

Berkendam 1953

Rolling Stock Midlife Update



OWNER'S MANUAL

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Table of Contents

1. Introduction.....	4
About this document	4
Midlife Update Characteristics.....	5
2. Installation	6
Download items	6
Installation	6
Other tips	6
Graphical Settings	7
3. Traction.....	9
Setting up scenarios.....	10
4. Coaches	21
5. Goods wagons	24
6. Preloads.....	27
7. Cab lay-outs.....	29
General.....	29
NS 200	30
NS 500	31
NS 1100	32
NS 2000	34
NS 2400	35
NS 3700, 4600, 6100 en 6200	36
NS 5800	37
Materieel 1924 ('Building blocks'/'Blokkendoos')	38
8. Colofon en credits.....	39

1. Introduction

About this document

Around 2016, the HCC! Trainsim user group did release the Berkendamroute. As with other routes built by Wilbur Graphics, all objects in the Berkendam route were developed in-house by our studio, with the exception of the vegetation and ground textures. This also applied to the rolling stock, including the 'Materieel 1924' motor coach trains and all steam locomotives. Now, many years later, our TS Classic competencies have improved significantly. The performance of the hardware is also at a higher level and therefore TS-objects can be displayed in much more detail and realistically. Every *mid-life update* of this rolling stock therefore makes a big difference to the appearance, handling and driving characteristics. This fact triggered a number of major updating actions, which the 3700 with our diesel and electric locomotives of Era 3 has already undergone as part of the Grenzlandbahn project and which have recently been released as separate freeware add-ons on our website.

Because rolling stock for the Berkendamroute is located in a different map, these rail vehicles did not benefit from these improvements, and gradually it became clear that those TS objects were also in need of a facelift. Together with the mentioned 3700, these issues have been taken care of and are offered as Freeware DLC in the form of this Midlife Update release.

In this manual you will find instructions for the installation of this addon in chapter 2. In chapters 3 to 5 we will provide a complete overview of the WG rolling stock within the release. Chapter 6 contains a specification of the available preload consists, which players can use directly either in QuickDrive mode or in the Scenario Editor. The naming of the objects follows the conventions for the Berkendamroute, which means that all material objects involved are automatically replaced. We conclude this manual in Chapter 7 with compact operating instructions for the supplied WG locomotives and motor coaches.

Midlife Update Characteristics

- Before a locomotive or motor coach can be driven, the air pump or control current must be switched on
- The air pump/control current status is shown in Dutch, English and German in compact message boxes
- New textures with software-rendered shadow effects ('ambient occlusion'), also to be found in the cabs
- Specular light effects have been reduced to realistic levels
- Improved handling and braking
- Improved automatic operation of safety valves
- Steam effects with cylinder valves in AI traffic are cut off above 25 km/h
- Running shuttle services with Mat '24 is now supported by switching on the control current in both railcars. This allows the sim to determine in which cab a train driver should be displayed.

Other rolling stock objects (coaches and wagons) have also undergone a mid-life update and have been provided with new textures and decals.



2. Installation

Download items

The Berkendam Rolmat MLU from Wilbur Graphics can be downloaded as a .zip file and contains the following items in addition to the `readme.txt` :

- German, Dutch and English manuals:

```
WG_Berkendam_Rollmat_MLU_DE_V1_0_build_20240531.pdf
WG_Berkendam_Rolling_Stock_MLU_EN_V1_0_build_20240531.pdf
WG_Berkendam_Rolmat_MLU_NL_V1_0_build_20240531.pdf
```

- The installer

```
WG_Berkendam_Rolmat_MLU_V10_build_20240531.exe
```

Manuals are also installed into the RailWorks folder structure:

```
..\Program Files x86)\
Steam\steamapps\common\RailWorks\Manuals\Wilbur Graphics\
Berkendam_Rolmat_MLU\
```

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

Installation

After launching the installer, you will be asked to

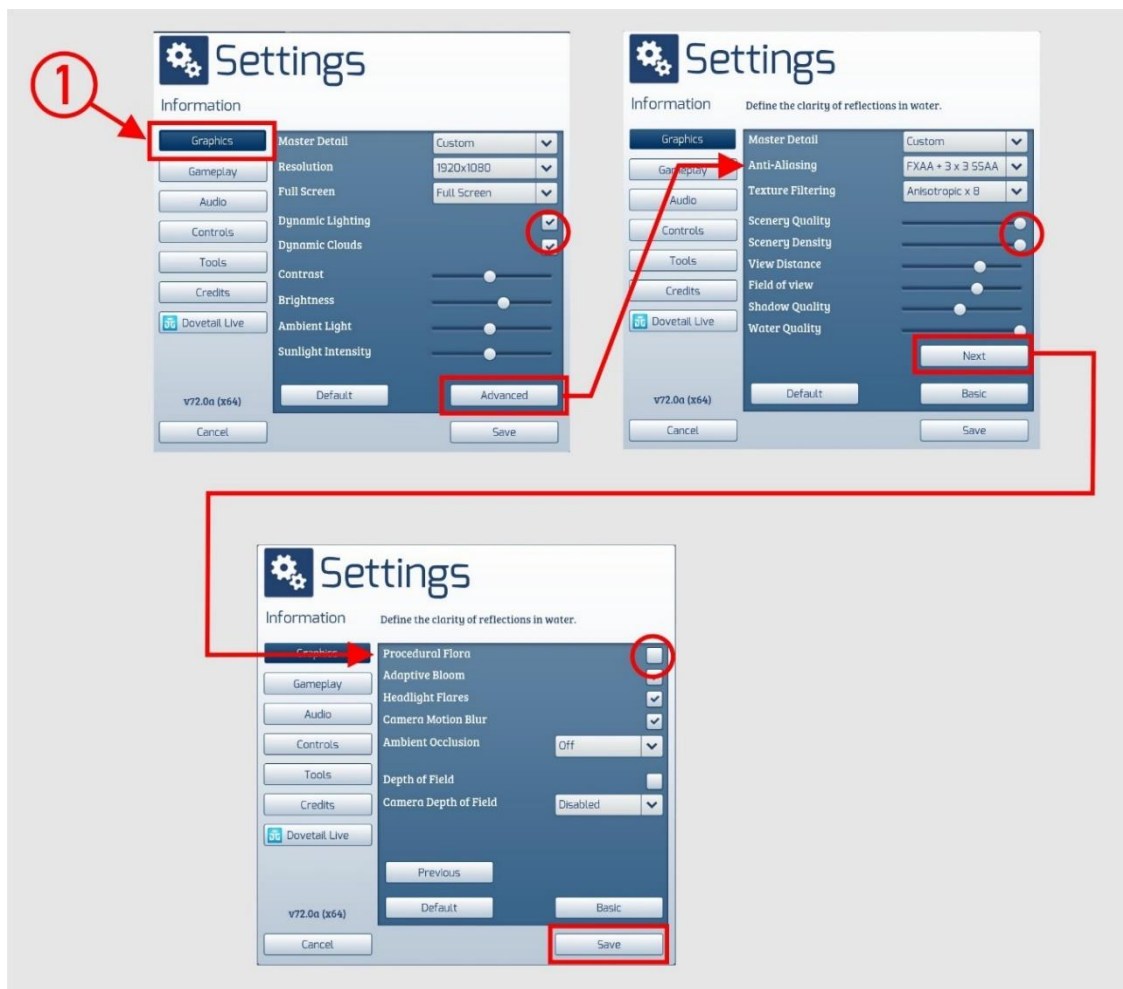
- select the installer language (Dutch/English/French/German)
- accept the License Terms (EULA)

Other tips

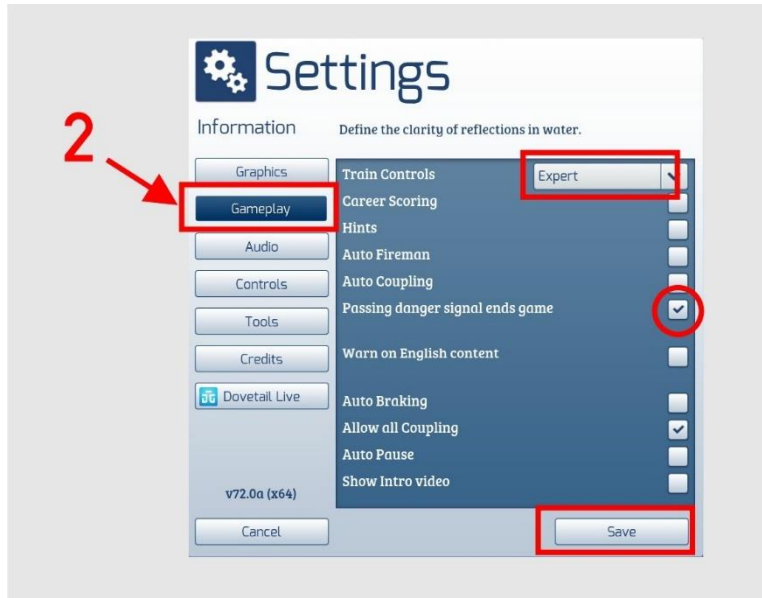
- Your computer must have access to the internet
- Make sure that the zipped files are extracted before starting the installation.
- If the installation software cannot find the Railworks folder on your system, the reference to this folder in the Windows registry may no longer be valid. This situation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

Graphical Settings

Furthermore, the following TS Classic graphics settings are required for the Berkendam Rolmat MLU:



In addition to the graphics settings indicated above, the following settings of the game itself ensure an optimal experience of the scenarios. It is then assumed that you are heating the steam locomotives yourself. Of course, if you wish, you can also turn on the 'Auto Fireman' option:



When using this add-on on heavier PCs with higher specifications than those specified by DTG, you might consider deviating from these settings, but we have not tested our stock under those conditions. In addition, the frame rate, which should normally be above 25 fps, can benefit from a lower anti-aliasing setting (FXAA + 8 x MSAA). Although this will result in a slight loss of display quality which will be compensated by an fps increase.

