

# AMADOR SAWMILL & MINING ASSOCIATION

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## President's Report - January 3, 2013

2012 was a year of projects both at the sawmill and at the shop.



Sawmill Crew for the Steam Expo

Back row L to R: Richard Cox, Mike Bispo, Mike Presson, Alex Sharp, Frank Tower, Austin Ford.  
Middle Row, L to R: Joe Harralson, John Tower, Jerry Virtue, Phil Kreiss, Al Langmuir, Wayne McCammon, Kevin Jarrett.  
Front row sitting, L to R: Sam, Tom Innes, Bill Braun

This report wraps up another year of progress and achievement for the Amador Sawmill & Mining Association. The sawmill performed well during the June Steam Exposition and July Amador County Fair. Due to the large donation of logs from three different sources, the sawmill was fired up on November 10th and 11th to complete the cutting of the logs. After leaks occurred on several occasions on the boiler hand hole plates, the operation time was reduced. Since then a better fitting gasket style has been installed for the hand hole plates.

The November 3rd Potluck Volunteer appreciation dinner was well attended and the amount of food consumed indicated that it was well worth the effort. Chefs Ken McCoy and Steve Bishop prepared the main course of an Italian dish of chicken, veggies & pasta, and a butternut squash dish. The volunteers brought refreshments, deserts, salads, and appetizers. Most all walked into the dinner hungry and left stuffed.

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The Board of Directors held their annual meeting just before the dinner. The Board appointed an advisory committee to recommend changes to the ASMA organizational structure and activities. The committee prepared a report that was presented to the Board. The report was taken under consideration and future Board meetings are scheduled in 2013 to address the proposed changes. A complete copy of the proposal is too long to include in this newsletter, and is available by contacting ASMA by phone or e-mail. Updates as progress is made by the Board of Directors will also be available on request.

Special guests Jim & Penney Hutchinson and their son Shaun attended the pot luck dinner. Jim donated to the Association several antique machine tools and a steam engine. They are currently under restoration and will be set up in a mobile display for exhibiting early industrial machining technology. These tools were originally used by Jim's Father in the 1920's and 30's for repairing and maintaining movie theater projectors of that era. Thank you very much Jim.

A slide show of Association activities of 2012 and previous years was set up by Ron Edgar with a lap top computer and power point projector. Ron donated the used lap top to the Association and Tom Innes contributed a printer for use in the restoration shop. (continued on page 2.)

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(Presidents Report Continued)

Multiple teams are forming within the volunteer ranks to take over various functions and responsibilities in the coming year and there after.

Join us in interesting projects and meeting new people. The New Year promises new adventures and further preservation achievements. We wish you a Happy New Year!

Bill Braun, President, ASMA

## Amador Sawmill And Mining Association Is Looking For Volunteers

A.S.M.A is expanding its program in steam sawmill history. Volunteers are needed to learn how to operate historical exhibits. Do you want to learn how to operate a sawmill, a stationary steam engine, a steam powered donkey engine, or wood and oil fired steam boilers?

If so, contact Bill at (209) 245-3448 or e-mail

[info@amadorsawmill.org](mailto:info@amadorsawmill.org)

P.S.—we also need volunteers to help us in Fundraising, Public Relations, Communications, Etc. too!



Vintage 1945 steam donkey at the 2012 Steam Expo

## The Best Part, We Have One of These. . .

THE STORY OF CORLISS AND HIS ENGINE

By Tom Innes

At the start of the 19th century, the industrial evolution was well established in Europe and the United States was still in a colonial mode. It was recovering from the revolutionary war which was a drag on the young country and the British were still in the process of making life as tough as it could for the young country. The French were an ally to the United States during the revolutionary war but in 1789 was involved in its own revolution that didn't end until 1799.

The US had not established much in the way of an industry during the late 1700s with the exception of firearms manufacturing. The first armory was the Springfield Armory in Massachusetts, established in 1795 and Harper's Ferry, Virginia in 1796. This was being driven by the possibility of hostilities with Britain and France.

