

RETRO CANVAS ROUTE

Version 2.1 Build 20260715



MANUAL

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1 Introduction

How this manual is organized

The Retro Canvas Route has been built as a fictitious line of the Dutch National Railways (Nederlandse Spoorwegen, NS), representing the years around 1990, with a strong bias towards driving pleasure, both for the eye and the mind. The infrastructure is characterized by concrete sleepers and colour light signals. Apart from some sidings all tracks have been fitted out with overhead lines. The surrounding landscape and city buildings will create a realistic impression. The effective track length is around 55 km.

In this manual you will find instructions on installing the route in chapter 2. The software includes all necessary Wilbur Graphics scenery and rolling stock assets. We expect that you already own the DTG ELAP addon, plus the ChrisTrains rolling stock that is used in the scenarios. Chapter 3 contains an overview of the route and track plans of all station yards, followed by an index of the included WG rolling stock in chapter 4. There you will also find a specification of the ChrisTrains assets that are needed to run the scenarios. Chapter 5 will introduce you to the NS lightsignals system ('NS daglichtseinen 1954'), while chapter 6 is reserved for an overview of all available scenarios.

In the Appendix user manuals excerpts of all included Wilbur Graphics locomotives can be found.



What is new in version 2.1?

The update to version 4.0.0 of Mat '64 by ChrisTrains is characterized by major changes, which are not compatible with the same developer's Mat'64 from older versions. This equipment type is represented in almost all scenarios of the Retro Canvas Route, whether as a player train, AI traffic or *loose consist*. As a result, it was necessary to replace this type of rolling stock with the new version in more than twenty scenarios.



2 Installation

Download contents

The TrainworX/Wilbur Graphics Retro Canvas Route (RCR) is being offered as a .zip-file and will contain the following items, apart from the Readme EN.txt -file :

Language User Manuals:

- WG_RCR_Handbuch_V2_0_build_20260115.pdf)
- WG_RCR_Manual_V2_0_build_20260115.pdf)
- WG_RCR_Handleiding_V2_0_build_20260115.pdf)

Installer program WG_RCR_V20_build_20260115.exe

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

Installation

After starting the installer you will be prompted to

- Select a language (Dutch/English/French/German)
- Indicate an alternative path to the installation folder (default is ../SteamApps/Railworks/etc.)
- Accept the licence agreement (EULA)

Removing the Retro Canvas Route

To remove the RCR we strongly advise you to limit this action to the deletion of the folder:

67ac1f9a-b1ca-4bd3-89e4-b27d24a15b23

From the folder as specified by the path below:

C:\Program Files (x86)\
Steam\steamapps\common\RailWorks\Content\Routes

Required add-ons

You cannot simulate railway services in a Dutch route without having ChrisTrains rolling stock on the roster. We therefore are assuming that most of these products have already been acquired by our esteemed users. In chapter 4 we will summarize the ChrisTrains rolling stock objects that have been scheduled to make an appearance in the route's scenarios.

In the RCR route we have been using scenery objects that DTG have omitted from newly bought TSC versions since 2015. This concerns passenger characters on platforms, some railway personnel etc., but is also important for rendering the terrain. User who came on board from that version on can remediate this by purchasing the DTG addon *European Loco and Asset Pack (ELAP)*, which is (reasonably priced) on offer at the Steam website.

Settings and hardware requirements

The hardware and software requirements that are recommended by Train Simulator 2019 supplier DTG have been observed by the developer when building this product.

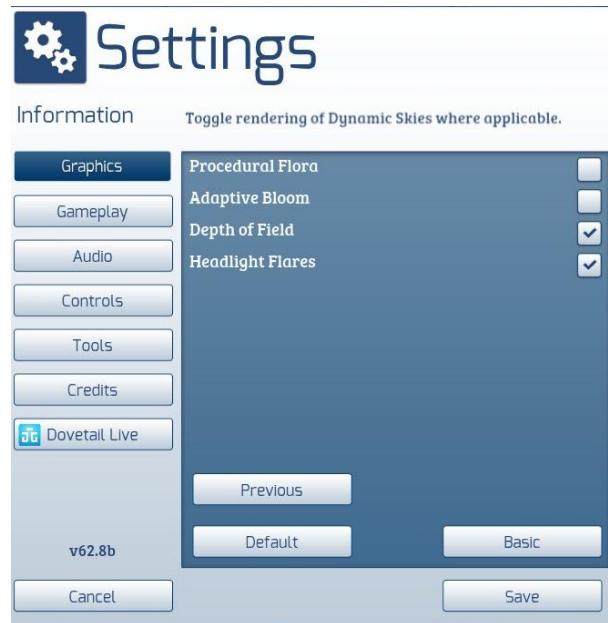
Minimum system requirements:

OS	Windows® 10/11
Processor:	2.8 GHz Core 2 Duo (3.2 GHz Core 2 Duo recommended), AMD Athlon MP (multiprocessor variant or comparable processors)
Memory:	4 GB RAM
Graphics:	512 MB with Pixel Shather 3.0 (AGP PCIe only)*
DirectX®:	9.0c
Hard Drive:	6 GB HD space
Sound:	Direct X 9.0c compatible

* Laptop versions of these chipsets could work but are not supported by TS Classic. It may be possible that the drivers for your video and sound cards must be updated.

We suggest that you will incorporate the graphics settings in your version of TS Classic as shown in the pictures below:





You could consider to make adjustments to these settings when implementing this route on more advanced PCs than specified by DTG, but we have not tested this product under those conditions.

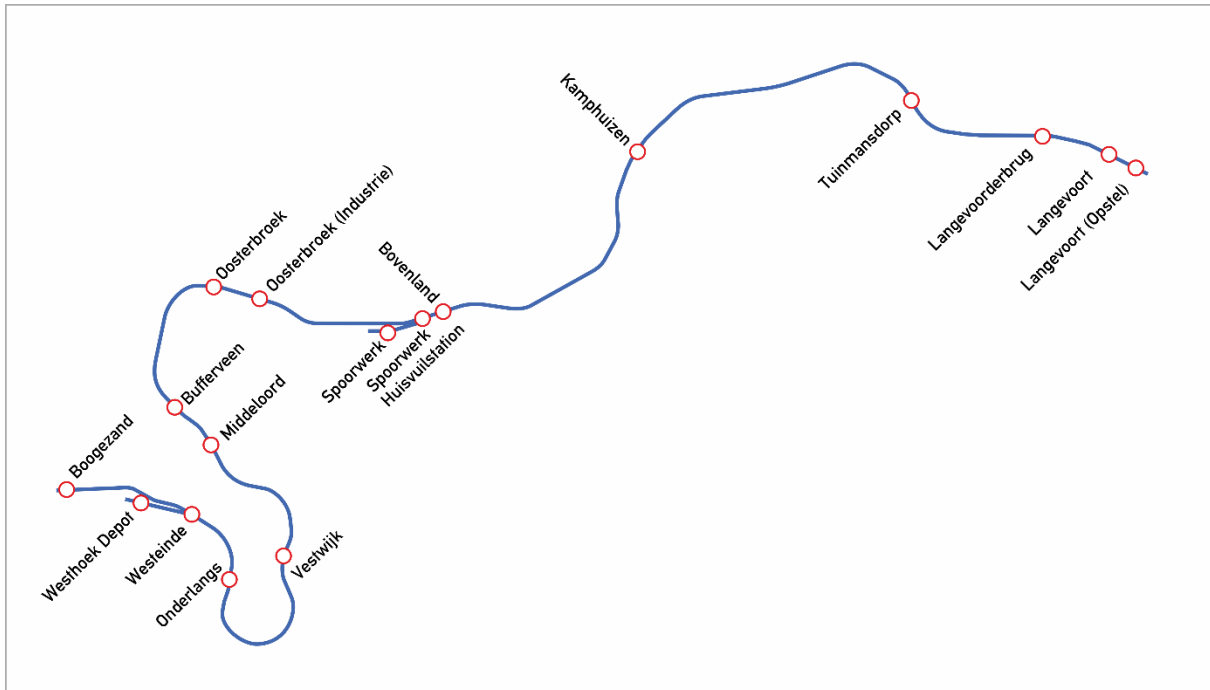
When running scenarios in this route the required memory capacity will, under normal circumstances, not exceed 2.5 Gigabytes. We nevertheless recommend to limit the number of parallel and background jobs anyway.

Notice to (beginning) scenario creators

It goes without saying that user who are building their own scenarios will have a responsibility of their own for an acceptable framerate and other performance parameters. When TS is running in its own window you will be able to keep a close watch on these in the Task Manager window (speedlink CTRL+ALT+DEL). When required the sim's framerate can be made visible in the TS window by hitting SHIFT+Z.

3 The route

Overview



Sections numbering

Ever since the beginning of railway history safety requirements made it necessary to introduce signalling, for which railway lines got divided into sections, taking braking distances into account. Access to sections is controlled by home signals. In this route sections have been numbered as given in the table below:

Section no.	Location
01	Westhoek Opstelrein (Wh), Boogezand (Bgz)
02	Westeinde (We)
03	
04	
05	Onderlangs (Odl)
06	
07.a/b	
08	Vestwijk (Vw)
10	
11.a/b	
12	Middeloor (Mdo)
13	
14	Bufferveen (Bfv)
15	
16	Halte Oosterbroek (Obk)
17	

18	Oosterbroek Mach. Fabriek (Obk MF)
19	
20	Spoorwerk Werkplaats & VAM-station (Spw VAM)
21	Spoorwerk Rangeer (Spw Ra)
22	Halte Bovenland (Bvl)
23	
24	
25	
26	Kamphuisen (Khz)
27	
28	
29	
30	Halte Tuinmansdorp (Tmd)
31	
32	
33	Langevoorderbrug (Lvb)
34	Langevoort (Lvt)
35	Langevoort Opstelterrein (LvO)



Mileage Posts

RCR Kilometer Posts

Km	Lat	Long	
17	52.45855	5.26331	Langevoort Opstel
18	52.46186	5.24936	Langevoort
19	52.46438	5.23477	Langevoorderbrug
20	52.46506	5.21976	
21	52.46546	5.20402	
22	52.46680	5.18870	
23	52.47152	5.17830	Tuinmansdorp
24	52.47878	5.17133	
25	52.48371	5.15750	
26	52.48339	5.14259	
27	52.48073	5.12784	
28	52.47881	5.11227	
29	52.47788	5.09722	
30	52.47648	5.08269	
31	52.47064	5.07085	
32	52.46447	5.06140	Kamphuizen
33	52.46041	5.05670	
34	52.45550	5.05360	
35	52.45123	5.05152	
36	52.44650	5.05188	
37	52.43723	5.04656	
38	52.43076	5.03110	
39	52.42663	5.01837	
40	52.42523	5.00345	
41	52.42632	4.98878	
42	52.42407	4.97460	Spoorwerk
43	52.42193	4.96022	
44	52.42217	4.94495	
45	52.42243	4.92970	
46	52.42535	4.91580	
47	52.42913	4.90243	Oosterbroek Industrie
48	52.43210	4.88677	Oosterbroek
49	52.43286	4.87881	
50	52.43195	4.87079	
51	52.42856	4.86472	
52	52.42367	4.86210	
53	52.41880	4.86023	
54	52.41398	4.85838	

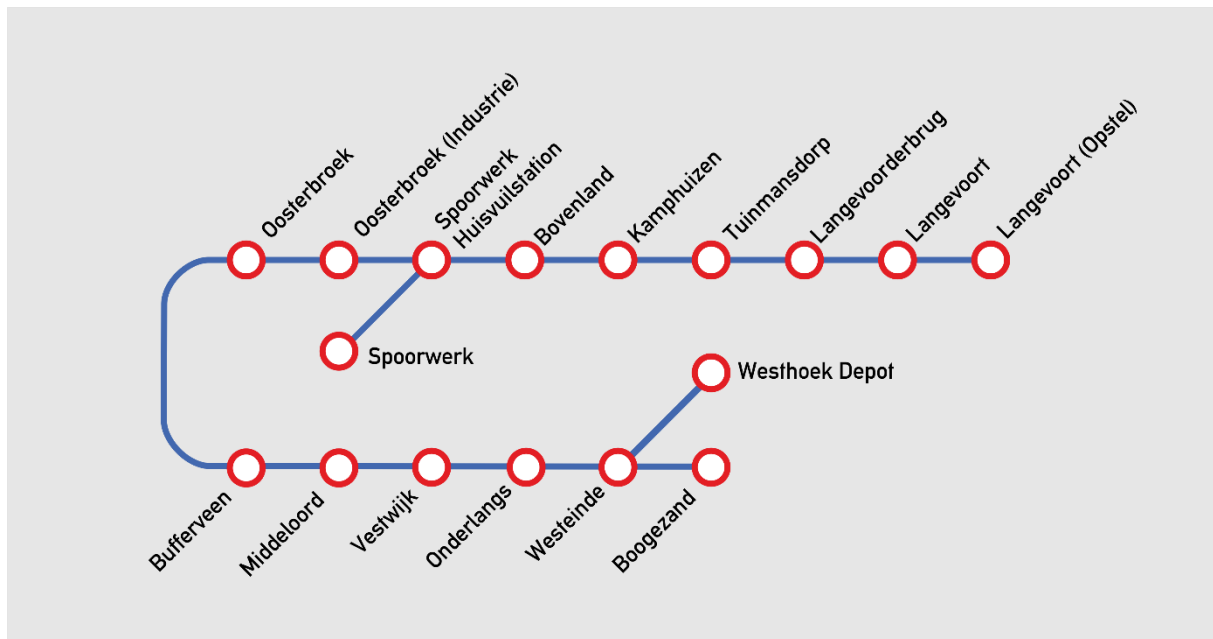
Km	Lat	Long	
55	52.40944	4.85803	
56	52.40505	4.86175	
57	52.40136	4.86740	Bufferveen
58	52.39826	4.87328	
59	52.39466	4.87830	Middeloor
60	52.39035	4.88198	
61	52.38576	4.88596	
62	52.38236	4.89261	
63	52.38131	4.90026	
64	52.37914	4.90759	
65	52.37501	4.91186	
66	52.37000	4.91287	
67	52.36514	4.91010	Vestwijk
68	52.36041	4.90863	
69	52.35113	4.91268	
70	52.34309	4.90585	
71	52.34282	4.89110	
72	52.35036	4.88356	
73	52.36022	4.88740	Onderlangs
74	52.36917	4.88490	
75	52.37438	4.87291	Westeinde
76	52.37833	4.85875	
77	52.38215	4.84363	
78	52.38198	4.82899	Boogezand