The frame rate (number of frames per second) can be visualized in the game using the key combination SHIFT+Z.

3. Traction

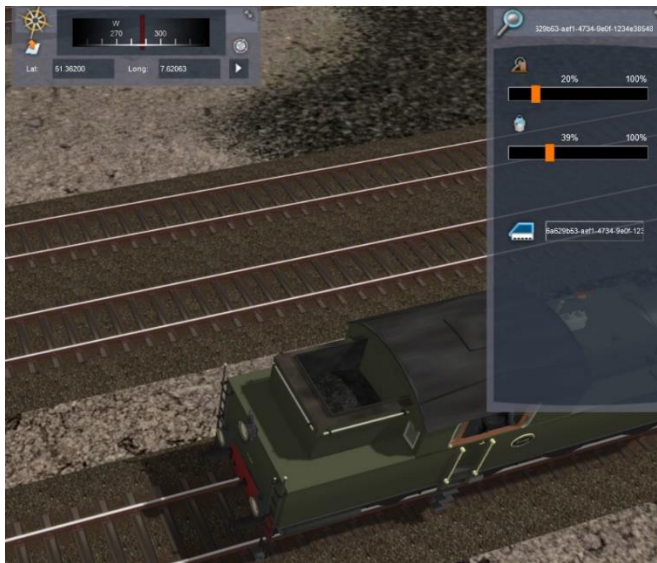
This table provides an overview of the available engines.

<i>Wilbur Graphics\ Rol- lend mat</i>	<i>.bin Object</i>	<i>Object Name</i>
NS_200	WG_NS_259	WG NS 259 tp3
	WG_NS_322	WG NS 322 tp3
NS_500	WG_NS_532	WG NS 532 tp3
	WG_NS_542	WG NS 542 tp3
	WG_NS_636	WG NS 636 tp3
	WG_NS_650	WG NS 650 tp3
NS_1100	WG_NS_1104_TEE	WG NS 1104 TEE
	WG_NS_1112	WG NS 1112 tp3
	WG_NS_1122	WG NS 1122 tp3
	WG_NS_1124	WG NS 1124 tp3
	WG_NS_1125	WG NS 1125 tp3
	WG_NS_1142	WG NS 1142 tp3
NS_2000	WG_NS_2016	WG NS 2016 tp3
	WG_NS_2017	WG NS 2017 tp3
	WG_USATC_8478	WG USATC 8478
	WG_USATC_8479	WG USATC 8479
NS_2400	WG_NS_2459_VSM	WG NS 2459 tp3
	WG_NS_2447	WG NS 2447 tp3
	WG_NS_2471	WG NS 2471 tp3
	WG_NS_2517	WG NS 2517 tp3
NS_3700	WG_NS_3717	WG NS 3717 tp3
	WG_NS_3718	WG NS 3718 tp3
	WG_NS_3737	WG NS 3737 tp3
	WG_NS_3738	WG NS 3738 tp3
	WG_NS_3717T4	WG NS 3717 tp3 tender T3
	WG_NS_3718T4	WG NS 3718 tp3 tender T3
	WG_NS_3737T3	WG NS 3718 tp3 tender T4
	WG_NS_3737T4	WG NS 3737 tp3 tender T3
	WG_NS_3738T3	WG NS 3738 tp3 tender T3
NS_4600	WG_NS_4604	WG NS 4604 tp3
	WG_NS_4611	WG NS 4611 tp3
	WG_NS_4621	WG NS 4621 tp3
	WG_NS_4622	WG NS 4622 tp3
	WG_NS_4604T3	WG NS 4604 tp3 tender T3
	WG_NS_4611T3	WG NS 4611 tp3 tender T3

<i>Wilbur Graphics\ Rol- lend mat</i>	<i>.bin Object</i>	<i>Object Name</i>
	WG_NS_4621T4	WG NS 4621 tp3 tender T4
	WG_NS_4622T4	WG NS 4622 tp3 tender T4
NS_5800	WG_NS_5812	WG NS 5812 tp3
	WG_NS_5816	WG NS 5816 tp3
NS_6100	WG_NS_6107	WG NS 6107 tp3
	WG_NS_6108	WG NS 6108 tp3
NS_6200	WG_NS_6239	WG NS 6239 tp3
	WG_NS_6240	WG NS 6240 tp3
SNCF_BB_8100	WG_SNCF_BB_8105	WG SNCF BB 8105

Setting up scenarios

In TS, the reserves of coal and water are also included in the simulation. The scenario builder can set the starting volumes in the scenario editor. After the locomotive has been placed on the rails in the usual way, it is selected with a double left mouse click. Then a setting window will appear in the top right corner of the screen:



You can move the orange rectangles by clicking on the desired levels. In this example, the level of coal and feed water have been significantly reduced.

NS 200



Officially, these machines were referred to as 'locomotors' (LMT) because instead of qualified loco drivers, yard workers could be tasked with operating LMTs. These LMTs date back to the steam era and were designed for light shunting tasks at smaller stations and marshalling yards. Between 1934 and 1951, a total of 169 of these shunters were delivered by the Dutch company of Werkspoor. These were assigned the serial numbers 201-369. Even during the 1980s, the 'Goats' could still be found everywhere in the Netherlands. Due to various causes, such as the decline in freight transport and modern health and safety legislation, the series were finally taken out of service by NS. Many of them ended up in the hands of various museum railways, often after having spent their last working years on private factory yards.

(Data taken from Spoor- en Trammaterieel in Nederland, De Alk, 1982)

NS 500



During the Second World War these series of diesel-electric shunting locomotives were built in Great Britain for the *War Department* to an existing LMS design. After the war, the NS took over 10 engines as numbers 501-510. The locomotives performed so well that the railways decided to order another 10 engines, the 511-520. Numbers 501-510 had a power of 265 kW, the next batch ordered had a larger power, 294 kW, to be followed up by 90 more units, the 521-610 series. In 1952 and 1953 another fifteen machines were delivered, but this time with a diesel engine from Stork. These locos were assigned numbers 701-715.

NS 1100



When resuming the NS mainline electrification after the war, the need was identified for a large series of mixed service electric locomotives. In order to meet this demand in the short term, 60 locomotives of the SNCF class 8100 were ordered from Alsthom in France, that were in production at the time and made their appearances in the Netherlands as the NS 1100 series in 1950. The first loco in the series made a test run between Laroche and Dijon and reached a speed of 135 km/h. The last unit was delivered in 1952.

The series 1100 is a four-axle locomotive, with the body resting on two bogies. The draw and buffing gear is attached to the bogies and not, as usual, to the body frame. From their Maastricht MPD, the engines could be spotted all over the Netherlands. They could be found not only heading domestic passenger trains, but also in freight and international train services. The type was not really popular with the staff due to their mediocre driving characteristics, notwithstanding a largely reduced maximum speed of 110 km/h.

NS 2000



The NS locomotive series 2000 originated in a diesel road shunter type, ordered in large numbers by the US Army Transportation Corps with the Whitcomb Locomotive Corporation. Production ran between 1943 to 1944 and the design took into account the smaller gauge clearances in Great Britain, where some of these locomotives were stored, awaiting their deployment in the liberation of Western Europe. Another part made itself useful during the advance of the Allies in Italy. After the end of hostilities, the Whitcombs put aside in a number of army dumps. From there, about 20 machines were sold to the NS in 1946. The Tilburg Maintenance Shop made the locomotives ready for operation, after which they were assigned the numbers 601-619 (one example was reserved as replacement parts supply).

Soon, persistent recurring problems occurred with their Buda engines. In 1953, these were exchanged with diesel engines, license-built by the Dutch firm of Thomassen. At the same time, the locomotives were renumbered in NS 2001-2018 (the 603 had been scrapped in the meantime). The locomotives were mainly found in freight services, such as running crude oil trains from Schoonebeek, but could also be seen heading local passenger services. Due to the influx of the 2200 and 2400 series, the Whitcombs became soon surplus to requirements and were eventually scrapped between 1958 and 1960.

NS 2400



During the same period in which the series 2200/2300 were built by Alsthom, this firm also maintained a production line for a universal DE locomotive for running light and medium freight services, intended for the railways in the French-African territories. In order to speed up the replacement of the steam locomotives by diesel traction, the NS placed an order in 1954 for 130 units of this series. On a fully welded, steel frame, the hood is divided into five compartments, in which the air equipment, the coolers, the diesel engine with generator, the cabin and the batteries are successively housed. Another French company, SACM, supplied the 8-cylinder engines. The machines could be run in multiple unit fashion, i.e. two or more locomotives could be combined to be operated by one driver.

The series served with NS well into the 1980s. Seven locomotives were sold to Volker Stevin for construction projects in Saudi Arabia and many returned to France to be used by SNCF as part of the TGV routes building activities. Of this group, the 2407, 2454 and the 2561 have been repatriated. They are now in service, fully restored, with VSM, 2454 CREW and STAR.

NS 3700



At the beginning of the last century, after experiments with the 4-6-0 express train locomotives of the NBDS, the State Railways also decided to order a series of similar engines with the British firm of Beyer Peacock. In 1910 the first units entered service as series SS 685-778. After the forming of the Dutch State Railways (NS) in 1920, production continued. The last units were delivered in 1928. With their 1850 mm driving wheels, the machines were suited for both passengers- and freight services. During WWII, 20 machines were lost, but the others served NS until the end of the steam era. Engine 3737 has been preserved for posterity in the National Railway Museum at Utrecht.

