

The Magazine for LEGO® Enthusiasts of All Ages!



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# Brick Journal

Issue 46 • July 2017  
people • building • community

## Building LEGO® Trains!

Launching Brick  
Model Railroader

PennLUG's  
Train Displays

Cale Leiphart's  
Trains!

Japan Brick  
Fest 2016

Chris McKay  
Talks About  
The LEGO®  
Batman Movie

Instructions and MORE!

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Helen's first build.



The initial group of scaled-up minifigures.

Helen Sham is literally a minifigure builder. For the past couple of years, her sized-up versions of minifigures have been seen and bought online by builders and collectors. Her Facebook page, *Small Bricks Big World*, is where she shares her models, both in progress and completed. Her portfolio is varied and mirrors the whimsy and design of the original minifigures she references. *BrickJournal* was able to talk to her about her work and, well, her work.

### What do you do outside the hobby?

I was a graphic designer and photographer in Hong Kong with over 20 years of work experience. My projects included commercial packaging like boxes, wrappers, posters, greeting cards, and other commercial products.

Before I moved to Taiwan, I owned a studio in Hong Kong for 5 years where I produced portraits, wedding photographs and graphics. It was a challenging and satisfying job as I needed to customize each job to fulfill my customers' needs. I would spend hours to edit or decorate photos for a special request and I also drew cartoon portraits. The happy faces of my customers were my motivation and reward.

About 18 months ago, I moved to Taiwan in search of a new career path. One afternoon, I was watching

television and a *Ghostbusters* movie trailer came on, which stimulated my creative juices. I spent two days to design the iconic Stay Puft Marshmallow Man from *Ghostbusters* with LEGO bricks, and the outcome was surprisingly good.

One of my good friends is a collector of LEGO minifigures, such as those wearing rabbit, piggy, and monkey costumes. These minifigures made me wonder, "How cute would it be if I could enlarge them?" I began to design my first 25 cm tall LEGO figure which was a LEGO figure in a bumblebee costume.

Since then, I have created many new designs and posted my designs on social media. I received many inquires about my figures and requests for instruction manuals, so I opened a Facebook page ([www.facebook.com/smallbricksbigworld](http://www.facebook.com/smallbricksbigworld)) to better communicate with all the LEGO fans around the world.

I post my designs online and I sell LEGO pieces with instruction manuals. This is, at the moment, my full-time job. So basically, my hobby is also my career.

*LEGO Batman was one of the funnier characters in The LEGO Movie, so it wasn't much of a leap of faith to make a movie about him. Hopefully by now you have seen the LEGO Batman Movie, which was released in February. If you haven't, it's now available on digital download and other media.*

*Directing this movie was Chris McKay, who also worked on The LEGO Movie. BrickJournal had a phone interview with him to talk about The LEGO Batman Movie and his part in the production of the film. There's some talk about LEGO in this, but there's also a lot about the nuts and bolts of moviemaking. Chris was a gracious and funny guy to talk to, as you'll read...*

**BrickJournal:** *You actually worked on The LEGO Movie as an Animation Co-director and Supervisor, but you became a full-fledged director on The LEGO Batman Movie!*

**Chris McKay:** Yes!

*So how did that change your tasks?*

I worked with Christopher Miller and Phil Lord really closely on *The LEGO Movie* and they needed somebody that could be kind of a General when they were around and when they were off doing *21 and 22 Jump Street* (released in 2012 and 2014, respectively); who could be Commander-in-Chief and keep things running and be able to take the story to the next level. I was there from almost the beginning of *The LEGO Movie* and because I've been a director and a producer of *Robot Chicken*, they knew I could do both and move fast. They wanted somebody who could iterate things fast, so *The LEGO Movie* became my proving grounds for the studio. We were batting around ideas for *The LEGO Movie* and spinoffs and characters and things we just wanted to do, and LEGO Batman was a real natural fit not only for what the next movie should be, but because everyone loved Will Arnett's performance. Also, since I am a huge comic book fan, playing in the Batman world seemed like a lot of fun. I've got Catwoman and Superman tattoos, so it just seemed like a natural fit for me to be the guy who ran this movie and developed it.

We had a very tight and really ambitious timeframe and it kinda proved that I could do something with a big epic scope, but on a crazy-fast schedule. They let me direct this movie and for me, as a fan of Batman, as a fan of comic books in general and movies, this has been a dream come true; to be able to play in that world and be able to do stuff like cast Billy Dee Williams as Two-Face to fulfill the promise of Billy Dee Williams being cast as Harvey Dent in the first Tim Burton *Batman* movie. Just so many things were like a dream come true stuff. I feel very lucky.

*In The LEGO Movie, Batman's a person I personally wouldn't like hanging around too long because he's, for lack of a better term, self-absorbed..*

*(Chris laughs)* Yeah, yeah..

*So the big question for me is how did you manage to keep him from being completely obnoxious for an entire movie?*

There's a lot of movies that are about a self-inflated egotistical guy who learns something about the value of the people around him and sort of fills a hole in his heart or fixes a problem. Movies like *Jerry Maguire*, *About a Boy*, *The Life Aquatic with Steve Zouzou*, *Arthur*, *A Christmas*



## Of Bats and Bricks: A Talk with Chris McKay, Director of *The LEGO Batman Movie*

*Interview by Joe Meno*

*Photos and art provided by Warner Brothers  
Photo of Chris McKay by Eric Charbonneau.*

*Carol, Scrooge*, all those movies. That's the film model that we were playing around with *Batman* and it's a great genre to work in. Because he's got a great sympathetic backstory and because of what happened to him as a child, we could play with that and use that as a way for you to be able to trust him. We could have our cake and eat it too, as we would be able to have him say the funny things, to say and do the things that, like you said, would be inappropriate. You wouldn't necessarily want to hang out with this guy for long, but because he has this big wound in his life, we wanted our movie to be the movie (two *Batman* movies actually sorta addressed this) that solved *Batman's* main problem. We knew since it was a LEGO movie, because we were doing it in animation, we could actually be a film that sort of attacks that problem head-on and you could make it about this guy, this pompous self-involved loudmouth but who also —

***You don't have to be that hard on him!***

*(Chris laughs)* —you know what I mean. He's a charming rogue. And that's what Will Arnett excels at, these guys whose ego kinda outstrips their self-awareness. We kind of enjoy how inflated their ego is and we also know it's because they are kind of blind to these other things in their life. We've got great side characters: Robin, Barbara Gordon, the Joker, and Alfred, who can shine a light on those things he doesn't know and possibly teach him something about the value of the other people in his life. We can also give a real earnest sincere story about a guy who learns from the people around him that he can really be happy. He doesn't necessarily need to keep people at arm's length because he's afraid that something bad might happen to them.

