Metrosimulator

Beta 3.7


Readme

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

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Introduction

Welcome to the newest beta version of this simulator. Beta 3.7 adds the 1982 version of Simvliet, the main route from the last two releases. It contains the route as well as train in 1982 style.

Configuration

The first time the game is started, a configuration dialog will appear. The dialog can be opened again later to change the settings by starting the program with the *setup* option, a shortcut is provided for this when you used the installer.

In this dialog you can select screen resolution and a few other settings. Not all of the settings actually work in this beta.
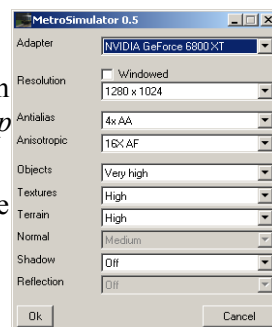
Loading route

After starting the game, the main menu will be visible. In this menu all routes are displayed. You can click a route to select it. Besides the picture there are buttons to start the game.
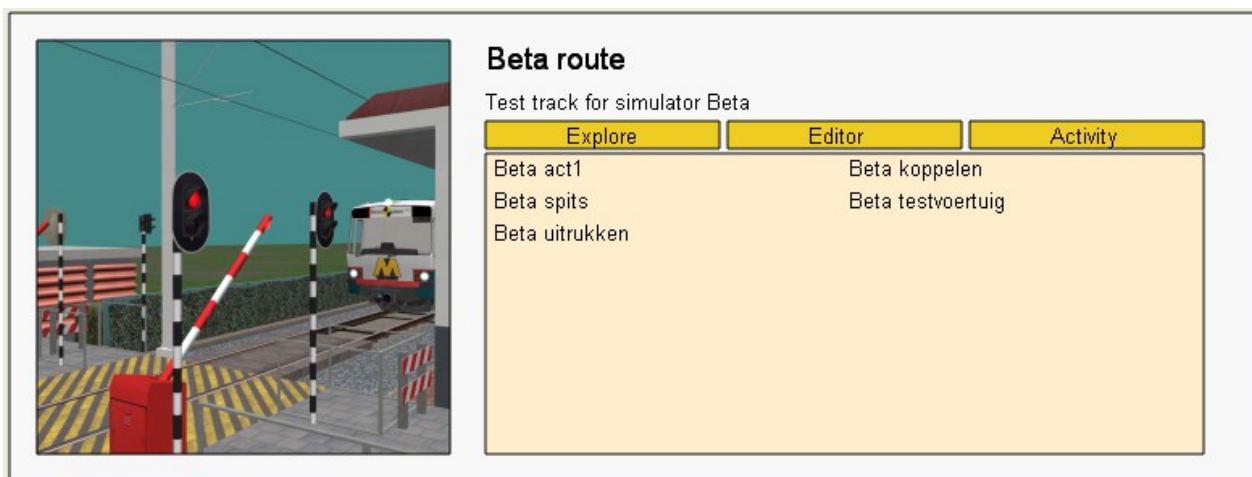

The button *Explore* is always available, this starts the route without any trains or timetables for free exploring of the route. The *Editor* button is only available when you have the source files of the route, this is not available with the beta route. Finally, when one or more activities are found, the *Activity* button is available. To load an activity, you first have to select one from the list.

On the top right there are 2 more buttons. The first one allows you to choice between *Player mode* and *AI mode*. This works in combination with activities. In AI mode, all trains are driven by the AI, allowing you to take the place of traffic controller, or drive around with a train from the train yard while the AI provides the necessary traffic.

Finally, second button allows you to choice between *Realistic mode* and *Arcade mode*. This function sets the difficulty and realism of coupling and shunting trains. In arcade mode, coupling and shunting is easier, but less realistic.

Inserting 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*, of via the dock on the left through this icon:
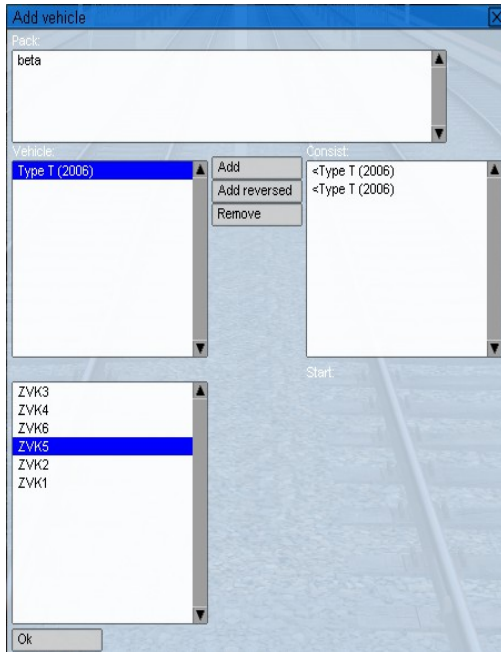
In the window that appears, choice the vehicle in the left on the left and press *Add* to add this to your consist. Pressing add multiple times will give you multiple units.

