Niddertalbahn

Bad Vibel – Stockheim

Driver's Manual

dovetail GAMES

TRAINSIM-GERMANY TSG ADD-ONS FOR TRAIN SIM WORLD

TRAIN SIM WORLD 3

Driver's Manual

Route expansion for Train Sim World 3

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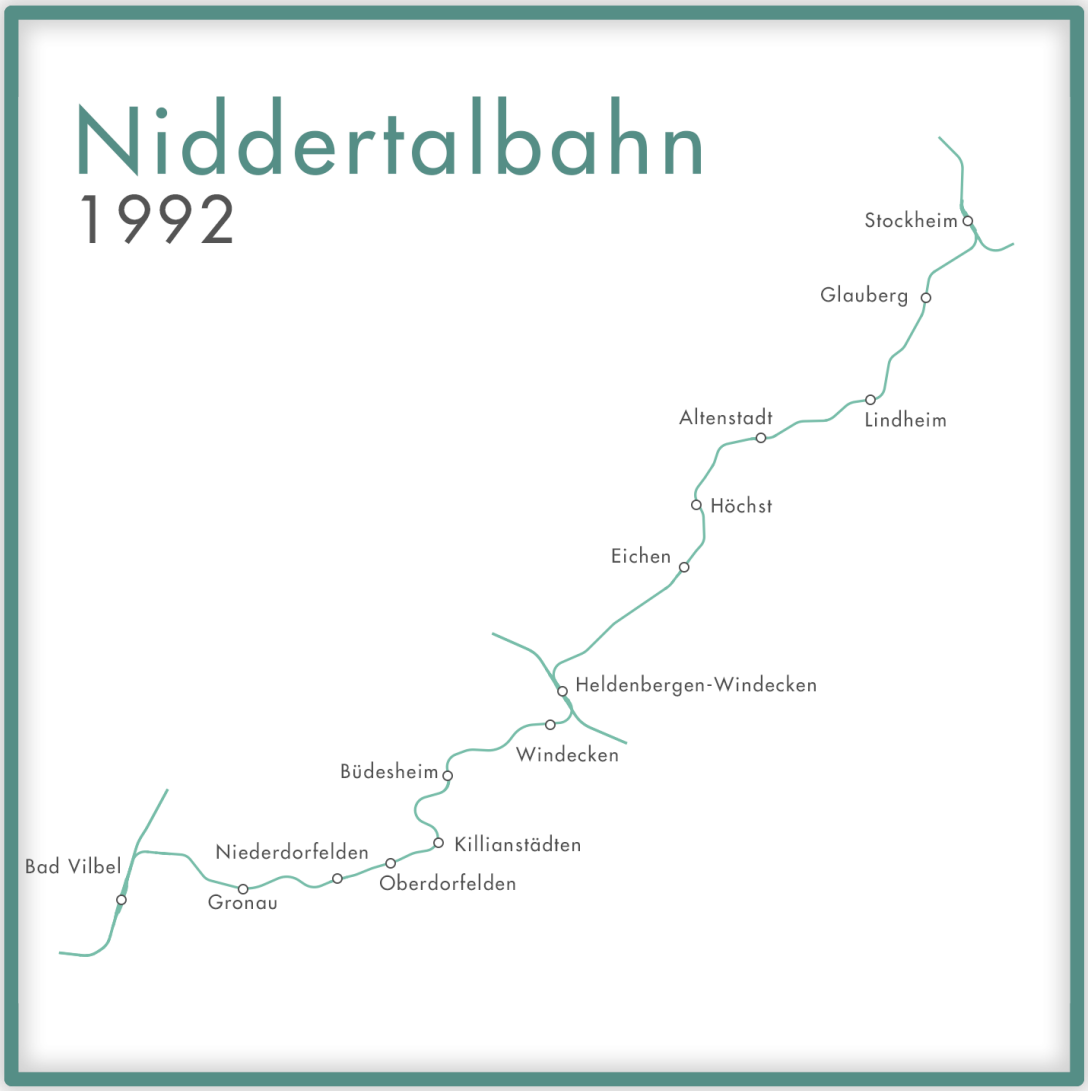
INTODUCTION

ABOUT THE ROUTE

Set in 1992, the Niddertalbahn route expansion for Train Sim World 3 takes you to the State of Hessen, in the newly reunified Federal Republic of Germany on one of the numerous rural lines of the country between Bad Vilbel and Stockheim. The line is an important lifeline connecting local settlements and farmlands to the mainlines of Hanau – Friedberg and Frankfurt – Gießen, with most of the DB BR 628s used on the route operating all the way until Frankfurt Hauptbahnhof (Main Station). Local sugar beet freight trains historically delivered the local production to Bad Vilbel to be later collected and processed at the Friedberg sugar factory. Back in 1992, the railways were operated by the public company Deutsche Bundesbahn (German Federal Railways) and were boasting different liveries based on their type of service. In this route, you will see the passenger services using the Mint livery, representing local and regional services as well as local freight services servicing the local farms.

