

The Texas Brick Railroad

by Anthony Sava

It's been nearly five years to the day since I began, quite by accident, building the locomotives, equipment, and buildings of the Texas State Railroad. I didn't set off to start some massive project, nor did I even intend to build but the one locomotive. Somehow fate stepped in, and I now find myself with a huge number of train MOCs of which I am exceedingly proud.

Perhaps first I should preface all of this by explaining just what the Texas State Railroad is. The TSRR was founded in 1881 as an extension of the Texas prison system, built by inmates to transport timber to the Rusk Penitentiary and the prison operated iron smelter. The furnace supplied the State of Texas with iron products, including the columns and dome structure for the capitol building in Austin. The railroad continued in one form or another until 1972, when it was handed over to the Texas Parks and Wildlife department. On July 4th 1976, as a part of the Bicentennial Celebration of the United States, the Texas State Railroad was opened to the public as a State historic park.

Budget cuts forced Texas to nearly close the railroad in 2007, but instead it was given new life as a private railroad. Currently the Texas State Railroad is owned by the cities of Rusk and Palestine (pronounced Pahlesteen), Texas, and operated by the American Heritage Railways company. The railroad boasts an impressive collection of four operating steam locomotives, one display steam engine, four diesels, and a large assortment of open air, climate controlled, and dining coaches. Leaving from one of two stations at either end, the train carries passengers through the beautiful and wild Piney Woods of east Texas.



I have been building with LEGO® as an adult for quite some time now, and in 2006 I was no stranger to building custom MOCs. However, at the time I was quite the novice at building trains, and was looking to build my third train MOC. I had seen pictures of the Blue Mountain and Reading's locomotive #425, a Pacific class steam engine with four pilot wheels, six driving wheels, and two trailing wheels, or a 4-6-2 arrangement. It's a very striking locomotive painted almost entirely blue from boiler to wheels. However

at the time Big Ben Bricks, the premier provider of custom Steam Engine wheels, did not offer blue wheels. So I began searching the Internet for another Pacific class steam engine that wasn't all black, which I find to be very boring.

This is when I discovered the Texas State Railroad (or rather, rediscovered it as it turns out, but I was only three years old). The TSRR owns locomotive #500, painted in green with a red roof and white pinstripes. I started construction immediately, and in looking for more photos I also found the TSRR's #300, a Consolidation 2-8-0 painted in red. I built the #500 in 7-wide and the #300 as a 6-wide, both constructed very simply using



#300



standard slopes and exposed studs. Looking back I cringe at the designs, but at the time they were complete I was very pleased with the results.

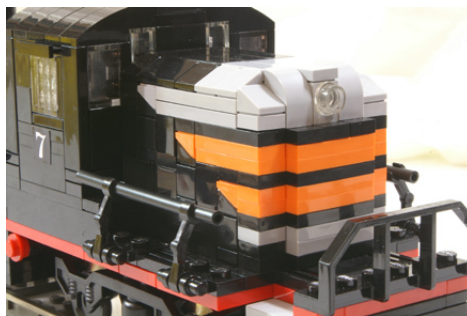
Several years and MOCs later, including finally building the Blue Mountain and Reading's #425 complete with blue wheels, my abilities and experience with LEGO® trains had grown and matured quite a bit. In fall of 2009 I learned the TSRR was hosting its first annual Railfest, but more importantly (to me) they were unveiling the newly refurbished and repainted locomotive #300. I had never really paid much attention to #300, I much preferred the larger #500, but on a whim I decided to drive the family north and pay the TSRR a visit. When I finally stood next to the real #300, seeing this huge, breathing, living machine, hearing it's whistle echoing through the piney woods, I fell in love immediately. Just for fun I had brought my MOC of the locomotive with me, and took a picture of them together. Seeing the two side by side made me realize I had built my MOC completely wrong. Things were out of place, the scale was all wrong, and there were many details completely left out.



began the process of rebuilding both #300 and #500 in 8-wide; making the necessary changes, and adding extra details I didn't originally include such as some of the hoses and the handrails. It took several months of trial and error, but when complete they were fantastic. So proud was I, in fact, that I decided from then on to only model train MOCs to the exact same scale, which turns out to be just about 1:48.