After this, choice a starting point on the left. You can press F1 to open the traffic control window to view all tracks, hold your mouse over a track to see the name of it. Start points usually have the same name as the platform. Finally, press *Ok* to create the train.

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

Consist bar

At the bottom of the screen you will find the consist bar. This bar hides automatically, move the mouse to the bottom of the screen to open it. This bar shows all vehicles in a consist. The buttons on the left allow you to scroll between all consists. The arrows scroll to the next or previous consist, while the middle button selects the current consist (the one you are controlling).

You can choice a train by clicking on the cabin, this will bring you to the cabin of that train. You can also change some settings of the trains. For this, right-click on the train to open the menu. In the menu you can disable 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.

Above the trains in the consist bar icons show the status of each train. When you disable a certain function of a train, the icon will appear. Also a yellow warning icon will appear when 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.

Rolling stock

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

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. Both in real life and in the simulator, some vehicles have advertisements on the train doors.

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. The 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 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

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. In Simvliet these vehicles are rarely used in 2013 as the SG2 vehicles are still in active service. They are used mainly during events.

Working trains

Series
6101

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 the are 4 locomotives, this beta features only one. 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.

Controlling

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 choice 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.

Driving			
< >	Throttle front/back	/	Emergency brake (SG2 and RSG2 only)
Ctrl + L	Emergency button (SG2 and RSG2 only), allows use of track brakes on third rail mode.		
Ctrl + F4	Switch cab on	Q	Control lever left (driving direction etc.)
Shift + F4	Switch cab off	W	Control lever right (driving direction etc.)
Enter	Horn	Shift+O	Decouple
Power control			
Ctrl + P	Raise pantograph (SG2, RSG2)	Ctrl + I	Raise third rail shoes
Shift + P	Lower pantograph (SG2, RSG2)	Shift + I	Lower third rail shoes
Door control			
Insert	Unlock doors left	Delete	Open doors left
Home	Unlock doors right	End	Open doors right
D	Close doors	Ctrl+Shift+D	Disable door protection
Train protection			
~	Confirm buzzer (MG2, SG2)	Ctrl + TAB	Drive on sight (RSG2)
Ctrl+Shift+A	Disable automatic train protection		
Overige functies			
[	Turn signal left	/	Destination sign up
]	Turn signal right	*	Destination sign down
\	Alarm lights		

The control lever with the MG2, SG2 en RSG2 types has the following options:

PZ	Full power
S/P	Half power
R	Shunting mode
Ra	Shunting reverse
S/Pa	Half power reverse

Finally, there are following controls, not directly related to controlling the train
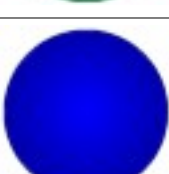
1	Camera cabin 1	F1	Traffic control
2	Camera cabin 2	F2	Traffic control console
3	Outside camera	Ctrl+PageUp	Increase simulation speed
9	Free camera	Ctrl+PageDn	Decrease simulation speed
Arrows	Move (free camera)	Ctrl+D	Benchmark mode (press twice)

Train protection

There are 2 train protection systems in this beta. On the main line, the "ATB" system from the Rotterdam metro is used. At the end of the route, there is 1 test track with the ZUB system that is used by the RSG2 vehicles.

ATB

The ATP system uses cab signaling. This means that, except at train yards, no light signals are used. Lights inside teh cabin show the maximum speed and when the train has to stop. In the 1982 trains the signals are slightly different from the 2013 version, mainly as the value shown back then was the advised speed rather then the speed limit.

