

# Advanced Trains

This mod aims to provide realistic, good-looking and functional trains by introducing a revolutionary rail placement system. It features several wagons that can be coupled together.

*This mod is not finished. Don't expect everything to work. If you miss features, suggest them, but do not denounce this mod just because they are not yet implemented. They will be.*

## Placing Rails

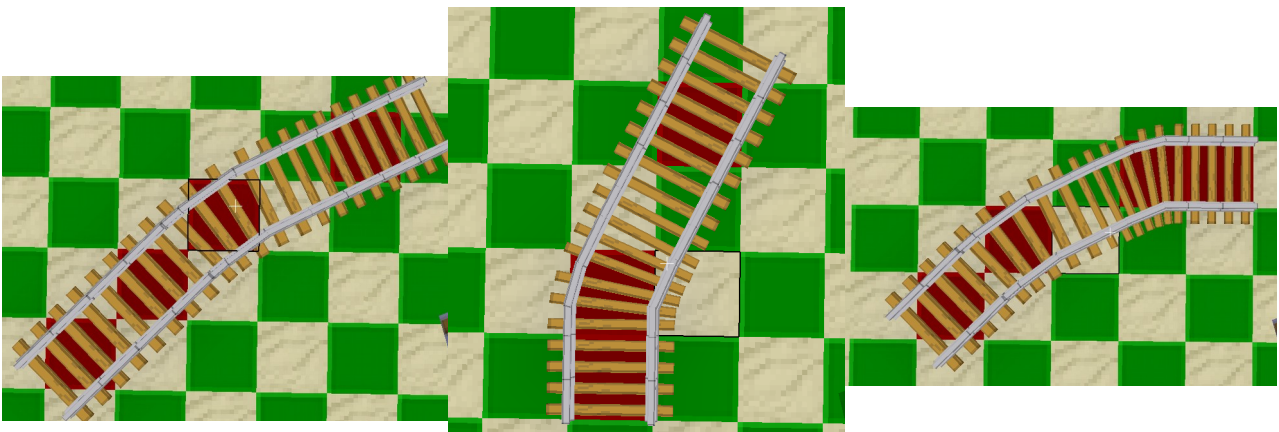
Minetest's in-house rail system features rails that turn at an angle of 90 degrees – totally impractical for the use with realistic trains. So, we have our own rails. Remember: Carts can't drive on the rails provided by this mod, as do trains not drive on minetest's default rails because of their different track widths.

First, craft some rails.



Now, place one at any position and another one right next to it: you have made your first railway track!

To learn how to make turns have a look at the following examples. A rail node has been placed only at the red-marked places.



As shown in the illustrations above, the 30-degree angled rails use a knight's move (2 ahead, 1 aside) for placement.

## Switches

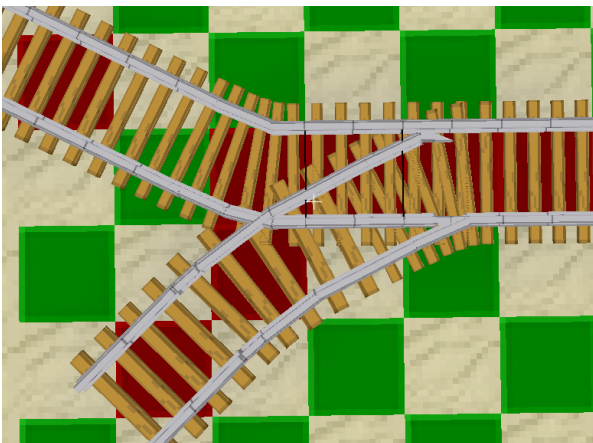
To create switches we need the trackworker tool. Aside from turning rails into switches, it is also capable of rotating everything (rails, bumpers, signals) in this mod.



Place some rails. Then left-click 1-2 times on one of these rails, until you see a switch. Use right-click to rotate it how you need it. You can change the switch direction by right-clicking the switch or by powering it with mesecons.

