

PicoTrains

Thank you for downloading PicoTrains! I hope you have as much fun playing it as I did making it!

If you want to get started playing it straight away, all the information you'll need is in the 'How To Play' guide, accessible from the title. This manual will discuss PicoTrains' systems and features in greater detail.

What is PicoTrains?

PicoTrains is a train management/strategy game, which challenges you to create efficient and profitable rail networks on randomly generated maps. In the 'Time Challenge' mode, you have 20 minutes to earn as much money as possible. In the 'Free Play' mode, there are no set goals or restrictions, and you can build your network at your own pace.

What is PICO-8?

PicoTrains is written for the PICO-8 fantasy console. You can think of a fantasy console as being like an emulator for a console that never existed physically! The technical limitations of PICO-8 are designed to evoke some of the aesthetics of early home-computing, which is why PicoTrains has a 16-colour palette, 4-channel sound, and a 128×128 resolution.

When you run PicoTrains, you are running it within a standalone PICO-8 platform, so you have access to some of the general features of PICO-8. Pressing 'Escape' will bring up a menu (navigated with cursor keys and 'Enter') giving access to some platform options, including adjusting the volume, and shutting down the game.

You can also make use of a number of handy keyboard shortcuts that are integrated into PICO-8; two of the most practical of these for PicoTrains are the ability to save screenshots or GIFs:

- Press F6 to save a screenshot to your desktop (PNG format).
- Press F9 to save the last 8 seconds of gameplay as a GIF (also to your desktop).

You can find a full list of PICO-8 keyboard shortcuts at https://pico-8.fandom.com/wiki/Keyboard_Shortcuts

Controls:


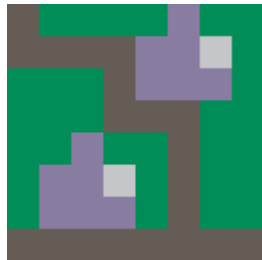

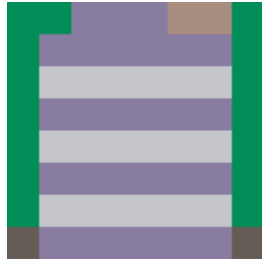
PicoTrains can be played exclusively with a mouse. The left mouse button is used to select buttons in the interface, and to place tracks, stations, and routes on the map. The right mouse button cancels any current selection. The 'Undo' button in the interface refunds and cancels your most recent build command. You can scroll the map by moving the mouse cursor to the edges of the screen, or by using the cursor keys on the keyboard.

How to Earn Money:

In either mode of PicoTrains, you start with \$2500, which is enough money to make a small network, and start earning income. Once you have placed at least two stations, and connected them with tracks, you can set a train route to run between them. The path of a route is created automatically, and will always follow the most direct path between the two selected stations.

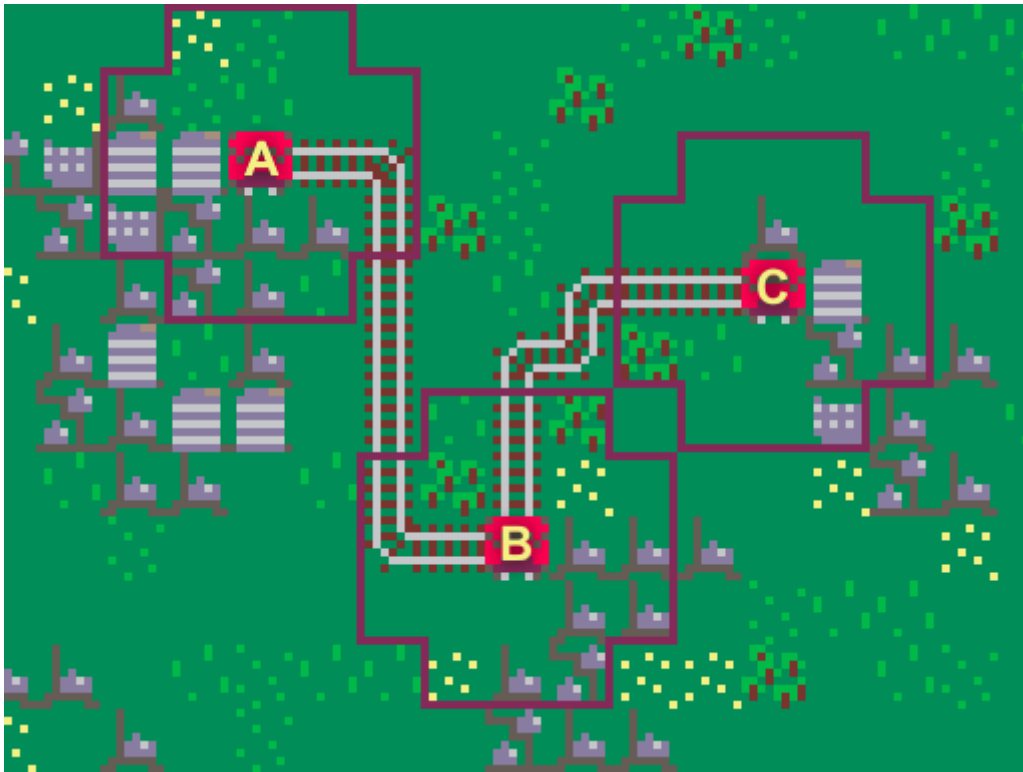
At each station that the train on the route passes through, you will earn money if there are any dwelling tiles within a 2-tile radius around that station. This region is shown as a red outline around the stations when you are placing them, and new stations can't be placed where these regions would overlap with the outlines around existing stations.

