

RAILBRICKSTM

BRICK RAILROADING MAGAZINE

INSIDE:

- TIM GOULD'S WESTERN LOCOMOTIVE
- AN INTERVIEW WITH GLENN HOLLAND
- UNDERSTANDING TRACK GEOMETRY

...AND MORE!

KEEP THE JUICE FLOWING

with David Stannard





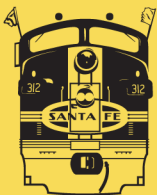
Adult, women's
& kids sizes!

BrickShirts
.com

WWW.RAILFONTS.COM

Over 70 Different Fonts

RAILROAD LETTERING
HERALDS
RAIL ARTWORK
TRAIN SILHOUETTES



GREAT FOR DETAILING, DECALS, BOOKS, NEWSLETTERS, WEB PAGES, ETC.

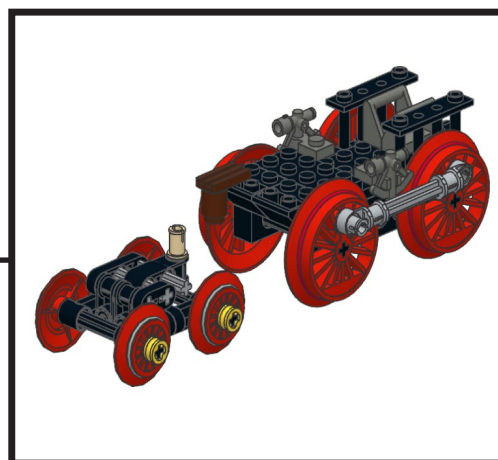
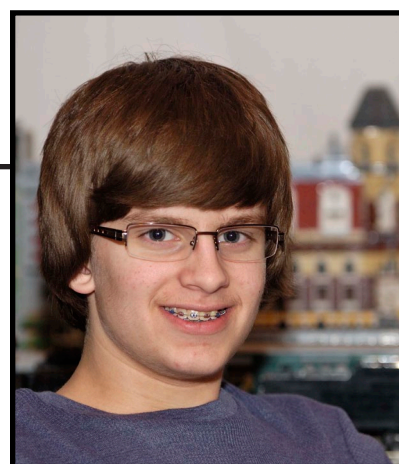
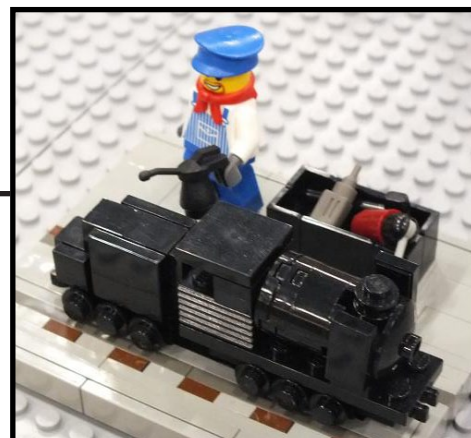


EASY CUSTOM ARTWORK- THEY WORK JUST LIKE ANY OTHER FONT



In This Issue

All Aboard!	4
Ciney, Belgium	6
Little Train	9
Track Geometry	21
A Teen's Perspective	26
Festi'briques 2011	29
Keeping The Juice Flowing	35
Western Locomotive	39
Trainspotting	62



The RAILBRICKS Team

Senior Editor:

Elroy Davis

Staff Editors and Writers:

Steve Barile

Benn Coifman

Tim David

Didier Enjary

Eric Kingsley

Cale Leiphart

Holger Matthes

Mark Peterson

Larry Pieniazek

Anthony Sava

Jordan Schwarz

Jeremy Spurgeon

Content Contributors:

Tim Gould

Glenn Holland

Didier Malon

Vincent Meeuw

David Stannard

Jean-Gérald Villari

Copy Editing/Proofing:

Steve Jackson

Copyright © 2007-2012 RAILBRICKS

Permission is granted to copy, distribute and/or modify this document under the terms of the GNU Free Documentation License, Version 1.2 or any later version published by the Free Software Foundation; with no Invariant Sections, no Front-Cover Texts, and no Back-Cover Texts.

LEGO® is a registered trademark of the LEGO Company, which does not sponsor, authorize or endorse this publication.

All other trademarks, service marks, and copyrights are property of their respective owners.

ALL ABOARD!

One of my favorite pastimes is flipping through old model-railroading magazines. The oldest magazines in my collection are from the late 1960s. Combining those magazines with the ones that I subscribe to today, I have a fairly decent span of time, and a lot of articles, to review. One trend seems to be consistent. Paraphrasing the more alarmist views, it goes something like this: “We’re old and dying off! How do we keep the hobby going? We need to reach out to the youth!”



I smile every time I read one of these articles or letters to the editor. Obviously, if the writers of the 1960s were stating this, and the hobby is still going strong in the 2010s, the hobby isn’t dying off. Instead, it seems, the model-railroading hobby has a “dark ages” trend, similar to the LEGO hobby, with modelers emerging in their later years.

While putting this latest issue of RAILBRICKS together, the team started talking about our own “dark ages”. We’re beginning to notice a trend amongst ourselves. In contrast to the model-railroaders, who worry that their demographic is growing too old, we’re noticing that our hobby is staying younger, with older builders falling into a second dark-age. The sweet spot for our hobby seems to fall into the range of builders in their mid-twenties, emerging from their first dark age that was brought on by high-school and college, to builders in their mid-to-late thirties, who are starting to fall out of the hobby due to family and job commitments that eat up their free time. While I do know some builders in their 50s and 60s, I wonder if they are the exception, or if their lead will become the norm. In other words, will those of us falling into our second dark age come out on the other side as builders once again, or will the hobby perpetually be the realm of pre-mid-life crowd? As hobbies go, the adult LEGO® hobby is still fairly new, so we don’t yet have a lot of data to see a trend. It’ll be interesting to watch as the AFOL crowd grows older. Perhaps one day we’ll see three distinct stages of our hobby lives: TFOL, AFOL, and SFOL (Senior Fan of LEGO).

-Elroy

Instructions, Challenges, and Tips & Tricks have been categorized into the following levels:



Beginner

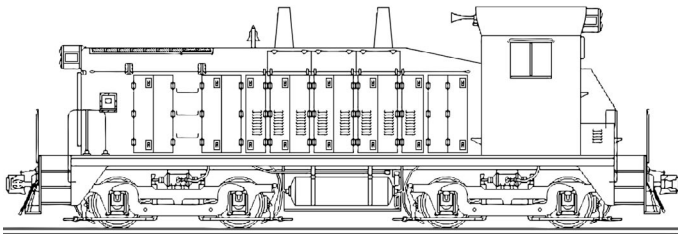


Intermediate



Advanced

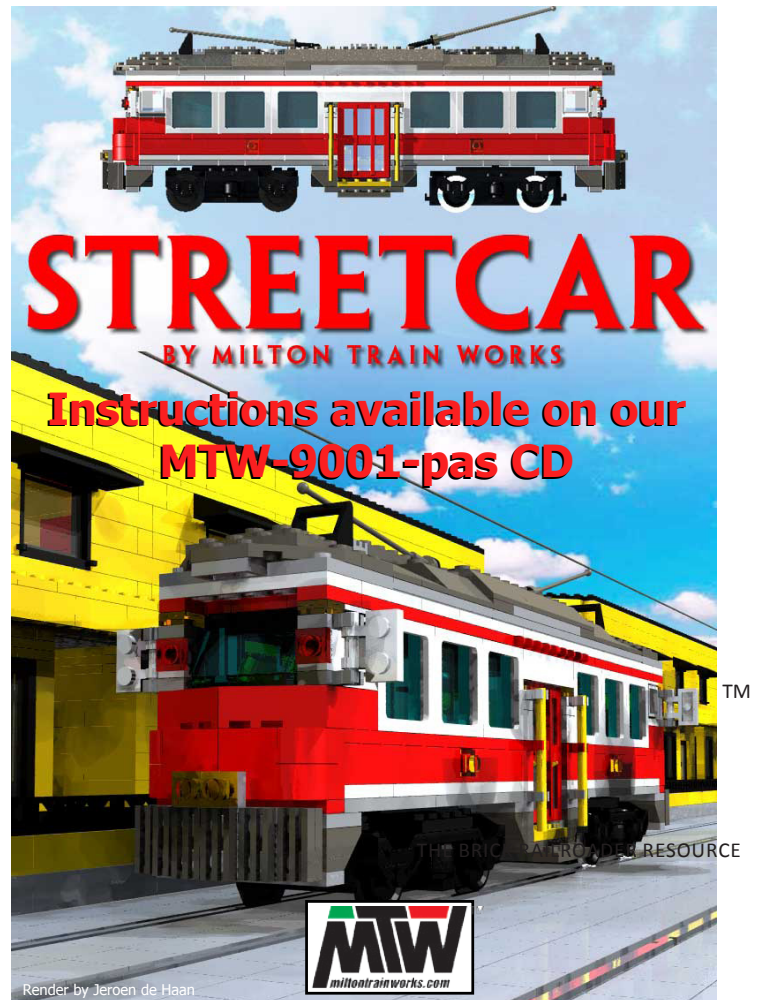
Your Free Source For Brick Railroading Information



 **RAILBRICKS**

- Read the Magazine
- Peruse the Blog
- Visit the Forums
- View the Galleries
- Download Building Instructions
- Post & View Upcoming Events

Visit RAILBRICKS.COM Today!



STREETCAR
BY MILTON TRAIN WORKS
Instructions available on our
MTW-9001-pas CD

Render by Jeroen de Haan

THE BRICK WAY TO THE RESOURCE

TM

*Have an idea for RAILBRICKS?
Here are some guidelines for
getting your article published in
an upcoming issue.*

Who may submit an article?

Anyone may submit articles for consideration by the RAILBRICKS staff. Submitted articles are reviewed and, if suitable, used in future issues of RAILBRICKS magazine.

People submitting articles do not need to be professional level writers. RAILBRICKS is a magazine for fans, by fans. We welcome articles from enthusiasts who build, collect, and play with LEGO® trains. When we evaluate articles, we look for quality in the content and the basic writing style. We also evaluate any photos that accompany the submission. Every article to be published is edited by the RAILBRICKS staff to increase readability if needed, and while basic grammar and spelling are expected, perfection is not necessary.

What sort of articles may be submitted?

Any material related to the creation, display, or collecting of LEGO trains is welcome. This includes articles about prototype trains or railroading locations that may spark inspiration, overviews of models that have been created, or step-by-step instructions for train models. While our focus is LEGO trains, articles about related items, such as modifying track with non-LEGO® elements, are also welcome. We are also interested in the overall LEGO train community, so articles about events, people, or clubs are also encouraged.

How long should articles be?

Submissions should be long enough to cover the article's topic, but short enough to hold the attention of the reader. In general articles should be between 750 to 3,000 words in length, and include any photographs or images that will accompany the text. In addition to images, any sort of source material that was used during the writing of the article, such as website URLs or book titles, should be included in order to give readers additional resources should they decide to read more about the topic outside of RAILBRICKS.

What if an article is over 3,000 words?

3,000 words is a guideline. If you have an idea for an article that may be over 3,000 words, please send us an outline or summary. We may decide that the idea warrants the extra space, or the article may be a good candidate for being printed in installments across multiple issues.

How should articles be prepared?

Articles should be typed in either a text document or e-mail, and should use proper grammar, punctuation, and spelling.

How are articles submitted?

Completed articles may be e-mailed to editor@railbricks.com. The text of the article may either be in the body of the e-mail, or added as a file attachment (Microsoft Word, OpenOffice Writer, text file, etc). Images to be included with the article should be submitted as separate attachments, and clearly named.

We can accept images in JPG, GIF, PNG, or TIFF formats. High resolution images, 300 DPI at least, are preferred as they will reproduce better than lower resolution images.

When will my article be printed?

Accepted articles will be included in future issues of RAILBRICKS. When the article is published depends on a number of factors including the amount of content already available to be printed, themes of specific articles, and article length. In short, there is no way to determine exactly when an article will be appear.

Does everything that gets submitted get published?

Unfortunately, no. While we will make an effort to publish what we can, it is not always possible to include everything.

Are authors compensated for their printed articles?

No one is paid for RAILBRICKS, including the editorial and writing staff. RAILBRICKS is an all-volunteer project, and as such, authors are not paid for the use of their material. Articles used by RAILBRICKS remain the property of their authors.

Ciney, Belgium

11-13th of November, 2011

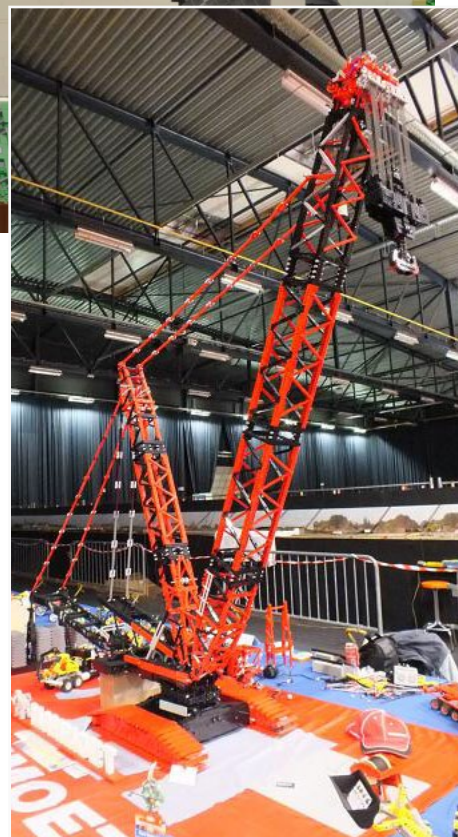
Article by Vincent Meeuw



Every year, during the weekend of the Armistice Day (Remembrance Day), a hobbyist event takes place at Ciney, Belgium. The event is not dedicated to the LEGO brick or railroad modeling, but a handful of Belgian and French adult fans of LEGO trains from FreeLUG took the opportunity to exhibit their latest creations.

We attended this event for the first time in 2009, and came back this year under the leadership of Richard Lemeiter (FreeLUG treasurer) and Jean-François Lacassaigne [1]. Jean Lemeiter attended the event and Vincent Patteyn and Joëlle Lacassaigne joined us as exhibitors. Ludo Soete [2] and Michel Bourgois lent some material (rail tracks).

The goal of such an event is to promote discussions between hobbyists of all kind and public of all ages. To this purpose, we exhibited a wide array of themes, including Technic with a huge Mammoet crane, and materials, old and brand new models, both official LEGO models and our own creations.



[1] Jean-François' participation at Fana'Briques is featured at RailBricks #10 , page 24.

[2] Ludo Soete previously contributed an article on *Emerald Night Improvements* in RAILBRICKS #7, page 31.



Organizers gave us a 48m² (57 yd²) space we fully covered in bricks. In the City / Train theme, a complete street featuring official Modular Buildings accompanied some traditional cottages in the Breton architectural style with dancers, musicians and revelers.

*Photos by Vincent Meeuw
and Vincent Patteyn*

<http://www.brickshelf.com/cgi-bin/gallery.cgi?f=488798>

<http://www.brickshelf.com/cgi-bin/gallery.cgi?f=489358>



Various rolling stock, electric and diesel engines of French, Belgian or American origin and dozens freight and passenger cars, also roamed the busy network of railtracks.

As usual, in the morning, to be assured the trains would run smoothly, we started the trains slowly and then, after a few laps, let them run with almost no supervision.



Prototype and LEGO model.

HLR77 (Class 77) of the National Railway Company of Belgium (SNCB/NMBS)



The train wreck

It was only after a while that I noticed the Santa Fe engine had lost two of its cars. A train on a side branch had moved unexpectedly causing a derailment.

Luckily, I had cranes and a few policemen, firefighters and paramedics to promptly set up a rescue scene.



We also set up a diorama inspired by the station and yard of the cities of Treignes and Mariembourg with a shed, a roundhouse, a water tower, a workshop, a coal yard and a pretty nice collection of 15 German (BR74, BR80, BR81, BR91, BR93, BR94) and French (040, 050 et 150X) steam engines. Some of these engines are in a work-in-progress condition and helped us to illustrate our explanations on building techniques.



The real roundhouse - front view



Rear view of the roundhouse with the water tower




Top and front view of the LEGO model of the roundhouse.



The visitors, about 9,000 during the three days, were curious and often talked to us. They asked where they could find old sets and models and how to buy spare parts. Others were curious about the various building techniques.

AFOLs are now not totally unknown to the other non-LEGO exhibitors, and they no longer reacted as if we were adults "playing" LEGO as kids do but, more and more, as connoisseurs who can spot new items.

To conclude, I'd like to underline how much a visitor's book is something you should bring at an exhibition for everyone to leave a comment, as feedbacks is encouraging. 



Vincent Meeuw, Vincent Patteyn, Jean Lemeiter, J-F Lacassaigne and Richard Lemeiter in front of the train shed.

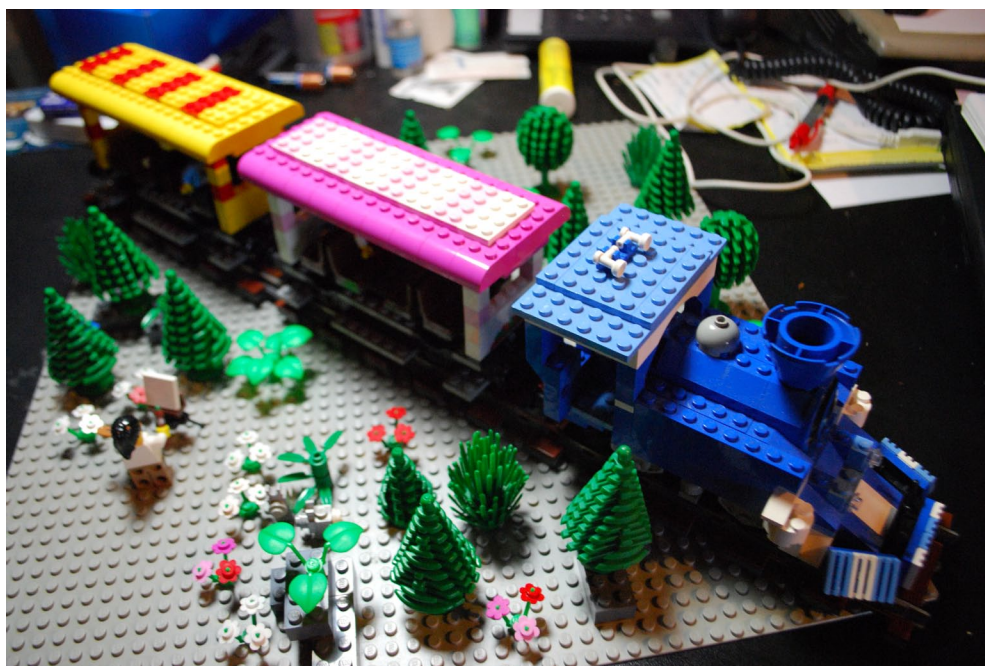


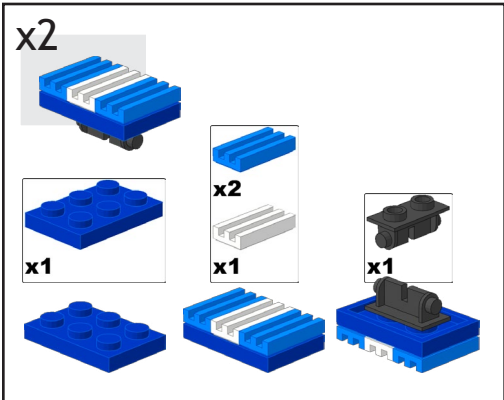
LITTLE TRAIN

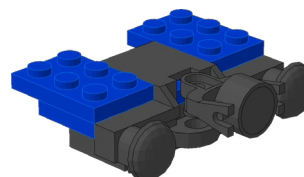
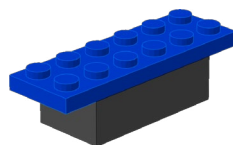
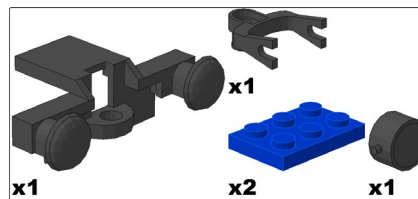
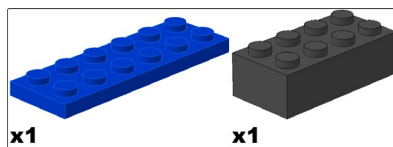
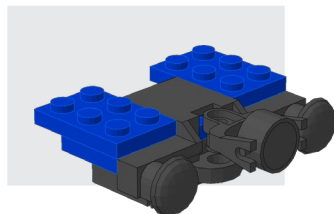
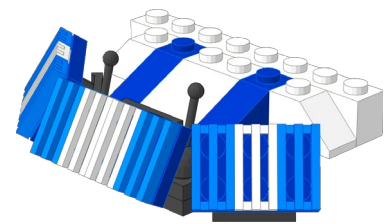
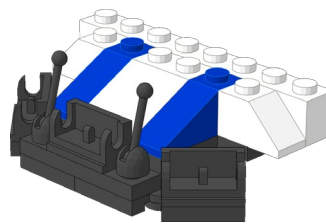
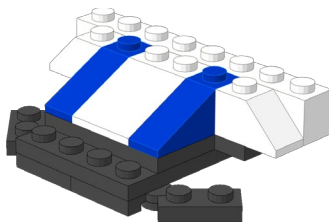
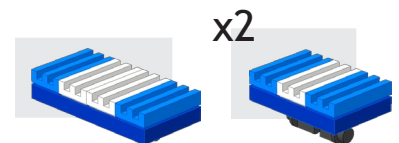
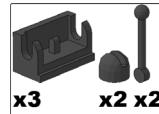
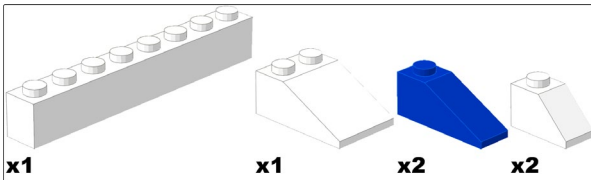
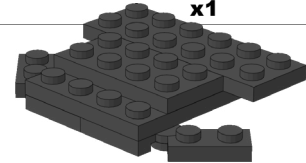
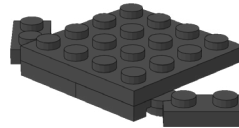
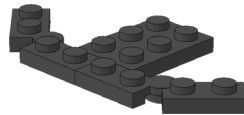
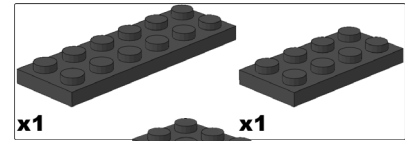
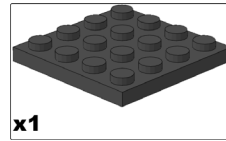
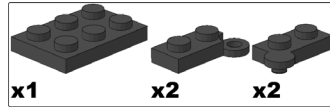
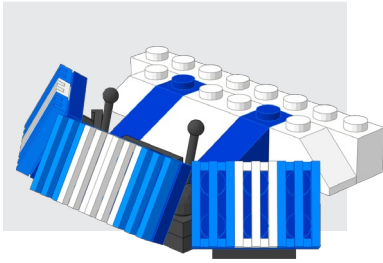


