

A Close Coupling Technique for Shared Bogies

by Jason Allemann

This article describes the close coupling technique for shared bogies that I used for my O-Train light rail model.



Background

Built for ParLUGment's Winterlude 2005 train layout, the O-Train is a light passenger train (Bombardier Talent BR643 DMU) that runs a commuter route through the city of Ottawa. The train was built on a tight deadline, and as such the initial version used a simple fixed pin/axle hole connection between the bogies and train body. Unfortunately this left a 2 stud gap between the coach and each engine, which I really wasn't satisfied with. Once the show ended, with more time on my hands, I took the opportunity to try and improve the design of the connections to eliminate this gap.

Criteria

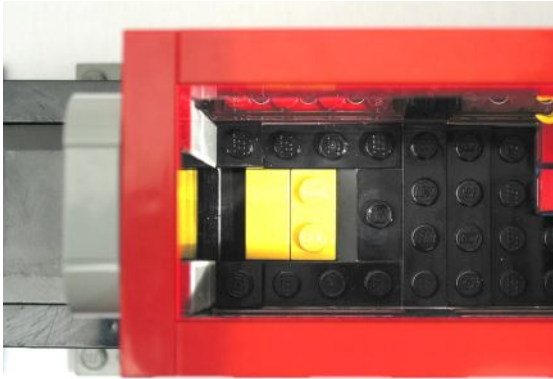
There were two criteria I wanted to meet. The first, and biggest, was that I still wanted to use the standard LEGO train motor as one of the shared bogies. This really limited the amount of work I could do with the bogies themselves. The other was that I wanted to have enough room inside the train to place a seat above the connection.

Solution

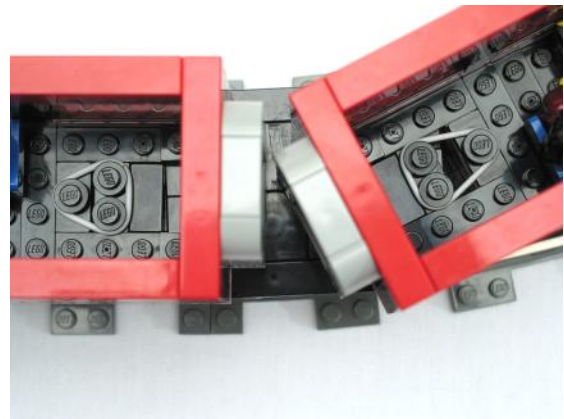
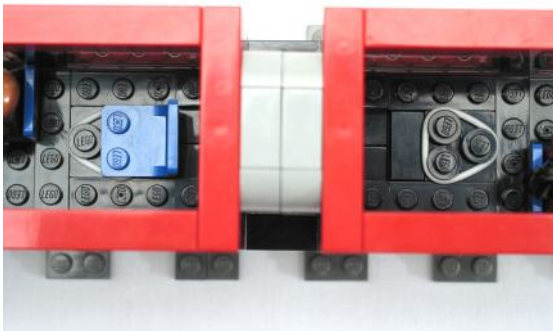
I started to experiment with elastic bands to create a flexible connection and came upon the following solution. This is actually just a more elaborate variation on the original fixed pin/axle hole connection. The 'pin' is now essentially a rotating 2x2 plate on the bogie. The 'hole' is a 2x3 opening in the bottom of the train body, for the 'pin' to fit into and slide along.



All that remained to be added was a mechanism to keep the train body tight with the bogie. To keep it as minimal as possible, and to meet my second criteria of placing a seat above the connection, I simply added a few 1x1 round plates and connected them with an elastic. Depending on the situation, any number of alternate techniques could be used to make this connection.



Here are some more pictures of the coupling in action.



Requirements

The only real requirement for this solution is to have access to the interior of the train when connecting or disconnecting the bogies. I also use a minifig lance to help manipulate the elastic bands on to and off of the 1x1 round plates.

Results

This close coupling solution seems to perform well in typical layout scenarios. In my testing it handled switches, grades of up to 2 plates per track and uneven track conditions without problems.

Contact

If you have any questions or comments about this technique, feel free to contact me at jason@parlugment.org.

More pictures of the O-Train can be found at www.truedimensions.com/lego.