NS 4600



NS series 4600 were put into service by NS from 1923 on and were designed for running coal trains from Limburg to the North. Almost immediately their four-axle tenders were exchanged for 3-axle types from NS series 3701-3720. Almost every locomotive was requisitioned by the Germans and pressed into service with the DRG during WWII. They were returned after the war, although six engines were damaged beyond repair and had to be scrapped in 1947, together with number NS 4616 which had been badly damaged by the Germans when withdrawing from the Netherlands. The remaining units were retired in 1949. Engine numbers 4621 and 4622 in this release are therefore fictitious, but show what the locomotives would have looked like with a four-axle tender.

NS 5800



These tender engines were put into service by the HSM as class 801-812 in 1914 and 1915 and were developed from the 4-4-2 locomotives of the HSM series 771-776. The last seven units of the series, which in 1920 were incorporated with NS as series 5801-12, were built by Werspoor and were slightly

different from the others. Between the world wars, the machines mainly operated in passenger services, initially heading boat trains between Haarlem, Amsterdam and Enkhuizen, but later on also for commuter services around Amsterdam. After 1945 their days was virtually over. For some time, six machines were kept in storage with war damage, but all were sold for scrap between 1949 and 1951.

NS 6100



When, at the end of the 1920s, most NS lines had been prepared for 18 tonnes axle loads, it was finally possible to have a 4-6-4 loco series on the roster that was a full tender version of series 3700. As far as boiler, cylinders and gearbox were concerned, these locomotives were identical to Nos. 3816-3820. The series were mainly intended for heading commuter services around Amsterdam. The NS 6105 was seized by the Soviets in their occupation zone of Germany after WWII. Engines 6103 and 6109 were retrieved with damage beyond repair and had to be deleted after the war. The surviving engines were scrapped between 1956 and 1958.

NS 6200



The NS series 6200 were put into service by SS between 1912 and 1914 as nos.1100-1140 and were intended for shunting and freight services in the Limburg coal mining region. In addition, they could also be found heading passenger services. Nine engines were lost during WWII. After the war, the survivors could be encountered all over the Netherlands until the end of the steam era in 1957.



Electric Motor Coaches ('Materieel 1924')



With the electrification of the main network in mind, the need for a series of motor coaches was contemplated soon after the founding of the 'Nederlandsche Spoorwegen'. Experience had already been gained with electrical rolling stock on the 'Hofplein' line of the ZHESM, so that in 1922 the first orders for a range of motor coaches and carriages of "Materieel 1924" were placed with the Dutch industry.

In the period 1923-1932, 259 units of this rolling stock design were built: 130 motor coaches and 129 carriages. Later on, five different variants have been in production and many other derivatives were created through conversion and declassification, like in 1957 the motor mail coaches and finally Maintenance Of Way wagons. Because of their square appearance and because this rolling stock could easily be combined in any desired composition, the Mat '24 series soon earned their nickname of "Building Blocks". After the arrival of the streamlined EMUs in the 1930s, the official designation was changed to "Buffermaterieel 1924".

4. Coaches

This table gives an overview of the available carriages. Objects with a green background were added after the release of Berkendam.

<i>Wilbur Graphics\ Rol- lend mat</i>	<i>.bin Object</i>	<i>Object Name</i>
CIWL_1950	WG_CIWL_F_1287	WG CIWL Orient F 1287
	WG_CIWL_F_1287_skvb	WG CIWL Orient F 1287 oxog
	WG_CIWL_F_1287_vbvb	WG CIWL Orient F 1287 ogog
	WG_CIWL_PS_4035	WG CIWL Orient PS 4035
	WG_CIWL_PS_4035_ogog	WG CIWL Orient PS 4035 ogog
	WG_CIWL_PS_4035_oxog	WG CIWL Orient PS 4035 oxog
	WG_CIWL_R_4008	WG CIWL Orient WR 4008
	WG_CIWL_R_4008_ogog	WG CIWL Orient WR 4008 ogog
	WG_CIWL_R_4008_oxog	WG CIWL Orient WR 4008 oxog
NS_2_assers	WG_NS_2B_271	WG NS B 271 ogog
	WG_NS_2B_271oxog	WG NS B 271 oxog
	WG_NS_2B_272	WG NS B 272 ogog
	WG_NS_2B_272oxog	WG NS B 272 oxog
	WG_NS_2C_274	WG NS C 274 ogog
	WG_NS_2C_274oxog	WG NS C 274 oxog
	WG_NS_2C_275	WG NS C 275 ogog
	WG_NS_2C_275oxog	WG NS C 275 oxog
	WG_NS_2C_276	WG NS C 276 ogog
	WG_NS_2C_276oxog	WG NS C 276 oxog
NS_AB_6100	WG_NS_AB_6117	WG NS AB 6117
	WG_NS_BC_6017	WG NS BC 6017
	WG_NS_C_6922	WG NS C 6922
	WG_NS_AB6116	WG NS AB 6116
	WG_NS_BC_6016	WG NS BC 6016
	WG_NS_C6921	WG NS C 6921
NS_AB_7201	WG_NS_A_7217	WG NS A 7217 bl
	WG_NS_A_7217_oxog	WG NS A 7217 bl oxog
	WG_NS_A_7217_oxox	WG NS A 7217 bl oxox
	WG_NS_AB_7201	WG NS AB 7216
	WG_NS_AB_7201_oxog	WG NS AB 7216 oxog
	WG_NS_AB_7201_oxox	WG NS AB 7216 oxox
	WG_NS_B_7184	WG NS B 7284 bl
	WG_NS_B_7184_oxog	WG NS B 7284 bl oxog

<i>Wilbur Graphics\ Rol- lend mat</i>	<i>.bin Object</i>	<i>Object Name</i>
	WG_NS_B_7184_oxox	WG NS B 7284 bl oxox
	WG_NS_C_7202	WG NS C 7202
	WG_NS_C_7202_oxog	WG NS C 7202 oxog
	WG_NS_C_7202_oxox	WG NS C 7202 oxox
NS_AB_7521	WG_NS_AB_7521	WG NS AB 7521
	WG_NS_AB_7521_oxog	WG NS AB 7521 oxog
	WG_NS_AB_7521_oxox	WG NS AB 7521 oxox
	WG_NS_C_7157	WG NS C 7157
	WG_NS_C_7157_oxog	WG NS C 7157 oxog
	WG_NS_C_7157_oxox	WG NS C 7157 oxox
NS_D_7521	WG_NS_D_7521	WG NS D 7521
	WG_NS_D_7521_skvb	WG NS D 7521 skvb
	WG_NS_D_7521_vbvb	WG NS D 7521 vbvb
	WG_NS_D_7622	WG NS D 7622
	WG_NS_D_7622_skvb	WG NS D 7622 skvb
	WG_NS_D_7622_vbvb	WG NS D 7622 vbvb
NS_D6000	WG_NS_D6061	WG NS D 6061 gr oxox
	WG_NS_D6063	WG NS D 6063 gr skog
	WG_NS_D6063oxog	WG NS D 6068 gr oxog
	WG_NS_D6064	WG NS D 6064 gr ogog
	WG_NS_D6066	WG NS D 6066 gr sksk
	WG_NS_D6062	WG NS D 6062 bl skog
	WG_NS_D6065	WG NS D 6065 bl ogog
	WG_NS_D6065oxog	WG NS D 6069 bl oxog
	WG_NS_D6067	WG NS D 6067 bl sksk
NS_Mat_24	WG_NS_mat24_Aec	WG NS Mat 24 Aec 8517
	WG_NS_mat24bl_Aec	WG NS Mat 24 bl AB 8527
	WG_NS_mat24_Bec	WG NS Mat 24 Bec 8501
	WG_NS_mat24_Bec_8521	WG NS Mat 24 Bec 8521
	WG_NS_mat24bl_Bec	WG NS Mat 24 bl B 8501
	WG_NS_mat24_Cec	WG NS Mat 24 Cec 8528 ogog
	WG_NS_mat24_Cec_8536_oxog	WG NS Mat 24 Cec 8536 oxog
	WG_NS_mat24bl_Cec	WG NS Mat 24 bl B 8536
	WG_NS_Mat_24_mBD	WG NS Mat 24 mBD 9101 Ldg
	WG_NS_Mat_24_mBD_s	WG NS Mat 24 mBD 9115 Trl
	WG_NS_mat_24_mBD_unpowered	WG NS Mat 24 mBD unpowered
	WG_NS_Mat_24_mCd	WG NS Mat 24 mCd 9424 Ldg
	WG_NS_Mat_24_mCd_s	WG NS Mat 24 mCd 9428 Trl

All WG rolling stock has been equipped with Wilbur Graphics type 3link couplings, which makes them compatible with all other couplings of this type used as standard by DTG for European rolling stock. Incidentally, you may receive error messages when building consists in Quick Drive mode when you try to combine WG stock with rolling stock from other providers. In the Scenario Editor, this can lead to issues when selecting rolling stock items.

When a locomotive or tender is placed in front of a bellows equipped coach, a folded bellows gangway must be shown on coach front. In addition, the 4-doors brake van ('Steel Dirk') may be part of a consist of old fashioned compartment coaches without such devices. To enable these train sets passengers rolling stock in this release is offered in different versions, recognizable by a suffix (sk = screw coupling only, og = functional bellows, ox = permanently folded bellows). Coach colours will sometimes be indicated by suffixes, i.e. bl = blue, gr = green, alu = grey roof. For example, the *browser name* WG NS D 6063 gr alu ox og stands for: Luggage van D 6063, with green sides and grey roof, non-functioning bellows on one side and functional bellows on the other.

When setting up scenarios, the difference between working and static bellows is indicated by special markers, as shown below.



At the scenario start, this combination will produce a full bellows passage.