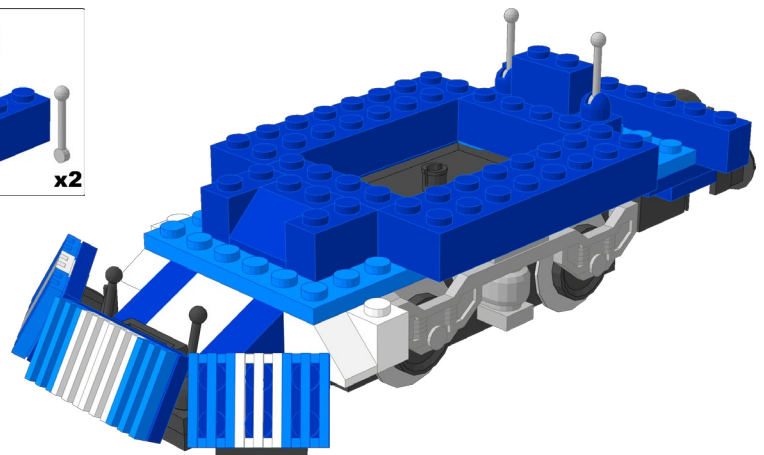
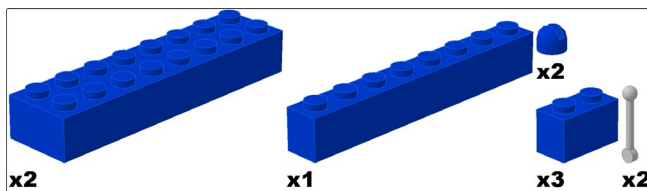
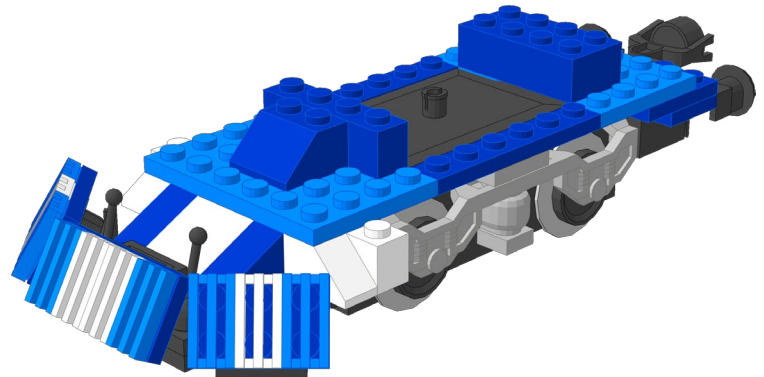
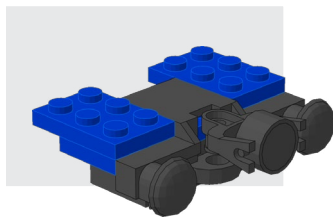
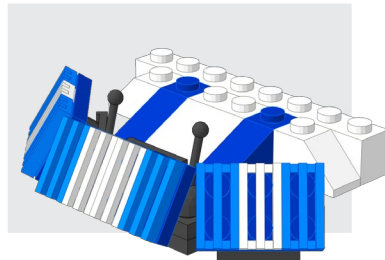
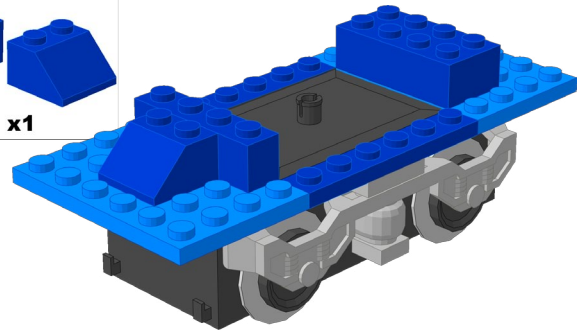
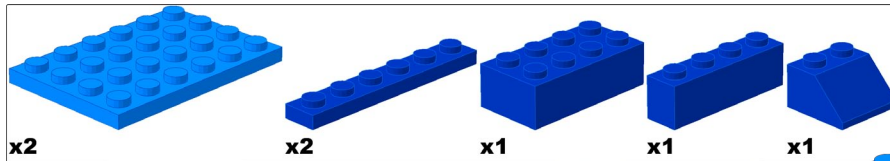
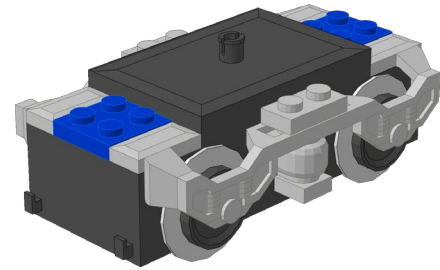
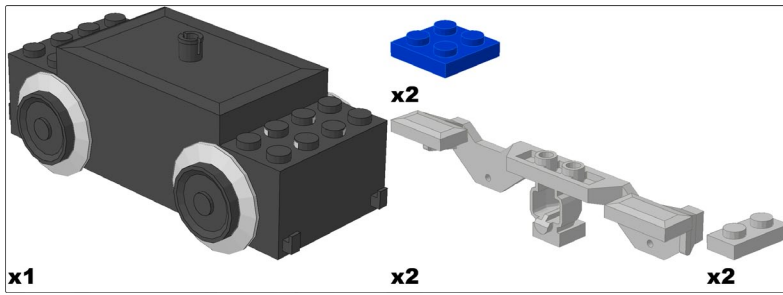
Design by Didier Malon

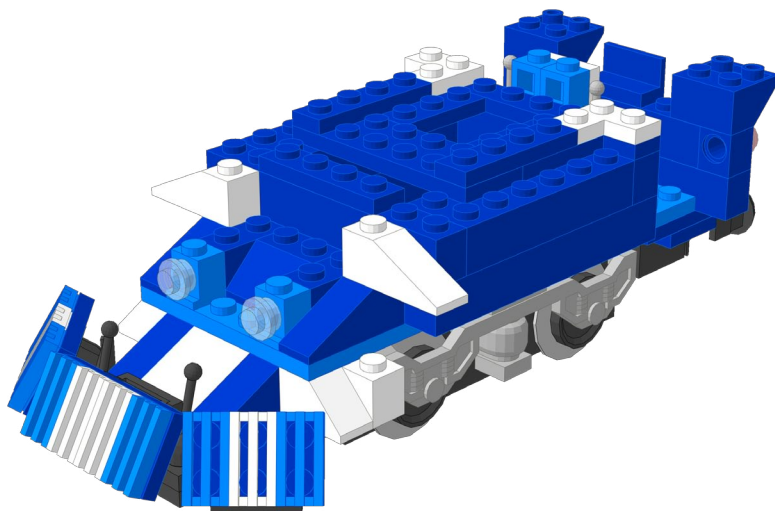
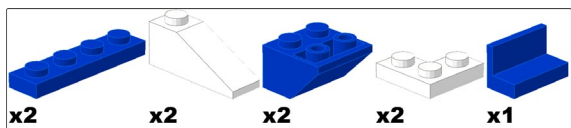
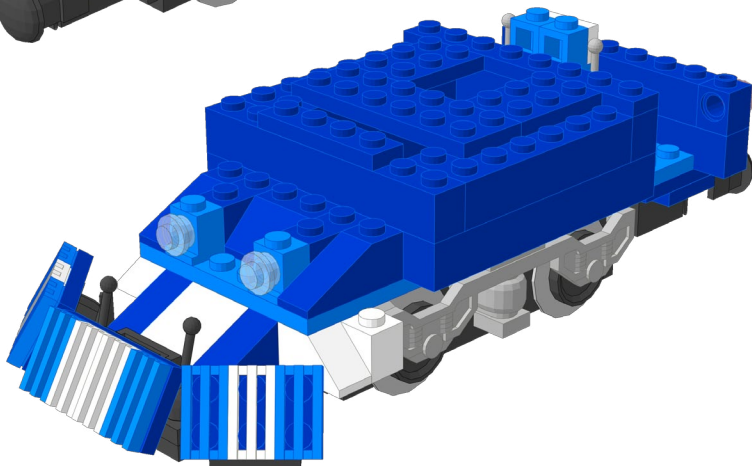
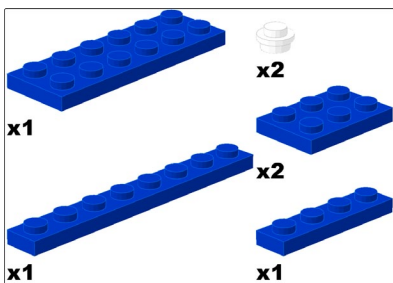
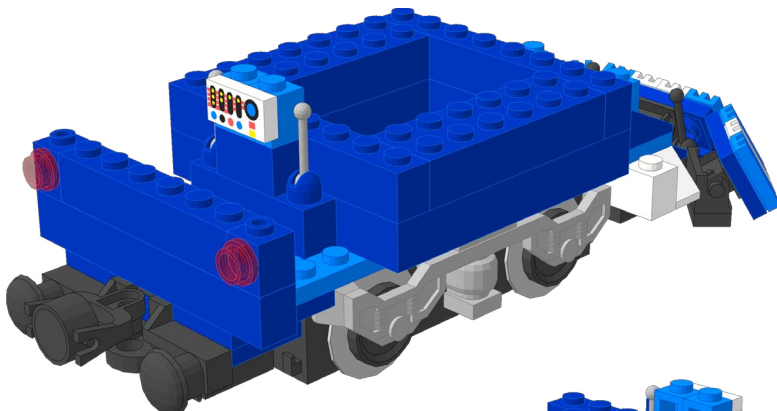
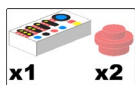
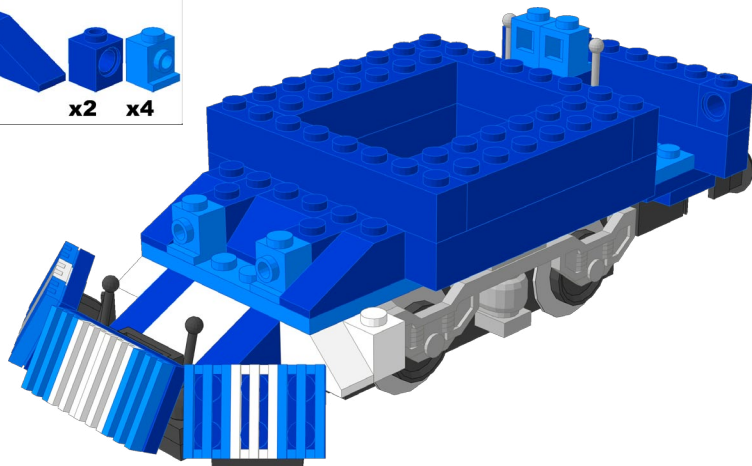
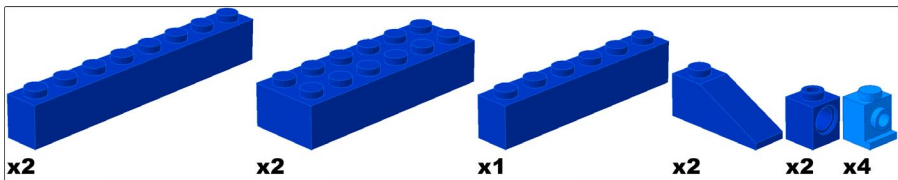
This small train has been purposely designed for young kids as an example of what can be done with fancy colors and basic bricks and plates. It has had great success at exhibitions because of the colors and the minifigs that visitors can see in the cars.

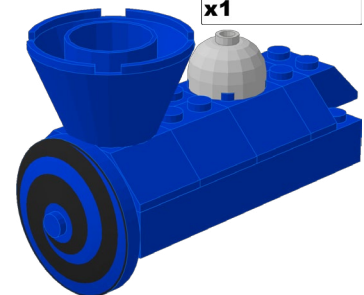
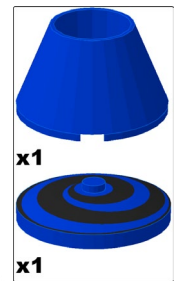
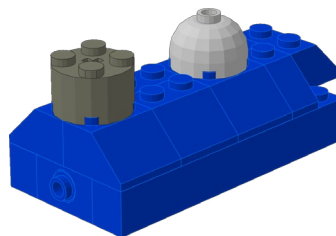
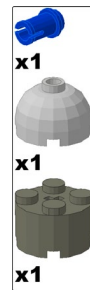
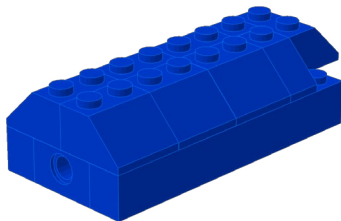
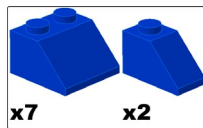
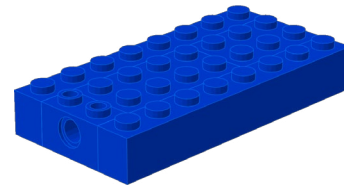
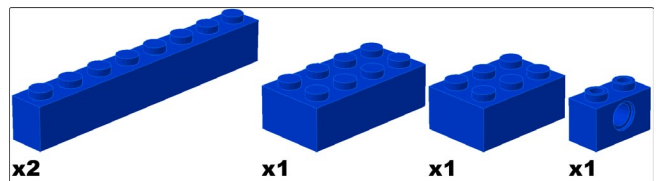
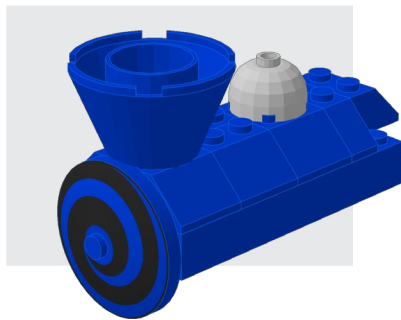
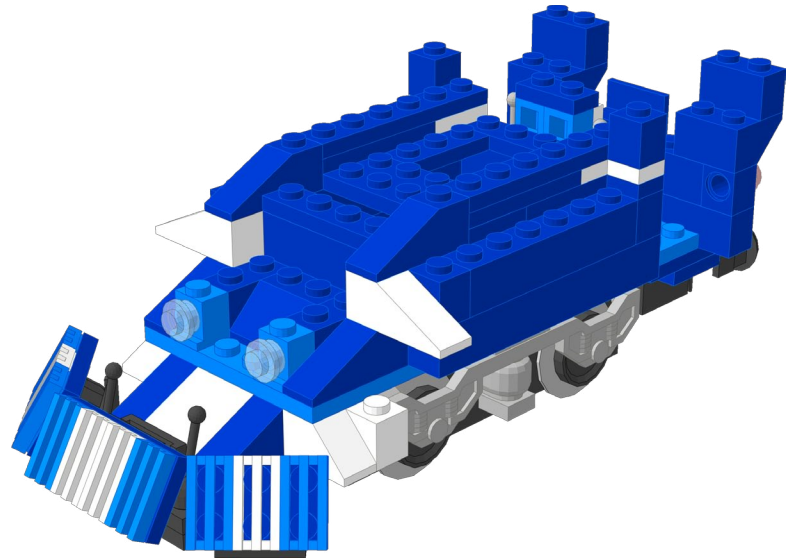
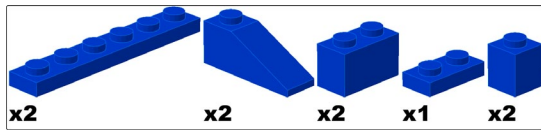


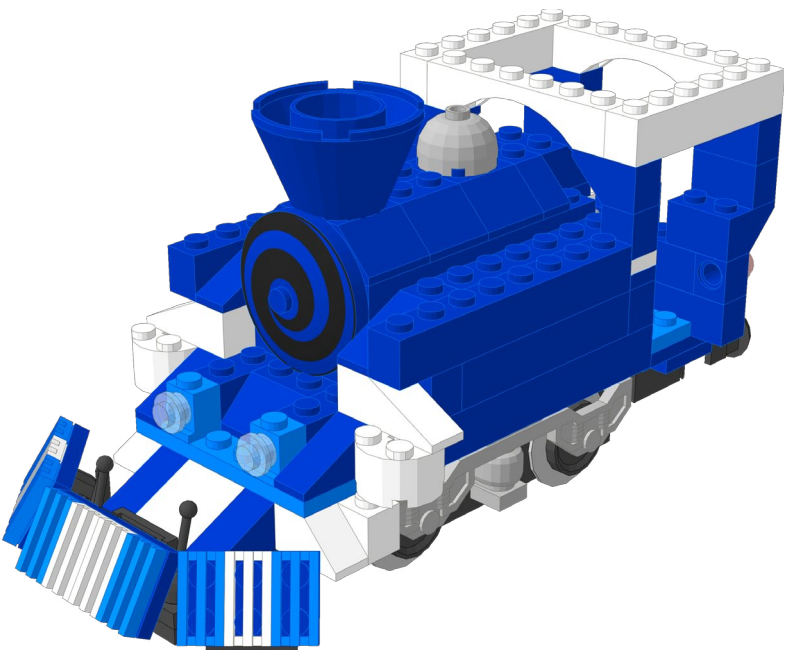
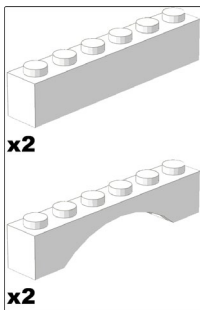
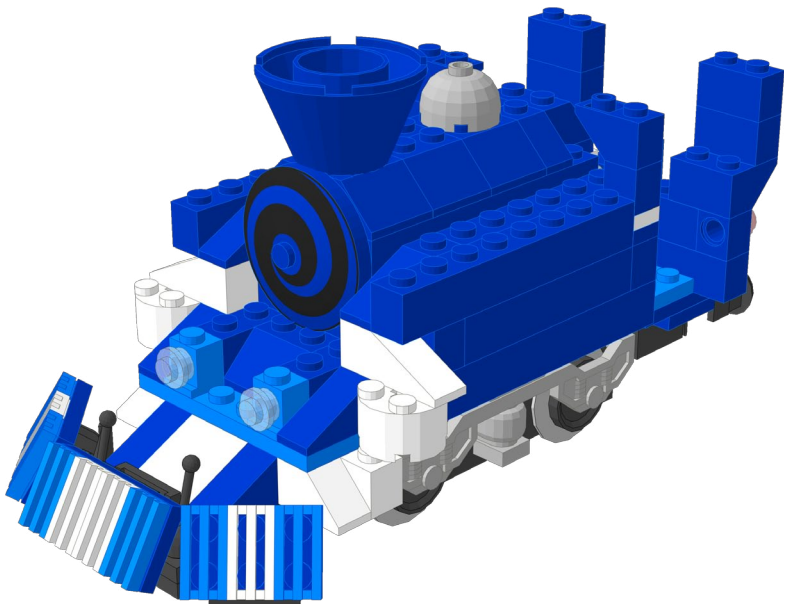
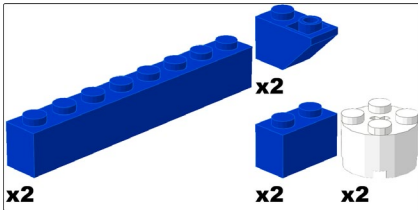
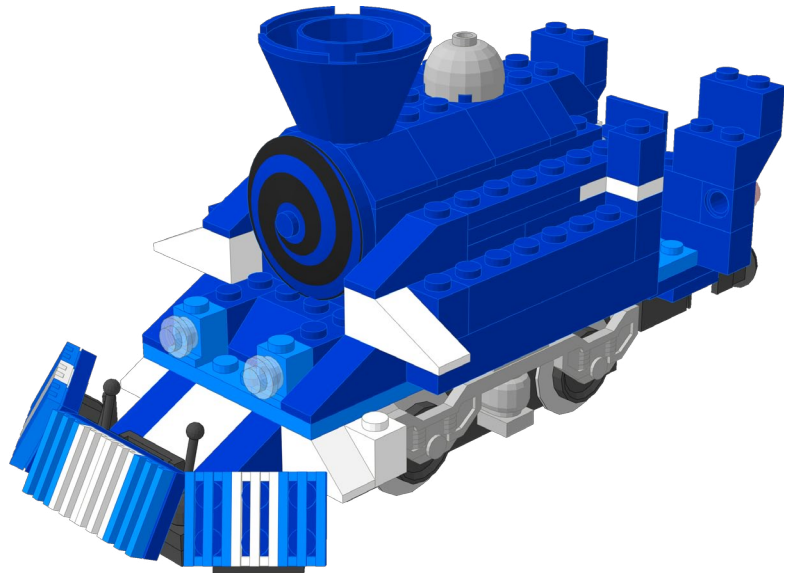
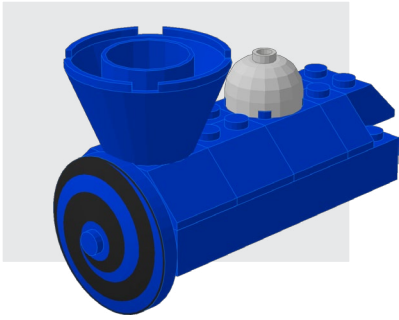