***How did you get so many characters? Getting the main Batman cast is one thing, but there's so many villains and also the Justice League. How did you manage to get them? It's like in the script, you wanted grab everyone you could possibly imagine and WB said, "Sure!" Was it that easy?***

No, it was very tricky because it's hard to juggle a lot of characters, especially since you and I know who these

characters are and maybe some of our friends do, but not everybody in the world knows them. My mom certainly wouldn't, you know, so there was some fear on the part of the Powers That Be sometimes that there were too many characters and there was too much going on. At the same time, there's enough of a love for these characters so we were just trying to find unique situations to put them in and have a lot of fun with the backstory of *Batman*. I really wanted to make a movie that tackled all of the history of *Batman* and as much of the DC Comics world I could get in, including the rivalry between *Batman* and *Superman* and the attitudes of some of the characters in that world.

I grew up on the *Super Friends*. I wanted to have *Samurai* and *El Dorado* in there, and characters like *Apache Chief* that were side characters in a couple of episodes. That meant a lot to me because they were fun. The *Super Friends* were almost like a Benetton ad for me, like having someone representing all parts of the world. I really loved that even though some of those superheroes didn't necessarily take off, I just loved that that was the ambition of the show. So I wanted them to show up, as well as *Zan* and *Jayna* and *Gleep*, all of that stuff.

There's a lot of rights holders and a lot of people that you have to have the lawyers go in and contact and find out, for example, who wrote *Gentleman Ghost* into a particular episode. It's a big job. Fortunately, we had a great producing team that wanted to help us make that happen: executives and lawyers and producers. We also had designers and artists who really loved these characters, loved the fact that they would show up in this movie, whether they showed up and had a role or showed up as an Easter egg in the background. The designers and artists really threw themselves into it and researched and designed these characters.

LEGO is just a fun thing to interpret things in. It's a fun sort of idiom to work in that everyone really liked, even though it was a challenge—everyone rose to the challenge, I guess, and wanted it to work somehow.

BATMAN and all related characters and elements™ & © DC Comics.  
Courtesy of Warner Bros. Pictures





Karen Metz with some of her work.

## Karen Metz: Reflections from an Artist

*Article and Photography  
by Karen Metz*

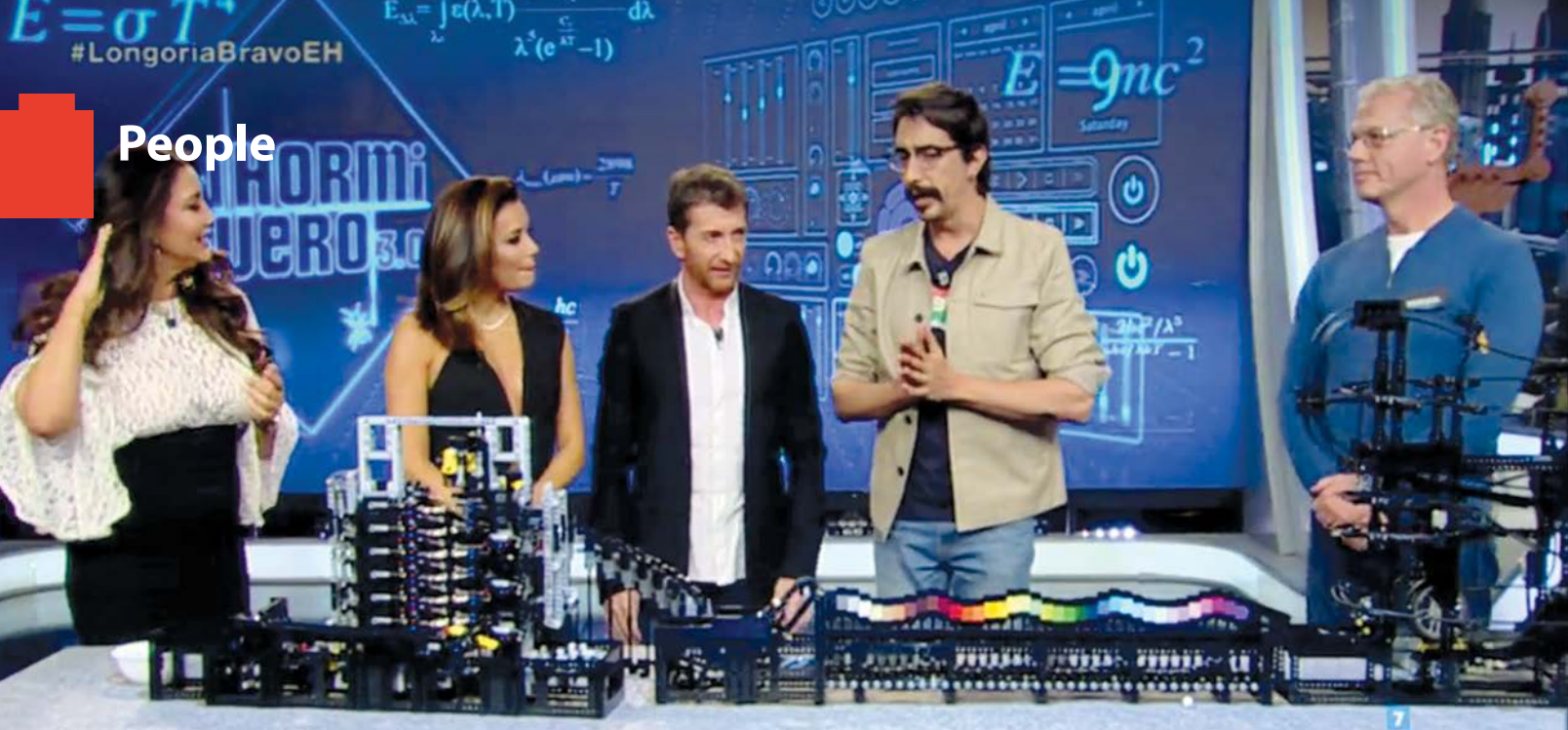
I only really discovered the joys of creating with LEGO three years ago. I never had LEGO growing up, so my “Dark Ages” spanned most of my life. Shocking, I know. The only building toy I had was a box of Tinker Toys, which is funny because my husband jokingly refers to me building things with LEGO as playing with Tinker Toys. I did get to play with LEGO occasionally as a kid whenever I visited my cousin’s house, but that was pretty infrequent.

I have three kids, who are now adults, and they had some Duplo, the first wave of the LEGO Harry Potter sets, and a few other sets from the late 1990s and early 2000s. The sets were not kept intact but were taken apart by them to create whatever they felt inspired to do. Eventually their LEGO was put away in a storage bin when they got older and stopped playing with them.

A tradition at Christmas in our family is to put together a puzzle, and instead of getting another jigsaw puzzle three Christmases ago, I decided to get the Expert Creator Mini Cooper for us all to do. This is what ignited my interest in LEGO. The set was so much more involved than the sets my kids had, and the end result lovely. I also decided to get one of the modular buildings, the Parisian Restaurant, and after building it I was hooked.

