STACK TALK

NOVEMBER 2015

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

UP-COMING MEETS

2016 OPS MEET JAN. 14, 15, 16, 17

2016 SPRING MEET MARCH 17, 18, 19, 20

2016 FALL MEET WATCH FOR UPCOMING DATES

The newsletter is late and it is my fault!! I can only say that I was at a train meet and I let that get in my way, yes I was having fun. Jim has been trying to get one from me so don't blame him.

I can report that I was not the only one there and in spite of the rain, everyone was having a good time. Good food, good friends, good weather most of the time, makes for a lot of fun.

We have three weeks left to install all our lights and get ready for the best show in Phoenix, in my mind.

The next club meeting is on November 14th election of officers for next year, please come out and vote.

If you have an item that you would like put on the agenda please let me know a few days ahead of time thank you.

Cliff Fought

ELECTION OF OFFICERS AND BOARD MEMBERS

1:00pm November 14, 2015

November Ballet for 2016 Officers and Board

PRESIDENT: John Bergt _____

Perry McCully _____

Vice President: Pet Pennarts _____

Secretary: Michael Lewandoski _____

Treasurer: Bob Doulas _____

Director at Large (Vote for Three)

John Bergt _____

Bill Unglaube _____

Joe Fego _____

Mike Grant _____

Fred Greenwald _____

Mick Janson _____

Ben Smith _____

Perry McMully _____

2015 SAHUARO CENTRAL CHRISTMAS PARTY AND POTLOCK AFTERNOON EARLY LUNCHEON

by Mike Lewandowski

This year our annual Abode Mtn. Railroad Park Christmas Party will be held on Dec. 12th, Saturday from 2:30 PM to 5:00 PM. This timeframe was selected to ensure that our public train volunteers have enough time to enjoy dinner and party with their friends.

- **MLS Christmas Chefs (Mike and Helen L.) will prepare spiral honey baked ham, spicy pork loin roast with beer gravy and red cabbage/apples.**

- **The Potluck portion of the dinner program will allow attendees to bring food items based on your last name first letter. Of course, if you have a special food item that you have prepared in the past dinners it's OK to bring. We will contact members via phone call to confirm their attendance and the food item. Betty Ann McCully and Donna Hohm will direct the decorations, table setups and food serving.**

Regards, Mike L.

We have confirmed the Star Trek Characters will be in the park on Saturday November

Jerry Smolyk and his new Steam Engine

Our Holiday Light Show is doing great. We have over 45 minutes of music and light show prepared for the walkway. We tested the white wire loom that holds the LED's to the arches and it works perfectly. While th ing of Christmas lights has already begun around the park, we'll begin to to put up the LED's the first of No and begin our cabling. Our first show will have 3,200 LED's using 48 controller channels. Engineer Shelby ing to connect the cables to the 16 output light controller.

I purchased a snow-maker (it makes Hollywood style tiny bubbles that look like snow) and it works great. W ing to put it at the North Pole by Racewatch. I estimate we'll use between 3 and 4 GALLONS of snow juice night. Since snow juice sells for $24.95/gallon I found a recipe to make it for about $3/gallon. If any membe like to contribute distilled water, rubbing alcohol and Mr. Bubble bubble bath and we can mix it up ourselve

We have confirmed the Star Trek Characters will be in the park on Saturday November 28 from 6 until 8pm let them change in the club house and gather in Friendship Park. This may mean I have to add some Star music to our light show. When they visited MLS in the spring the crowd reaction was fantastic. They all love train ride, except for the Storm Troopers-they can't sit down.

Please sign up to work a shift or 3 so we have enough help to handle the expected 1,000 to 1,400 visitors night. Email John Broughman at pluggie49@msn.com. And for the first time, we'll be operating on Christm

Thanks, Hank

Shelby soldering

STEAM LOCOMOTIVES

LEAD TRUCKS

Well, let's try this again, this time taking a look at the lead truck and how it functions.

The lead (sometimes called the pilot or engine) truck provides two functions, being first to support some of the engine weight and second to guide the locomotive through curves. The very early engines did not use lead trucks since the speeds were very low, however, as speed increased on the rough and tumble track it became necessary to provide a method for guiding the engine through curves. It was not long before engines also began to need larger boilers, again, creating a need to support the front of the engine. The answer to this problem came in the form of the classic 4-4-0 American type locomotive using a four wheel truck.

