

EN

2020

TSW

TRAIN SIM WORLD®

RE6 Düsseldorf Hbf

425 600-6

DB

dovetail
GAMES



HAUPTSTRECKE RHEIN-RUHR



dovetail
GAMES

©2020 Dovetail Games, a trading name of RailSimulator.com Limited ("DTG"). "Dovetail Games", "Train Sim World" and "SimuGraph" are trademarks or registered trademarks of DTG. Unreal® Engine, ©1998-2020, Epic Games, Inc. All rights reserved. Unreal® is a registered trademark of Epic Games. Portions of this software utilise SpeedTree® technology (©2014 Interactive Data Visualization, Inc.). SpeedTree® is a registered trademark of Interactive Data Visualization, Inc. All rights reserved. The DB logo and the S-Bahn logo are registered trademarks of Deutsche Bahn AG. All other copyrights or trademarks are the property of their respective owners and are used here with permission. Unauthorised copying, adaptation, rental, re-sale, arcade use, charging for use, broadcast, cable transmission, public performance, distribution or extraction of the product or any trademark or copyright work that forms part of this product is prohibited. Developed and published by DTG.



CONTENTS

- 3 INTRODUCING HAUPTSTRECKE RHEIN-RUHR**
Welcome to the new route for Train Sim World.
- 4 ROUTE MAP & POINTS OF INTEREST**
Familiarise yourself with the route and find your way around.
- 5 GAME MODES**
Learn how to read the AZ720, essential in-cab information on the PZB system.
- 6 INTRODUCING THE DB BR 425 & DB BR 422 EMU**
Get familiar with the equipment you'll be driving.
- 7 THE DRIVING CAB**
Familiarise yourself with the driver's environment and the driving controls.
- 9 GETTING STARTED**
Learn how to get going in the included trains.
- 10 SETTING DESTINATIONS**
Learn how to let passengers know where you're going.
- 11 APPROACHING STATIONS & DOOR CONTROLS**
Learn how to stop at stations and get passengers on-board.
- 12 EMERGENCY BRAKE RECOVERY**
Learn how to get going again when the unexpected happens.
- 13 SIFA**
Learn about the vigilance system and how to use it.
- 14 PZB**
Learn about in-cab signalling and how to use it.
- 19 PZB MODE QUICK REFERENCE CHART**
An at-a-glance chart to quickly determine the appropriate speed under specific circumstances.
- 20 GERMAN SIGNALLING GUIDE**
Learn about the various signalling systems employed on the German rail network.
- 28 DEFAULT ENGLISH KEYBOARD CONTROLS**
A list of all valid controls for the English keyboard.
- 29 USING THE CAMERAS**
Change your point of view with cameras.
- 30 DOVETAIL LIVE**
The online destination for players.
- 31 TROUBLESHOOTING & HOW TO GET SUPPORT**
What to do when you need help.
- 32 CREDITS & ACKNOWLEDGEMENTS**
Special thanks.

3 INTRODUCING HAUPTSTRECKE RHEIN-RUHR



Experience bustling regional and commuter operations from aboard modern and well-known traction with Train Sim World: Hauptstrecke Rhein-Ruhr. Drive your trains over a rail network represented how it is today, complete with both routes between Essen and Bochum that are populated by different trains and services. Reproduced in exquisite detail, every station, signal and milepost feel so real you could almost reach out and touch them.

It's your job to carry passengers along Deutsche Bahn's ever-busy Rhein-Ruhr Main Line. Manage the complexities of keeping to the timetable, picking up and dropping off passengers in a timely yet safe and comfortable manner. Whether you're driving, riding along or watching the action, experience all the sights and sounds of a modern commuter line.

Take control of a duo of DB multiple units, the hard-working DB BR 425 which is used on regional services by the dozen throughout Germany; and the DB BR 422 which works exclusively for the S-Bahn Rhein-Ruhr, together the two work passenger duties along the route.

ROUTE MAP & POINTS OF INTEREST





JOURNEYS

Blends together more than 24 hours of sequential gameplay. Start a Journey and enjoy hundreds of scenarios, timetabled services, and jobs to complete around the railway.

TRAINING

Training modules give you the knowledge you need to get the most from your locomotives and trains via interactive lessons that teach you key concepts. If you're new to Train Sim World, we recommend you start here to learn the fundamentals.

SCENARIOS

Scenarios are objective-based activities which provide unique experiences. Move coaches around, drive passenger and freight services and experience some of the operations that occur on the route.

TIMETABLES

These provide a host of activities throughout an entire 24-hour time period; Timetable Mode is a new way to play. There's always something to do with a large variety of services to take control of or ride along with. Sit back and enjoy the action and capture amazing screenshots, hop on or off and ride along with the various services as they go about their duties or take control and carry out the duties yourself. Featuring many individual services, you'll always find something going on.

INTRODUCING THE DB BR 425 & DB BR 422 EMU

6

Built between 2007 and 2010, the DB BR 422 was ordered by the dozen to take charge of commuter services on the Rhein-Ruhr. A consortium of Alstom and Bombardier designed the unit, and others like it, to fulfil similar roles on urban networks throughout Germany.

