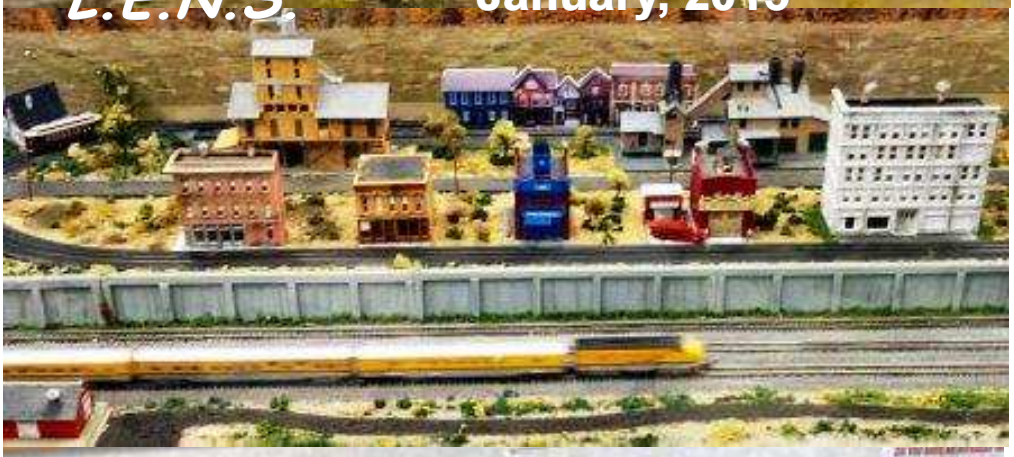
Lake Erie "N" Scale Society

"L.E.N.S."

January, 2015



News and Opinions
Monthly Meeting Info
Web Sites of Interest
Learning from Prototypes
Show Schedules
and more!

N-TRAK
N SCALE MODULAR RAILROADING

Over 30 years of promoting model railroading!

Welcome! LENS is a group of people with a common interest in modeling N scale railroads using the "NTRAK" modular concept.

Any time we meet and/or display our work and promote this hobby, we would love to have you join us.

This means that ALL of us have chances to participate in the hobby by helping with any or all of the following:

Setting up / tearing down
Running trains
Sharing your knowledge
Learning something new
Answering questions
Hosting a meeting

Notice that NONE of the above requires a module. We need your help… so bring yourself, your enthusiasm, your interest and your trains.

Thanks in advance for helping! Hopefully, we will continue to see you at the meetings and display events.

Come and join in the fun!

www.lensohio.org

The Lake Erie N Scale Society newsletter is published monthly for the sole use of its members by a crew of volunteers.

Opinions published here are solely those of the editor and/or the members of the Lake Erie N Scale Society.

This publication is intended to be a monthly newsletter describing the business, events and the common interest in N scale model railroading enjoyed by the members of the Lake Erie N Scale Society.

For information or questions regarding our Society, you may contact Dennis Lloyd at 440-352-7081 - or - (denlloyd@gmail.com)

Meetings normally start at 7:30 p.m., the fourth Friday of each month.

Last Month's Set-up

Last month we had a successful set-up, run, and tear down at the annual Country Lights show at the Lake County FarmPark. We had members running trains and lots of help setting up and removing the layout. Many thanks to all who were able to participate.

This Month's Meeting

This month's meeting is the annual Winterfest held at Dave N.'s home. Please bring your appetite, a significant guest, and whatever else you think you might need to an evening of a short meeting and lots of socializing. The meeting will be at 7:30 PM on January 23rd, the FOURTH Friday of the month, NOT the last Friday. See you there.

Next Month's Meeting

The February meeting is looking for a good home. It is scheduled for Friday, February 27th, at 7:30 PM. Let us know if you are feeling daring and will host a meeting. This is the meeting where we need to prepare for our annual Railfest set-up at Lakeland Community College.

From the Internet

From Rick Rowlands

We are building a 23" gauge ingot mold railway at the Youngstown Steel Heritage Museum. Over the past month we built the first 100 feet of track as well as a 10' x 20' enginehouse. Today we moved Jones & Laughlin Porter 0-4-0T No. 58 to the museum, and over the next year the 58 will be restored to operating condition.

Adam Peszel and I will be working on modifying the 36" gauge Brier Hill Works ingot mold car design into a 23" gauge version, and once I get patterns made we will be casting new carbodies, ingots and stools to ultimately make up a fleet of six cars. When the railroad is fully built a track will extend under the teeming ladle that is to be displayed in front of the museum building where we can simulate the teeming of ingots. 58 would then move a cut of cars to the rear of the property, run around them and then shove into the main building on one of two tracks. Using the Morgan crane we will then simulate the stripping of ingots by lifting the molds off of one car and placing it on the adjacent flat.

