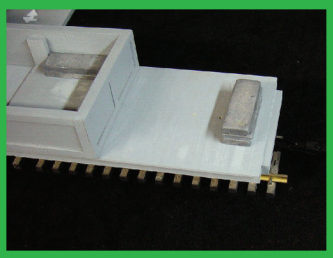
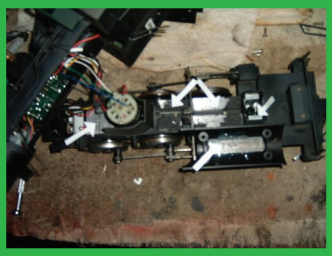
Garden Trains
From A to Z

W is for Weight





Better Information - Better Railroad

LSOL.com - The Leader in Online Information

GARDEN RAILROAD UNIVERSITY
GRU
Concepta Munita Profecta

Garden Trains - A to Z

What you will find in this document.

Discussion groups are a great way to share information. One thing that is unique to LSOL.com is our Tuesday Topic. Each week, for almost six years, we have discussed a specific group topic. It could be about bridges, or maybe you like steam vs. diesel engines. Many times it is about how people solved a problem, or what they think about a current issue or product. My favorite was several years ago. "If your railroad was a candy bar, what would it be." (Good and Plenty, Milk Dud, etc.) We have fun at LSOL.com as well as help each other with serious issues on our railroads.

Now with almost 300 different weekly discussions online we wanted to make it easier for you to use this vast knowledge base of topics. We are taking the time to edit the best answers on a specific Tuesday topic into PDF documents. We have also added photos as available so you can see just what was being talked about from each of the users.

This paper is different than one written by just one author on a topic. You are getting dozens and dozens of years of combined experience from some of the smartest people running Large Scale Trains today. Save this document and start building your own personal reference library on your computer today.

What is LSOL.com? (Large Scale Online)

Large Scale Online has been providing information for Large Scale Garden Train enthusiasts for almost 15 years. We are the oldest, largest, and most professional web site on the Internet that is exclusive to Large Scale Garden Trains.

LSOL.com provides information in many different ways. We have online articles, videos for you to watch and photos for you to see how it is done. We also have organized and secure online discussion groups. We are the only site that requires people to use their real name. No hiding behind your keyboard making anonymous posts. Join Us.

Weight

Is there a scale weight to Large Scale?

We know that engines and rolling stock run better when they have the right amount of weight to them. So what is that? Is there a scale weight to Large Scale?

So do you add weight to engines and rolling stock that you buy? If you do how do you do it and how much do you add? Are some manufacturers better at adding weight to their units? Is there a standard as to how much a piece of rolling stock should weigh? Do some of your units weigh too much out of the box or not enough? How does more weight help your trains run better? Are passenger cars different than freight cars? Are diesel engines different than steam?

Todd Brody - I now limit their length

With some of my engines it seems to help on the grade, especially when I used to pull longer trains. I now limit their length and it is not so necessary. It is a great way to crack/strip plastic gears.

Oft times it is added to cars in the form of sound systems and additional speakers, or loads of real rock in my gondolas. I also always put more weight in my track cleaner cars.

I add no weight to engines, I figure that the manufactures have weighted them to the limit of the gears and motors.

Ron Hill - weight is not an issue

I have no grades on my railroad so weight is not an issue. I put 30 cars behind one of my USA GP-30's and it walked away with them. But I am working on plans for an 89' pig flat and it may require some weight to keep from tipping over. That remains to be seen.

David Maynard - I position the cars properly in the train

I have weighted only one locomotive, the Bachmann 2-4-2, since without weight it could barely take itself to the summit. Now it can take 2 hoppers and a caboose, maybe 3 hoppers if one of them is the lighter hopper.

When I was in the smaller scales I read where the NMRA had a "standard" weight for cars, when I got into garden railroading I searched for a similar standard. Mark H., from Garden Railways told me there is no standard and it doesn't matter as much in gauge 1. Adding metal wheels seams to bring most cars to a good weight for tracking. However I am swapping out some of my USA metal wheels because they are too heavy.

Being that my railroad is a constant grade and almost constant curves too much weight is a bad thing, so no I don't usually add more weight than the metal wheels. Even my lightweight wooden boxcars track well with metal wheels, so as long as I position the cars properly in the train they all run well. Proper position is heaviest in front, lightest to the rear, hey it works for me.

Rick Henderson - Some cars are however just too light

I found that most locomotives were close to having the most weight that their drive system could handle and you really got what you paid for. The inexpensive locomotives were light and pulled little. If you added weight for traction, often it would wear out quicker.

Most cars seem to have the minimum necessary weight, but here it may be more of a cost savings to produce a lighter car as it takes less raw material. Some cars are however just too light and if you desire to run a long train, you have to put the light cars to the rear as they will not stay on the track close to the front with all of the drag weight behind them.

