DB BR111 Add-on

1 Information

1.1 DB Class 111

The Class 111 of the Deutsche Bundesbahn is a four axle AC electro locomotive mainly used for passenger transportations. 227 machines were built and delivered between 1974 and 1984. It is covering an application area of commuter and other suburban line services. Some of them were temporary used for intercity services.

The locomotive has 2 bogies with 2 axles each (Bo'Bo'). Every axle has its own engine, which is controlled by a high performance thyristor throttling with 28 notches. It has a power of 3700kW and a top speed of 160km/h (99mph).

1.2 Double-decker coaches

The double-decker coaches DBz, DAbz and the control car of the 3rd generation DBbzf were built and delivered between 1993 and 1997 to the DB by the Deutsche Wagonbau AG (DWA), formerly known as Wagonbau Goerlitz GmbH and is now part of Bombardier Transportation.

The control car is fitted with an standardized cab which is nearly identical except in colouration to the cab of the Class 111 itself. All coaches have 2 bogies with 2 axles each and have an admitted top speed of 140km/h (87 mph). The control car is fitted with a ZWS to remote control the pushing Class 111 at the end of the train.

1.3 Technical data for the BR111

Manufacturer:	LBB Henschel	**Years of manufacture**:	1970 - 1982
Type:	electric	**Wheel arrangement**:	Bo-Bo
Length total:	20.82m	**Weight total**:	122t
max Power:	3700kW	**Top speed**:	160 km/h

2 The locomotive

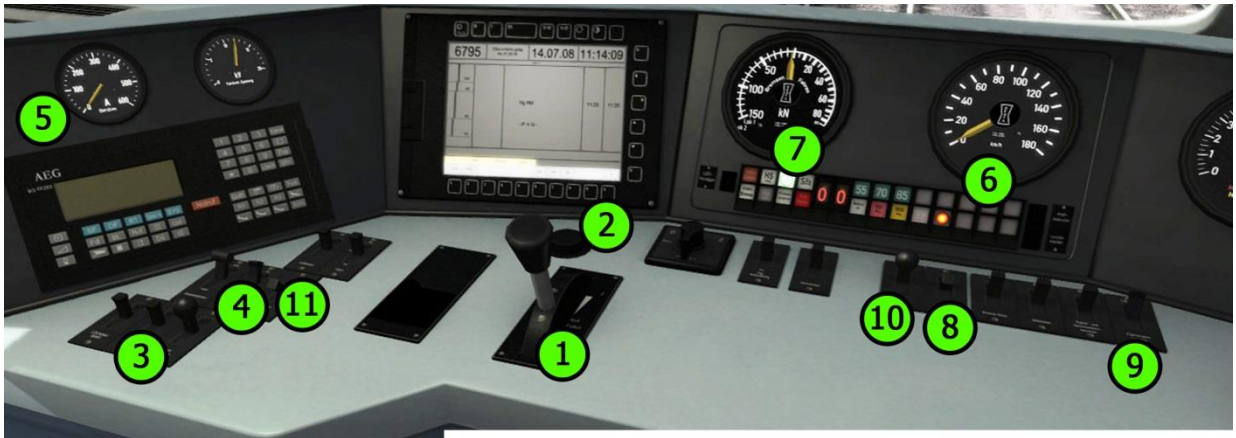
2.1 DB class 111 locomotive and DBbzf control car

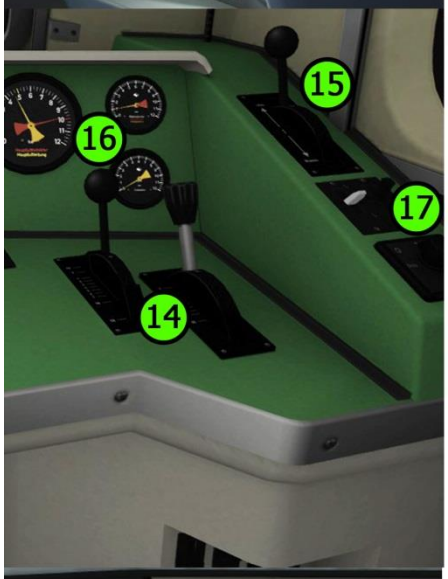
DB Class 111 Traffic Red - DBbzf control car Mint Turquoise

