TrainTeamBerlin

Typ	Railworks 3 - AddOn
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1. Preamble

Dear consumer,

we thank you for your interest in our AddOn „Railworks Class 143 PlusPack". The present AddOn is an eminently special implementation.

After the class 101 we improved this classic locomotive which is in deployed since 1990 for the commuter service. This way we are going to create a felicitous cadre of rolling stock. But it's a good way to demonstrate several new features in praxis too.

The class 143 has a completely new soundscape. These sounds are much more accurate and demonstrate the capabilities of the simulator: mainly chirring in curves and cab/outside outputs.
As you have seen in the prior plus pack we use more technical possibilities of Railworks 3. So we are able to present a couple of new features like a simplified version of the German train control system PZB which replaces the Railworks default pseudo-PZB. We intentional simplified this system - it's the first step to a full-featured PZB. On top we programmed a completely working implementation of the SiFa (German abbreviation for: Sicherheitsfahrschalter). So you get another full working train control system in the expert mode.
In addition we added a new soundscape to regional passenger coaches and freight coaches. In combination with our previous AddOn now all German coaches delivered with the Railworks simulator use our new soundscape and additional functions. As Bonus we included the enhancement also for the machines (class 143) in the AddOns "Köln-Düsseldorf" and "Im Köblitzer Bergland".

There are six scenarios for the routes Hagen - Siegen, Köblitzer Bergland and Köln - Düsseldorf. You will hear the popular acoustic announcements in every scenario.

We are planning to create further German Railworks AddOns. So it's worthwhile to have a look at our website and forum http://www.trainteamberlin.de periodically.

In this sense, we wish you as much pleasure with this AddOn as we had while creating it.

Best regards

TrainTeamBerlin
Berlin, in June 2012

2. Content

3. The Team And Acknowledgements

The team is free to introduce itself at this place::

Software: TrainTeamBerlin
Distribution: Halycon Media and TrainTeamBerlin

Benjamin Ebrecht	Sound, Scripting, Repaints, Scenarios, Manual
Eckhard Frädrich	Investigation, Quality management, Scenarios, Manual
Ronald Jacobi / Halycon	Sound
Partrick Polzin	Modelling, Scripting, Quality management

On top we want to sincere thank all other (partly anonymous) helpers who supported us creating this software. One or more textures on 3D models used in this AddOn have been created with images from CGTextures.com. These images may not be redistributed by default, please visit www.cgtextures.com for more information.

4. System Requirements

For a proper function of the simulation we recommend the following PC-Hardware conditions

Processor (CPU):	DualCore 3 MHz
Memory (RAM):	4096 MB
Graphic board:	DirectX 10-ready or better, 1024 MB Graphic memory
Hard disk memory:	350 MB free
Sound board:	Soundblaster or compatible Gamer card

This AddOn has been developed with Train Simulator 2012 (Railworks 3) Version 11.7b.

5. *Installation & Configuration*

You have to execute the file setup.exe to install „Railworks BR143 PlusPack". The automatic install routine is opening. Follow the instructions and install the AddOn in your Railworks main folder. This is detected automatically in most cases. With this you finished the installation.

Advice: We recommend using the class 143 in active status just in the Railworks expert mode (you'll have to activate it in the Railworks option menu). **Don't** drive the class 143 using the **CabDriver** (F4) - Use only keyboard and mouse (for clicking on the control elements in the cab).

Configuration:

Please note that all new configurations and definitions are integrated in the rail vehicles automatically. If you like to deactivate it and run the Railworks default sound again, you won't need to uninstall the whole AddOn: Just open "BR143 Konfiguration" which you can find in you windows start menu: Programs → TrainTeamBerlin → Railworks BR143 PlusPack. Run it and click on "Deaktivieren."
It's possible to reactivate all new features again with a click on "Aktivieren" in the same program (e.g. after a forced update by Steam).

Uninstallation:

If you want to uninstall "Railworks BR143 PlusPack ", just run the uninstall routine which you can find in the start menu: Programs → TrainTeamBerlin → TrainTeamBerlin → Railworks BR143 PlusPack → Deinstallation.