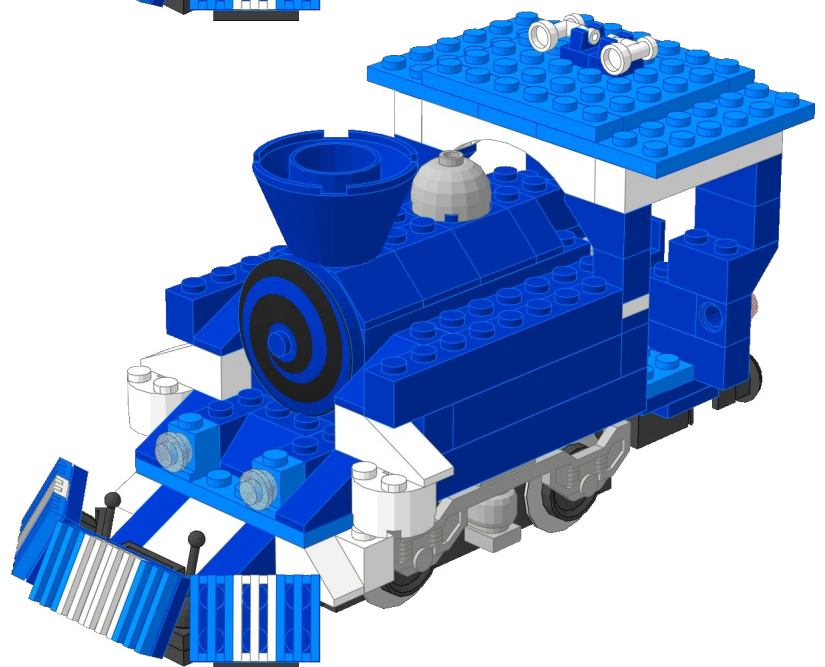
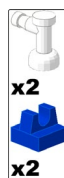
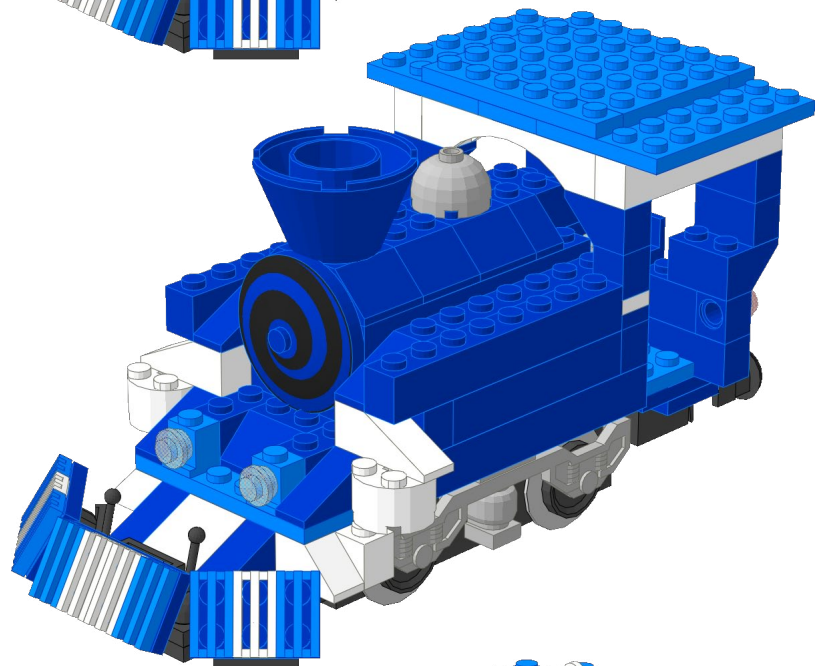
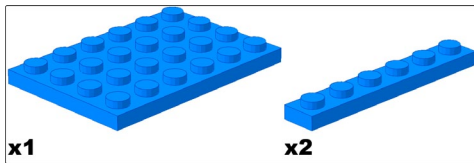
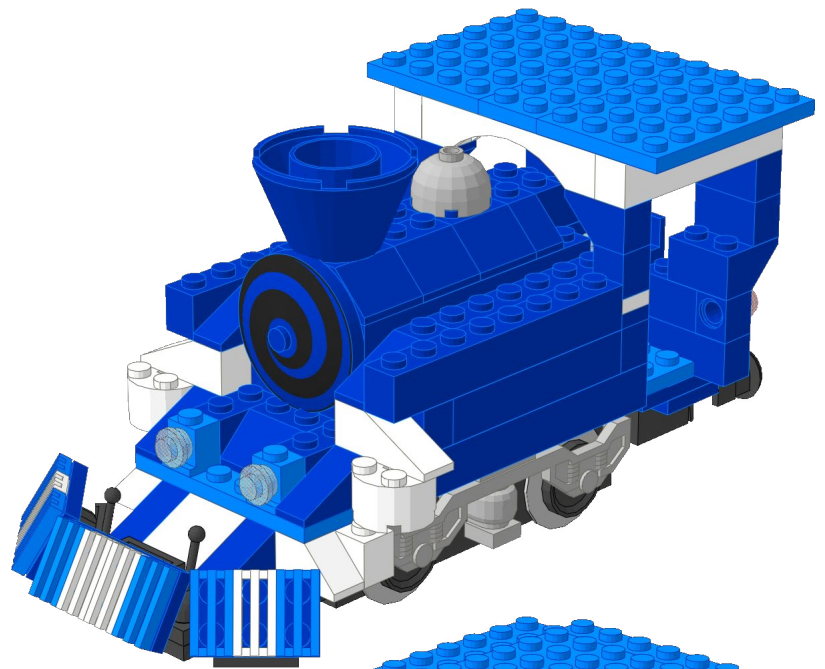
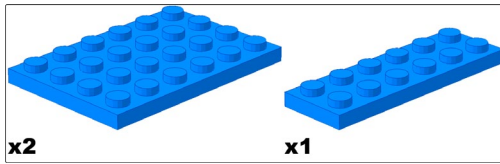


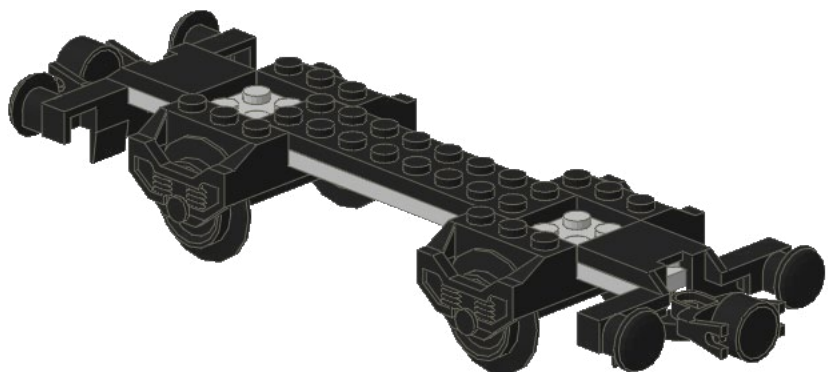
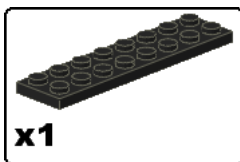
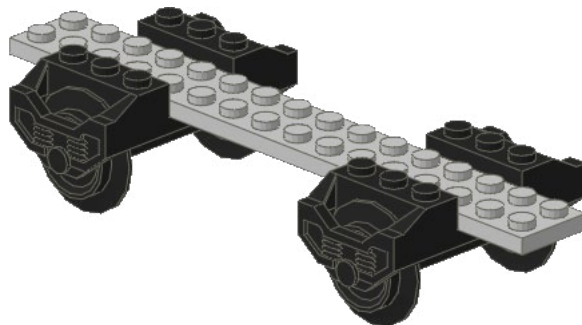
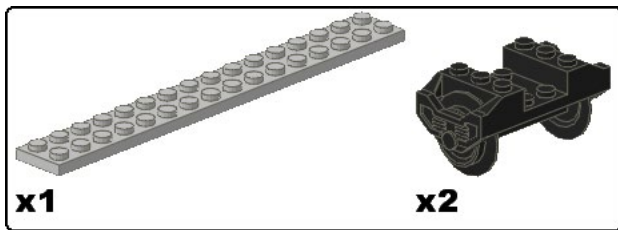
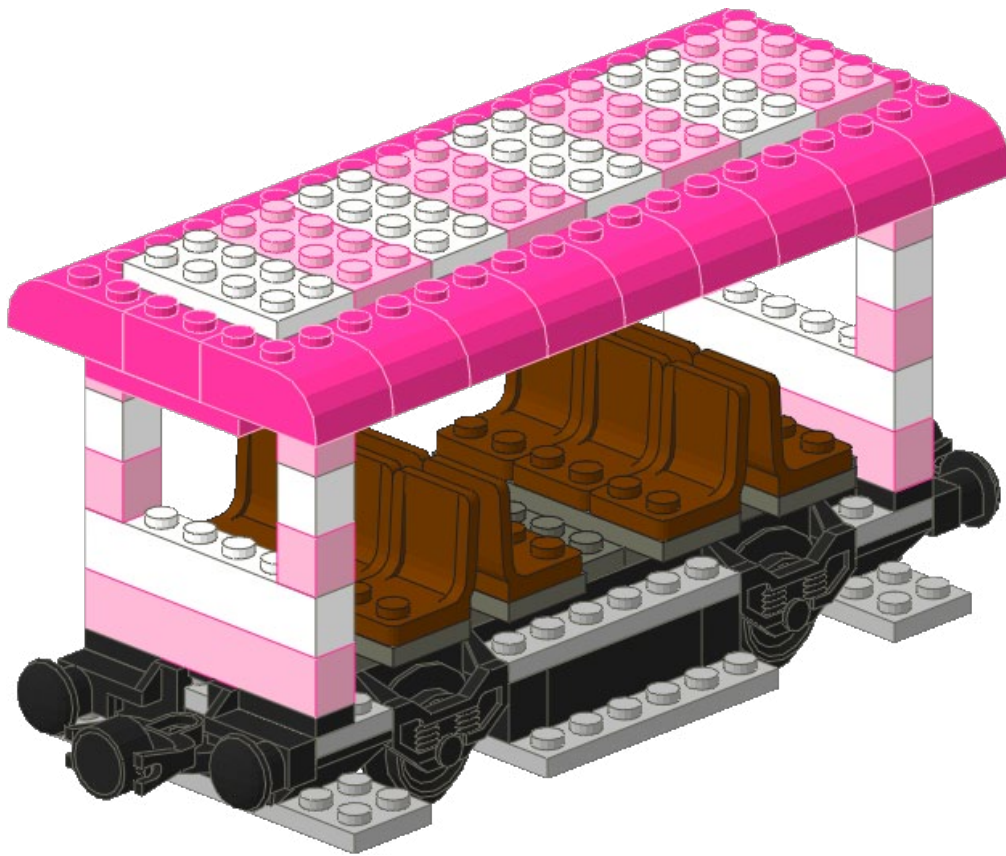


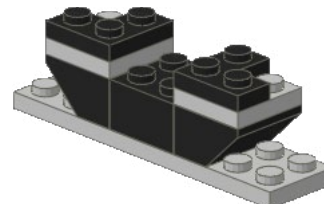
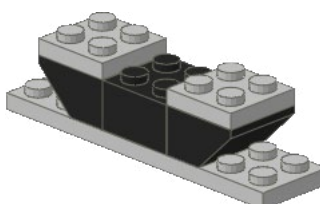
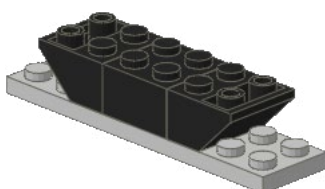
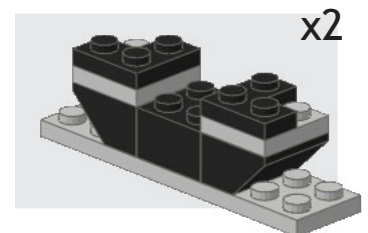
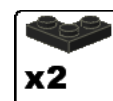
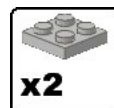
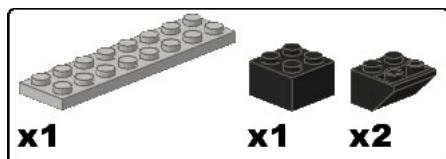
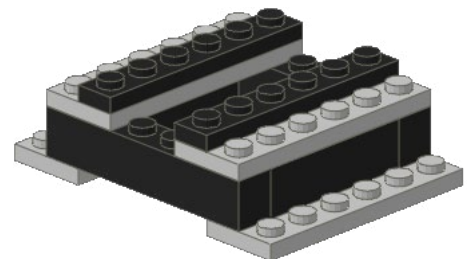
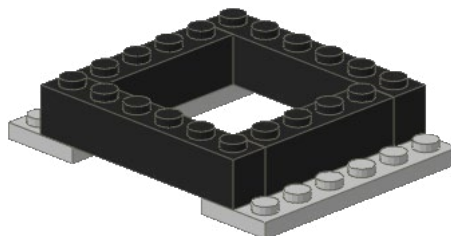
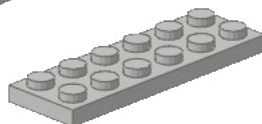
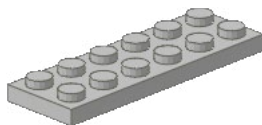
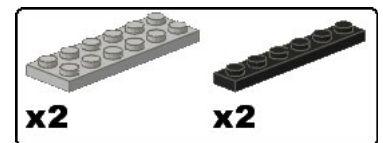
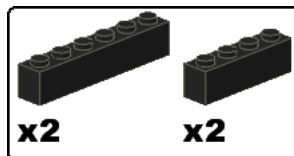
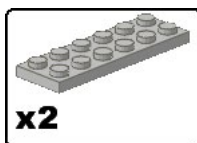
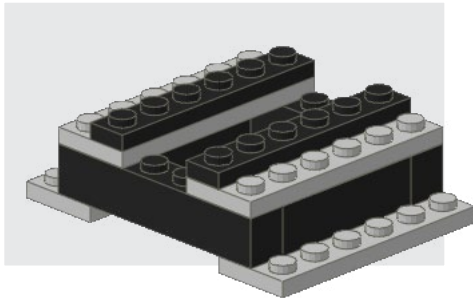
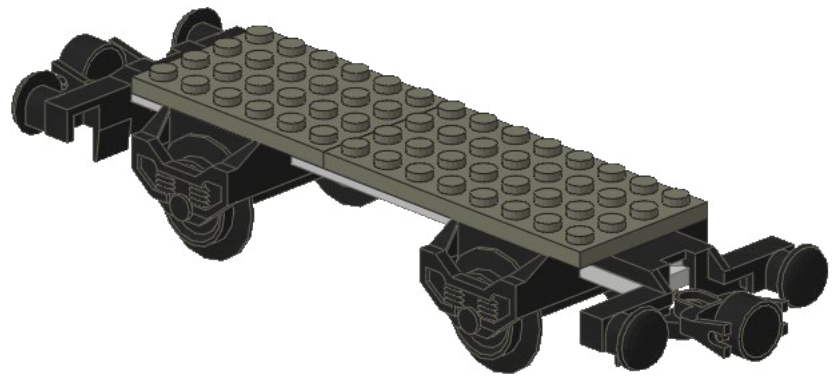
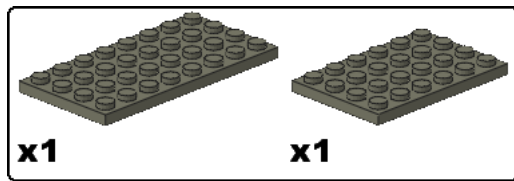


