



STACK TALK

JULY 2014

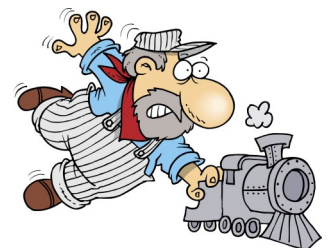
The Official News Letter of the Adobe Mountain Railroad
Phoenix Arizona, Operated by the Maricopa Live Steamers
Railroad Heritage Preservation Society,

It's all good news this month. No meeting and I go on vacation to cool off on the beach. All kinds of track work is being done thanks to Bill Lowe , Terry Liesegang and Bob Douglas. Switches are being made just in time to start rebuilding the latter track in Adobe yard. Terry has been installing switches. In Bills spare time after building switches, he has welded up two Cantilever signal bridges that go out to Joshua Junction. I guess there is some confusion as to what signal is for what track??? This should fix the confusion. Thank you Bill, Terry and Bob. The air conditioner broke down two weeks ago. I called Glen Lynch on Sunday and Monday morning he had it fixed. He has been a member for a long time and he is a very good air conditioner and refrigerator repair man. Thank you Glen. I would like to thank all the people that came out and helped clean up the junk that had accumulated behind the wood fence. In one hour the trash container was full. The water park is having fireworks on Friday night starting around 9:30 pm. Free parking in our lot. September is just around the corner and all the Sunday train crews need to take the engineer test before you start pulling the public. August 9 is the next general membership meeting at 6 pm with Ice Cream social time. Come and enjoy a bowl on us. The Board meeting is August 9 at noon. There's a silent auction for a riding car that the club doesn't need. Look for it in this news letter. Have a safe holiday and try and keep cool. Good luck.



Safety First

Perry McCully

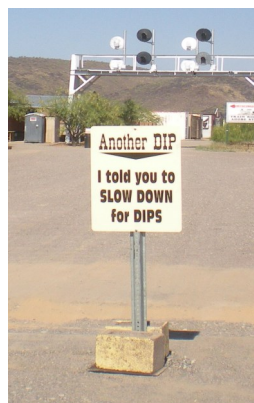




A long hot summer does not end the need for improvements and General upkeep of our park.



The false fronts on our containers have been showing much wear and tear from the weather, they are currently being repainted



The County insists that we cut down on the dust. Please slow down. The fines for excessive dust are high.



Arizona Railway Museum

Surplus Equipment SALE

WHEN: Saturday, July 5 - 7am -noon
(preview for members on July 4, from 6-8pm)

WHERE: ARM Shop Building

WHAT: Surplus power equipment, drill press, horizontal band saw, small power tools, hand tools, assembly fixtures. Some items complete, some ??

PRICES: As marked (but negotiable, all proceeds help the museum).

WARRANTY: As-is, Where-is.

Over the years, the museum has accumulated many pieces of donated shop equipment. So much, that it will not all fit into our new shop building. Many are duplicates or not useful for our needs. All proceeds will go towards completing the new shop building (insulation, electrical, HVAC, exterior painting, etc).

Members get a chance to purchase before the general public will.

Mark J. Redmond
Director/Newsletter Editor
Arizona Railway Museum
<http://www.azrymuseum.org/>

STEAM LOCOMOTIVES CYLINDERS

Well, hello again.

Recently we have discussed the type of cylinders used on locomotives, it being realized that the ones we looked at are the typical and basic types, there are other configurations but seldom used, so we won't take the time to review them,(for instance Young rotary valves). This time we're going to talk about the construction and attachment of the cylinders to the frame.

Very early cylinders were fairly small, usually being separate castings in themselves. One of the most difficult problems for early (1829-1840) engines was the boring of the cylinder. The machinery simply did not exist to provide the truly round cylinders we are used to seeing today. An example of this is found in the description of how Matthias Baldwin bored and reamed his cylinders for "Old Ironsides"(1832). The final "rounding" of the cylinder used a block of wood and a triangular piece of steel to "scrape" the bore into some semblance of round. This is a quote from a history of M.W.Baldwin:

"Tools were not easily obtainable; the cylinders were bored by a chisel fixed in a block of wood and turned by hand....." (Amer. Machinist, 8-04, pg. 1020 (bound volume)).

It seems this is a good point to take a bit of a side bar to look at the history of very early mechanical skills and machinery necessary for the construction and maintenance of locomotives. As the series continues we will frequently refer to "the very early years of the locomotive", as such, it seems appropriate to discuss the subject in detail now, then farther on we can just skip the detailed descriptions.

While researching another paper on "Early Locomotive Shops, 1829-1850" it has become quite interesting to try to understand how the mechanics of the era conducted the work. It boiled down (no pun intended) to the skillful use of the hammer, chisel and file!!

The machinery available was next to non-existent so everything became an exercise in hand work. This is valid when it is remembered that the engines were typically not more than 15-20 tons total.