ROUTE INFORMATION



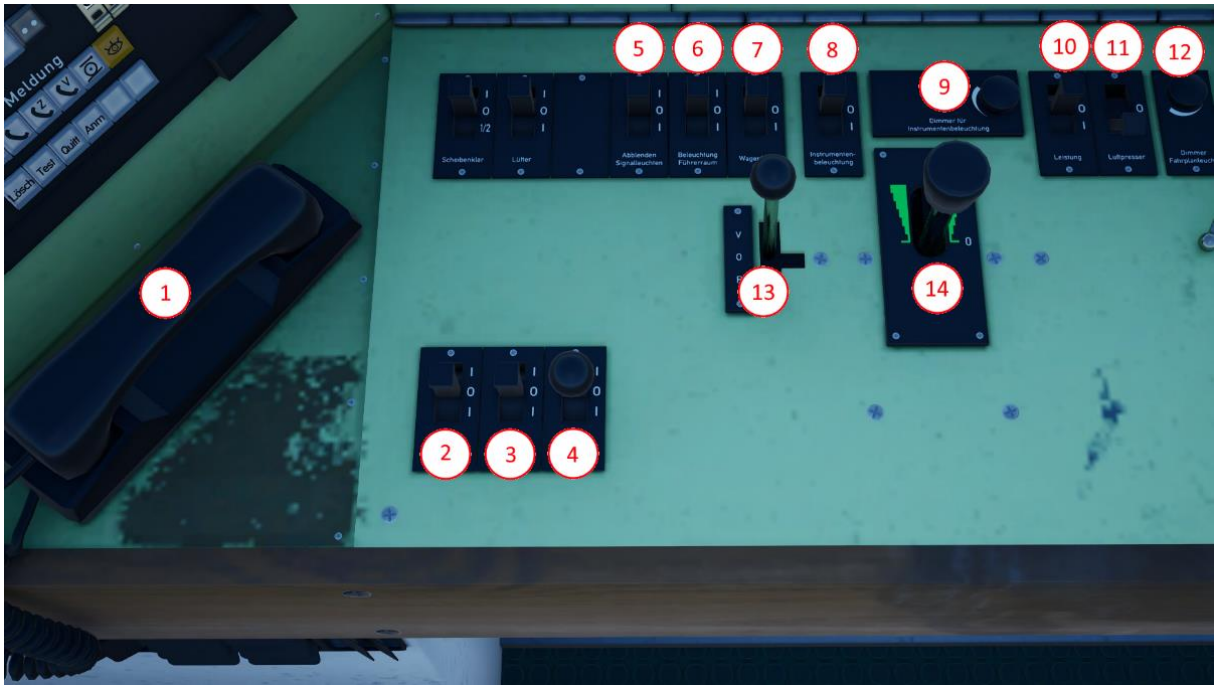
- Trackage: 31 kilometres (16 miles)
- Stations: 14 (including 6 stations where 2 trains can pass each other)
- Max line speed: 60km/h
- Services: 62 (54 DB BR 628 + 8 DB BR 365)

