



MLS MasterClass - 2002

Build a 2-6-6T / 0-6-6T Mason Bogie An Adventure in 1:20.3

By David Fletcher

Chapter 2 - Mason's Colors & Chassis Work.

Background

Dedication:

Michael Dean Anderson 1941-2002:

We dedicate this Chapter to the Memory of our friend, Michael Anderson. You will be missed by us all.

Onward...

Most of you will have ordered your BBT Mason Bogie chassis in the last couple of weeks. For those that are still waiting for your order to be fabricated and mailed to you, do not fear you can actually make up the major components of this chapter, without the BBT chassis in your hands. We'll be constructing a series of 'sub assemblies' that get made up on their own, and then later attached to the chassis.

This is what we're dishing up this month, just to keep you off the streets:

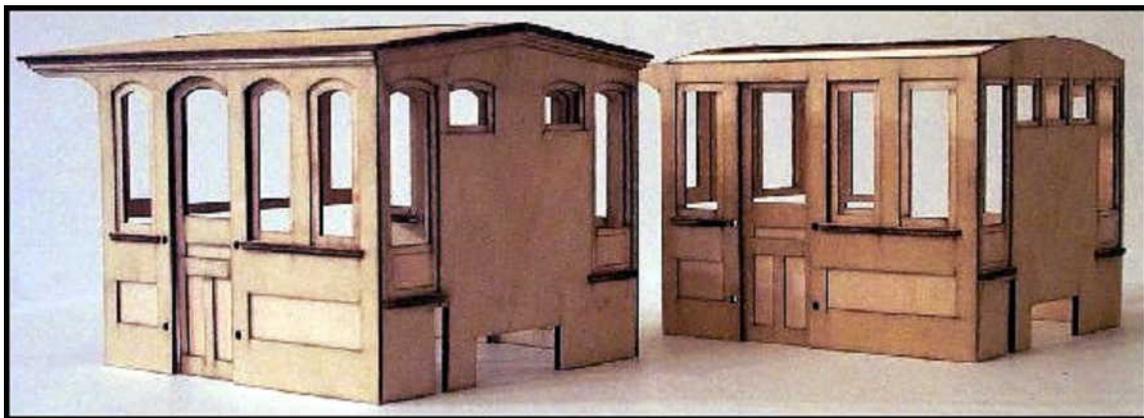
Background - We take look at the unusual color schemes developed by William Mason in the 1860s - 1870s. Mason was never one to accept the standards of the day, and his color schemes were no exception. His colors were very much the core of the Mason corporate image, distinctive, beautiful, and bordering on the outrageous! Wes White, a long time friend and South Park enthusiast who helped with my original 2-6-6T Mason kit bash of some years ago, has provided the background section for our enjoyment and education. The historical content of the chapter is based on the very fine work done by Jerry Kitts and Doug Heitkamp, as well as references to others.

Construction - This month, we dive into the Mason Bogie model headlong, and no turning back. We start by scratch building the pilot, and working back over the chassis to the tender and cab floor structure.

Note - We demonstrate the fabrication of a pilot/cow catcher in styrene, however if you have already have a commercial pilot to use, then you can ignore the pilot construction section.

The FH&PB timber pilot option - Vance Bass has laser-cut wood Mason Pilot kits available for those that wish to have a real wood pilot, and do not feel up to making their own as outlined in this chapter. The wood kits are based on the same CAD templates as used in this chapter, so they will be compatible with the model, and are of correct Mason styling.

Vance is offering pilot kits and wood Mason cab kits for the duration of this class. The prototypes are stunning, and the kits are extremely reasonably priced.



The FHPB Mason Bogie Cab Kits - pre-production prototypes - 1870s cab to the left, 1880s to the right.

1870s cab: \$35
1880s cab: \$34
Pilot: \$12

Postage will be an additional \$4 (Priority Mail to US addresses), which will be enough for one or two cabs with pilots.

