Garden Trains
From A to Z

B is for Bridges






Better Information - Better Railroad

LSOL.com - The Leader in Online Information

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.

Bridges

Commercial or Home Grown?

Have a commercial bridge: What kind are they? What are they made of? How long have they lasted in the great outdoors?

Do not have a commercial bridge: Why no commercial bridge; cost, availability, no place to put it on your railroad? What kind of bridges would you like to see produced commercially that are not currently being created?

Have a home grown bridge: What kind of bridge did you build? What is it made out of? How did you build it? Why did you build it and what does it cross on your railroad? What would you different the next time you build a bridge?

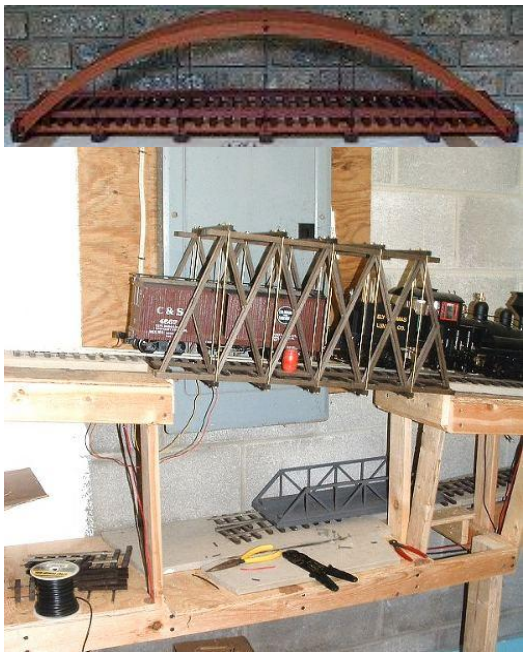
Do not have a home grown: What keeps you from having a bridge on your railroad; skill to build one, no time, concerned of the cost, you have no place to put one on the railroad?

Most important: If you have a bridge tell us what you have learned about having a bridge on your railroad. As these are not something you bring in they have to survive outside all year long. What have you found that works and what does not work? What makes them look real and what does not?

Rick Henderson

I have at least 10 bridges, only 1 still installed during reconstruction. I had some 4' LGB bridges outdoors on a temporary layout for a few years and they were removable to get in and out of the inside of the railroad.

Now I am indoors and using shorter bridges so I am actually selling off the 3' and 4' bridges for shorter spans. I did try to have a variety on my big layout, simply because I really like bridges. No installed bridges with scenery right now.



John B Pedersen

I have 5 bridges on my RR. One commercial 10 foot long by Garden Textures.
The other 4 are scratch built. If there is one thing to pass on it is DON'T scrimp on the size of the bridge! My first bridge was a scratch built Howe style truss bridge that my rolling stock went through just fine. I then added a Bachmann Shay and much to my surprise it would not go through the bridge without removing the stack top. I had less than 1/16" space for it to fit. After that all my construction was geared for the largest locomotives I can run. The Howe was replaced with the Garden Texture bridge built in 1:20.3 size. It is easier to build large the first time rather than have to do it twice. My RR is all elevated so I have lots of trestle work and bridges.

Glenn Habrial

I have (or will have) 5 bridges on my layout 2 are just concrete blocks that cross a river(actually it is the rain drain)the other one that is finished is a through truss bridge the two remaining bridges will be through girder bridges. Right now they are just a piece of PT wood one half inch thick.

Kenneth Allen

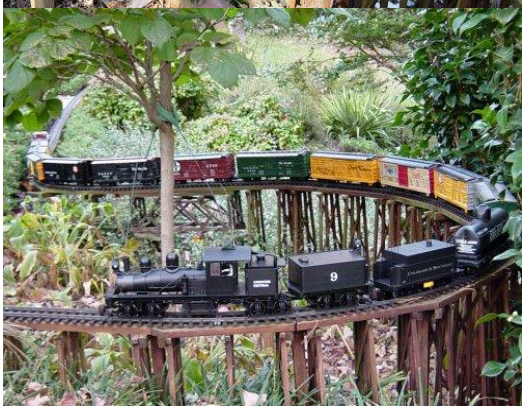
I have 8 bridges on my layout, 1 is an 82 ft trestle, a 4 ft trestle, 8 ft wood Howe truss bridge, 3 ft and 4 ft metal bridges I bought, a 5ft aluminum bridge I made, a concrete block bridge 4 ft and an LGB plastic bridge 4 ft long. Two of the bridges span a water bed, the 5 ft aluminum and 8 ft Howe trust, the others span a dry river bed except the 82ft trestle I made to expand the layout some.