Daniel Sheehan - I do not add weight to locomotives

Normally I do not add weight to locomotives, with the exception of my Bachmann Indie, a bit more adhesive weight helped it perform.

Noel Widdifield - adding metal wheels provides enough

Like some of the rest of you, I find that adding metal wheels provides enough weight and also lowers the center of gravity so that the cars track better. I don't think that weight is much of an issue.

Barry Reade - all I have added was metal wheels

So far all I have added was metal wheels. I just acquired a USA SD 70 that has been modified and has metal wheels instead of the rubber covered ones. (This may have already been covered in another thread) When I get it checked out I may have to add some weight to improve the traction if I am pulling a lot of cars but won't know for a few months as I run DCC and am waiting on QSI to get their new USA plug and play DCC/sound card out. When I get it going I will post the results.

Ray Turner - I haven't added any weight to cars

My Bachmann Annie's will pull 13 cars up a 2.5% grade without a sweat so no need to add weight there. I added a little weight in the side tanks of my Bachmann Porter. It was slipping in one spot with the train I had for it to pull. My Aristo Mallet weighs a TON by itself and has pulled 31 cars up a 2.5% grade for as long as the couplers would stay together - a 31 car train is HEAVY.

I haven't added any weight to cars (not counting the metal wheels). They all seem to track fine as is.

KC Marshall - I just add engines

By putting standard San-Val metal wheels on my rolling stock added weight and improved tracking ability. I do not add other weight other than loaded railcars, such as real logs, barrels, die cast vehicles and real sawdust in my hopper cars (have saw mill). The engines run as made but with onboard RC/power or trailing car. The trailing cars with the receiver/batteries (2-4 li-ion), sound boards and such end up weighting very much, so I add roller bearing wheels to them to carry the weight.

If I need more power I just add engine(s). The only passenger train I have is 4 Aristo classic track powered Sierras that are pulled fine by the older Aristo C-16. Have a couple 3% included in my 8’ and 10’ 90 and 180 degree curves and have not had any issues with 25 car trains.

Bob Freeman - I love to pull long trains

I love to pull long trains, and I have grades of 4%, so with several locos, tractive power was an issue. I added weight to 2 U-25B freight diesels, one F-1A unit, and an Aristo Pacific steam locomotive. The 4-6-2 Pacific was the biggest problem. It would barely pull 8 freight cars and only 2 heavyweight passenger cars without spinning the drivers on grades.

I found that automobile wheel balancing weights, available at NAPA, were the easiest to use. They come in long strips, which can be cut into shorter lengths, with peel-and-stick adhesive strips. I added them to the bottom of the motor block and the inside of the boiler, a total of about 5 pounds (YES, 5 POUNDS) and now the loco pulls over 24-28 freight cars and 5-7 passenger cars with no spinning, and no apparent strain on the locomotive. I also added a couple of pounds to each of the diesels, and I have no idea what the tractive limits are on those units...I don't have enough freight cars to find out.

The wheel weights are a bit pricy...about $40 per box of about 15 pounds of weights, but well worth it if you have grades, or just like to pull long trains.

The only weight I have ever added to rolling stock is to change out plastic wheels to metal ones.

E. Paul Austin - some rod locos need some extra weight

After voting I think someone needs to run some tests on car weights. I, like several others, use metal wheels and have found that seems to be enough weight for rolling stock. However Loco's are another thing. The Shays and other geared loco's are fine but some rod locos need some extra weight. I have several BBT chassis which have weights from Barry on them. I have a LGB 2-6-0 that I added about a pound to, that will out pull most other rod engines. This is something that you need to experiment with to improve the pulling power without destroying the drive train.

Bud Steinhoff - some sort of weight to all my locos

Added some sort of weight to all my locos, mostly for traction or just to keep the pony trucks on the track. I try to balance the weight from front to back to keep equal pressure on the wheels. Most rolling stock, unless they are very light, just adding metal wheels will be enough to keep them on the track.

Have had no problems in 10 years with stripped gears except on 1 LGB loco. Even climbing 4% grades loaded heavy.

Stephen Auslender - I use sheet lead

I have been adding weight to my rolling stock since my HO gauge days back in the 1950's. I'm not about to change my habits now. Some engines need it, some don't

I use sheet lead which I cut to fit in various places. It can easily be cut and bent to fit into small places. Good stuff. I buy it at the local scrap yard. 1/8 inch thick is easily worked and cut. I glue it in place with bondo (filled resin automobile body paste).

Why do I add weight? Because I like the movements of cars that are heavily weighted. The movements are subtle but noticeable. Run the train a bit slower and enjoy the sight. A good byproduct is the necessity to double head some long trains because of the added weight. Double heading a train is just a plus. Even better with a pusher.

Now if we could only get huge amounts of steam pulsing out of the steam locomotive stacks!