Lathes consisted of wood or stone beds with wrought iron straps on the surfaces for the carriage and tail stock. One is described in "English and American Tool Builders", J.W. Roe, 1916 as such...."His first lathes (Samuel Flagg) were light and crude, with a wooden bed,wrought iron strips for ways, chain operated carriage and cast gears, as cut gears were unheard of....." A great deal of research went into looking for the primitive lathes to no avail until inadvertently running into the term "chain lathe". This term then produced information that showed the

early forms of American lathes. It should be noted that in this era England was significantly further advanced in their technical arts and machinery, but we were fast catchin' up. There was no equivalent of a milling machine (none) and only the infancy of the planer as a concept but typically not found in any shop except for some of the more intricate work conducted in Lowell, Mass.(ref. Lowell Machine) then too with a primitive machine. Flat surfaces were made using the hammer and chisel to chip a relatively flat surface, then finished with a file and possibly scraped, no machining involved.

Drilling consisted of little more than a brace and bit, with the bit being of a spade configuration(it wasn't until the 1870's that the twist drill made its appearance) along with a method of levers to apply pressure to the brace, sometimes using a boy to provide the load to the lever.

Even John Whites consummate work "A History of The American Locomotive, Its Development: 1830-1880" does not provide much information regarding the mechanical developments under discussion. It should also be noted that there was very little technical information in printed form until 1851 when Zerah Colburn published "The Locomotive Engine". Then in 1853, Septimus Norris (Norris Locomotive Works) produced "Norris' Handbook for Locomotive Engineers and Machinists". Until this time technical information came from England, and then in only a few works from such notables as Pambour, Wood and Lardner, then only providing design and performance data.

Most of the true technical data of "how things are done" does not appear until 1868 when the "American Railway Master Mechanics Assoc." began publishing their annual convention proceedings. True, the "American Railroad Journal" began in 1832, but was sorely short of information on how things were accomplished. There were other publications but none specifically oriented toward the locomotive construction/repair community.

Much of the construction/repair of engines came from the Blacksmith shop, with the machining accomplished by mostly hand work(again, hammer, chisel and file (ref. Railroad & Engineering Journal, 1887, pg. 63). To support this premise, the work force at the Parkesburg shop(1839) of the Philadelphia and Columbia RR (predessor of the PRR!) included not one but two, full time file MAKERS(ref. Journal of the 50th House of Representatives of the Commonwealth of Pennsylvania, 1840, Vol II, Part II) (Whew!!)

It should becoming fairly clear that "early locomotive work" was virtually completely done by the HAND of a skilled craftsman, and that no two engines were the same even down to the bolts which, again, were EACH made by hand!!

This whole exploration into the early world is terribly fascinating in that it shows how much was accomplished with what we would consider "nothing".

They have my undying admiration!!

Now that we have that data base installed, we can move along at a blistering pace--
-----next time!!!!!!

Once again thank you all who have inquired regarding my back "relocation", you will be pleased to hear that I've only missed two months of anvil toss competitions. Will be entering this month, but have been assigned a handicap, they really are considerate folks.

The best to you all and take care,
Dave Griner



Park clean up has been progressing . This large dumpster was delivered and filled to capacity, emptied and filled to capacity the following Saturday.

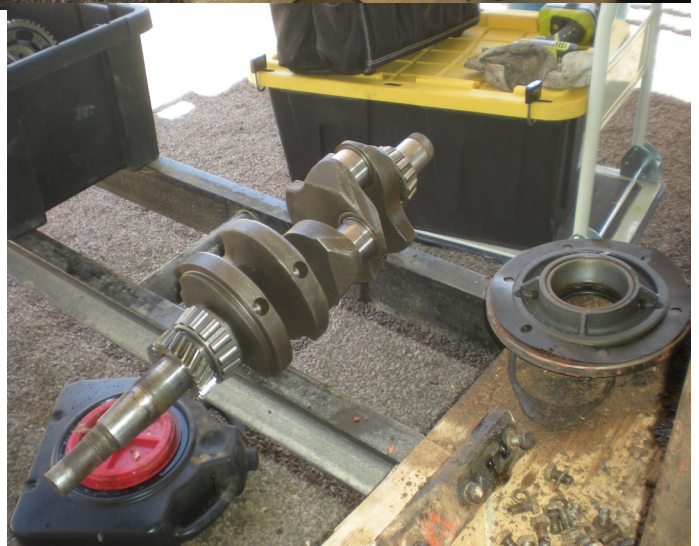
 **ENGINEER
CERTIFICATION**
This certifies that
YOUR NAME
SHOULD BE HERE !

is a certified engineer at the Maricopa Live Steamers

 This certification expires on
May 31, 2015

Engineer cards expired on May 31st, so now it is time to take your test

It can be taken online at Maricopalivesteamers.com



The engine on our very overworked trencher is currently being rebuilt