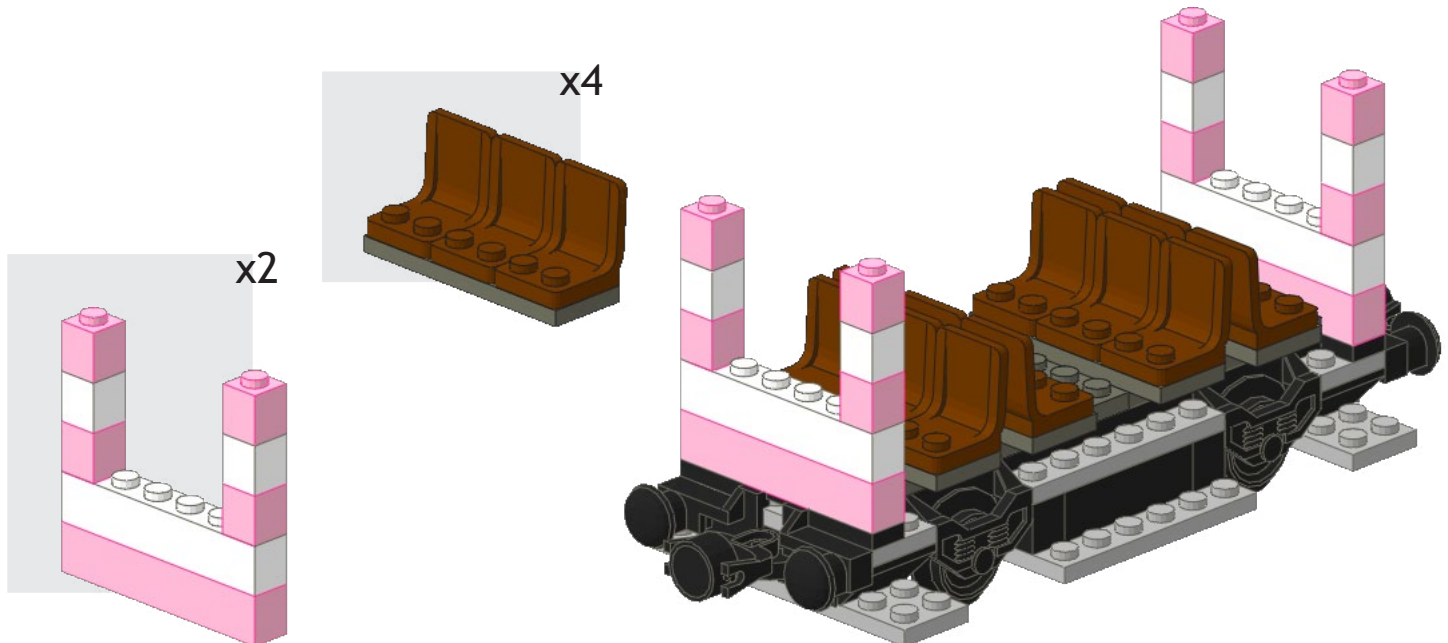
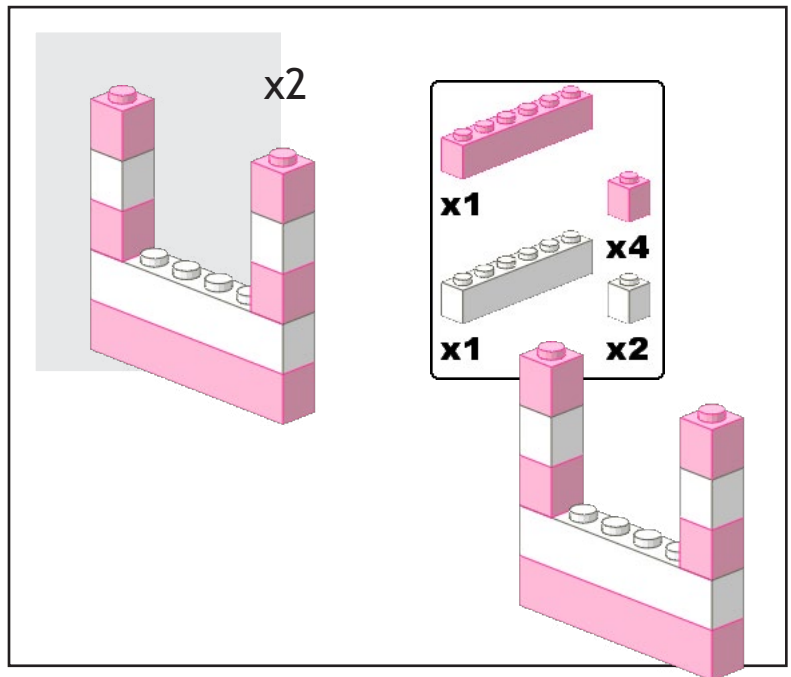
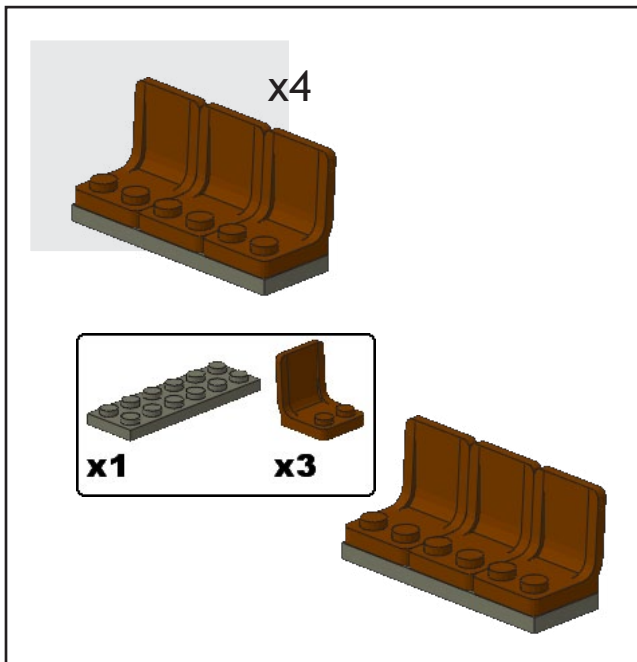
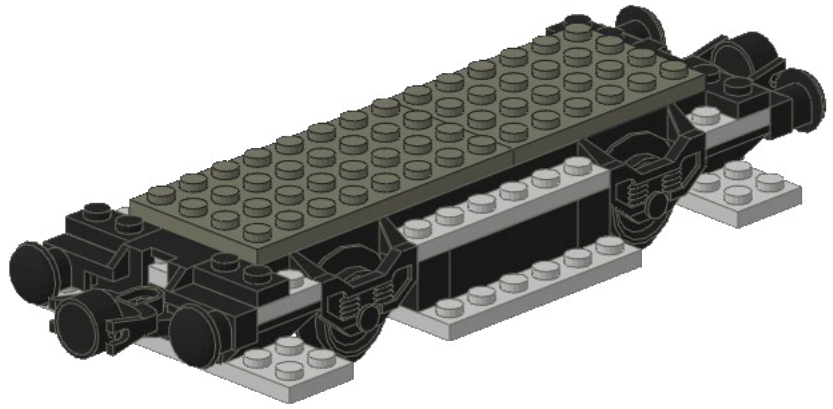
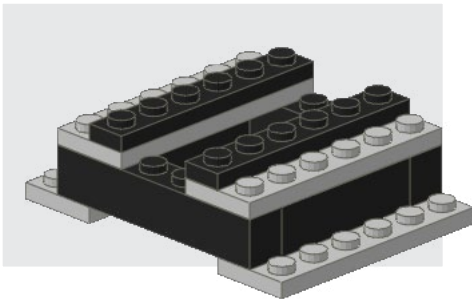
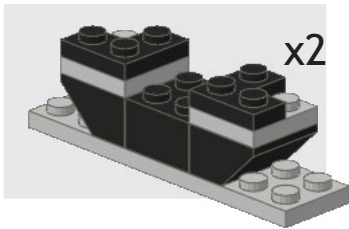


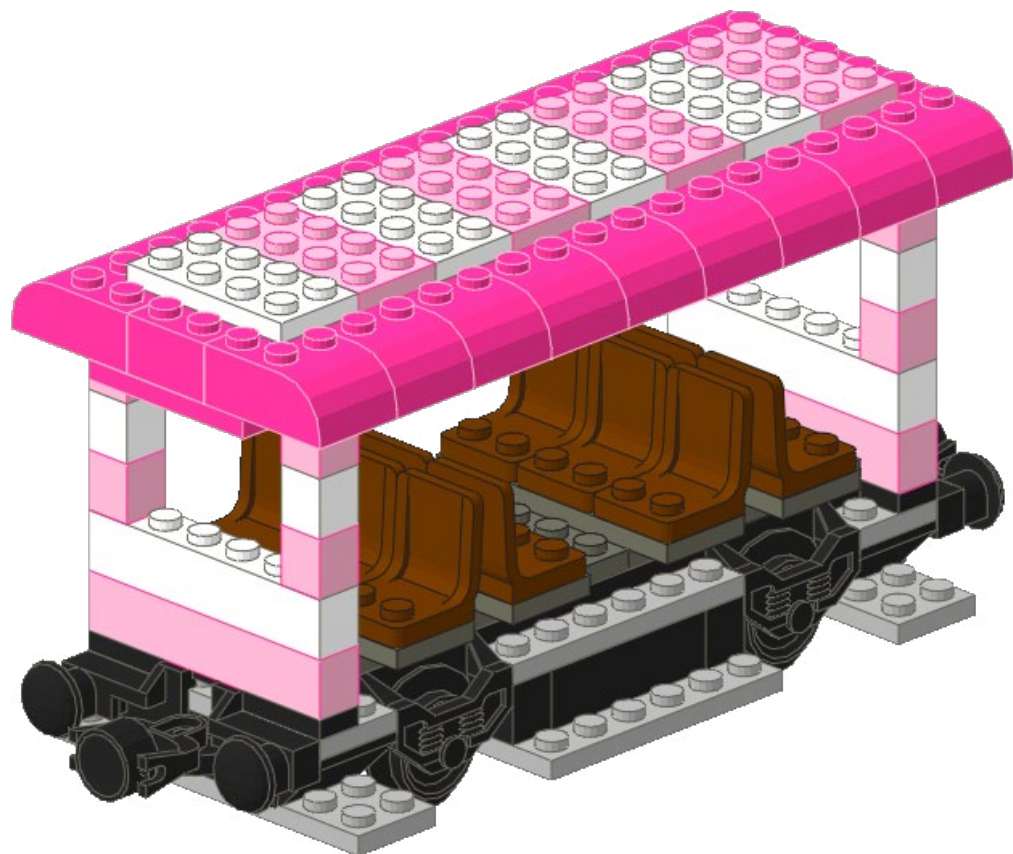
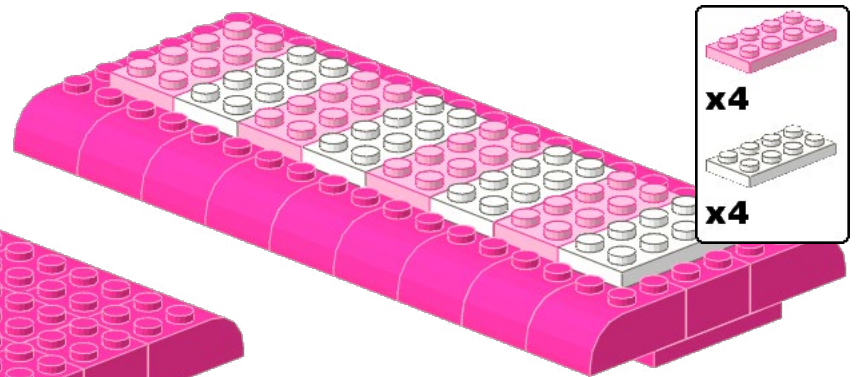
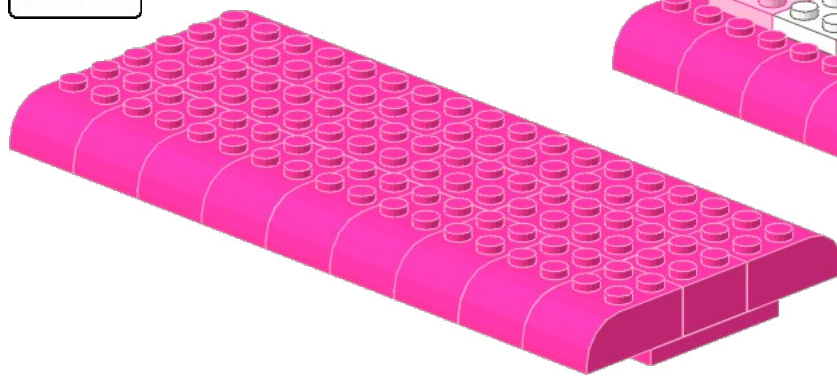
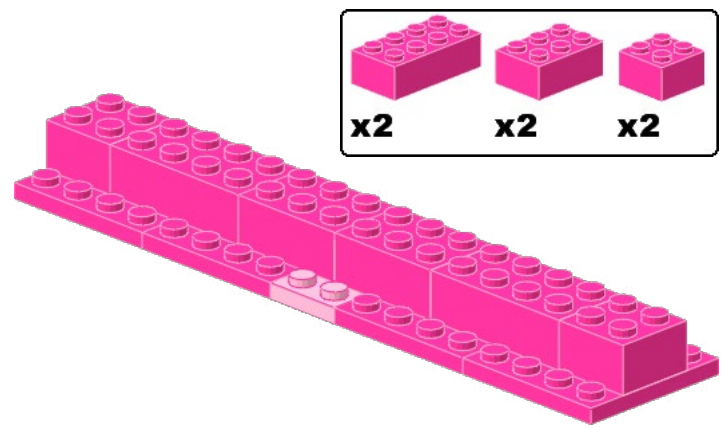
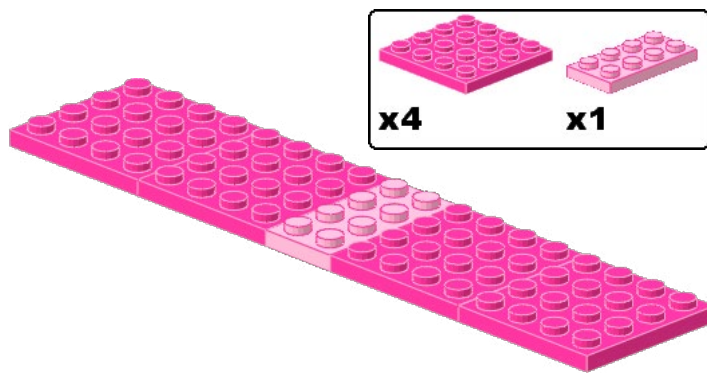












Article By
Didier Enjary

Track Geometry

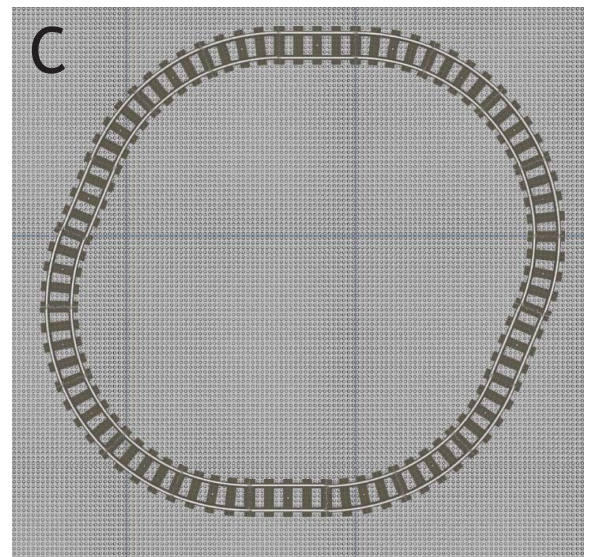
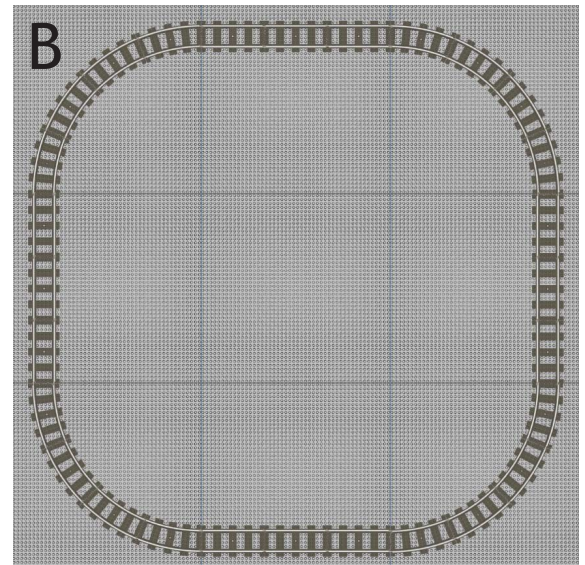
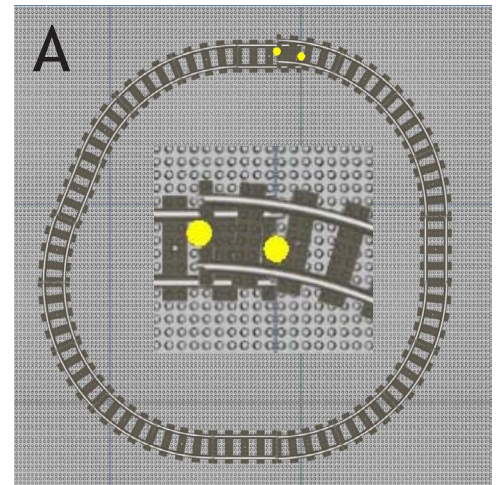
At first sight, the subject of LEGO® track geometry seems very limited. In the 9V system, now discontinued, only a handful of parts are available: one straight, one curved track, two switches (right and left) and a 90° crossing. The straight tracks are 16 studs long. You need 16 curved track to make a complete 40-stud radius circle.

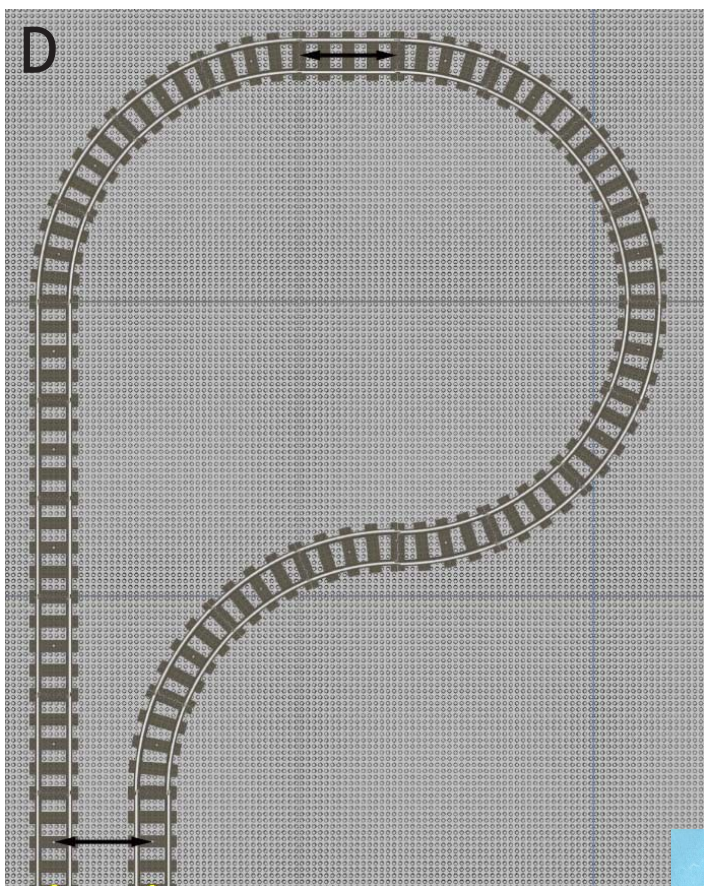
Let us have a try at a small and very simple closed loop using only straights and curved pieces (A). We fail at closing the loop; the two end tracks (yellow points) being misaligned and shifted. It is maybe surprising, but you will find out that you will almost never close a loop without stressing the elements, which is, of course, not recommended.

The first simple rule to follow to close a loop is to make all curves out of 4 curved elements, i.e. to use only 90° (or multiple) curves (B). However, you can break this rule and end up in a valid closed loop (C) if you respect symmetry or more complex, not intuitive, rules based on pythagorean triples. This has been described by Bill Ward[1] and is usefull only for huge layouts featuring, for instance, switching yards. Still, you will not be able to connect them square with the baseplate's studs because of weird angles.

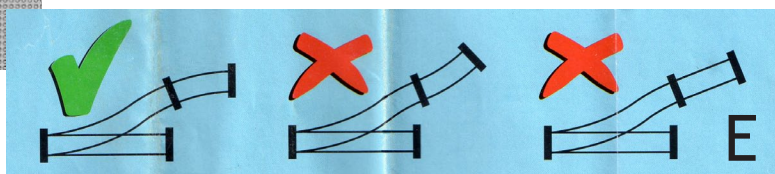
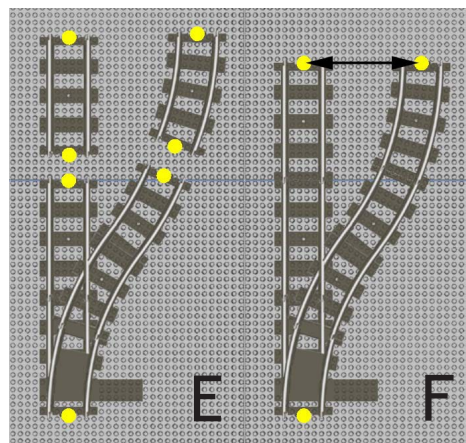
[1] Bill Ward's BrickPile, Track Layout Geometry,
<http://www.brickpile.com/track-layout-geometry/>

The author would like to thank Alban Nanty for the software he makes available to the community. BlueBrick is used for making all of the illustrations in this article. For more information, please visit <http://bluebrick.lswproject.com/>.

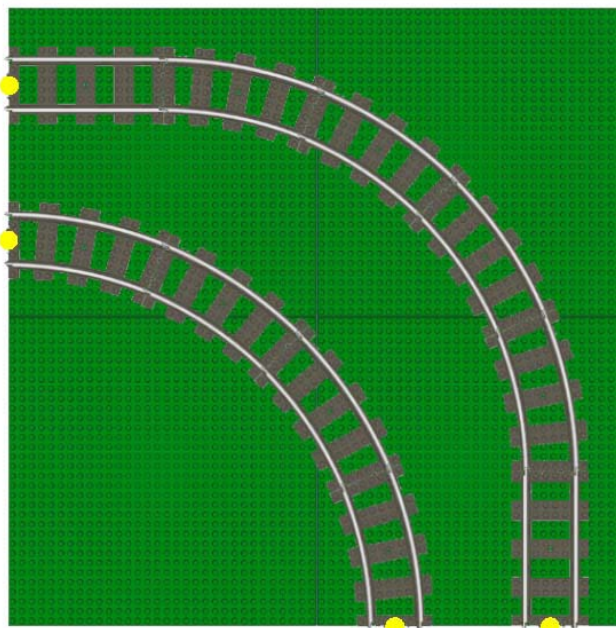
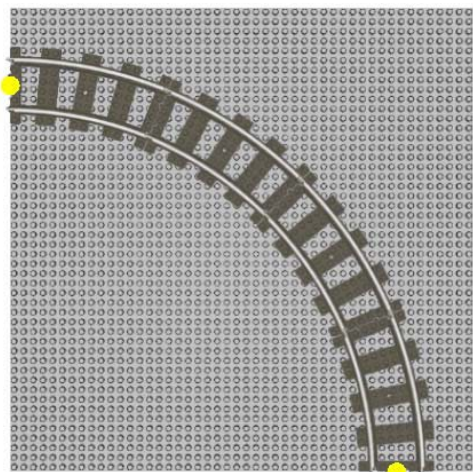




Second rule: Space parallel straight tracks a distance of 16-stud multiples. This rule is a direct consequence of the fact the straight track is 16 studs long (*D*). This also dictates the design of the switch. The switch is meant to be used with a curved track (*E*) in order to get two parallel tracks 16 studs apart (*F*).



