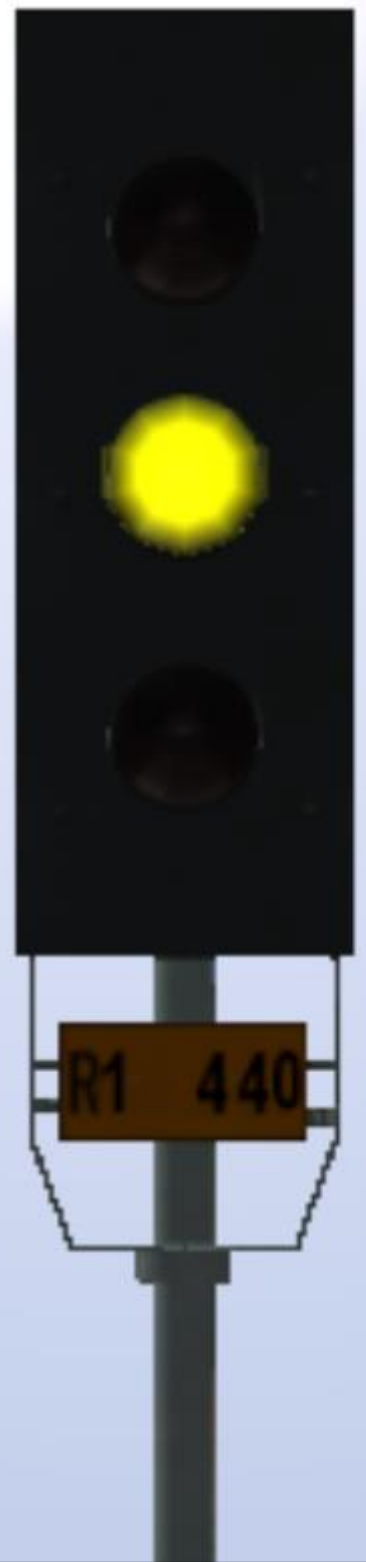


Metro Simulator

BETA



Readme

<http://sim.bemined.nl/wiki/>

Metro Simulator

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Readme

<http://sim.bemined.nl/wiki/>

Metro Simulator

Welcome to Metrosimulator Beta 3.8

Welcome to the newest beta version of this Metrosimulator. Beta 3.8 adds the 2017 version of Simvliet, the main route from the last three releases. It contains the 5700-series and two extra stations.

Getting Started

System Requirements

Minimum System Requirements :

Operating system: Windows XP or above
Processor: Intel Pentium 4 1.7 GHz
Ram: 512 MB (1GB on Vista or above)
Video Card: 256 MB, DirectX 9.0 or above
Sound Card: DirectX 9.0 compatible
Hard Drive space: 140 MB

Recommended System Requirements:

Processor: Dual Core 2.4 GHz
Ram: 2 GB
Video Card: 1 GB (GeForce GT 500 series or higher)

Installation

To install Metrosimulator download the .msi file on <http://sim.bemined.nl> and proceed by following these steps:

1. Open the folder where the .msi file is downloaded
2. Open Beta.msi and execute it
3. Follow the on-screen instructions to complete the installation

Metro Simulator

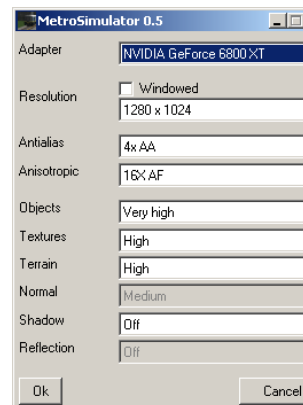
Launching Metrosimulator

1. Open the file where the Metrosimulator is installed and open Metrosimulator.exe, or
2. Go to your programs menu under the Windows start button, then go to **Start > All Programs > MetroSimulator Beta > MetroSimulatorBeta.exe**

Configuration

The first time the game is started, a configuration dialog will appear. In this dialog you can choose your Video Card, Screen Resolution and a few other settings. When you want to change the settings later on, you can open it with the `/setup` option, a shortcut is provided for this when you used the installer.

Not all options are working in this actual beta version.



Main Menu

When the game is started the main menu will appear. In this menu you can choose all routes and activities.