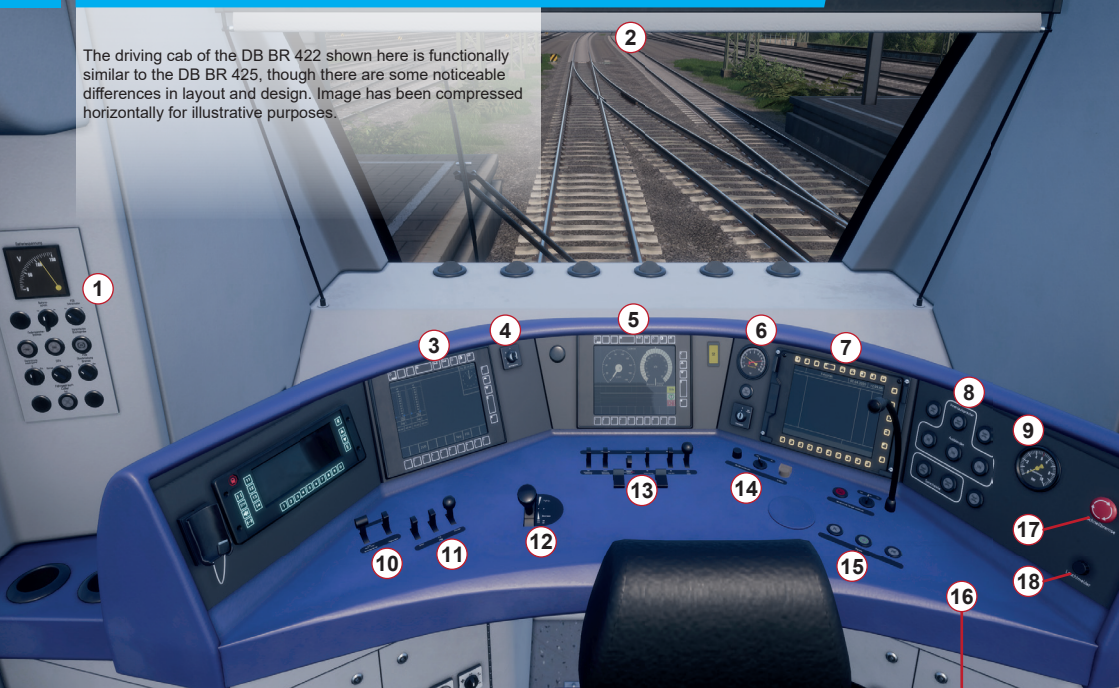
Prior to the 422's introduction, Bombardier worked with Siemens to create a unit designed for regional express duties known as the DB BR 425. High-powered and light-weight, the BR 425 has been put to use across much of DB's electrified commuter network since the late 1990s.

Decked out with modern controls, capable of rapid speeds with efficient and comfortable running thanks to their shared Jacobs bogies, all while featuring a spacious and accessible interior, the DB BR 422 and 425s are perfectly suited to high density passenger operations between Duisburg and Bochum.



7 THE DRIVING CAB

The driving cab of the DB BR 422 shown here is functionally similar to the DB BR 425, though there are some noticeable differences in layout and design. Image has been compressed horizontally for illustrative purposes.



- 1** Isolation Switch Panel used to activate Battery, PZB and SIFA systems.
- 2** Driver's Sunblind.
- 3** Left MFD displays the current traction status and power supply, and is also used to set the destination display.
- 4** Master Key and Reverser is used to set the direction of travel.
- 5** Centre MFD displays the applied forces, current speed and status of the SIFA and PZB systems.
- 6** Air Brake Gauge displays current Master Reservoir (red needle) and Brake Cylinder (yellow needle) pressures. The small button below the gauge is used to uncouple from the front of the unit.
- 7** Right MFD typically displays the current driver schedule and is commonly referred to as Ebula (non-functional).
- 8** Announcement Speaker selection panel defines which unit the driver's announcement is sent.
- 9** Main Brake Pipe pressure shows the amount of air in the brake pipes throughout the train.
- 10** Left: Raise/Lower Pantograph.
Right: Open/Close Master Circuit Breaker.
- 11** PZB Driver Interaction Switches. Left: Override, Centre: Release, Right: Acknowledge.
- 12** Master Controller Lever. Push forward to apply power, pull backward to apply brake.
- 13** From Left to Right: Saloon Lighting (passenger compartment), Cab Lighting, Exterior Lighting (Headlights, Marker & Tails), Window Heating (non-functional), Horn and Sanding On/Off controls.
- 14** Desk Spot Light and associated dimmer control.
- 15** Passenger Saloon Door Control. The two outer buttons control the left and right doors respectively. The centre button closes all doors irrespective of which side is open.
- 16** Windscreen wiper controls (below desk).
- 17** Emergency Brake Slam Switch.
- 18** Instrument Lighting Dimmer Control.

Getting going in either the DB BR 422 or DB BR 425 is relatively simple and only involves a few steps as shown below:

1. Enter the driving cab.
2. Engage the Battery by holding the switch in the On position for 5 seconds.
3. Move the Reverser to the Neutral position to activate the desk.
4. Wait for the Main Reservoir to reach a minimum of 4.8 Bar.
5. Raise the Pantograph.
6. Close the Master Circuit Breaker.
7. Wait for the Brake Pipe pressure to rise.
8. Set the Reverser to Forward.
9. Move the Master Controller Lever forward to apply power.
10. Speed can be managed by careful control of the Master Controller Lever.