The last rule to get a well-shaped layout is to run the tracks at a distance of 8 studs from the edges of 32x32 baseplates to the center of the track ends (*G*). An alternative is to run a line in the middle of a 48x48 baseplate (not illustrated). This rule is a direct consequence of the basic geometric properties of the curved track (40-stud radius curve), of the straight track length, and of the previous rule of the 16-stud track distance.



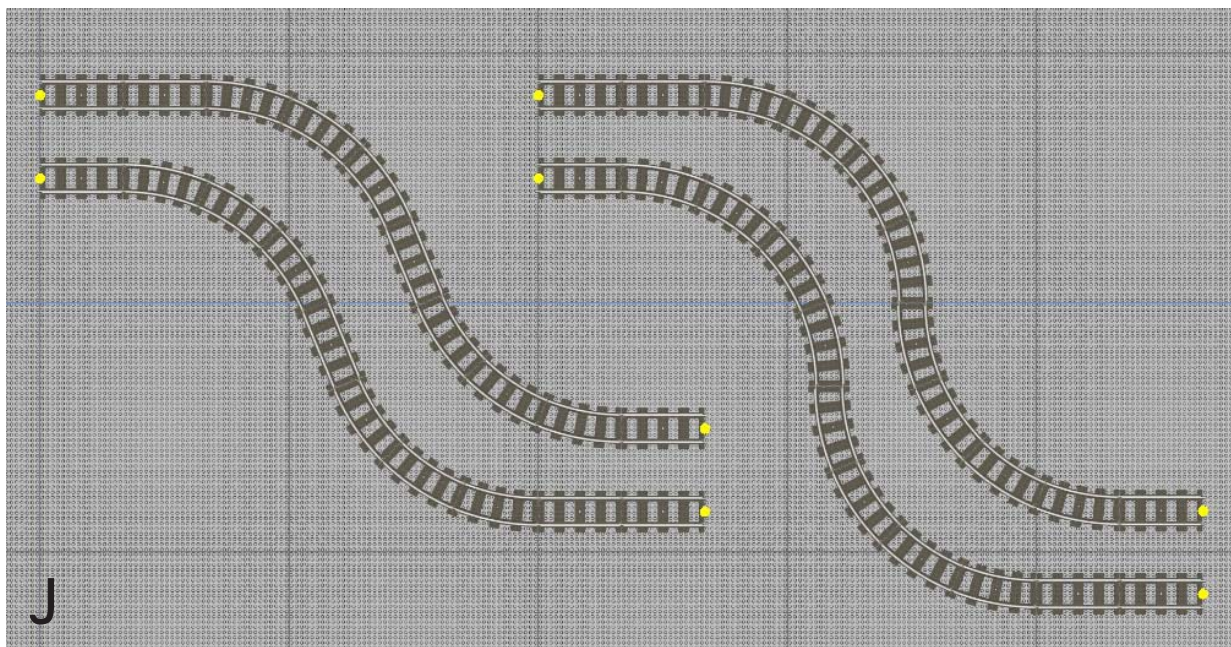
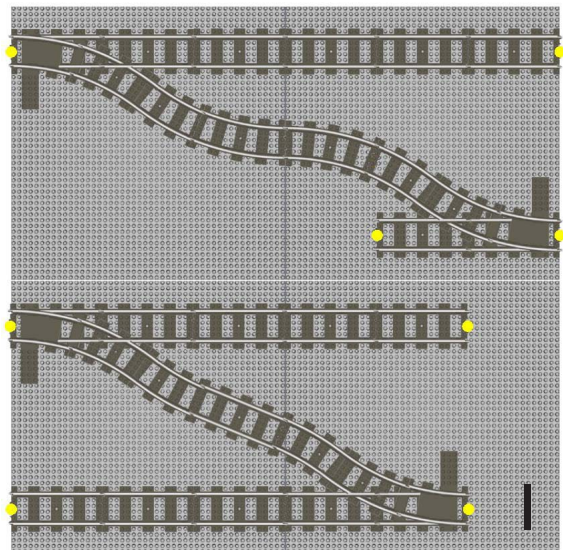
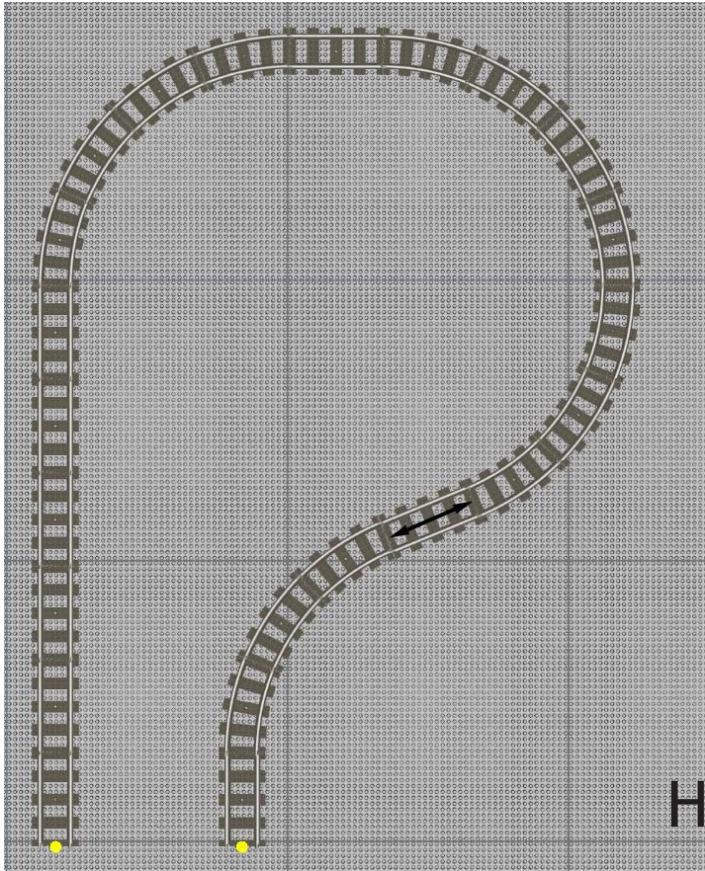
G

The S curve trick.

Let's have a look at the loop illustrated previously (*D*). There is a point where two consecutive curved tracks make an S, making your train zig-zag. As illustrated (*H*), you can replace these two curved tracks with a straight one. This has two advantages: making the transition smoother and, as illustrated below (*J*), saving space (on the right the classical S curve, on the left the same using the S curve trick).

You have to be aware that this trick breaks the first rule (a curve should be made only out of 4 curved tracks), but only for S-curves. Moreover, this build does the job in practice, but is mathematically wrong, and there is indeed a shift, which is quite small and does not cause trouble in reality. The trick also works fine with switches (*I*).

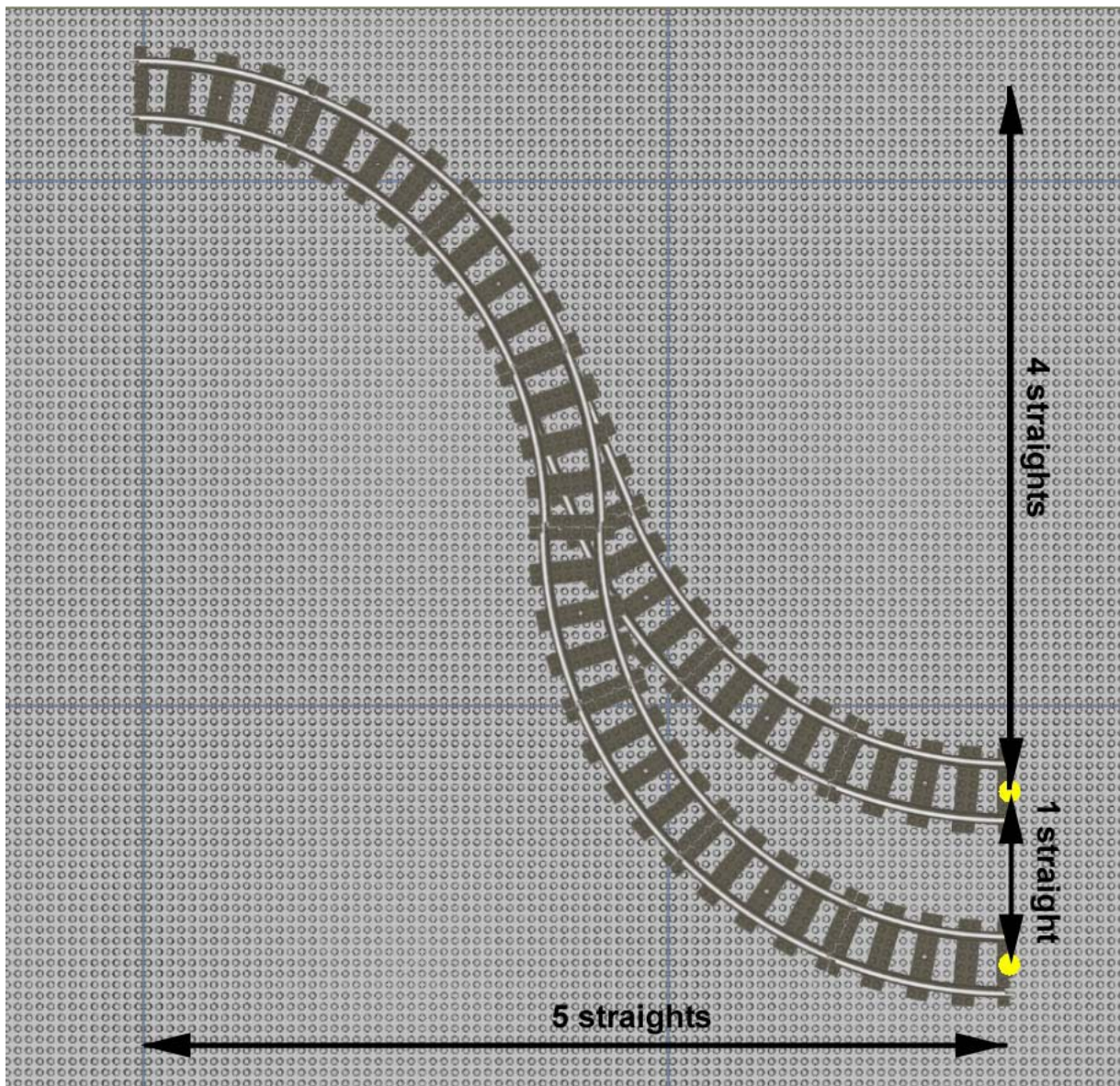
So far this article has dealt with the 9V System geometry, but not completely. We did not speak about the 90° crossing. Not because it has no play value, but it does not add much to the geometry rules.



The math behind the S-curve trick (The page for the math geeks) [2]

Along the x-axis, the formula is $K \cdot \cos(\alpha) + \sin(\alpha)$ with α being the curved track angle ($360/16=22.5^\circ$) and K the full circle diameter (5 straight track). It then equals 5.002. It is a 0.04% error; nothing in practice. Along the y-axis, the formula is $K \cdot [(1 - \sin(\alpha)) + \cos(\alpha)] = 4.010$. Again, a very small error (0.25%) with a shift of one straight, saving space. Why such a coincidence? 22.5° is almost 22.62° (ϕ), which is the angle in the (5,12,13) Pythagorean triangle for which the sinus and cosinus are ratios of integers: $\sin(\phi)=5/13$ and $\cos(\phi)=12/13$. $K=5$ is the smallest solution making both formulas an integer.

This explains the unexpected coincidence. It is still a coincidence, and it is most probably not for that precise purpose that TLC made these dimensional choices for its tracks.



Power Function System (PFS) tracks

Back in 2006, The LEGO Company (TLC) decided to discontinue the 9V system for trains. Some argue that it was due to toy regulations and costs. Though the PFS system was totally different in its philosophy, TLC made their new tracks geometrically compatible with the previous 9V system, releasing identical straight, curves and switches[3]. The lower costs gave opportunities for TLC to release more track geometries in the future.

One question raised is why TLC has decided to stick with the previous geometry? The change could have been an opportunity to think about brand new track parts. But the change, for various reasons, was much too sudden. There was no time to develop a brand new product line. However, the system still was not good enough, making loops not so easy to close.

The double crossover (2007)

The first new geometry released was the double crossover, now discontinued. This piece of track was not the one AFOLs dreamt of. It did not sell well to kids either. Moreover, the double crossover was quite complex and expensive to produce (compared to a 90° crossing with no mobile parts). This item does, however, fit the rules, constraints and values which made TLC successful in the past. It fits the system and has play value. It fits the system noticeably well as it makes the “close loop” task easy for kids - at least not more complex. The tracks are straight with no weird angle or unusual gap or shift. To this regard, the switches do not fit the system perfectly, any more than a hypothetical large radius curve would.


The Flex track

At the very first stage of development, the flex track was meant to give an answer to the large radius curve request from the fans. However, it probably would have never reached the production stage if it had not solved the “close loop” issue. With the flex track, there is no more need for rigorous layout planning based on the rules and tricks described in this article.

TLC can not simply say everything is perfect: it has to innovate; to be always in motion[4]. So, even though the system of track is now easy to set up and is complete, we will see in the future new products for our train layouts. It is just a guess, but as the PFS System is about electronics, motors, sounds and lights, new tracks will be not only about geometry but also about play value.

[2] Special thanks to Timothy “Math Geek” Gould.

[3] The 90° crossing did not make it to the PFS System, though it would have been a very cheap part to produce. Not only it is unnecessary to most childrens’ room layouts, but it is also quite reasonable to believe that it did not sell well as a 9V track part, and was not worth re-releasing.

[4] Remember, for instance, the 2009 Indiana Jones “Temple of Doom” set featuring narrow gauge tracks. Licenses are probably the best illustration of how much TLC has to innovate, and how they do so. 



BUILDER SPOTLIGHT

A Teen's Perspective

An Interview with TFOL, Glenn Holland



Teen builder Glenn Holland shares a few thoughts with RAILBRICKS editor, Elroy Davis

RAILBRICKS: First, tell us a little bit about yourself.

Glenn Holland: I'd like to start out by saying thank you for interviewing me for RAILBRICKS. It's been an aspiration of mine to be featured in this magazine, so naturally I was overjoyed when I found out I was going to be in it. I am sixteen years old and recently moved to the Philadelphia, Pennsylvania area.

RB: What appeals to you most about trains, and why do you choose to model in LEGO® as opposed to using more traditional modeling methods?

GH: Trains have been my passion since I was two years old. Trains are enchanting. Something about the size, motion, and sounds spark my imagination. They are appealing to me because trains had a large part in the building of America. I tend to focus more on LEGO than traditional models mainly because I think they are more customizable. With scales like HO, your customization options are limited to what you can buy from the local hobby shop and what the model manufacturers have to offer, whereas with LEGO, the sky is the limit. You can make anything, and use any techniques, parts or colors you wish. Of course, most of the characteristics are shared. For example, most modelers chose a specific time period to focus on. This is what I tend to do. My setting is Hudson, New York, 1948. Every now and then, however, I will make a locomotive or piece of rolling stock past this time.

RB: Do you follow any other themes, or do you primarily focus on trains?

GH: I primarily focus on trains. My first love is designing and operating the trains, but I also really enjoy building the layout. The trains are the reason why there is scenery. Of course, some people just have a loop of track and more trains. While I see nothing wrong with this, it seems to me that building and operating a layout is much more fun.

RB: Who are some of your favorite builders?

GH: I have several favorite builders. I'd have to say that Cale Leiphart and Anthony Sava



Yeah, we've got issues.

If you want to see what is going on with the LEGO fan community, you'll want to take a look at *BrickJournal*, the magazine for LEGO Enthusiasts! We have articles on all the aspects of the LEGO hobby, from building to events to instructions!

Issue 18, due out in March, will focus on the builders and LEGO culture in Japan! After that, Issue 19 will cover the events of 2011, and Issue 20 is the Superheroes issue!

BrickJournal is available at LEGO Brand Retail stores in the US, and can also be ordered online at http://twomorrows.com/index.php?main_page=index&cPath=78



BrickJournal
people • building • community

peak the list. Although I really like the work of Carl Greatrix and Peter Norman. I love Cale's mainline steam engines. He has inspired me many times. I like Anthony Sava's collection, with the Texas State Railroad fleet. Lastly I'm a fan of Carl's British pieces and Peter's diesels.

RB: I've noticed that you do a lot of work in LDD. Do you find the platform limiting, or does it help open up new ideas?


GH: I think LDD is a great program, with Universe mode of course. I would not say it is limiting, but you are limited to what you can buy on Bricklink, or if you're not a purist, modify. I use Universe mode for almost all my creations, but always keep Bricklink open to check part availability. LDD works so well for me because it helps me be creative with new techniques and it's better for a TFOL with school to worry about and a tighter budget than most. I can't tell you how many times I've finished a project and said "That looks really good," but I also can't remember how many times I've been working on something and LDD crashed.

RB: Tell us a little bit about the overall building community from the perspective of a Teen Fan Of LEGO. Do you find the community welcoming?

GH: Building as a TFOL can be limiting, but can also be very rewarding. As previously mentioned, I do have

school and homework to worry about. The best building time for me is weekends. The flip side to being a TFOL is that the feeling you get when someone says "Good job!" is to me much more rewarding. People see the big LEGO displays at train shows, two at which I have proudly displayed alongside NELUG. NELUG, on several occasions, has been kind enough to give me access to the inside of the layout, and even let me run a few trains with them. I would definitely say the community is welcoming, and I can't wait until I'm old enough to join PennLUG.

RB: Do you have any upcoming projects that you're working on?

GH: I have a lot of projects on my list. I recently made a "Big Boy" that is a real pest on my track. I've been wanting to rebuild that and work out the kinks. I recently finished a Baltimore and Ohio USRA Light Mikado, much like Cale Leiphart's model. I also hope to start really working on making the left side of the layout nicer. But they all come in second to the main goal: finishing two 4x8's worth of scenery, buildings and trains. The part featured in this article is the middle 4x8. My layout was first constructed in Massachusetts, where I lived before I moved. There were originally three 4x8 shelves arranged in a "U" shape. The left and center shelves are currently being used. Ideally, the left one will have a mountain in the back corner, a river, and a manufacturing plant on the river. 

FESTI' BRIQUES

29 - 30
Octobre
2011

Since 2009, the French LUG Festi'briques has organized LEGO® exhibitions in Burgundy, France. This fourth edition celebrated the 20th anniversary of the 9-volt train system with an impressive 7x35m train layout during a two-day event in Châtenoy-Le-Royal. No less than 100 participants and 3,400 visitors livened up this event.

Article by
Jean-Gérald Villari





Festi'briques 2011: An Overview

All the French LEGO clubs were part of this event that took place at the 1,000 square-meter Alain Colas Gymnasium: Festi'briques as the main organizer, Briques à Brac (BàB), FanaBriques, FreeLUG, SETechnic... and, for the first time, a Dutch exhibitor, Maico Arts, with an outstanding and highly remarkable GBC with tens of modules.

This year, the main theme focused on trains. More precisely, focusing on the 9V train standard 20th anniversary (1991-2011). On this occasion, two train networks were created.



*Jean-Gérald Villari, Festi'Brques president, interviewed by French national TV channel M6.
<http://www.youtube.com/watch?v=QGuV-rBMduw>*

The "Ligne Grande Longueur" (LGL) is a 60-meter line, with large radius curves made out of straight 9-volt classic tracks. The LGL is divided into 20 electrically separated sections, powered by 20 speed regulators, through 200m of LEGO electric wires. The main target was to put long trains into circulation. With this network, created by Daniel Stoeffler (FanaBriques member), the Festi'briques team brought 150 Octan cars to beat the previous world record for the longest LEGO train, held by Germany since 2000 with 127 cars. Jean-Gérald Villari and Benoit Kayser (FanaBriques member) took control of this monster train (multiple engines), and managed to put on 20 additional cars...and eventually, the record was established with 170 cars.

Monster Train!