Loading Route

When you select the route by clicking on it you can choose two options, explore and activity. The explore button is always available, and loads the route without any trains or timetable for exploring the selected route.

The activity button is available when one or more activities are found. To load a activity click on the activity you want and click the activity button, this loads the map with a complete timetable and preloaded trains.

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Different Modes

In the top right corner there are two more buttons. The first button switches between the player mode and AI mode, the second one switches between the realistic mode and arcade mode.

The player mode you have to manage all the trains, where in AI mode the trains are driven by the AI and you can take the place of traffic controller or drive a train from the trainyard.

The realistic mode sets the difficulty and realism of coupling and shutting trains. In arcade mode, coupling and shutting is easier, but less realistic.

Explore Mode

For exploring the route you have to place a train and to make it easy you can load a pre-set route.

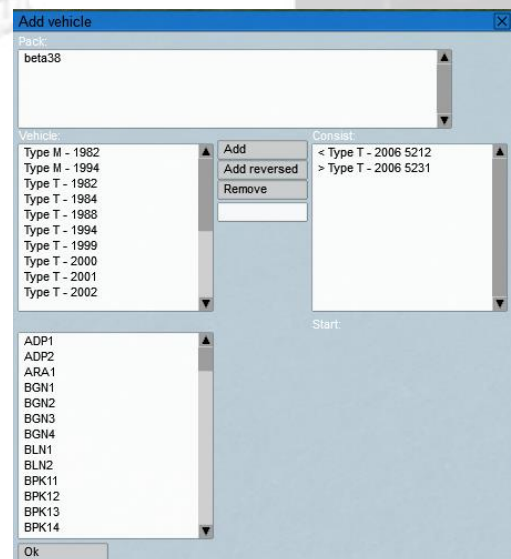
Loading the Train

While in *activity* mode all trains are ready when the activity loads, in *explore* mode you have to create the trains yourself. This can be done through the menu at the top by clicking **Vehicle >Add**, or with the dock on the left through train icon.

In the window that appears, choose the vehicle in the list on the top left and press *Add* to add this to your consist. Pressing add multiple times will give you multiple units. After this, choose a starting point on the lower left. Finally, press *Ok* to create the train.

To view all the tracks you can press F1 to open the traffic control window. Hold your mouse over a track to see the name of it. Start points usually have the same name as the platform.

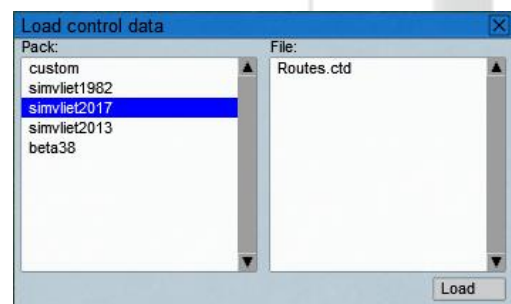
Important: the beta does not yet check if the track is free, Be careful not to place 2 trains at the same start point.



Loading the Pre-set Route

To use the destination commands for an automatic generated route you can load the control data. Now you can drive without constantly being a traffic controller.

This can be done through the menu at the top by clicking **Control >Load data**.



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Controls

Controlling the trains is (at the moment) done using the keyboard only. To control a train, you must first navigate to the cabin. This can be done using the consist bar, or using the arrow keys up and down while pressing the ctrl key. To choose a cabin, you can use the buttons 1 and 2. The locomotive has only 1 cab, the buttons 1 and 2 can be used to look in the different direction, but the driving direction has to be set using the control lever.

Main Vehicle Controls

Throttle.....	>
Brake.....	<
Switch cab on.....	Ctrl+F4
Switch cab off.....	Shift+F4
Control lever left (driving direction etc.)..	Q
Control lever right (driving direction etc.)..	W
Emergency brake.....	/
Emergency button (allows trackbrakes)...	Ctrl+L
Decouple.....	Shift+O
Horn.....	Enter

Power Control

Raise pantograph.....	Ctrl+P
Lower pantograph.....	Shift+P
Raise third rail shoes.....	Ctrl+I
Lower third rail shoes.....	Ctrl+I

