wilbur graphics

trainsim assets

NS Type 1924 Electric Multiple Units for TS Classic

User Manual

Version 2.0 Build 20251201

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1 Background Information

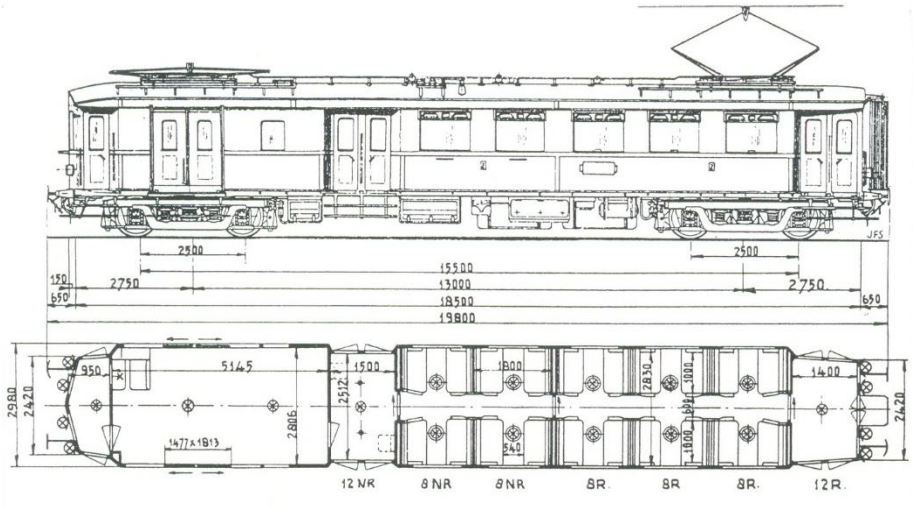
Electric Motor Coaches Type 1924

With the electrification of the mainlines in mind, the need for standard motor coaches arose soon after the establishment of the Dutch State Railways (N.V. Nederlandsche Spoorwegen). Moreover, experience had already been gained with EMUs on the *Hofplein* line of the ZHESM, so that in 1922 the first orders for motor coaches and drawn carriages of *Materieel 1924* were placed with the Dutch industry.

In the period 1923-1932, 259 units of these electric stock were built: 130 motor coaches and 129 drawn carriages, subdivided in five series of both types. Afterwards, another five different types were manufactured, while many other types were established through conversion and declassification, like in 1957 the motor mail coaches, motor convoy cars and finally the maintenance-of-way cars. Because of their square appearance and because this equipment could be combined without any problems in any desired composition, the carriages of Mat '24 were soon nicknamed Block Boxes or *Blokkendozen*. After the arrival of the streamlined EMUs in the 1930s, the official designation was changed to Type 1924 Buffer Stock or *Buffermaterieel 1924*.

Official portrait of motor coach mBD 9001, pictured in 1924 (collection Lex Tempelman)

Technical Data (mBD)



Axle arrangement:	Bo’ Bo’
Continued power:	660 kW (880 pk)
Top speed:	110 km/u
L.o.a.:	19,8 m
Wheel base:	15,5 m
Bogies wheel base:	2,5 m
Center points distance:	13,0 m
Wheels diameter:	1.000 mm
Mass:	61 t

What is new in version 2.0?

Modifications with respect to previous versions:

- All objects in this version 2.0 will replace previous releses and have been concentrated into a single assets folder: ..\Wilbur Graphics\Rollmat_NS\NS_Mat_24
- Improved textures and cabs
- Shunting signals are always switched on and are automatically extinguished when train running signals are switched on
- Switchable panel meter lighting installed
- Ditto cab lighting
- Front and tail lights have been improved
- More realistic panto handling control
- User manual was adapted to new cab functionality

2 Installation

General

The Type ‘24 EMU from Wilbur Graphics is delivered as a .zip file and includes apart from a Readme_EN.txt the following manuals:

```
WG_NS_Mat_24_Handbuch_DE_V2_0.pdf
WG_NS_Mat_24_Handleiding_NL_V2_0.pdf
WG_NS_Mat_24_User_Manual_EN_V2_0.pdf
```

The installer will store the manuals in the RailWorks subfolder:
..\Manuals\Wilbur Graphics\NS_Mat_24

… and the installer itself: `WG_NS_Mat24_V20_build_20251201.exe`

After launching the installer, you will be prompted to

- Language selection for the installer (Dutch/English/ German)
- A different path for the installation (default is C: /SteamApps/Railworks/etc.)
- Accept the license terms (EULA)

Please see the release notes.txt for the latest changes and improvements.