I am also an artist, working in many different painting and drawing mediums. The same winter I was introduced to the fun of building with LEGO, I suffered a freak tobogganing accident. A friend in our area has a “bobsled” run that he built after his niece won Gold in the two-person bobsled in the Olympics. I went down it one day with my kids and nearly tore my ring finger off my dominant hand. It was impossible to paint or draw while my finger was healing. My artistic desire to create meant that I had to find a new medium, and I found that I could still click bricks together.

I wanted to see what I could create out of the bricks I still had in the house from when my kids were growing up. Since it was mostly tan bricks from the Harry Potter sets, and I had bought some of the new Scooby-Doo sets, I decided to



On the air!

## Berthil van Beek's Great Ball Adventure!

*Article and Photography by Berthil van Beek*

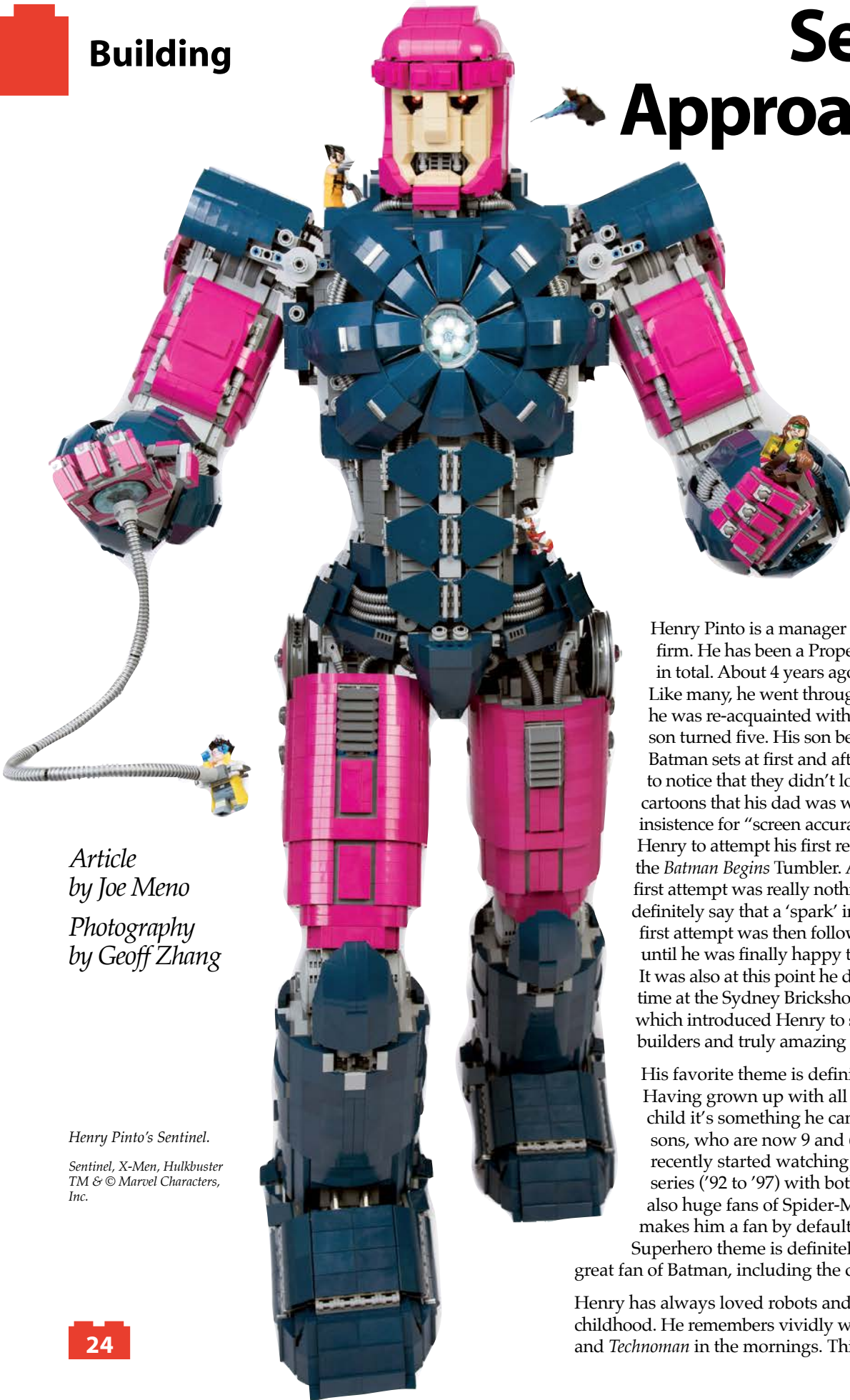
I am from the Netherlands, 50 years old, and have two children who are studying at University. I work as a Business Intelligence Manager for the largest synthetic rubber producer in the world called Arlanxeo, a joint venture between Lanxess (formerly Bayer) and Saudi Aramco (the largest oil company in the world).

As an 11-year-old boy, I got the first Technic set 853 as a birthday gift. That started my love for LEGO. I built a lot of MOC Technic models from the first Technic sets available. However, my LEGO collection during my childhood was very limited due to the financial situation of the family I grew up in, as my father died very early in my childhood.

Like most AFOLs, my interest in LEGO diminished during my teenage years, but it never really left. It was revived by buying many sets as birthday and Christmas gifts for my two children during their childhood. They were not much into Technic, so that part of the collection was still underrepresented. Something kept nagging to overcome my childhood 'frustration' of not having enough LEGO to build what I wanted. In the last 3 years I have overcome this frustration by buying a lot of LEGO.

After seeing the beautiful historic Formula 1 LEGO models of Luca Rusconi, I came out of my Dark Age and collected all the LEGO from my youth and my children from the attic three years ago. Together with many Bricklinked bricks and my 39-year-old LEGO parts from the 358 set, I have built 11 Formula 1 models designed by Luca. I next discovered the LEGO modular buildings and collected all of them. After that, I thought it was time to design my own modular. For this I combined my favorite sport with the place where I practice the sport twice a week—that being squash and the Squash Centre in Maastricht, The Netherlands. The modular squash court I designed and built was well received by AFOLs and is currently on display at the squash center in Maastricht.

# Sentinel Approaching!



Article  
by Joe Meno

Photography  
by Geoff Zhang

Henry Pinto's Sentinel.

Sentinel, X-Men, Hulkbuster  
TM & © Marvel Characters,  
Inc.