Door Control

Unlock doors left.....	Insert
Unlock doors right.....	Home
Open doors left.....	Delete
Open doors right.....	End
Close doors.....	D
Disable door protection.....	Ctrl+Shift+D

Train Protection

Confirm buzzer.....	~
Drive on sight (ZUB).....	Ctrl+Tab
Route request (ZUB).....	Tab
Disable automatic train protection.....	Ctrl+Shift+A

Other Options

Destination sign up.....	Num /
Destination sign down.....	Num *
Turn signal left (SG2 and RSG2).....	[
Turn signal right (SG2 and RSG2).....]
Alarm lights (SG2 and RSG2).....	\

Metro Simulator

Other Controls

Traffic control.....	F1
Traffic control console.....	F2
Increase simulation speed.....	Ctrl+PageUp
Decrease simulation speed.....	Ctrl+PageDn
Benchmark mode.....	Ctrl+D 2x

Camera Options

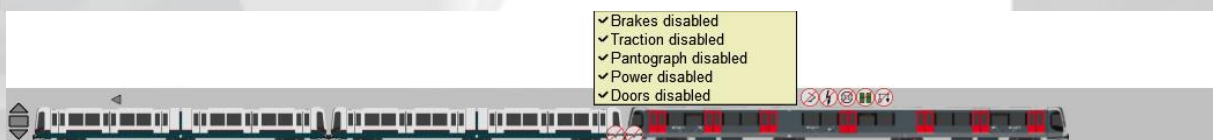
Cabin 1 camera.....	1
cabin 2 camera.....	2
Outside camera.....	3
Free camera.....	9
Move on free camera.....	Arrows

Consist Bar

At the bottom of the screen you will find the Consist Bar, it will appear when you move the mouse to the bottom of the screen and hides automatically. The Consist Bar shows all the vehicles in the consist.

The buttons at the left allow you to scroll through all consists. The arrows let you scroll to the next or previous consist. The middle button selects the current consist. (The one you are driving) The arrow above a train indicates the direction of the train cabin which is turned on.

To select a train you can left-click on the cabin you want, this will bring you to the cabin of that train. By clicking right on the middle of the train you can disable some functions like, door control, power or brakes. By right-clicking on the coupler, you can disable the electric couplers from opening when you couple a train at the front or end of the train, or decouple the train when clicking a coupler in the middle of the consist. Disabled functions will appear in icons above the train.



When a yellow warning icon will appear the brakes of that train cannot be controlled from the current cab and are currently applied. In that situation, in order to drive, you have to disable the brakes of that train, or check the couplers. Driving with disabled brakes will result in reduced braking power.

Train Protection


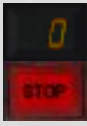



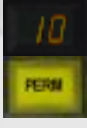

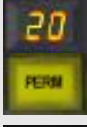

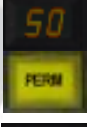







There are two train protection systems in the simulator. On the B and C lines, the ATB system from the Rotterdam metro is used. The A line is protected by ZUB.

ATB

The ATB system uses only cab signaling. This means that, except at train yards, no light signals are used. In the SG2 the lights inside will show you the maximum speed. In the SG3 the maximum speed is shown under the speedometer.

The SG2 has different lights before its revision (First revisions in 1997). The value shown is a advised speed limit, the maximum speed is a bit higher.

The ATB uses the following signals:

SG2	Bombardier	
		0 Absoluut Stop signal, train will be forced to stop and will be blocked. Signal appears at junctions when no route is set and at end of track.
		10 Absoluut Maximum speed 10km/u, the buzzer will sound every 7 seconds. This signal is received when nearing the end of the track or nearing a switch that is not properly set and locked for this train. Passing a 'S' sign with this signal will result in a <i>0 absoluut</i> signal that will force the train to a stop.
		10 permissief Maximum speed 10km/u, the buzzer will sound every 7 seconds. Danger, appears when no signal is received, for example when driving in the wrong direction or when the current block is full.
		20 permissief Maximum speed 20, the buzzer will sound every 7 seconds. Appears when nearing a block that is filled by another train or when nearing a junction that isn't set.
		Geel 50 Maximum speed 50km/u and buzzer will sound every 7 seconds. No active signaling in this block, drive on sight.
		Groen 35 Maximum speed 35km/h, is used at small junctions.
		Groen 50 Maximum speed 50km/h.
		Groen 60 Maximum speed 60km/h, only available on the SG3 and RSG3 otherwise it will shown as Groen 50.
		Groen 70 Maximum speed 70km/h.