In the Scenario Editor, this red arrow indicates non-functional bellows passage.



The shunter has been coupled up, the bellows are shown in retracted position.



At the back of the van an extended bellows passage will be rendered.

5. Goods wagons

This table gives an overview of the available goods wagonss. Objects with a green background have been added after the Berkendam V2.0 release. Most vehicles are now equipped with a fixed cargo object. As a result, selected *preload consists* in Quick Drive mode are immediately available in loaded fashion.

<i>Wilbur Graphics\ Rol- lend mat</i>	<i>.bin Object</i>	<i>Object Name</i>
DB_Dwg_Heizöl	WG_DB_Dwg_Heizöl	WG DB Dwg Stookolie
DB_Ghs30_Oppeln	WG_DB_Ghs30_Oppeln_DUB	WG DB Tkos30 Dortm Union
	WG_DB_Ghs30_Oppeln_EUR	WG DB Ghs30 Oppeln EUROP
	WG_DB_Ghs30_Oppeln_Kühlw	WG DB Tkos30 Oppeln
	WG_DB_Gms30_Oppeln	WG DB Gms30 Oppeln (Remk.)
	WG_DR_Grhs_Oppeln	WG DR tp3 Grhs Oppeln
	WG_DRG_Grs_Oppeln	WG DRG tp2 Grhs Oppeln
	WG_DRG_Grs_(r)_Oppeln	WG DRG Grs Oppeln (r)
	WG_DRG_Grs_Oppeln	WG DRG tp2 Grs30 Oppeln (Remk.)
DB_Off_52	WG_DB_Off52_A	WG DB Off 52 A
	WG_DB_Off52_B	WG DB Off 52 B
	WG_DB_Off52_C	WG DB Off 52 C
	WG_DB_Off52_D	WG DB Off 52 D
DB_OOt50	WG_DB_tp3_OOt50	WG DB Ep3 OOt 50
DRG_Gh_Kassel	WG_DB_G10_Kassel	WG DB G10 124 709
	WG_DRG_Gh_Kassel	WG DRG tp2 Gh 137726
EDK_typ_6a	WG_DR_EDK6a_schutwagen	WG DR EDK6a schutwgn
	WG_DR_EDK6a_transprt	WG DR EDK6a transport
	WG_EDK6a_gen_schutwagen	WG NS EDK6a schutwgn
	WG_EDK6a_gen_transprt	WG NS EDK6a transport
	WG_EDK6a_VSM_schutwagen	WG VSM EDK6a schutwgn
	WG_EDK6a_VSM_transprt	WG VSM EDK6a transport
NS_CHD	NMBS_CHD_r_1	WG NS CHD 17521
	NS_CHD_r_1	WG NS CHD 17147
NS_CHOP_Oppeln	WG_NS_CHOP_Oppeln	WG NS CHOP Oppeln
NS_CHPW	NS_CHPW_Amstel	WG NS CHPW Amstel 27817
	NS_CHPW_Amstel_1950	WG NS CHPW Amstel 27818
	NS_CHPW_Frico	WG NS CHPW Frico 27787
	NS_CHPW_Frico_1950	WG NS CHPW Frico 27788
	NS_CHPW_Fyffes	WG NS CHPW Fyffes 27711
	NS_CHPW_Fyffes_1950	WG NS CHPW Fyffes 27712
	NS_CHPW_Zeevisch	WG_NS_CHPW_ID_Zeevisch

<i>Wilbur Graphics\ Rol- lend mat</i>	<i>.bin Object</i>	<i>Object Name</i>
NS_Dg	NS_Dg2425_groen	WG NS tp2 Dg2425
	NS_Dg2426_bruin	WG NS tp3 Dg2426
NS_Frico_Oppeln	WG_NS_Frico_Oppeln	WG NS Frico Oppeln
NS_GTMK	NS_GTMK_1938_kolen	WG NS GTMK 59228
	NS_GTMK_1954_kolen	WG NS GTMK 59241
	NS_GTMK_r_1938_kolen	WG NS GTMK 59281
	WG_NS_GTMK_1938_ledig	WG NS GTMK 59228 (ledig)
	WG_NS_GTMK_1954_ledig	WG NS GTMK 59241 (ledig)
	WG_NS_GTMK_59228	WG NS tp3 GTMK 59228
	WG_NS_GTMK_59421	WG NS tp3 GTMK 59241
	WG_NS_GTMK_r_1938_ledig	WG NS GTMK 59281 (ledig)
NS_HHW	WG_NS_HHW_laadk	WG NS tp2 HHW laadk
	WG_NS_HHW_tankcont	WG NS tp2 HHW tankcont
NS_LW	WG_NS_LW_1938	WG NS LW 87428 Bingham
	WG_NS_LW_1954	WG NS LW 87426 Phoenix
	WG_NS_LW_ledig	WG NS LW 87435
	WG_NS_LW_NKF	WG NS LW 87433 NKF
NS_P_ketelw	NS_P_ketelw_caltex	WG NS P-ketelwgn 2ass Caltex
	NS_P_ketelw_esso	WG NS P-ketelwgn 2ass Esso
	NS_P_ketelw_fina	WG NS P-ketelwgn 2ass Purfina
	NS_P_ketelw_matex	WG NS P-ketelwgn 2ass Matex
	NS_P_Ketelw_phm	WG NS P-ketelwgn 2ass PHM
	NS_P_ketelw_shell	WG NS P-ketelwgn 2ass Shell
	NS_P_ketelw_texaco	WG NS P-ketelwgn 2ass Texaco
	NS_P_ketelw_tsig	WG ketelwagen hcc!trainsim
NS_S-CHO	WG_NS_S-CHO_1954	WG NS S-CHO 6933
	WG_NS_S-CHO_5617	WG NS S-CHO 5617
NS_S-CHR	WG_NS_S-CHR_1954	WG NS S-CHR 1954
	WG_NS_S-CHR_31577	WG NS S-CHR 31577
NS_SSImas53	WG_NS_SSImas_53_GP200	WG NS S-HTS Type K trucks
	WG_NS_SSImas_53_NKF	WG NS S-HTS NKF
	WG_NS_SSImas_53_Phoenix	WG NS S-HTS Phoenix
	WG_NS_SSImas_53_spar	WG NS S-HTS sparren/spars
	WG_NS_SSImas_53_stam	WG NS S-HTS logs/stammen
	WG_NS_SSImas_53_trucks	WG NS S-HTS LKW
	WG_NS_SSImas_53	WG NS S-HTS
	WG_NS_SSImas_53_rails	WG NS S-HTS rails/track
	WG_NS_SSImas_53_WilburG	WG NS S-HTS WilburG
NS_SSImas53_basis	WG_NS_SSImas_53_GP200	WG NS Rs GP 200 trucks

<i>Wilbur Graphics\ Rol- lend mat</i>	<i>.bin Object</i>	<i>Object Name</i>
NS_SSImas53_mil	WG_NS_SSImas_53_mil_2LR109_5t	WG mil SSImas53 2LR 5t
	WG_NS_SSImas_53_mil_2LR109_YA328	WG mil SSImas53 2LR YA328
	WG_NS_SSImas_53_mil_2LR109+3t+	WG mil SSImas53 2LR 3t
	WG_NS_SSImas_53_mil_2LR109+YA314	WG mil SSImas53 2LR YA314
	WG_NS_SSImas_53_mil_3t+3t+	WG mil SSImas53 3t+ 3t+
	WG_NS_SSImas_53_mil_3t3t	WG mil SSImas53 3t 3t
	WG_NS_SSImas_53_mil_4LR88	WG mil SSImas53 4 LR 88
	WG_NS_SSImas_53_mil_5t5t	WG mil SSImas53 5t 5t
	WG_NS_SSImas_53_mil_KL_4LR88	WG mil SSImas53 KL 4 LR 88
	WG_NS_SSImas_53_mil_YA314	WG mil SSImas53 YA 314
	WG_NS_SSImas_53_mil_YA328	WG mil SSImas53 YA 328
NS_SSy45_mil	WG_SSy_45_Centurion	WG mil SSy 45 Centurion KL
	WG_SSy_45_Centurion_BAOR	WG mil DB SSy 45 Centurion BA
	WG_SSy_45_YP408	WG mil SSy 45 YP408 KL
NS_USATC	WG_USATC_ketelw_Caltex_47	WG NS USATC Caltex 47
	WG_USATC_ketelw_Caltex_50	WG NS USATC Caltex 50
	WG_USATC_ketelw_Esso_03	WG NS USATC Esso 03
SNCF_Gas	WG_SNCF_Gas_A	WG SNCF Gas A
SNCF_K_Oppeln	WG_SNCF_K_Oppeln	WG SNCF K Oppeln



6. Preloads

The table below lists the included *preload consists*, which can be selected either with the Scenario Editor or in Quick Drive mode.

