on the premises but there was a rich history in the area involving hydroelectric power generation and logging with its historic dependence on steam power. The campground is owned by Southern California Edison (SCE). It had been for private use but is now open to the public. Located in the Upper San Joaquin river valley, this entire

area was developed as part of the Big Creek Hydroelectric project. This system consisted of eight generating stations and supplies 12% of SCE's hydroelectric power. Of all the power supplied by SCE, 20% is from hydroelectric sources such as Big Creek. One key element of the system was a reservoir for water so that flow down the river could be assured all year round, through dry and wet years. A 180 foot high dam was built on Stevens Creek in 1927 which created Shaver Lake which then became a reliable source of water for the project.

The camp ground has various camping facilities and the lake is stocked with trout and bass. A museum, the Central Sierra Museum, was created on the premises to capture and display the many types of power generating equipment that helped make the project a success at the turn of the 20th century. There were various steam generation and



engines on display such as this Steam Donkey, shown on the previous page, which was a self-contained portable winching system for pulling felled trees up hill.

Another example of the equipment was this Drag Line Winch which was driven by two large (by model makers standards) oscillating steam engines.



Drag Line Winch

There was a three story high scale model of a power generating station that housed a Pelton wheel motor driving an AC generator. This unit included a ball governor system to control the water pressure/ volume impinging on the buckets of the wheel to control speed.



Three Story Scale Model of Power Generating Station



Pelton Wheel and Generator in Power Station

There was a tie-in with the Knight Foundry located further North at the base of the Sierra Nevadas where Night Water Motors were built prior to the invention of the Pelton Wheel motor. The older Night Water motors had an efficiency rating of 76.5% verses the newer, double cupped Pelton Wheel motors with an efficiency of 90.2%. This significant improvement led the wide spread use of the Pelton wheel motors and the diminished use of the Night Wheel motors.



Smaller Pelton Wheel and Generator

One item featured in the presentation was a bank of three meters for monitoring the motor/generator assembly for RPM, voltage and frequency. The frequency meter consisted of an array of reeds, each tuned for a slightly different frequency. These reeds were excited by an electromechanical transducer and the frequency could be easily estimated by observing which reed was vibrating the most.

Larry showed an image of a piece of "sinker wood" as well as a slide depicting some details and history behind these logs. Typically they are cypress or pine and have been at the bottom of rivers and lakes for 100 or more years. They sank due to their dense nature and were well preserved in the cold water by being protected from the presence of oxygen, light and a multitude of insects.



Cross Section of Sinker Wood

The water feeding the various power generation stations goes through large pipes called penstocks. One image displayed was a cross section of one of these pipes with a man standing inside.



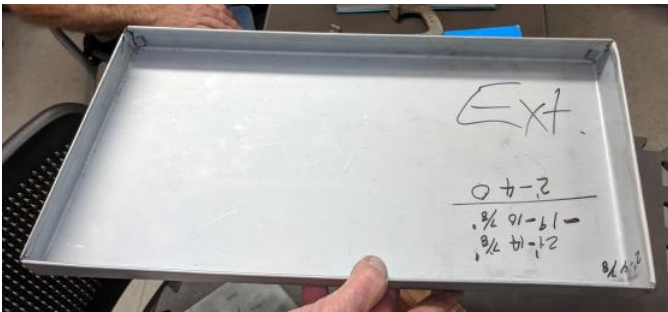
Section of Penstock Pipe

SHOW and TELL –

Norm Wells – Norm brought in some examples of non-silver bearing solder/brazing rod. He had experience during his employment years where certain conditions leached the silver out of some silver soldered joints which left the joints virtually useless. One sample was Harris 15 which is a 15% silver, 80% copper and 5% phosphorus. The other sample was a copper & phosphorous rod.



Lewis Sullivan – Lewis presented some examples of sheet metal work he had recently created for a project. The job was to form and install a sheet metal cap for a wood frame wall to keep water out. He had a bunch of 12" wide by 10' long sheet



metal panels precut for his use. He designed them such that one end of each panel was slightly narrower than the other end so subsequent panels could be mated together to get a long contiguous span that is water tight. He stacked up all the precut panels and marked the location of the two



main bends at each end by using a bandsaw to cut a small notch into the stack at the appropriate place on each end. With this, all the sheets were marked the same. He bent the individual sheets on a 10' brake to form the basic U shape. He then used hardwood slappers to form the sheet metal



on the end pieces. The wooden slappers form the metal without leaving hammer marks. The channels were dressed up by adding 1/2" folds to the edges.



The material he generally used is Bonderized steel which is galvanized sheet metal that has been treated with a phosphoric acid wash to form crystalline zinc phosphate surface. The porosity of this surface is good for adhesion of various primers and paints.



Lewis displayed a variety of tools he uses for this work; including a dull carpet knife, thin slotted piece of steel for making small bends, the slappers, a piece of 1/2" thick CRS to use

as a flat and straight edge for forming bends on the job, a length scribe and a small flat headed hammer.

Many of these tools as well as several very useful sheet metal fabrication books were acquired in an estate sale and have proven to be very useful. Also helpful but not shown are super thin



(0.040") abrasive cutoff wheels. They are a great tool but they demand respect because they can cause serious flesh wounds very quickly if the user is not careful.

Ron Gerlach - Ron talked about the Advance brand of Nitrile gloves he has been buying from Amazon. They have proven to be very durable and can be reused three to four times before they have to be discarded.



Bob DeVoe – Bob showed some curved parts he created using a bending jig and some half-hard brass stock. He was using a No.1 bender



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 SCHSM. Please contact President Charlie Angelis to make arrangements to give a presentation.

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.

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

