

PSLTC Two-Stud Monorail Standards

Thomas Garrison

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Why Two-Stud Monorail

Of all trains, monorails hold a special fascination for Lego enthusiasts and Washingtonians. The LEGO Company has made a few forays into monorail, but they were poor matches for the prototype and require specialized pieces—some susceptible to mechanical failure—that are long out of production. Brick-built rail that can accommodate prototypical monorail trains themselves built from contemporary pieces makes running monorails more accessible, scalable, and affordable. Two-stud-wide brick-built rails, sometimes identified as the monorail Custom Rail System¹, are well-sized for minifig-scale and (often based on the pioneering work of Masao Hidaka²) have been developed into a variety of geometries.



Steven Walker photo

¹ <https://www.eurobricks.com/forum/index.php?/forums/topic/150261-wip-lego-monorails-custom-rail-systems-crs/>

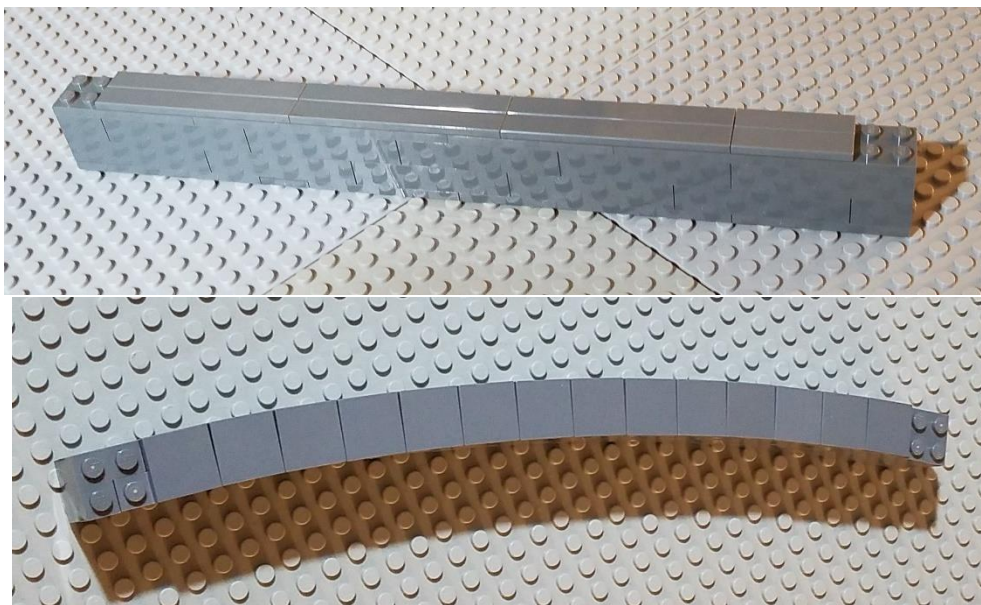
² <https://www.youtube.com/user/MasaoHidaka/>