6. *Characteristics Of The Class 143*

→ Producer: VEB Lokomotivbau-Elektrotechnische Werke „Hans
                          Beimler" (LEW), 1422 Hennigsdorf (bei Berlin)
→ Developed since: 1980
→ Initial operation: 1982: Weiße Lady 212 001-2;
                          1983: 243 001-5;
                          1984-1990: Commissioning mass-production vehicles
→ Lot size: 646 (19 total loss caused by accidents or fire)
                          538   (2011)
→ Start of rejection: 2008
→ Speed V_{max}:   125 km/h (on duty: 120 km/h)
→ Power: 4 x 930 kW
→ Start. tractive effort:240 kN (128 kN permanent tractive effort)
→ System of drive: One phase series motor in hollow shaft - cannon box
                          construction with interpole and compensation coil
→ Axle arrangement: Bo'Bo'
→ Triggering: High voltage control unit with 28+3 regulating steps and
                          Thyristor actuator XTS44 for step transformer
                          (32taps)
→ Weight/Axle load: 82,8 t / 20,7 t
→ Length over buffer: 16640 mm

7. Features

Besides a really accurate sound we provide some special features with this PlusPack.

Pantograph control:

You know that Railworks is controlling both pantographs of a loco by its own. Railworks raises the rear pantograph every time you change the direction. We implemented a more flexible and manual pantograph control:

The player has now the check on both pantographs independently. You can raise and drop the front pantograph by pressing **Shift +** [P], the rear pantograph is controlled with [P]. It's clear that you have to raise at minimum one of both pantographs for making the loco able to move. But it's no problem as well to use the class 143 with both pantographs raised. This can make sense while shunting. On top it's possible to simulate an accurate pantograph control driving a double traction regime: Then you'll have to raise the front panto of the leading loco and the rear panto of the second one.
In AI traffic the Class 143 raises the rear panto in most cases independent of direction changes. In AI double traction regimes the front pantograph of the leading loco is raised. If the loco is marked as a "defect" vehicle in the scenario editor, both pantos are dropped.

Rear pantograph   [P]
Front pantograph   Shift + [P]

Simplified PZB:

Railworks contains a very pseudo implementation of the German train safety system " punktförmige Zugbeeinflussung" - shortly called PZB.
We programmed a PZB more related to reality. But we first want to suggest that this implementation is not complete as well. The equipment of Railworks default routes and German cabs set limitations, so we constrain the implementation to the 1000Hz monitoring without possibility to free from monitoring and no restrictive mode. Certainly we adapted the forced braking on active 2000Hz magnets. We simulate the class 143 in train mode O. In the following we explain the functionality of our implementation:

There is a 1000Hz monitoring in this version of the class 143. This means that distant signals showing a stop or expected speed reduction below 100 km/h **have to be confirmed in the first 4 seconds with key** [Q] after driving over an active 1000Hz magnet located at the distant signal. If you fail to do this a forced braking will be triggered.