Dwellings come in four varieties, with higher-density dwelling types earning more money for their nearby stations:

| | |
|---|--|
|  |  |
| Dwelling score of 1 (Earnings \times 1) | Dwelling score of 2 (Earnings \times 2) |
|  |  |
| Dwelling score of 3 (Earnings \times 3) | Dwelling score of 4 (Earnings \times 4) |

The amount of money earned by a station is also proportional to the distance the train has travelled from the start of the route (when running forwards) or the end of the route (when running backwards). If 's' is the score of all properties in the 2-tile radius around a station, and 'd' is the distance travelled so far along a route, then the exact amount earned at a station is given by the following formula: $d \times s \times 0.25$
(the result is always rounded down to the nearest integer)

Consider the following example, with stations A, B, and C, to see how this works in action:



If a route is set starting at station A and ending at station C, here is the sequence of events which will happen:

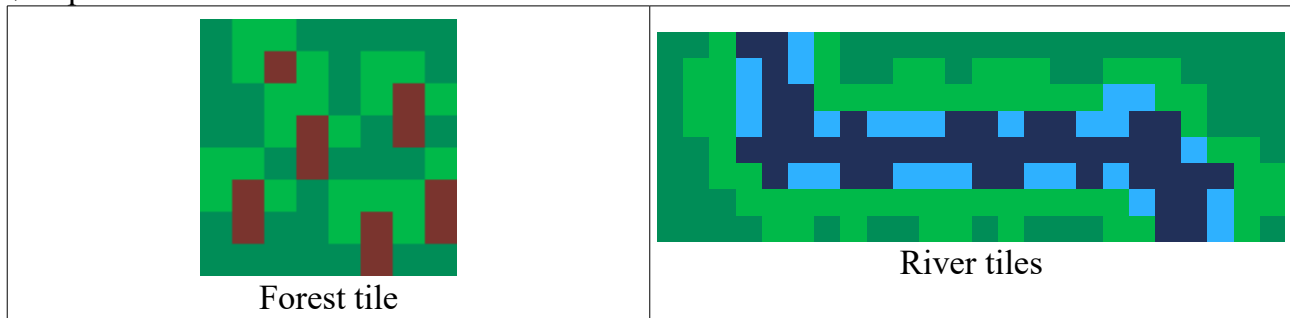
1. The train departs station A (no money is earned at this point).
2. The train arrives at station B. The distance travelled from A to B is 10 tiles, and the score for all of station B's dwellings is 7. $10 \times 7 \times 0.25 = 17.5$. The decimal portion is removed, and \$17 is earned.
3. The train arrives at station C. The distance travelled from A to C is 18 tiles, and the score for all of station C's dwellings is 11. $18 \times 11 \times 0.25 = 49.5$, so \$49 is earned. After this point, the direction of the route is reversed, and distance calculations are based on the distance from station C.
4. The train arrives at station B. The distance travelled from station C is 8 tiles, and the dwelling score of station B remains unchanged (7). $8 \times 7 \times 0.25 = 14$, so \$14 is earned.
5. Finally, the train arrives back at the start of the route, at station A. The distance travelled from station C is 18 tiles, and the score of all of station A's dwellings is 19. $18 \times 19 \times 0.25 = 85.5$, so \$85 is earned. The direction of the route is reversed, and this sequence of events is repeated.

Cooldown:

Once a train has passed through a station, that station enters a 'cooldown' mode, during which it will not earn money for any other trains. The cooldown lasts 8 seconds, and its progress is shown by a green bar above the station. When the bar is full, the station can earn money again.

Building and Route Costs and Rules:

Rail: Tracks cost \$150 per tile when placed on dwellings, river tiles, or forest tiles, and cost \$50 per tile on all other tiles.



Stations: Your first station costs \$150, and the price increases by \$150 for every additional station that you place (the cost of your n th station is $n \times 150$). Outside of space limitations, you can place an unlimited amount of stations, and terrain does not affect their cost.

Both rails and stations automatically create connections to adjacent rails/stations when they are placed.

Routes: Your first route costs \$200, and the price increases by \$200 for each additional route that you place (the cost of your n th route is $n \times 200$). You may place 16 routes, and they don't need to be unique; they can overlap, or even be identical. The cost to reset a route is always \$2000; this cost is unaffected by the amount of routes that you are running.

Tips and Strategies:

- Be careful not to make your first route too expansive - if you can't afford to finish setting up your first route, you will have no means of earning money, and you will need to restart.
- You may only undo your most recent building command, and placing or resetting a route disables the undo button, so you need to create a long-term plan for your routes from the very beginning.
- Creating long and winding railways is the easiest way to add value to a route (you can imagine that the denizens of PicoTrains love taking long, scenic train journeys!)
- Don't forget to reset your shorter, older routes as you expand. They may be triggering station cooldowns, reducing the potential profits from your longer routes.
- Starting routes at the right moment to minimise overlap is critical to late-game optimisation. Station cooldowns last exactly 8 seconds, and each train travels 15 pixels per second (just under 2 tiles per second; each tile is 8×8 pixels). Therefore, if you have multiple trains on an identical route, and you want to maximise their earnings, there needs to be at least 15 tiles between trains to avoid waste due to cooldowns.

Credits:

Music, Design, Programming, Graphics: Soundole (Peter Anthony Smith)

Playtesting: Erin Harrison, Joanne Moo, Matt Scattini

PICO-8 is created by zep (Joseph White) and Lexaloffle: <https://www.lexaloffle.com/pico-8.php>

You can find more of my games at my itch.io page: soundole.itch.io

You can reach me with your questions, concerns, or comments at
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PicoTrains is dedicated with lots of love to Hershel Harrison-Smith - without whom, I would know much less about steam trains!