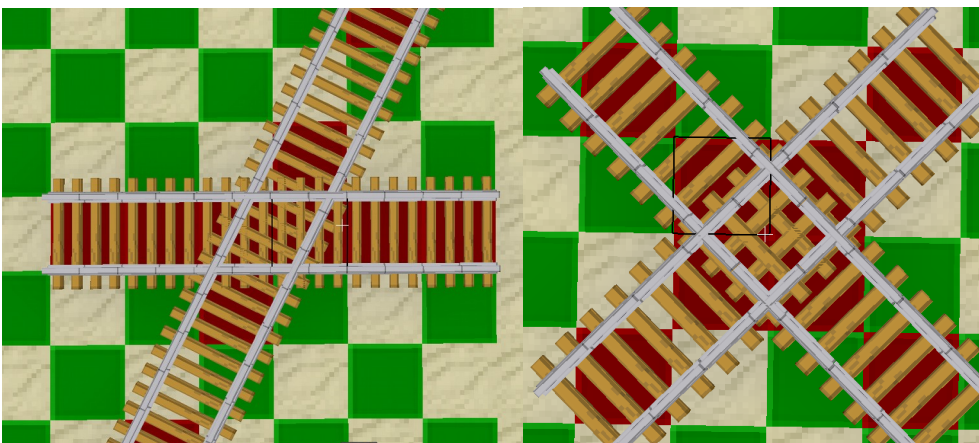
*Unfortunately tracks that are placed next to switches don't always automatically connect to them. You need to correct manually using the trackworker.*

When you are finished, it could look like this:



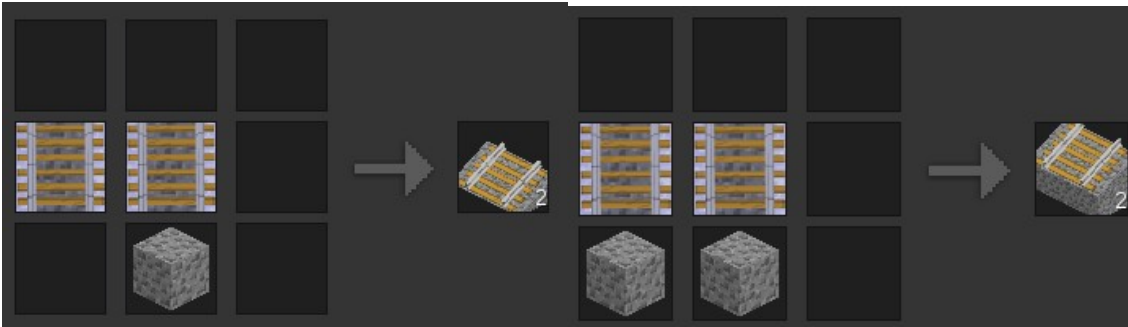
## Rail crosses

There are no real cross-rail nodes. However you can create crossing rails by being creative and using the knight's move or by placing opposing 45-degree rails.



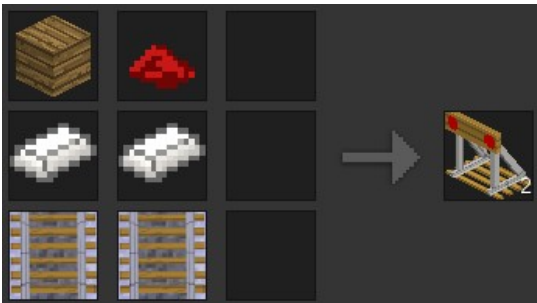
## Height differences

To master height differences, you can use the following two nodes:



They should be self-explaining and can be rotated by the trackworker.

## Bumpers, platforms and signals



Bumpers are objects that are usually placed at the end of a track to prevent trains rolling off it. After placed, they can be rotated using the trackworker.



These are a regular analog signal and an electric signal. Like everything, you can rotate them using the trackworker. Right-click or power with mesecons to signal trains that they can pass or have to stop.



These are some platform nodes. I suggest using the left one, it's only half height.

# Trains



These are a steam engine and a wagon for it. The wagon is immovable if not pulled/pushed by an engine.



This is an underground train wagon. Hook some of them together to get an underground train.

To place wagons, simply craft and click a track.

## Driving trains

Right-click any wagon to get on. If the wagon you are sitting in is an engine (this is the case for the underground train and the steam engine) a control is displayed. The upper bar shows the speed the train is travelling at, the lower bar shows the speed it is ordered to reach.

Depending on if you are or want to drive forward or backward, A and D make the train faster or slower. The sneak key stops the train.

You can always get off the train by either pressing aux1(usually E) or by right-clicking the wagon again. But be warned: Trains that roll you over will damage you!

## Coupling wagons

You just learned how to drive an engine. Now, place a wagon anywhere and drive your engine slowly towards that wagon. As soon as they collide, your engine will stop. Now get off and right-click the green icon that appeared between the engine and the train. You have coupled the wagon to the engine.

To decouple a wagon, punch the red icon between the wagons you want to decouple while the train is standing.

*And now have fun playing around with trains in minetest!*