Furthermore you have to lower your speed after passing an active 1000Hz magnet. There is a continuous speed curve which is used for controlling your actual speed. You must lower your speed **below 85 kilometers per hour within 23 seconds** - otherwise a forced braking will be triggered. Afterwards there is a monitoring of a **constant speed of 85km/h as far as you travelled 1250 meters** since you passed the active 1000Hz magnet. The following diagram shows the functionality of our 1000Hz monitoring graphically:
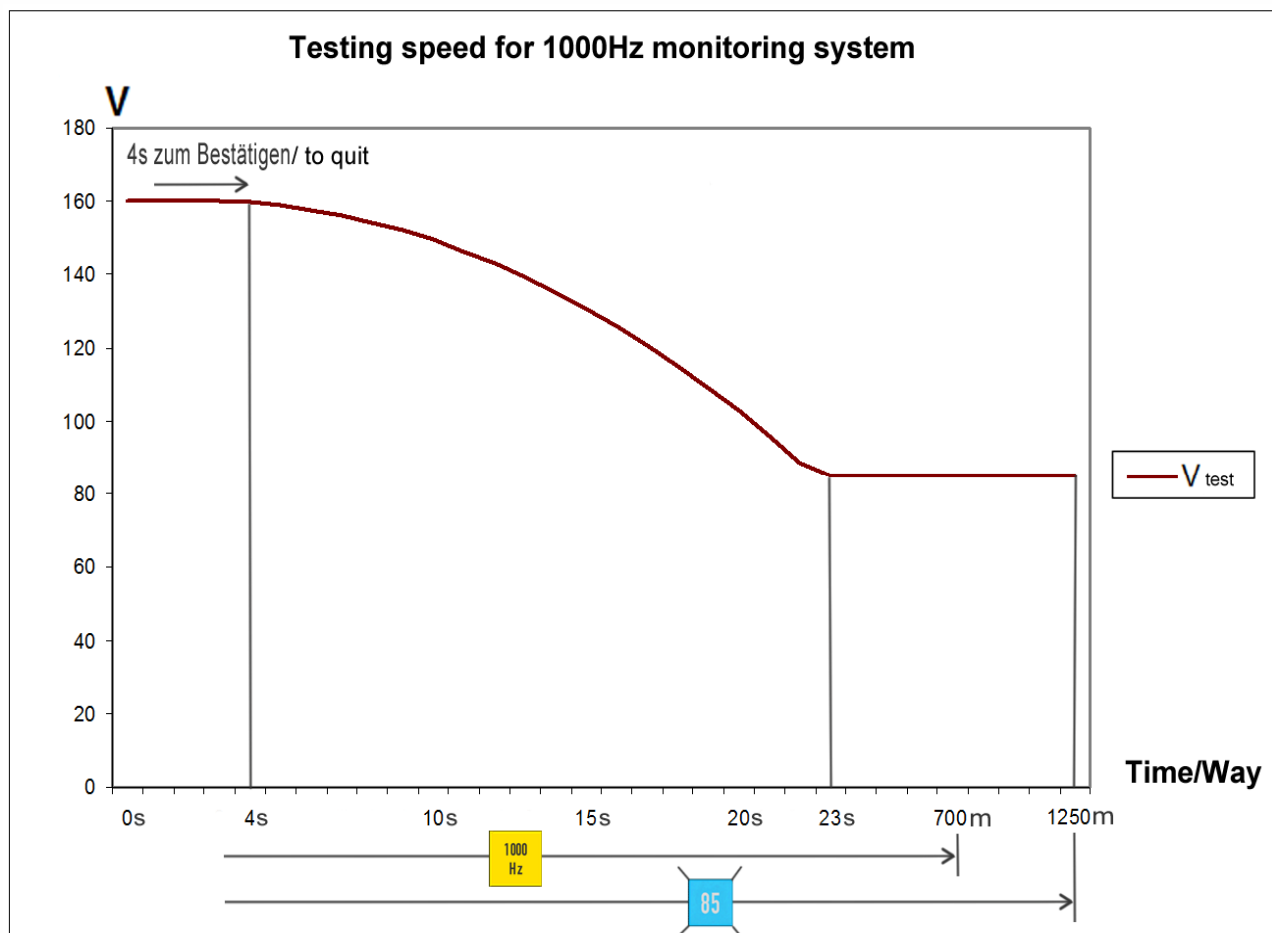
Further Information:

If you get a PZB forced braking your train will be stopped until it stands. Finally you have to **confirm the forced braking with key** [Q]. Then you can accelerate again. After a 1000Hz monitoring forced braking the 1000Hz monitoring will be continued.

After confirming a 1000Hz monitoring the yellow 1000Hz indicator will light up until you travelled 700m since passing the active 1000Hz magnet. After this there is a possibility to free from monitoring. This possibility is **not implemented** in our simplified PZB. The indication speed of 85km/h must be kept until you travelled 1250m since passing the active 1000Hz magnet.

The restrictive mode **isn't implemented** as well. In reality lowering the speed under 10km/h respectively stopping the train while an active 1000Hz monitoring will let you fall in the restrictive mode which lowers the indication speed to 45km/h. This restriction is not programmed by us, so you still have to keep the indication speed of 85km/h.

On top the passing of red signals (active 2000Hz magnet) is checked. If you have no permission to pass it (oral permission or signal Ra12 - key TAB respectively Shift + TAB in Railworks) a forced braking will be triggered.

Advice: The functionality of the PZB is initial **active**. You are able to deactivate the PZB while driving the class 143. Just press **Ctrl + Shift + [Q]**. The deactivation will be acknowledged with the acoustic output "PZB deaktiviert". It's possible to reactivate the PZB by pressing **Shift + [Q]**. This is acknowledged with an acoustic output as well.