Henry Pinto is a manager at a property valuation firm. He has been a Property Valuer for 14 years in total. About 4 years ago he began building. Like many, he went through a “Dark Age”, until he was re-acquainted with LEGO when his oldest son turned five. His son began collecting the LEGO Batman sets at first and after a short time, began to notice that they didn’t look like the movies or cartoons that his dad was watching. It was his son’s insistence for “screen accuracy” that challenged Henry to attempt his first real MOC, which was the *Batman Begins* Tumbler. As Henry notes, “My first attempt was really nothing special, but I can definitely say that a ‘spark’ inside was triggered.” His first attempt was then followed by many re-builds until he was finally happy to call it an official MOC. It was also at this point he displayed for the first time at the Sydney Brickshow and joined SYDLUG, which introduced Henry to some serious LEGO builders and truly amazing people.

His favorite theme is definitely LEGO Superheroes. Having grown up with all of the characters as a child it’s something he can share with both his sons, who are now 9 and 6 years old. Henry recently started watching the *X-Men* animated series (’92 to ’97) with both of them. His sons are also huge fans of Spider-Man and Venom, which makes him a fan by default. His favorite specific Superhero theme is definitely LEGO Batman—he’s a great fan of Batman, including the comics and screen media.

Henry has always loved robots and Mecha ever since childhood. He remembers vividly watching *Voltron*, *Astroboy* and *Technoman* in the mornings. This would grow into a



# You Can Build It

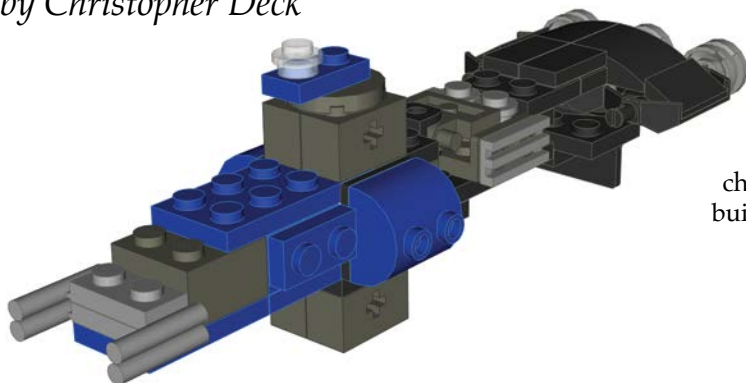
MINI Model



## Creator 31054 "Blue Express" Train Alternate Model:

# Hyperion Class Cruiser

Design and Instructions  
by Christopher Deck



Hello everybody! I am glad to join again in this issue of *BrickJournal*! It's about trains this time, and we want to pick up this theme for our mini-model building session, too! New for 2017 the mini Creator set "Blue Express" appeared on the toy stores' shelves—a lovely small blue/gray/black locomotive with 73 pieces (two of them being extra pieces). You can build another two models from the same pieces, a different engine and a wagon. In this building experiment we want to build a fourth model with these pieces, but from a completely different theme.

Although the part variety is extremely limited and we only have a few pieces, we want to build a Hyperion-class Cruiser from the *Babylon 5* science-fiction series. Of course we will not be able to build it absolutely accurate and detailed under the conditions given, but we should at least be able to recognize the model. I can only encourage you to try this method of alternative building as it's extremely challenging and will improve your building skills! Happy building and see you next time! 🧱

## Parts List (Parts can be ordered from Bricklink.com by searching by part number and color)

### Front/Middle

Qty	Color	Part	Description
2	Dark-Bluish Gray	99780.dat	Bracket 1 x 2 - 1 x 2 Up
2	Black	99207.dat	Bracket 1 x 2 - 2 x 2 Up
2	Dark-Bluish Gray	3005.dat	Brick 1 x 1
4	Blue	87087.dat	Brick 1 x 1 with Stud on 1 Side
2	Trans-White	3065.dat	Brick 1 x 2 without Center Stud
1	Dark-Bluish Gray	3003.dat	Brick 2 x 2
2	Blue	30165.dat	Brick 2 x 2 with Curved Top and 2 Studs on Top
1	Trans-White	4073.dat	Plate 1 x 1 Round
2	Light-Bluish Gray	4073.dat	Plate 1 x 1 Round
3	Blue	3023.dat	Plate 1 x 2
1	Dark-Bluish Gray	2540.dat	Plate 1 x 2 with Handle
2	Light-Bluish Gray	3839b.dat	Plate 1 x 2 with Handles Type 2
5	Black	3022.dat	Plate 2 x 2
1	Blue	3022.dat	Plate 2 x 2
1	Dark-Bluish Gray	18674.dat	Plate 2 x 2 Round with 1 Center Stud
1	Black	63082.dat	Plate 2 x 2 with Square Towball Socket and Axlehole
1	Black	3731.dat	Plate 2 x 2 with Towball

Qty	Color	Part	Description
1	Blue	3021.dat	Plate 2 x 3
1	Blue	3020.dat	Plate 2 x 4
4	Dark-Bluish Gray	32064a.dat	Technic Brick 1 x 2 with Axlehole Type 1
2	Light-Bluish Gray	2412b.dat	Tile 1 x 2 Grille with Groove

### Engines

Qty	Color	Part	Description
1	Black	2436b.dat	Bracket 1 x 2 - 1 x 4 Type 2
1	Black	99207.dat	Bracket 1 x 2 - 2 x 2 Up
4	Light-Bluish Gray	4073.dat	Plate 1 x 1 Round
2	Black	3023.dat	Plate 1 x 2
2	Red	3023.dat	Plate 1 x 2
1	Black	3022.dat	Plate 2 x 2
3	Black	6157.dat	Plate 2 x 2 with Wheels Holder Wide
3	Black	85984.dat	Slope Brick 31 1 x 2 x 0.667
2	Black	15068.dat	Slope Brick Curved 2 x 2 x 0.667
2	Black	3069b.dat	Tile 1 x 2 with Groove
3	Flat Silver	93594.dat	Wheel Rim 6.4 x 11 without Spokes
1	Black	24299.dat	Wing 2 x 2 Left
1	Black	24307.dat	Wing 2 x 2 Right

## Building

### Minifig Customization 101

# Large Figure Conversion, Part 1

Article and Photography  
by Jared K. Burks



19" Store Display Figures



LEGO Clock Minifigure.

Over my years in this hobby, I have made many customs for friends and family. These customs typically take on a more personal meaning and I commonly end up making things outside my typical norms or skill sets. These projects typically end up teaching me something and I try to share the lessons learned in these articles. Today's article is one of those cases. For those that don't know, my wife and I recently welcomed a baby boy, Greyson, into the world. My wife, having decorated the nurseries of our first two children, had charged me with decorating his nursery. Given my love of LEGO minifigures, I wanted to make a special piece for his nursery, but found the typical LEGO figure a bit small for a newborn. I have long craved to customize one of the 19-inch Store Display Figures that LEGO uses, however they are a bit out of my price point as they sell for hundreds to thousands of dollars on eBay. So Greyson's room would have to live without one.