Station layouts descriptions

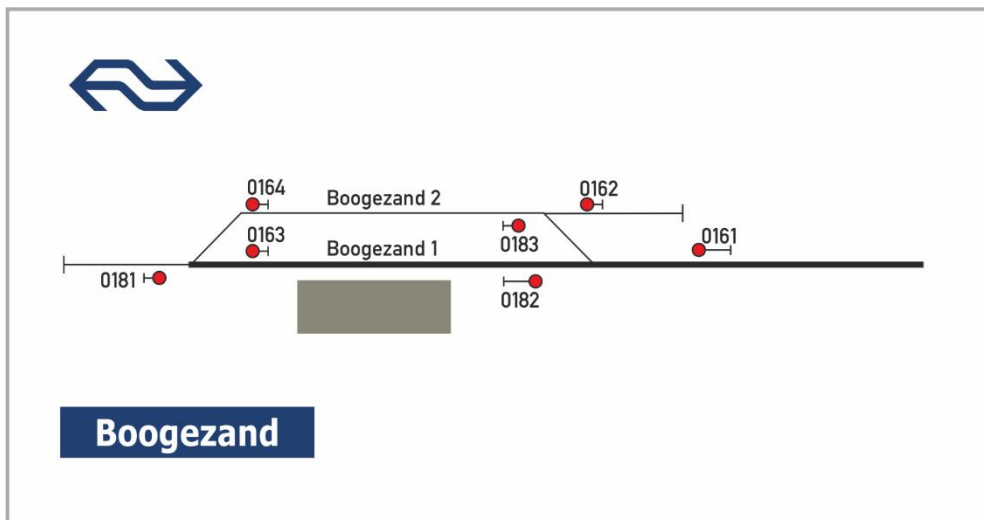
3.1.1 Overview

For each station layout in the route a schematic picture has been included, referencing to signal numbers and siding and platform names. Signals are identified by a four-digit code, in which the left hand positions have been reserved for the two-digit section-ID.

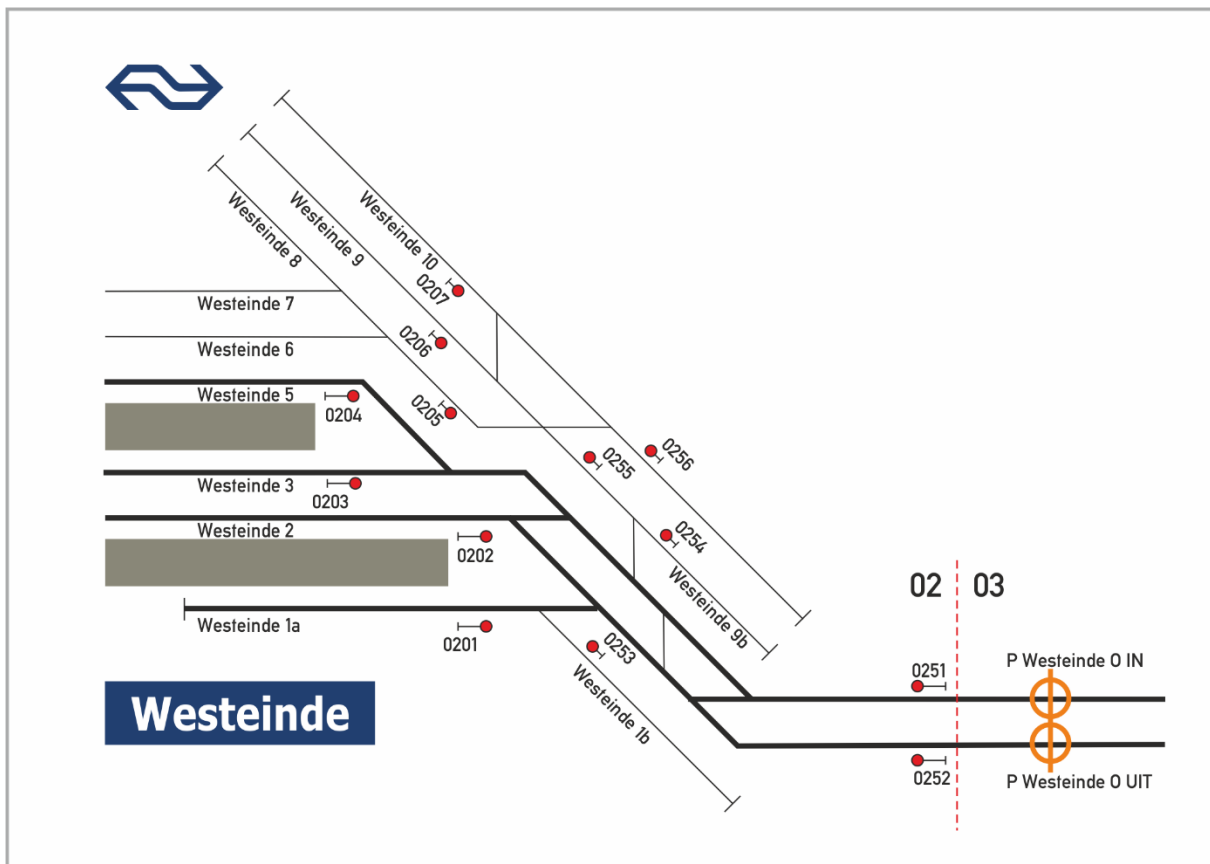
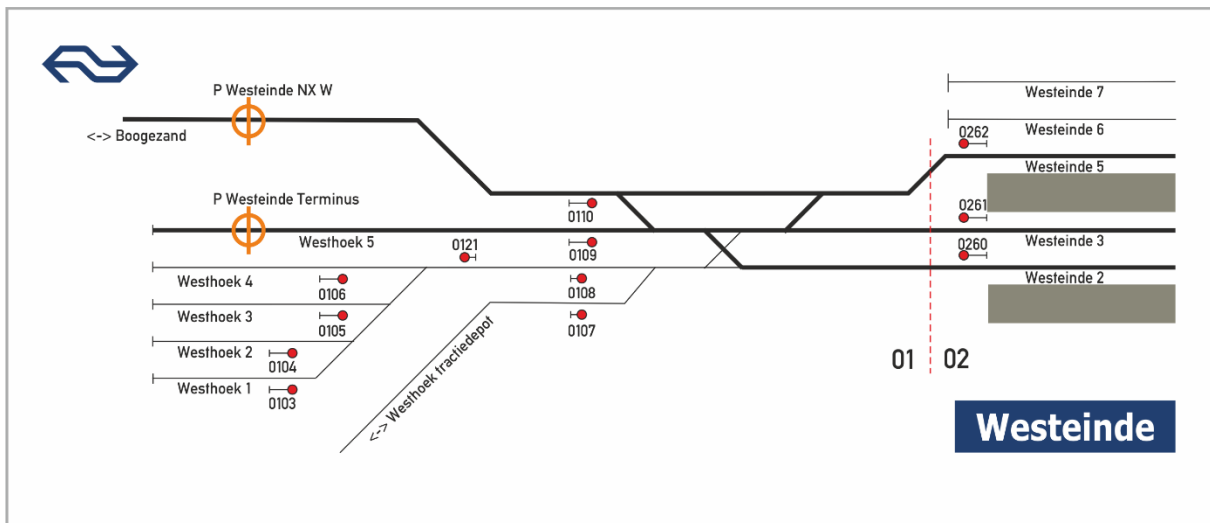


Tuinmansdorp station

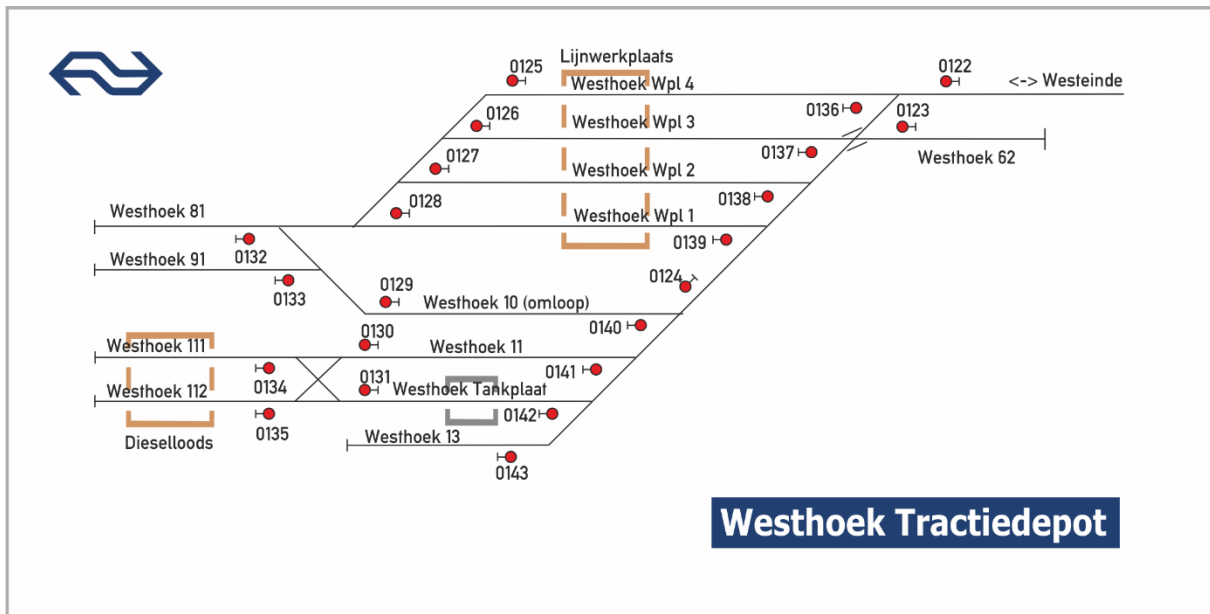
3.1.2 Boogezand



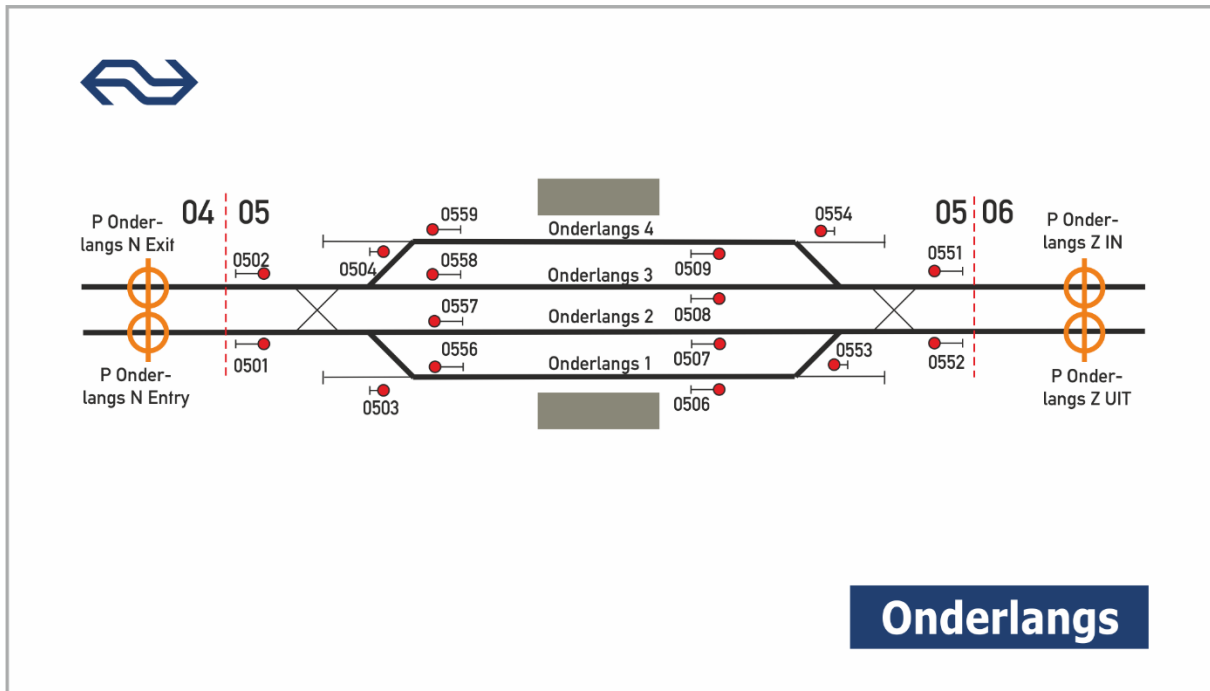
3.1.3 Westeinde



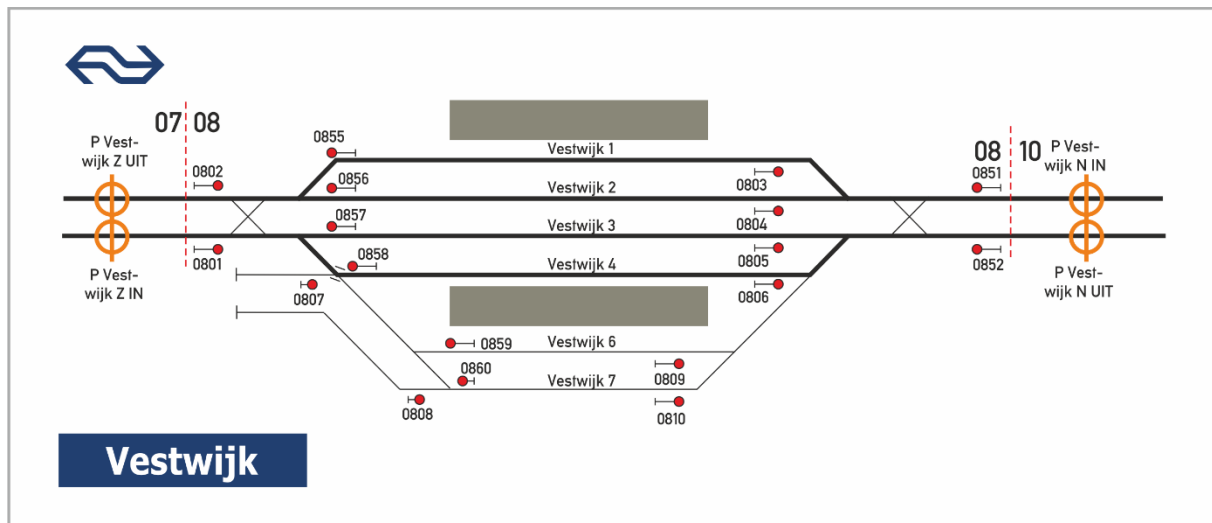
Next to the passengers station the MPD Westhoek is also part of the layout:



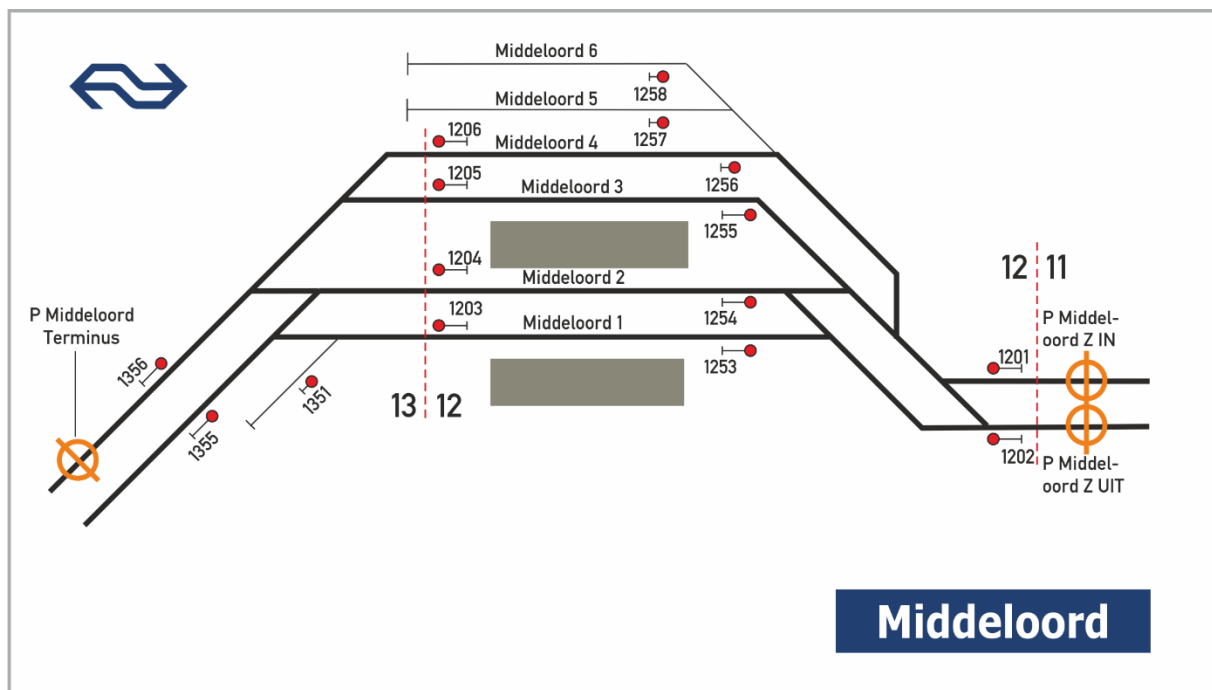
3.1.4 Onderlangs



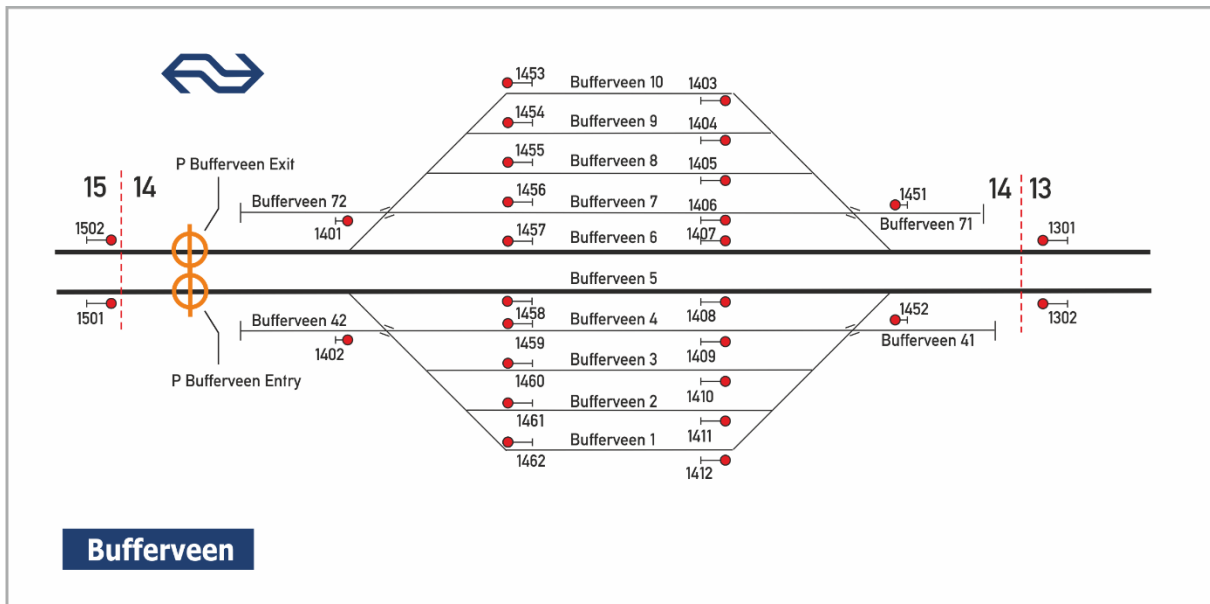
3.1.5 Vestwijk



3.1.6 Middelloord



3.1.7 Bufferveen



3.1.8 Oosterbroek

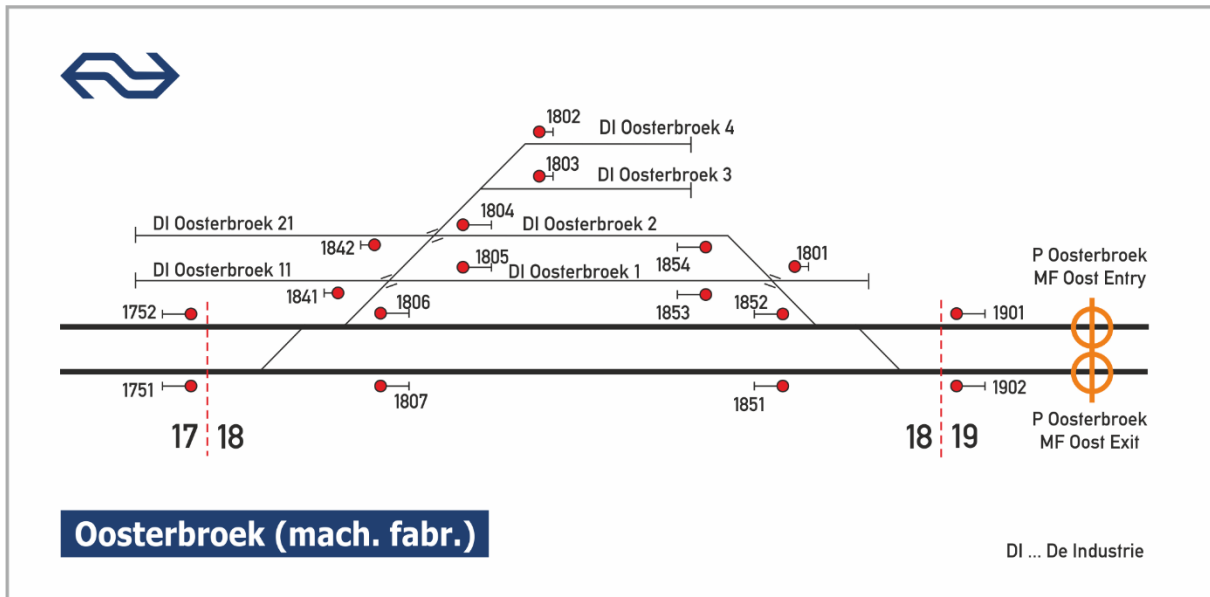
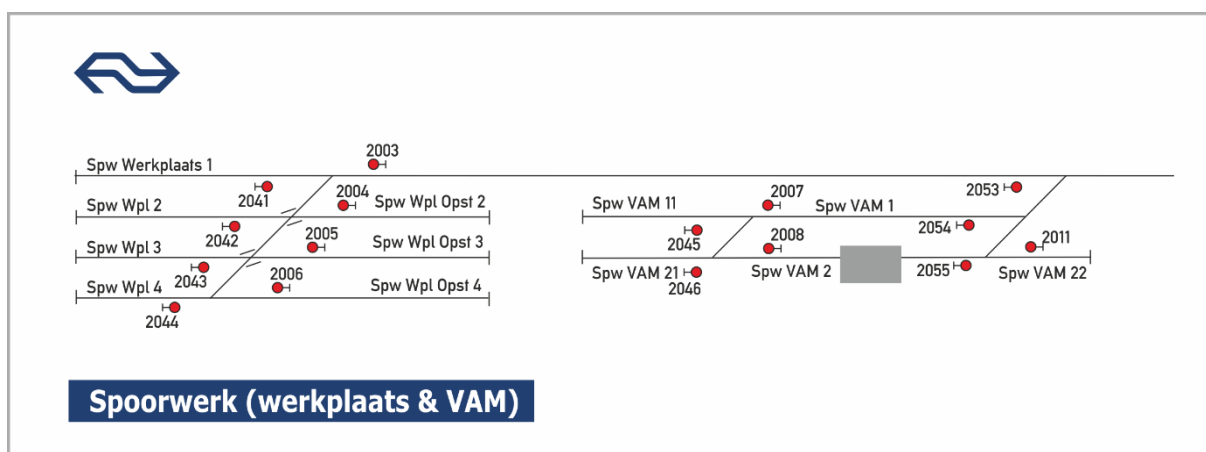


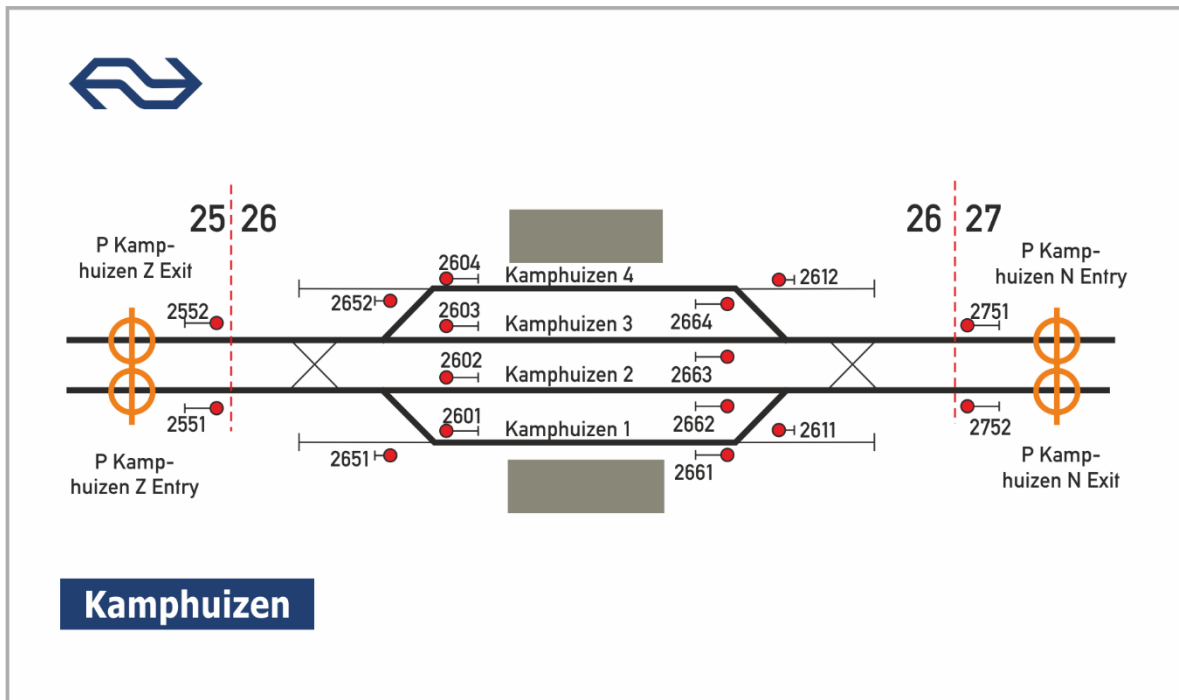
Diagram illustrating the Spoorwerk (rangeerterr.) layout, showing various tracks and platforms. The diagram is divided into two main sections by a red dashed line.