It should be noted that the lead truck is usually a two or four wheel device, below is a drawing of the two wheeled type. A close look at the image will show that there is an equalizing lever that transfers weight from just in front of the first driving axle to the top of the truck frame. The lever is attached to a cross bar that

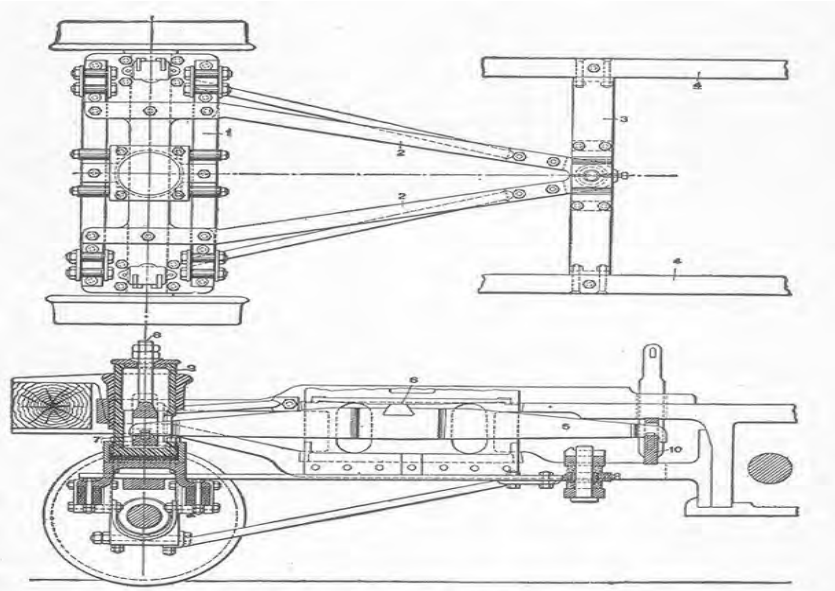
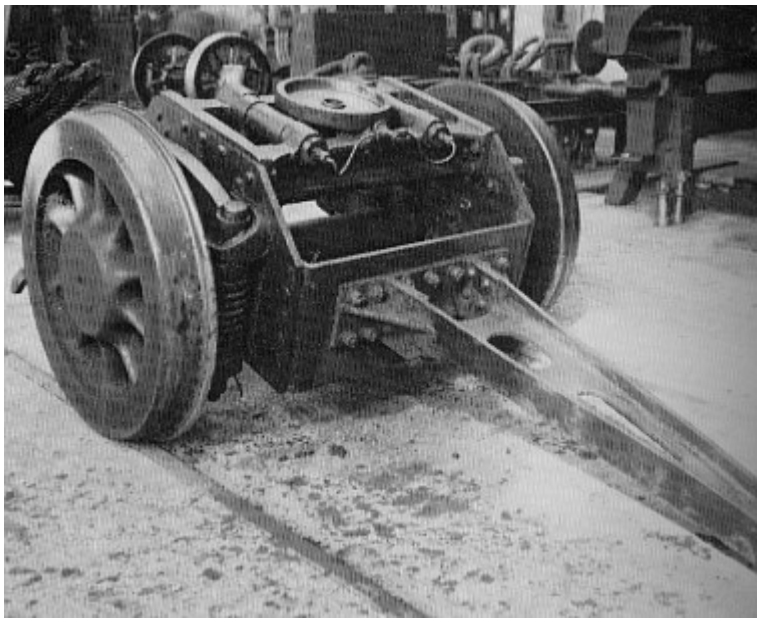


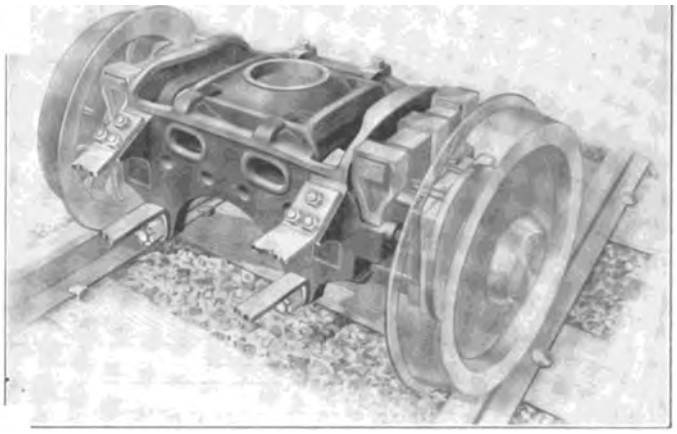
Fig. 85. Pony or Two-Wheeled Truck.

bears on the first spring hanger for the first driving axle. This provides cross equalization from the truck throughout the rest of the engine spring rigging.