However, I simply couldn't let this concept go. I started trying to figure out how I could make a Minifigure larger such that it would work as a display piece in my son's room and allow him to play with it as he grows. I debated 3D printing a figure and there are many out there that people have created models for; I just wanted something closer to the classic minifigure. It was then I noticed my LEGO Stormtrooper Clock Minifigure. While the Clock Figures are only about 10 inches, it would be more than large enough. As an added bonus the Clock Figures can be found on sale for as little as \$10; however, using the clock figure comes with some challenges. This article will chronicle my conversion of the clock into a custom figure for my son. Please note I am not the first to convert one of these figures; I found a few conversion examples online: Galactus by plaguedoc (<http://imgur.com/gallery/EcMX5>) and Stay-Puft Marshmallow Man, which I can no longer find online. Both of these individuals created their figures in ways I wasn't entirely happy with, and so I decided to find my own path, which I will share here.

In this part of the conversion of the Clock to a custom LEGO figure, I will cover the disassembly, clock removal and hole repair, and basic use of Bondo to convert the clock elements to more LEGO-like elements. What do I mean by that last statement? The head of the figure in the clock is a snooze button. The head is design to be pushed down and spring back into place, triggering snooze. The hair, helmet, or whatever head accessory is used is locked onto the head by traveling through the head element. I wanted a removable hairpiece and a removable helmet, so I set to repair these elements to make them more like traditional Minifigure elements. The rest of the conversion of the figure will be presented in the next issue of *BrickJournal*, which will include: Sculpting in Bondo, Surface Prep, Priming and Painting, Accessory Production, and Decaling or Printing the final Design.

Let's get started.

# Bat-Train



## Parts List (Parts can be ordered through Bricklink.com by searching by part number and color)

Qty	Part	Color	Description
2	98138.dat	Red	Tile 1 x 1 Round with Groove
4	3020.dat	Dark Bluish Gray	Plate 2 x 4
5	2412b.dat	Black	Tile 1 x 2 Grille with Groove
2	2420.dat	Black	Plate 2 x 2 Corner
1	2436a.dat	Black	Bracket 1 x 2 - 1 x 4 with Square Corners
3	2654.dat	Black	Dish 2 x 2
1	3009.dat	Black	Brick 1 x 6
2	3023.dat	Black	Plate 1 x 2
5	3024.dat	Black	Plate 1 x 1
2	3032.dat	Black	Plate 4 x 6
1	3034.dat	Black	Plate 2 x 8
2	3035.dat	Black	Plate 4 x 8
1	3062b.dat	Black	Brick 1 x 1 Round with Hollow Stud
8	3069b.dat	Black	Tile 1 x 2 with Groove
2	3460.dat	Black	Plate 1 x 8
1	3622.dat	Black	Brick 1 x 3
8	3623.dat	Black	Plate 1 x 3
1	3666.dat	Black	Plate 1 x 6
1	3832.dat	Black	Plate 2 x 10
6	3937.dat	Black	Hinge 1 x 2 Base
19	6141.dat	Black	Plate Round 1 x 1
2	4085c.dat	Black	Plate 1 x 1 with Clip Vertical (Thick U-Clip)
1	4274.dat	Black	Technic Pin 1/2




Tommy Williamson is no stranger to *BrickJournal*, having been featured previously for his Jack Sparrow miniland scale figure. Since then, he has gone farther into building, making some remarkable *Star Trek* props and other models. He's now doing a column for *BrickJournal*: DIY Fan Art. Here, Tommy

takes a little time out from his busy schedule at BrickNerd.com to make a model of his choosing for the magazine.

## Design and Instructions by Tommy Williamson

### About this issue's model:


"When I learned the theme for this issue was trains, I thought of two things: A Disney train (very tempting) and the Bat-Train. *The LEGO Batman Movie* was awesome, but what's more awesome is my friend Paul Lee got to work on the film as a designer. One of his designs was the Bat-Train, so naturally I went with that. I'd like to thank Paul for helping me get it right, since the reference in the movie trailer is a little hard to see. His tips and feedback were invaluable." 

Qty	Part	Color	Description
2	4477.dat	Black	Plate 1 x 10
2	4589.dat	Black	Cone 1 x 1
1	6111.dat	Black	Brick 1 x 10
6	6134.dat	Black	Hinge 2 x 2 Top
3	6541.dat	Black	Technic Brick 1 x 1 with Hole
3	11477.dat	Black	Slope Brick Curved 2 x 1
2	15332.dat	Black	Fence Spindled 1 x 4 x 2 with 4 Studs
1	30039.dat	Black	Tile 1 x 1 with Groove
1	30162.dat	Black	Minifig Binoculars with Round Eyepiece
4	30503.dat	Black	Plate 4 x 4 without Corner
1	41769.dat	Black	Wing 2 x 4 Right
1	41770.dat	Black	Wing 2 x 4 Left
1	43722.dat	Black	Wing 2 x 3 Right
1	43723.dat	Black	Wing 2 x 3 Left
4	50746.dat	Black	Slope Brick 31 1 x 1 x 0.667
16	85984.dat	Black	Slope Brick 31 1 x 2 x 0.667
5	87580.dat	Black	Plate 2 x 2 with Groove with 1 Center Stud
16	99780.dat	Black	Bracket 1 x 2 - 1 x 2 Up
6	99781.dat	Black	Bracket 1 x 2 - 1 x 2 Down
2	3062b.dat	Light Bluish Gray	Brick 1 x 1 Round with Hollow Stud
1	4274.dat	Light Bluish Gray	Technic Pin 1/2
2	87994.dat	Light Bluish Gray	Bar 3L

# You Can Build It

## Railroad Hand Car

*Design and Instructions  
by Cale Leiphart*

The Railroad Hand Car or “Pump Car” is a simple track maintenance vehicle consisting of a platform built on 4 flanged railroad wheels and propelled by hand power. The rider or riders pump a beam on the car and the motion is transmitted through a system of rods, cranks, and gears to the wheels. The hand car was developed around the late 1850s and early 1860s. The average hand car could carry 4 to 6 track maintenance workers, called a Section Gang, who were responsible for performing maintenance on a section of the railroad’s track, usually 10 miles. The section gang would use the hand cars to inspect track for problems, and to haul tools and supplies out to areas along the line where repairs may be needed. 