Left Section (Tracks 20-21):

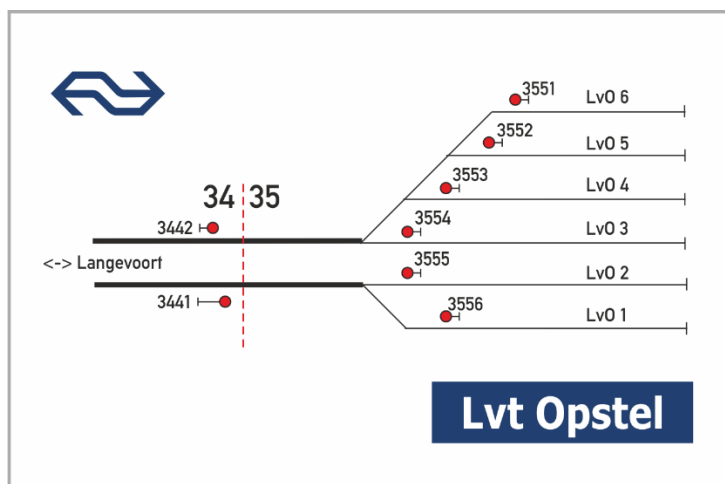
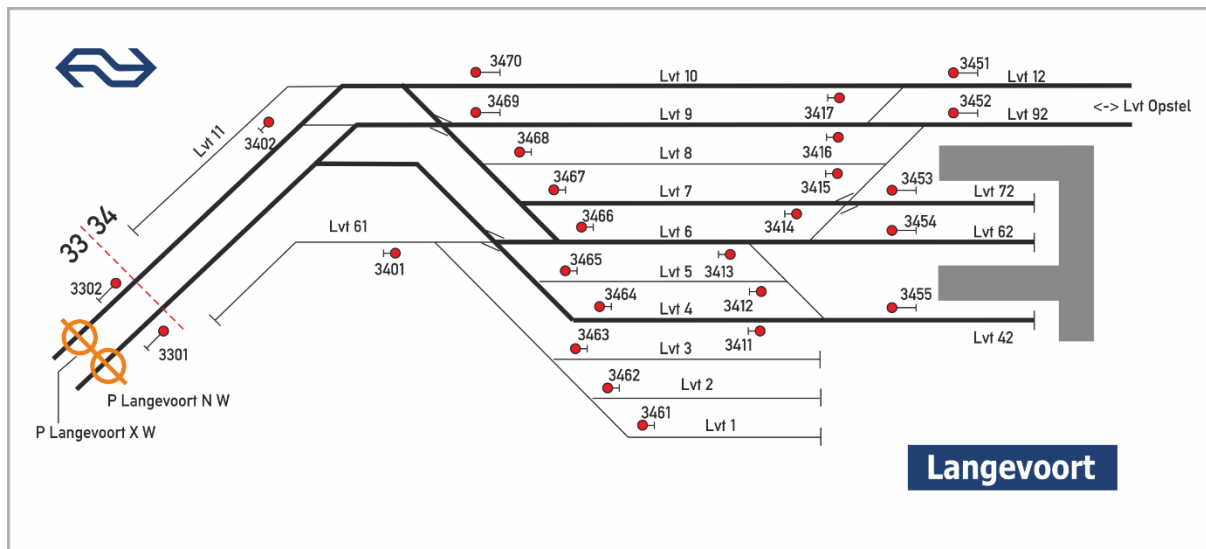
- Top track: P Spoorwerk Ra Exit W (Platform 2052)
- Second track: P Spoorwerk Ra Entry W (Platform 2051)
- Third track: 2101
- Fourth track: 2102
- Fifth track: 2103
- Sixth track: 2104
- Seventh track: 2105
- Eighth track: 2106
- Ninth track: 2107
- Tenth track: 2108
- Eleventh track: 2109
- Twelfth track: 2110
- Thirteenth track: 2111
- Fourteenth track: 2112
- Fifteenth track: 2113
- Sixteenth track: 2114
- Seventeenth track: 2115
- Eighteenth track: 2116
- Nineteenth track: 2117
- Twentieth track: 2118
- Twenty-first track: 2119
- Twenty-second track: 2120
- Twenty-third track: 2121
- Twenty-fourth track: 2122
- Twenty-fifth track: 2123
- Twenty-sixth track: 2124
- Twenty-seventh track: 2125
- Twenty-eighth track: 2126
- Twenty-ninth track: 2127
- Thirtieth track: 2128
- Thirty-first track: 2129
- Thirty-second track: 2130
- Thirty-third track: 2131
- Thirty-fourth track: 2132
- Thirty-fifth track: 2133
- Thirty-sixth track: 2134
- Thirty-seventh track: 2135
- Thirty-eighth track: 2136
- Thirty-ninth track: 2137
- Fortieth track: 2138
- Forty-first track: 2139
- Forty-second track: 2140
- Forty-third track: 2141
- Forty-fourth track: 2142
- Forty-fifth track: 2143
- Forty-sixth track: 2144
- Forty-seventh track: 2145
- Forty-eighth track: 2146
- Forty-ninth track: 2147
- Fiftieth track: 2148
- Fifty-first track: 2149
- Fifty-second track: 2150
- Fifty-third track: 2151
- Fifty-fourth track: 2152
- Fifty-fifth track: 2153
- Fifty-sixth track: 2154
- Fifty-seventh track: 2155
- Fifty-eighth track: 2156
- Fifty-ninth track: 2157
- Sixtieth track: 2158
- Sixty-first track: 2159
- Sixty-second track: 2160
- Sixty-third track: 2161
- Sixty-fourth track: 2162
- Sixty-fifth track: 2163
- Sixty-sixth track: 2164
- Sixty-seventh track: 2165
- Sixty-eighth track: 2166
- Sixty-ninth track: 2167
- Seventieth track: 2168
- Seventy-first track: 2169
- Seventy-second track: 2170
- Seventy-third track: 2171
- Seventy-fourth track: 2172
- Seventy-fifth track: 2173
- Seventy-sixth track: 2174
- Seventy-seventh track: 2175
- Seventy-eighth track: 2176
- Seventy-ninth track: 2177
- Eightieth track: 2178
- Eighty-first track: 2179
- Eighty-second track: 2180
- Eighty-third track: 2181
- Eighty-fourth track: 2182
- Eighty-fifth track: 2183
- Eighty-sixth track: 2184
- Eighty-seventh track: 2185
- Eighty-eighth track: 2186
- Eighty-ninth track: 2187
- Ninetieth track: 2188
- Ninety-first track: 2189
- Ninety-second track: 2190
- Ninety-third track: 2191
- Ninety-fourth track: 2192
- Ninety-fifth track: 2193
- Ninety-sixth track: 2194
- Ninety-seventh track: 2195
- Ninety-eighth track: 2196
- Ninety-ninth track: 2197
- One hundredth track: 2198
- One hundred and first track: 2199
- One hundred and second track: 2200
- One hundred and third track: 2201
- One hundred and fourth track: 2202
- One hundred and fifth track: 2203
- One hundred and sixth track: 2204
- One hundred and seventh track: 2205
- One hundred and eighth track: 2206
- One hundred and ninth track: 2207
- One hundred and tenth track: 2208
- One hundred and eleventh track: 2209
- One hundred and twelfth track: 2210
- One hundred and thirteenth track: 2211
- One hundred and fourteenth track: 2212
- One hundred and fifteenth track: 2213
- One hundred and sixteenth track: 2214
- One hundred and seventeenth track: 2215
- One hundred and eighteenth track: 2216
- One hundred and nineteenth track: 2217
- One hundred and twentieth track: 2218
- One hundred and twenty-first track: 2219
- One hundred and twenty-second track: 2220
- One hundred and twenty-third track: 2221
- One hundred and twenty-fourth track: 2222
- One hundred and twenty-fifth track: 2223
- One hundred and twenty-sixth track: 2224
- One hundred and twenty-seventh track: 2225
- One hundred and twenty-eighth track: 2226
- One hundred and twenty-ninth track: 2227
- One hundred and thirtieth track: 2228
- One hundred and thirty-first track: 2229
- One hundred and thirty-second track: 2230
- One hundred and thirty-third track: 2231
- One hundred and thirty-fourth track: 2232
- One hundred and thirty-fifth track: 2233
- One hundred and thirty-sixth track: 2234
- One hundred and thirty-seventh track: 2235
- One hundred and thirty-eighth track: 2236
- One hundred and thirty-ninth track: 2237
- One hundred and fortieth track: 2238
- One hundred and forty-first track: 2239
- One hundred and forty-second track: 2240
- One hundred and forty-third track: 2241
- One hundred and forty-fourth track: 2242
- One hundred and forty-fifth track: 2243
- One hundred and forty-sixth track: 2244
- One hundred and forty-seventh track: 2245
- One hundred and forty-eighth track: 2246
- One hundred and forty-ninth track: 2247
- One hundred and fiftieth track: 2248
- One hundred and fifty-first track: 2249
- One hundred and fifty-second track: 2250
- One hundred and fifty-third track: 2251
- One hundred and fifty-fourth track: 2252
- One hundred and fifty-fifth track: 2253
- One hundred and fifty-sixth track: 2254
- One hundred and fifty-seventh track: 2255
- One hundred and fifty-eighth track: 2256
- One hundred and fifty-ninth track: 2257
- One hundred and sixtieth track: 2258
- One hundred and sixty-first track: 2259
- One hundred and sixty-second track: 2260
- One hundred and sixty-third track: 2261
- One hundred and sixty-fourth track: 2262
- One hundred and sixty-fifth track: 2263
- One hundred and sixty-sixth track: 2264
- One hundred and sixty-seventh track: 2265
- One hundred and sixty-eighth track: 2266
- One hundred and sixty-ninth track: 2267
- One hundred and seventieth track: 2268
- One hundred and seventy-first track: 2269
- One hundred and seventy-second track: 2270
- One hundred and seventy-third track: 2271
- One hundred and seventy-fourth track: 2272
- One hundred and seventy-fifth track: 2273
- One hundred and seventy-sixth track: 2274
- One hundred and seventy-seventh track: 2275
- One hundred and seventy-eighth track: 2276
- One hundred and seventy-ninth track: 2277
- One hundred and eightieth track: 2278
- One hundred and eighty-first track: 2279
- One hundred and eighty-second track: 2280
- One hundred and eighty-third track: 2281
- One hundred and eighty-fourth track: 2282
- One hundred and eighty-fifth track: 2283
- One hundred and eighty-sixth track: 2284
- One hundred and eighty-seventh track: 2285
- One hundred and eighty-eighth track: 2286
- One hundred and eighty-ninth track: 2287
- One hundred and ninetieth track: 2288
- One hundred and ninety-first track: 2289
- One hundred and ninety-second track: 2290
- One hundred and ninety-third track: 2291
- One hundred and ninety-fourth track: 2292
- One hundred and ninety-fifth track: 2293
- One hundred and ninety-sixth track: 2294
- One hundred and ninety-seventh track: 2295
- One hundred and ninety-eighth track: 2296
- One hundred and ninety-ninth track: 2297
- Two hundredth track: 2298
- Two hundred and first track: 2299
- Two hundred and second track: 2300
- Two hundred and third track: 2301
- Two hundred and fourth track: 2302
- Two hundred and fifth track: 2303
- Two hundred and sixth track: 2304
- Two hundred and seventh track: 2305
- Two hundred and eighth track: 2306
- Two hundred and ninth track: 2307
- Two hundred and tenth track: 2308
- Two hundred and eleventh track: 2309
- Two hundred and twelfth track: 2310
- Two hundred and thirteenth track: 2311
- Two hundred and fourteenth track: 2312
- Two hundred and fifteenth track: 2313
- Two hundred and sixteenth track: 2314
- Two hundred and seventeenth track: 2315
- Two hundred and eighteenth track: 2316
- Two hundred and nineteenth track: 2317
- Two hundred and twentieth track: 2318
- Two hundred and twenty-first track: 2319
- Two hundred and twenty-second track: 2320
- Two hundred and twenty-third track:



3.1.10 Kamphuisen



3.1.11 Langevoort



4 Rolling stock

When the RCR's installation has completed the following rolling stock will be available for deployment in the scenarios:

Wilbur Graphics

4.1.1 Motive Power

Object Browser

WG NS 1123

WG NS 1143

Folder

NS_1100_tp4

NS_1100_tp4

Asset Name

WG_NS_1123

WG_NS_1143



Object Browser

WG NS 1615

WG NS 1722

WG NS 1734

WG NS 1737

Folder

NS_1700

NS_1700

NS_1700

NS_1700

Asset Name

WG_NS_1615

WG_NS_1722

WG_NS_1734

WG_NS_1737



Object Browser

WG NS 2407
 WG NS 2454
 WG NS 2561

Folder

NS_2400_tp4
 NS_2400_tp4
 NS_2400_tp4

Retro Canvas Route Manual

Asset Name

WG_NS_2407
 WG_NS_2454
 WG_NS_2561



Object Browser

WG NS 325 huisstijl
 WG NS 345 huisstijl

Folder

NS_200_tp4
 NS_200_tp4

Asset Name

WG_NS_325
 WG_NS_345



Object Browser

WG NS 622 huisstijl
 WG NS 673 huisstijl
 WG Locon 9702

Folder

NS_500_tp4
 NS_500_tp4
 Locon 9702

Asset Name

WG_NS_622_huisst
 WG_NS_673_huisst
 WG_Locon_9702



Retro Canvas Route Manual

Object Browser

WG SSN BR 23 023

WG SSN BR 23 023 T26

Folder

DB_BR_23

DB_BR_23

Asset Name

WG_SSN_BR_23_023

WG_SSN_BR_23_023_T26



Object Browser

WG V100 VolkerRail 203-1 'Tom'