Other tips

- Your computer must have access to the internet
- There is NO need to repeat the download if the installation is not successful. First, find out which of the above problems can be solved by you.
- Make sure that the zipped files are unzipped before starting the installation.
- If the installation software cannot find the Railworks folder on your system, the reference to this folder in the Windows registry may no longer be valid. This situation occurs if you have moved the Steam environment to another computer or disk drive. You can solve this by repeating the installation of Steam.

***Note**: If you want to use the WG assets in this release in other TS Routes scenarios, it is necessary that Wilbur Graphics as a provider is linked to the route you want to drive.*

You can indicate this either in the scenario editor or in the route editor. The screenprint below is from the scenario editor, but both editors work in the same way. First, select the blue cube with the orange triangle on the left side of the window. Then the window shown below appears on the right, in which you first scroll to Wilbur Graphcis and then check < Rollmat_NS >.

Settings and system requirements

In developing this release, the builders have based themselves on the hardware specifications recommended by the supplier of Train Simulator Classic, DoveTail Games.

Furthermore, we recommend our users to copy the graphic settings of TS 2021 from the images below:

When using this add-on on heavier PCs with higher specifications than those indicated by DTG, you could consider deviating from these settings, but we have not tested our product under those conditions.

3 Rolling Stock

NS Type '24 EMU for TS Classic

For the depiction of Type '24 EMU rakes in TS Classic, the choice fell on two motor coaches and three carriages for release V2.0. The naming of these containers is taken from the official NS *soortmerken* (designations), as shown below:

A	1st Class coach
B	2nd Class coach
C	3rd Class coach
D	Brake van or baggage compartment (combined with A, B or C)
c	Toilet present
d	(Motor)coach with diaphragms
e	Drwan carriage for use in EMUs
m	Motor coach

TS Object Browser Index

Object Browser	*Folder*	*Object name*
WG NS Mat 24 mBD 9101 Ldg	NS_Mat_24	WG_NS_Mat_24_mBD_9101
WG NS Mat 24 mBD 9115 Trl	NS_Mat_24	WG_NS_Mat_24_mBD_9115
WG NS Mat 24 Aec 8517	NS_Mat_24	WG_NS_mat_24_Aec_8517_ogog
WG NS Mat 24 Aec 8527	NS_Mat_24	WG_NS_mat_24_Aec_8527_ogog
WG NS Mat 24 Bec 8501	NS_Mat_24	WG_NS_mat_24_Bec_8501_ogog
WG NS Mat 24 Bec 8521	NS_Mat_24	WG_NS_mat_24_Bec_8521_ogog
WG NS Mat 24 Cec 8528	NS_Mat_24	WG_NS_mat_24_Cec_8528_ogog
WG NS Mat 24 Cec 8536	NS_Mat_24	WG_NS_mat_24_Cec_8536_ogog
WG NS Mat 24 mCd 9424 Ldg	NS_Mat_24	WG_NS_Mat_24_mCd_9424
WG NS Mat 24 mCd 9428 Trl	NS_Mat_24	WG_NS_Mat_24_mCd_9428

The suffix _ogog indicates diaphragms.

mBD 9101 Ldg
mBD 9115 Trl

The motor coaches from this series (mBD 9101 – 9130) were built between 1924 and 1929 by Werkspoor and Beijnes, with electrical installations from Vickers and Heemaf. The furnishings of the mBDs were comfortable. The benches in compartments were upholstered with ripe. The carriages were equipped with a baggage compartment with a capacity of 2.5 tons. The passengers reached the five compartments with 40 seats via two balconies. The mBDs did not have toilet facilities.

Aec 8517 en 8527

Simultaneously with the mBDs, 27 steel first-class cars (Aec 8501 – 8527) were put into service between 1923 and 1929. The suppliers were Beijnes (Aec 8502) and Werkspoor. They possessed seven compartments, three of which were "non-smoking" with a total of 42 seats and a toilet.

Bec 8501 en 8521

The first Becs were part of a test series (Bec 8503 - 8512) that ran in international passenger services with steam traction but were adapted for the electric train service from 1925 onwards. In addition to the 8501 and 8502 already delivered in 1923, the other carriages (Bec 8513 – 8533) of the series made their appearance between 1926 and 1931. The Becs had 64 seats, divided into eight compartments, half smoking, the other half "non-smoking", with a toilet in the middle.