35	**"Groen 35" / "Groen 30" (1982)** Maximum speed 35km/u.	(red)	**"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.
50	**"Groen 50" / "Groen 40" (1982)** Maximum speed 50km/u.	(symbol)	**"10 absoluut"** Danger, appears when closing to junction and no route is locked. Maximum speed 10km/u and buzzer has to be stopped every 7 seconds. Train should be stopped before a sign with 'S' placed next to track.
70	**"Groen 70" / "Groen 60" (1982)** Maximum speed 70km/u.	**10**	**"10 permissief" / "0 permissief" (1982)** Danger, appears when no signal is received, for example when driving in the wrong direction or when the current block is full. Maximum speed 10km/u and buzzer will sound every 7 seconds.
80	**"Groen 80" / "Groen 70" (1982)** Maximum speed 80km/u.	**20**	**"20 permissief" / "15 permissief" (1982)** Maximum speed 20km/u and 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.
(blue)	**"Vertreksverbod"** Maximum speed 50km/u, every 7 seconds buzzer needs to be stopped. It is not permitted to depart from the station. This signal is used when no route is set or train is ahead of schedule.	**50**	**"Geel 50" / "Geel 40" (1982)** Maximum speed 50km/u and buzzer will sound every 7 seconds. No active signaling in this block, drive on sight.

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.

At train yards, in addition to the cab signals, the following light signals are used:

(red signal image)	**Red signal** Stop before this signal	(white signal image)	**White signal** Passing signal is allowed
(S sign image)	**S sign** Stop when signal shows "10 absoluut"	(ATB sign image)	**End of ATB system** End of the section protected with ATB.

ZUB

The ZUB system is a point based signaling system using light signals. The following light signals are used:

Green	Yellow	Yellow-Red	Red
Proceed with local speed, the next 2 blocks are free.	Proceed, reduce speed to stop before the next signal.	Next block is full, passing signal is allowed to couple with maximum 10km/u.	Stop

Green + blinking number	Green + number	Yellow + number	No light
Proceed, reduce speed to number x 10, speed must be reached at next signal.	Proceed with speed as shown by number x 10, the next 1 blocks are free.	Proceed with speed as shown by number x 10, reduce speed to stop at next signal.	When white cross is attached to signal: proceed, signal out of use. Otherwise:stop immediately.

The maximum speed is shows 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 next list shows all signs:

	Speed sign Local speed is number x 10		**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, as shown by white speed signs.		**Station** Reduce speed to 50km/u
	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.

Finally, ZUB also used cab signals. In the speedometer a red arrow is installed showing the maximum speed, calculated by the train, to stay within the speed limit. Next to the speedometer there is a panel with a display and 4 buttons.

The display in this panel shows the target speed. When the train has to slow down, this will change to the new target speed.

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.

Activities

In the main menu, you can choice to play an activity. When you start the activity in player mode, your tasks are shows 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 shows. 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 5513BZ

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 5513BZ
Couple with train 5561BZ

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.

Train yards

The beta has 2 train yards: BPK and OPK. These yards are used to store trains when they are not in service. These yards can be controlled using the yard tool. This tool is available only in activities when the yard is being used, and is available through the dock. The tool looks like this:
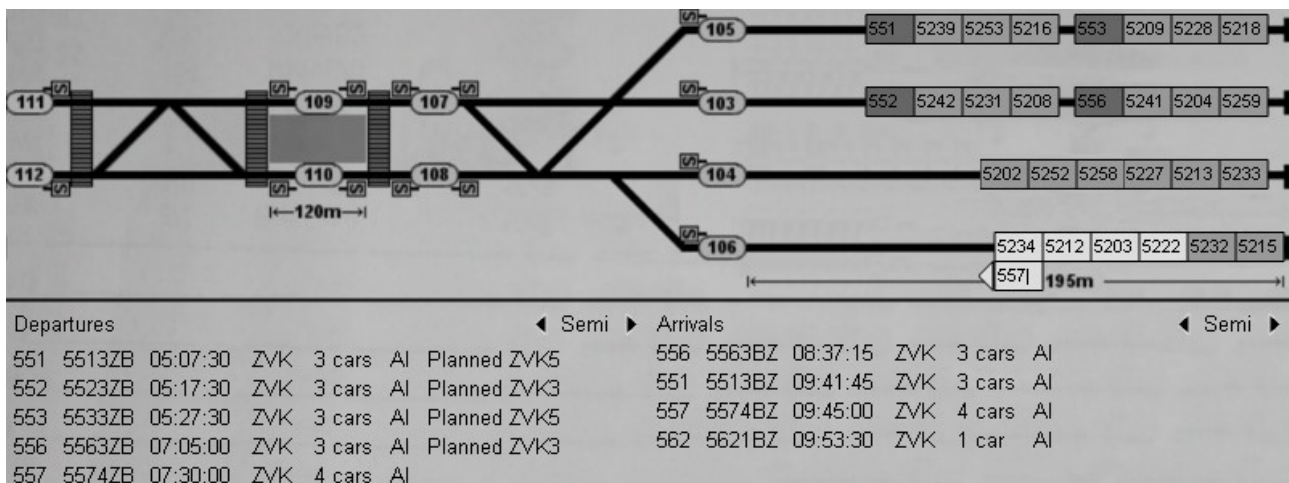
The yard tool has 2 parts. At the top the track plan with all trains at the yard. Below that is a list of planned departures and arrivals. Departures and arrivals each have a mode with the options manual, semi(automatic) and auto(matic). In manual mode everything must be done by hand, the tool is only 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 corespondents 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.