WG V100 VolkerRail 203-5 'Tyke'

WG V 100 Locon_220

Folder

V_100

V_100

V_100

Asset Name

WG_V100_VolkerRail_203_1

WG_V100_VolkerRail_203_5

WG_V_100_Locon_220



4.1.2 Coaches

Object Browser

WG tb CIWL F 1287 flash

WG tb CIWL PS 4035 flash

WG tb CIWL R 4008 flash

Folder

CIWL_train_bleu

CIWL_train_bleu

CIWL_train_bleu

Asset Name

WG_CIWL_F_1287

WG_CIWL_PS_4035

WG_CIWL_R_4008



Retro Canvas Route Manual

Object Browser

WG DB 119 Apmz

WG DB 119 Bpmz

Folder

DB_119_ABpmz

DB_119_ABpmz

Asset Name

WG_DB_119_Apmz

WG_DB_119_Bpmz



Object Browser

WG NS ICR Apmz

WG NS ICR BDpmz

WG NS ICR Bpmz

Folder

NS_ICR_ABpmz

NS_ICR_ABpmz

NS_ICR_ABpmz

Asset Name

WG_NS_ICR_Apmz

WG_NS_ICR_BDpmz

WG_NS_ICR_Bpmz



Object Browser

WG SSN Mitropa WRm 217

WG SSN Bm 232

WG SSN Bm 232 blauw

Folder

DR_Mitropa_WR4g

DB_Abüm4

DB_Abüm4

Asset Name

WG_SSN_Mitropa_WRm_217

WG_SSN_Bm_232

WG_SSN_Bm_232B



4.1.3 Freight waggons

Object Browser

WG DB Cargo Fals 167

WG DB VTG Fals 167

WG DB Fads 176

WG NS Fals 254 (Kalk)

Folder

DB_Fals_167

DB_Fals_167

DB_Fads_176

NS_Fals_254

Asset Name

WG_DB_Cargo_Fals_167

WG_VTG_Fals_167

WG_DB_Fads_176

WG_NS_Fals_254



Object Browser

WG DB Glmhs 50 flash

Folder

DB_Glmhs

Asset Name

WG_DB_Glmhs_flash



Object Browser

WG DB ZZw 51 Esso 581226 rmp1tfrm
 WG DB ZZw 51 EVA 572355
 WG DB ZZw 51 Mobil 580783
 WG DB ZZw 51 Shell flash
 WG DB ZZw 51 VTG 596551
 WG NS ZZw 51 NAM 500813

Folder

DR_ZZw_51
 DR_ZZw_51
 DR_ZZw_51
 DR_ZZw_51
 DR_ZZw_51
 DR_ZZw_51

Asset Name

WG_DB_Esso_ZZw_51_rmp1tfrm
 WG_DB_Eva_ZZw_51_572355
 WG_DB_Mobil_ZZw_51_580783
 WG_DB_Shell_ZZw_51_flash
 WG_DB_VTG_ZZw_51_596551
 WG_NS_NAM_ZZw_51_500813



Object Browser

WG NS EDK6a gen schutwgn tp4

WG NS EDK6a transport tp4

Folder

EDK_typ_6a

EDK_typ_6a

Asset Name

WG_EDK6a_gen_schutw_tp4

WG_EDK6a_gen_transprt_tp4



Object Browser

WG NS Gs flash

Folder

NS_Gs

Asset Name

WG_NS_Gs_flash



Object Browser

WG NS Sgns 7 20' A-M-H
 WG NS Sgns 7 20' APL
 WG NS Sgns 7 20' Cont. Ships
 WG NS Sgns 7 20' Gouda VV
 WG NS Sgns 7 20' HAPAG
 WG NS Sgns 7 20' MAERSK
 WG NS Sgns 7 20' WilburG
 WG NS Sgns 7 20' Ts-Ts-V
 WG NS Sgns 7 40' APL
 WG NS Sgns 7 40' ContShips
 WG NS Sgns 7 40' Gouda VV
 WG NS Sgns 7 40' HAPAG
 WG NS Sgns 7 40' MAERSK
 WG NS Sgns 7 40' WilburG
 WG NS Sgns 7 ledig

Folder

NS_Sgns
 NS_Sgns
 NS_Sgns
 NS_Sgns
 NS_Sgns
 NS_Sgns
 NS_Sgns
 NS_Sgns
 NS_Sgns
 NS_Sgns
 NS_Sgns
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 NS_Sgns
 NS_Sgns
 NS_Sgns

Asset Name

WG_NS_Sgns7_2A2M2H
 WG_NS_Sgns7_2A2A2A
 WG_NS_Sgns7_2C2C2C
 WG_NS_Sgns7_2V2V2V
 WG_NS_Sgns7_2H2H2H
 WG_NS_Sgns7_2M2M2M
 WG_NS_Sgns7_2T2T2T
 WG_NS_Sgns7_2T2T2V
 WG_NS_Sgns7_4A
 WG_NS_Sgns7_4C
 WG_NS_Sgns7_4G
 WG_NS_Sgns7_4H
 WG_NS_Sgns7_4M
 WG_NS_Sgns7_4T
 WG_NS_Sgns7_lm



Object Browser

WG NS Slps ACTS flash
 WG NS Slps ledig mat flash

Folder

NS_Slps
 NS_Slps

Asset Name

WG_NS_Slps_ACTS_flash
 WG_NS_Slps_lm_flash



Object Browser

WG NS Rs
WG NS Rs type Y32 trucks
WG NS Rs NKF
WG NS Rs Phoenix
WG NS Rs rails
WG NS Rs sparren
WG NS Rs stammen
WG NS Rs trekkers/tractors
WG NS Rs Wilbur Graphics



Object Browser

WG SBB Gbs



Object Browser

WG SNCF Gas A tp4



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Folder

NS_SSImas53_tp4
NS_SSImas53_tp4
NS_SSImas53_tp4
NS_SSImas53_tp4
NS_SSImas53_tp4
NS_SSImas53_tp4
NS_SSImas53_tp4
NS_SSImas53_tp4
NS_SSImas53_tp4

Asset Name

WG_NS_SSImas_53_tp4
WG_NS_SSImas_53_tp4_GP200
WG_NS_SSImas_53_tp4_NKF
WG_NS_SSImas_53_tp4_Phoenix
WG_NS_SSImas_53_tp4_rails
WG_NS_SSImas_53_tp4_spar
WG_NS_SSImas_53_tp4_stam
WG_NS_SSImas_53_tp4_JD_5100
WG_NS_SSImas_53_tp4_WilburG

Folder

SBB_Gbs

Asset Name

WG_SBB_Gbs

Folder

SNCF_Gas

Asset Name

WG_SNCF_Gas_A

ChrisTrains



© ChrisTrains

The route features a significant amount of scenarios featuring ChrisTrains payware rolling stock. These are the locomotives and wagons specified below. If you don't own them yet, you can purchase them from the ChrisTrains webshop, which can be accessed via this link:

https://www.christrains.com/en/ts_buy.html

4.1.4 Motive power

Object Browser

NS Class 2200 ...
 NS Class 6400 ...
 NS mp3000 ...

ChrisTrains Shop

ChrisTrains NS2200 for Train Simulator
 ChrisTrains NS6400 for Train Simulator
 ChrisTrains mp3000 for Train Simulator

4.1.5 Electrical Multiple Units (EMUs)

Object Browser

CT NS VIRMm ...
 NS DD-IRM ...
 NS Mat64 Plan V ...
 NS V-IRM ...
 NS ICMm ...
 NS SGM ...

ChrisTrains Shop

ChrisTrains NS IRM for Train Simulator
 ChrisTrains NS IRM for Train Simulator
 ChrisTrains NS Mat64 for Train Simulator
 ChrisTrains NS IRM for Train Simulator
 ChrisTrains NS ICMm for Train Simulator
 ChrisTrains NS ICMm Paint Pack
 ChrisTrains NS SGM for Train Simulator

4.1.6 Goods rolling stock

Object Browser

NS FCCPPS
 NS Hbbkkss
 NS Koppelwagen
 NS Tads ...

ChrisTrains Shop

ChrisTrains NS FCCPPS for Train Simulator
 ChrisTrains NS mp3000 PTT Paint Pack
 ChrisTrains NS Koppelwagen for Train Simulator
 ChrisTrains NS Tads wagon for Train Simulator

5 Signalling

Introduction

5.1.1 Definitions

Home signal:

A light signal which can show 'Danger'.

Speed limit:

Depending on your speed:

- To reduce speed to the prevailing speed, or
- To increase speed to the prevailing speed

P-signal:

An automatic signal, marked ,P'.

Drive on sight:

To be able to stop at any given spot behind the signal.

Limit your speed. Do not exceed 40 km/h.

Speed:

Number x 10 km/h

Line speed:

The line's permitted maximum speed

Local speed:

Locally permitted maximum speed, as indicated by signs or signals.

5.1.2 Signal positions

Signals can be found at the right hand side of tracks, or above a track for which they are valid, with the exception of signals:

- On left hand tracks of double track sections or lines;
- Midget signals that cannot be placed at the right hand side, due to local circumstances.

5.1.3 Signals validity

All signals are valid for trains and yard movements.

5.1.4 Speed adjustments

When adjusting speed you must observe the following rules:

- Speed reductions must be started when the first vehicle of a consist passes the signal that is indicating a speed reduction
- Speed increments can only be effected when the last vehicle of a consist has passed the signal that allows a speed increment.

Light signals

5.1.5 Definitions

Red variant indicates "Danger". The term *red variant* implies that a signals' shown primary colour is **red**.

Green variant indicates "Passing allowed". The term *green variant* implies that a signals' shown primary colour is **green**.

Yellow variant indicates "Speed reduction". The term *yellow variant* implies that a signals' shown primary colour is **yellow**.

White variant indicates "Passing allowed". The term *white variant* implies that a signals' shown primary colour is **white**.

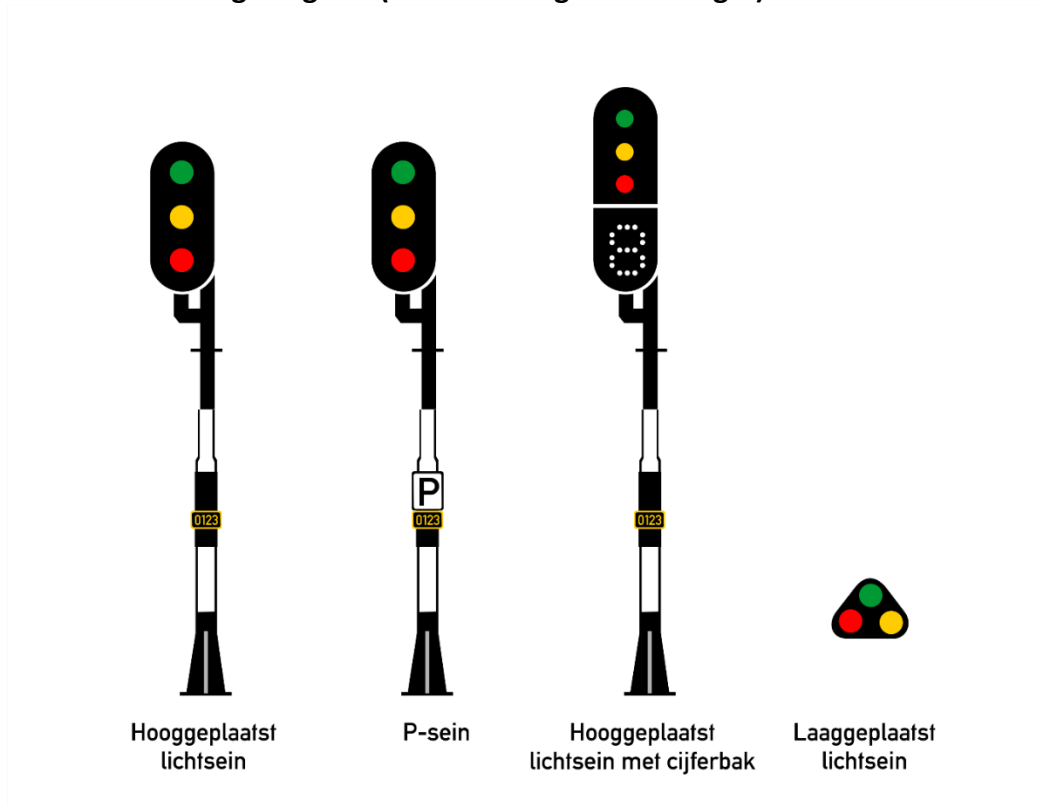
5.1.6 Related signals

The Dutch National Railways signalling system "Signalstelsel 1954" which has been applied to the Retro Canvas Route will either require a train driver:

- to drive at a given speed -or-
- to reduce speed

Signal indications will be arranged in such a way that a train driver can follow up on the instructed actions. The signal 'Reduce Speed' will be shown at such a distance that a required speed reduction can be timely carried out. Timely means that the available braking distance is sufficient to get at the required speed.