Building a curve with straight tracks consists of building a polygon. Each straight is connected to the next one with help of a jumper plate (plate 1x2 with one stud) to get an offset of a half stud at one side of the track only. More details and building instructions can be found in RAILBRICKS magazine, Issue #1, page 32.



A section of the LGL and its large-radius curve made out of straight tracks as described in RAILBRICKS magazine.



The 150 Octan cars waiting at the yard to enter the main loop. The cars were built by the visitors. The Maersk color train on the left is custom painted.



A monster train section on the large-radius curve of the LGL.



The Museum building by Laurent Thévenard, displayed along the LGL and LGV tracks.

Speed Train

The "Ligne Grande Vitesse" (LGV) is a high-speed dedicated line. This line was developed by the group Briques à Brac (BàB). Xavier Viallefont was in charge of the powering solution, offering a 0 to 30V current and virtually limitless amperage, allowing a voltage overcharge on an unlimited number of LEGO train motors.

Denis Huot on his side, using model railroaders' materials, has created a custom seamless track, geometrically controlled down to tenths of millimeters (track alignment) and large-radius curves with superelevation (tilt). All of these parameters make it possible to run trains at speeds up to 30km/h. Unfortunately, the group has not been able to beat their own record, previously established by Jérôme Tessier with 29.91 km/h at the "Festival de la Miniature" in St Rambert d'Albon, France.

The LGV will make its way to the Fana'Briques event in 2012 (Rosheim, France - June 29th- July 1st) and will be open to anyone willing to enjoy the thrill of a ride at 30V.

The custom LGV in total length, and its tilting large-radius curve. In the loop, Pascal Bréard's 12V layout.

Numerous videos of bullet trains on this track can be seen on the Youtube website:

<http://www.youtube.com/watch?v=641Q0nafjBU>

An onboard video, slow speed:

<http://www.youtube.com/watch?v=S00VJxtshGU>

and high speed:

<http://www.youtube.com/watch?v=oNS8mMykaEc>

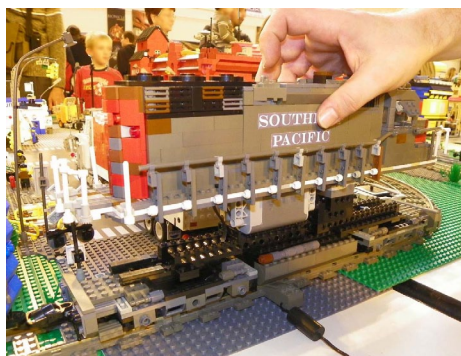
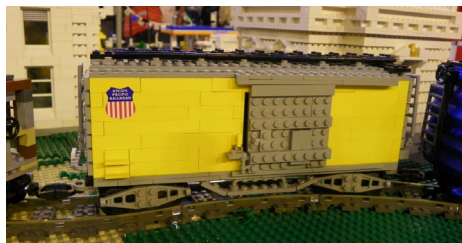


Olivier Dzikowski is not into high speed trains. To the contrary, spends his time running slow American-style engines through far-west scenery or modern landscapes of his own.

The wooden cars - passenger coach, flatcar and cattle van - are pulled by a American eight-wheeler around the saloon and gunsmith shop, stopping at the Hill Valley station before refilling at the water tower.

At the same time, a weathered Southern Pacific EMD SD 40 or a Union Pacific EMD GP 38 pull various eight-studs-wide boxcars and tank cars past a fire station, movie theater, diner, and gas station.

The diesel engine is a two-part build with a removable body sitting on a fake three-axle truck base made possible thanks to the choice of an 8-wide body.



American Style



We could not have celebrated the LEGO 9V train standard 20th anniversary without exhibiting each and every LEGO 9V train set, in a collective effort led by Daniel Stoeffler. The least one can say is that the community, even Bionicle fans, have embraced all train systems from the discontinued 4.5V to the recent PFS.


We hope to see you in 2012 at the event, which will focus on Star Wars and cinema. 



Photo Credits

Olivier Dzikowski,
Xavier Duvert,
Didier Enjary,
Benoît Kayser
and Catherine Lefort





KEEPING THE JUICE FLOWING

By David Stannard

In Issue #9 of RAILBRICKS, David Stannard introduced us to electric railways, and the catenary systems that power them. In this article, David expands on his previous work, outlining how catenary lines are powered and repaired.

Two main pieces of infrastructure are required for the supply of electricity as a source of power for traction via overhead wiring on railway lines. The most visible of these is the catenary system that is used to provide the overhead wiring above the tracks (See *Under The Wire*, RAILBRICKS Issue #9). The next, and equally important piece, is the traction substation which provides the physical connection between the electricity grid and the overhead wiring. The main purpose of the traction substation is to convert electricity from the grid supply to a voltage that is suitable for electric traction. The type of current can also be converted to suit the supply needs of the system.

Current Types

There are two types of current available for electricity: Direct Current, better known as DC, and Alternating Current, known as AC. The AC supply can vary in frequency depending on the supply. Frequency is measured in units called Hertz, which are the number of cycles per second in the current.

Direct Current (DC)

Direct Current was used in the early days of electrification of railway networks and is still used in a lot of countries that had installed their electrified networks early on. The voltages vary from country to country, the most popular voltages being 1kV, 1500V and 3kV. The electricity that is supplied from the grid is AC.

To provide a DC supply, the electricity from the grid is fed through a step-down transformer, then into a rectifier that converts the AC supply to DC. Early rectification was done via either a motor generator set or mercury arc rectifier. Rectification these days is mainly done through solid state diodes or silicon controlled rectifiers.

Alternating Current (AC)

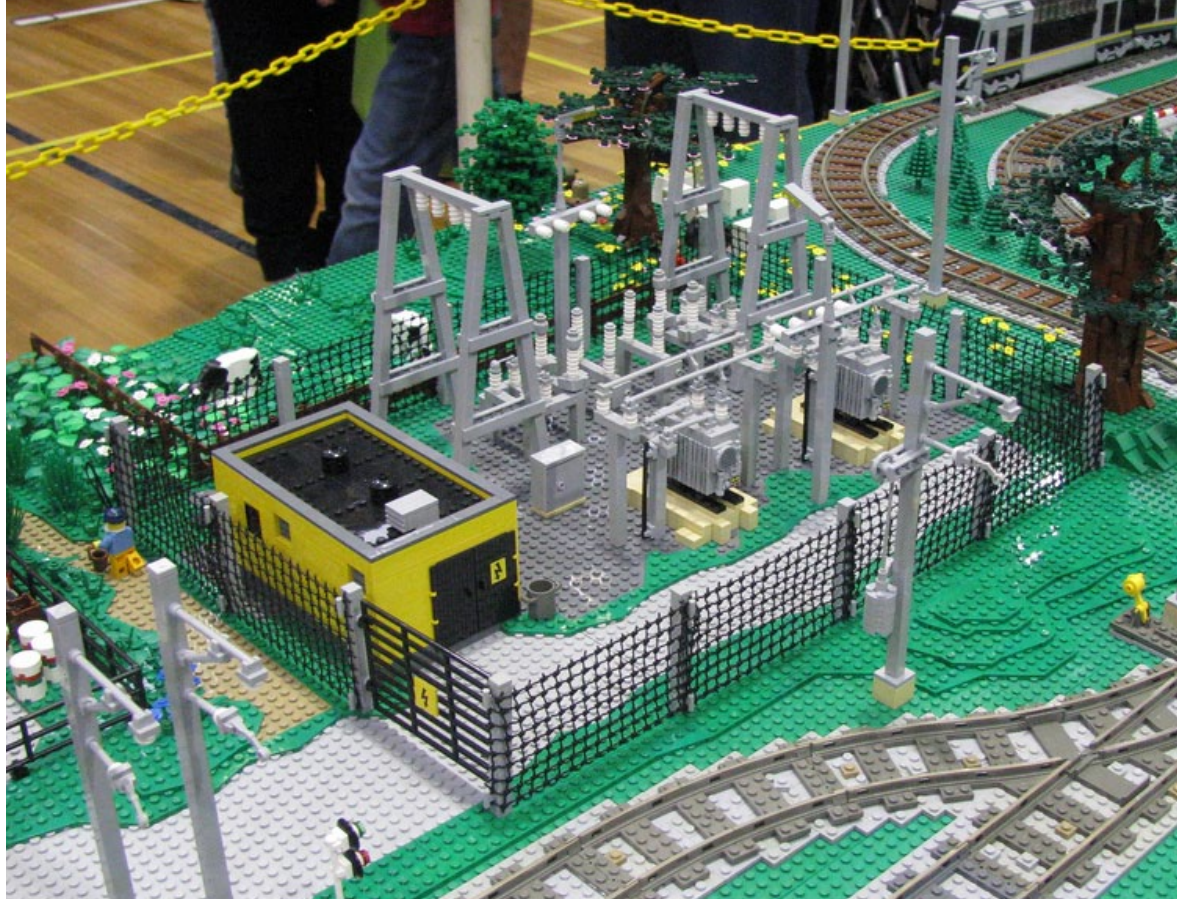
The supply of alternating current used for traction substations can vary depending on the frequency that is used for supply to the catenary network. Low frequency AC is used by countries that were at the forefront of AC electrification in the early 1900s. The use of the lower frequency was to alleviate the effects of Inductance and eddy currents. Germany, Austria, Switzerland, Sweden and Norway all standardized a supply of 15kV 16.7Hz. To supply these networks at this frequency, current convertor plants

are used to reduce the grid supply from 50-60Hz to 16.7Hz. The more modern electrified networks use 25kV, supplied at the same frequency as the electrical grid of between 50-60Hz.

Traction Substations

The traction substation is the essential link which provides electricity from the grid to the local catenary network. Traction substations can vary in size and style depending on the requirement and local environment. The most notable difference is the layout. Traction substations can have an open yard design with a control hut, or be fully housed in the form of "trafo towers" or larger "trafo houses". The electrical supply from the grid first goes through a group of equipment which includes a voltage transformer, current

Continued, page 38





Opposite page above: Model of a 66kV AC to 15kV AC traction substation.

Above: RFW Hi-Rail platform truck.

Opposite page below: Overall view of a mainline 1500V DC traction substation.

Below: LBB catenary renewal gang




transformer, circuit breakers and yard isolator switches. These pieces of equipment are used to protect the traction substation from current or voltage surges that can severely damage other equipment. The electrical supply then goes through a rectifier, if being used for DC supply, then to a step-down transformer which will supply the final voltage required by that network. After the voltage supply has been adjusted by the transformer, the supply goes through another circuit breaker which is normally housed in a control hut. The control hut is fitted with instrumentation that monitors the supply. After that point, it goes to a feeder mast that provides the physical connection between the traction substation and the catenary.

Catenary Maintenance and Repair

For catenary to operate efficiently and safely it needs to be inspected from time to time, and any faults repaired. Catenary that has wear and tear due to use of the wiring also has to be replaced. To inspect the wiring, special vehicles have been developed, such as the Catenary Inspection Car and Motor Tower Wagon. These vehicles use a special test pantograph which is fitted with an array of sensors that monitor the height, stagger and tension of the contact wire. The data collected is then stored on a diagnostic computer inside the cabin. The vehicles are also fitted with a video

camera and recorder that is used to check for faults. Some vehicles also have an observation dome. Once faults are identified, they are earmarked to be repaired. Many of the vehicles have an onboard repair capability and are fitted with elevated platforms or cherry picker baskets for the crew to access the wiring. There is also a workshop area inside the cabin that carries a range of spare parts, so repairs can be done on the spot if required.

For the renewal and construction of wiring a range of vehicles are used, ranging from a Hi-Rail truck or wagon fitted with a cable drum and tensioning gear, to dedicated machines such as the FUM 100 Series Catenary Renewal Machines produced by Plasser & Theurer. These vehicles reel out the new cables at a constant tension at the required height. The knuckle boom fitted to the FUM series vehicles is especially effective with its two reels to lay the catenary wire and contact wire simultaneously. A wide range of vehicles can be used to assist in this task, including specialized vehicles such as Motor Tower Wagons and Motorized Platform Cars, to Hi-Rail trucks fitted with platforms or cherry picker baskets. These vehicles all travel together in a group as they work their way along the track repairing or installing the wiring. 

LBB Catenary Inspection and Repair Vehicle





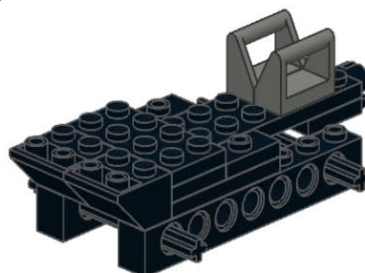
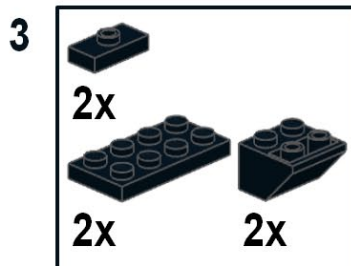
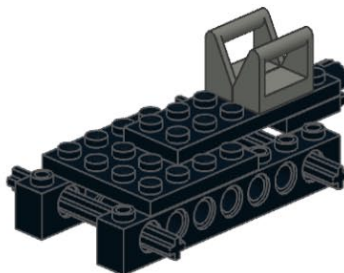
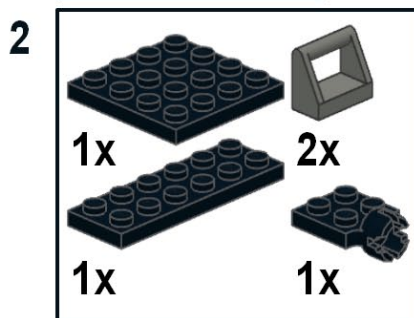
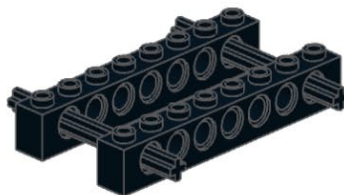
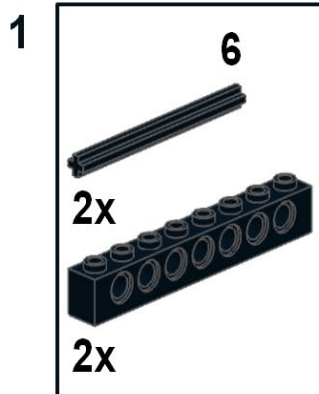
TIM GOULD'S A

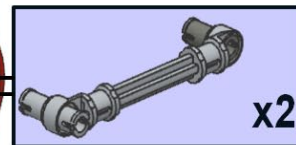
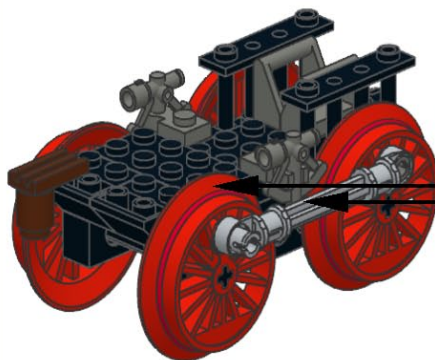
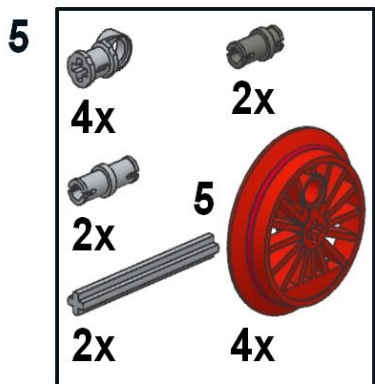
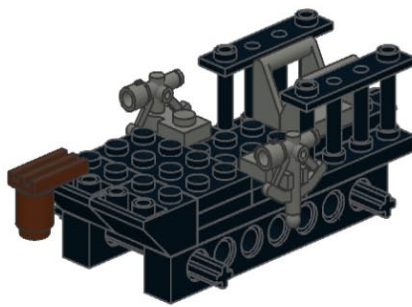
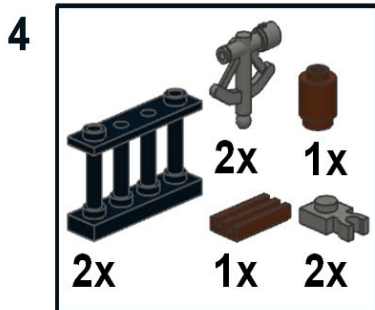
WESTERN LOCOMOTIVE

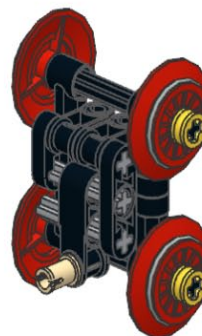
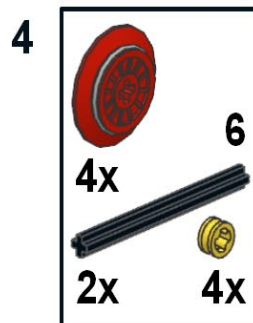
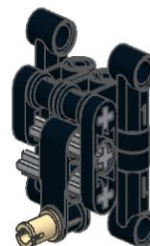
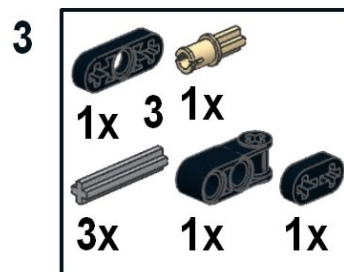
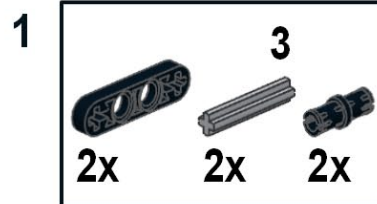
World-class builder Tim Gould, shares instructions for his version of the iconic 4-4-0 American type locomotive.

4-4-0 Americans were popular with U.S. railroads during the 19th century. Two of the most famous Americans, Union Pacific No. 199, built by Rogers Locomotive and Machine Works, and Central Pacific No. 60 (Jupiter), built by Schenectady Locomotive Works, met at Promontory Summit, Utah on May 10, 1869, to celebrate the completion of the the First Transcontinental Railroad.