David Clapper

I had one home built, handmade Howe Thru Truss Bridge on my old layout and I will more than likely build a few more bridges for my new layout. I enjoyed building the bridge as it was something to do while my broken leg healed back in 2001. I sure hope the next bridges I build will have nothing to do with any type of recuperation on my part.

James O'Connor

The C&S RY (VA. DIV) has two bridges and several large trestles on its route. The bridges are modified deck trusses from Aristo and the trestles are all hand built. The trestle is about 90 ft in length with the two bridges in between. The trestles and bridges have been in over 7 years. The trestles need very little maintenance, but the bridges are constantly loosing cross members. Will have to nail and glue them come spring.



David Maynard

Do not have a commercial bridge: Why no commercial bridge; cost, availability, no place to put it on your railroad? Cost mostly, but I am a builder, I like building things, and I like having just what I want, not something someone else built that's not quite what I want. What kind of bridges would you like to see produced commercially that are not currently being created? Haven't considered that, I dunno.

I have a through truss bridge, an arched through truss bride with 2 cement arches leading up to it and a curved trestle, that I didn't include on my bridge count in the survey. My trestle and truss bridges are wood; my cement arches are pink foam with a cement board cap. The trestle was built with a jig; the curved arch truss was built on a photocopied picture of a real bridge, enlarged to size of course. The cement arches were just cut on a scroll saw (its Styrofoam) and glued with great stuff to metal posts that were pounded into the ground.

I built them because I like building and I needed something to fill the need. The first truss bridge I built crosses my pond; the trestle was built for interest and to get the raised track close to the porch. The curved truss bridge was built to cross a rock wall

Every year I have to do some minor repairs to them and reseal them with sealant. I brought in my truss bridge over the pond the first winter but I soon filled its storage space so it has to survive out there now. I have found that good glue should be used, I used CA for my first bridge so I have had a lot of extra repairs as the glue has let go. I also pin (nail) ALL joints in my wooden bridges for extra security of the parts. No offense to anyone, but to my eye over-sized fasteners can ruin the look of an otherwise beautiful bridge. Also, bridges that do not actually support the rails along the length of

the rail do not look good to me. There are books out there that explain bridge construction so it should not have to be a mystery as to how to build a bridge. A little research goes a long way to making it look right is all I am saying

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Marvin Gersten

I built a cedar Howe Truss, 2' long, single track, stained and varnished it. I bring it in for the winter, and must refinish each year. The source of the plans was one of the Large Scale websites. It has held up well.

Roland Smith

I have one bridge on my layout. I scratch built a double wide Howe through truss bridge out of cedar. I treated it with Jasco brand copper naphthenate wood preservative. It's been outdoors for three years and shows no deterioration of any kind. The wood has weathered to a beautiful silver gray color and the brass truss rods are now almost black from oxidation but structurally, it is as strong as the day I finished it.

Phill Lowe

I posted this montage once before possibly in response to a similar question. I enjoy building bridges and my layout includes the following:

Top row, left: Collapsing bridge - pressure treated wood.
Top right: Styrofoam stone bridge.
Next row, left to right: pressure treated wood over pond.
Redwood over same pond. Howe truss in miniature train layout in G village.
3rd row, left to right: wood with Styrofoam supports. Pressure treated over dry gully.
Pressure treated with Styrofoam supports over roadway.
Bottom row. A little wood gully washer and pressure treated trestle.

And this one below is cut from real brick and assembled with Gorilla glue.

Another view of the Styrofoam stone bridge.