Shunting

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.

Traffic control

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 included traffic control system. This window can be opened by pressing F1. The screen shows all tracks, trains and routes set. By pressing and holding the right mouse button the view can be moved.
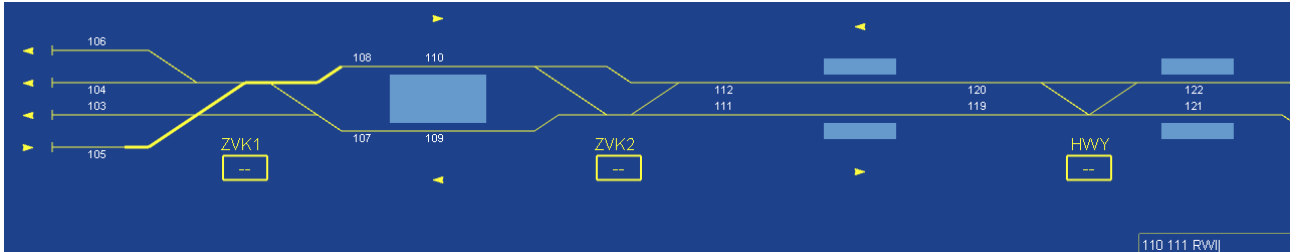
The fastest way to set a route is using the console at the bottom right. The hotkey F2 can be used to access this console quickly.

Routes

In order to create a route you type in the code of the block where you want the route to staat, followed by the code of the block where you want it to go to, followed by the letters "RWI". So to create a path from the bottom track (105) to the top platform (108) the command is:

105 108 RWI <enter>

If the route does not appear, make sure there is no traffic coming from the other direction or if another route is set in the opposing direction. An unwanted route can be removed by typing the same codes, followed by "RWO". So to remove the route we just made we use the command:

105 108 RWO <enter>

When a train has passed the junctions, the path will be cleared automatically.

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, in the console first type the old number, followed by the new number and then "TWZ", like this:

F10002 5512ZB TWZ <enter>

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

Explore mode

In explore mode, in order to use train numbers, you will need to load the control data. From the Control menu, select "Load Data". In the window that opens, select "custom" on the left and on the right select the route data you want to load. The default is "beta3b-rotues.ctd", but future addons and custom routes might show up here as well.
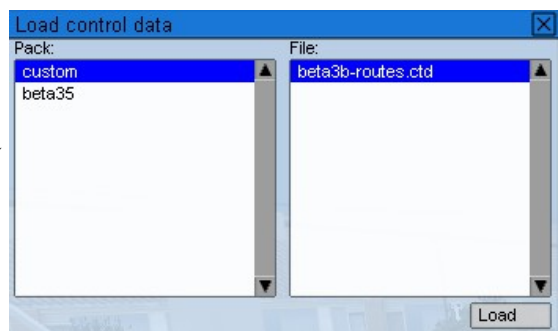
The train number is made of the following parts:

551 – schedule number, this must be unique, when there is a train 5513BZ, there cannot be a 5512ZB.
2 – number of cars
Z – starting point of train
B – ending point of train

The following codes can be used in the beta as start and end

Z: ZVK
O: OMM
B: BLA
W: BLA yard (will direct trains to BLA1)

This way you can construct your own route, for example:

5992ZW

To create a route to BLA yard.

Besides changing a train number, you can split it. In this case a single train number is changed into 2 new numbers. Here you first provide the old number, followed by the 2 new commands and the command SPLIT:

551 5511ZB 5521ZB 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.

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:

OMM1 FE <enter>

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