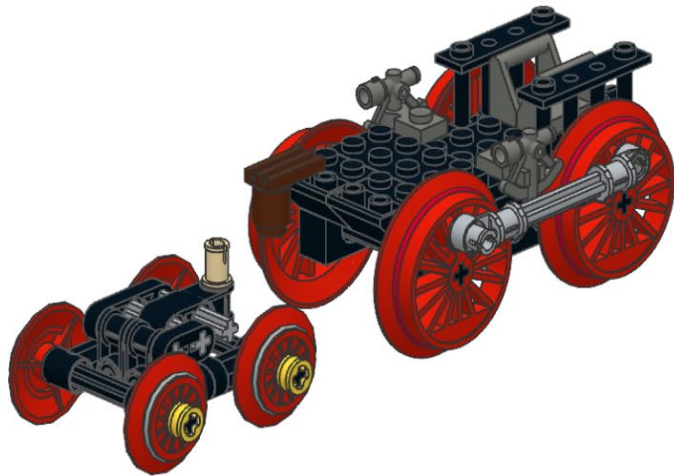




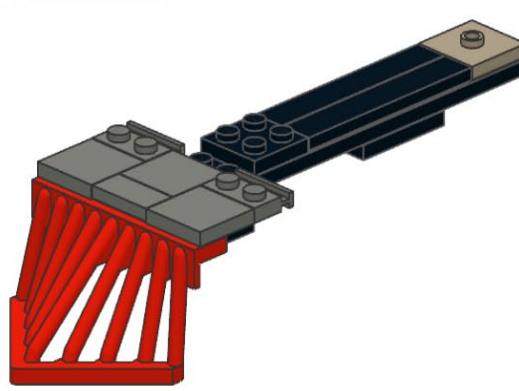
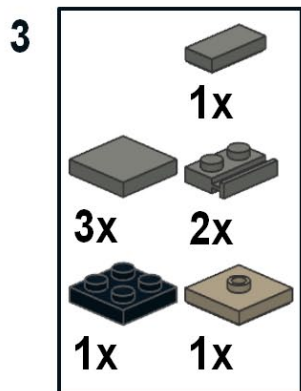
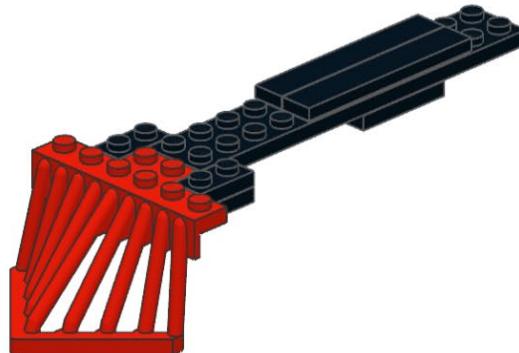
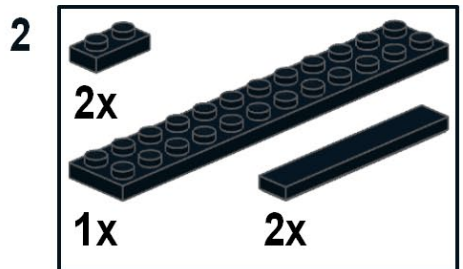
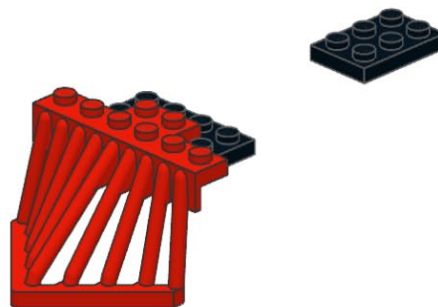
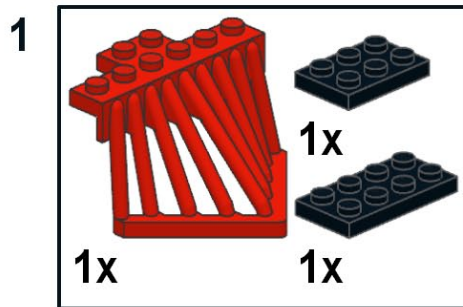










1

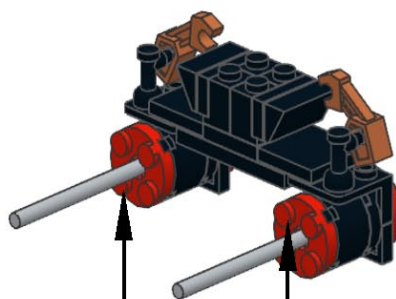
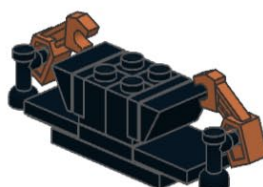

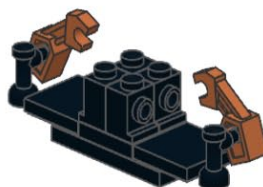


4



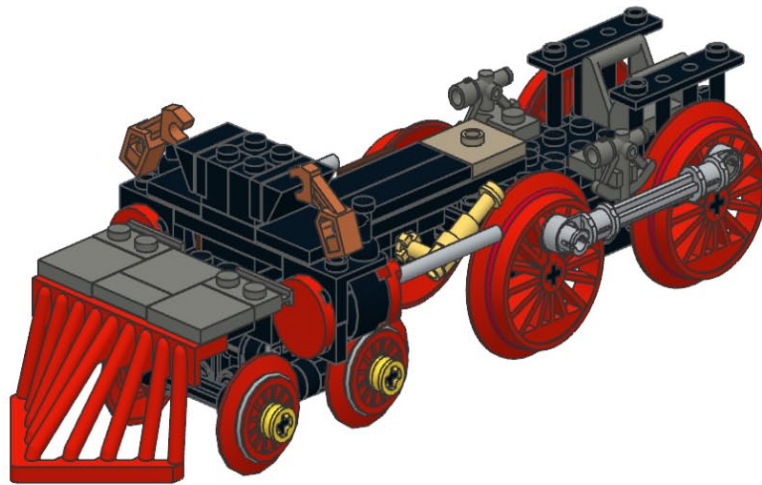
5

		
1x	2x	2x
		
1x	2x	4x

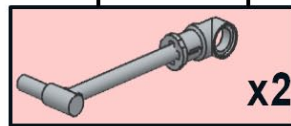
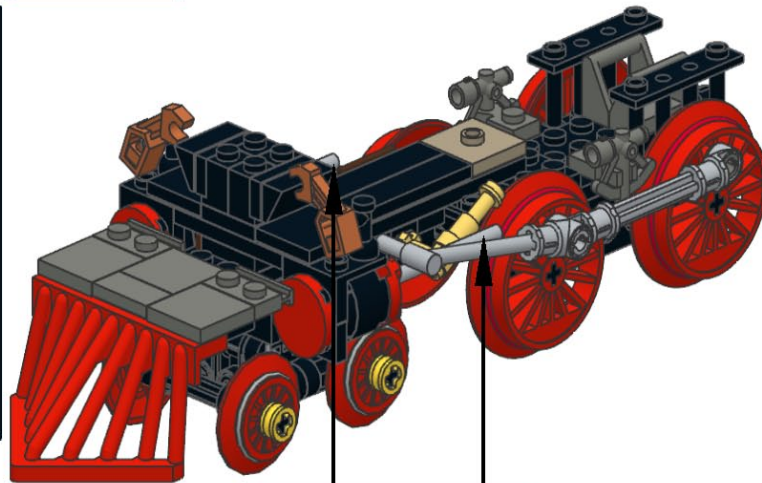


x2

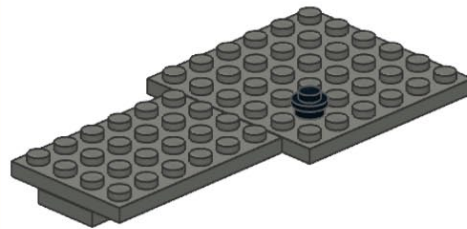
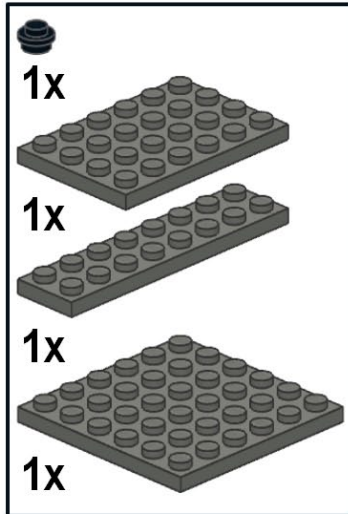
2



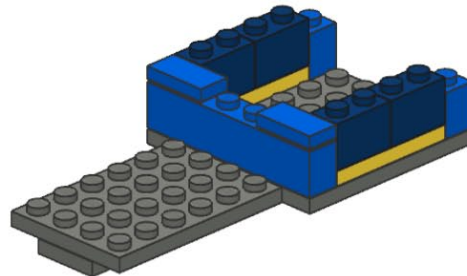
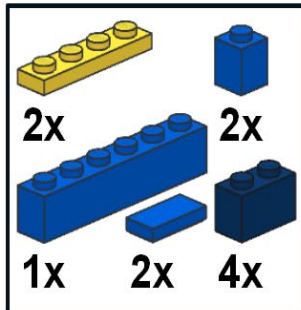
3



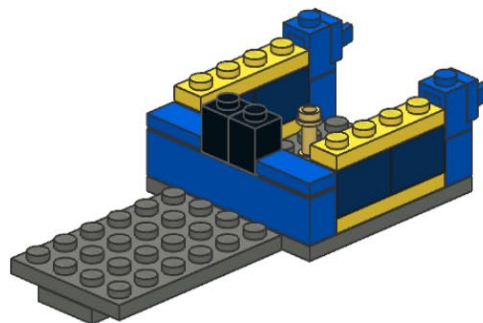
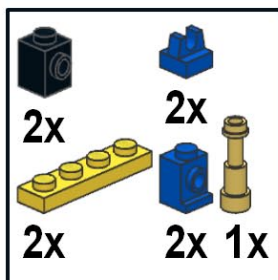
1



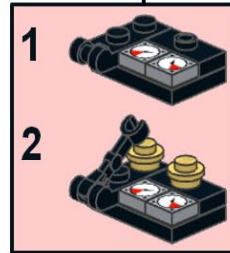
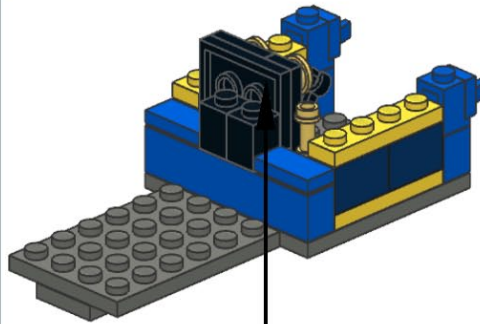
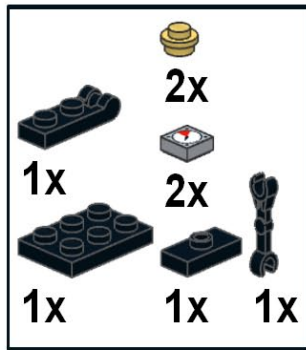
2



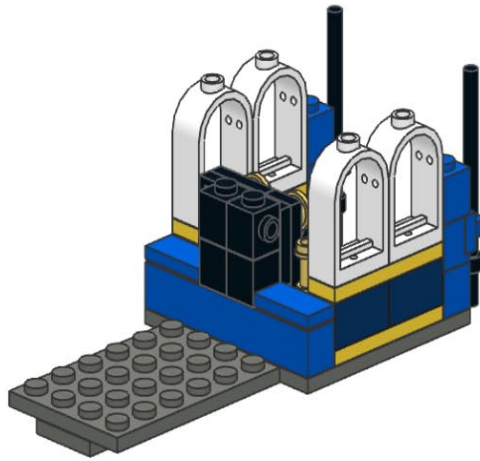
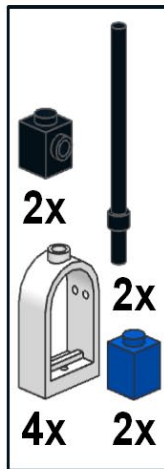
3



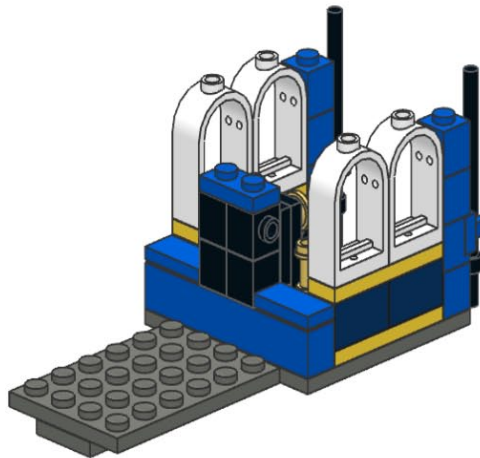
4



5

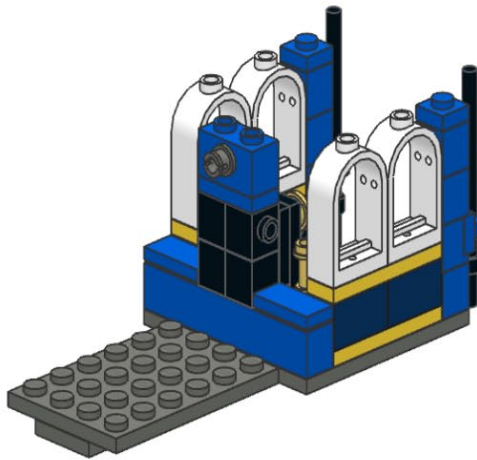


6

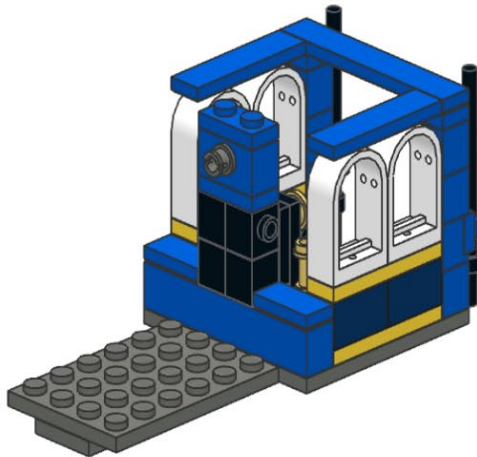
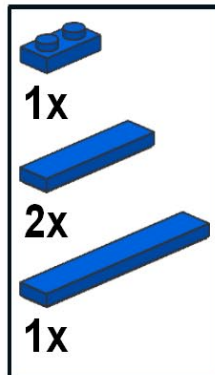


10

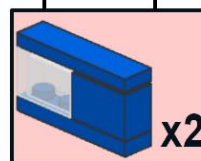
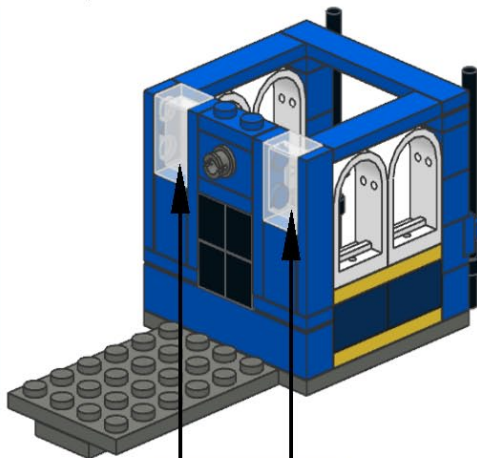
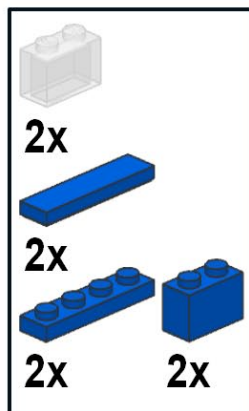
7



8

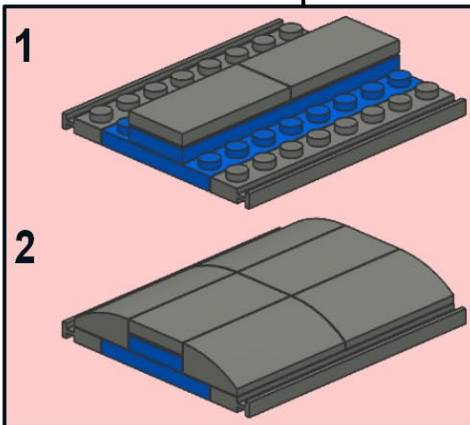
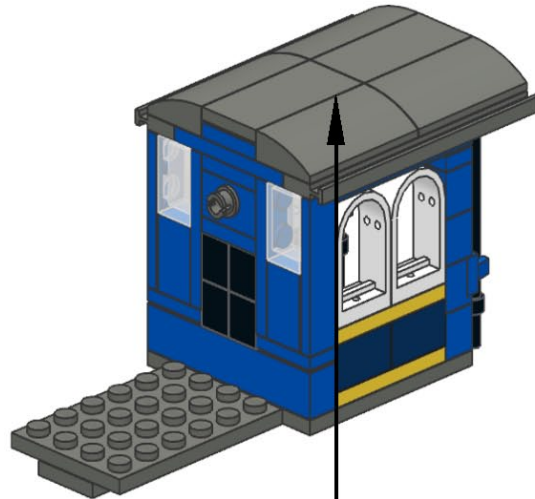
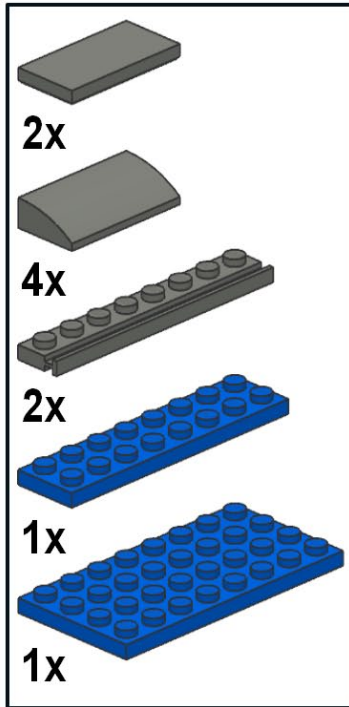


9

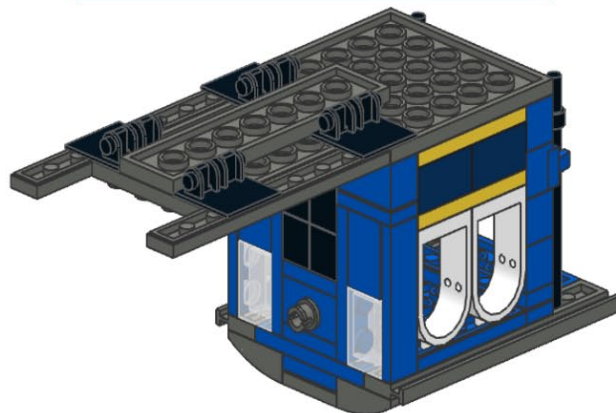
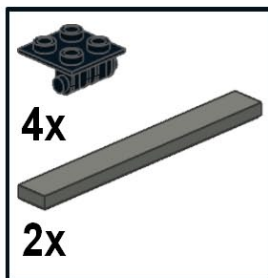


11

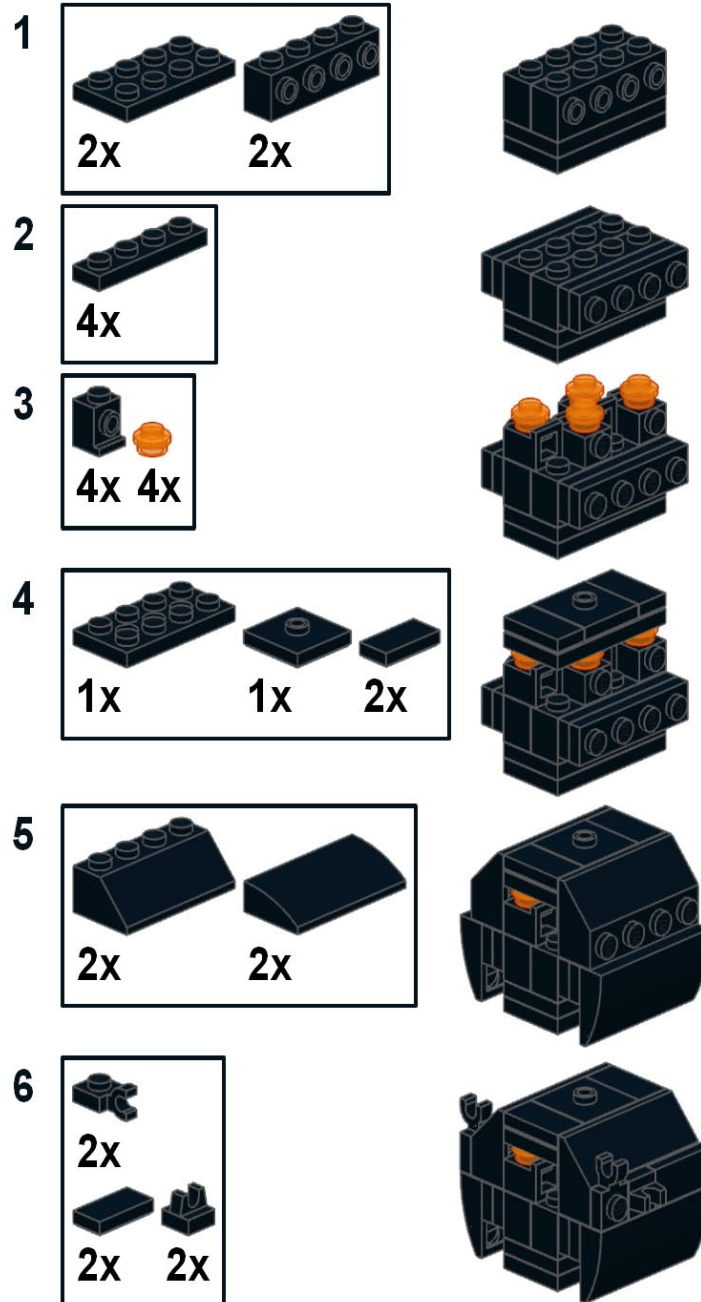
10

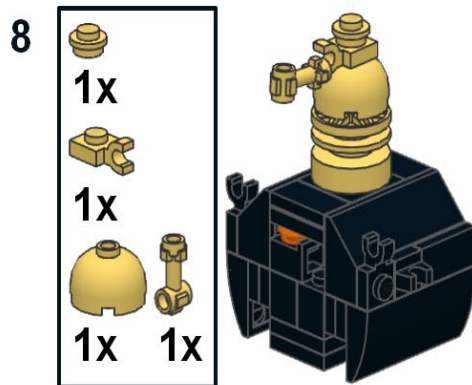
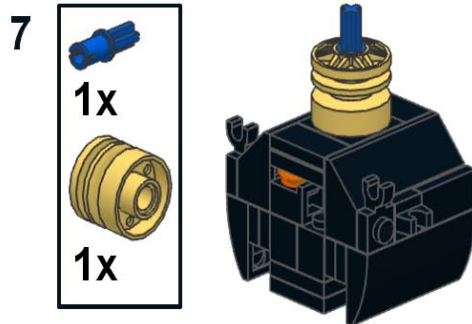