Brier Hill also had a fleet of riveted 4 wheel flatcars, and one of those cars is now under construction to be used as a tender/rider car behind the 58. I built its frame two days ago. A patternmaker is now working on a 16" flanged wheel pattern, and once I get the pattern I'll cast the first four wheels, make up the wheelsets and hopefully have the tender on the rails by spring.

Providing we find no significant problems we will have the 58 under steam by our fall open house on September 19, although she will not by completely finished by then. J&L 58 is a very unique locomotive, weighing 45 tons. She was

designed to give the maximum tractive effort possible in a four coupled 23" gauge locomotive and as a result the frame is solid steel. Some of the frame was cut off but will be remade. The saddle tank and cab will also be rebuilt.

Photos of the J&L 58 and the ingot mold railway are here: https://www.flickr.com/photos/33523379@N03/sets/72157649174154139/

Rick Rowlands
Executive Director
Youngstown Steel Heritage Museum
2261 Hubbard Road
Youngstown, OH 44505
330-272-4089
www.todengine.org
www.facebook.com/steelheritage

PRODUCT REVIEW

Walthers has imported a new line of products from a new supplier called Rolland Industries Limited. It is a series of 20 and 40 foot containers. The printing is excellent. The roof, ends, and doors are terrific. However the sides are not corrugated (or "wrinkled") but have rectangular posts. This is not noticeable from a distance but may bother the purest. They do fit current well cars.

Modeler's guide to freight car trucks

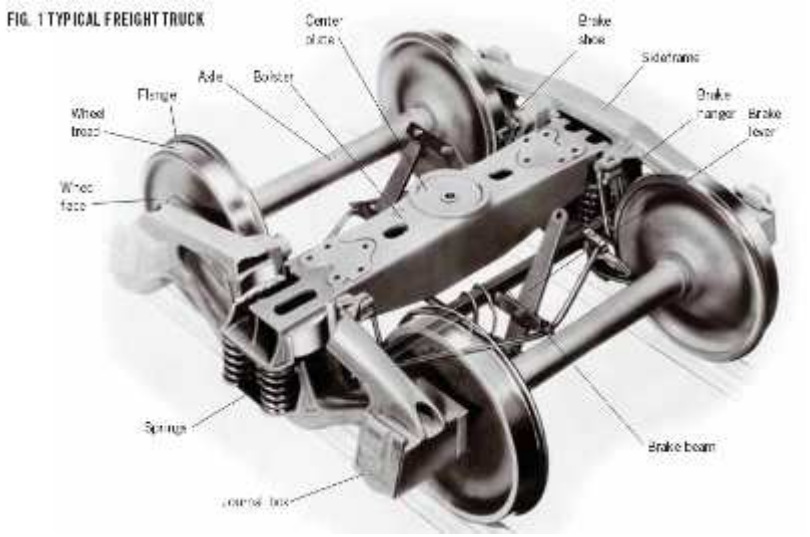
Understanding and modeling trucks and wheelsets

By Jeff Wilson •
Photos by the author
MODEL RAILROADER •

If you pay attention to detail differences on your freight cars, you owe the same attention to the trucks. Under-standing how railroad trucks evolved will help you choose the proper ones for your models. Figure 1 shows the parts of a freight car truck. Railroads have used hundreds of different truck designs over the years. We can't show them all, but we can present an overview of trucks commonly used from the early 1900s through today. The freight car rides on its bolster, held by a kingpin on the car's bolster that extends into a hole in the middle of the truck bolster. The truck bolster isn't solidly attached to the side-frame – it "floats" on a group of springs (five or more, called the spring package) in each sideframe. The size and number of springs varies based on the capacity of the truck. These springs cushion the ride by allowing the bolster to move up and down in the sideframes and provide equalization by allowing the sideframes to rotate around the bolster. The sideframes, in turn, place their load on the ends of the axles. Older trucks, such as the one in fig. 1, are known as solid-bearing trucks (often incorrectly called friction bearings). In these the journal box surrounds the bearing and axle end, the "journal." The journal box is packed with a fibrous cotton material – called waste – soaked in lubricating oil. The journal and bearing surfaces are lubricated by wicking oil from the waste. Later trucks used roller bearings that roll with much less friction and require no added lubrication.