TRAINS

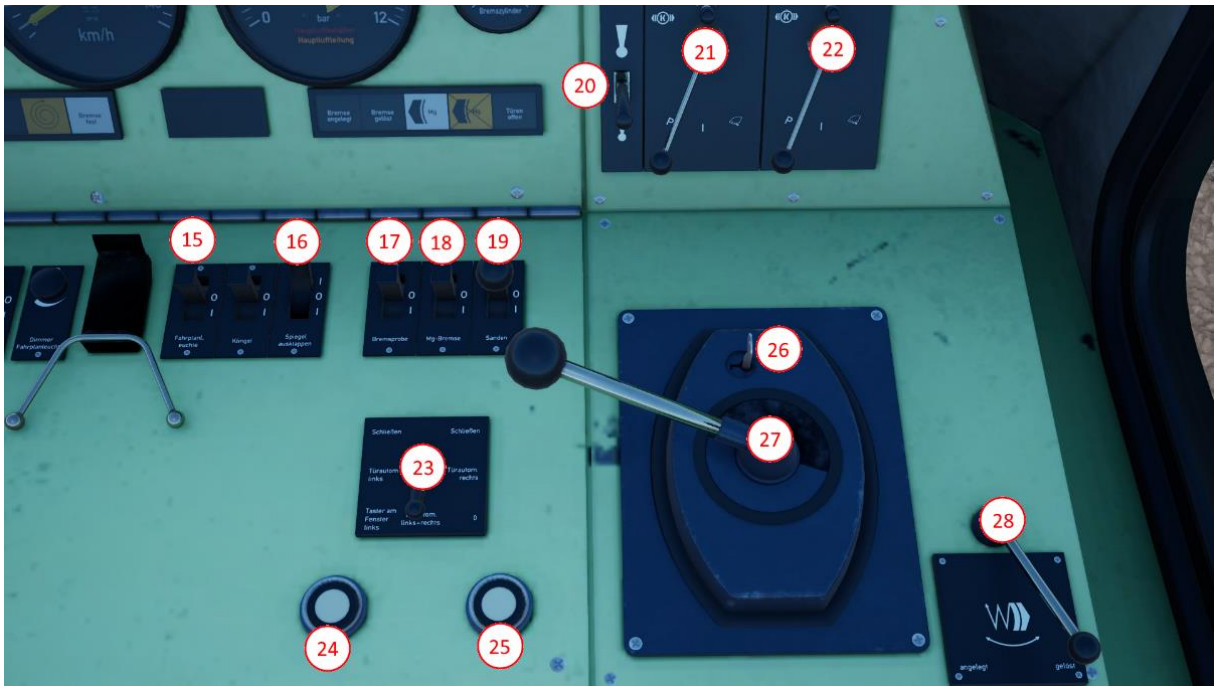
DB BR 628

ABOUT THE TRAIN

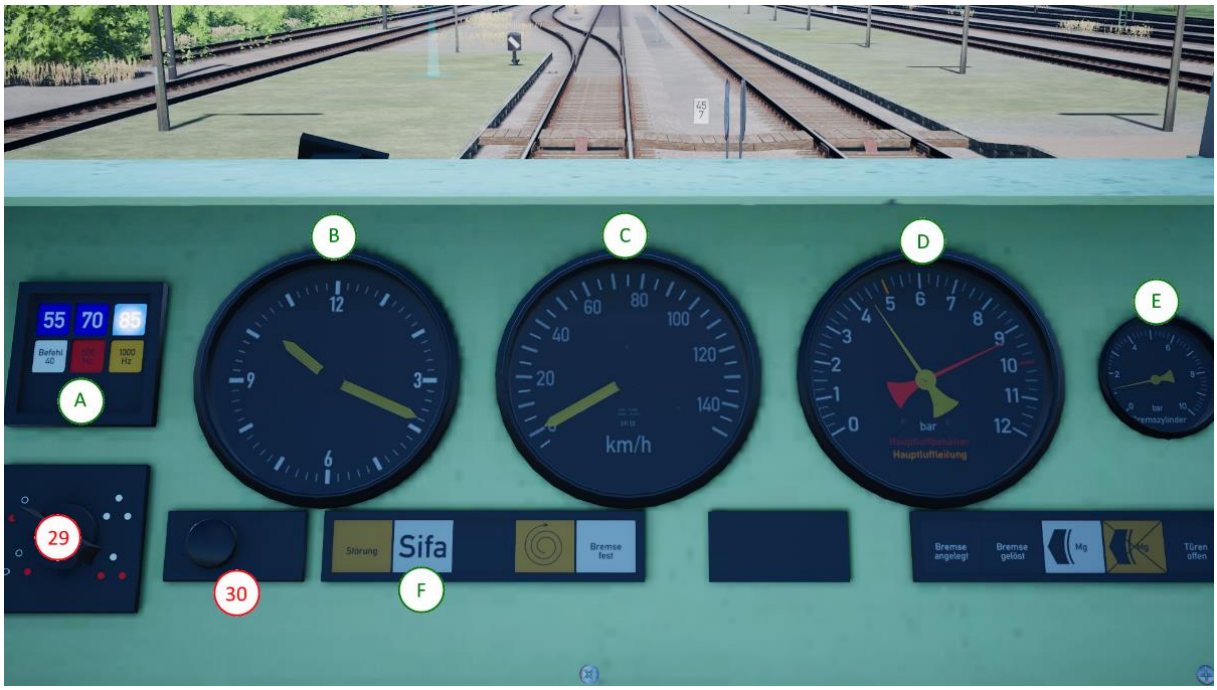
The DB BR 628 was first manufactured by Düwag in 1974, then several other of the main manufacturers like Waggon Union and AEG. Between 1974 and 1995 a total of 479 of these units across 5 sub-classes. Whilst being a Diesel Multiple Unit (DMU) with strictly identical cabs at either end and being able to operate coupled with similar units, the 628 is in reality more akin to a push-pull train in function, having the 628 car being the motorcar with the diesel engines and the 928 being a cab-control car. The 628 was designed for mainline and, most primarily, local railway operations, with it being a staple of local, rural lines feeding into larger regional hubs and mainlines, with a top speed of 120km/h (75mph). In this route within Train Sim World 3, you can operate the DB BR 628.2 on the entirety of the line between Bad Vilbel and Stockheim, calling at all stations in between. Some of those services will continue as non-player trains outside of the modelled world to Frankfurt after stepping out at Bad Vilbel.



1. Contact the signaller
2. PZB override
3. PZB release
4. PZB acknowledge
5. Signal lights dim
6. Cab lights
7. Train lights
8. Instrument lights
9. Instrument lights dimmer
10. Power
11. Compressor
12. Desk light dimmer
13. Reverser
14. Throttle



15.Desk light
16. Mirrors
17. Brake test
18. Magnetic brake
19. Sander
20. Horn
21. Wiper left
22. Wiper right
23. Door locking
24. Door front left
25. Door front right
26. Brake key
27. Train brake
28. Parking brake



29.Signal lights

30. Indicators dimmer

A. PZB panel
B. Current in-game time
C. Speed
D. Brake reservoir (red) and brake pipe (yellow)
E. Brake cylinder
F. Sifa

31. Engine group 1

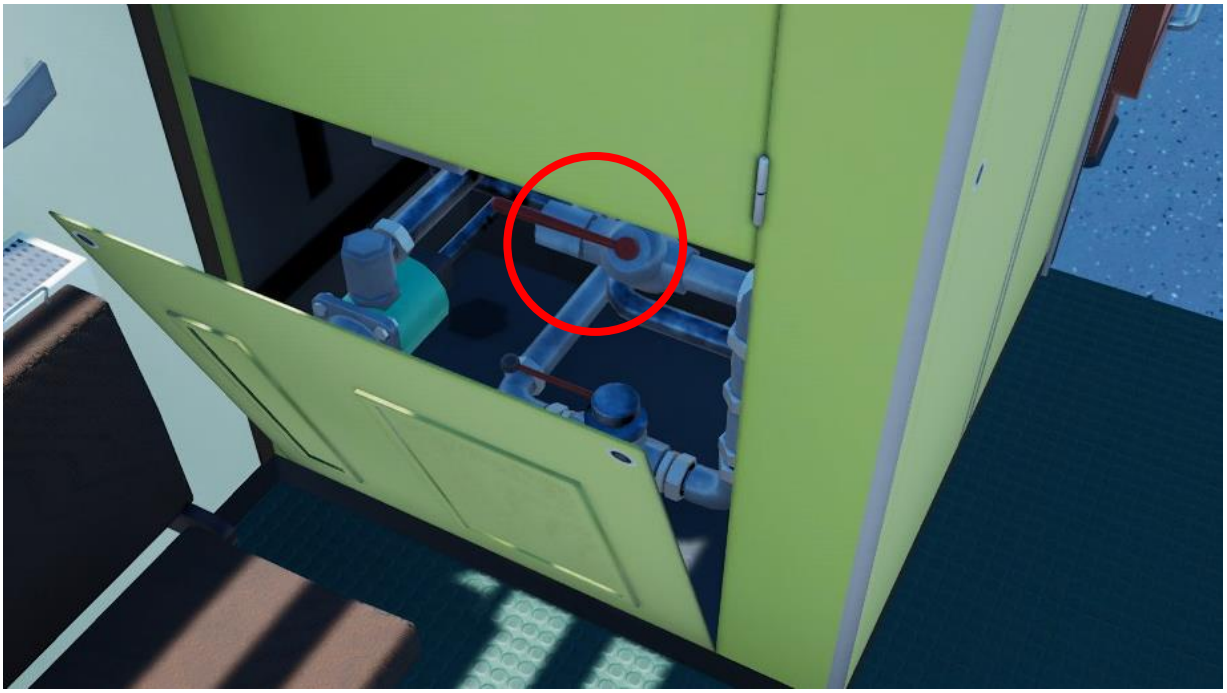
To start the train:

- Enter the cab and insert the reverser, then set it to “Forward”.
- Hold the Engine group 1 (31) knob on the “Start” position for 5 seconds.
- Insert the brake key.
- Switch the compressor and the power to “On”.
- Release the parking brake.