Elaine Haggenbottom

I always loved bridges: bought an LGB trestle bridge (commercial), but never got a chance to use it. So, I really loved the home-grown one a friend made for us of sheet metal. A couple of stick-on letters for Pennsylvania and we were good to go. It was over a dry river bed as shown in the following picture.

Donald Urquhart

Yes, three LGB Bridges. Heat of Summer, the Snows of Winter, six years and no damage. I removed the "super structure" from one bridge and put an LGB Bridge Pier under the center for support. The two others I had to cut away a small part of the super structure, at one end, to clear the swing of my "Challenger".

KC Marshall

I have basically two bridges, one 42 inch Warren Truss with hinges so I can get through The other is 13' deck girder that handles a small S curve and 8 foot diameter curve Both home built to fit area

The Warren Truss bridge is made with cut redwood drilled and bolted together with scale bolts, nuts, washers and no nails or glue, the warren truss is older and still as strong as first built. It is also built with hinges so it will lift up out of the way so people can get through. All bolts, nuts and washers including long truss rods were purchased from McMasters.com The deck girder is nailed and glued. It is being replaced because of the failure of the joints in the outside weather. And I do have this 3' bridge hand built for a little dry creek area

Ed Biesiadecki

I have two Howe wood bridges; the first was a kit build I have on my overhead, and the other one I built from scratch (Using the kit for measurements to do the second.) The scratch built, I used 1/2" & 3/4" Oak shelves cut down to stripwood to form all the pieces. I still used commercial tie rods.

Using Oak, this unit is strong as can be, particularly since I use it to bridge the entry to my train room loop track. Probably wouldn't change a thing on the next one. The thing I like about mine is it's durability as a removable unit, yet I have been able to put details on it that make it look realistic.

Paul Roberts

I built my first bridge using Garden Texture plans and with a bit of maintenance it has stood up for over 10 years. The other two are manufactured metal bridges because I have them so they can be removed if necessary. Bridges and trestles really do give a wonderful vista to our trains and I can see adding more as time goes on.

Mike Evans

Mine range from the simple to complex. Built a Howe truss from redwood 1/2 x 1/2 and metal rod. A couple of trestles from a jig for the frames. A couple of simple girder types from redwood lath. Even used MDF door casing for one. For the (fake) abutments, I simply use 3/4" foam painted with two coats of concrete colored house paint.
It would be great to have a gallery of bridges to look over as well as some articles on techniques to keep them together. Glue seems not to work very well in the weather but a good mechanical approach with a brad or pin nailer seems to be the answer.

Barbara Karkutt

I have one 2' cedar bridge scratch built which goes over the entrance to my Wild Horse canyon. I really want to redo this one so I can remove it when I have to clean leaves out of the canyon very difficult to crawl under.

I also have two 5' bridges put together. These are cedar bridges I bought at ECLSTS from Michael. They had to be assembled but were easily done. These bridges go over a natural gorge on the layout.

I also have a 15' trestle 12' of which is over 2' high (the rest graduates down to 6" to modify the grade coming down the hill). The higher portion spans the lower end of the natural gorge. It is scratch built, designed from a picture of the Ophir trestle and made from PVC and stained with 3 different Krylon paints.

Ron Selliers

I have 3 bridges one an Aristo-Craft covered bridge I purchased from St. Aubin's and 2 deck girder bridges I made by cutting lexan sheet plastic purchased at Lowe's and attached to 1x6 cedar boards. After putting in place and positioning the rail I then used Pigeon Grit as ballast. They turned great and after spraying the clear lexan with flat black paint you'd never know it was from clear plastic.