PZB acknowledge	[Q]
PZB deaktivation	Ctrl + Shift + [Q]
PZB aktiviation	Shift + [Q]

Safety brake system "SiFa":

The so called "SiFa" (dead man's handle) is a safety system of locos and motor train sets which ensure that the driver is capable of acting and can do his job. Otherwise the train will be slowed down automatically. We implemented the missing SiFa in Railworks for the class 143 which works like the time-time SiFa in reality.
This means that after 26 seconds of moving the train with 15 km/h or above the SiFa indicator will light up. After 4 seconds more an acoustic warning "SiFa" appears. Then there are **8 seconds** left for pressing **the key [Y]** for confirming the SiFa. If you fail do this, a forced braking will be triggered. At any time the forced braking can be interrupted by pressing the Y-key so you can prevent the train from stopping.

Please note that after accelerating the train over the threshold speed of 15km/h an additional confirming is required.

Advice: The functionality of the SiFa is initial **active**. You are able to deactivate the SiFa while driving the class 101. Just press **Ctrl + Shift + [Y]**. The deactivation will be acknowledged with the acoustic output "SiFa deaktiviert". It's possible to reactivate the SiFa by pressing **Shift + [Y]**. This is acknowledged with an acoustic output as well.

SiFa	Y
SiFa deactivation	Ctrl + Shift + Y
SiFa activation	Shift + Y

Second Horn

In the times of MS Train Simulator the usage of an second horn sound (a short an one long sound) was established. The usage of both was controlled by the train speed. Railworks provides different possibilities. So we decided to use two different key combinations for both horn sounds. You can use the following ones:

Horn short	Space
Horn long	Shift + Space

Fan Control

For this class now you have two choices for the running mode of the engine and transformer fan: automatic and manual. The automatic mode will be initialized during the start of the scenario. If you want to run the fans when the locomotive is not in drive press the key B. Pressing the B again will stop the fan. Pressing B while driving the locomotive will have no effect until you stop.

Fan switch on/off   B

Configuration of regional express coach sound

You have the possibility to configure the sound of the regional express coaches. Open the start menu and click on the link all Programs → TrainTeamBerlin → BR143 PlusPack → Konfiguration nWag Sound. Open the file with a text editor. With setting the variable TTB_nWag_Klotzbremse you can change between block brake and wheel disc brake. Set it to 1 for the block brake or 0 for the wheel disc brake. Set the variable TTB_nWag_Doorbeep to 1 if you wish to have a warning beep sound when closing the doors and 0 if you don't want to hear it.

8. Scenarios

We want to present you the six scenarios in this block of the manual. We'll show the main data for each scenario and give hints which are maybe useful for successfully complete them.

Hagen - Siegen

TTB 03: Schwerlast mit Doppelpack

Class: 143 traffic red
Rating: heavy
Season / Weather: Summer / cloudy
Time: 06:42 pm
Period: 1:30 hours

Description: Today your service starts at Kreuztal. You will drive two class 143 locos which you have to set up first. The system of rules says that you have to raise the front pantograph for the first locomotive. Then drive them backwards and couple your freight coaches. Your departure time is 6:46 pm. Now take the train to Hagen Kabel. The restricted speed of your train on the main track is 80 km/h, at shunting areas 25 km/h. At Lennestadt-Meggen and Plettenberg the dispatcher will take you besides in order to let faster train pass you. You will need the TAB-key to enter both stations and for leaving the shunting area of Plettenberg.
The following time table shall be a guidance for you:

Kreuztal	depart	6.46pm
Kreuztal station	pass	6.50pm
Welschen-Ennest	pass	7.00pm
Lennestadt-Meggen	stop	7.12pm - 7.19pm
Grevenbrück	pass	7.23pm
Finnentrop	pass	7.27pm
Plettenberg	stop	7.38pm - 7.41pm
Werdohl	pass	7.49pm
Altena	pass	7.56pm
Letmathe	pass	8.03pm
Hohenlimburg	pass	8.05pm
Hagen cable factory	arrive	8.12pm

TTB 04: RE79344 nach Siegen

Class: 143 traffic red
Rating: medium
Season / Weather: Summer / cloudy & rainy
Time: 04:18 pm
Period: 1:30 hours

Description: At Hagen main station you assume a delayed commuter train in order to drive it to Siegen main station. After letting pass a delayed InterRegio you start your trip approx. 5 minutes delayed. Although the time table is strong on this busy railway track you should manage to catch up the delay till Plettenberg. There you can have a short break because a delayed main train will overtake you.