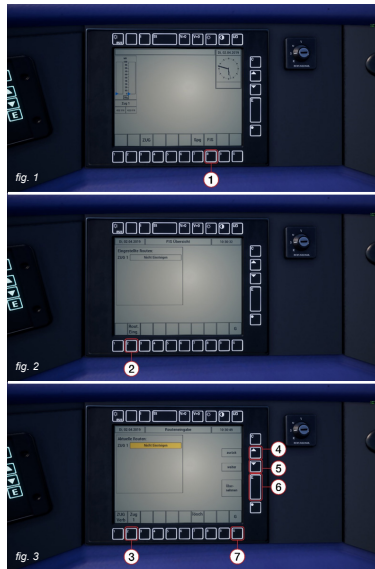
If you also wish to drive with SIFA and PZB enabled, follow these additional steps:

1. Before moving the Reverser to Forward, enable SIFA and PZB from the left-hand Isolation Panel.
2. Note that once you start moving, PZB will engage its "Start Program". Refer to the Reference Section for more detailed information relating to SIFA and PZB.

Unlike other Deutsche Bahn trains, the DB BR 422 and DB BR 425 are not equipped with FT95 Units for setting the exterior destination display. The destination is instead set from the left-hand MFD.

To set a destination, follow the steps below:

1. Look at the left-hand MFD and press the '8' button (fig. 1) from the numbered buttons along the bottom of the display which is labelled 'FIS'.
2. The display will present a representation of the units in the consist and the destinations that are currently set, labelled 'ZUG 1', 'ZUG 2', etc. Press the '2' button (fig. 2) which is labelled 'Rout. Eing.' to set the destination.
3. From the next screen, press the '2' button again (fig. 3), labelled 'Zug 1' ('Zug' is German for Train). This correlates to 'ZUG 1' in the upper list and once you've pressed the button, the display will update and turn the entry yellow (see opposite). If you had two BR 422/425 units coupled together, they would be listed separately as 'Zug 1' and 'Zug 2'. The individual trains can then be selected by pressing the respective buttons along the bottom of the display or can be selected as a complete set by using the 'ZUG Verb' button.
4. Once you've made the selection, and the item has turned yellow, you can now set the destination by using the up and down arrows. Pressing the Enter button will set your destination and the setting will be updated throughout the displays on the exterior of the consist.



1. On approach to the station, you should always manage your speed appropriately. The timing of the brake applications will need to be timed properly to ensure a smooth and stable stop. As such, you will need to think and act well ahead. Begin approximately 1.6 to 2.4 km (1 to 1.5 miles) from the station by applying a 1 Bar reduction with the Master Controller Lever. Note this 'braking point' distance is influenced by numerous factors, such as the current speed of the train, the weight of the consist, the current grade and the conditions of the rails – it will be necessary for you to adjust your braking point accordingly.
2. The aim is to apply sufficient brake pressure once and only adjust it when you reach the start of the platform. As a general rule, you should always aim to be at no more than 40 km/h (24 mph) depending on the platform length. For short platforms, you should aim to be at no more than 24 km/h (14 mph) when you reach the start of the platform.
3. Move the Master Controller Lever to increase the brake pressure to around 2 Bar.
4. As your speed reduces below 10 km/h (6 mph), move the Master Controller Lever to 1 Bar to ensure the stop is smooth and does not introduce a sudden stop as the brake pads bind. Friction increases the slower your speed and easing off on the brake application will limit this.
5. Once the train has reached a full stop, move the Master Controller Lever to 3 Bar to secure the train.

DOOR CONTROLS

Passenger entry and exit doors on each side can be operated independently i.e. either left side or right side. A simple method of control has been implemented for the included trains. Simply press the **[TAB]** key to call up an on-screen menu and select which side of the train you wish to lock/unlock the doors.

You can also operate the doors from within the driving cab of the DB BR 422 and DB BR 425. Simply press the appropriate button for the side of the train you wish the doors to open, e.g. left button to open the doors on the left side of the train. To close the doors, press the centre button. See the section related to the Driving Cab for more information.

At some point in your Train Sim World driving career, you will encounter an emergency brake application. Whatever the reason, here are some simple steps to get you back on your way quickly:

1. You should always begin by understanding why you received an emergency brake application. Was it an intervention by an on-board safety system? Was it because you tripped a trackside mechanism? Or something else? Understanding the exact cause can significantly help you avoid similar situations in the future.
2. If you can hear an alarm, and you are still moving, you must wait for the train to come to a complete stop before you can acknowledge or cancel the alarm.
3. Acknowledge/Cancel the alarm either by pressing the **[Q]** key or, in the case of a PZB alert, the **[END]** key. All audible alarms should have been silenced. If you can still hear alarms, please refer to the appropriate section about on-board safety or signalling systems.
4. Once at a complete stop, and all alarms have been acknowledged or cancelled, you should always 'reset' your driving controls. Resetting simply means to restore all the driving controls to their default position, neither applying power or braking (except where brake needs to be applied to prevent you from free-rolling) and the direction control or Reverser is set to its neutral or off state.
5. Once all the driving controls have been reset, move the Reverser to Forward.
6. If you have the Master Controller Lever in a brake setting, move it into a low throttle position to begin applying power. Note that the DB BR 422 and BR 425 EMUs require a power setting before the brakes will begin to release.
7. Once the brakes have fully released, the train should begin to move.