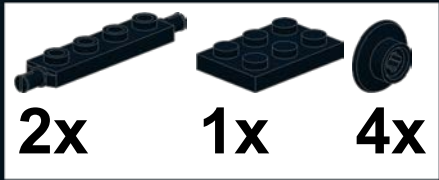


### Parts List (Parts can be ordered through Bricklink.com by searching by part number and color)

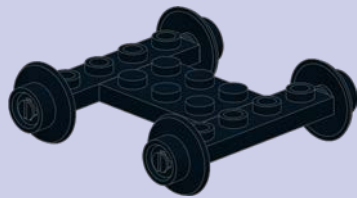
Qty	Part	Color	Description
4	2420.dat	Red	Plate 2 x 2 Corner
2	3020.dat	Red	Plate 2 x 4
2	3069b.dat	Red	Tile 1 x 2 with Groove
2	3710.dat	Red	Plate 1 x 4
2	3794b.dat	Red	Plate 1 x 2 with Groove with 1 Center Stud
4	4735.dat	Red	Brick 1 x 1 x 2/3 Round with Bar and Clip Vertical
2	6541.dat	Red	Technic Brick 1 x 1 with Hole
8	60478.dat	Red	Plate 1 x 2 with Handle on End
2	63864.dat	Red	Tile 1 x 3 with Groove
2	87079.dat	Red	Tile 2 x 4 with Groove
2	2489.dat	Reddish Brown	Barrel 2 x 2 x 1.667
1	3841.dat	Dark Bluish Gray	Minifig Pickaxe
1	2412b.dat	Black	Tile 1 x 2 Grille with Groove
4	2926.dat	Black	Plate 1 x 4 with Wheels Holder
1	3021.dat	Black	Plate 2 x 3
2	3069b.dat	Black	Tile 1 x 2 with Groove
1	3837.dat	Black	Minifig Shovel
1	4522.dat	Black	Minifig Tool Mallet
2	4697b.dat	Black	Technic Pneumatic T-Piece - Type 2

Qty	Part	Color	Description
1	30374.dat	Black	Bar 4L Light Sabre Blade
8	50254.dat	Black	Train Wheel Small with Notched Hole
2	59230.dat	Black	Minifig Mechanical Arm Straight
4	76263.dat	Black	Technic Flex-System Hose 3L (60LDU)
1	604547.dat	Black	Minifig Tool Hammer with 3-Rib Handle
1	604548.dat	Black	Minifig Tool Oilcan with Ribbed Handle
1	604550.dat	Black	Minifig Tool Screwdriver with Wide Head and 3-Rib Handle
1	604551.dat	Black	Minifig Tool Open End Wrench with 3-Rib Handle
1	604615.dat	Black	Minifig Tool Socket Wrench with Ratchet and 3-Rib Handle
1	4006.dat	Light Bluish Gray	Minifig Tool Spanner / Screwdriver
2	4865b.dat	Light Bluish Gray	Panel 1 x 2 x 1 with Rounded Corners
4	6231.dat	Light Bluish Gray	Panel 1 x 1 x 1 Corner with Rounded Corners

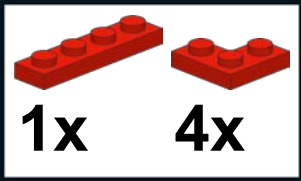
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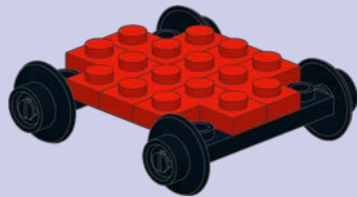
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**2**



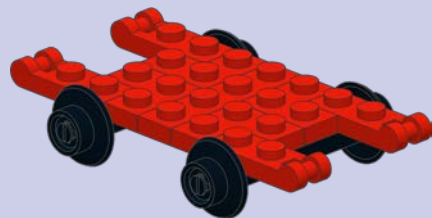
1x      4x



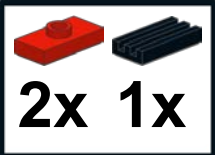
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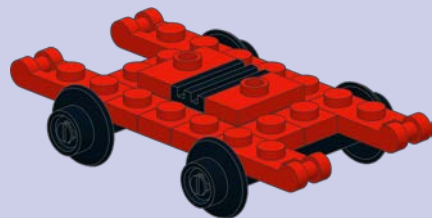
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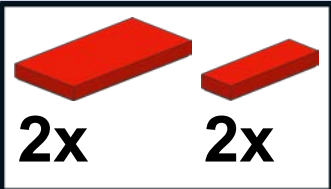
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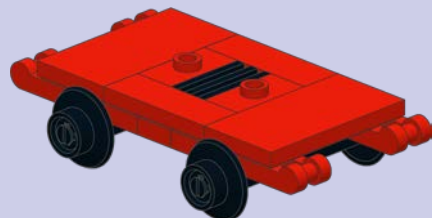
2x    1x



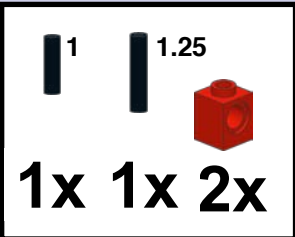
**5**



2x      2x

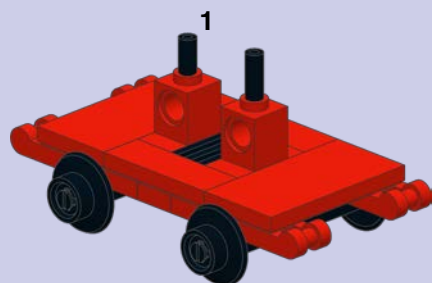


**6**



1x    1x    2x

Cut one tube to the length of a 1 stud plate. Cut another to 1.25 stud length.



 1 stud       1.25 stud



## The Norfolk & Western's Big Steam Freight Haulers: Class A and Y6b

*Article and Photography by Cale Leiphart*

These two locomotives, the Norfolk & Western's Class A and Class Y6b are my latest big articulated locomotives. These two builds have their genesis in my desire to update an older build of the Y6b I had built several years ago, and in a rare opportunity to build LEGO models for a commission.

My original model of the Y6b was my first attempt at an articulated locomotive, a locomotive type with two sets of driving wheels, pistons and running gear that articulate in the center to help the long locomotive cope with tighter curves. The Union Pacific "Big Boy" is probably the most famous of this type. At the time I built my original Y6b in 2008, I was dissatisfied with the articulated style engines from other builders. The majority of them seemed too compromised, too out of scale in relation to the real prototypes they were based on, and too lacking in detail. I felt I could build a better example, and for the most part I did. It was one of the first LEGO locomotive models to successfully use Power Functions for power instead of the traditional 9v, before even LEGO's own Emerald Night set came out. It stuck to scale

pretty well, had nice detail, and was even the first ever winner of Best Train at Brickworld in 2009. It proved that Power Functions could not only work in trains, but could do things 9v couldn't do when it smashed the competition at the train pull completion at Brickworld '08. I felt I had done what I set out to do.