Groen 80
Maximum speed 80km/h.



Vertrekverbod
Maximum speed 50km/h, the buzzer will sound every 7 seconds. It is not permitted to depart from the station. This signal is used when the train is ahead of schedule.

Deadman

With a few signals there is a notice that a buzzer will sound every 7 seconds. If you hear the buzzer you will have to stop it with the ~ key (above the Tab button) or the train will be forced to stop.

When you are stopped at a station there is no need to press the key, the buzzer will stop after 7 seconds and the train will be blocked, but when the signal changes to green it will be unblocked.

ATB track signals

At train yards you find some signals, and on the side of the track some other signs:



Red Signal
Stop before this signal.



White Signal
Passing signal is allowed.



S Sign
Stop when ATB signal gives "10 absoluut".

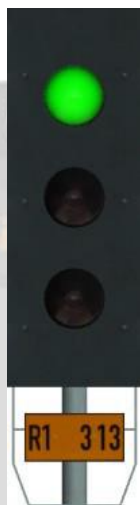


End of ATB system
End of ATB protected track.

Metro Simulator

ZUB

Beside the ATB there is ZUB, a point based signaling system using light signals. The following light signals are used:



Green

Proceed with local speed, the next 2 blocks are free.



Yellow

Proceed, reduce speed to stop before the next signal.



Yellow-Red

Next block is full, passing signal is allowed to couple with maximum 10km/u.



Red

Stop before this signal.



Green + Number

Proceed with speed as shown by number x 10, the next 1 blocks are free.



**Green +
Blinking Number**

Proceed, reduce speed to number x 10, speed must be reached at next signal.



Yellow + Number

Proceed with speed as shown by number x 10, reduce speed to stop at next signal.



No Light

When white cross is attached to signal: proceed, signal out of use. Otherwise: stop immediately.

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ZUB track signs

Different from the ATB is that the maximum speed is shown using signs. There are 2 speed: the track speed shown with green signs, and the local speed shown with white signs. Stations may be passed at 50km/u at most. The signs used on the ZUB track are in the list below:



Speed Sign
Local speed is number x10



Reduce Speed
Reduce speed to number x 10, white speed sign will follow where speed has to be reached.



Track Speed
Track speed is number x 10 from this place until the next green sign. Local speed may be lower.



End of ATB system
End of ATB protected track.



End of ZUB system
End of the part protected with ZUB, appears when switching to other system.



End of train protection
From this point there is no more protection of track and junctions.

Speedometer

In the RSG3 and SG3 the speed is displayed at the same place as the ATB. The RSG2 is different, here is the maximum speed displayed next of the speedometer like below.



Point based

Since ZUB is a point based system, new signaling may not be received by the train until it passed a signal. Because of this, when a red signal changed to yellow or green, the cab signal point still force you to slow down to 10km/u. In that case you have to proceed with 10km/u until you reached the system or the train protection system will stop the train.

Rolling stock

The third beta contains several types of trains and cars. The different trains are shortly introduced below.

Passenger trains

Type MG2



Series

5001 – 5027, 5051 – 5066, 5101 – 5126, 5152 – 5152

Description

The trains for the first metro line in Rotterdam opened in 1968. They were used until 2002, when they were replaced with newer trains.

Type SG2



Series

1984: 5201 – 5271

2013: 5202 – 5228, 5230 – 5260

Description

These vehicles were built between 1980 and 1984 and are still in use in Rotterdam. There were 71 vehicles, 11 of these were reconstructed to type RSG2 and 2 vehicles were destroyed in fire, leaving 58 vehicles remaining. The vehicles are 29,8 meters long with 2 cabins, and can be used both with third rail and overhead wire.

Type RSG2



Series

5260 – 5271

Description

Type RSG2 consists of old SG2 vehicles, reconstructed between 2005 and 2006 for use on the RandstadRail network between 2006 and 2009. They are no longer in service in real life. Besides different coloring, these vehicles also have a different train protection system, and are missing 2 of the 4 third rail shoes, which results in these vehicles being gapped more often in this rail use.