13 SIFA

SIFA is a Driver Vigilance Device and its purpose is to simply ensure that the driver is constantly aware of the train and is able to react and respond to the train in a timely manner.

ENABLING OR DISABLING SIFA

The default state of the SIFA system is disabled, to enable the system you must be seated in the appropriate driving seat. Press **[Shift] + [Numpad Enter]** to enable the system. Repeat the key press to disable the system again.

USING SIFA

Once SIFA has been enabled, and the train is in motion, you will hear an audible alarm every 30 seconds. Prior to the audible alert, the white SIFA indicator lamp on the desk will be lit. If you do not respond by pressing the **[Q]** key, after 2.5 seconds it will sound an alarm. Once the alarm sounds, you will have a further 2.5 seconds to respond before the train will apply a full-service application of the brakes.

If you respond after the brakes have begun to apply, the brakes will begin to release but be mindful that it may take some time for them to fully release and you can begin to re-apply power.

OTHER CONTROLS

SIFA can also be enabled/disabled via the in-cab switch. See opposite for the location of the in-cab switch.



The PZB system is an advanced on-board cab signalling system used to enforce reductions of speed on approach to various situations on the track, whether that is adverse signals, changes in speed or other things that require protection. It works via three buttons on the cab desk (Acknowledge, Free and Override) and either via visual displays or lamp indicators on the desk or display panels, depending on the locomotive / unit.

ENABLING OR DISABLING PZB

The default state of the PZB system is disabled. Before you enable the system, you must first check to ensure you are in the correct mode for your train. PZB Mode O is typically used for passenger trains with Modes M and U reserved for freight services. The mode selection can only be changed from the in-cab control. Locate the switch and select the appropriate mode. Note that some trains do not have any control to change the PZB Mode, such as EMUs. These types of trains are permanently locked in the most appropriate PZB Operating Mode for that class of train.

To enable the system you must be seated in the appropriate driving seat. Press **[Ctrl] + [Numpad Enter]** to enable the system. Repeat the key press to disable the system again.

Note that PZB operates exclusively in km/h units and you should ensure you set Metric units in the game settings when intending to drive with PZB enabled. PZB imperial conversions are not provided.

OTHER CONTROLS

PZB can also be enabled/disabled via an in-cab switch. See opposite for the location of the in-cab switch.

CALCULATING PZB MODE

The exact method employed to determine the correct PZB Mode is by mathematical calculation. Take the total Brake Weight (in tons) and divide by the total mass (in tons) of the consist, then multiply the result by 100.

This will give you the brake percentage or BRH. Brake Weights can typically be found on the side of each loco and wagon.

The formula for this equation looks like:

$$\text{Brake Percentage (BRH)} = (\text{Brake Weight} \div \text{Mass}) \times 100$$

If the result is less than 65, set Mode U

If the result is between 65 and 111, set Mode M

If the result is greater than 111, set Mode O



15 USING PZB

PZB can be daunting when you first get started, but it is extremely rewarding and fun once you get the hang of it. Included in this manual is a PZB Quick Reference Chart, which will be handy to have by your side (perhaps printed, or on a mobile device while you drive) until the system begins to become second nature. Start by learning the signals and then enable PZB. It is recommended that you do not try to learn PZB and SIFA at the same time.

SETTING UP

Before you start, you should check to make sure you are in the correct PZB mode. Once you have visually verified the correct mode, enable the system.

STARTING OFF

Once PZB is enabled, and you start moving, it will switch to its Start Program, which you can see by the alternating 70/85 lights (or 70/55 for other modes) on the PZB section of the desk. Some locos also have a flashing indicator with a yellow text announcement “v-Überwachung 45 km/h”. The Head-Up Display will also replicate the alternating pattern. Whilst these are alternating you should adhere to the 1000 Hz Restricted speed shown on the PZB Modes Quick Reference Chart (most real drivers will adhere to 40 km/h to allow a 5 km/h margin of error). You can either let this expire naturally OR if you are sure you have green signals ahead, no speed restrictions and/or no signals at all in the next 550 meters then you can press the **[End]**

key or the PZB Free button on the desk to release from the Start Program early.

Once released from the Start Program you can drive according to the maximum permitted speed under the given PZB mode and/or the line speed, whichever is lower.

REACTING TO THE ROUTE

As you drive you will be faced with signals and speed restrictions, and it is important that you understand how you must react to these. As you get to (or near) these, devices next to the rails will send a pulse to the train and it's your job to predict this and react accordingly.

It is good practice not to run right up to your speed restrictions when PZB is monitoring, real drivers will generally run around 5 km/h under the PZB monitored limit to allow for any inconsistencies in speed measurement.

In our first example we are driving in PZB Mode O, and are faced with the signal shown on the left of the next page.

From a PZB perspective the most essential information here is that the distant is showing an Expect Slow aspect with an indicated 50 km/h speed at the next main signal. This signal requires PZB reaction to proceed.

After we have passed this signal, press the **[Delete]** key or the



PZB Acknowledge button on the desk, and the on-board PZB system should now show a yellow 1000 Hz indicator in the cab and on the HUD.

If you now refer to the PZB Modes Quick Reference Chart, you can see that we must now reduce our speed to 85 km/h within the next 23 seconds.

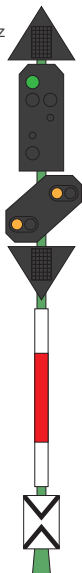
This is the only intervention PZB will have, it is now your responsibility to further reduce speed to meet the 50 km/h maximum permitted speed by the next main signal.