Trucks are classified by weight. The rating isn't the load a single truck can carry, rather it is the total load of the car. A 50-ton truck is designed for a 50-ton-capacity car, and so on.

In the early 20th century most cars were in the 30- to 40-ton range; most modern steam-era cars had 50- and 55-ton capacities. The 1950s saw covered hoppers and box-cars of 70-ton capacity, moving to 100-ton jumbo covered hopper, tank, and coal cars in the 1960s. Some modern cars, notably articulated intermodal well cars, use 125-ton trucks, but many modern cars are 70-ton cars. On the following pages we will take a look at how trucks changed over time and how they can be modeled.



Archbar and Andrews trucks

The most common trucks used in the early 1900s were archbar trucks as shown in fig. 2. These were made of pressed steel and bar components that were bolted together. Although they worked well, archbar trucks required a lot of maintenance. Their bolts needed frequent tightening, as they tended to work loose with the shocks and jolts of operation. Although some archbar trucks were built into the 1920s, they had largely been superceded by more advanced designs by the mid-teens. Archbar trucks were banned from inter- change service starting Dec. 31, 1939.

(Continued on page 8)

A “recovery period” was allowed until June 1, 1940, permitting cars with archbar trucks to return empty to their owners.

Trucks with cast sideframes were the next major development, eliminating the problems of the bolts and connectors of the archbar truck. The most popular of these early cast trucks was the Andrews, shown in fig. 3. Andrews trucks still used separate journal boxes, and could be identified by the steel bar between the truck sideframe and the journal box base. Andrews trucks were in production from around 1910 through the 1930s. A big selling feature of the Andrews design was that journal boxes from older archbar trucks could be reused in new Andrews trucks. Figure 3 also shows the truck side bearings, mounted inward slightly, just above the spring package. These provide stability for the car on the bolster.

Fig. 2 ARCHBAR TRUCK. Archbar trucks are made of numerous pieces of pressed steel and bar components bolted together. The trucks worked well, but the bolts tended to loosen over time. They were banned from interchange service starting December 31, 1939.

Fig. 3 ANDREWS TRUCK. These trucks have cast steel sideframes with journal boxes bolted in place. The steel retaining straps extending from the base of the journal box to the sideframe identify this an an Andrews truck. This one was built by the Bettendorf Co.

Bettendorf, AAR trucks

The next generation of trucks featured journal boxes cast as integral parts of the sideframe. The Bettendorf Co. was the first to do this (as early as 1903), using a cast sideframe with a “T” cross section, an example is shown in fig. 4. The Bettendorf T-section truck was popular through the teens. Significantly stronger trucks featuring a U-shaped cross-section eventually superceded the T-section trucks. Figure 5 shows an example. This truck, which is most identified with the modern steam and early diesel eras, has become known generically – and incorrectly – as the Bettendorf truck. The Bettendorf Co. widely licensed elements of its

design, and many builders made trucks of this type. The U-section cast steel truck was eventually adopted as an ARA (American Railway Association; later AAR (American Association of Railroads) standard: the Type Y truck. Each of these trucks follows the AAR standard, but many have varying details including sideframe shape, spring size and styles, bolster design, and journal-box lids. The double-truss sideframe of the 1930s improved the AAR standard. The sideframe is similar in appearance to earlier trucks, but parts of the U-shaped section are filled in, creating the effect of a double-layer sideframe on each side. A truck of this type is shown in fig. 6.

Fig. 4 BETTENDORF T-SECTION TRUCK. The first cast Bettendorf trucks had T-shaped cross sections and a unique sideframe profile.
Fig. 5 AAR U-SECTION TRUCK. Trucks with U-shaped sideframe cross sections were built by several companies. The modified sideframe was stronger than the older T-section truck design.
Fig. 6 DOUBLE-TRUSS TRUCK. Compare the sideframe of this ASF double-truss truck to the one in fig. 5. This sideframe also has a vertical stabilizing snubber in place of one of the coil springs.