Cec 8528 en 8536

This series included 55 carriages, from different suppliers (Hawa, Görlitz, Werkspoor and Beijnes). The Cec's originally had an interior with wooden benches, which were upholstered with tarpaulin from 1937. The seating arrangement was 3 + 2 and smoking was allowed in the entire carriage. The toilet was located in the middle.

mCd 9424 Ldg
mCd 9228 Tlg

The mCDs were built between 1928 and 1932 by Werkspoor and Beijnes and appeared for the first time on the Amsterdam-Rotterdam line to solve the shortage of third class seats in the five-car trains and to maintain the engine power of these trainsets. The mCds were normally positioned in the middle of a rake. In our preload consists however mCds function as leading or trailing units.

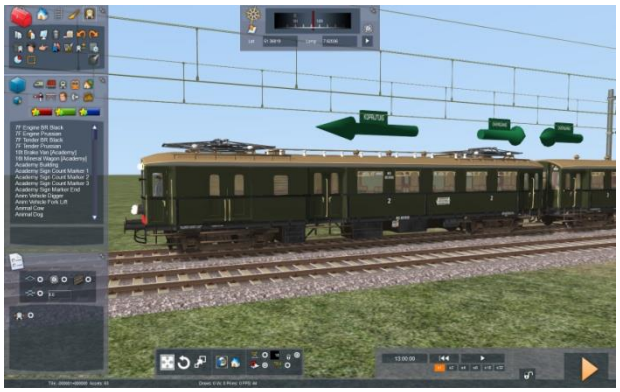
Historical and technical information taken from 'Electric trains in the Netherlands'
by Carel van Gestel, Bert van Reems and Lex Tempelman.

Preload Consists

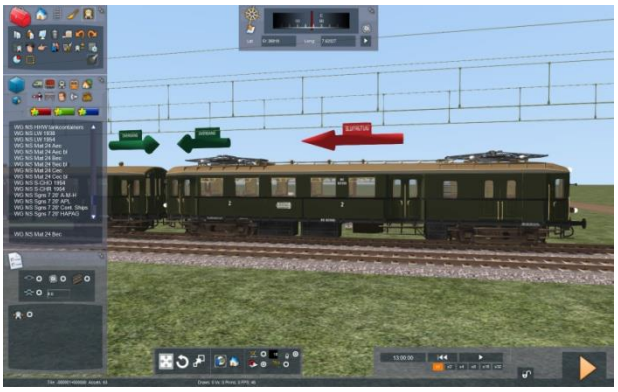
Two ‘preload’ rakes are included in this version:

(1) WG Mat 24 mBD 6-car EMU (mBD + Bec + Aec + Cec + Cec + mCd)
(2) WG Mat 24 mCd 7-car EMU (mCd + Cec + Bec + Aec + Bec + Cec + mBD)

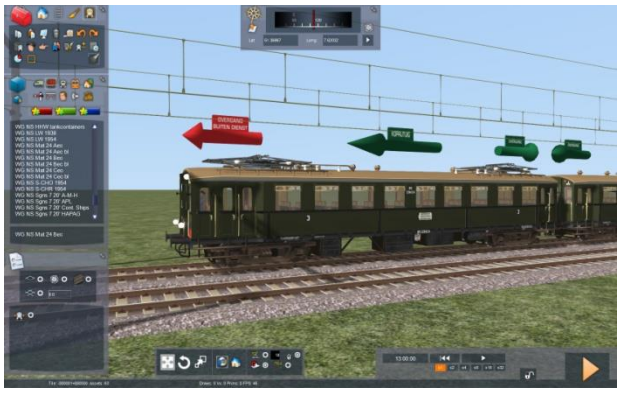
Type '24 rakes were often composed of carriages with a motor coach on each side. In this release, the direction of travel of the motor coaches is important for switching front and train signals. In support of compositioning consists, the mBD and the mCd are now offered in two versions, namely as leading or trailing car, recognizable by the addition ***Ldg*** resp. ***Trl*** . When setting up scenarios, the differences between leading and trailing cars and the direction of travel are indicated by special markers, as shown below.



The standard mBD only has a diaphragm at the rear and always rides in front.



As a trailing unit, the mBD is running in reverse.