<i>Consist</i>	<i>Loco Name</i>	<i>Display Name</i>
NS_1100_Mat24bl_stam	WG NS 1125 tp3	met D A B B C C C
NS_1100_Ovaalramersbl_stam	WG NS 1125 tp3	met D B B A A B B B ovaal blauw
NS_1112_koelwagentrein	WG NS 1112 tp3	with reefers/met koelwagens
NS_1142_16_Off52_VW	WG NS 1142 tp3	met DB Off 52 en VW brilkevers
NS_1125_solo	WG NS 1125 tp3	light engine/ losse loc
NS_1142_solo	WG NS 1142 tp3	light engine/ losse loc
NS_2000_NAM_ketelwagens	WG NS 2016	met NAM ketelwagens
NS_2447_solo	WG NS 2447 tp3	(light engine)
NS_2471_solo	WG NS 2471 tp3	(light engine)
NS_2459_15_G_wagens	WG NS 2517 tp3	mixed goods/bonte goederentrein
NS_2459_15_G_wagens_2	WG NS 2471 tp3	mixed goods (2)/buurtgd (2)
NS_2459_15_kolenbkn	WG NS 2447 tp3	coal hoppers/kolenbakken
NS_2459_16_G_wagens_Tp_III	WG NS 2517 tp3	goods era III/goederen Tp III
NS_2459_16_Off52_VW	WG NS 2471 tp3	VW Beetles/VW kevers
NS_2459_20_G_wagens_Tp_III	WG NS 2447 tp3	22 goods Era III/22 Gwgs Tp III
NS_2459_ketelwagens_01	WG NS 2517 tp3	2- and 4-axle tankers/ketelwagens
NS_2459_ketelwagens_02	WG NS 2471 tp3	4-axle tankers/4-add ketelw (2)
NS_2459_DB_ketelwagens	WG NS 2459 tp3	4-axle tankers/4-add ketelw (1)
NS_2517_Maint_OfWay	WG NS 2517 tp3	w/m 8 Rs trucks/rail sections
NS_259_ketelwagens_01	WG NS 259 tp3	met 2-assige 'custom' ketelwagens
NS_3717_solo	WG NS 3717	Losse loc/light engine
NS_3718_solo	WG NS 3718	Losse loc/light engine
NS_3718_Ovaalramersbl_stam	WG NS 3718	met D B B A A B B B ovaal blauw
NS_3737_solo	WG NS 3737	Losse loc/light engine
NS_3737_koelwagentrein	WG NS 3737	with reefers/met koelwagens
NS_3737_20_kolenbkn	WG NS 3737	with/met 20 coal/kolen
NS_3737_D_C4_BC4_AB4_2C4	WG NS 3737	w/7 coaches/coupe hout
NS_3737_Etoile_du_Nord	WG NS 3737	met Etoile du Nord
NS_3737_Ovaalramers_DCCABABCCC	WG NS 3737	met D C C AB AB C C C ovaal
NS_3738_solo	WG NS 3738	Losse loc/light engine

<i>Consist</i>	<i>Loco Name</i>	<i>Display Name</i>
NS_4600_2ass Gmix	WG NS 4621	m/w 2-ass/2-axle Gmix
NS_4604_light engine	WG NS 4604 T3	(light engine)
NS_4611_light engine	WG NS 4611 T3	(light engine)
NS_4621_light engine	WG NS 4621 T4	(light engine)
NS_4622_20_kolenbkn	WG NS 4622 T4	with/met 20 coal/kolen
NS_4622_ketelwagens_01	WG NS 4622 T4	2- and 4-axle tankers/ketelwagens
NS_4622_light engine	WG NS 4622 T4	(light engine)
NS_5812_12_G_wagens	WG NS 5812	w/m mixed goods/bonte g-trein
NS_5812_2_assers_GCCBCC.xml	WG NS 5812	w/m local/2-assers
NS_5812_C4_BC4_AB4_2C4	WG NS 5812	w/5 coaches/coupe hout
NS_5812_light_engine	WG NS 5812	losse loc/light engine
NS_5816_light_engine	WG NS 5816	losse loc/light engine
NS_5816_stam_mat24	WG NS 5816	with/met 5 coaches
NS_6100_stoptrein	WG NS 6107	stoptrein / local passenger service
NS_6107_light_engine	WG NS 6107	losse loc/light engine
NS_6107_Ovaalramers_DCCABABCCC	WG NS 6107	met D C C AB AB C C C ovaal
NS_6108_16_G_wagens_Tp_II	WG NS 6108	m/w G-wagens tp 2/goods wagons Era II
NS_6108_16_G_wagens_tp3	WG NS 6108	w/ goods Era 3/met G-wagens tp3
NS_6108_D_C4_BC4_AB4_2C4	WG NS 6108	w/6 coaches/coupe
NS_6108_light_engine	WG NS 6108	losse loc/light engine
NS_6108_stam_coupe_DCCAACCC	WG NS 6108	w/met 7 coaches/couperijtuigen
NS_6200_2-4ass Gmix	WG NS 6239	m/w 2/4-ass/2/4-axle Gmix
NS_6200_20_kolenbkn	WG NS 6240	with/met 20 coal/kolen
NS_6239_ketelwagens_01	WG NS 6239	4-axle tankers/4-ass ketelw
NS_6239_light_engine	WG NS 6239	losse loc/light engine
NS_6240_light_engine	WG NS 6240	losse loc/light engine
NS_636_EDK_custom_01	WG NS 636	m/w custom kolenkraan/coaling crane
SNCF_BB_8105_Etoile_du_Nord	WG SNCF BB 8105	w/m Etoile du Nord
SNCF_BB8100_cars_transport	WG SNCF BB 8105	with VW cars transport
NS_Mat24_mBD_5_bak	WG Mat24 mBD 9101	5-wagentrein/motor coach train
NS_Mat24_mBD_6_bak	WG Mat24 mBD 9101	6-wagentrein/motor coach train
NS_Mat24_mCd_5_bak	WG Mat24 mCd 9424	5-wagentrein/motor coach train
NS_Mat24_mCd_6_bak	WG Mat24 mCd 9424	6-wagentrein/motor coach train
NS_Mat24_NSM_4_bak	WG Mat24 mBD 9101	Restored MCT/Museumtreinstel
NS_Mat24_stam_CBABC	WG Mat24 mBD 9101	w/m 5 Mat24 (CBABC)

7. Cab lay-outs

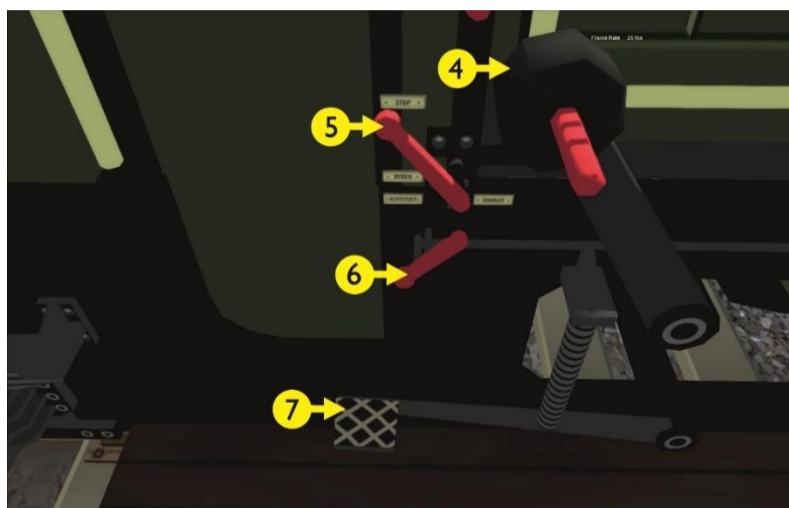
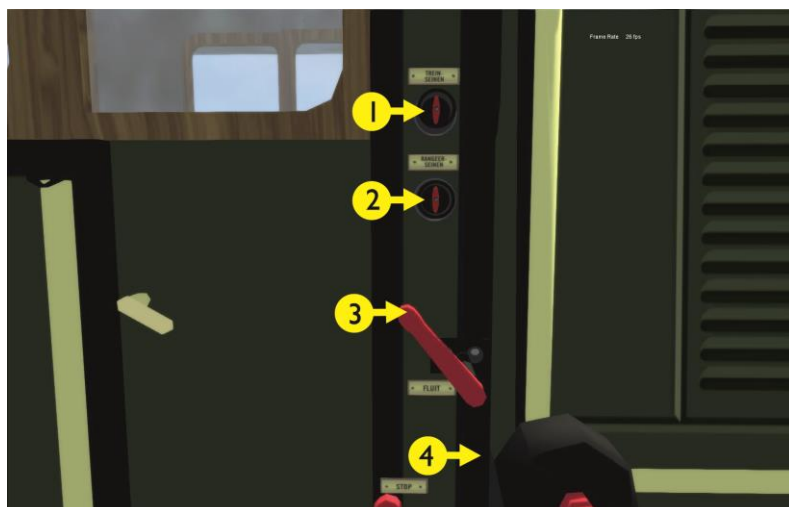
General

Cab layouts in our Dutch steam locomotives are almost identical. In locomotives with a coupled tender, two cab camera positions are available. You can switch between them with the arrow keys (left: fireman-, right: driver position). In tender locomotives four positions are provided for, because these locomotives may be heading trains in reverse.

Headlights are operated in accordance with TS. Dutch steam engines had no electrical installation and kerosene lamps were standard issue. These can be switched on and off in the usual way using the H button. To illuminate the cab and the dials, you can light the oil lamp on the boiler front.