The train is now ready to move. To move the train, simply release the brakes and apply some throttle to get moving (there are 7 steps of power). To stop the train, pull the throttle back to 0 and use the train brake lever to apply the brakes on the entire train. You can open the doors either by selecting which side to open (or both) with the door locking knob, or only open the front door one side. Put the knob to “Lock all” to close them or press the front door button if you have only opened a front door.

PZB90

The current safety system in use in Germany is PZB 90 (**P**unktförmige **Z**ug**B**eeinflussung or Punctiform Train Protection System, 90 stands for the fact that it was first introduced in the 1990s). It consists of 3 settings for different types of trains/services (O, M and U) and 3 modes of function (normal, monitored, and restricted). In the DB BR 628, only the O setting is in use as it is the default one for most passenger trains. You can activate this system by using your assigned key binds for activating the system or by finding it in a cabinet in the passenger compartment a few steps behind the cab of the 628 motorcar.



Once activated and with the reverser set to forward, the PZB should switch on to a single “85” lamp, symbolising that it is active in “O” mode.

Definitions:

- 85: O setting, speed limit under monitored mode is 85km/h.
    - Flashing on its own indicates that the monitored mode is active.
    - Flashing consecutively with the 70 lamp indicates that the restricted mode is active.
- 70: M setting (not in use).
- 55: U setting (not in use).
- 1000 Hz: A magnet of this frequency has been passed and acknowledged. The train must slow down to its specified monitored mode speed under this magnet's influence or 45km/h in restricted mode.
- 500 Hz: A magnet of this frequency has been passed. The train must slow down to its specified monitored mode speed under this magnet's influence or 25km/h in restricted mode.
- Befehl 40: Used when passing a stop signal. When this lamp is active, the train must be driving at a speed under 40km/h.

How to use:

- When first starting the train, after reaching 5km/h, the 85 and 70 lamps will start flashing consecutively, indicating that the PZB is in restricted mode and that the maximum starting speed is 45km/h. If this speed is exceeded, then the train will initiate a penalty brake application. To release from the restricted mode when it is safe to do so (not approaching a stop signal), press the Frei (release) key.
- When approaching a signal or sign that needs to be acknowledged, press the Wachsam (acknowledge) key within 4 seconds after the cab passes that signal or sign. Please refer to the signalling chapter in order to find out which signals need acknowledgement.
- Once acknowledged, the 1000 Hz lamp will light up and the 85 lamp will start flashing indicating that the train is now in monitored mode. From this point on, the PZB is observing a braking curve that will observe the train speed from 165 to 85km/h in 24 seconds, which is not visible to the driver. You must bring the train to a speed under 85km/h as soon as possible. If the train exceeds the braking curve at any point, then it will initiate a penalty brake application.
- If the train has slowed down to the appropriate speed in time, the 1000 Hz lamp will come off and releasing from the monitored mode becomes possible. It is however unadvised to release from the monitored mode if approaching a stop signal. To release the monitored mode, press the Frei (release) key.
- When approaching a stop signal which has a 500Hz magnet, the associated 500 Hz lamp will come on and system will check for a starting speed and another braking curve. When passing the 500Hz magnet, the train must first be at a speed of 60km/h or under, then must slow down to 45km/h in under 153 metres. If the starting speed or the breaking curve is exceeded, then the train will initiate a penalty brake application.

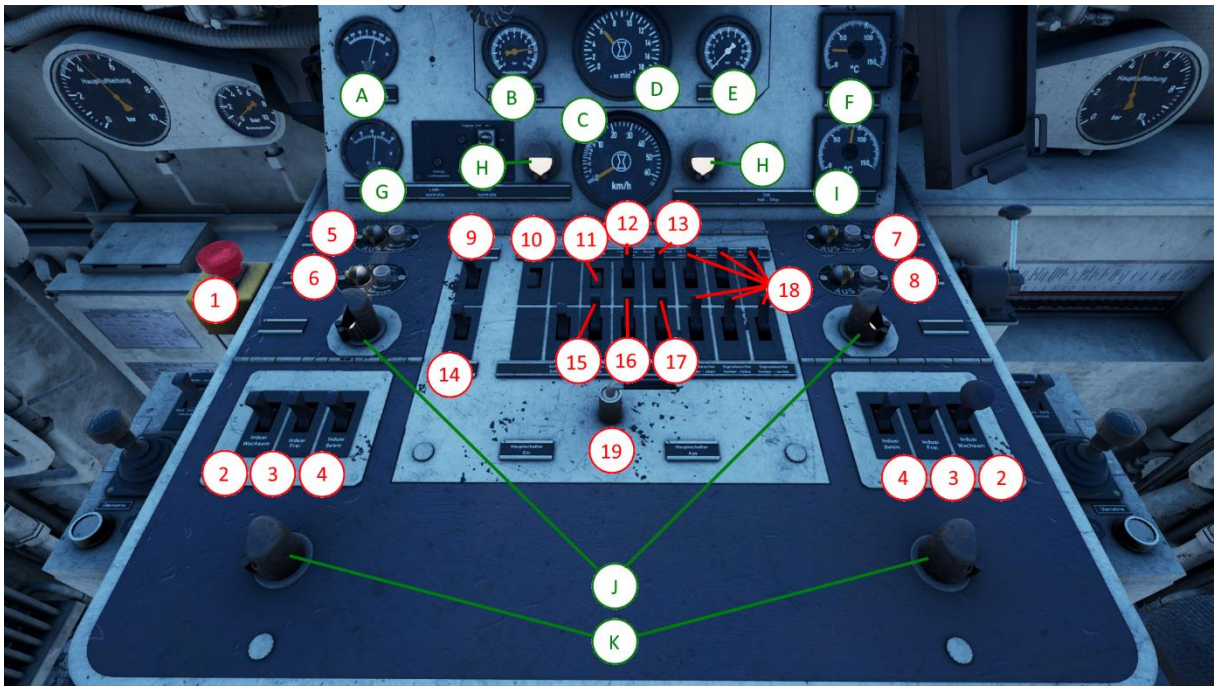
- To release from a penalty brake application, wait for the train to stop then press the Frei (release) key. The 85 and 70 lamps will start flashing consecutively, indicating that the PZB is in restricted mode.
- If no additional lamp is lit, or the 1000 Hz lamp is lit, then the starting speed limit under restricted mode is 45km/h. If the 500 Hz lamp is lit, then the starting speed limit is 25km/h. It is only possible to release from the restricted mode once either magnet lamp comes off.
- When passing a stop signal (with authority), the train must be driving at a speed of 40km/h or under and you must hold the Befehl (override) key. The Befehl 40 lamp should come on temporarily and the 85 will start flashing, indicating that the train is now in monitored mode.