11

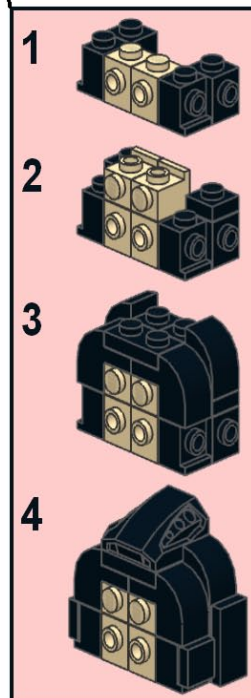
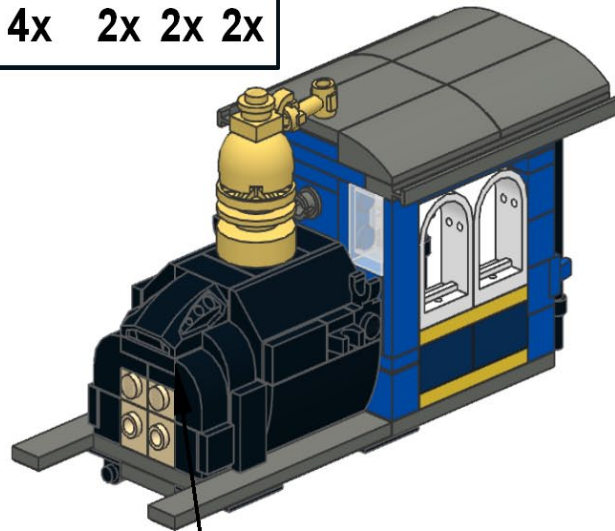
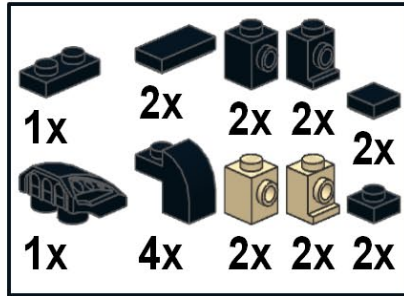


12

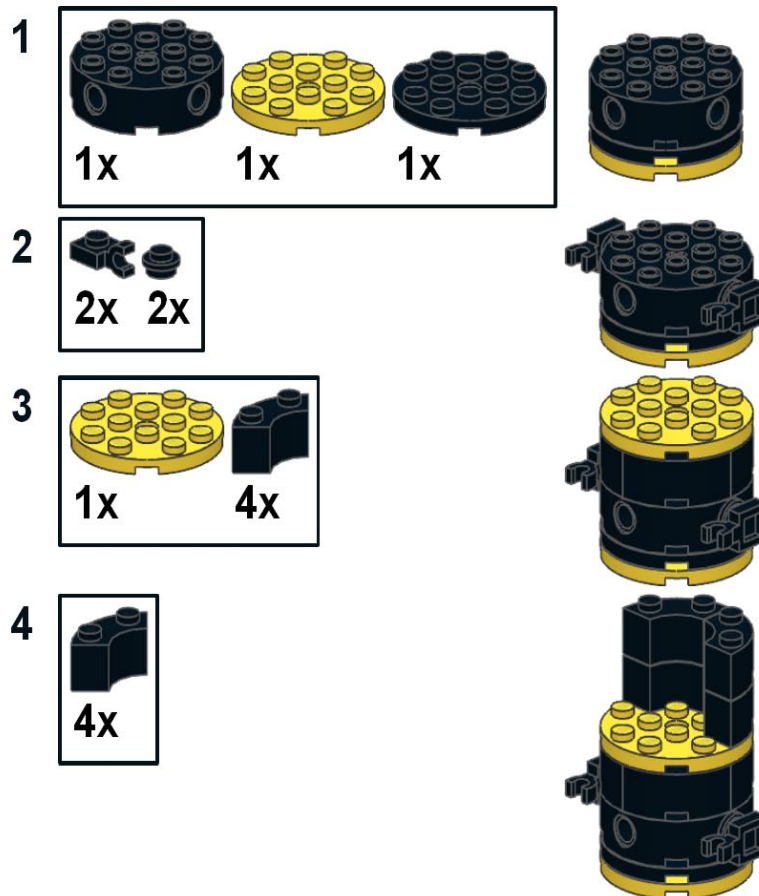















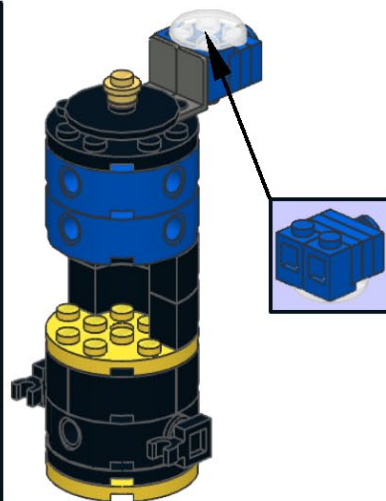
12







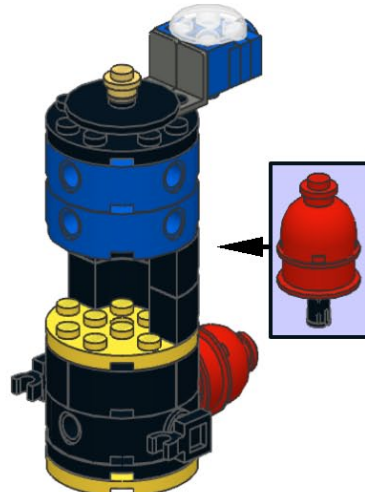
15



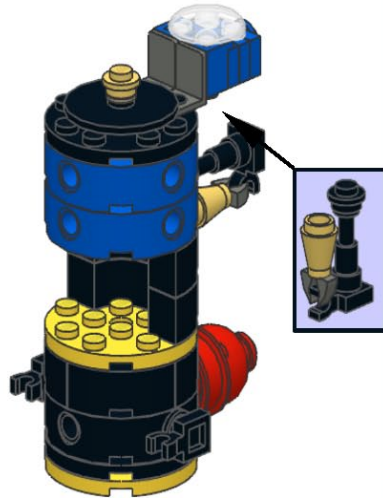
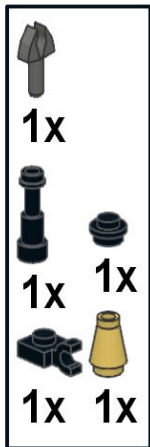
		
1x	1x	1x
		
1x	2x	1x
		
2x	1x	3 2x
		
	1x	2x



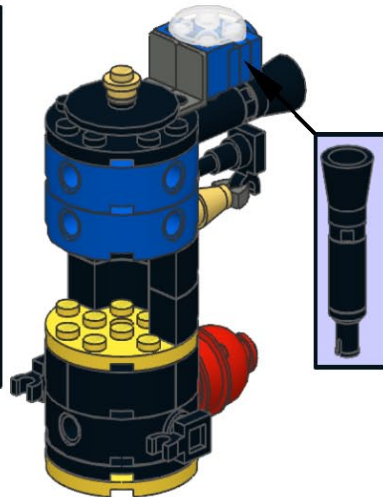

1x

1x


1x **1x**



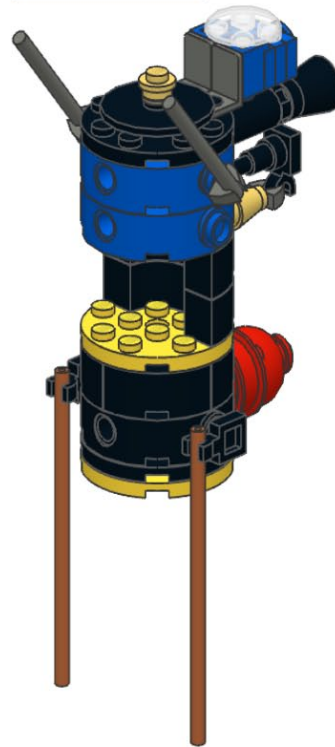
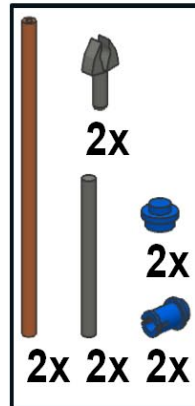
7



8

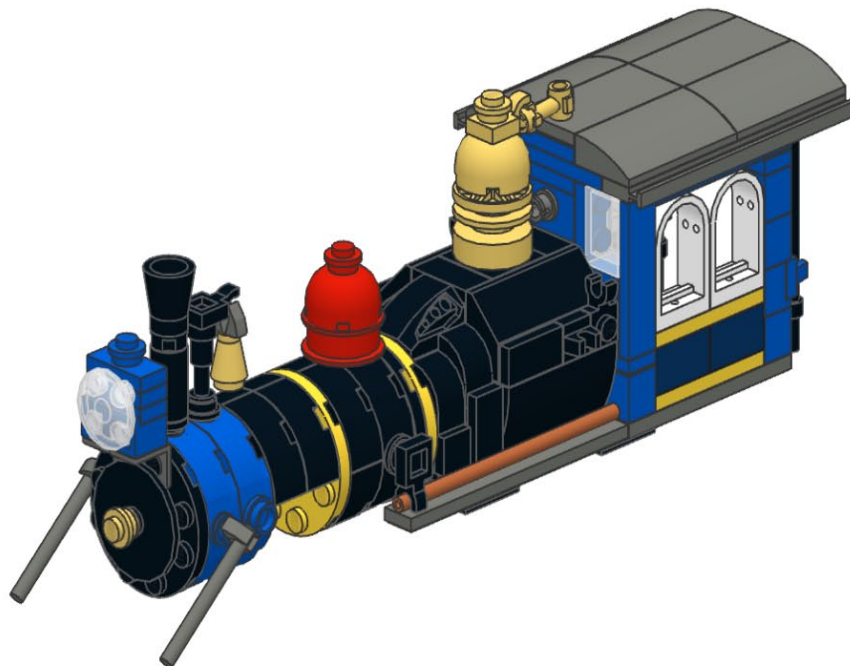


9

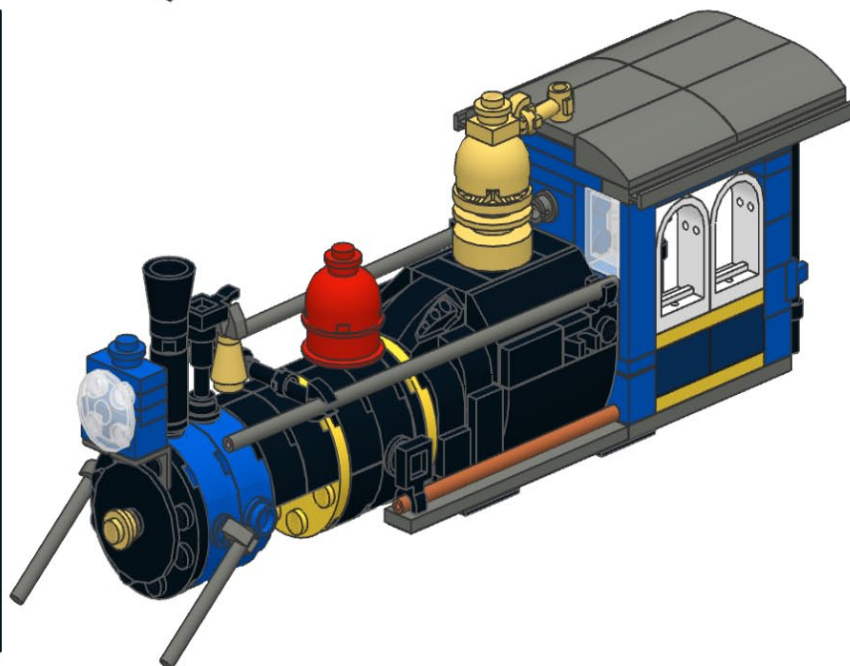
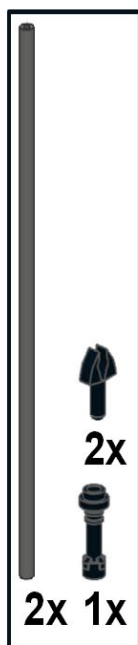


18

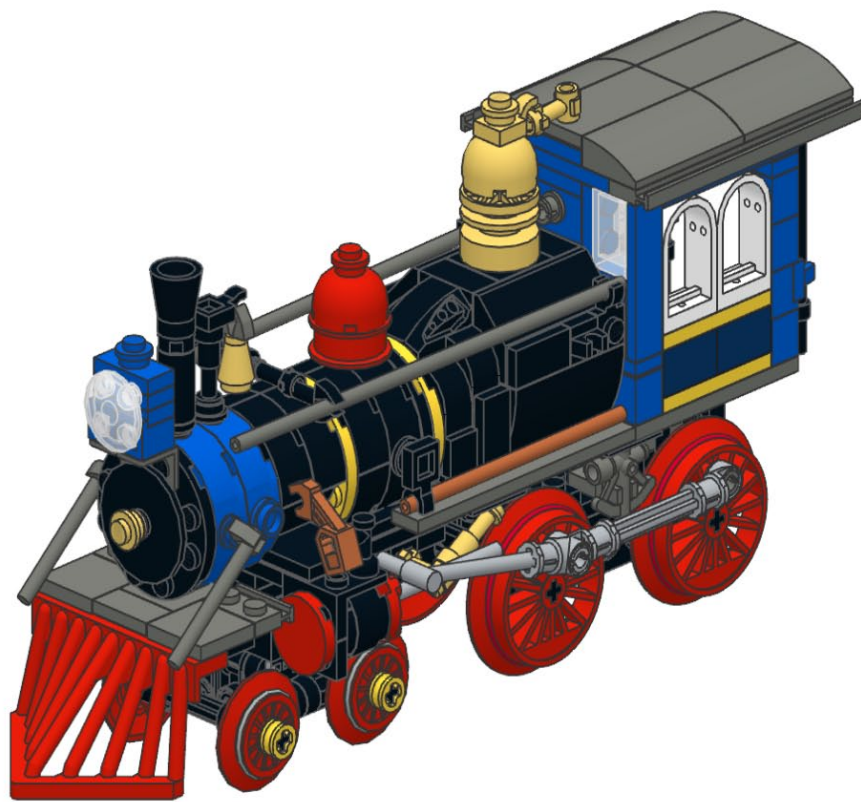
13

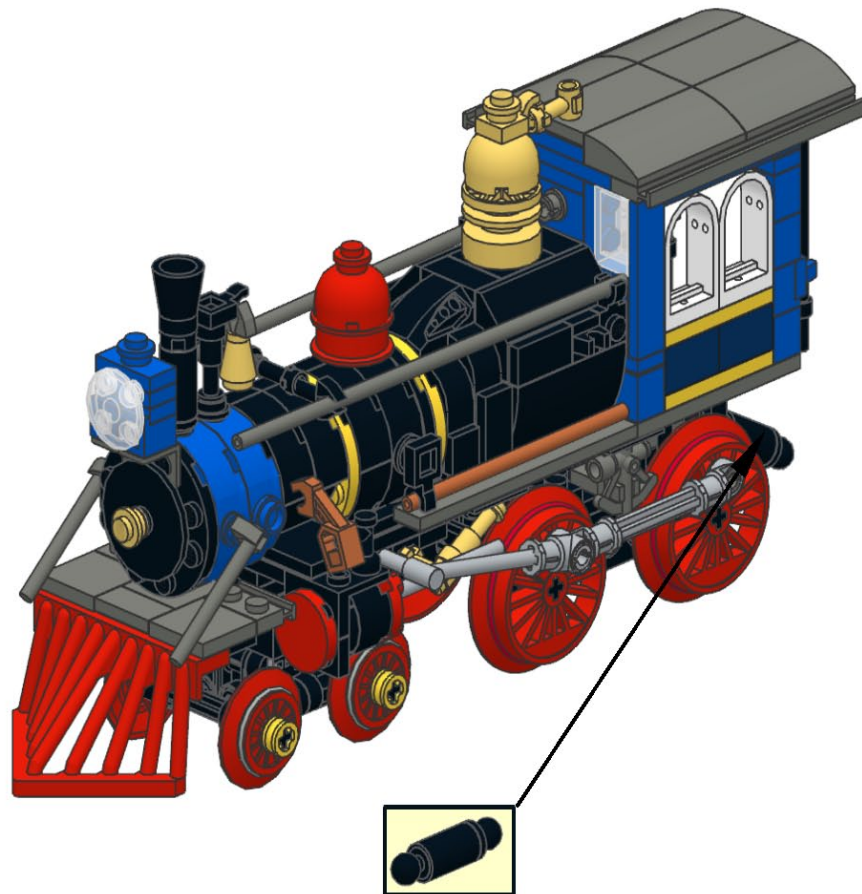


14



19





21

TRAINSPOTTING



AWVR 1206 by Colin Redner (<http://www.flickr.com/photos/44479150@N07/6802922014/in/pool-94516438@N00/>)



CP1961 Bombardier by Sérgio Batista (<http://www.flickr.com/photos/75394519@N03/6791128727/in/pool-94516438@N00/>)



Class 55 Deltic by Alan Rodger (<http://www.flickr.com/photos/49974317@N05/6875021101/in/pool-94516438@N00/>)

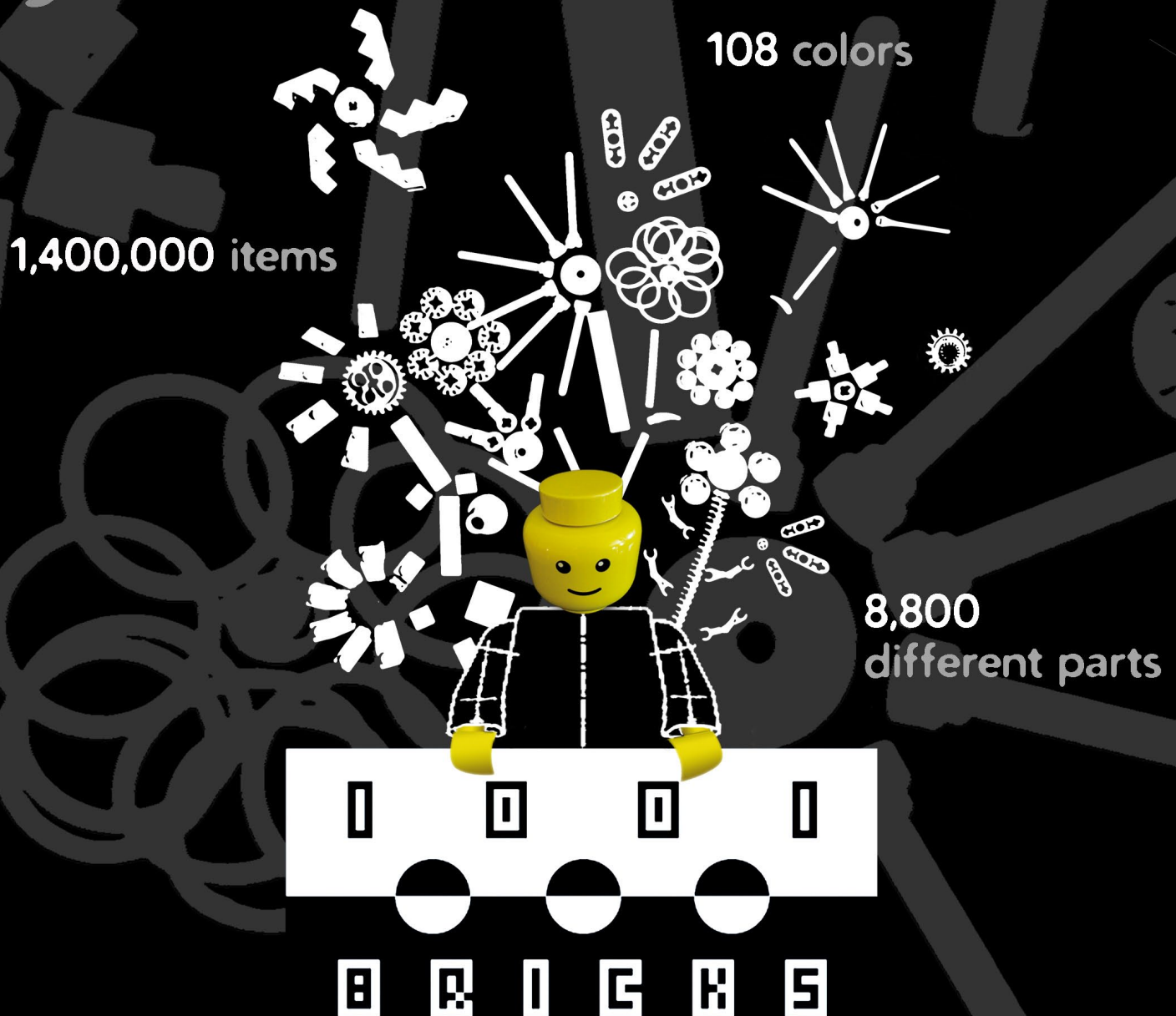


2-6-0 Standard Class 4MT by Carl Greatrix (<http://www.flickr.com/photos/bricktrix/6921424149/in/pool-94516438@N00/>)



Danish State Railways Litra EA by Dennis Thomsen (http://www.byggepladen.dk/forum/forum_posts.asp?TID=12065)

BUILD your dreams



Widest choice • Cheapest airmail • No fees • Multi languages/currencies

www.1001bricks.com