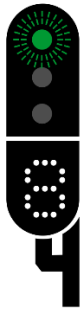
5.1.7 Pictured light signals (standard height and midget)



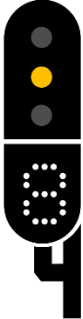
5.1.8 Green variants

Picture	Signal	Indication
	<i>High green</i>	Pass with local speed. If this is not known, then depart at 40 km/h.
	<i>Flashing green</i>	Pass at 40 km/h.

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	<i>Flashing green with digit</i>	Pass at speed as indicated by the number shown (x 10 km/h)
	<i>Midget green</i>	Pass at 40 km/h.

5.1.9 Yellow variants

Picture	Signal	Indication
	<i>Yellow (high and midget)</i>	Reduce speed to 40 km/h or lower when necessary in order to stop at the next "Danger" showing signal.
	<i>Yellow with digit</i>	Reduce speed as indicated by the number (x 10km/h). A speed reduction must be ultimately effected at the next light signal.

	<i>Flashing yellow (high and midget)</i>	Drive-on-sight
---	--	----------------

5.1.10 Red variants

Picture	Signal	Indication
	<i>Red (high and midget)</i>	Stop in front of the signal.

5.1.11 White variants

Picture	Signal	Indication
	<i>Departure light signal</i>	Permission to depart.

Signs

5.1.12 Speed signs

Picture	Signal	Betekenis
	<i>Speed reduction sign</i>	Reduce speed as indicated by the number (x 10km/h).
	<i>Speed sign</i>	Pass at speed as indicated by the number (x 10km/h)
	<i>Line speed sign</i>	Permission to increase speed as indicated by the number (x 10km/h)

5.1.13 Other signs

Picture	Signal	Indication
	<i>Track end stop</i>	Stop in front of signal.
	<i>Station approach sign</i>	Station without entry signal at brake distance.

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		<i>Sign 'Overhead line ends'</i>	Do not pass with raised pantographs.
		<i>Number sign</i>	Indicates the location where a train head must be stopped, depending on the number of coaches as shown by the sign.
		<i>Number sign</i>	Indicates the location where every stopping train must be brought to a halt, when other number signs do not apply.
		<i>P-Sign</i>	P-signal (automated signal along the line outside station layouts).

6 Scenarios

Gameplay Settings

When playing the scenarios we recommend the following TS Gameplay settings:



These settings assume that steam locomotives will be fired by the player. Coupling actions will also be part of the player's tasks. Of course you may activate the settings concerned.

Tasks

6.1.1 Overview

00 Materieelshow		FR	
Quickdrive Langevoort-Boogezand		QD	
Quickdrive Boogezand-Langevoort		QD	
01 CT VIRMm2 IC Boogezand-Langevoort	VIRM m2	ST	R
01 IC Boogezand-Langevoort	NS 1700 6 ICR	TT	R
02 IC Langevoort-Boogezand	VIRM 6-bak	TT	R
03 CT VIRMm3 IC Langevoort-Westeinde v.v.	VIRM m3	TT	R
03 IC Langevoort-Westeinde v.v.	ICM 4 + 2	TT	R
11 Boogezand-Langevoort	Plan V 2x2	TT	Spr
12 Langevoort-Boogezand	SGM2	TT	Spr
14 Stoptrein naar Langevoort	Plan V and Plan T combined (6 coaches)	TT	Spr
21 Ertstrein Westeinde-Langevoort	NS 2200 m/u 20 Fals	ST	G
22 Ketelwagens Langevoort-Westhoek	NS 1100 4-axle tankers	ST	G
23/0 Bediening Machinefabr. Oosterbroek (1)	NS 200	ST	Rangeren
23/1 Bediening Machinefabr. Oosterbroek (2)	NS 6400 mixed goods	ST	G
24/0 Bediening VAM-station Spoorwerk (1)	NS 500	ST	Rangeren
24/1 Bediening VAM-station Spoorwerk (2)	NS 2400 VAM	ST	G
25 Werktrein Middeloor-Langevoort	NS 2400 Rs	ST	G
26 Kalkwagens Langevoort Westhoek	NS 1700 20 Fals 254	ST	G
27 Goederentrein Spoorwerk-Westeinde	NS 2407 en 2561	ST	G
28 Ophalen gestrand treinstel Plan V	NS 6400 with coupling wagon	ST	G
31 SSN Langevoort - Westeinde(1)	VR V100 cat + SSN 23 023	ST	Extra
32 SSN Langevoort - Westeinde(2)	SSN 23 023	TT	Extra
51 Milkrun service to Langevoort	NS 6400	ST	G
91 Inspectierit Boogezand-Langevoort	mP 3000 Jules	ST	Extra
97 Railfan Westeinde		FR	
98 Railfan Bovenland		FR	

TT = Time tabled, ST = Standard, FR = Free Roam

R = Express passenger service, Spr = Sprinter (Stopping passenger service), G = Goods service, Extra = extra service

6.1.2 01 Intercity Boogezand-Langevoort

For getting familiar with the RCR a time table scenario has been made available in which you drive a through passenger service consist of a NS 1700 series electric loco and ICR type coaches on the full length of the route. You will encounter various other rolling stock combinations along the way.

6.1.3 02 Intercity Langevoort-Boogezand

Another intercity service, now with a VIRM, but the other way around. You will only stop in Langevoort, Middeloord and Westeinde. The scenario ends on Westhoek Track 5.

6.1.4 03 IC Langevoort-Westeinde v.v.

Intercity service with a four coaches NS ICM ('Koploper') EMU. After stops in Kamphuisen, Middeloord and Vestwijk you will change cabs in Westeinde. After that you will return along the same stations to Langevoort, where the scenario ends.

6.1.5 11 Boogezand-Langevoort

This stopping passenger service will naturally stop at all stations, after which the scenario ends in Langevoort. Your consist exists of two SGM2 EMUs, totalling six coaches. The time table has been set up for a maximum speed of 130 km/h taking all stops and speed limits along the way into account.

6.1.6 12 Stopping passengers service Langevoort-Boogezand

You will perform the same task as in scenario 11, but in the reversed direction and with three Plan V two coach EMUs.

6.1.7 14 Stopping passenger service to Langevoort

This scenario has been modelled on the same lines as scenario 11, but things will now start to roll at night with two SGM2 EMUs.

6.1.8 21 Iron ore train Westeinde Opstel-Langevoort Opstel

Bringing a heavy iron ore train from Westeinde to Langevoort will enable you to find out what it is like driving 20 wagons and 1,000 tonnes, headed by three 2200 locos in multiple unit mode.



You may encounter a signal at danger along the way.

6.1.9 22 Tank cars Langevoort-Westhoek

In this standard scenario you are tasked with driving a tank cars train, headed by the NS 1143 electric engine, from Langevoort to Westhoek. Keep your speed around the 100 mark and enjoy the snowy landscape.

6.1.10 23/0 Local goods Machinefabriek Oosterbroek (1)

Shunting service in Oosterbroek Industrie yard. You will put a consist together that you can collect in scenario 23/1.

6.1.11 23/1 Local goods Machinefabriek Oosterbroek (2)

After leaving Westhoek Track 4 you will now deliver a number of empty Rs and Gs wagons at Oosterbroek 1 Industrie. Next, you will collect the waiting consist at track 21 and bring it to Langevoort 6 where this scenario will end.

6.1.12 24/0 Local goods VAM-station Spoorwerk

Shunting VAM garbage cars in Spoorwerk (Ra) yard. You will shift empties and loaded wagons in order to get a consist ready at track Spw A/V 2 for collection in scenario 24/1.

6.1.13 24/1 Local goods VAM-station Spoorwerk

Before leaving Westhoek with the NS 2407 diesel loco you have to pick up a number of VAM empties which must be delivered at Spoorwerk A/V 1. Next, you will collect the waiting consist at track Spw A/V 2 and bring this to Langevoort where the scenario ends.

6.1.14 25 Maintenance of way train Middeloord-Langevoort

Today you will ferry a maintenance of way train between Middeloord and Langevoort Opstel. You may expect to run the engine at full power all the time, without exceeding speed limits.

6.1.15 26 Mineral cars Langevoort Westhoek

Fals 254 self-discharging mineral wagons were a common sight in Holland during the nineties of the 20th century. You will bring a limestone ('kalksteen') train from Langevoort to Westhoek with an NS 1700.



6.1.16 27 Goederentrein Spoorwerk - Westeinde

You will drive a mixed goods train with double heading by two NS 2400 diesel engines. It is raining but that is not unusual by this time of the year. There is much traffic on the route and there is a maintenance crew at work, somewhere down the line.

6.1.17 28 Plan V EMU Recovery

A Plan V EMU has been broken down and must be recovered in the Oosterbroek MF yard. For this job a NS 6400 diesel loco have been assigned to you. Your first action is to pick up a coupling car in Westhoek MPD.

6.1.18 31 SSN Langevoort – Westeinde (1)

The *Stoomstichting Nederland* preservation society will run a steam special today with the SSN 23 023 and ex-DB and ex-DR Mitropa coaches from Langevoort to Westeinde, but at first the SSN-consist must be taken in tow to Langevoort by a V100 diesel since the 23 023 cannot be turned in Langevoort.

6.1.19 32 SSN Langevoort - Westeinde (2)

Now you have the opportunity to drive a former Bundesbahn series 23 steam locomotive when bringing the SSN Jubilee Special from Langevoort to Westeinde, stopping in Middelloord only. At the destination you have to uncouple the loco and leave it at a track near the MPD diesel shed.

6.1.20 51 Milkrun service to Langevoort

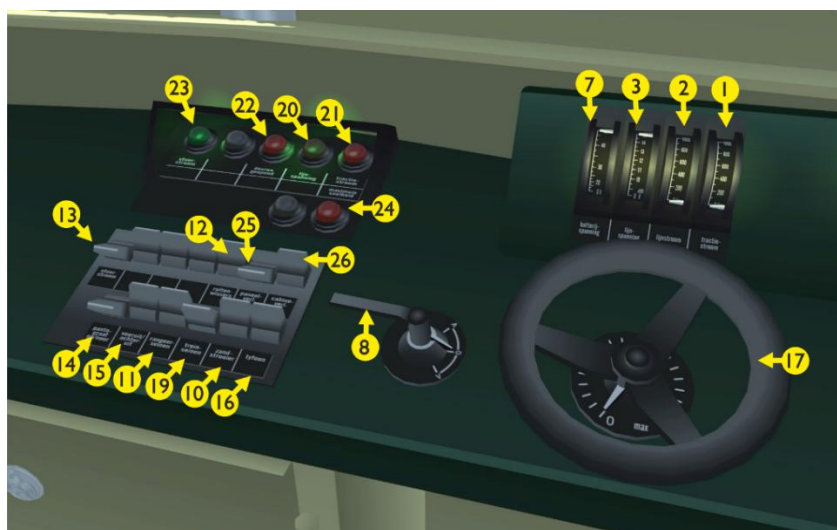
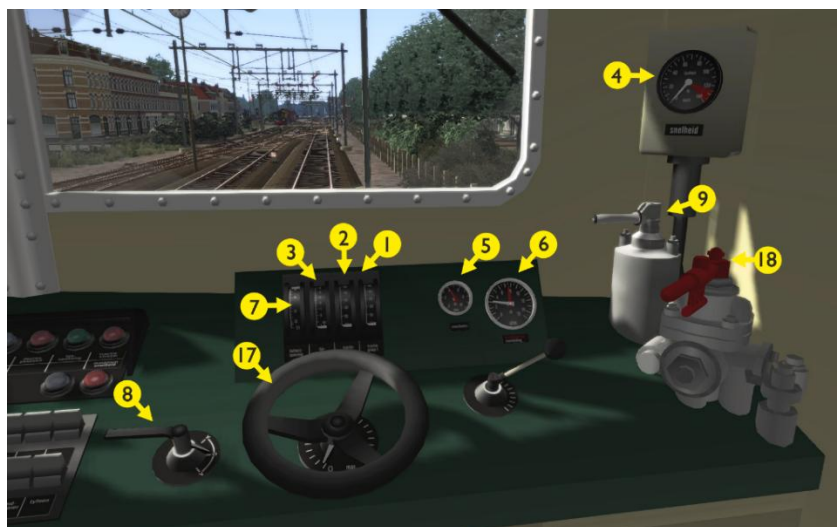
Today you will run a freight service on a NS 6400 from Bufferveen to Langevoort, with shunting tasks along the way.

6.1.21 91 Track surveying service Boogezand-Langevoort

This scenario will ask you to drive the survey railcar mP 3000 'Jules' from Boogezand to Langevoort Opstel. There will be no stops, but you may encounter a lot of AI traffic.