PSLTC Track Standards

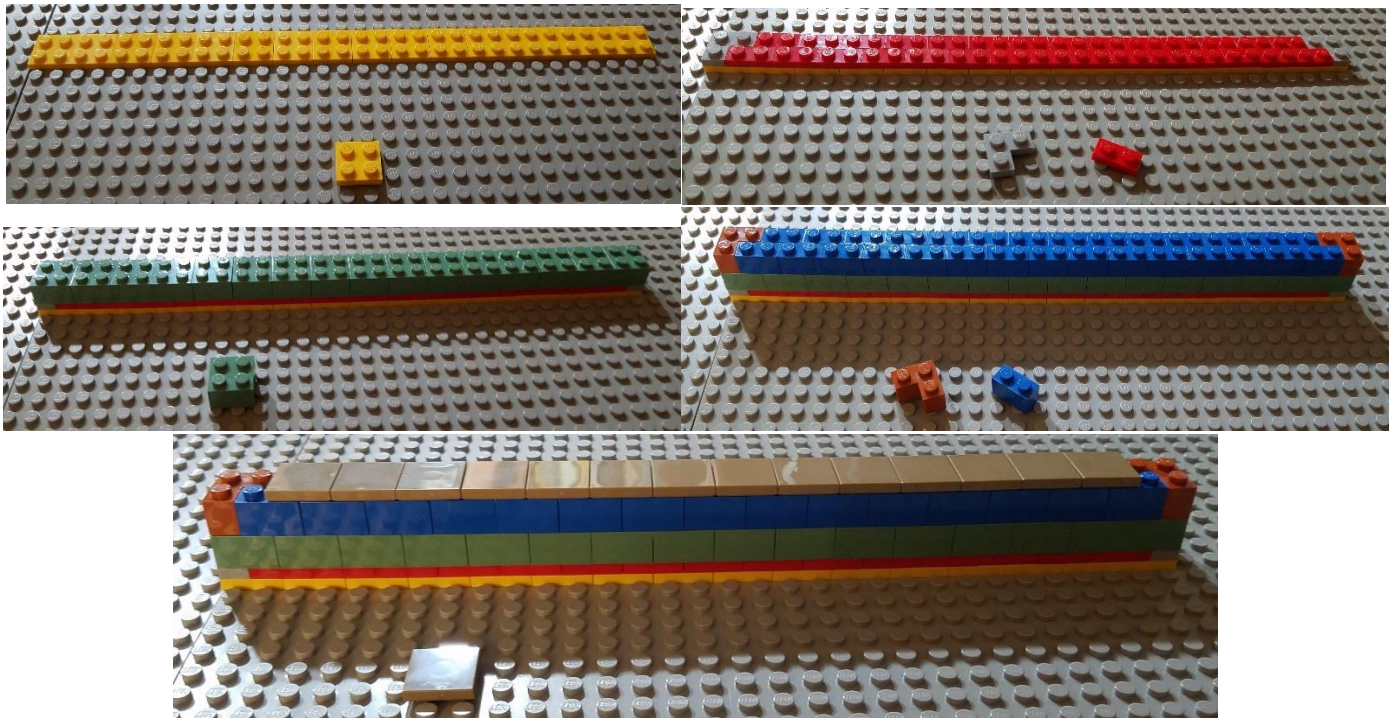
PSLTC monorail track is dark stone gray, two studs wide, and smooth-topped with at three bricks height of smooth-sided rail and a top surface at 20 bricks above “ground level”. Minimum curve radius is 80 studs. The track consists of the rail, rail joiners, and supporting stanchions. Generally, for each section of rail used there must be one rail joiner and one supporting stanchion.

The rail typically consists of two layers of bricks and two layers of plates, in any combination, topped with tiles except for a depth of two studs at either end. Rails may be of any length (provided they are strong enough to support trains over their spans) but are most often 32 or 40 studs long.

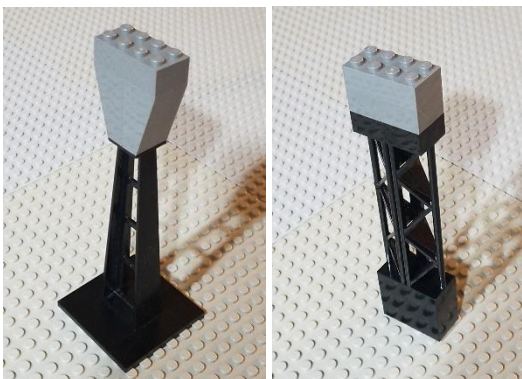
Since curved rails are generally topped with 2x2 tiles, it is a good practice to top straight rails with only 1x tiles so they may be easily distinguished. Curved rails are generally made by bending brick structures under slight stress. Conveniently, a 32-stud-long bent brick structure forms $1/16^{\text{th}}$ of a circle with radius 80 studs, so a curve with the minimum radius has the familiar Lego track geometry, albeit taking up considerably more space.



Such curved rail can be easily made from basic elements, primarily 1x2 and 2x2 bricks and plates.