Geoffrey Cullison

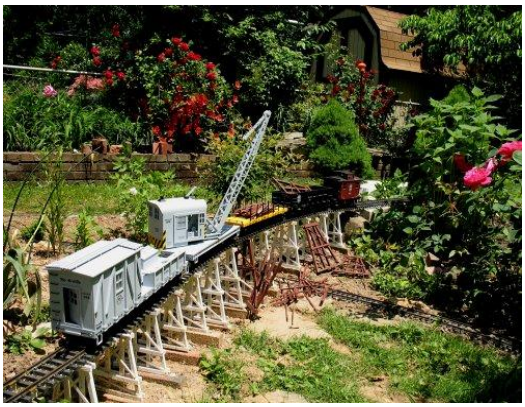
The ALF has only one bridge. It is on the inner loop, an S-curved trestle about 6' long and just high enough (10") to clear a track that passes under it. The S-curve is made with Aristo 20' diameter curves. The two photos below are of trains operating on the original, wood trestle. The original bridge was built with pressure treated lumber cut to near scale sizes. These pieces were too small to nail so the entire bridge was fastened together with polyurethane glue. The entire bridge was painted with Krylon red primer.

This construction method lasted for several years but there was no keeping moisture out of the wood and the freeze-thaw cycle here in Northern Virginia finally began to pop the glue joints and smaller pieces of the trestle came off.

The original wood trestle has been replaced with one built of PVC lumber, again, cut to near scale sizes. This time, all joints are "welded" with PVC cement. Water intrusion into the joints problem solved! The longitudinal stringers and lateral braces are yet to be added and the trestle has not been painted, but it is fully functional. I plan to add guard rails in the future, but those, like the longitudinal stringers and lateral braces are purely cosmetic.

The ALF also has two drainage culverts but they are not considered bridges.

I can't wait for spring. There are lots of fun projects to get done before the ALF hosts the May meeting of the Washington, Virginia and Maryland Garden Railroad Society.



Richard Friedman

I've got about half a dozen bridges, if you include trestles. I didn't build any of them, but only a few are "commercial." The trestles for the most part are "finds," recycled from others' railroads. I've got a plastic covered bridge from Aristocraft, two small wood bridges that I bought at shows, the recycled wood trestles, and a metal plate girder bridge built by a club member.

At the SVGRS annual dinner I won a metal Howe truss bridge custom built by one of our members. Don't know where I'll put it, but I WILL! My son-in-law built me a one-yard long low trestle out of recycled redwood fence boards which will go into a new line to be built this spring!

Ron Brantner

I currently have one home built bridge, with 2 other home built bridges and a long trestle planned. I'm cheap and lazy and the reason for the bridge at the right. Florida is flat and so is my railroad for the exception on one 2% grade. The bridge is constructed of 2 aluminum boxes used in screen cages over pools, PVC decking, and ¾" PVC piping and boarding. The aluminum boxes were provided to me, the rest of the materials were less than $50. The bridge is 16 feet long that accounts the cheap part. The laziness came from not having an easy way to get fill dirt in the back and me hauling the dirt by wheel borrow wasn't an attractive option.

The bridge supports the grade and passage over one of the mainlines. My long term plan is to have a stream/pond in this area of the railroad.

Bennie Shields

My railroad has two bridges and one thirty-five foot long curved trestle which replaced an earlier twenty-five foot long trestle. All are home made. The two bridges have been out doors for about eleven years and are holding up well. I will probably replace them in a year or two, I had to replace the earlier 25 foot trestle two years ago, due deterioration of some of the wood I used. The newer 35 foot trestle was made of cedar and allowed me to change the track plan to increase the length of the railroad. I hand spiked the rail on the long trestle. It really looks neat, but the large amount of maintenance will probably prevent me from hand spiking future trestles.

Gilbert Johnson

I have two bridges, both homemade, one of treated wood and one of aluminum angles and channel aluminum. The wood bridge is part of a 15 ft trestle and the metal one part of a 10 ft trestle. The trestles were also homemade. Commercial bridges are too high priced when you can make your own much cheaper.

Roy Towne

I have one homemade trestle that circles under itself. Made out of 2x6 metal studding and composite decking material. I think a modern suspension bridge would look pretty cool.

Dave Marecek

The Lone Firr has 9 bridges and trestles, all home built from cedar using blue prints. Each is custom based on location and a prototype bridge being represented.

See the attached GRBlog as I did a whole article on the bridges of the Lone Firr RR
http://www.grblogs.com/index.php?blog=51

Dean Mead

Someone told me when I started garden railroading, I had to have at least one bridge, and one tunnel. So I built a bridge and tunnel.