For the signal on the right, we are approaching a signal which has an Expect Stop distant aspect. This tells us crucially that the next main signal is a Stop aspect and we must not proceed past it.

After we have passed this signal, press the **[Delete]** key or the PZB Acknowledge button on the desk, and the on-board PZB system should now show a yellow 1000 Hz indicator in the cab and on the HUD.

If you now refer to the PZB Modes Quick Reference Chart, you can see that we must now reduce our speed to 85 km/h within the next 23 seconds.

Assuming the next signal remains at a Stop aspect, you must now prepare to meet the 500 Hz magnet on



the track. Again, referring to the chart, this requires that you are going no faster than 65 km/h at the exact moment you hit the 500 Hz magnet and then once you do, you have 153 meters in which to further reduce your speed to 45 km/h.

Once you go over the 500 Hz magnet you will see the red 500 Hz indicator appear on the desk and HUD – you do not need to acknowledge this, but you must obey the speed restrictions.

Once you have met the 500 Hz restrictions, your only task is to ensure that you now successfully stop before the red signal.

The examples on the previous page are not the only two times that you will need to use PZB, but they do form the most frequent situations that require PZB intervention.

Speed restrictions often also require a PZB acknowledgement, however the rules for this can be trickier to understand and remember for the new driver. The simplest rule and indeed one that is used by many real drivers on a day-to-day basis is simply to acknowledge any speed restriction showing less than 100 km/h limit. If the 1000 Hz indicator activates, make sure that you can respond with the appropriate reductions in speed according to the PZB Modes Quick Reference Chart.

RESTRICTED MONITORING

Whilst under 1000 Hz or 500 Hz monitoring, if you travel below 10 km/h for 15 seconds or more, or come to a complete stop, the PZB system will switch into Restrictive Monitoring. At this point the speed limits enforced are changed and you should use the Restrictive Monitoring speed tables from the PZB Modes Quick Reference Chart.

It is possible to release from Restricted Monitoring if neither of the 1000 Hz or 500 Hz indicators are lit and you are confident that there are no active 1000 Hz or 500 Hz magnets ahead within 550 metres, you can do this with the PZB Free or **[End]** key.

OVERSPEED

If in the normal course of driving you exceed the main PZB maximum permitted speed for the mode you are operating under (i.e. when not under any restrictions), the PZB system will apply a full-service application to bring you back within the limit.

This brake application will begin releasing as soon as the train is below the correct speed limit, however, as it is a full service application, it is likely the train will slow considerably before the brakes are fully released.

For example, if you are in PZB Mode O and exceed 165 km/h you will receive a warning indicator showing a "G" indicating you are exceeding the maximum permitted speed. After a few seconds, the brakes will apply and slow the train. Once the train is below 165 km/h, the brakes will begin releasing but you may be as low as 60 or 70 km/h before they have fully released.

HANDLING AN EMERGENCY BRAKE APPLICATION

Should you make an error whilst interacting with PZB, it may result in the train sounding alarms and applying emergency brakes. If this happens:

- Wait for the train to come to a complete stop.
- Press the **[End]** key or activate the PZB Free button to cancel the alarms.
- Apply the brake and move the throttle handle to zero.
- Release the brakes and continue as normal.

Note that you will likely now be in Restricted Monitoring with an appropriate speed restriction and will need to observe that and decide whether you are able to release safely. If not, continue under the restriction until it releases naturally.

Also, be aware of the cause of the braking, for example, if you are approaching a red light or a speed reduction you should act accordingly.

PZB QUICK REFERENCE

Starting	System starts in restrictive monitoring. Limit to 45 km/h. Can Release if there are no active 1000 Hz or 500 Hz magnets in the next 550 metres.
When to Acknowledge	On passing Expect Reduced Speed, Expect Stop or any speed reduction warning below 100 km/h. Press PZB Acknowledge.
When to Release	If 1000 Hz not lit, and no 1000 Hz or 500 Hz active magnets in next 550 metres.
When to Override	On permission to proceed through a Red / Stop signal, must be below 40 km/h. Press PZB Override.
After an Emergency Stop	Stop, Press PZB Free, Reset Brakes and Throttle, then proceed as normal.



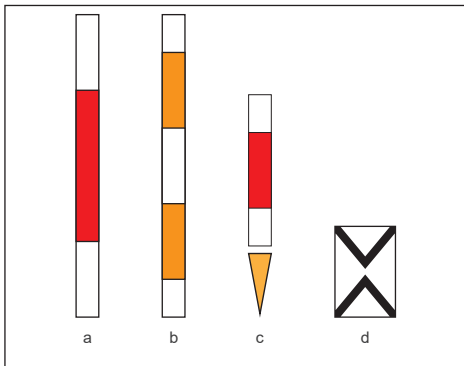
19 PZB MODE QUICK REFERENCE CHART

MODE O		MODE M		MODE U	
NORMAL		NORMAL		NORMAL	
Max	1000 Hz	Max	1000 Hz	Max	1000 Hz
165 km/h	85 km/h within 23 seconds	125 km/h	70 km/h within 29 seconds	105 km/h	55 km/h within 38 seconds
500 Hz Start	500 Hz Max	500 Hz Start	500 Hz Max	500 Hz Start	500 Hz Max
65 km/h	45 km/h within 153 m	50 km/h	35 km/h within 153 m	40 km/h	25 km/h within 153 m
RESTRICTED		RESTRICTED		RESTRICTED	
1000 Hz	500 Hz Start	1000 Hz	500 Hz Start	1000 Hz	500 Hz Start
45 km/h	45 km/h	45 km/h	25 km/h	45 km/h	25 km/h
500 Hz Max		500 Hz Max		500 Hz Max	
25 km/h		25 km/h		25 km/h	

SIGNAL POST PLATES

Plates placed below the signal inform the driver as to the nature of the information provided at this signal.