Note: These prices, like the BBT drive, are close to 'cost' price. These prices will go up to normal retail rates after October 2002. Please see that you get your order to Vance by October to enjoy these discounted rates.

Payment options: Vance will take checks or money orders made out to "FH&PB Railroad Supply", or credit cards through PayPal.com. Vance will set up a PayPal button, so you can just click on the FHPB web site.

vrbass@nmia.com

Or refer to Vance's web page:

<http://www.nmia.com/~vrbass/fhpb/>

The Mason Bogie Archive

Keep reviewing the Mason Bogie Archive.

<http://www.ironhorse129.com/>

The site is constantly being up-dated as more photos of Masons come in. Keep searching your books, old photos and magazine, and send us any Mason Bogie photos you might find that don't appear to be in the current Archive. Also send us pictures if your images are clearer than the many we have in the current Archive. E-mail the images as a JPEG scan, 300 bit images, preferred.

The Ghosts of Mason Bogies Past, Present & Future

We hope to make this a regular section in the MC2002 chapters. This section is dedicated to the work of Model Railroaders from around the globe that have done the extra-ordinary, pulled off the impossible and done the ridiculous in order to obtain that special Mason Bogie. The basis of any good kit-bash is the existence of common components found on different prototypes that enables one to modify the available commercial model into something never produced...and its fun! Now the Mason is different - for the components that make up a Mason Bogie are quite dissimilar to those found on most other prototypes. This makes the kit-bashing of other models into Mason Bogies difficult at best, leaving one to scratch make the bulk of the model, just like we're doing in this class.

In this section we'll showcase the clever, wild, and wacky ways folks have overcome obstacles in order to build their own Mason Bogie. If any of you readers have built a Mason Bogie in some form in years past, please e-mail us a photo and a description and we'll gratefully showcase your model here.

Last Month we showed the 'Clay Mason', and asked for further info about the loco, who built it and why. Within days the mystery was solved! The Clay Mason is probably the most outrageously clever large scale model I've ever seen. Made entirely out of pottery, atop an LGB mechanism, this is a fully working model! The proportions of the model are extremely good, with a touch of the whimsical in it, almost a cartoon. This is a model, and it is art as well!



Fellow myLargescale.com reader Dave Sawyer responded with the following information:

The model was built by George Karl Konrad on an LGB mechanism for a project in an industrial design class. I photographed it on George Karl's father's layout. His Dad, George Konrad, is a Master Modeler, active member of the NH Garden Railway Society, and a member here at MLS.

This Month's Mason Bogie - An LGB Mogul becomes a Mason in the UK

When the names for this class began to flow in, I received a nice letter from David Buckingham, near Bristol, UK, announcing that he'd joined the class. He also spoke of a Mason Bogie he'd bought recently, that had been kit-bashed from an LGB mogul. I asked for some photos for this section.

Shortly after, I received an e-mail from Allan Cash, also from the UK, who is also going to undertake the MC2002 project. He e-mailed me the pictures and article about a Mason Bogie kit-bashed from an LGB mogul that was built by his friend Peter Janes. This turned out to be the very same model that David had purchased! How's that for a small world! David and Allan have discovered they live only 70 miles apart, both have run this LGB Mason at some point, and both are building a MasterClass Mason this year!

The LGB Mason Bogie is indeed built from an LGB Mogul. The model was built by Peter Janes in 2000 and is extraordinary from a number of fronts - first off, to see a Mason Bogie hidden within an LGB mogul, and then to pull off the bash with such convincing results is quite an achievement. Second, when ever I bash models into completely different prototypes, my models looks like a train wreck until a coat of paint hides all the mess! Check this Mason bash, the entire loco cut up and rebuilt, with much of the original LGB paint job left intact! Talk about skill! The model sports a new scratch made cab, and the chassis is fully articulated.



Send in those photos of Masons past, present and future that you've been involved in, we'd sure like to see them.