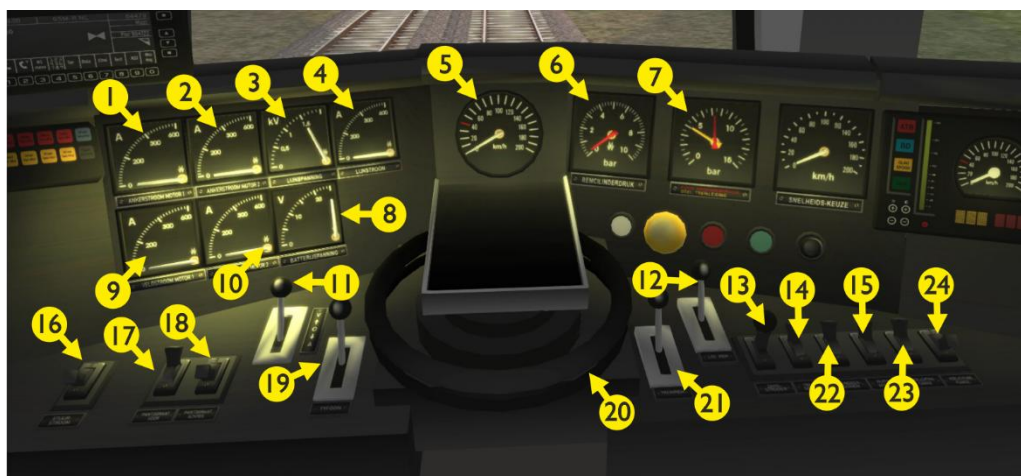
7 Appendix

Cab layout NS 1100



1	Traction current gauge		14	Pantograph up/down	P
2	Line current gauge			Select front/rear panto	CTRL + P
3	Line tension gauge		15	Horn	Space bar
4	Tachometer		16	Horn (short)	N
5	Brake pressure gauge		17	Regulator	A / D
6	Brake pipe/Main res. press. g.		18	Train brake	; / '
7	Control current tension g.		19	Front/rear lights switch	H / Shift + H
8	Reverser	W / S	20	Indicator light line tension	
9	Engine brake	[/]	21	Indicator light line current	
10	Sander	X	22	Indicator light doors	
11	Shunting signals switch	CTRL + F9	23	Indicator light control current	
12	Wipers switch	V	24	Indicator light Vmax	
13	Control current switch	CTRL + 0	25	Panel lights switch	CTRL + F11
			26	Cab lights switch	CTRL + F12

Cab lay-out NS 1700

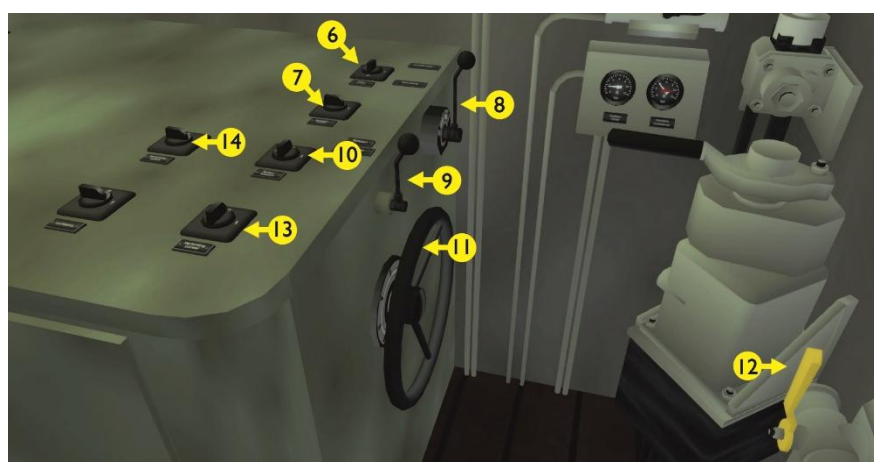
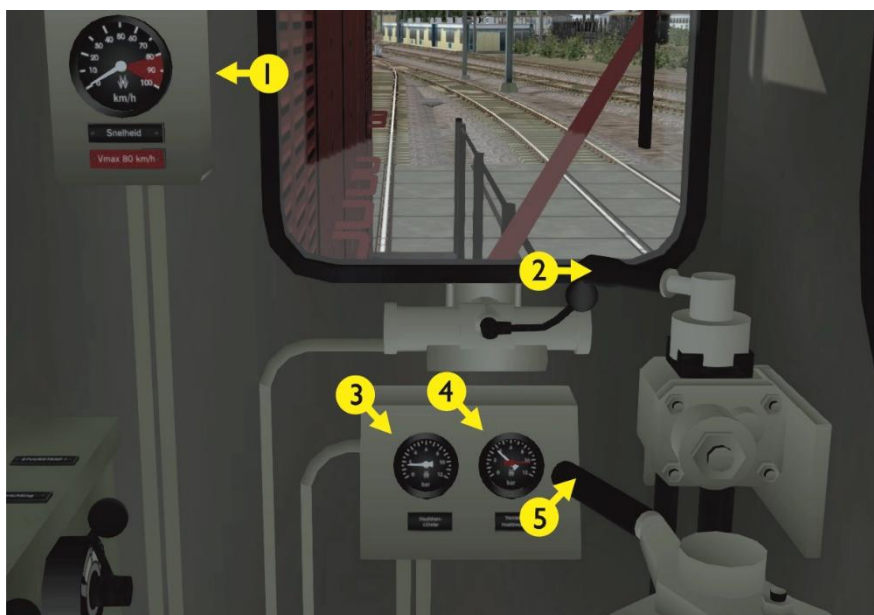


1	Armature curr. gauge M1		13	Sander	X
2	Armature curr. gauge M2		14	Shunting signals switch	CTRL + F9
3	Line tension gauge		15	Wipers switch	V
4	Line current gauge		16	Control current switch	CTRL + 0
5	Tachometer		17	Pantograph up/down	P
6	Brake pressure gauge		18	Select front/rear panto	Space bar
7	Brake pipe/Main res. press. g.		19	Horn	N
8	Control current tension g.			Horn (short)	A & D
9	Field current gauge M1		20	Regulator	; / '
10	Field current gauge M2		21	Train brake	H / SHIFT + H
11	Reverser	W / S	22	Front/rear lights switch	CTRL + F11
12	Engine brake	[/]	23	Cab lights switch	CTRL + F12
			24	Panel lights switch	

Notice:

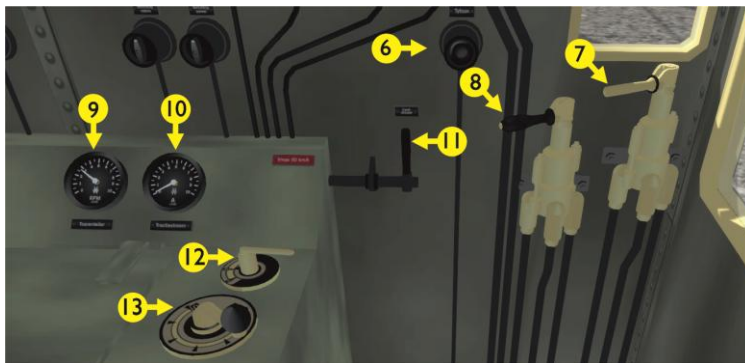
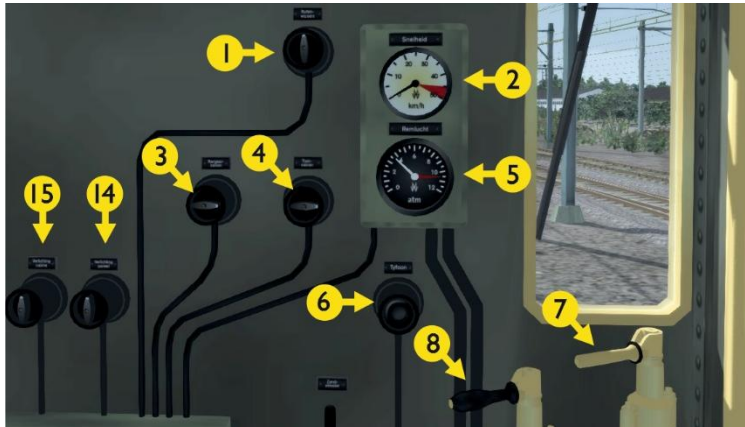
When using short cut P or switch 17 to raise the pantographs switch 18 will stay in its original position ('forward'). Both pantos will respond, but when driving in the forward direction the front panto will automatically be lowered when the engine's speed exceeds 20 km/h. Should we stop and reverse direction then both pantos will still be up and when exceeding the 20 km speed the front panto will again be lowered. *The driving direction alone will not influence the pantographs' behaviour.* To change the latter you must use switch 18 in the 1700 cab and switch 15 in the 1100 cab, respectively.

Cab lay-out NS 2400



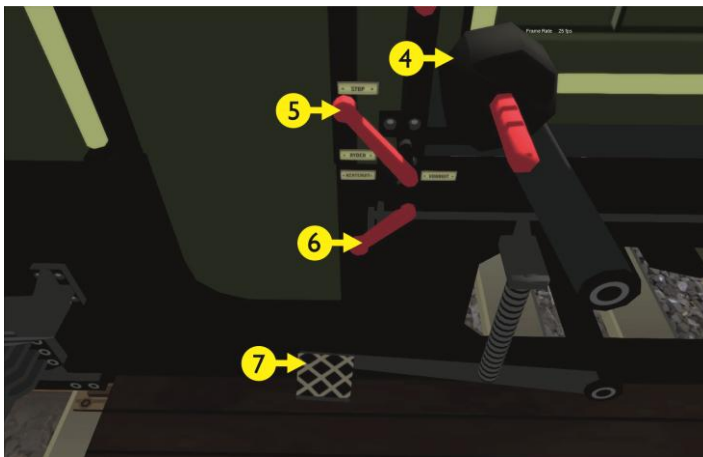
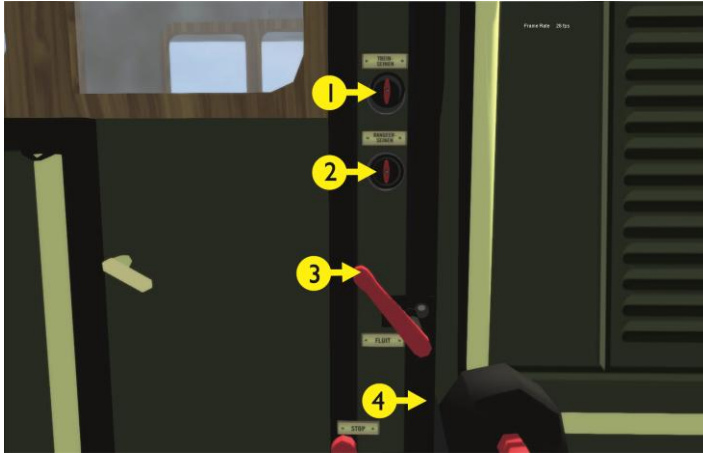
1	Tachometer		8	Reverser	W / S
2	Engine brake	[/]	9	Horn	Space bar
3	Brake pressure gauge			Horn (short)	N
4	Brake pipe/Main res. press. g.		10	Wipers switch	V
5	Train brake	; / '	11	Regulator	A / D
6	Front/rear lights switch	H / SHIFT + H	12	Sander	X
7	Shunting lights switch	CTRL+F9	13	Panel lights switch	CTRL+F12
			14	Cab lights switch	CTRL+F11

Cab lay-out NS 500



1	Wipers switch	V	8	Train brake	; / '
2	Tachometer		9	RPM gauge	
3	Shunting lights switch	CTRL+F9	10	Traction current	
4	Front/rear lights switch	H/SHIFT+H	11	Sander	X
5	Brake pipe/Main res. press. g.		12	Reverser	W / S
6	Horn	Space bar	13	Regulator	A / D
	Horn (short)	N	14	Panel lights switch	CTRL+F12
7	Engine brake	[/]	15	Cab lights switch	CTRL+F11

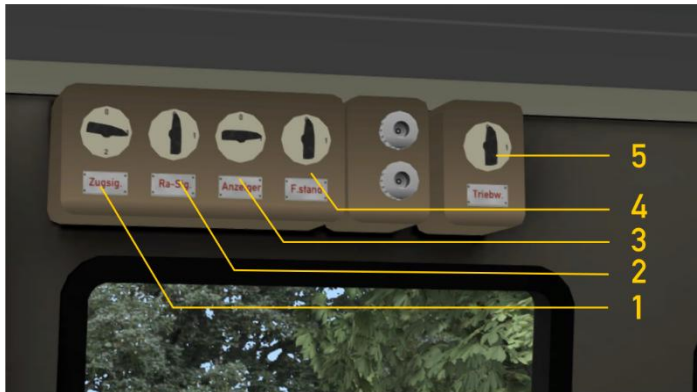
Cab lay-out NS 200



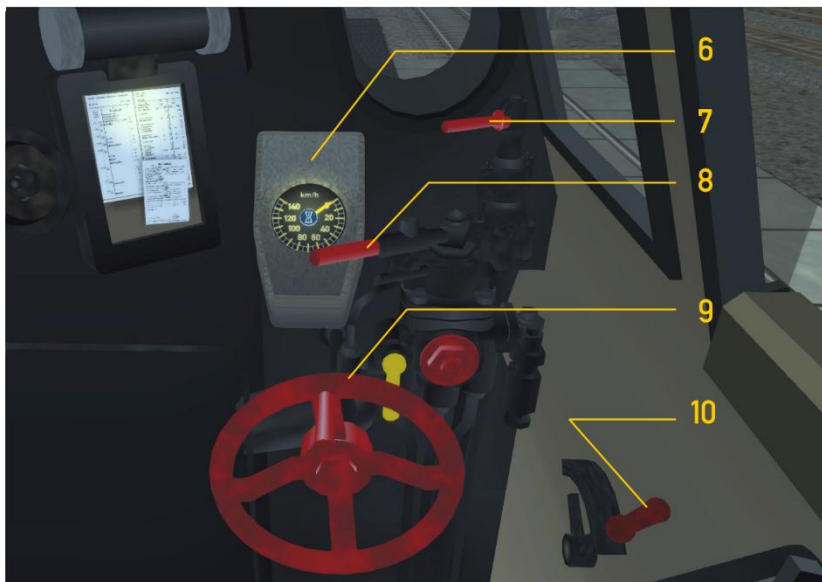
1	Front/rear lights switch	H/SHIFT + H	7	Engine brake	[/]
2	Shunting lights switch	CTRL + F9		Sander	X
3	Whistle	Space bar			
	Whistle (short)	N			
4	Train brake	; / '			
5	Regulator	A / D			
6	Reverser	W / S			

Cab lay-out SSN 23 023

Like all modern German steam locomotives the 23-series have been fitted out with an electric lighting system, controlled by a switch panel at the upper right hand side of the cabin. At the start of each scenario the shunting-lights (2) will be switched off, while the gauges lights will be on (4). Motion link and driving/coupling rods lighting may be switched on at dark.