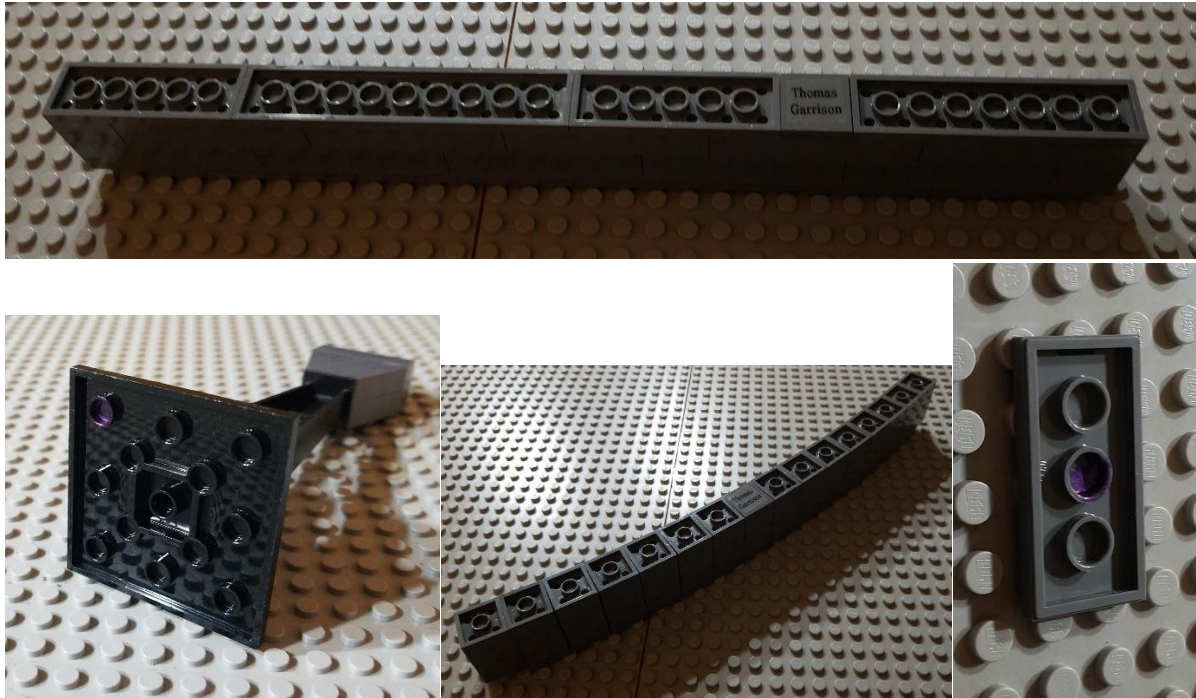
Standard rail joiners are dark stone gray 2x4 tiles, which complete the tops of the two joined rails. Two 1x4 tiles may also work as a rail joiner. From below the rails will be joined by a 2x4 studded part, usually the supporting stanchion.



Supporting stanchions are predominantly dark stone gray and black, but may have a variety of designs as needed to not obstruct their surroundings (e.g., on sidewalks or between train tracks) and in some cases to allow trains to run under the rail. They are typically topped with a 2x4 studded surface that will join two rails from below and 17 bricks tall, but should be available in or readily adapted to multiple heights as needed when placed atop sidewalks or other structures.

By design, the components of monorail track are fungible and like all fungible components of PSLTC layouts they must be distinctively marked so their owners can be

easily determined by third parties even when components are separated, particularly during teardown.




PSLTC Train Standards

PSLTC monorail trains have their floors seven plates above the top of the rail. Trains are no more than eight studs wide at or below floor level and no more than ten studs wide above floor level. Trains extend no more than 29 plates above the top of the rail and no more than nine plates below the top of the rail.

Possible Variations

PSLTC monorail standards are designed to allow current and plausible future rolling stock to operate well, and may evolve based on the evolving roster of rolling stock available. The minimum curve radius might be violated for switches, sidings, or branch lines (assuming there was rolling stock in use that could use such track) so long as the mainline were clear. If rolling stock could handle tracks with a grade and the tracks did



not interfere with trains below then tracks could slope up or down. Two studs is five plates, so track could be built sideways (assuming a four-stud track height would not create interference) and might not need to be fully tiled on both sides if available rolling stock could run with antistuds.