A more extensive guide about modern German signalling and safety systems, courtesy of Producer Matt Peddlesden, can be found by heading to the official YouTube Channel of Train Sim World and finding the video named "Train Sim World 2 – German Signals and PZB tutorial!"

DB BR 365

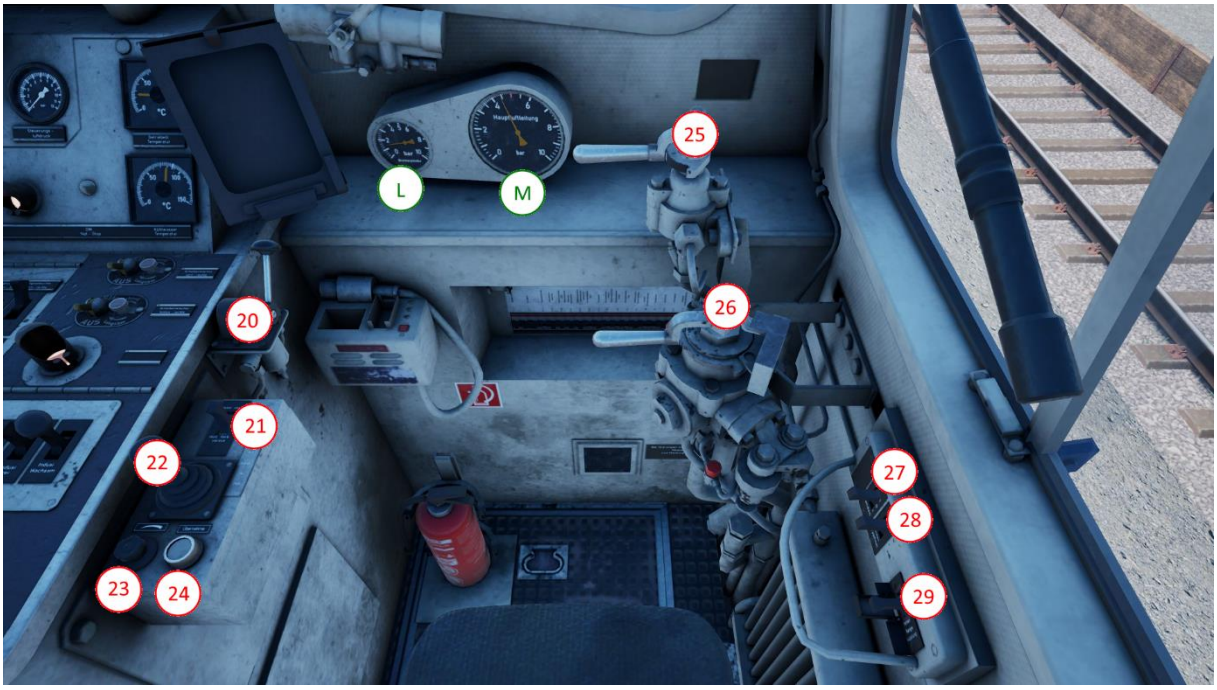
ABOUT THE TRAIN

The DB BR 365 is part of the V60 family and was manufactured by almost all major locomotive manufacturers at the time between 1956 and 1964 with more than 940 units produced. The V60 family of locomotives was initially designed to cope with a large shortage of shunting locomotives but were able to perform both shunting and mainline freight hauling and even sometimes used for passenger services. Many of these locomotives operate to this day in Germany and some other countries. They feature automatic couplers, a single cab with a 360° view, a gear changer for shunting or mainline operation and all the required safety systems at the time. The units are also compatible with remote control operations. The trains hauling freight on rural lines were known as Nahgüterzüge (Local freight trains), examples of which can be seen on the Niddertalbahn as they were hauling sugar beet carriages in between peak times from the local communities. In Train Sim World 3, you can operate the DB BR 365 in its Ocean Blue Livery from the Bundesbahn running local freight services to Bad Vilbel.