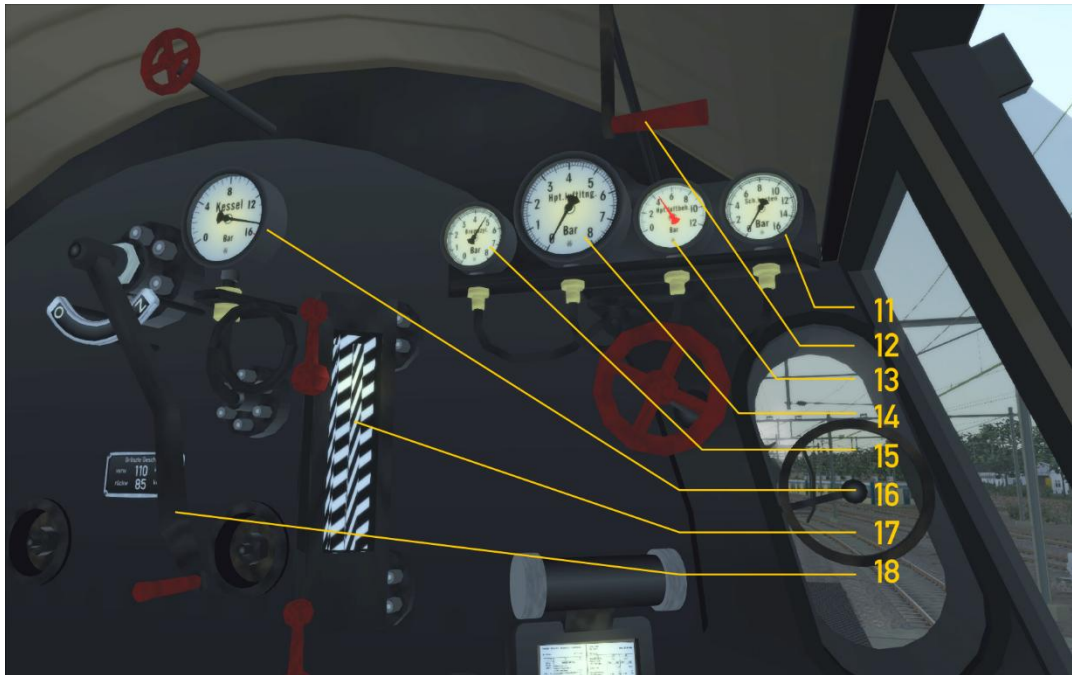


1	Head/tail lights	H / SHIFT + H	4	Gauges lights	CTRL + F11
2	Shunting lights	CTRL + F9	5	Cabin light	CTRL + F12
3	Motion link lighting	CTRL + F10			



The reverser (9) controls the link motion operation. Next the engine and train brakes handles can be seen (7 and 8 respectively) and the speed indicator (6). Handle (10) serves to operate the cylinder cocks. At scenario start they will be opened.

6	Speed indicator		9	Reverser	W / S
7	Engine brakes	[]	10	Cylinder cocks	C
8	Train brakes	; ';			

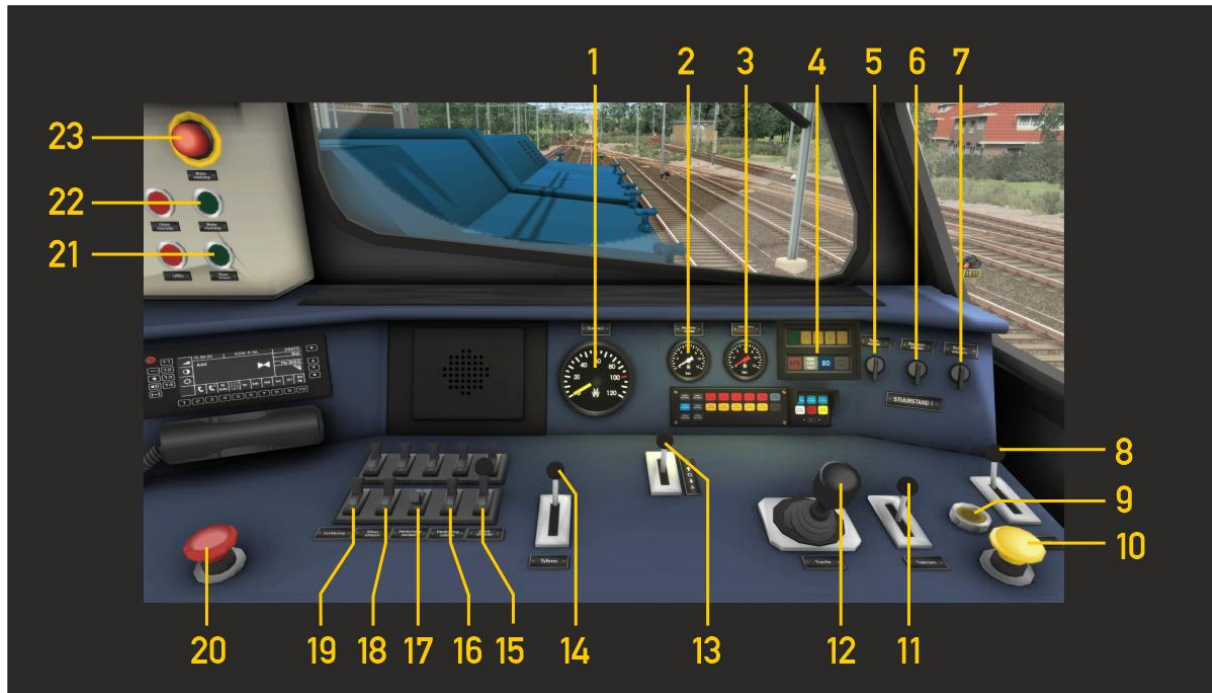


11	Steam chest pressure gauge		15	Brake cylinder pressure gauge	
12	Whistle, long tone	Space bar	16	Boiler pressure gauge	
	Whistle, short tone	N	17	Water level gauge	
13	Main reservoir pressure gauge		18	Regulator	A / D
14	Air brake pipe pressure gauge				



17	Water gauge			Bell	B
19	Dampers	D/SHIFT + D		Blower	, / SHIFT + ,
20	Firebox	F/SHIFT + F			
21	Sander				

Cab lay-out V100



1	Speedometer		13	Reverser	W / S
2	Brake cylinder pressure		14	Whistle	SPACE
3	Train pipe/main res. press.			Whistle-short	N
4	AWS-panel		15	Sander	X
5	Forward/reverse lights	Headlights	16	Cab light	CTRL+F11
6	Shunting lights	CTRL+F9	17	Panel lights	CTRL+F12
7	Wipers	V	18	Control current switch	CTRL+0
8	Engine brake control	[/]	19	Compressor switch	CTRL+I
9	Vigilance warning light		20	Emergency stop	
10	Vigilance reset	NUM ENTER	21	Control current light	
11	Train brake control	; / '	22	Diesel running light	
12	Power lever	A / D	23	Diesel engine start/stop	CTRL+Z

Engine start up procedure: switch on control current (18, CTRL+0) and compressor (19, CTRL+I) before starting the diesel engine (23, CTRL+Z). AWS and driver vigilance will be described in appendix 7.8. Driver vigilance can be switched on/off by CTRL+NUM ENTER. To activate AWS use the U-key.

Driver vigilance and AWS

Mainline locomotives in this RCR release are equipped with two optional safety features. This concerns NS series 1100, 1700 and 2400, together with the Volker Rail and Locon V100 units. When running these you may activate driver vigilance monitoring (DVM) and/or a close simulation of the Dutch pendant of AWS i.e. Automatic Train Control – First Generation (ATB-EG or ATB). Both systems monitor the player's actions as an engine driver. The DVM's function is to stop the train if the driver should lose consciousness. The ATB takes the same action if the driver does not respond to the commands of the signals along the line. The player can decide for himself whether and which systems he wants to activate in the scenario. Both systems can be used simultaneously if desired.

7.1.1 Driver Vigilance Monitor

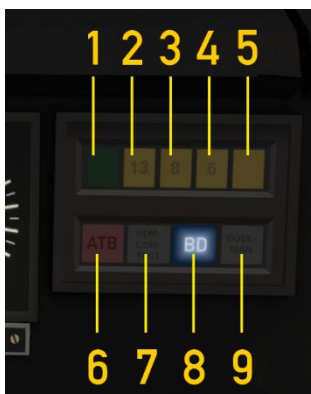


This system expects the driver to click the DVM reset button (2) or press the numeric ENTER key at least once every half minute. When 30 seconds have passed without any of these actions, a buzzer will sound and a flashing red light (1) will appear. From that moment on, the driver has five seconds to respond. Failing that, an emergency brake intervention by DVM will follow. Only after the train has come to a complete stop are the controls released again.

Enabling and disabling DVM is done with the key combination CTRL + NUM ENTER. When lamp 9 of the TAB panel (see below) is lit, DVM is active.

7.1.2 ATB

This safety feature is made up of three process components. The first process is tasked with detecting speed limits that are on the set path of the train while driving, within a distance of 1000-1200 meters. The values found are converted into one of five limits: 40, 60, 80, 130 or 140 km/h. A second process monitors the driver's reactions to the speed limit found. The last part is formed by the ATB panel that provides communication with the driver by lamps and bell signals.

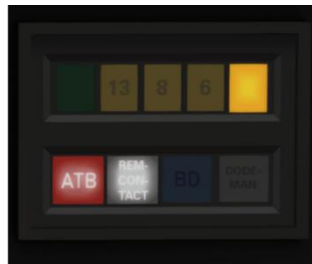
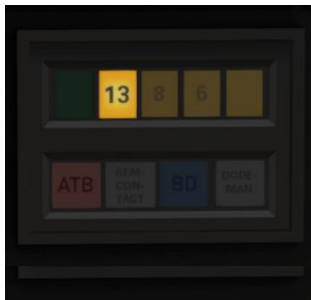


In that panel, in addition to a vigilance light, eight lamps are present that alone or in combination can display the different states that ATB can assume. When ATB is not active, lamp 8 (BD = out of service) lights up. Lamp 7 (brake contact) is shown when the driver applies a train brake – even when the ATB is switched off.

We apply the U key to enable or disable ATB. When ATB is switched on, lamp 8 will extinguish and the speed limit that is currently in force will be displayed by one of the lamps 1 to 5. There is also a ringing sound. When ATB is being switched off, this bell sounds five times in quick succession.

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We will explain the operation of the activated ATB by means of an example. In the left image we drive at a speed of 125 km/h. A limitation of 40 km/h has been detected in the right picture. A ringer sounds ('ding') and lamp 5 lights up.



The driver engages the brakes and the brake contact lamp 7 is shown (left). When the assigned speed of less than 40 km/h is reached (with an upper margin of 5 km), three bell signals sound shortly after each other ('ding ding ding').

If the driver does not respond to a speed reduction command within 5 seconds, an alarm bell will ring for 3 seconds. Within this period of time, the driver can still prevent an ATB intervention by still applying the train brakes. If this condition is not met, an emergency stop will be forced upon the train. ATB lamp 6 lights up, as does the brake contact lamp. At the same time, train brakes are fully applied while controller and reverser levers are set to the 'neutral' position. Only after the train has come to a complete stop are these controls released again.

The functions of this 'Wilbur Graphics' ATB version are controlled by a script, which is fed with information that is retrieved from the game while driving a scenario. These data come from the main signals, the section speed limits and/or from speed signs, depending on the tracks, signals and speed signs used. In the real world, the ATB looks at the distance signals when detecting upcoming speed limits. As a result, the simulated ATB may indicate a different restriction than a local speed limit. When driving Timetable and Career scenarios, you should therefore also pay attention to the limit that TS shows in the HUD. Another difference with reality is the possibility to run a scenario without DDM and/or ATB.

Frequently asked questions

Question: Why have speed limits been applied to station yard through tracks?

Answer: That is a consequence of the station tracks length. Large track yards will not only tax your software and your computer but will result in extended development times as well, and since many different projects compete to get into the building stage, time is always sparse. This is why the distances between yard entry and exit signals will vary around 800 meters, which in turn will result in speed limitations that fit the available braking distances.

Question: Why is it that the Doppler effect at level crossings often seems to be curtailed?

Answer: When a train approaches a level crossing (LC) warning lights and bells will start flashing and ringing. The sound effect will last for 10 seconds, but the lights will keep on flashing while the booms are down. Most trains will pass the LC at that moment, i.e. just when the ringing ends. This will also prevent the Doppler effect to be audible over the full time lapse of the passing event. When you should approach the LC in for example a shunting engine or a slow local freight you may expect to hear no sounds at all when you finally arrive at the LC.

Question: Why do the departure/destination names in the Quick Drive menu window seem to be different from the station names in the route?

Answer: When we assigned names to the QD scenario markers we wanted to make a clear separation between goods and passenger services. Location names with the suffix 'Goederen' will result in paths through shunting yard sidings. When this suffix is missing your selection of departures/destinations train will lead your train along station platforms, while yard sidings will be ignored.

8 Colophon and credits

Development and production:

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

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Wilbur Graphics (Henk van Willigenburg)

Ton van Schaik

Oscar Weijde

Testing:

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Printed sources:

- Handboek Machinist, mei 2001, NS Reizigers
- The Nederlandse Modelspoorweg, hfst. 7. Schuyt & Co, Haarlem 1991, by Gerard Tombroek
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