I meant the bridge to be something temporary until I could get a real bridge built. But here it is 6 years later, and it still is the same. So, my first advice: don't build anything 'temporary'. Now I am building my second layout, table-height, and I plan several bridges and trestles. They will be home-built to match the spaces I have.

Thanks, everyone who submitted pictures; they give me many good ideas!
Do I want help? Definitely! Your ideas are valuable to me.

Ron Hill

I have 4 bridges in place and one to be installed on my layout.

3 are concrete and 2 are styrene.

Dwight Morgan

I have three bridges on my layout. There are two commercial (a deck girder of plastic and a deck truss, from Bridgeworks, from wood) which I bought from a layout which was being dismantled. The third one is actually 4 thru truss bridges which form a curve around a tree. The purpose is actually to protect the trains and track from falling persimmons. It has been shown on this site before and is in my photos. It is built from mahogany which I ripped to dimensional lumber with the help of the friend who donated the ten foot 2" x 12" plank he was going to use for furniture. He decided it was too hard to work with. The sections are supported on LGB plastic piers set on bricks which are buried. It was a fun project. I cut and threaded all the brass rods and there are no nails and no glue anywhere in the structure.

MEMBERS ONLINE STORIES ON TRACK & BRIDGES

Here is a small sample of the articles that are online for members of LSOL.com

You Can Build a Warrren Truss Bridge

After finishing the area between Bellefontaine and Muncie on my indoor railroad, I found I needed a second highway bridge to extend the one that Mike Tylick built for me in that area. I spent a few days looking for a truss bridge that would fit into the 30- inch space that I had for the bridge. I found some examples in both books, but not exactly what I had in mind.
Feb 18, 2009 - 10:00:00 AM

How to Build a Trestle Using Michael's Custom Woodworking Bent Jig

I will show you in this article how to build a small 12" high and 48" long curved trestle using LGB 18000 radius track for this example. (any brand track will work with the exception of flex track which I have not tried). With the large bent jig you can build any size trestle up to 4 ft tall. At the end of this article I will show you a 4 ft tall x 52 ft long trestle that I built using this same method as described here.
Feb 11, 2009 - 10:00:00 AM

Trestle Design Considerations

Learn about the design and construction ideas that should be considered in building outdoor G scale trestles. These considerations apply to abstracting original prototype designs into practical, durable, functional outdoor wooden trestles for G scale.
Apr 16, 2008 - 10:00:00 AM

Bridging the Gap for Cheap

I live on an island in the Puget Sound hence a run down to the corner hobby shop is not an option. Now, of course a hardware store isn't going to have a Large Scale Garden Train bridge but it might just have the raw materials needed for me to make something that looks like a train bridge.
Jul 18, 2007 - 10:00:00 AM

Quick and Easy Track Risers

I was building a mountain using white Styrofoam, so after experimenting a bit came up with a quick solution.
Apr 25, 2007 - 6:00:00 AM

Installing Bridges and Piers for the GC&E - Part 1

Two years ago when we rebuilt a large portion of the GC&E I wanted a dramatic bridge crossing to pass over the track and a new stream we added to the layout.
Jun 21, 2006 - 8:01:00 AM

Installing Bridges and Piers for the GC&E - Part 2

Garden Metal Models (GMM) makes a deck/walkway kit for its metal deck girder bridges. The kit comes with enough material to do a 1-foot length of bridge they also make a double kit with enough for 2 feet of bridge.
Jun 28, 2006 - 8:07:00 AM

Casting Concrete Abutments - Part I

While I am no expert on pouring concrete into molds, at least I can share with you what I have done and what success I have had with it, in spite of my inexperience. I started off with a desire to add a second circle of track to my layout. Since I wanted it to go under the existing tracks there was a need for bridges and, of course, bridge abutments.
Jul 26, 2006 - 3:16:00 AM

Casting Concrete Abutments Part II

As I ended Part I, the mold for the abutments had been filled with the Vinyl patching concrete and the mold was shaken with the saber saw minus the blade to remove the air bubbles. We had left it to cure for a day. This was where things got interesting.
Feb 28, 2007 - 10:00:00 AM