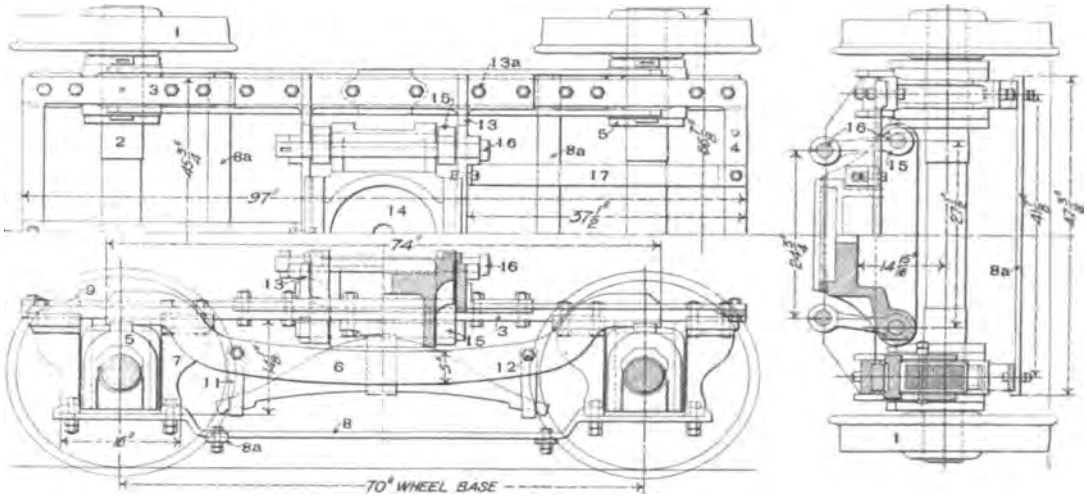
The following picture shows what is referred to as swing links, which further enhance curving abilities and weight management.



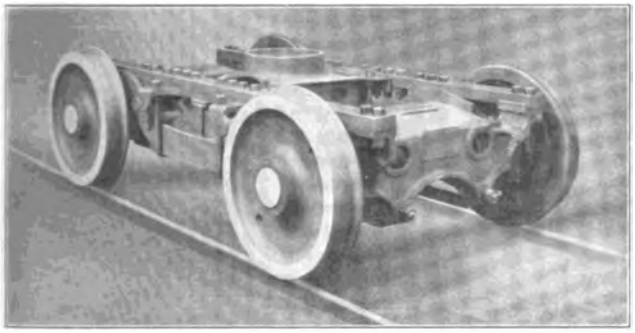
This picture shows a more modern design using steel castings, but yet is essentially the same mechanism as the more primitive one noted in the drawing above.



Here is the four wheeled version as used on the American type engines. You can clearly see the swing links here along with the center plate which was the point of support, this being centered under the cylinders. It is apparent that this design will carry more weight and is intuitively better at providing substanitive guiding characteristics.



Below is pictured a more modern example, however, again using the same basic design but employing steel castings for its construction.



As modern locomotives became larger towards the end of steam traction, it became apparent that the lead truck needed to support more weight, hence the six wheeled version as show on the PRR S2 turbine locomotive. This probably would have been the maximum number of wheels since if much more weight is sent forward or aft, the lcoomotive begins to fail due to the greater loss of adhesive weight, essentially a point of diminishing returns. You might also notice that the design incorporates coil springs, cast steel side frames and roller bearings.

Next time we'll go to the other end and look at the trailing trucks.

Take care,

Dave

The Railroad

Train Traffic Control

By: Gabe Zorbas

In the next few months, we will cover all different types of railroad operating schemes, from those used 150 years ago to those used today. This month's article will be the foundation, covering the backbone of all railroad operating schemes used today. We'll start with traffic control, an important safety function of the railroad. Throughout railroading history, many traffic control systems have been tried, and indeed today several different systems are used throughout the world.

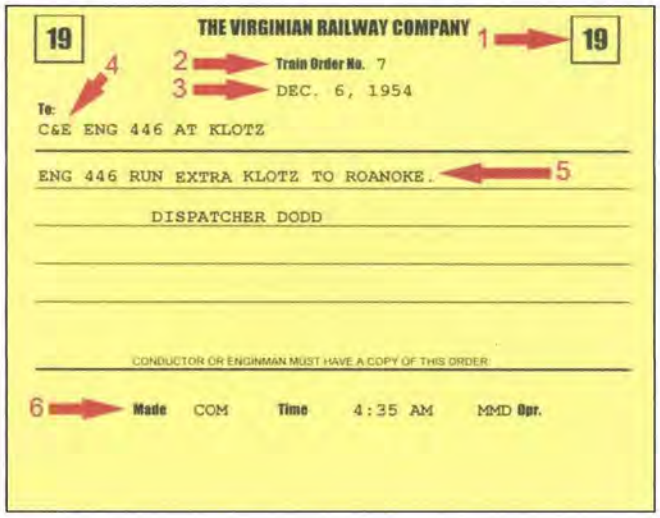
There are four criteria guidelines that should be met by a traffic control system.