DB Class 111 Orient Red - DBbzf control car Traffic Red

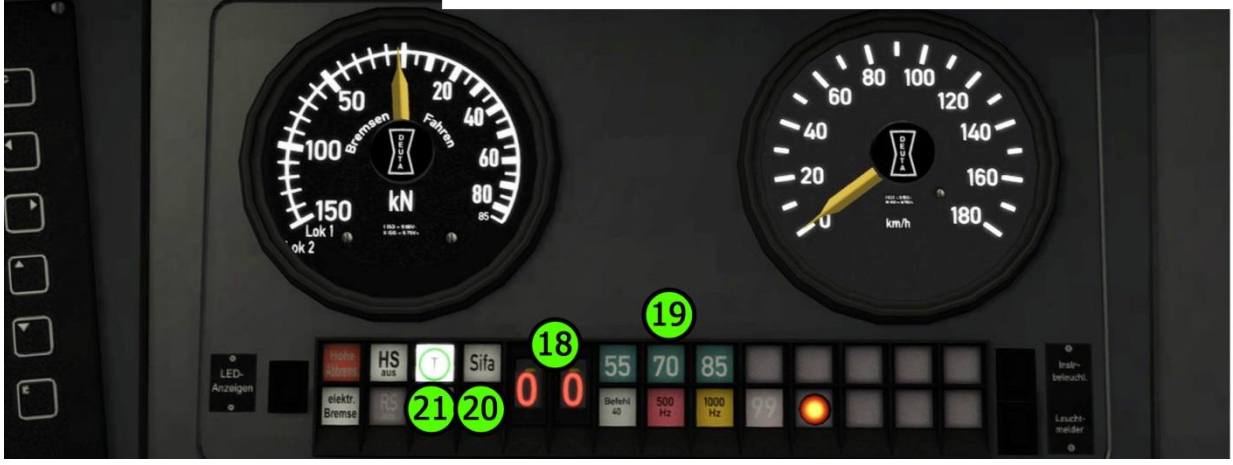
DB Class 111 Traffic Red

3 The cab and the controls





1 - Regulator
2 - Reverser
3 - PZB trio
4 - Pantograph and Powerswitch
5 - Ammeter
6 - Speedometer
7 - Accelerometer
8 - Headlights
9 - Cablight/Desklight
10 - Sander
11 - Wiper (DBbzf)
12 - Wiper (BR111)
14 - Trainbrake / Dynamic brake
15 - Engine brake
16 - Brake pressures
17 - Horn
18 - Notch display
19 - PZB lamps
20 - SIFA lamp
21 - Doors lamp



3.1 Regulator

The regulator is a simple lever. With it you are able to choose the power you want and the lokomotive will then try to achieve the requested power. The Increasement of the power is depending by several environmental conditions like acceleration, wheel slipping, total mass of your consist and speed. This model works very similar to the original which has a so called Z-control.

This regulator has a forced setting at the zero position and a protection against increasement of power. If you have chosen a given power level and you are about to use one of the brakes, the regulator will immidiately be blocked and the power will be cutted off. To increase the power again you will have to release all brake systems again, the doors have to be closed and the regulator must be positioned one time to the zero notch. After that you are able to choose power again.

Please keep in mind that increasing and decreasing the power is very slowly. Please watch the notch display. The numbers in this display are counting upwards or downwards and indicate the actual power from 00 to 28. If the notch display is showing a 00 the power is completely deactivated. Pay attention to the time the notch display will need to decrease the power levels, if you are about to brake. For maximum realism you should always brake your train only if the notch display has finished counting to 00.

3.2 Brakes

This locomotive has 3 brake systems:

- Locomotive brake (direct brake)
- Train brake (automatic brake)
- dynamic brake (electric resistor brake)

The **locomotive break** influences only the locomotive and is released at game start. It is only used when driving as a single engine without any wagons or to prevent moving while parking. You can use this type of brake on slopes until the engine has enough power to move your train without rolling backwards. At this point of time you should release the locomotive brake immidiately. During a normal start you should always release this brake before increasing power.