Fast forward to 2016, eight years later, and the LEGO train hobby has advanced in skill and quality immensely. I had since built two more articulated type locomotives, a Baltimore & Ohio EM-1 2-8-8-4, which was an advancement of my ideas employed in the Y6b, and a Western Maryland Challenger 4-6-6-4 which I built for a competition between myself and my good friend Nate Brill. Each one of these was a progressively better model than the last. But my old Y6b was starting to show its age; it ran well, but the quality and detail of the models being built by LEGO train fans today was so much more advanced. Better parts, and better techniques have come out since the old Y was built. It was time to build a new Y6b locomotive—a build with all the best parts available and all the accumulated knowledge of building trains that I could throw at it.



Michael Gale's Class 73 "The Royal Alex".

Attend any conventional model train show today and you'll notice one thing right off the bat—the entire room is filled with realistic sounds of locomotives and trains. For many years now, traditional scale modelers have been implementing sound systems in their model locomotives. Doing so adds a whole new level of realism to a train layout. Steam locomotives chuff along at proper speeds, accompanied by the sounds of a whistle, a bell, and various other component sounds which can be adjusted to suit the operator's desire.

So what about LEGO trains? Has sound ever been put in them?

In a word: yes. However, these models have been few and far between. Train builders such as Carl Greatrix (the man behind the Caterham 7 set), Michael Gale, and Rob Hendrix have each implemented their own sound systems in some of their locomotives. Carl and Michael each are experienced with traditional scale model trains and the electronics behind them. I had the opportunity to check out one of Michael's sound-equipped locomotives at Brickworld Chicago 2015.

While it is a truly impressive model, the sound system he installed and the control he used was pretty over my head. On the other hand, Rob Hendrix of LifeLites has his own solution. Rob uses the Bluerail controller and a Bluetooth speaker in his Davenport steam locomotive. Another very impressive model, but it requires the use of a Bluetooth-enabled phone to operate the sound. Rob tells me it works well, has good range, and does not require a line of sight, given the Bluetooth operation. So, if you don't mind using your phone, this may be a better option.

## Taking LEGO Trains a Step Farther: Sound

*Using a Dallee system and LEGO Power Functions you can add sound to your train! Let's find out how!*

*Article by Glenn Holland*

Rob Hendrix's Davenport steam locomotive.



Building a New LEGO®  
Train Publication



# BMR

## Brick Model Railroader

*Article, Photography  
and art by Cale Leiphart*

# BRICK MODEL RAILROADER

BUILDING THE LEGO® TRAIN HOBBY



Brick Model Railroader's home page.

Have you ever looked at the LEGO® community and seen a hole that you thought you could fill? Well, *Brick Model Railroader* is my attempt at filling this hole. If you're a LEGO train fan, you may have heard about it. To put it simply, *Brick Model Railroader*, or *BMR* (as we sometimes refer to it) is a LEGO train news and information resource. But to understand what *BMR* is and why I thought it was needed, we must follow the story back to its beginning. *Brick Model Railroader* launched on December 30, 2016, but its story really starts years earlier.

The seed for *Brick Model Railroader* was planted with the end of another LEGO train publication, *RAILBRICKS*. Created by Jeremy Spurgeon and friend Mark Peterson, *RAILBRICKS* was a LEGO train fan magazine produced from late 2007 to 2014 with 15 issues released in total. As a magazine devoted to the LEGO train hobby, *RAILBRICKS'* mission was to bring new builders to the LEGO train hobby as well as inspire the current LEGO train fan with articles on a broad range of subjects from builders to clubs, and reviews to in-depth articles on building techniques.

My first encounter with *RAILBRICKS* was at Brickworld 2007 when I was asked to write an article for the first issue of the magazine. It was the first time I had been asked to write an article for any publication. I was both excited and honored, as my train building had progressed to the level that I was now able to share my knowledge with others in the hobby and help make them better builders. I would go on to become a regular contributor to the magazine throughout its run. I really enjoyed both reading and contributing to *RAILBRICKS*. It was a go-to source for the best the LEGO train community had to offer and an inspiration for us hobbyists to push the LEGO train hobby to new levels of awesome. But *RAILBRICKS* would eventually come to an end. Its creator and editor Jeremy Spurgeon left the LEGO hobby after a few years to concentrate more on family and career. Elroy Davis stepped in to take over editing the magazine, and we contributors tried to do what we could to help, but without Jeremy, the magazine lost momentum. Losing momentum soon brought the magazine to a halt. The last issue came in the summer of 2014.

*RAILBRICKS* was always a volunteer effort for everyone involved. It was a labor of love, but not a job. It was something that we devoted free time to when we could. Producing a magazine of the quality level we wanted was a huge effort, and as contributors moved on, it became harder to gain new blood due to inactivity; the magazine soon became more than those left could maintain. Seeing *RAILBRICKS* end was hard for all us involved. We took pride in knowing that *RAILBRICKS* was a focal point for the LEGO train community. It was a repository for all the great knowledge of train building. Not having





Early concept sketch for the BMR logo from Glenn Holland when it was still only Brick Railroader.

again on this new venture. I wanted to cover the people who make the hobby great, the clubs who push boundaries, as well as the great train models produced by builders. I want this new publication to be a hybrid of fan magazine and hobby blog.

So now I knew what I wanted to do. I didn't have a name yet, or know how I was going to create it, but I had the idea. I also knew I needed help, so I turned to some friends. My first task was to flesh out these ideas I had. I wrangled in Elroy Davis, Anthony Sava and one of my fellow PennLUG friends Glenn Holland. We discussed my ideas and added new ones. We all agreed from the start that this effort needed to be simple. We didn't want to stretch ourselves thin by doing too much. No magazine, no hosting instructions, no forum—just a news blog dedicated to LEGO trains. The best MOCs, the best techniques, info on new sets and other products for trains, train events, building inspiration, etc.

It needed to be easy to navigate for the reader, and easy to write for the authors. We could always add other features later if we had the resources, but our main focus should always be the articles.

Oh, yeah—did I mention we finally had a name? We couldn't call it *Super Awesome LEGO Train News* because of LEGO trademark issues, and mostly because it was too long. Seriously though, we knew we wanted to convey that this was LEGO-related in the title. The most obvious way without stepping on the LEGO Group's trademarks was to use Brick in the title. And as this was train-related, *Brick Railroader* soon emerged as a front runner for the name. But it was Elroy who added the final piece, "Model" to *Brick Model Railroader*. It felt right. *BMR* makes for a good abbreviation, and we all like the idea of emphasizing the modeling railroading aspect of the hobby.

With the plan for what we wanted to do in place and a name to do it under, the next problem was how to do it. This new publication was going to be web-based. I know nothing about web design though, and still probably don't. But I had another friend I could turn to for help, James Catagnus. James is also a PennLUG member and more importantly to this story, he was the person behind creating and maintaining the PennLUG website. James' immediate suggestion was to use Wordpress for building the site. Wordpress is a free and open-source content management system for creating web sites and blogs. It features a plug-in architecture and a template system, and it's what James used to create



The BMR boxcar has become our mascot.