- The system should attempt to prevent any movement that could cause conflict, or worse, an accident.
- The system should be flexible and allow for corrections
- The system should be fast acting, and be able to adapt quickly.
- The system should include fail-safes, in case any failure should occur.

Before the advancement of the steam powered locomotive, horse-drawn rail carriages carried cargo across short distances. Flagmen would be sent down the line to flag any approaching train. In 1804, Richard Trevithick, an early pioneer of locomotives, demonstrated the first use of a steam engine hauled train, with mixed success. In a short time, railroads began appearing throughout England and the United States.

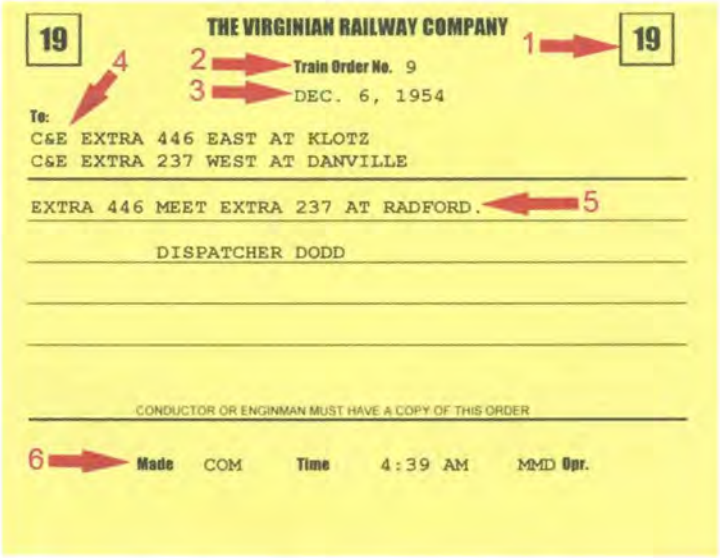
As the railroad system began to develop in both Europe and North America, the need for control over traffic was soon realized. The first full fledged system to be implemented was timetable operations. In a timetable system, all train movements in a territory were scheduled ahead of time. Trains where to "meet" at

a predetermined point, where the train with the lower priority would wait at a siding while the train with the higher priority would pass. Sufficient time would be given to each train, so in case of a problem the train crew could alert the preceding train either by flag, lights, or torpedos. Timetable operations were incredibly inflexible, as any additions, subtractions, or changes could not be easily made. They were also unsafe, as no confirmation could be given that the track ahead was, in fact, safe to proceed.



With the invention of the telegraph, a innovated system emerged. The railroad would follow timetable schedules, like before, only this time changes could be more easily made. Any change to the schedule could be communicated via telegraph in the form of a train order. Train orders would be given to the crew of a train at their next scheduled stop by an operator, or before they enter the mainline, and they would give or change authority and/or priority for the train. Any train addition to a timetable would be called an "extra" train. The image above is an example of a train order adding a train. Arrow one is pointing to the form number, there are two types of train orders, form 19 and form 31, the difference being that a train order issued on a form 31 requires the train crew to stop the train and both the conductor and engineer sign the order. The second arrow points to the train order number, this number resets at the start of each day. Arrow three points to the date. Arrow four points to whom the train order is addressing, in this example it is for C&E (Conductor and engineer.) engine 446, once the crew receives the order they will become an "extra" and the engine will no longer be addressed by its' engine number, but by its' assigned extra number. Arrow five is the order itself, in this case it is creating a train that was not scheduled on the timetable. Arrow six points

to the final information of the train order, the word "COM" being a confirmation that the order is complete, the time the order was completed is next to it in the middle, and the initials of the station operator receiving the order. Below are two more examples of a train order. In the below example the order is being directed at two trains, and it is scheduling a meet point for the two trains.