Important: To run a steam locomotive, the air pump must first be turned on (CTRL+O or move the handwheel with the mouse)

NS 200

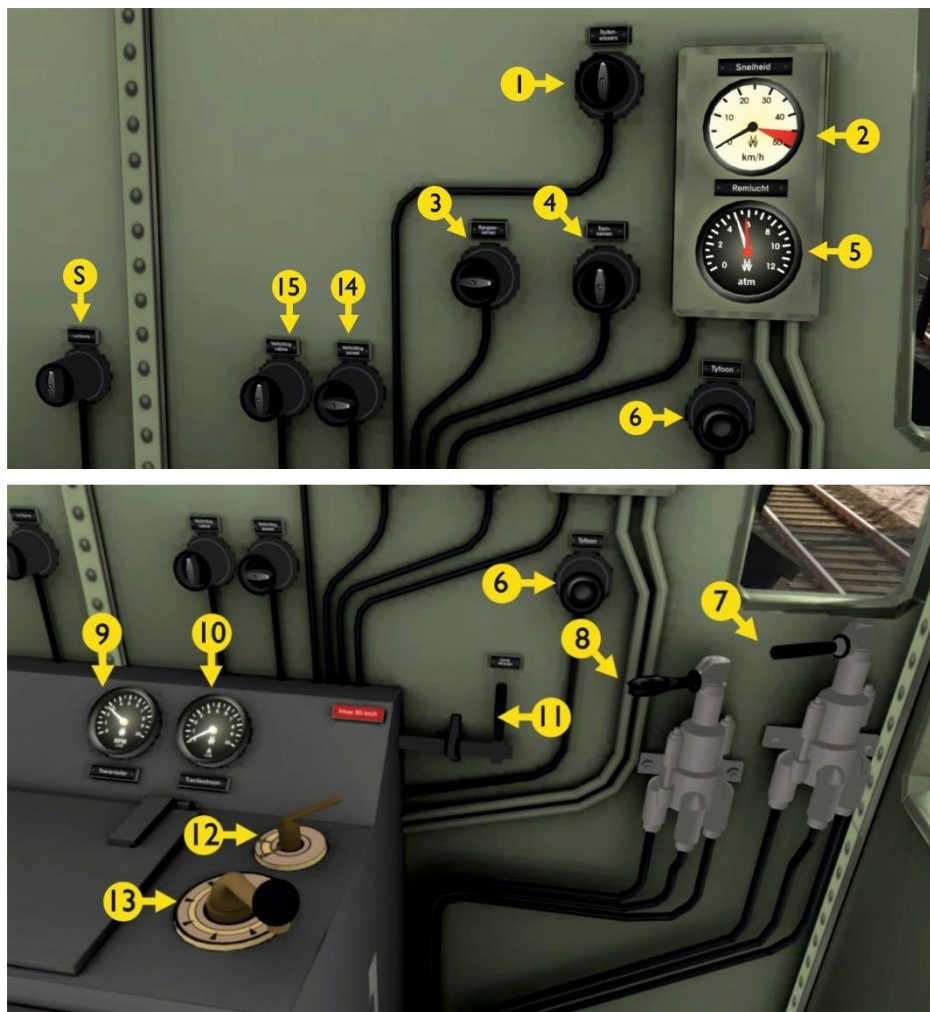


1	Train signals on/off	Headlights	7	Engine brake	[&]
2	Shunting signals on/off			Sander	X
3	Whistle	SPACE			
	Whistle (short)	N			
4	Train brake	; & '			
5	Controller	A & D			
6	Reverser	W & S			

Like in reality, this TS Classic shunter is operated from the footboard, where you will find handles for the whistle, the direction of travel and the speed control, with a switch for turning the shunting signals on and off. The foot brake is designed as a locomotive brake. The large counterweight lever acts as a train brake.

Please note: the engine script of the Sik distinguishes between the use as a *player engine* and as AI traffic when selecting train signals. The player indicates once with W or S that he or she is the driver.

NS 500

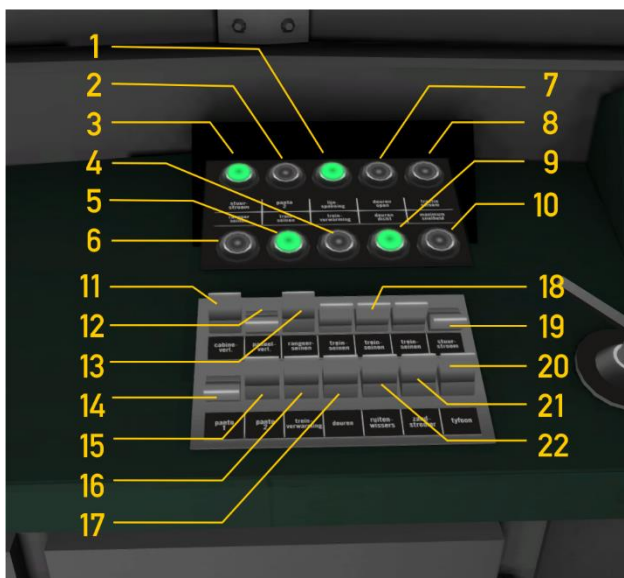


1	Wipers	V	8	Train brake	; ' ;
2	Speedometer		9	RPM	
3	Shunting signals on/off	CTRL+F9	10	Traction current	
4	Train signals on/off	H/SHIFT+H	11	Sander	X
5	Train brake pipe/main res. pressures		12	Reverser	W S
6	Horn	SPACE	13	Controller	A D
	Horn (short)	N	14	Instrument lighting on/off	CTRL+F12
7	Engine brake	[]	15	Cab lights on/off	CTRL+F11

NS 1100



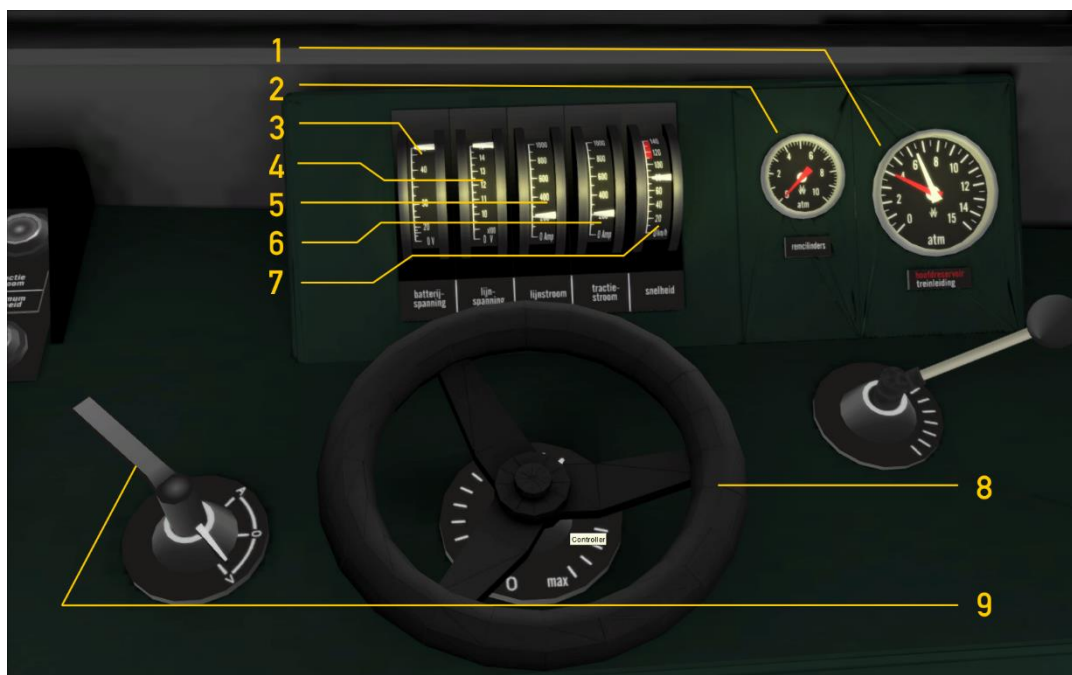
Control lights and Faiveley-block



Switch 17 (doors/open closed) only responds to the hotkey T or to clicking the Load/Unload button in the HUD.

1	Line voltage detected	12	Instrument lights on/off	CTRL+F11
2	Panto 2 in upper position	13	Shunting signals on/off	CTRL+F9
3	Control current switched on	14	Panto 1 up/down	P
4	Train heating switched on	15	Panto 2 operation mode	
5	Train signals switched on	16	Train heating on/off	T
6	Shunting signals switched on	17	Doors operation	CTRL+ 0
7	Train doors open	18	Train signals on/off	
8	Traction current overload	19	Control current on/off	SPACE or N
9	Train doors closed	20	Horn	X
10	Speed warning	21	Sander	V
11	Cab lights on/off	22	Wipers on/off	

Handles and instruments



- | | |
|---|--------------------------------------|
| 1 | Train brake pipe/main res. pressures |
| 2 | Brake cylinder pressure |
| 3 | Battery voltage |
| 4 | Main current voltage |
| 5 | Traction current truck 1 |

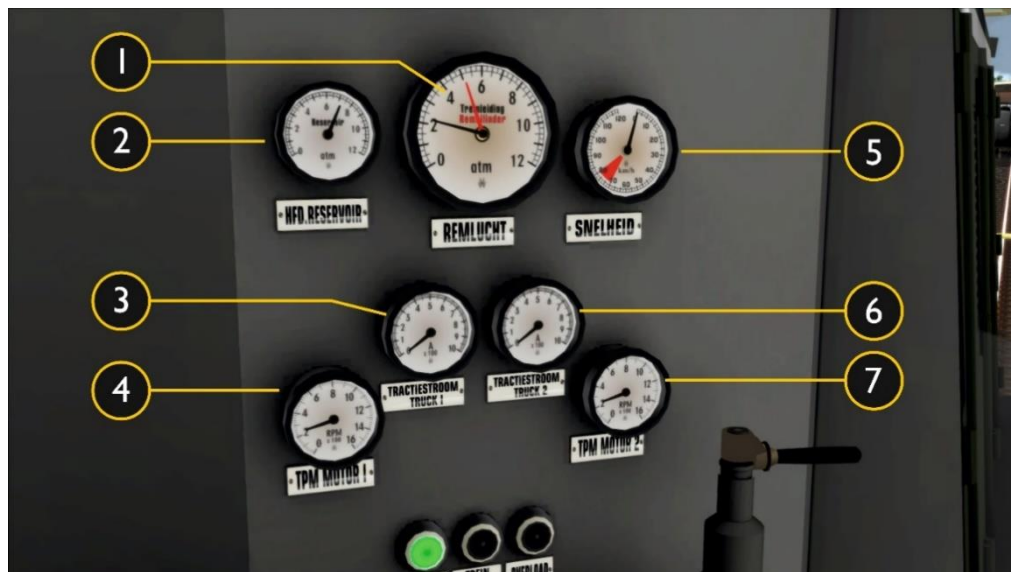
- | | |
|---|--------------------------|
| 6 | Traction current truck 2 |
| 7 | Speedometer |
| 8 | Controller |
| 9 | Reverser |

