

Martian Rails

RULEBOOK · VERSION 1.0.0 · TRONSOFT GAMES

Martian Rails is a crayon-rail game for two to six railroads, played across the whole surface of Mars. You lay grade between mileposts, run freight against waybills, and try to be the first railroad to reach the charter figure with all five major cities standing on one connected system.

What makes this map different from every other railroad map is that it is not a rectangle. It is a cylinder. The eastern edge of the plate is the western edge, and the shortest alignment between two railheads is very often the one that leaves the sheet.

The sheet

The map is a milepost lattice laid over an equirectangular frame of Mars. Each milepost has up to six neighbours. Mileposts in the same row are 356 km apart at the equator and closer together toward the poles; rows are 296 km apart throughout. Beyond 66 degrees of latitude the layered polar deposits take no grade at all.

The plate	
Columns × rows	60 × 29
Mileposts	1740
Mileposts that will take grade	1620
Segments between mileposts	4740
Settlements	178 (5 major, 23 city, 150 town)
Lava tubes	12

Every settlement on the plate is named for, and sited on, a real Martian feature. The terrain follows the real crustal dichotomy — the smooth northern lowlands against the battered southern highlands — with the Tharsis rise, the great shield volcanoes, the chaos terrains, the dune seas and the polar deposits laid over it.

The seam

The sheet is cut at 180 degrees east. That meridian is drawn as a dashed verdigris line, and it is marked on the longitude ribbon under the map. Grade laid up to the seam continues on the far edge. So does a train. The table below gives the cheapest grade between each pair of major cities, and it is the clearest statement of why this matters.

	Chryse	Syrtis Major	Elysium	Olympus	Hellas
Chryse	—	47	51	40	63
Syrtis Major	47	—	34	48	34
Elysium	51	34	—	28	51
Olympus	40	48	28	—	64
Hellas	63	34	51	64	—

Elysium sits near the eastern edge of the plate and Olympus near the western one. Measured across the sheet they are nearly two thirds of the map apart. Measured across the seam they are 28 — the cheapest link between any two majors on Mars.

Setting out

Each railroad begins with 60, plus 2 more for each seat behind the first. The first 2 turns are survey turns: you may lay grade but not run a train. Survey turns are taken in snake order — first to last, then last to first — so no seat gets both opening picks. When the survey closes, every railroad places its train on the largest city it has reached.

From then on a turn is simply: lay up to 20 of new grade, and move your train up to its allowance. You may do them in either order and you may go back and forth between them.

Laying grade

New grade must join your existing system. Before you own any track you may start from any city milepost. The price of a segment is the dearer of the two mileposts it joins, plus anything charged for a barrier crossed on the way.

Ground

Ground	Per milepost	Mileposts on the plate
Plain	1	382
Cratered highland	2	792
Dune sea	2	29
Montes	3	134
Chaos	4	20
Layered ice	4	240
Volcanic shield	5	23
Polar cap	no grade	120

Settlements

Settlement	Per milepost	On the plate
Town	3	150
City	4	23
Major city	5	5

A major city occupies its own milepost and all six of its neighbours. The segments inside a major are open to every railroad, so nobody can be walled out of one. Every other segment belongs to the railroad that paid for it.

Barriers

Barrier	Added to the crossing	Crossings on the plate
Outflow channel	+2	87
Chasma	+3	46
Dry canal	+1	77
Wet canal	+2	93
Lava tube	+0	12

The canals are the one invented layer on an otherwise real map. A century of Martian fiction owes Percival Lowell a debt, so the sheet carries the canals he thought he saw, redrawn as engineering: wet ones still carry water, dry ones are abandoned cuts. A lava tube runs beneath its barrier and costs nothing extra at all — the only free crossing on the planet, and worth planning a whole route around.

Running freight

Your train moves one milepost at a time along track it is allowed to run on: your own grade, the shared segments inside a major city, or a rival's grade. Running over a rival costs 4, paid once to that railroad per turn however far you run on it. You cannot enter track you cannot pay for.

You hold 3 waybills. Each names three demands — a commodity, the settlement that wants it, and the fee. Load a commodity free at any settlement that produces it, carry it to the settlement named on a waybill, and collect. That waybill is then discarded and a fresh one drawn.

Where to load

A demand names what is wanted and where it is wanted. It does not name where to pick the load up, and with 178 settlements on the plate that is the harder half of the question. Tap the demand and the plate answers it: every settlement that raises the commodity is ringed with a dashed ring and a chevron pointing down into it, and the settlement that wants it is double-ringed. A caption under the waybills names those settlements nearest first with the distance to each, and the names are links that travel the plate, wrapping across the seam when that is the short way. If the load is already aboard, only the destination is marked.

Each commodity is raised at four settlements, so there is nearly always one within reach. Hovering any milepost also lists what it raises.

If none of your three waybills can be worked, you may return all three and draw three new ones, which costs you the rest of the turn's running. And a railroad that has spent itself short is topped up to 8 at the start of its turn on the government mail contract — operating money only, which cannot be spent on grade.

Fees

Waybills in the deck	150
Demands across them	450
Lowest fee	12
Highest fee	63
Median fee	34
Mean fee	34.3

A fee is set by how far the goods have to come: it is figured from the nearest settlement that produces the commodity to the one that wants it, so a long haul across the seam pays what a long haul is worth.