Im Köblitzer Bergland

TTB 03: RegionalExpress nach Bad Rinckenburg

Class: 143 028
Rating: medium
Season / Weather: Summer / cloudy & rainy
Time: 04:33 pm
Period: 1:10 hours

Description: Today your service schedule plans an introspective trip from Altenburg to Bad Rinckenburg. Your commuter train has to stop at all stations. At Köblitz there is a correspondence to the train to Wildau. Please mark that there is a signal bug with a wrong active 1000Hz magnet between Altenbrück and Bad Rinckenburg. So you have to press the Q-tab after passing.

TTB 04: Commuter Train Altenburg - Wildau - Altenburg

Class: 143 wine red
Rating: medium
Season / Weather: Summer / clear
Time: 10:45 am
Period: 1:15 hours

Description: At a beautiful summer Sunday you assume the cycle of a commuter train from Altenburg to Wildau and back. Unfortunately some Graffiti gangs damaged many coaches with paintings so there is only a shortened train for service available. But it should be a contemplative drive over the country side anyway.

Köln - Düsseldorf

TTB 03: PbZ 2470

Class: 143 traffic red
Rating: heavy
Season / Weather: Summer / cloudy & rainy
Time: 9:45 am
Period: 1:00 hours

Description: Today your service starts at Köln-Deutzer Feld with PbZ2470 (destination Dortmund). At Köln Deutzer Feld there are rearranged coaches and trains. Before you can drive your train to Düsseldorf you have to couple some coaches damaged by graffiti.
After activating the locomotive drive to track 62 via "Turning point 1". Couple the two classes 101 and drive to track 91 via "Turning point 2". Now couple the three graffiti coaches. Drive back to track 62 via "Ausziehgleis". After coupling the whole train set change to the class 294 and drive to the station Köln-Messe/Deutz track 3. Uncouple the class 294 and return to class 143. Now take your train to Düsseldorf.
Please mark that you have to switch all shunting switches at Köln Deutzer Feld yourself.

TTB 04: Morning Train in Winter

Class: 143 traffic red
Rating: medium
Season / Weather: Winter / Snow
Time: 04:25 am
Period: 1:05 hours

Description: After a stormy winter night you adopt a S6 commuter train from Düsseldorf Hbf. to Köln Hbf. Usually it would be a normal service but some annoyances in drain will leave some marks.
Because of the stormy night with many canceled trains you have to take this overlong train which does not fit into all station. You have to pass through some stations without stop. In spite of the bad situation try to be in time at your target station.

Graphic schedules

You can find graphic schedules in pdf format for the routes Seebergbahn and Hagen - Siegen in the folder ..\Railworks\TTB-Material\BR143-PlusPack\. You can print them and use it for solving our scenarios.

Both files are linked in the windows start menu, too: Programs → TrainTeamBerlin → TTB BR143 Pluspack

Known problems:

→ The acoustic announcements of the 6 provided scenarios are played at wrong times when you save and reload the scenarios. We recommend to play the scenarios at a stretch.

→ We strongly recommend to got to the railworks start menu and activate the "30FPS Lock" option. Please be sure that you use railworks with graphic options that produce a smooth gaming experience. Otherwise it's possible that several functions won't work properly - for example the acustic outputs may be played too early / too late and/or the animations may be not synchronized with the sound.

Further advices:

→ We strongly recommend using an EAX capable sound card for an optimal audio pleasure. According to your hardware you should activate EAX in Railworks settings. The option "Force software mixing" can cause sound problems and should be deactivated in such cases. The following adjustments are approved:
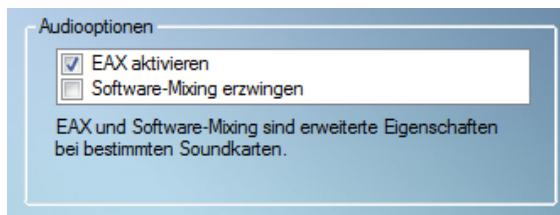
→ You can use our support forum http://www.trainteamberlin.de/forum for further questions.