After double-truss and U-section cast-sideframe trucks proved to be sufficiently strong for the loads they carried, manufacturers turned their attention to improving the riding characteristics of their trucks by cutting down on excess lateral and vertical movement. An early (1920s) attempt at improving riding quality was the Dalman truck. This truck had eight springs in each side-frame (compared to five on other trucks), with springs on different levels. As fig. 7 shows, this, along with a unique sideframe, gave Dalman trucks a distinctive appearance. The two most popular improved trucks came along a bit later: the Barber S-2, which is shown in fig. 8, and the American Steel Foundries (ASF) A-3 Ride Control, shown in fig. 9. Both designs were introduced during World War II, and were advertised to ride more smoothly, cut down on wheel and spring wear, and

be easier on track and roadbed. The A-3 caught on rapidly and became the most popular truck in use through the end of the solid-bearing era. Many other stabilized trucks were introduced, including the National B-1. Figure 10 shows this truck, which had a unique spring package featuring stabilizing wedges. The Allied Full Cushion truck shown in fig. 11 was used extensively from World War II through the mid-1950s in high-speed service – mainly express boxcars and troop sleepers. This distinctive-looking and complex truck rode quite smoothly, but it eventually earned a reputation for derailing. Because of this, the Allied Full Cushion was banned from interchange service in 1955. Cabooses were often equipped with trucks that were smoother riding than those used on standard freight cars. Improved ride quality was also the reason why caboose trucks generally had elliptical "leaf" springs in place of coil springs, a design choice made possible because a caboose has a relatively constant weight.

The Barber-Bettendorf Swing Motion caboose truck was among the most popular in the solid-journal era. An example of this truck is shown in fig. 12.

Fig. 7 DALMAN TRUCK. Eight springs (most trucks have five) mounted on different levels made the Dalman truck design distinctive. This Dalman truck was made by American Steel Foundries (ASF).

Fig. 8 BARBER S-2 TRUCK. The Barber Stabilized truck design was among the most commonly used types of freight car trucks through the end of the solid-bearing-truck era.

Fig. 9 ASF A-3 RIDE CONTROL TRUCK. This truck became the most popular truck of the post-World War II era.

Fig. 10 NATIONAL B-1 TRUCK. This truck can be distinguished from others by its unique spring package and sideframe design.

Fig. 11 **ALLIED FULL CUSHION TRUCK.** The Full Cushion was a complex truck with a very distinctive appearance, with springs outboard each journal instead of under the bolster ends.

Fig. 12 **CABOOSE TRUCK.** The Barber-Bettendorf caboose truck had elliptical "leaf" springs for improved ride quality and was initially manufactured with solid bearings.

Roller bearing trucks

A problem with solid-bearing trucks is that the journal boxes need frequent lubrication. This was labor intensive, and a dry bearing would cause an overheated journal, which could result in a fire or broken axle and consequent derailment. Roller-bearing journals were the solution. Roller bearings reduced friction and did not require additional lubrication. Roller-bearing trucks have been around since the turn of the 20th century and began to see common use in the 1930s on passenger cars. Because of their additional cost, the trucks weren't widely used on freight equipment until the late 1950s and 1960s. The end caps on the journals, as shown in fig. 13, identify these trucks. New cars built after 1966 were required to have roller- bearing trucks, and solid-bearing trucks were banned from interchange service after 1980.

The two most popular modern trucks are the ASF Ride Control, shown in fig. 14, made by ASF-Keystone, and the Barber S-2, made by Standard Car Truck Co., shown in fig. 15. Both date back to solid-bearing designs. Other common modern trucks include the ASF Ridemaster and National C-1 (not shown). Each is made with various spring packages and other options in 70- to 125-ton versions. The Barber-Bettendorf Swing Motion caboose truck is one most commonly used on modern cabooses and is quite similar to the solid-bearing version, as fig. 16 shows. Identifying the proper truck for modeling purposes can be difficult. Features can differ even within specific truck styles, including the roller-bearing end-cap design and springs. The manufacturer's

name and truck type are cast on the sideframe and that's the easiest way to identify any truck. If all else fails, matching the sideframe design will get you close.

Fig. 13 ROLLER-BEARING TRUCK. This 70-ton ASF Ride Control truck shows the roller-bearing end caps. The roller bearing assemblies take the place of the journal boxes.

Fig. 14 100-TON RIDE CONTROL TRUCK. The 100-ton version of the ASF Ride Control truck has three visible springs. Note the differing styles of bearing end caps on each side.

Fig. 15 100-TON BARBER S-2 TRUCK. Modern freight car trucks are similar in appearance, but if you look carefully, this S-2 truck has subtle differences in shape compared to the Ride Control truck.

Fig. 16 BARBER-BETTENDORF CABOOSE TRUCK. The most popular modern-era caboose truck was the roller-bearing-equipped version of the venerable Barber-Bettendorf truck.