When reading the aspect of a signal, it is important to observe the presence of these plates at the same time as they will make it clearer what information is presented and therefore how you should react to it.



From the plates shown in the image to the left, the plates are identified as follows:

- a Identifies a main signal.
- b Identifies a main block signal. The differences between this and the plate above (a) are related to what the driver can do if they are unable to communicate with the signaller and for the purposes of Train Sim World should be simply regarded as a main signal.
- c The yellow arrow is used below a main signal plate (a) to indicate that this is a combined Ks signal with distant information as well as main signal information.
- d The Ne2 plate identifies that this is a distant signal only on Hp and Ks signals.

21 HP SIGNALLING OVERVIEW

Hp Signals are easy to interpret once you understand how they are structured. They are essentially a collection of signal heads and signs that are mounted on a single post and you can learn to understand each one and then build up the picture of the entire message you're seeing piece-by-piece.

At the left of the Hp Signalling Quick Reference there is an example signal post showing four of these components in one signal.

You may find other signal posts that do not have all of these - they may only have a Hp, or Hp plus Zs3, or Hp plus Vr, etc. The principles and the way you interpret them are the same except that if there are signal components not present then the signal is not telling you anything about those elements.

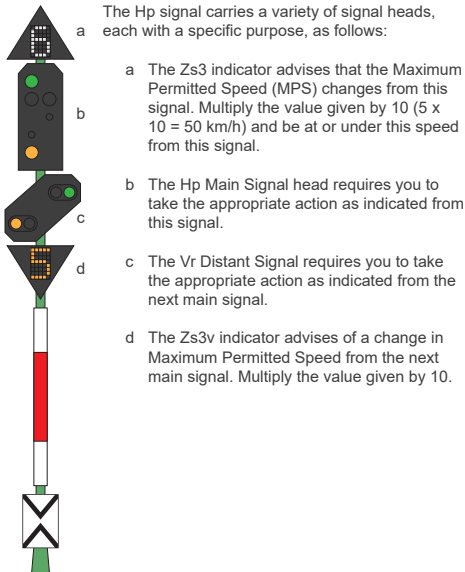
The white number at the top of the signal, known as a Zs3 indicator, tells you what the speed limit is from this signal. If it reads 6, the speed limit is 60 km/h (multiply the value shown by 10) and should be adhered to from this signal.

The main signal head, known as the Hp indicator, this is the aspect you should obey immediately, so if this signal is showing red then you cannot pass it without permission from the dispatcher. The signal head shown is displaying a slow aspect, which is paired with the white "6" in relation to a speed restriction in place from this signal.

Next, is the distant signal, also known as a Vr indicator. It will

either be in this style, or in a small rectangular 'compact' style. Its job is to give you information about the next signal, so it will never show you a red – but if it shows two yellow lamps then you know for sure you have a red coming up. In the example, it's warning that the next signal also has a speed restriction and is paired with the yellow number to indicate what the speed is from that signal - in this case 50 km/h (31 mph).

The yellow number known as a Zs3v, if present, indicates the speed restriction in place at the next signal. If it is not present but a yellow/green aspect is shown on the Vr indicator, then you should always assume you must not exceed 40 km/h (24 mph).



The Hp signal carries a variety of signal heads, each with a specific purpose, as follows:

- a The Zs3 indicator advises that the Maximum Permitted Speed (MPS) changes from this signal. Multiply the value given by 10 ($5 \times 10 = 50$ km/h) and be at or under this speed from this signal.
- b The Hp Main Signal head requires you to take the appropriate action as indicated from this signal.
- c The Vr Distant Signal requires you to take the appropriate action as indicated from the next main signal.
- d The Zs3v indicator advises of a change in Maximum Permitted Speed from the next main signal. Multiply the value given by 10.

DISTANT SIGNALS

Unlike a main signal, a distant signal provides information only and you are not required to take any specific action. However, typically, these types of signals provide appropriate braking distance for degraded aspects (those aspects that are worse than the current or last aspect received). You should, therefore, regard them as locations where you may need to begin braking.

There are some additional concerns to be aware of with distant signals.

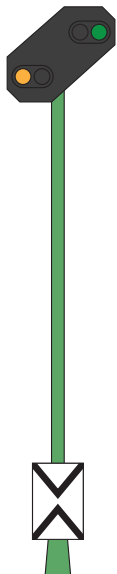
If a signal only contains the distant signal head, then there are still several different things it could be telling you – but you should be very aware of the differences as they will impact how you react to them.

If the distant signal has a white light, and the signal has no main aspect and no Ne2 board – the signal is a repeater and is advising you about the next distant signal. Repeaters are useful as they are often used when additional braking distance is required such as at the top of a downhill section.