Locomotives

Locomotive	Movement	Cars	Upgrades to
Dust Crawler	9	2	Freight Hauler, Fast Freight
Freight Hauler	12	2	Maglev
Fast Freight	12	3	Maglev
Maglev	16	3	—

One locomotive change per turn, at 20 each. Cargo above the new car limit is left on the ground.

Events

At the start of each turn there is roughly a 22 in 100 chance that something happens on the line. Events last the round.

Event	Effect
Global Dust Storm	A planet-encircling storm closes every grade above 30 degrees latitude. Trains there lose half their movement this round.
Regional Dust Storm	Dust shuts one region. Trains inside it lose half their movement this round.
Canal Freeze	The wet canals ice over. Crossing a wet canal costs 3 extra this round and every railroad pays 2 for de-icing.
Solar Flare	Comms are out. No railroad may draw a replacement waybill this round; deliveries still pay.
Aerobrake Supply Drop	A supply canister lands on the line. Every railroad collects 6.
Derailment	Sand in the points. The active railroad's train stops where it stands and forfeits the rest of its movement.
Marsquake	A shallow quake on the Cerberus Fossae. Crossing any chasma costs 2 extra this round.
Perchlorate Contamination	Regolith handling levy. Every railroad pays 4.
Terraforming Grant	The Areographic Board underwrites new grade. Every railroad may build 6 further this round.
Ice Convoy	Polar shipping is at a premium. Water Ice and Deuterium deliveries pay 8 more this round.
Sublimation Fog	Morning fog in the lowlands. Every train's movement is reduced by 3 this round.
Equipment Recall	A hauler fleet is grounded for inspection. Every railroad pays 3 per load it is carrying.

Winning

A railroad completes its charter when it holds at least the charter figure in the treasury and has all 5 major cities — Chryse, Syrtis Major, Elysium, Olympus and Hellas — standing on one connected system. The charter figure rises with the size of the field, because running fees are real income and a two-railroad game collects far less of them than a six.

Railroads	Charter figure
2	230
3	250
4	270
5	290
6	310

The charter is judged at the close of a round, never in the middle of one, so every railroad has taken the same number of turns. If more than one qualifies in the same round, the richer treasury wins. Should the game somehow run to 250 rounds without a charter, the richest railroad takes it.

Working the plate

Where to load	Tap a demand on a waybill. Tap it again to clear the marks.
Lay grade	Click a milepost beside your system. Drag to lay a run.
Run train	Click any milepost your train can reach this turn.
Pan	Drag the sheet, or drag the longitude ribbon beneath it.

Keys	B lay grade, R run train, U undo, Enter end turn, Esc close
Undo grade	Takes back the last segment laid this turn, with a refund.
Saving	The game saves itself in this browser at the top of every turn.

Commodities and where they are raised

Thirty commodities are worked on the plate. The four settlements listed against each are the only places it can be loaded.

Commodity	Class	Raised at
Water Ice	Raw	Boreum, Australe, Olympia, Sisyphi
Deuterium	Raw	Boreum, Utopia, Australe West, Proctor
Hydrogen	Raw	Vastitas, Australe, Dawes, Elysium
Regolith Ore	Raw	Meridiani, Arabia, Sirenum, Vastitas East
Iron	Raw	Hesperia, Tyrrhena, Cimmeria, Tempe
Nickel	Raw	Isidis, Argyre, Scandia, Australe
Copper	Raw	Nili, Solis, Chronius, Olympia
Rare Earths	Raw	Aureum, Iani, Aram, Korolev
Sulphur	Raw	Hadriacus, Apollinaris, Vastitas West, Argentea
Perchlorates	Raw	Meridiani, Gusev, Boreum East, Aonia
Silica	Raw	Gusev, Gale, Deuteronilus, Argentea
Basalt Aggregate	Raw	Daedalia, Syrtis Major, Vastitas West, Korolev
Olivine Sand	Raw	Nili, Jezero, Aonia, Vastitas
Methane	Raw	Cerberus, Elysium, Wirtz, Boreum
Oxygen	Raw	Chryse, Tharsis, Promethei, Vastitas East
Fossil Cores	Raw	Jezero, Mawrth, Gale, Australe West
Algae Protein	Farm	Melas, Lunae, Utopia, Hellas
Grain	Farm	Xanthe, Chryse, Argyre, Mie
Seed Stock	Farm	Jezero, Cydonia, Milankovic, Lowell
Greenwood	Farm	Melas, Xanthe, Utopia, Hellas
Textiles	Mill	Cydonia, Noachis, Zephyria, Casius
Ceramics	Mill	Tharsis, Ausonia, Arabia, Phlegra
Aerogel	Mill	Alba, Tempe, Hellas, Mie
Carbon Fibre	Mill	Olympus, Ascraeus, Hellas, Casius
Machinery	Works	Olympus, Elysium, Chryse, Hellespontus
Electronics	Works	Syrtis Major, Elysium, Melas, Sirenum
Reactor Parts	Works	Utopia, Tharsis, Hellespontus, Cimmeria
Solar Mirrors	Works	Pavonis, Arsia, Hellas, Elysium
Nanofilm	Works	Hellas, Olympus, Lyot, Chryse
Medicine	Works	Hellas, Chryse, Arcadia, Sirenum

The railroads

Railroad	Reporting mark
Tharsis & Western	T&W
Boreal Transit	BT
Hellas Grand Union	HGU
Syrtis Overland	SO
Chryse Pacific	CP
Elysium Traction	ET