STEEL WHEELS A-ROLLIN'

Wheels on prototype cars have a number of differences, but for modelers the most important detail is probably the size. The 33"-diameter wheel is standard on freight equipment of 70-ton capacity and under. For 100-ton trucks, 36" wheels are used, and for 125-ton trucks (as on some articulated intermodal cars), 38" wheels. An exception is that smaller wheels (28" diameter) are used on triple-deck autorack cars. This allows these 70-ton cars to negotiate tighter clearances. Ribs on the back of the wheels are a detail found on many model wheelsets.

Ribs were a characteristic of many cast iron wheels (known as "chilled" wheels for the heat treatment of the treads). The ribs dissipated the heat generated during braking. Chilled wheels faded from use in the 1950s, were forbidden on new cars after 1957, and were banned from interchange use as of 1970. Modern wheels are cast or wrought steel and do not have ribs. Steel wheels began increasing in popularity starting in the mid-1920s, and by the end of the steam era most cars used steel wheels instead of chilled wheels. Steel wheels on freight cars are either single-wear

or two-wear. This information (1W or 2W) is usually stenciled on the car end. Single-wear wheels are scrapped after the tread profile wears to a certain point. Two-wear wheels have thicker (2") rims and can be recut and reshaped to return the wheel to its proper contour. Single-wear wheels are cheaper, while double-wear wheels will pay for themselves on heavy-duty cars where the wheels will be turned during the life of the car. – J. W.

N scale

SOLID-BEARING TRUCKS

Mfr.	Archbar	Andrews	ARA, AAR	Allied Full Cushion
Atlas			22050 22051*	
InterMountain			60001••, •	
Micro-Trains	1010• 1011 1012•	1051 1052• 1053•	1000• 1001 1002•	1190•
Model Die Casting	8984••		8983••	

ROLLER-BEARING TRUCKS

Barber-Bettendorf caboose	70-ton roller-bearing	100-ton roller bearing
22060	22055 22056*	22070 22071*
		60011••, •
302140	1030• 1031 1032•	1035• 1036 1037•
	8980••	KEY: • = Truck-mounted coupler •• = Kit

From a Yahoo Groups email:

LED USES

Here is some suggestions on what can be done with LEDs. They come in many colors and can simulate many different types of real world lighting.

LED Color What it looks like

Blue-White or White-Blue Lighting (Businesses) Yellow, Sunny White Incandescent Lighting (Homes) Amber Sodium Vapor (Street Lights) Red, Blue Green Purple, etc. Decorative Landscape or Architectural Lighting Red warning Lights (some blinking) Bright Blue/White Strobe Lights

Here are some different ideas for using lighting

Light up your signs. Either self lit or spotlights.

Animated signs grab attention.
Even two alternating lights work. I remember signs that just blinked yellow and white.

Police or Fire equipment can make an interesting focal point.

There are some special effects LEDs

Some will blink two colors. (Red/Blue, Red/Green)
I have some that will go through a whole spectrum color show, great for tower domes or a Christmas tree with fiber optics.

Red and yellow LEDs replacing the speakers in a pair of cheap headphones plugged into a radio at low power can make a fire effect. Change the volume and tuning for best effect.

Colored LEDs with their beams shooting up the sides of a building make it more interesting at night.

Put partitions in buildings or cover windows with black to stop that single room house look, especially for big buildings. Don't forget to separate the different floors. The apartments over a shop would have incandescent while the shop has fluorescent.

The lighting in the office part of a business will be different than the warehouse/factory part. The office will have fluorescent while the working part would have sodium vapor lights.

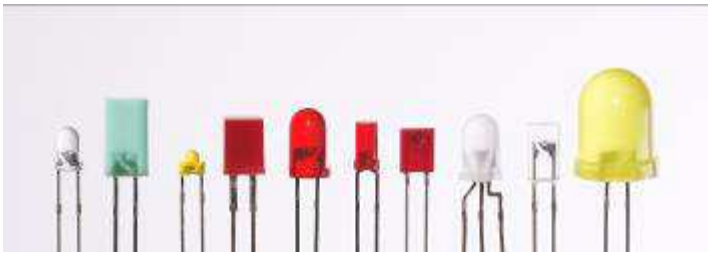
We may not be able to animate everything but the darkness can hide a lot. Two alternating lights from different angles give the illusion of a little movement of figures.

Use LED votive candles to duplicate flames

Gas Lamps, Tiki Torches - use candle underneath layout with fiber optics to bring the light up through the fixtures, the fiber end represents the flame.

Room Lights - Put the candle inside the building. Multiples create better effect.

Outside the Building Sconces - The candle inside the building a optic fiber through the wall makes the sconce.



“F.R.E.D.”

See you at the next station!

www.lensohio.org