The big push in manufacturing was the war of 1812 with Britain. At this time ship building became an important industry. So one might think this was the start of an industrial revolution in the US. There were a number of brilliant inventors during this time. A problem that affected gun builders were interchangeable parts since most arms were hand fitted. That was a problem that continued for many years before being solved. Keep in mind the availability of measuring tools did not exist. Also, there was constant friction between gunsmiths and their skill and any attempt to replace them with some kind of machine. People such as Ely Whitney, Thomas Blanchard and John Hall were but a few of the inventors that made major contribution to machine manufacturing.

There were many rivers in the Boston area that became sources of water to drive water wheels of various designs. These were generally overshot wheels and they were used as prime power sources in the region. A large textile, weaving and shoe manufacturing industry developed in this area. Waterworks and distribution systems were developed:

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But a problem exists in using water. The rivers can freeze in the winter and dry up during hot summers. Replacing the water wheels as power sources by steam engine became obvious.

Since Watt's time, steam technology had advanced somewhat. They still used low pressure steam. Remember, Watt was not supportive of high pressure steam. However, there were some higher pressure engines that also drove a piston from both sides and exhausted the steam to the atmosphere: In other words, not an atmospheric engine. Many patents that Watt and others had were usually defended and this might have limited some development. In any event, steam became the choice of power for much of these factories.

In 1817, George Corliss was born in Easton, NY. He was the second child of a local physician. His schooling consisted of a local school that wasn't much more than a junior high school. He left school and went to work as a clerk in a general store. He decided on continuing his education and attended an academy in Vermont where he graduated three or four years later. He then started his own general store where he remained for several years.

A latent genius for mechanical skills surfaced about this time. In 1842 he received a patent for a sewing machine for boots and heavy leather. He moved to Providence, RI where he was employed as a draftsman. Here he began to focus on steam power and the improvement to stationary steam engines.

Around 1848, he started a partnership with Nightingale and Barstow to form the Corliss, Nightingale and Company. Here they built the first steam engine using his ideas of valve operation that was the hallmark of the Corliss engines. He recognized the energy loss taking place in most valve trains that used a common steam chest for both inlet and exhaust steam. The Corliss has a dedicated steam chest for the inlet and exhaust. This greatly increases the efficiency of the valve train. Efficiency had become important in the US since coal was expensive and fuel became the most expensive cost after labor costs.

This was the first of two major innovations in steam control. The first being fuel economy. The second was speed regulation or throttle control. What Corliss did was to reduce or lengthen the period of steam entry to the cylinder, depending on speed. This was controlled by a spinning ball governor. And as speed increased, steam was cutoff by disconnecting the valve from direct connection to the engine and close rapidly. At the end of the cycle, connection was re-established and the process repeated.

When a large textile mill was operating and the load on the engine constant, all was well. But if one or more looms, for example, were taken off line, the others would spin up to a destructive speed. The governor valve arrangement limited any damage that might occur. Steel rolling mills also needed close speed control.

All this formed the basis for his patent in 1849. He was able to maintain his patent protection until 1870. However, he did spend time and money protecting these patents.

The Corliss design was rapidly accepted in Europe, basically replacing many less efficient steam engines.

As an aside, in 1861 during the Civil War, the US Navy required a large metal fabrication to mount the turret of the Monitor so it could revolve. Corliss was one of the few plants in the country that could fabricate such a part. George Corliss devoted all of his time and factory resources to fabricate this part. The Monitor saw battle at the Battle of Hampton Roads against the Merrimac.

There does not seem to be a limit to Corliss engine size in those days. Corliss was to build the power source for the 1876 Philadelphia centennial exhibition. Here was an engine designed to power the Machinery Hall. It had two one cylinder walking beam engines. The beams were 30 feet off the floor and were 27 feet long with 8 foot centers. The cylinders were 3 feet in diameter and the flywheel was 56 tons. The line shaft was 352 feet long and the power takeoff were 6 foot diameter bevel gears. After the exhibition, it was moved to the Pullman Car works where it continued operation until 1910.