The myLargescale.com MasterClass & Articles Forum

Please direct any of your questions to this forum for either the team members or other modelers to help you. There is a wealth of modeling expertise at this forum from hundreds of fellow modelers. Never be afraid to ask, we've all had to ask at some point.

[MasterClass Forum](#)

Important Notes about Model building in General

Working with the MC2002 CAD templates

Throughout this chapter, and the coming chapters, many of the major locomotive component profiles will be provided in the form of CAD templates. These are to be downloaded as PDF files during the construction. You are to print these pages onto regular document paper. Once printed, the paper templates should be exactly 1:1 for your model, i.e. the exact size you need for your model.

Caution and Warning!

Each PDF page will have a scale bar in inches and millimeters shown along the bottom of the page. This scale bar should also scale out to be exactly 1:1. It is imperative that you check each and every page you print to ensure your page has indeed printed at 1:1. If the print set-up does not have the 'print full page' box checked, you'll most probably be printing your Mason templates at some 75% the proper size, and thus you'll be building a Mason at a scale close to 1:32, which is WRONG! **BE ABSOLUTELY** sure you have printed the templates at 1:1, such that one inch on the printed scale bar is equal to one inch on your ruler!

Tracing the CAD Templates onto Styrene or Other Materials

This class demonstrates the construction of the Mason Bogie using 4 basic thicknesses of styrene. These same templates can also be used (for those with experience) to build the Mason out of sheet brass, or in part, sheets of wood. Whatever material you decide to use, try to keep to the same sheet thickness indicated so that the parts go together properly.

The MasterClass demos are all in styrene.

Each printed sheet or CAD template is associated to one particular assembly. You need to transfer those printed profiles onto your styrene sheet (or wood sheet, brass sheet etc.). The way I have done this is to lay the sheet of paper onto the styrene, and using a sharp pointy implement, such as a needle or pin, prick the pin into the corners of each drawn component such that you provide an indentation into the styrene in the same place. Thus your styrene sheet below becomes a dot-to-dot outline of each part to be cut out. Then using a metal ruler and a sharp modeler's knife, cut out the parts by cutting between the dots. You should aim to push the pin into the paper in the dead centre of the line's printed thickness. For easier, more rectangular parts, simply measure the CAD drawing component, and measure out the same on the styrene.

Cutting Styrene

Cutting styrene is easier than you might think. The thinner sheets such as the 1.0mm or 0.5mm thickness can be cut exactly like cutting paper.

Tip No.1. When cutting the sheet styrene, always run the blade along the ruler as a light cut first. This provides a scored line only. Then cut through the material with the 2nd or even 3rd run of the blade. The initial scored line will help to guide your blade in a straight line for the subsequent cuts. To cut into the styrene in one cut can be done, but take care, for the blade will like to travel away from the ruler on its own path, and go crooked. I always mark my cuts with a light score first -- this is an anti-cussing procedure. Ignore this, if you like cussing and swearing!

Cutting the thicker styrene sheets such as 2mm and the 2.5mm thickness can be treated in a different way. Basically score the styrene with the initial light blade run, followed by 2 or 3 runs of the blade, but only cut about 50% through the styrene thickness. At that point fold the styrene about the scored line and the styrene will snap in a clean line. Practice this method a few times on the thickest styrene to see how deep to cut.

Tip No.2. When scoring thick styrene for small components, the folding/snapping of the styrene can be more difficult. The styrene has a tendency to tear near the ends of the scored lines. On smaller components (such as the pilot spokes in this chapter), score the styrene per normal, but make sure you cut right through the styrene thickness at the very ends of the scored lines -- this will prevent the tearing. Folding the styrene for such small parts can also be difficult, not enough to grab onto. What I do is fold some cardboard around the styrene part to be snapped, and then using long nose pliers, fold the part using the plier's grip. The cardboard prevents the edges of your styrene being damaged by the pliers.