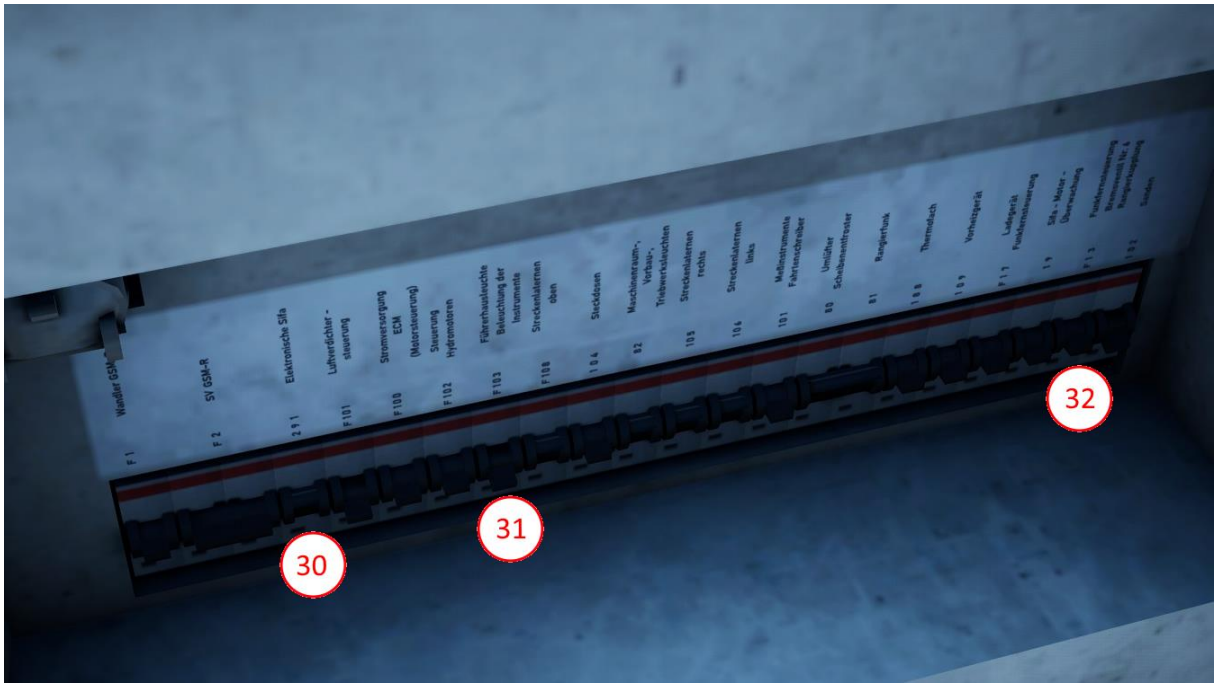


1. Emergency stop
2. Indusi acknowledge
3. Indusi release
4. Indusi override
5. Front left wiper valve & speed
6. Rear left wiper valve & speed
7. Front right wiper valve & speed
8. Rear right wiper valve & speed
9. Engine start
10. Power
11. Fuel pump
12. Cab light
13. Engine room light
14. Engine stop
15. Engine light
16. Instrument lights
17. Stem lights
18. Headlights (front and rear)
19. Main switch

A. Battery current charge
B. Main reservoir
C. Speed
D. Tachometer
E. Control air pressure
F. Gear oil temperature
G. Battery voltage
H. Sifa
I. Cooling water temperature
J. Reverser forward lamp
K. Reverser backward lamp



20.Fine control valve
21. Reverser
22. Throttle
23. Changeover dim
24. Changeover
25. Locomotive brake
26. Train brake
27. Sand
28. Horn
29. Uncouple
L. Brake cylinder
M. Brake pipe



30. Sifa
31. Cab and instrument lights breaker
32. Sand breaker

To start the train:

- Enter the Cab, put the main switch to the “On” position and hold the Engine start button for 5 seconds.
- On the side of your choice, press the changeover button, then set the reverser to forward or backward until an arrow light shows up

- Release the handbrake:

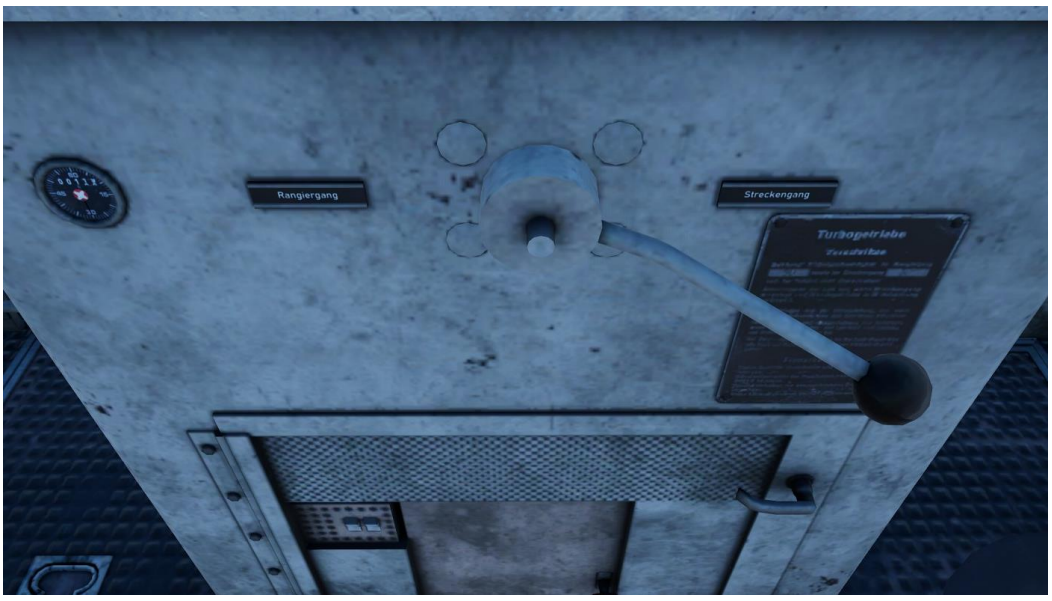
The mechanical handbrake is located behind the left-hand side controls and allows to hold the locomotive in position without using air brakes.

The train should be ready to move. To move the train, make sure the locomotive and the train brake are both released before setting off. Apply some throttle to move the train. To stop the locomotive when driving on its own (light locomotive), you can use the locomotive brake. When attached to freight carriages, it is better to use the train brake.