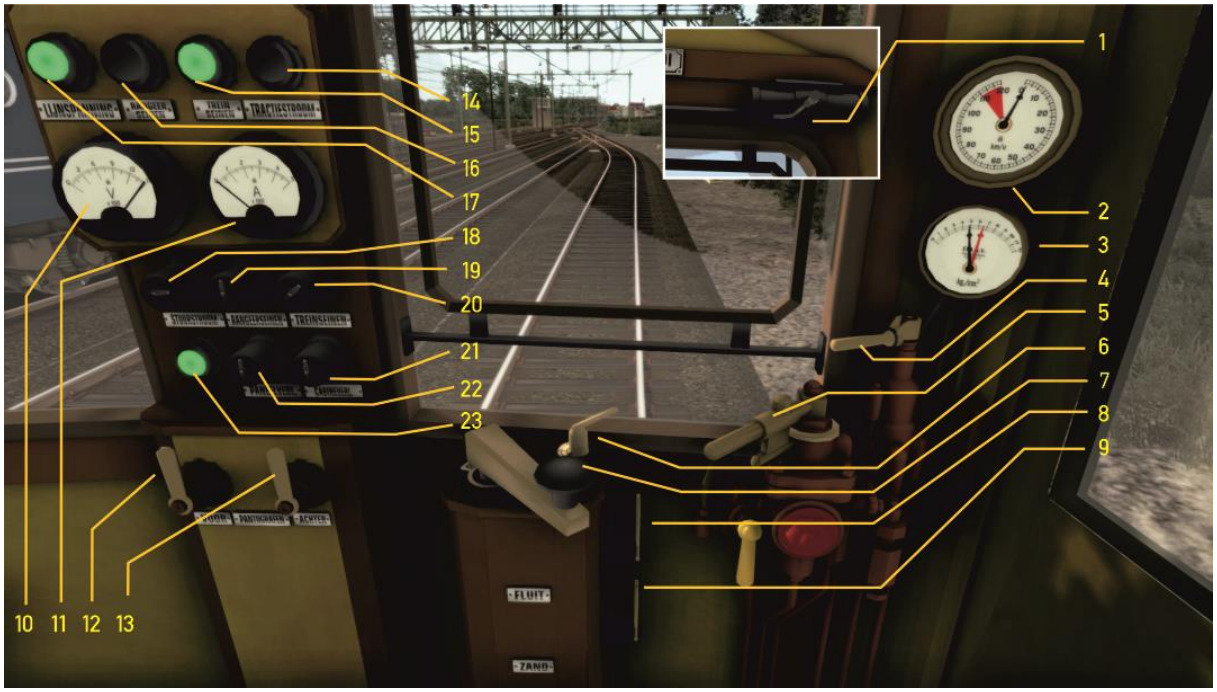
The standard mCd is also configured as a leading unit, with a static dummy diaphragm.

A trailing unit version is also included for the mCD, running in reverse.

When this method is applied when composing an EMU, it will be easy to switch direction in stations when preparing for the reverse lag (simply changing cabs and direction with HUD buttons, whereby the correct front and tail lights must be manually selected.

4 Operation

The layout of the cab in this TrainSimulator view follows the TS2020 standard (expert mode) and therefore differs from the large example due to the presence of a sand spreader and a locomotive brake. The cabs of the mCd and mBD differ slightly from each other in terms of the arrangement of the controls. Follow the on-screen instructions for activating the EMU at the start of a scenario.



1	Wipers	Wipers | V	13	Second panto up/down **	
2	Speedometer		14	Current overload warning	
3	Main reservoir/ brake pipe pressure		15	Train signals control light	
4	Unit brake control	[|]	16	Shunting signals control light	
5	Train brake control	; | '	17	Line tension control light	
6	Reverser	W | S	18	Control current on/off	
7	Regulator	A | D	19	Shinting signals on/off	
8	Whistle *	SPATIEBALK	20	Head/tail lights on/off	Headlights|H
9	Sander	X	21	Cab lighting on/off	
10	Overhead line tension		22	Panel lighting on/off	
11	Line current		23	Control current light	
12	Panto up/down	P			

*) long (short: N-key)

**) controlled by simulator

Coupling/Uncoupling

All WG rolling stock is equipped with Wilbur Graphics couplings (type 3link). This coupling is therefore compatible with all other couplings of this type used by DTG as standard for European rolling stock. Nevertheless, when assembling Quick Drive-consists, you may get error messages when you want to combine WG equipment with rolling stock from other providers. In the Scenario Editor, this can lead to problems when putting wagons or coaches on the tracks.

The diaphragms are integrated with the couplings from release 1.2. In the image above we see from left to right:

- Two uncoupled carriages
- The carriages are in touch and ready to be coupled
- The carriages have been coupled

5 Colophon and credits

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© Wilbur Graphics, Henk van Willigenburg (www.wilburgraphics.com)

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