Rick Henderson - you could void any warranty

I should clarify my earlier response. "I found that most locomotives were close to having the most weight that their drive system could handle and you really got what you paid for. The inexpensive locomotives were light and pulled little. If you added weight for traction, often it would wear out quicker."

There could be a problem with adding weight to locomotives that is in addition to stressing the drive system, you could void any warranty.

James O'Connor - I have added auto wheel weights

Other than add metal wheels (San-Val/USA or BMann) car weight is usually not an issue. I have added auto wheel weights once in a while to aid a troublesome car, especially if it is placed in the consist near the locomotive, for example a sound car. I have added weight to three LGB Forney's (new models). The old first run models used lead weight, but the new ones used pig iron which does not weigh as much.

Geoffrey Cullison - plastic wheel sets with metal wheel sets

We don't add weight to locomotives; they seem to run fine with the weight they have out of the box. The ALF has up to 3% slopes and we've never experienced a loco slipping except when oil got on the wheel treads.

We do add weight to rolling stock, but solely by replacing plastic wheel sets with metal wheel sets (Bachmann, Aristo, San-Val ball bearing (for heavy cars), and will try some Comstock (when LSOL gets them). Metal wheel sets seem to provide enough weight and it's down low where it's really needed. Some of our derailments, usually when backing, may be because of low car weight, but we haven't done any study on that; yet. The ALF is torn up AGAIN for another remodeling project.

Michael Gruber - Lead Wool

A great source for weight is Lead Wool. It can be obtained at a plumbers supply shop. It can be molded to fit any configuration.

Barbara Karkutt - added weights to two of our engines

We added weights to two of our engines. The Bachmann Indie needed weight so we filled the boiler from the motor block to the front with shotgun shot (about 1 lb). The Bumble Bee Annie for our freight line needed weight on the pilot and so we added the auto stick-on weights to that truck. The other Annie (for the passenger train) did not seem to need anything.

We have 4% grades and sharp curves so the weights helped out quite a bit for those two.

The only other thing that has weights are the tenders which are loaded with the batteries for the engine. I haven't run all of my freight cars yet but so far those that I have run have needed no weight (they all have metal wheels).

Jon D. Miller - no longer necessary to add weight

In years past, when locomotives where lighter in weight I would add weight.

As locomotives became heavier, from the manufacturer, it is no longer necessary to add weight to most locomotives. I have a number of older locomotives that have weight added. So far with these locomotives the added weight has not had an adverse effect on drive trains.

I did add weight to the 1:20.3 Bachmann side tank Porter. The Industrial Mogul that was introduced a number of years ago had to have weight added in order to pull a consist of 3-5 freight cars or three J&S coaches. All of the geared locomotives have enough weight to pull realistic loads.

Rolling stock has metal wheels. As others have mentioned, metal wheels add any extra weight needed and helps to lower the center of gravity.

Cars that carry batteries and/or RC receivers all have San-Val ball bearing axle sets. I've used the San-Val ball bearing axle sets since around 1995 and they all run just as smooth as the day they were installed. The ball bearing axle sets eliminate journal box wear and make the cars roll easier.

Richard Friedman - do we just add some weight?

I just finished building two Bachmann wood boxcar kits and a Bachmann ice box car. They seem to be much lighter than the ready builts of the same car, even with metal wheels. Is there a standard weight that the cars "should" be, or do we just add some weight 'til it seems right.

Kenneth J Kessler - Have not added weight to locos.

Adding metal wheels seems to be sufficient for most rolling stock. Flats and gondolas are an exception. Have not added weight to locos.

Joe Fotschky - Cars get metal wheels

I do not add weight to my locomotives. Aristo-Craft does a good job of that on their locomotives that they have made over the past 7 or more years since they went to the newer motor blocks.

Cars get metal wheels and I feel that it is good enough and in the right place no need to add more. Of course the cleaning and plow car do get added weight so that they can perform their job better.

Jon D. Miller - metal wheels do add stability

Bachmann rolling stock kits, such as box and reefer cars, weigh the same as their assembled, decorated counterparts. The kit cars are molded from the same plastic and have the same thickness as the assembled, decorated cars.

I weighed two Bachmann kit reefer cars and two of their assembled, decorated cars. The weight of the cars varies from 2 lbs 4 oz to 2 lbs 6 oz. All cars were equipped with Bachmann's latest metal wheel sets.

I've found that Bachmann rolling stock, with or without metal wheels track just fine. Proper gauge and side bearing are the keys. Now for long trains the metal wheels do add stability when pulling around curves.

Try pulling Jim Hobbs' forty plus car "Banana" train, all Bachmann reefers, without metal wheels and it will end up on the ground. These cars have no additional weight added except for the Gary Raymond metal wheels.

Thanks, Jon. I appreciate what you said. Last night I weighed one of my Bachmann kit cars and an identical ready built. Mine has metal wheels (Bachmann's own) and Kadee couplers, and it's STILL two ounces lighter than the ready built with plastic wheels and funky Bachmann couplers.