If the distant signal has a white light and is on the same post with a main signal or there is an Ne2 board, this signal is a full distant and is warning you that the following main signal is closer than you would normally expect.

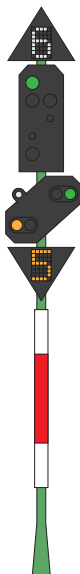
Some distant signal examples are shown on the next page.

23 HP SIGNALLING OVERVIEW



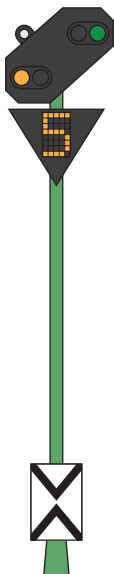
This is a standard distant signal. Note the presence of the so-called 'Ne2' board - a white board with two triangles pointing toward each other. This signal is telling you about the state of the next main signal.

If you have PZB enabled, you must acknowledge this signal.



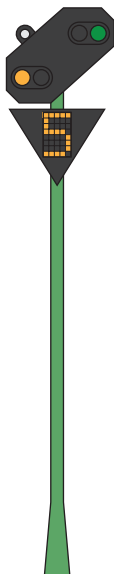
This is a variation on the example signal from the Quick Reference section. In this case, the distant works exactly the same except that the presence of the white light tells you that the next signal is closer than normal so you will need to react more promptly.

If you have PZB enabled, you must acknowledge this signal.



In this variation, we have a Vr head and Zs3v indicator, and it has a white light. The presence of the Ne2 board means this is an actual distant and the white light tells us that the following main signal is closer than it would be normally.

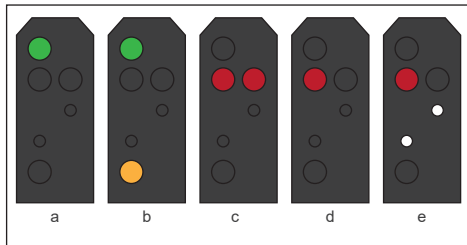
If you have PZB enabled, you must acknowledge this signal.



This variation is slightly different again, note that this time, there is no Ne2 board. This, combined with the white light, means that this is a repeater and is used to provide additional sight of the next distant signal.

If you have PZB enabled, you would not normally need to acknowledge, however, some repeaters do have PZB protection and you will need to acknowledge this signal if it is present.

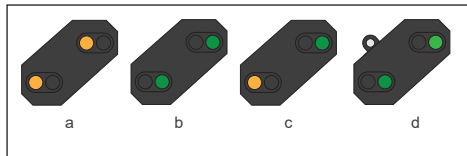
MAIN SIGNAL ASPECTS



The Hp main signal head is capable of displaying the above aspects:

- a Hp 1 **Clear**. Proceed at the maximum permitted speed.
- b HP 2 **Reduced Speed**. Proceed at 40 km/h (24 mph) unless otherwise indicated.
- c HP 0 **Stop**. Do not proceed beyond this signal, the line ahead may be occupied or obstructed.
- d HP 0 **Stop**.
- e HP 0 + Sh 1 **Shunting Permitted**. Proceed but do not exceed 25 km/h (15 mph) until an improved aspect is displayed.

DISTANT SIGNAL ASPECTS

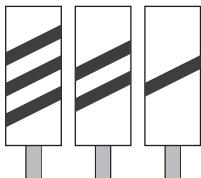


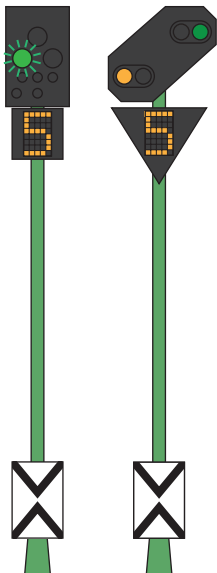
The distant signal head is capable of displaying the above aspects:

- a Vr 0 **Expect Stop**. The next main signal is displaying a Stop aspect.
- b Vr 1 **Expect Clear**. The next main signal is displaying a Clear aspect.
- c Vr 2 **Expect Reduced Speed**. The next main signal is displaying a Reduced Speed aspect.
- d The white light in the upper left indicates that the next signal is situated at a reduced distance.

APPROACH MARKERS

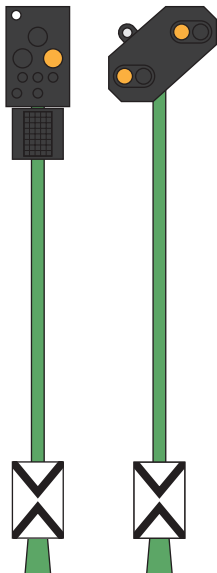
Hp signalling also uses approach markers for distant signals called Ne 3: 'Vorsignalbaken' and are placed before a distant signal. These are placed at 75 metre intervals in advance of the distant signal and essentially count down as you approach the signal.





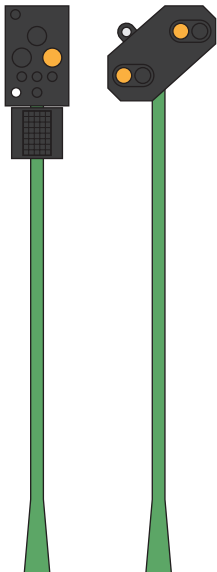
Ks Signals provide the same information as Hp signals but in a more condensed fashion. The Ks Signals aim to condense the information provided to a single head.