A second visit to the Texas State Railroad, this time to see the traveling Thomas the Tank Engine show, inspired me to try another TSRR locomotive, this time my very first diesel MOC. I decided on locomotive #7, an ALCO RS-2, partially because I had been able to see it first hand at Railfest, and partially because I loved it's color scheme – black with orange and light grey stripes on either end and a red pinstripe down the base. I had built mockups of designs in LDraw before, but I had never attempted to build an entire MOC start to finish. Part and financial limitations, however, necessitated the LDraw only build. Inspired by the work of Gerrit Carstensen, I eventually finished #7, and went on to build the other three diesels similarly in LDraw.

I've built several train MOCs in 8-wide before, but never to some sort of particular scale. Usually I decided to build 8-wide because of the particular size of a steam engine's boiler, and I didn't want the cab and the boiler to be the same width. But standing next to the real locomotive, and then looking back at my photographs, I knew that building 6-wide just wasn't doing #300 justice. I started working on calculating all the appropriate dimensions, using the Big Ben Bricks drivers as a reference, and came up with what an 8-wide #300 should be. I also went back and did the same with #500. It turns out that not only was #300 two studs too thin, but it was two studs too short and the boiler needed an extra stud in diameter. #500 was even more out of scale, needing the extra width both in body and boiler, and seven studs more in length.



A month later I was invited by the Texas State Railroad to put up a display of my TSRR MOCs at Railfest 2010. I decided to step up my timeline on building another physical locomotive, and began ordering parts to build #7. I also decided to order parts for a pair of climate controlled TSRR coaches, so my locomotives would have something recognizable to pull. The coaches didn't turn out as well as I'd hoped, but #7

Using the cheese slope boiler I designed for the BM&R #425, and the piston design ingeniously built by Cale Leiphart, I



#7



#610

was fantastic; and I was able to get a shot of it and its real life counterpart together. I also was able to take a picture of the little TSRR motor car with its LEGO® doppelganger, which I had built on a complete whim.

It all snowballed from there. In January of 2011 I began designing Texas type 2-10-4 locomotive #610, the massive steam engine the Texas State Railroad keeps as a display. #610 is the earliest known surviving example of Lima's "Superpower" steam locomotives. It was from these designs that Lima began to design very large and ultra powerful steam engines capable of pulling the heaviest loads at speed. #610 also has the distinction of being one of the three locomotives to pull the 1976 American Freedom Train, when it wore a striking red, white, and blue livery. I decided to build her with that livery, rather than her all black coat she wears today. After all, all black is boring.

At the same time I built #8, the ALCO MRS-1 diesel that I saw on that first trip to see Thomas the Tank Engine. However, for the first time building trains I designed her to be completely unpowered, focusing instead on capturing all the detail I could in her three axled trucks. Before construction on either the #610 or #8 was complete, while waiting on parts, I began designing locomotive #400.

Locomotive #400, a Mikado class 2-8-2 steam engine, didn't inspire me much - everything on the locomotive itself was something I had already done in some form or another on the other three TSRR steam engines. However, #400's tender was

new – a Vanderbilt style tender. Not only was this something I'd never attempted before, it's something very few people have ever attempted in LEGO, and certainly not at this small size. #400 was also fun to design because it, without its Vanderbilt tender, was featured in the movie "How the West Was Won", where it can be seen smashing through a barricade placed across the tracks.

A few months later and I was able to render #400 in LEGO. Only a few months after that, the two remaining diesels #1 and #22, also found themselves rendered in plastic bricks; both being GE built switchers. #1 is a 45 ton siderod switcher, one of the earliest diesels, and #22 is a 70 ton switcher that is no longer operational but still owned by the Texas State Railroad. Both of these locomotives, along with #400, were either too small or too complex to include motors. However, I plan to fix this at a later date by building a motorized concession car, which has very few windows to reveal the motors and battery boxes within.