To change the direction or move to the other seat:

- Make sure the throttle is on 0.
- Move the train brake to "Off"
- Make sure to apply the locomotive brake to avoid rolling while doing the changeover procedure! It will move back to the "Hold" position automatically when not in use.
- You can then press on the changeover button and/or the reverser on the seat or desired direction.

Gear Selector:



Located under the main console, this lever allows to select the gear best suited for the duty that the 365 is performing. The setting on the left is "Shunting" and the one on the right is "Long Distance". When in

Shunting mode, the realistic maximum locomotive speed limit is 30km/h whereas in Long Distance mode, the locomotive speed limit is 60km/h.

Coupling:

The DB BR 365 bears an automatic coupler on both ends of the locomotive and allows to hook freight carriages to the train by simply driving to them. To uncouple freight carriages from the cab, hold the "Uncouple" switch (29) towards the direction the carriages are (front or back of the locomotive). It is still possible to couple carriages manually by raising the coupler's arm and getting out of the cab or using the external camera when the locomotive is standing next to freight carriages.

INDUSI 60

For the first time in Train Sim World's history, Indusi 60 (**Indu**ktive Zug**si**cherhungsheit or Inductive Train Safety System first introduced in the 1960s) is simulated, which is a predecessor of PZB 90 and still in use in some other countries to this day. You can activate this system by using your assigned key binds for activating the system or by finding it in a covered fuse box above the centre console.

This system comprises only two lamps, a blue lamp on the right and a yellow one on the left.

This train only uses the U setting which is the one used for heavy or slower freight with a higher brake percentage. Its speed under monitored mode is 60km/h. The Indusi 60 also does not have a restricted mode unlike the modern PZB 90, nor does it check for a braking curve, but for a specific speed at a set timing.

Definitions:

- When the blue lamp is lit up, the system is operating.
- When the yellow lamp is flashing on its own, the emergency brakes are being applied as a penalty.
- When both lamps are lit up, a 1000 Hz magnet has been passed and acknowledged. The train must slow down to 60km/h in under 34 seconds.

How to use:

- When approaching a signal or sign that needs to be acknowledged, press the Wachsam (acknowledge) key within 4 seconds after the cab passes that signal or sign. Please refer to the signalling chapter in order to find out which signals need acknowledgement.
- Once acknowledged, the yellow lamp will light up. From this point on, you have exactly 34 seconds to slow the train down to speed of 60km/h or under. The system will then once confirm that the speed restriction has been respected at that point without checking for a braking curve. If the train has been checked at a speed under 60km/h, the yellow lamp will simply shut off and the monitored mode will switch back to normal mode. If the train is running at a speed above 60km/h, it will initiate a penalty brake application.
- If approaching a signal which is equipped with a 500Hz magnet in front of it, the system will check that the train is driving at speed of 40km/h or under when driving over the magnet. If the train is exceeding that speed upon passing the 500Hz magnet, it will initiate a penalty brake application.
- To release from a penalty brake application, wait for the train to stop and fully vent the brake pipe (showing near 0 bars on the brake dial) and press the Frei (release) key. The yellow lamp will shut off and the blue lamp will come back on, and the brakes should start to release.
- When passing a stop signal (with authority), the train must be driving at a speed of 40km/h or under and you must hold the Befehl (override) key.

SIFA

Sifa (**Si**cherheits**fa**hrschaltung) is the German name for the vigilance/dead's man system. It checks that the driver is still aware and capable of operating the train. This system is simulated on both trains in this route. The Sifa lamps are centrally located in both cabs.

You can activate this system by using your assigned key binds for activating the system or by finding it in the same cabinet as shown in the PZB section on the DB BR 628, or among the fuses in front of the right-side driver seat of the DB BR 365.

Once the Sifa is active, its associated light should come off. When driving, at regular intervals, the Sifa light will come on, to tell the driver that it is awaiting to be confirmed. To confirm the Sifa, press on the associated Sifa key bind. If the driver does not confirm the light within 2.5 seconds, an audible warning will sound. If this warning is also not confirmed within 2.5 seconds, then the train will initiate a penalty brake application. To release from this penalty brake, press on the associated Sifa key bind to confirm it, and the brakes should start to release.

ROUTE FEATURES

SIGNALLING

Being a single-track line, the Niddertalbahn uses interlocked signals to control the movement of trains by allowing or denying their access and ensure that no conflicting movements meet. Introduced with this route for the first time in Train Sim World's history are German mechanical signals. These were the standard form of signalling on rural, single-track lines for a long time and still are to this day. In addition, some stations also feature newer colour light signals. Both are part of the H/V signalling system which stands for Haupt/Vorsignal-system which is the German for Main/Distant signalling system.

The route also features a number of signs with the notable first-time introduction of [P] whistle board signs for the first time in Train Sim World.

Definitions:

- **Hp** = Hauptsignale = Main signals
- **Vr** = Vorsignale = Distant signals
- **Sh** = Schutzsignale = Protection signals
- **Bü** = Signale für Bahnübergange = Signals for level crossings
- **El** = Fahrleitungsignale = Catenary signals
- **Wn** = Weichensignale = Points/Switch signals
- **Ra** = Signale für den Rangierdienst = Signals for shunting operations
- **Lf** = Langsamfahrtsignale = Slow speed signals

When the signalling section specifies "proceed at [posted number × 10] (km/h)", an example is if the sign or signal shows a 6: [6 × 10 = 60], which makes this an indication of a speed limit of 60km/h.

Signal aspects used on the route:

Hp 0 Main signal Stop. Driving prohibited.	
Hp 1 Main signal Proceed at line speed.	
Hp 2 Main signal Proceed at 40 Km/h. If the signal has a triangular sign with a white number on it, proceed at [posted number × 10] (km/h) instead	

Vr 0 Distant signal Prepare to stop at the next signal(s). The 1000Hz magnet is active and must be acknowledged.	
Vr 1 Distant signal Proceed through the next signal at line speed.	
Vr 2 Distant signal Slow down to 40km/h before the next signal. The 1000Hz magnet is active and must be acknowledged. If the signal has a triangular sign with a number on it, slow down to [posted number × 10] (km/h)	
Sh 0 Protection signal Passage is prohibited.	
Sh 1 Protection signal Passage is permitted.	