For example, the two signals shown on the left are providing the same information. Expect Reduced Speed at the next main signal. The presence of the Ne2 board on the Ks signal means this is strictly being used as a distant.



The signals shown to the left are also identical in the information provided. In this case, the white light combined with the Ne2 tells us that the main signal following this Expect Stop aspect is closer than normal, and we'll need to brake accordingly.

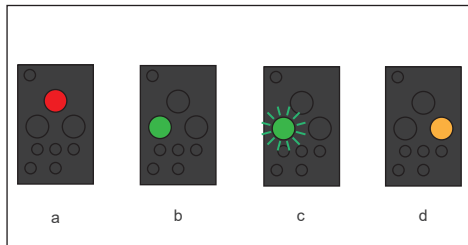
27 KS SIGNALLING OVERVIEW



Compare these two examples with the ones on the previous page and note the positioning of the white light on the Ks signal on the left.

These signals are both distant repeaters (note the lack of Ne2 board), but also observe that the white light is now in the bottom left of the Ks signal. The white light in the lower left of the signal essentially advises that this signal is a repeater.

SIGNAL ASPECTS



Note: These types of signal provide only distant information if a yellow triangle post plate is present.

Keyboard			Keyboard		
Name	Increase / Press	Decrease	Name	Increase / Press	Decrease
Throttle	A	D	Reverser	W	S
Headlights	H	Shift + H	Wipers	V	Shift + V
High Horn	Space		Low Horn	N	
Master Switch	Ctrl + W		Cab Light	L	
Sander	X		Handbrake	\	
Emergency Brake	Backspace		SIFA Reset	Q	
Toggle SIFA	Shift + Numpad Enter		Toggle PZB	Ctrl + Numpad Enter	
PZB Acknowledge	Page Down		PZB Release / Free	End	
PZB Override	Delete		Flashlight (walking)	L	

Train Sim World includes several cameras for you to control, here's an outline of those cameras and some examples of use:

1

First Person Camera or Cab Camera

Use this camera to operate your locomotive, flip switches and handle all of your cab controls. You can also click the right mouse button to activate the mouse pointer. Click the right mouse button again to return to camera control.

2

Boom Camera

Your camera extends outward on an invisible pole, you can rotate it around your focused vehicle. Use Ctrl + left or right cursor keys to switch between vehicles or press the 2-key again to switch between the front and rear of your consist.

3

Floating Camera

A camera that allows you to freely look in all directions whilst locked to a vehicle. This camera is useful for coupling and changing switches. Press it once to view the front of your consist and again to view the rear. Freely move your view using the cursor keys.

8

Free Camera

Freely move around without limits using this camera. Use this camera to navigate your way around a busy yard, change switches or position it to get the perfect screenshot.

When in any of the camera modes, you can use the cursor keys to move the camera whilst using the mouse to pan and pitch the view:



Moves the camera forward.



Moves the camera backward.



Moves the camera to the left.



Moves the camera to the right.

The Dovetail Forums are your one-stop destination for everything Train Simulator and Train Sim World related. We have an ever growing and vibrant community of train enthusiasts from all over the world, ranging from experienced railroad veterans to new players getting into the world of train simulation. So, if you haven't already, why not sign up for an account today and join our community – we'd love to have you on board!

See more at: <https://forums.dovetailgames.com>

Dovetail Live is an online destination which enables players to interact with Dovetail's products and each other in an environment tailored specifically to fans of simulation entertainment. Dovetail Live will evolve to become central to Train Sim World®, enriching the player experience in every way from offering rewards, building a community of likeminded players and helping every player find the right content to create their own perfect personal experience.

Signing up for Dovetail Live is completely voluntary. However, users that do sign up for it will receive exclusive benefits in the future.

See more at: <https://live.dovetailgames.com>

I have a problem downloading the Steam client, how do I contact them?

You can contact Steam Support by opening a customer service ticket at <https://support.steampowered.com>. You will need to create a unique support account to submit a ticket (your Steam account will not work on this page) and this will enable you to track and respond to any tickets you open with Steam.

How do I install any secondary programs that the game may need?

Train Sim World requires certain secondary programs to operate properly. These are standard programs that most up-to-date computers already have installed on them, such as DirectX. These programs can be found at the following location: Local Disk (C:) > Program Files (x86) > Steam > SteamApps > common > TSW > _CommonRedist

How do I change the language of Train Sim World?

This is an easy process and will allow you to play Train Sim World in English, French, German, Spanish, Russian and Simplified Chinese. To change the language of Train Sim World, double-click on the Steam icon on your PC desktop, left click on 'Library', right click on 'Train Sim World', left click on 'Properties', and finally left click on the Language tab and select your preferred language.

How do I reset my display screen size settings?

It is possible to change the display screen size settings for Train Sim World from within the game. Changing display screen size settings is done from the Settings menu in the Display tab.

For any questions not covered here, visit our knowledgebase at <https://dovetailgames.kayako.com>

We would like to take a moment to express our gratitude to the following organisations and individuals who helped us to deliver this product:

Deutsche Bahn for their kind permission to represent their iconic brand and trains in Train Sim World.

Linus Follert for providing key audio samples essential to bringing the DB BR 425 to life.

Maik Goltz for his kind assistance and outstanding expertise in making the DB BR 425 sound incredible.