George Corliss received much recognition from around the industrial world. He was inducted into the National Inventors Hall of Fame in 2006. George Henry Corliss died in 1888 at the age of 70.

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## Happy New Year from the ASMA Restoration Committee

Bill Braun asked me to head up the restoration operation after we received several, generous donations of early/historic machinery. Currently we have 10 volunteers working on our committee and I'm proud of what we've accomplished. We come from diverse backgrounds and provide a varied and effective skill set for restoring old machinery. Typically we meet for a few hours 2 times a month (usually Wednesday or Friday) and work in Bill's workshop. Our compensation consists of coffee, donuts/cookies, the occasional beer, and the satisfaction of knowing we have returned a bit of history to Amador County.



Our first project is to restore the machine shop equipment donated by the Jim Hutchinson family. One of our goals for 2013 is to place this equipment and other restored machinery in a mobile trailer, replicating the kind of equipment that might have been used to repair saw mills in the early 1900s. The trailer could then be taken to a variety of functions or locations as a teaching tool or simply for display.

So far, this group of merry men, has completed the following restorations:

Sebastian Lathe (gifted by Jim Hutchinson)

Blacksmiths Leg Vise (gifted by Ervin Baker)

Blacksmith Post Drill (gifted by Ervin Baker)

Miscellaneous hand tools and machine accessories (gifted by Jim Hutchinson)

We are currently working on a Rockford Horizontal Mill (gifted by Jim Hutchinson) and have several other donations in the queue.

I extend my profound thanks to Bill Braun and the current members of our committee.

Members: Joe Harralson, Dave Lindquist, Austin Ford, Alan Langmuir, Wayne McCammond, Ken McCoy, Jake Aqius and Mike Oswalt.

If you have any interest in our group, have something you wish to donate, or just want to know more, please Email me at [4edgars@msn.com](mailto:4edgars@msn.com).

Ron Edgar

## In Memoriam

We regret to announce that Jim Jarrett passed away in December. Jim has been volunteer with the sawmill since 1990, and did a great job collecting donations to support its operation.

## STEAM FOR THE SAW MILL or PILEBUTS TO DONKEY PUNCHERS

By Austin Ford

*How Two San Francisco Bay Pile Drivers Became Part Of A Re-created Sawmill in Amador County California*

### CHAPTER 2: THE VOYAGE BEGINS

*In Chapter 1, we described how the equipment was saved from the scrapper in San Francisco Bay by the Amador Saw Mill Association.*

**April 15, 2004**

It was noon on a sunny day as we neared the Islais Creek Channel in a not-so-nice part of the San Francisco waterfront. As we crossed the shiny art deco Third Street Draw Bridge near Pier 90, Bill (Our Prime Mover, Bill Braun) was the first to spot the two white Oil Derrick-looking towers floating in the canal off to our left. This was the first glimpse of the new toys we'd been discussing for over two years.

Oddly, they were tied up off of Amador Street. Dick (Richard Hansen) noted that the address was appropriate. "Amador to Amador" he said. But how were we supposed to get the stuff we wanted off of these rigs?



*Steam Pile Drivers #2 and #3 Ready to Go*

#### **"PileButts" Say Goodbye**

Having first parked on the strongest looking part of the dilapidated pier, we noted a whole bunch of folks in dirty life jackets over their Carhart work clothes climbing all over the two lashed together barges. They were taking pictures. Who are these guys? Turns out these were the "Pilebutts," the members of Pile Driver Union Local 34 who had, for many years, worked on these barges operating the equipment. They had gathered to say goodbye to their two gals, Steam Pile Drivers #2 and #3.

They were a fine bunch of guys, full of waterfront stories, who were struggling to separate from a big part of their lives.