Tip No.3. Wimp's way styrene parts - OK you tried cutting/snapping the 2.5mm styrene, and got jack of it... too hard... who does this guy think he is!

It is possible to make up the thick sections of styrene, by laminating layers of thinner (easier to cut) styrene. You will find in many instances in this class, we'll be laminating layers of styrene as a standard method. The cab walls are made this way, so are the tender walls, and smaller elements in the loco. However, you can decide on your own to laminate smaller areas where we designate 2mm or 2.5mm styrene. 2.5mm styrene can be made up of two layers of 1mm and one layer of 0.5mm, or a 2mm layer and a 0.5mm layer. My advice is to go for the full thickness without laminating if possible, it might require a bit of practice.

Something About Soldering

Soldering will be required in this project. Two types of Soldering is generally necessary, that of soldering wires and soldering brass components. Both types of soldering require a different approach.

Soldering wires- Soldering wires is technically easier than soldering brass parts, but in being easy it is also very easy to overheat your work, melt wires, and even damage motor contacts etc. Depending on how the motor is wired up on the BBT drive (we're testing the use of clips to connect the wires to the motor terminal without soldering), it might be necessary to unsolder wires and re-solder the same during the project. The trick with soldering wires is to ensure you don't use too much heat. If the insulation around the wires is melting while you solder, this is an indication you are applying too much heat. If not familiar with soldering wires the best advice is to get some wire scraps and solder a bunch of them together for practice. Barry Olsen of Barry's Big Trains, has the following advice regarding soldering the motor terminals. If you have any questions at all, please direct them to the forum.

Have a good working soldering gun or pen, also some thin wires solder, and very important, a proper flux.

When detaching the wire from the motor posts, heat or reheat the motor posts and insert a wooden toothpick into the melted solder to reclaim the hole in the motor post. When you are ready to reattach the-

wires, twist the wire into a clean small diameter which will fit into the hole you have reclaimed, insert the wire into the motor post hole, apply flux to the joint, either apply solder to the soldering gun tip or to the joint, as soon as the solder flows, remove the soldering tool point, continue to hold things in place, blowing lightly on the joint which will make it set up faster. Make sure the wires of the two posts are not touching, if they are, just cut away the ends, which touch. I use side cutters.

Soldering Brass Components - We will only be soldering small brass components, specifically for the valve gear. Heat is the enemy of wires, and electronic parts, but when soldering metal locomotive parts made from brass, heat is your friend. Again a good flux is desirable, this is an agent that allows solder to flow better over parts, and helps to bond the solder to the parts. When soldering brass parts together, its best to rest the soldering iron against the parts for a couple of minutes to heat them up before applying any solder. You will know you have heated the part sufficiently when the solder flows onto the parts like water, and doesn't blob like wax...there is nothing worse than a dry joint - that is a solder joint where the parts are effectively glued together by the resin in solder, and not actually bonded by solder. The hotter the parts the better the solder will flow, and bond. There will not be any of this type of soldering required for Wimp's Way construction.

Drilling Holes for Bolts

This is a fairly simple bit of info. During the class you will be pre-drilling some holes in your styrene through which you shall insert screws, and bolts. Since the bolt sizes between all our nations may differ slightly, and our drill bits also differ in size. My advice is to use the tiny (8BA and 10BA) bolts or similar as shown through the class, and match your drill bits to the bolt sizes you have. Generally there is flexibility in the exact bolt size you use in the project. There are two drill bit sizes to define for each bolt size you have. One drill bit will be the diameter of the bolt core, which is narrower than the total diameter of the bolt with thread. Bolts will tighten into holes drilled with this bit. The second drill bit is the same size as the total diameter of the bolt including thread. Bolts will glide through this hole and not tighten. Hold the base of the drill bit up against the end of your bolts, and find the two drill bits that match both bolt diameters. Drill a couple of holes in some scrap styrene and see how well the bolts slide in, or tighten in. make note of the two drill bits for each bolt, you'll use these through the whole project.