A / D
W / S

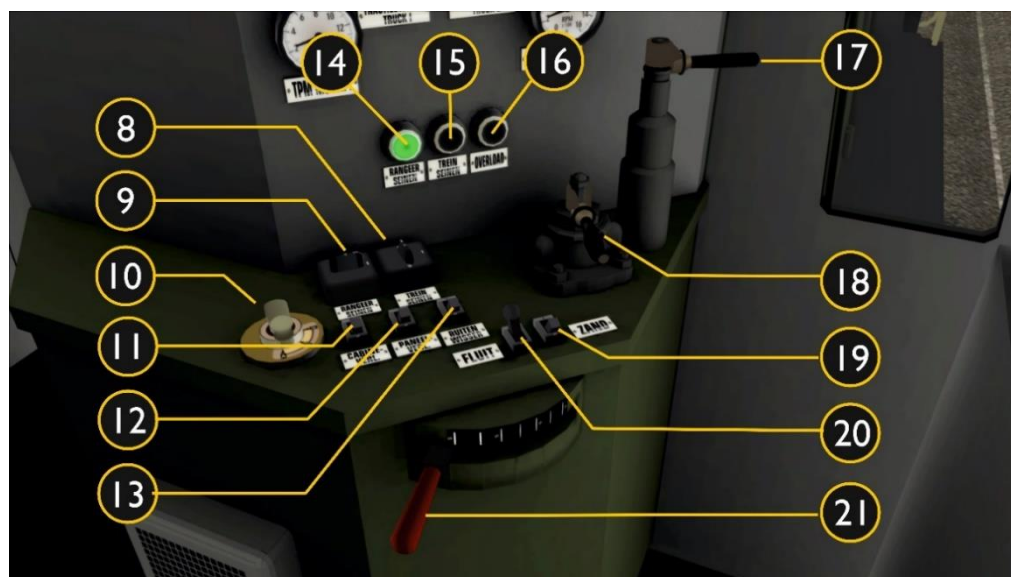


- | | |
|---|--------------------|
| 1 | Speedometer |
| 2 | Engine brake valve |
| 3 | Train brake valve |

The series 1100 cab layout follows the TS Classic standard for electric locos (expert mode) and therefore some details are differently implemented when compared to reality (e.g. no control current key). Headlights lights are operated in accordance with TS. These can be switched on and off in the usual way using the H button. When shunting signals are switched on, a white light is displayed at the front and rear.

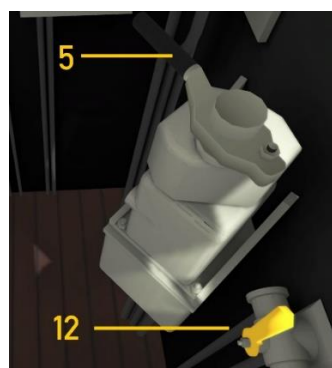
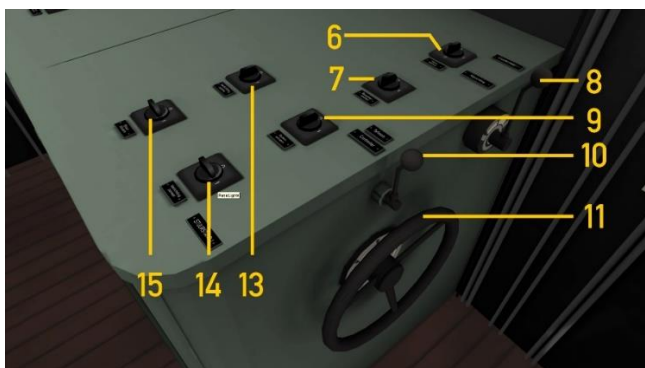
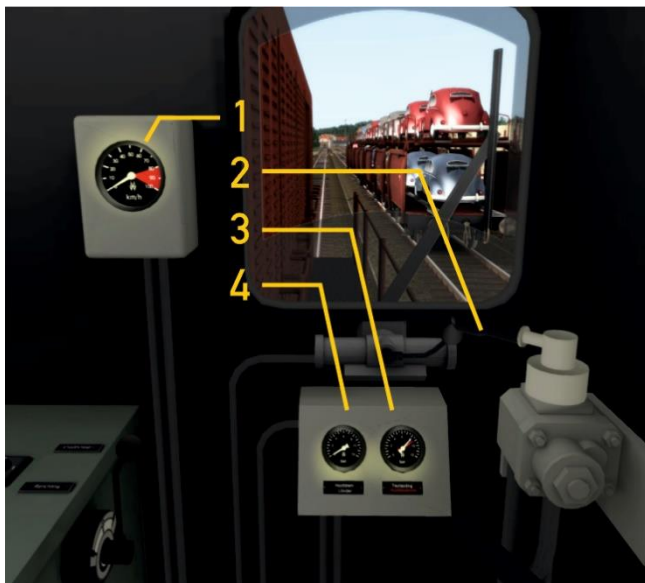


1	Train brake pipe/brake cyl. pressures	5	Speedometer
2	Main reservoir pressure	6	Traction current truck 2
3	Traction current truck 1	7	RPM engine 2
4	RPM engine 1		



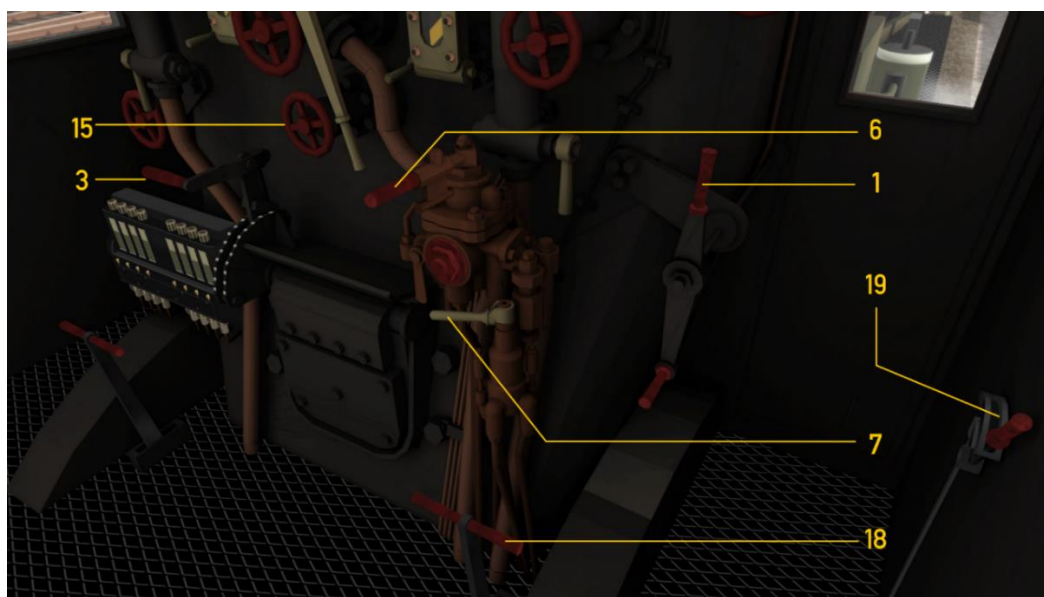
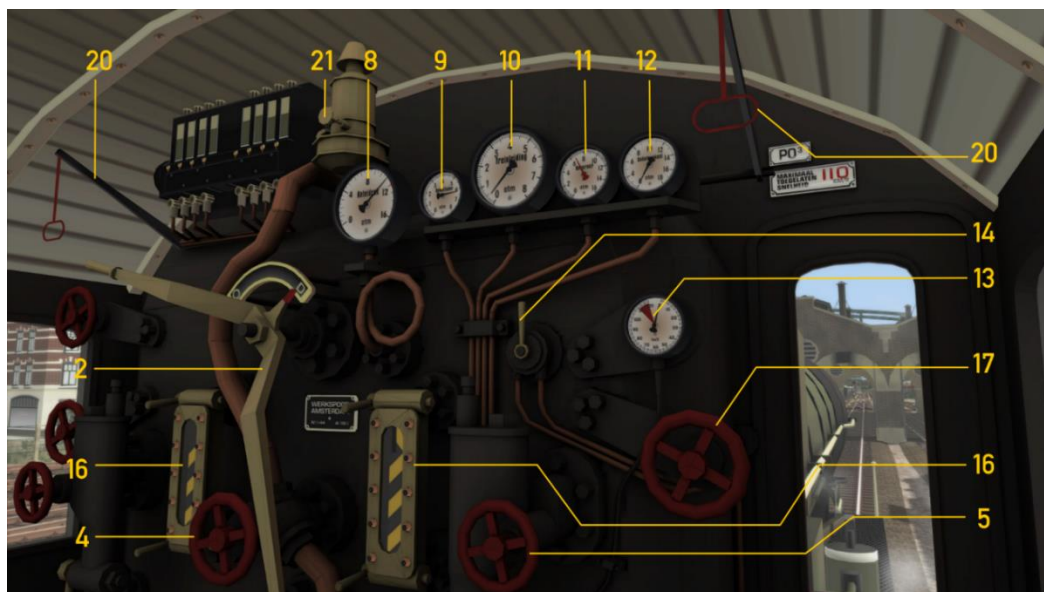
8	Train signals on/off	H	15	Train signals indicator light	
9	Rangearseinen in/uit	CTRL + F9	16	Overload indicator light	
10	Reverser	W S	17	Engine brake	[]
11	Cab lights on/off	CTRL + F11	18	Train brake	; ' ,
12	Instrument lights on/off	CTRL + F12	19	Sander	X
13	Wipers	V	20	Horn	SPACE or N
14	Shunting lights indicator light		21	Controller	A D