As if to underscore the end of the steam era, Pile Driver Supervisor, Jim Meisenbach, pointed to a nondescript used crawler crane on an old barge down the pier a ways, the replacement pile driver. He hoped this diesel driver would work as smoothly as the #2 and #3 steamers had for the last 53 years.

#### **Time for Action**

It was time to get going. The first step was to transport the pile drivers up the Sacramento River to Pittsburg where the steam winches and boilers would be removed. We put on our life jackets and put aboard our tool boxes, duffel bags and a 5 gallon can of gasoline. We would keep the jackets on for the next 24 hours.

Two little tugs, Shorty and VP, were lashed one to each barge and set up to push from the tower ends. We knew about pulling unseen logs out of the woods 100 years ago, but were a little concerned that Mark, the young tug Captain, could not see the front of the barge from his elevated wheelhouse. No problem. Mark and first mate, Rich, 85 feet away, used a special sign language to communicate - pretty routine.

#### **We Get Active**

The barges drew 7 feet and we needed to navigate into a Sacramento River slough of only 5 foot depth. No problem. We four retired helpers set up a gasoline engine-powered pump and began to remove 16,000 gallons of fresh water from tanks located down in the hull of each barge.

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## Getting underway with "Shorty"

Alan ("Skipper" Alan Langmuir), true to his need for a tidy-boat, recruited Tom (retired Electrical Engineer, Tom Innes) to help coil the many 100 foot lengths of 2 inch line used to wrap the drivers around the piers when driving piles. But, when removal of grime and trash revealed missing tools, it was time to investigate. Great news! The pile driver people had left all the special steam tools and spare parts we would need to get these huge machines back up to running condition. What else? Upstairs, the office desk and lockers didn't yield much, but we found an old microwave, old clothes and tons of old work drawings: a nice warming oven

had been built around the boiler below to keep food warm.

More discoveries. Driver #2 had a current boiler certificate and ran its last trip last fall; Driver #3 had a 2004 boiler certificate and last ran in February. As you might expect when old equipment lays around, vandals had stolen the steam whistles and a few of the aluminum hatches. We arrived just in time to save these fine old ladies from a fate of certain destruction.

Feeling confident and in control, we were not prepared for the scary stuff ahead.

*To be continued*

## FROM THE WOODS INTO A WOODSHED

By Tom Patten



Amador Historic Sawmill Association volunteer and Plymouth-Foothills Rotary Club member, Tom Patten and his wife Lacy, donated three Red Incense Cedar Trees from their ranch near Volcano to the Rotary Club, which in turn had it milled into timbers for the Amador County Fairgrounds. It was more material than needed for the Fair project, so the Patten's decided to contribute further by paying the milling fee on the remaining wood. They were not sure what the cedar would be used for at the time, but it seemed like a fun investment and a great way to support the Sawmill. It didn't take long to decide its fate, to become a new wood shed at the Patten Ranch. Volunteer and neighbor, Ron Pacheco, felled the trees, then bucked and loaded them onto Bill Braun's trailer for transport to the Fairgrounds,



home of the Historic Sawmill. "Projects like this make living in the foothills more fun and interesting", said Tom, "especially when your efforts go toward helping others. Plus I had all the fun working at the mill during the Fair." Previously the Pattens donated seven Ponderosa Pine trees, some of which was given to the Plymouth-Foothills Rotary for a sign project.

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## NOVEMBER SPECIAL CUT

By Phil Kreiss

On Saturday Nov 9 and Sunday Nov 10, the Amador Sawmill Association conducted a special milling session to complete the milling of sawlogs on the deck, donated by Brian Oneto and family. The logs needed to be milled in order to fill the remaining cut orders on the books. The weather was cool and breezy, but no one seemed to mind.