Bü 0 Crossing signal The crossing ahead is unsecured: <u>Prepare to stop in front of the crossing.</u> The 1000Hz magnet is active and must be acknowledged.	
Bü 1 (flashing) Crossing signal The crossing ahead is secured: <u>Proceed through the crossing normally.</u>	

Signs used on the route:

Ne 2 <u>Prepare to stop at the next signal(s).</u> A permanent 1000Hz magnet is attached to this sign and must be acknowledged.	
Bü 2 <u>Expect a level crossing signal.</u> An axle counter activating the level crossing is attached to this sign.	

Level crossing announcer Indicates an upcoming protected level crossing with its hectometre location.	
Level crossing location sign Indicates the hectometre location of the current protected level crossing.	
El 6 End of electrification: Electric trains must stop before this sign.	
Sh 2 Closed track: Entry is prohibited.	
Wn 3 Indicates the direction of a diamond point/switch.	

Bü 4 Approaching an unprotected level crossing. Blow the whistle/horn.	
Ra 10 Limit of shunt: Trains performing a shunting manoeuvre must stop before this sign.	
Lf 6 Warning for a temporary speed restriction: Reduce speed to [posted number × 10] (km/h).	
Lf 4 + Lf 5 Enforcement of the previously announced speed restriction: Proceed at [posted number × 10] (km/h).	
Lf 3 End of the temporary speed restriction: Resuming line speed running is permitted.	

LEVEL CROSSINGS

The Niddertalbahn features working level crossings. A particular feature which is unique to this route as of its release is the probability that a crossing might not properly secure itself upon the arrival of a train. In these situations, it is necessary for the driver to stop ahead of the crossing and secure it manually. This event has a 1% probability of happening.

As seen in the previous chapter about signalling, a crossing signal which does not show a flashing aspect upon passing it (Bü 0) indicates that the crossing has failed to secure in time. Upon encountering this situation, the procedure to fix the level crossing is as follows:

- If PZB or Indusi are activated, acknowledge the Bü 0 signal by pressing Wachsam on the PZB/Indusi command panel.
- Slow down the train and stop the train ahead of the level crossing.
- Exit the cab or use the external camera and move towards the activation panel which is found next to every barrier level crossing.

- Activate this panel. The closing procedure should start.
- Once the crossing is fully secured, normal running may be resumed.

MODULES

TRAINING MODULE

3 Training Modules are available with the route:

- Introduction to the Niddertalbahn
- DB BR 628 introduction (Training Center)
- DB BR 365 introduction (Training Center)

SCENARIOS

5 scenarios are included with the route:

- Hugging trees: DB BR 628, 30 minutes, 3/5 difficulty
- Prep work: DB BR 628, 30 minutes, 3/5 difficult
- Manual labour: DB BR 628, 1 hour and 5 minutes, 2/5 difficulty
- Glimpse into the future: DB BR 365, 30 minutes, 5/5 difficulty
- 373 Sugar Beets: DB BR 365, 1 hour and 10 minutes, 4/5 difficulty

TIMETABLE MODE

The timetable follows the exact real-life timetable from 1992. It includes 62 services with 54 services using the DB BR 628 and 8 with the DB BR 365.

With the DB BR 628, the pattern of services changes throughout the day. Between 06:00 and 12:00, more trains run in the direction of Bad Vilbel (and Frankfurt). During this time, a 4-car formation runs with another 2-car formation on the line.

Between 16:00 and 20:00, more trains return from Frankfurt and run in the direction of Stockheim, with a 4 and 2-car formation on the line.

In between peak times, freight trains run in addition to 3 trains made of solely 2-car formation of DB BR 628s. Freight services mostly consist of coupling to freight carriages and hauling them until Bad Vilbel.

If you own the Linke Rheinstrecke route, the DB BR 103 and 110 will appear as AI only passenger services and run through or stop at Heldenbergen-Windecken and Bad Vilbel.

Note: Preparation services are split into two parts. If done one after the other without unloading the game: please wait until the next service starts and the signal will clear. Waiting times can be as high as 5 minutes and might not be displayed by the in-game's UI.

COLLECTIBLES

The Niddertalbahn for Train Sim World 3 features 4 types of collectibles to find with 10 of each type:

- Milk bottles (which have a special effect when collected!)
- Station posters
- Statue
- Crossing signs to fix

EXTRAS

- The signs at the end of freight trains can be changed. The current one, also used back in 1992, is called Zg2 and is equipped by default. It can be changed to an older Zg102 by walking to the signs and equipping/unequipping them. The Zg102 can also be equipped on the DB RB 365.

- It is possible to change the brake settings of the freight wagons. They can be found all together on one side of each carriage:

For loaded freight carriages, which is the case of all of the services of this route, the brake timing realistically needs to be set to "Goods", as demonstrated here:

- It is possible to lower the lamp of the mechanical signals with a handle found at the bottom of each signal. This does not serve an actual in-game function but is a demonstration of how a mechanical signal lamp is maintained. Those lamps are essential as they are the only way to see the signal at night.

CREDITS

Basically Everything:

- Lukas Klimczyk
- Edward Fisk

Scenery and 3D Modelling:

- TrailDogRunner1909
- Daniel Barnett

Loco & Wagon:

- Maik Goltz
- Michael Früchtl
- Eric Wegener

Timetable:

- Joe Burgess

Special Thanks:

- Edds
- Daisy
- Dan #2
- Will Marshall
- Beta Team

Manual authors:

- Lukas Klimczyk
- Raphaël Beïs

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