NS 2400



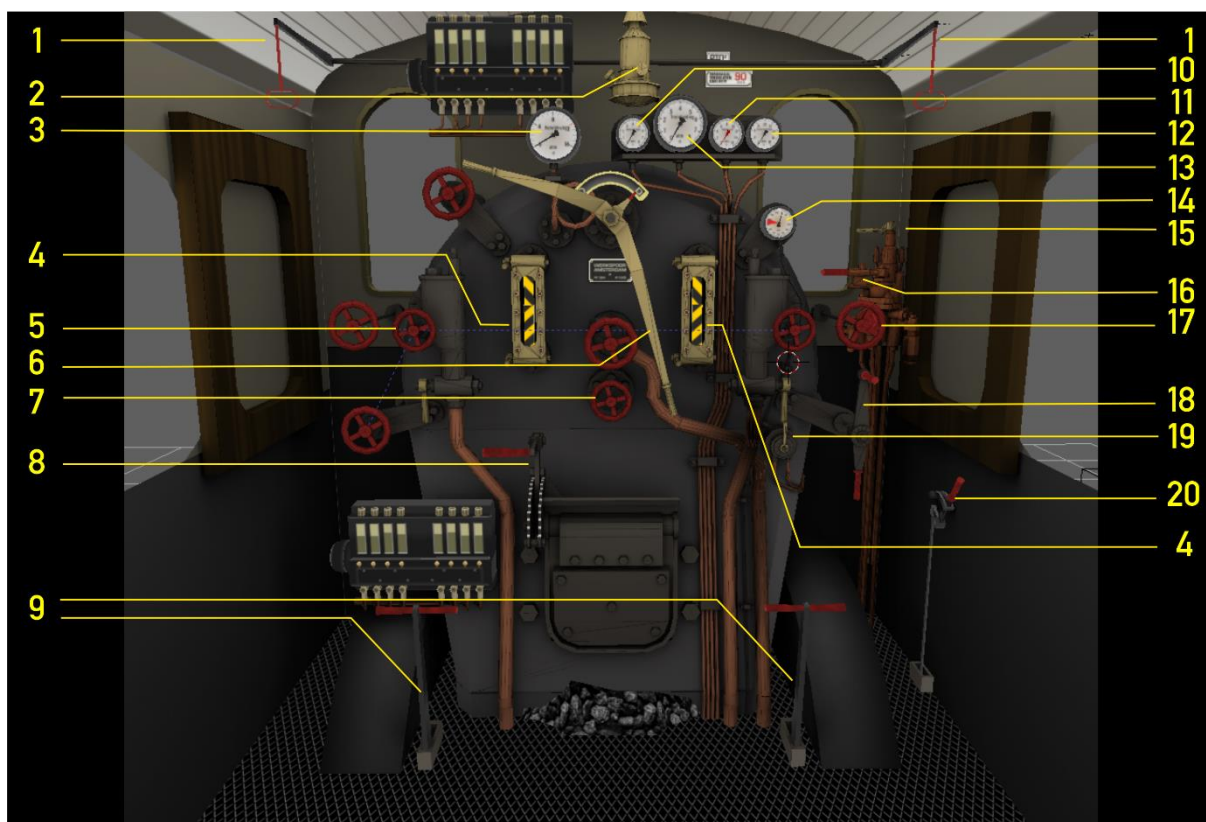
1	Speedometer		9	Horn	SPACE
2	Engine brake	[&]		Horn (short)	N
3	Brake cylinders pressure		10	Wipers	Wipers
4	Train brake pipe/main res. pressures		11	Controller	A & D
5	Train brake	; & '	12	Sander	X
6	Train signals on/off	Headlights	13	Instrument lighting on/off	CTRL+F12
7	Horn	CTRL+F9	14	Cab lights on/off	CTRL+F11
8	Reverser	W & S	15	Control current on/off	CTRL+9

NS 3700, 4600, 6100 en 6200



1	Reverser	W S	13	Speedometer	
2	Regulator	A D	14	Sander	X
3	Firebox door	F	15	Blower	
4	Injector (fireman)		16	Water gauges	CTRL+9
5	Injector (driver)		17	Compressor start/stop	M/SHIFT+M
6	Train brakes	; ']	18	Dampers	C
7	Engine brakes	[19	Cylinder cranes	SPACE BAR
8	Manometer		20	Whistle	N
9	Brake cylinder pressure			Whistle (short)	CTRL + F11
10	Brake pipe pressure		21	Oil lamp (cab light)	H / SHIFT +H
11	Main reservoir pressure			Head/tail lights	CTRL + F9
12	Steam chest pressure			Shunting lights	

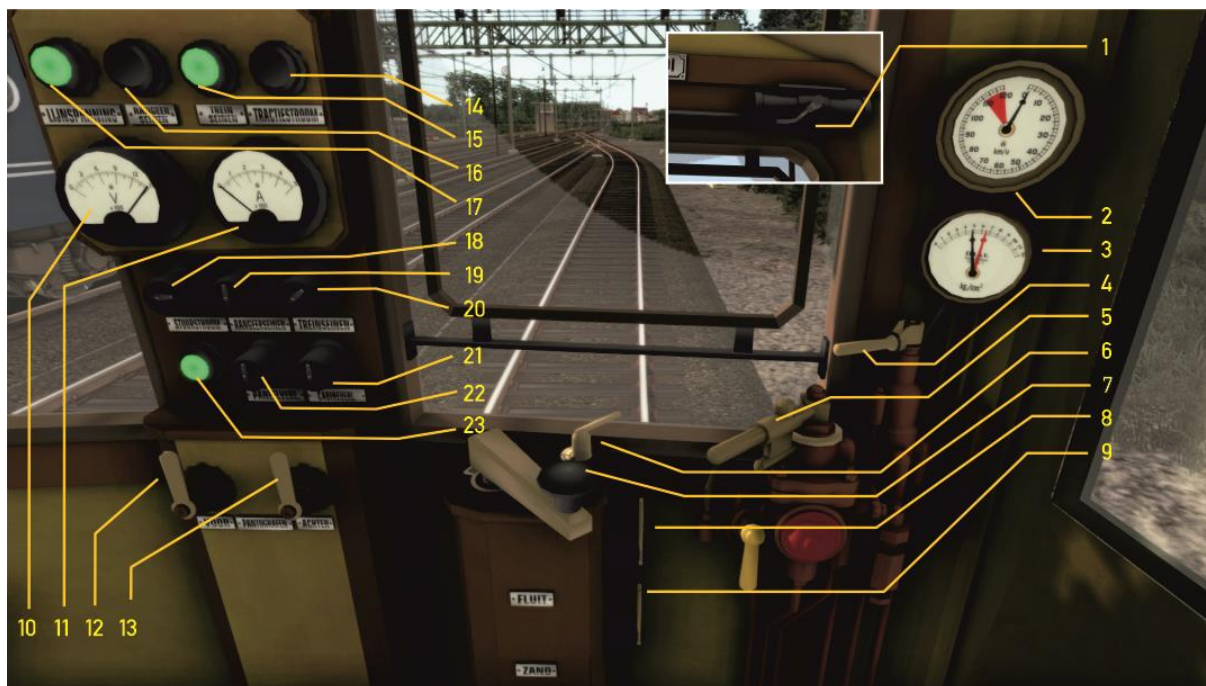
NS 5800



1	Whistle (long)	SPACE BAR	12	Steam chest pressure	
2	Whistle (short)	N	13	Brake pipe pressure	
3	Oil lamp (cab light)	CTRL+F12	14	Speedometer	
4	Manometer	F	15	Engine brakes	[]
5	Water gauges		16	Train brakes	; ,
6	Injectors		17	Compressor start/stop	CTRL + 0
7	Regulator	A D	18	Reverser	W S
8	Blower		19	Sander	X
9	Firebox door	F / SHIFT+F	20	Cylinder cranes	C
10	Dampers			Head/tail lights	H
11	Brake cylinder pressure			Shunting lights	CTRL+F9
	Main reservoir pressure				

Materieel 1924 ('Building blocks'/'Blokkendoos')

The interior of this cabin follows the TS Classic standard (expert mode) and therefore differs from reality EMUs because of the presence of a sander and an engine brake. The mCd and mBD cab layouts are slightly different from each other.



1	Ruitenwissers	Wipers V	13	Tweede panto op/neer **	
2	Snelheidsmeter		14	Overload tractiestroom	
3	Hoofdreservoir/treinleidingdruk		15	Treinseinen controlelamp	
4	Locrem	[]	16	Rangeerseinen controlelamp	
5	Treinrem	; '	17	Lijnspanning controlelamp	
6	Rijrichtinginsteller	W S	18	Stuurstroom in/uit	
7	Rijcontroller	A D	19	Rangeerseinen in/uit	
8	Luchtfluit *	SPATIEBALK	20	Front/sluitseinen in/uit	Headlights H
9	Zandstrooier	X	21	Cabineverlichting in/uit	
10	Lijnspanningsmeter		22	Paneelmeterverlichting in/uit	
11	Lijnstroommeter		23	Stuurstroom controlelamp	
12	Pantograaf op/neer	P			

*) long (short: N-key)

**) controlled by engine script

8. Colophon and credits

Development and production:

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

Sound effects WG steam locos:

© Michel R.

Tips and advice:

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Reinhart190953

TrainworX (Paul Mersel)

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Testing:

Ton van Schaik

Reinhart190953

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