Finally in August 2011 I finished work on #201, the oldest and smallest of the TSRR's steam locomotives. Like with #400, most of #201's design challenges had already been overcome with my previous locomotives. But like #400, #201 also had one design challenge left for me with which to struggle. The pistons of the other four locomotives were all more or less the same, and were all built with similar designs. Cale Leiphart's design provided flawless performance and high clearance, allowing #500 to have a fully functional and sturdy 4 wheeled pony truck. But while #201 was a Ten Wheeler class 4-6-0



#8



#400



#1



#22

engine and would have a 4 wheeled pony truck as well, the pistons were an older, box-topped design that prevented me using Cale's design. Reimagining the design to match the real #201 was easy, but getting a low slung, sturdy pony truck was the real challenge. Using a combination of technic pins and light sabre blades, I was able to build a chain of 1x1 technic bricks that holds the pony truck together, and allows the #201 full track compatibility.

With #201 finished, I had completed my MOC marathon that had begun so many years before. All nine locomotives of the Texas State Railroad rendered in LEGO®. I tried to keep certain design elements throughout the different locomotives to tie them all together. For example, all of the steam engines use cheese slopes for boilers, and the two GE built diesels, and the two ALCO built diesels, share the same basic cab design between the companies. None of them are finished, though. Not to sound full of myself, but to quote Leonardo da Vinci – "Art is never finished, only abandoned." Since their rebuild, I have gone back and made changes to all of my engines at least once. #500 alone has gone through at least six different revisions.

My thoughts then turned to building the train station at the Palestine depot. There are two stations owned by the TSRR, one in Palestine and one in Rusk. The Rusk, Texas station is made up of large irregular stone and thick mortar, which

does not lend itself to easy LEGO construction. The Palestine station, however, is a European inspired timber frame construction, which not only is easier to build in LEGO, but I find more attractive as well.

I had already designed the exterior of the station in LDraw many months before, but the interior and the large water tower would have to be built outside of the computer, though I did use a photo to scale out the tower in studs and bricks like I do my locomotives. The water tower was built first, using design elements I found on Brickshelf. The roof is made up of 16 panels of 32 right handed wedge plates, placed on 1x2 brick hinges. Eight of the sixteen are designed to slip below the center radar dish, the other eight above, to minimize daylight escaping through the spaces between. Each layer of the tower is made up of alternating 16 1x2 log bricks and 16 1x1 round bricks, which remarkably form a 16 stud diameter circle.

The station started soon after. With the majority already built in LDraw, I was able to make progress quickly, stopping only when a decision needed to be made as to the layout of the interior. To be honest I wasn't going to build the interior of the station at first, but I decided to go the extra mile, and I think it paid off nicely. The roof was a bit of a challenge, but thanks to more wedge plates I was able to fashion the octagonal roof design reasonably well. There are some holes around the small sections of roof I feel should be smaller, but I've yet to



#201



figure out a solution. The overall design of my station doesn't exactly match the real thing, but I made the changes to make it easier to build, as well as easier to display at TexLUG events.

So am I finished? Not hardly! At the Palestine Depot there's also an Engine shed, home to locomotive #610 and #22. Once complete I plan to assemble an entire Texas State Railroad at Palestine diorama, complete with the engine shed, the station, and the wye that surrounds the station. If I can manage it, I plan to debut it at Brickworld 2012 next year. I still need to build more passenger coaches, as well. I have two climate controlled coaches, I would like to build a few of the open air coaches, a dining coach, the deluxe observation car, and the aforementioned powered concession car. And of course there's the Rusk depot... but its irregular stone construction frightens me a bit. The only solution I've come up with so far is to build the entire thing out of different shades of 1x2 plates and "fake" the irregular stone façade.

I've been asked several times now "Does the Texas State Railroad pay you to do this?" No, nor have I ever asked for anything from them except information. Sure, I'd accept whatever they would offer, but I think of myself more of an unofficial goodwill ambassador to the TSRR. Their gorgeous machines are a sight to behold, and it has become something my five year old son and I share. I have to admit, I really enjoy driving up to the Texas State Railroad and hearing him say "Let's go visit Daddy's trains!"

For more photos of my creations visit my Flickr account:
<http://www.flickr.com/photos/savatheaggie/>

For more information on the Texas State Railroad, visit their website:
<http://www.texasstaterr.com/>
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