Some of the people who have been involved with BMR, left to right: Joe Meno (advice and guidance), Cale Leiphart (creator), Nate Brill (writer), Glenn Holland (writer and social media), Josh Sanders (moral support).



The BMR boxcar being switched around Red Lion train station.



*PennLUG's layout begins to take shape before a show.*

# The PennLUG Lines— Trains and More!

**A look at some of the finest scale LEGO  
Train models and the layout they run on.**

*Article by Glenn Holland*

*Photography provided by PennLUG*

PennLUG, or The Pennsylvania LEGO Users Group, goes much further than a typical LUG. Several of the most advanced and well-known train builders call PennLUG their home club, and it is for that reason that the PennLUG train layout is regarded as one of the best in the nation.

It all started with the efforts of Cale Leiphart, who founded PennLUG in 2005. Since then, the layout has grown rapidly. Currently, the “PennLUG trains” crew consists of Cale, Nate Brill, Josh Sanders, Glenn Holland, and Nate Robinson. This group of train and LEGO-loving individuals continue to put countless hours into the layout, whether it be adding more trains, building scenery and buildings, or running trains when the layout is put together. All PennLUG members enjoy hanging out at the layout and watching trains go by, but for the die-hard train builders, it’s a little more special, as none of them have a layout at home they can run trains on. Therefore, having the layout put together is always a special and thoroughly enjoyed time.

Some of the more notable improvements to the layout include the introduction of “grand curves,” a total redesign of the railyard, and the addition of a roundhouse and locomotive servicing facility. Of course, these are all changes specific to the layout itself. There are almost always new trains to run every time the layout is assembled.



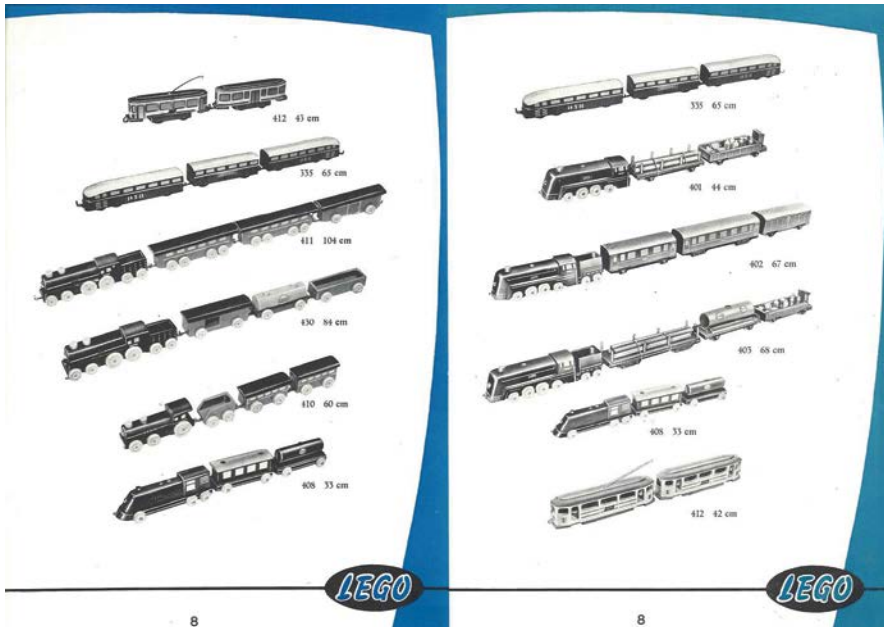
A wooden train sold in the '50s. Photo by Richard Bintanja.

If you grew up with a love for LEGO trains, do you remember what drew you in? For me, it started way back in the early 1990s with the little awe-inspiring brochures and booklets that came in almost every LEGO set. As an adult, I'm still a huge fan of LEGO trains. As a student of history, I'm also interested in the evolution of the LEGO Group's long line of rail transportation toys. Advertising has played an integral role in fleshing out this story by providing insight into how LEGO trains were marketed, who they were marketed to, and the impact of product innovations on this beloved theme.

### From Wood to Plastic

In the beginning, there was wood! By 1932, LEGO founder Ole Kirk Christiansen turned to making wooden toys for a living after his carpentry business fell victim to the Great Depression. It was during the 1930s that the first official LEGO trains made their debut as wooden pull toys.

Pages from a '50s retailer catalog showing wooden trains. Photo from [www.miniland.nl](http://www.miniland.nl).



# All Aboard the Advertising Train!

## A History of LEGO Train Advertising through the 9-Volt Era

Article by Matthew Hocker

Photography and Art Provided by Matthew Hocker, except where noted.

1957 ad for LEGO toys. Photo from [www.miniland.nl](http://www.miniland.nl).





Twice as many AFOLS, vendors, and visitors came to Japan BrickFest in 2016.

## Event Report: Japan Brick Fest 2016

Article by Will Galbraith (@willgalb)  
Photography by Takamichi Irie (@legomichiiiiii)



Sachiko Akinaga's Manmaru.

There Japan goes, back at it again with Japan Brick Fest 2016! Japan Brick Fest, the country's biggest fan-held LEGO event, was hosted by the Kansai LEGO® User Group (KLUG) and held on June 4th and 5th at the Black Box Theater & Gymnasium of Canadian Academy, Kobe for its second year in a row. Now when you think "LEGO event", seeing models built by fans of the brick often comes to mind. Surely there was no shortage of LEGO creations at Japan Brick Fest, but what also sets it apart from all the other LEGO events I've visited was the emphasis on games, activities, and entertainment. In addition to all the bricks and games were live musical performances by The Ofuromates (Bath Mates), a variety of renditions of popular songs, and a special course "Everything Is Awe"

The event was separated into two main areas: the Theater and the Gymnasium. Like last year, the Theater held the main stage where the live performances and other games were held, and the Gymnasium featured three large collaborative displays by the group Sakura. Plenty of other models were on display in the open space in this location and the much larger gymnasium and their creations were located pretty much packed in there, so there was just so much to see.

Among the games available were contests for Mixel prizes, Star Wars Competition, Mindstorm of the Future, and one, the Brick Master Competition. Over the two days, a special raffle was held where you were collecting all the stamps from the event. Five lucky winners were chosen to win a mystery prize (you guessed

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### BRICKJOURNAL #46

**LEGO TRAINS!** Spotlight on train builder CALE LEIPHART, a look at the train layouts and models from the PENNSYLVANIA LEGO Users Group (PENNLug), BRICK MODEL RAILROADER (a new LEGO Train fan website that launched this year), and more locomotive action! Plus: Minifigure customizing from JARED K. BURKS, step-by-step "You Can Build It" instructions by CHRISTOPHER DECK, & more!

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