On Friday, Nov. 8 a smaller crew came in to set up the mill and ready the equipment. Then on Saturday and Sunday the full crew of volunteers worked long and hard hours cutting the large logs and kept all the machinery running smoothly. Ed Arata and Bill Braun came in at 5:30 a.m. both days to stoke and heat the boiler—hearty souls, indeed! Saturday's cut was not without its problems: 3 hand hole gaskets started leaking and had to be replaced. Unfortunately, this required the boiler to be bled of steam, drained, repaired and then refilled and heated back up to full pressure—each repair took about two hours to complete. Also, at one point, the carriage jumped the track and had to be realigned. To top it all off, the saw hit something hard in a log and dulled out—it had to be resharpened by Dave Bibby. The net result of all this was that only one and a half logs were cut—very frustrating to Bill and all the crew. The highlight of the day, however, was a terrific BBQ lunch served by Incahoots Catering—a hearty thanks to Tom Krumbholz!

Sunday was a much better day—the crew was able to cut 8 full logs, and this was no easy task since they were larger in diameter than the blade. The sawyers had to cut chunks off the sides at odd angles to whittle the logs down—very tricky, but with no problems. Much to everyone's relief, only minor problems with the equipment cropped up—the boiler's spark arrestor plugged up, so Bill Braun had to climb up a tall ladder to clean it; the husk clutch slipped a little, but was quickly adjusted; and the Corliss cylinder rod got a little hot after long hours and the gland packing had to be re-adjusted. The crew loaded up Bill's big trailer with a full load of planks and timbers. A few volunteers (and of course Bill Braun) stayed to cool down the boiler and tidy up the mill. Overall it was a very successful day, and everyone went home tired, but happy.

On Monday, a small and weary crew showed up at the mill to do the usual cleanup and takedown, putting away all the belts, the saw blade, tools and other equipment and cleaning up lots of stray sawdust.

In the end, it was a very successful operation, and now that Bill has new and improved hand hole gaskets, the next cut should not have lot of down time. We all learned that keeping the equipment running is as much work as cutting the logs! Hats off to all the hard working volunteers for their long hours!



Mill Crew—November Special Cut : Back Row, Standing, L to R: Al Langmuir, Frank Tower, Eric McConnon, Mike Bispo, John Tower, Steve Bishop, Alex Sharp, Kevin Jarrett. Middle Row, Sitting on Logs, L to R: Dave Bibby, "Doc", Ron Edgars, Jake Agius, Wayne McCammon. Front Row Standing, L to R: Jake Headd, Maddie the Dog, Bill Braun, Richard Cox, Austin Ford, Joe Harrelson, Tom Innes, Jerry Virtue.  
Not in Photo: Connor Mistron, Brandon Pharris, Phil Kreiss (behind the camera.)

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Photos Courtesy: Page 1, Bill Braun. Page 2, Phil Kreiss. Page 4, Ron Edgar. Page 5, page 6 upper, Austin Ford. Page 6 lower, Tom Patten.  
Page 7, Phil Kreiss, Page 8, Barbara Kreiss

Contributing Editors: Bill Braun, Tom Innes, Ron Edgar, Austin Ford, Tom Patten, Phil Kreiss.  
Production: Phil & Barbara Kreiss

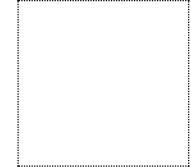
## Upcoming Events:

DATE	TIME	EVENT
July 25-28, 2013	11 A.M. and 3 P.M.	Amador County Fair—Sawmill in operation—Two shows daily.
Saturday, November 2, 2013	11 A.M. to 7 P.M.	SAWMILL DAY AND APPRECIATION DINNER. Where: Amador Fairgrounds, Spur building. This event is held for all volunteers/families and invited guests.
Twice a Month On Wednesdays	Contact Ron Edgar For Times	MACHINE RESTORATION GROUP Workdays—Contact Ron Edgar at: <a href="mailto:4edgars@msn.com">4edgars@msn.com</a>
Third Saturday of each month or to be announced	8:00 A.M. to -----	Volunteer Workdays at Sawmill.

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AMADOR COUNTY SAWMILL HISTORY:  
ALIVE AND WELL FOR THE FUTURE.