Type MG2/1



Series

5301 – 5342, 5343 – 5363

Description

Type SG2/1



Series

5401 – 5418

Description

Type RSG3



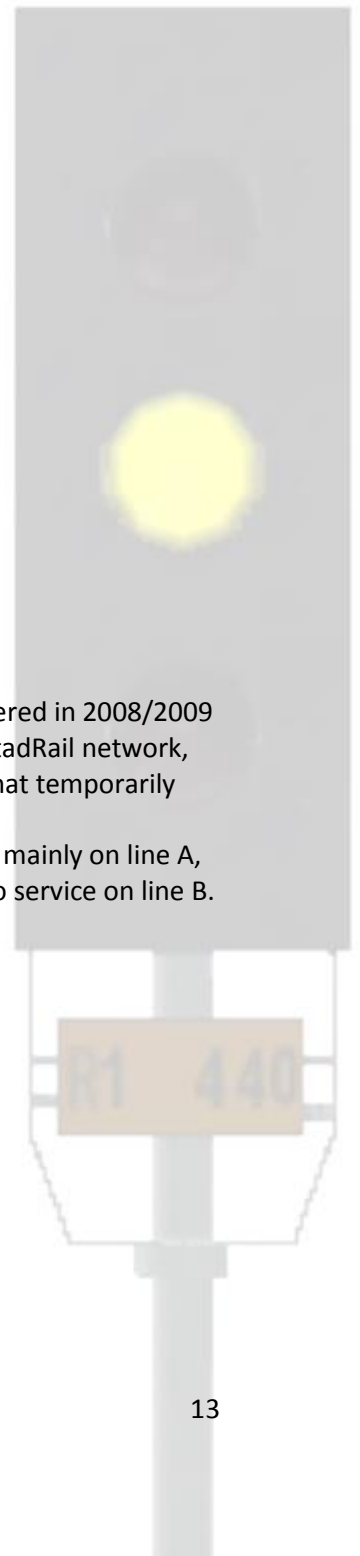
Series

5501 – 5522

Description

The RSG3 vehicles were delivered in 2008/2009 to be used on the new RandstadRail network, replacing the RSG2 vehicles that temporarily were used on this line.

Within Simvliet they are used mainly on line A, but during rush hour they also service on line B.



Type SG3(5600)



Series

5601 – 5642

Description

These trains were delivered as replacement for the SG2 series and were delivered between 2009 and 2011. An additional series of these vehicles is to be delivered in 2015-2016.

These trains are identical to the RSG3.

Type HSG3(5700)



Series

5701 – 5716

Description

These trains are ordered for the Hoekse Lijn and are delivered in 2015. In the simulator the train has an expected paintjob. In real life there isn't made a decision about the paintjob yet.

Working Trains



Series

6101 – 6102

Description

This diesel locomotive in use in Rotterdam has automatic couplers that allow it to couple with the 5000, 5100 and 5200 series. This locomotive does not have an automatic train protection system. In real life there are 4 locomotives, this beta features only two. This train does not have a cabin yet.



Series

7011 – 7016, 7101, 7201

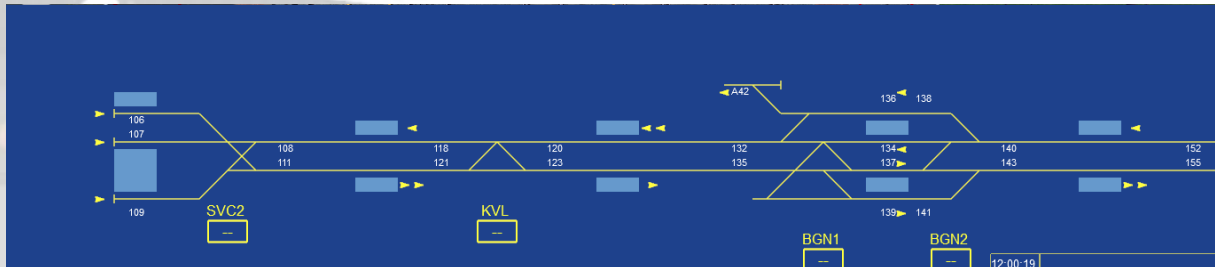
Description

These cars are being used for maintenance on the network. They do not have a special function in this beta, although they can be used when shunting trains with disabled brakes for extra braking power.