The **train brake** is based on a multi-releasing Knorr Einheitsbremse with several notches at the brake lever. It is easy to adjust and the brake power can be modified while braking. Please use it accordingly to the mass of your consist. Before increasing power the train brake has to be completly released.

The **dynamic brake** operates every 4 electric engines of the locomotive. If both levers of the train brake and the dynamic brake are in release position, both brake types will then be linked together. To unlink both brakes you will have to use the dynamic brake seperatly.

3.3 Wheel slip and sanding

This locomotive is fitted with a wheel slip protection. But if your consist is very heavy and the tractive force is very high the wheels will nevertheless start to slip. In this situation the locomotive will not increase the power anymore. With the use of the sander box you might be able to get a better friction between the wheels and the tracks. Press <X> on your keyboard or the appropriate symbol on your HUD or on your gamepad to use the sanding

function. Switch of the sander again if you don't use it anymore. Pay attention to the other locomotives if your are driving a multiple unit train, because the other locomotives might have a wheel slip of their own.

3.4 SIFA („Sicherheitsfahrschalter")

The DB Class 111 is fitted with a *dead man's vigilance device* called SIFA. You will have to acknowledge the SIFA once every 30 seconds by pressing <Q>. If you forget to operate this function, the SIFA warning lamp will light up on the cab control panel. You now have 4 seconds left to operate the SIFA and 2 additional seconds with an alarm sound. If you still don't acknowledge the SIFA you will then get an automatic train stop! Operating the SIFA then will interrupt this automatic brake procedure, but you will have to switch the regulator to the zero notch first, before you are able to increase power again.

The SIFA can be enabled and disabled with the hotkey <SHIFT+7>.

3.5 PZB (Train protection system)

This model is equipped with a simulation of the PZB90 V1.6, which is still in development. Nevertheless the here implemented PZB is nearly complete and functioning. Only the implementation of brake curves are missing, so the driver has to observe the given speed limits by himself.

To enable/disable the PZB use the hotkey <SHIFT+8>.
Change the train mode between U, M and O with the hotkey <CTRL+8>.

Please keep in mind that switching the PZB on or off or changing the train mode will cause a self test of the PZB. The PZB can only be enabled during a full stop.

The following hotkeys are used for the PZB:

<Del>	= PZB Befehl40
<End>	= PZB Frei
<Page down>	= PZB Wachsam

Because of the complexity of the PZB, we regret that we can't provide you here with a detailled explanation of the complete functionality of this system.

For further information to the PZB system please visit:
http://www.sh1.org/eisenbahn/rindusi.htm

3.6 Door interlock system

This model is equipped with a door closing message. If the doors were opened, the lightened T will be switched off in the cab control panel and a sound will occure. If all doors are about to close again you will hear a short sound every second until all doors of all coaches are fully closed. While doors are open you are not able to start moving your train. This function is only available with the included double-decker coaches.

3.8 Additional hotkeys / Gamepad / cab controls

V -- Wipers on/off	NUM -/+ -- train brake (additional keys)
L -- Cablight	X -- Sander
SHIFT+8 -- PZB on/off	CTRL+8 -- PZB mode change (O/M/U)
SHIFT+7 -- SIFA on/off	Q -- SIFA Reset
Del - End - Page down PZB Cmd 40 - PZB Free - PZB Acknowlege	Num Enter -- PZB Acknowlege (additional key)
Space -- Horn	B -- Horn 2
0 and SHIFT+0 -- Destination sign change	

4 Scenarios

1. BR 111 - Celle to Hannover , 30 mins, medium

Midday commuter from Celle to Hannover.

2. BR 111 - Lueneburg to Celle, 40 mins, medium

Drive an commuter to Celle through a stormy night.

3. BR 111 - Night Service, 20 mins, medium

Drive a short service from Hannover airport to Hannover Hbf through the night.

4. BR 111 - RE Hannover to Celle, 35 mins, medium

RE from Hannover to Celle.

5. RE to Lueneburg, 20 mins, medium

A short run between Hamburg and Lueneburg

6. BR 111 - S Bahn to the Airport, 20 mins, medium

Commuter service with the BR 111 to Hannover Airport.

5 Credits

A special thanks to Andreas Czudai for scenario creation, and the team of RSC.