19

THE VIRGINIAN RAILWAY COMPANY

19

1

2 Train Order No. 9

3 DEC. 6, 1954

4

To:

C&E EXTRA 446 EAST AT KLOTZ

C&E EXTRA 237 WEST AT DANVILLE

EXTRA 446 MEET EXTRA 237 AT RADFORD. 5

DISPATCHER DODD

CONDUCTOR OR ENGINMAN MUST HAVE A COPY OF THIS ORDER

6 Made COM Time 4:39 AM MMD Opr.

The result of train orders only being able to be given out at the next station was the creation of blocks, or sections. Blocks are the result of having a distance of track in which only one train can usually occupy, or traffic control information can't be given. The idea is, in most cases, only one train can be allowed in a block on a single track at a time. Each block's length is made to a sufficient size as to create a safe buffer between two trains heading the same direction. The length of a block can differ, and several factors can affect its' size, such as speed limit, gradient, or visual obstructions. Most block signaling systems use fixed blocks, such as in between two sidings, or two stations. Blocks could either be manually controlled by signalmen, which was a popular system in the United Kingdom up until the 1950's, or automatically through track detection.

There are two types of block signaling, absolute and permissive block signaling. In an absolute block (AB) signals are always headed except when

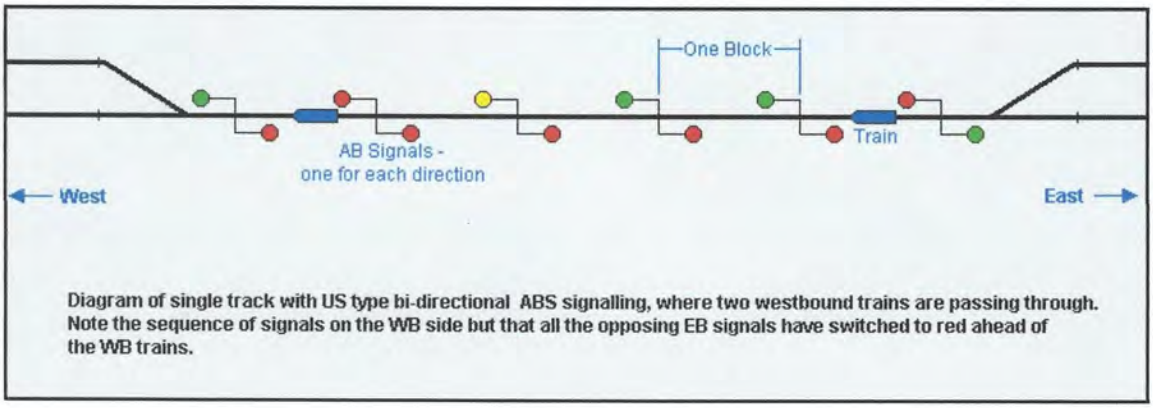


Diagram of single track with US type bi-directional ABS signalling, where two westbound trains are passing through. Note the sequence of signals on the WB side but that all the opposing EB signals have switched to red ahead of the WB trains.

express authorization is given by the dispatcher, however, in a absolute *permissive* block (APB) restricting signals can be passed without authorization at restricted speed, except during times of low visibility. APB can also be used in case a train can't contact a signalman or dispatch.

In next month's article we'll take a look closer look at traffic control, including fixed signals, track detection, and operating rules.

MARICOPA LIVE STEAMERS

FALL MEET 2015

MLS has recently implemented a time log which records time in and out of the facility. One of the coincident benefits of this plan is the opportunity to present to the membership just how much time and work is being applied to keep our operation in good condition. Following is a record ending 10-27 of the first month. A hearty THANK YOU is in order for all involved!!

Time registered in the log book,in no particular order:

Mickey Janzen	Engine service on public runs	6 Hrs.
Pete Pennarts	Facility maintenance/light pole installation	50Hrs.
Fred Greenwald	Club Locomotive maintenance	38.25Hrs.
Cliff Fought	Facility maintenance	6.75Hrs.
Terry Liesegang	Signals	42.5Hrs.
Bill Lowe	Facility maintenance	4Hrs.
Bob Douglas	Track work	62.5Hrs.
Joe Snyder	Track work	45.95Hrs.
Joe Fego	Track work/water tower repair	23.9Hrs.
Perry McCully	Christmas lights	11Hrs.
Donna Holm	Painting	27Hrs.
Paul Lator	Track work	5Hrs.
Jim Zimmerman	Ops meet work/Christmas lights	8.5Hrs.
Dave Griner	Track work/weed spraying	8Hrs.

MARICOPA LIVE STEAMERS
PHOENIX, ARIZONA

ENGINEER
CERTIFICATION

This certifies that

YOUR NAME HERE

is a certified engineer at the Maricopa Live Steamers

This certification expires on
May 31, 2016

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

It can be taken online at Maricopalivesteamers.com