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Traffic Control (CVL)

In order to drive the train needs a safe signal, and in order for a signal to be safe the switches have to be set and locked and driving direction set. This can be done with the Traffic Control System (CVL), to open the CVL press F1 or F2 for access to the console. In this screen you can see all tracks, trains and set routes, and be able to set your own routes.



Set Routes

To create a route you have to type the blocknumber from where the route should start and followed by the blocknumber where you want it to go to, then end with "RWI" (RijWeg Instellen). So to create a path from the bottom platform (109) to the bottom rail (111) the command is:

109 111 RWI <Enter>

If you have made a wrong route you can remove it on the same way as above only ended with "RWO" (RijWeg Opheffen). So to remove a path from the bottom platform (109) to the bottom rail (111) the command is:

109 111 RWO <Enter>

When a section is reserved from the other direction the route won't appear. If the train passed the junction the section will be removed automatically.

Junctions

During activities, junctions are set automatically. How this is done is controlled by the junction mode. This is displayed below each junction, the following modes are available (not all junctions have all):

- FE – Manual (no automatic routes)
- AK – Automatic reversing (used at terminus, sends train to free track)
- AB – Automatic (used at diversions, train gets route based on destination code)
- DV – Straight traffic (no diversions, all trains head the same way)

To change the mode, enter the name of the junction followed by the wanted mode:

SVC2 FE <Enter>

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Train Numbers

During activities, junctions can be controlled automatically. For this to work the train has to be assigned a train number. When no train number is assigned, the train will get a F-number, which you have to change into a real train number.

To change the train number you have to type the actual number followed by the new number, then end with "TWZ"(Treinnummer Wijzigen):

F10001 5512CL TWZ <Enter>

When there is already a train with number 551, it will be deleted.

Besides changing the train number you can also split a existing train, in that case one train number changes in two train numbers. To split first type the actual number followed by the two new ones, end with "SPLIT":

551 5511LC 5561LX SPLIT <Enter>

The first number is the train that will be split (only the first 2 numbers are required for trains with valid train number), the second is the new number of the train that will depart first, the third number is of the train that leaves second or stays behind.

Used Codes

The train number is made of the following parts:

- **551** - schedule number, this must be unique
- **2** - number of cars
- **L** - starting point of train
- **C** - ending point of train

The following codes can be used in this beta version as start and end:

- **S** - Simvliet Centrum
- **B** - De Bergen
- **S** - Stadionweg
- **T** - Tussenvelden
- **O** - Oostpark
- **L** - Lelywaard
- **S** - Springstraat
- **A** - Araplein
- **M** - De Molens
- **X** - De Bergen Trainyard
- **Y** - Opstel Oostpark

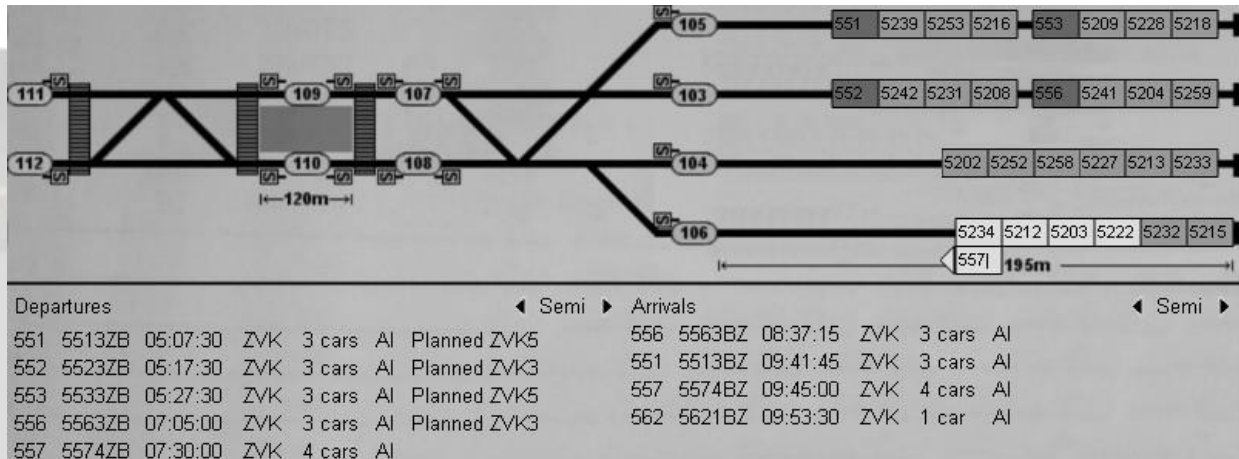
In Explore Mode

Before you can set a trainnumber in explore mode you have to load a pre-set route. For more information about it see "*Loading The Pre-set Route*".

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Train Yards

Trains yards are used to store trains when they are not in service. When a activity is loaded the trains yards can be controlled using the yard tool. The tool can be found in the left sidebar and looks like below.



The yard tool has 2 parts. At the top the track plan with all trains at the yard. Below that is a list of planned departures and arrivals. Departures and arrivals each have a mode with the options manual, semi(automatic) and auto(matic). In manual mode everything must be done by hand, the tool is only there for yourself in that case so you know what train is where. In semi-automatic mode, you can use the tool to plan which trains goes where, and the AI does the rest. Finally, in automatic mode, everything is done automatically based on the plan preset in the activity.

The planning of departing trains is done by selecting the vehicles in a consist by clicking the first and last one, and filling in their train number (as show most left in the departure list). By clicking twice on a selected vehicle, you can set the direction they depart.

In order to plan arriving trains, you need a free track. Free space is shown in meters in the tool. This is shown both at start and end of the track (when available). You click the box from the side where the trains will arrive, and a popup with 3 boxes appears. Use TAB to navigate through the boxes. In the first box enter the train number, in the second the number of vehicles, and in the last one the stopping position. As stopping position you can enter a number that correspondents with a stop sign, 'C' to tell the train to couple, or 'S' to drive as far as possible on the yard. In this beta, deleting planned trains and changing the AI flag is not yet possible. The CVL is also needed for arriving trains.

Shutting

The yard tool is used for planning trains and getting an overview of the parked trains. For shunting on the yard, you should open the traffic control window, as the yard tool doesn't show all tracks. See the next section for how to make paths using the traffic control tool. At the side of the yard, next to the depot, there is a part of the yard without electrical power and with switches that should be operated manually. You can double click to flip the switch levers. Opening the doors of the depot works by double clicking as well.

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Activities

In the main menu, you can choose to play an activity. When you start the activity in player mode, your tasks are shown in the player schedule. This can be accessed by moving the mouse to the top right of the screen. At the top of the schedule, the activity name and time duration are shown. Below that, each task is listed with start and end station and time. Sometimes start and end station are the same, for example with shunting operations. See the description below what you have to do. This can for example be this:

Drive Train 2151MA

Which means you have to drive train 5513BZ. Although you mostly don't need the full train number, you can use it to locate your train on the traffic control screen. Sometimes, with this order a second order has been added:

Drive Train 2151MA

Couple with train 2155CM

In that case, at your final destination you have to couple with another train. You will be directed to the track where this train is standing.

Decouple

Another operation is decoupling. When decoupling, you have to take care you decouple at the right position. Your schedule will tell you how many trains each part gets: The left part is the train that will leave first after decoupling, while the right part leaves second, or stays behind. In case the train stays behind, you might have to move it to the end of the track, if that is the case that will be listed in your schedule. Keep in mind that the driving direction will change at a terminus, so when you have to decouple a 3-car train into a 2-car and 1-car train, you have to decouple the last 2 trains, cause they will leave first after reversing.

Metro Simulator	Evening- line AB
	19:44:00 - 20:59:30
SVC	MLS
19:44:00	20:00:30
Drive train 2152CM	
At MLS decouple train	
MLS	ARA
20:05:00	20:19:30
Drive train 2151MA	
ARA	MLS
20:20:30	20:35:00
Drive train 2151AM	
MLS	ARA
20:45:00	20:59:30
Drive train 2151MA	
ZVK	ZVK
08:34:00	08:36:00
Decouple train 551	
5512ZB	5561ZVW
2 cars	1 car

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