

# DB centre entry coaches 'yl'

Version 1.1 / 09.01.2020



## Manual

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**POLYGONZUG**

Feine Modelle für Eisenbahnsimulatoren

# Background

After several different test coaches, the Deutsche Bundesbahn acquired a new type of wagon for light express trains from 1951 on, which at the same time was the first DB series vehicles with a length of 26.4 metres.

In addition to the usual end doors, it also had an entrance with double doors in the middle of the coach, which was intended to speed up passenger changes, especially in city express services. It is noticeable that the centre entries are offset by one compartment width from the centre of the coach, because its length resulted in an even number of window or compartment axes.

Just like the UIC express train coaches built in series from 1954 on, the "Mittleinstiegswagen" were all-steel welded. The use of the newly developed Minden-Deutz MD 32 bogies, which would have even made possible a maximum speed of 140 km/h, although the D62 alternators only permitted 120 km/h, achieved a running smoothness that was outstanding for the conditions at that time.

The largest part series of these coaches was the Byl421, 320 of which were delivered from 1952 on. Previously, a prototype had been created, which was recognizable at first glance until the end of its life by its recessed end entrances. The coaches had two compartments of the 2nd class (after the abolition of the 3rd class in 1956) with a total of 84 seats in 2+2 divisions and vis-à-vis seating. The seat frames were initially upholstered with green (in the non-smoking compartment) and red (in the smoking compartment) imitation leather, in later years the green seat cushions were replaced by red. Both ends of the coaches have generously dimensioned vestibules, each with a toilet.

Furthermore, the Deutsche Bundesbahn ordered a total of 259 of the mixed-class coaches (later AByl411), which were delivered from 1952 to 1954. They had two compartments with 18 or 12 plush-covered upholstered seats in 1st class (from 1956). The 2nd class large-capacity compartment is located in the other half of the car and is identical to that of the Byl421. In addition, a train attendant compartment was installed at the end of the 1st class.

Three series of control cars were procured for use in push-pull serviss, all with identical cab equipment. Initially, however, not all vehicles were equipped with the facilities for operation with diesel and electric traction units. The narrowness of the driver's cab soon led to the use of the term "Hasenkasten" (rabbit hutch). The first type - Bylf436 - essentially corresponded to the Byl421, but due to the cab it had a narrower end door which was offset towards the passenger compartment. 50 units of this type were procured and later, after dismantling the driver's cabs, were listed as type Byl422.

Furthermore as of 1953 two series of control cars with luggage compartment were built. The first series (BDylsf456) comprised 29 cars and had 22 seats within the luggage compartment separated by a side corridor; in the 38 coaches of type 457 built afterwards these "emergency seats" were omitted in favour of a bigger luggage compartment. Here, too, the control equipment was later removed, resulting in two new types BDyl458 and 459.

In addition to these numerically most important types, there were others based on the same basic design: 35 BRyl446 half dining cars, 10 Ayl401 first-class large-capacity cars and a single Dyl961 luggage van.

# Pack Contents

This pack contains the following models of the light express train coaches (known as "Mittleinstiegs-wagen") operated by the former "Deutsche Bundesbahn" (German Federal Railway), era 1970 - 1993:

- Byl421 (3 variants)
- Byl421 prototype (2 variants)
- Byl422 (3 variants)
- AByl411 (3 variants)
- BDyl458 (3 variants)
- each of them is also available in a "parked" version; i.e. without light, steam heating effect and passengers

All 14 variants are presented in more detail on the following pages.



## Features and functions:

- opening passenger (and loading doors on the BDyl458)
- dynamic numbering: wagon number, home location and train destination sign
- detailed compartment model (Byl421)
- animated wagon transition connections (1)
- highly detailed coupler model with dynamic brake hoses and steam heating connection (1)
- prepared for steam heating (leaking) effect (2)
- switchable tail lights
- custom sound set
- individual textures with traces of weathering and ageing

(1) only operating if vehicles contained in this pack are coupled; also working with all other rolling stock products made by *Polygonzug*.

(2) requires a locomotive with a specific and compatible control to turn the train heating on and off.



# Pack Contents

## **AByl411 - variant 1:**

- green livery with brass-colored anodised window frames



## **BDyl458 - variant 1:**

- rebuilt from type BDylsf456
- green livery with brass-colored anodised window frames



## **Byl421 - variant 1:**

- green livery with brass-colored anodised window frames



# Pack Contents

## **Byl422 - variant 1:**

- rebuilt from type Bylf436
- green livery with brass-colored anodised window frames



## **AByl411 - variant 2:**

- ocean blue / beige livery with black underframe
- livery was applied during revisions between 1974 and 1979



## **BDyl458 - variant 2:**

- ocean blue / beige livery with black underframe
- livery was applied during revisions between 1974 and 1979





# Pack Contents

## **Byl421 - variant 2:**

- ocean blue / beige livery with black underframe
- livery was applied during revisions between 1974 and 1979



## **Byl422 - variant 2:**

- ocean blue / beige livery with black underframe
- livery was applied during revisions between 1974 and 1979



## **AByl411 - variant 3:**

- ocean blue / beige livery with ocean blue underframe and beige line between frame and body
- livery was applied during revisions after 1979
- rubber frame windows in the end doors



# Pack Contents

## **BDyl458 - variant 3:**

- ocean blue / beige livery with ocean blue underframe and beige line between frame and body
- livery was applied during revisions after 1979
- rubber frame windows in the end doors



## **Byl421 - variant 3:**

- ocean blue / beige livery with ocean blue underframe and beige line between frame and body
- livery was applied during revisions after 1979
- rubber frame windows in the end doors



## **Byl422 - variant 3:**

- ocean blue / beige livery with ocean blue underframe and beige line between frame and body
- livery was applied during revisions after 1979
- rubber frame windows in the end doors





# Pack Contents

## **Byl421 - prototype 11 101-0:**

- green livery with brass-colored anodised window frames
- setback end doors
- scripted tail lamp function
- correct revision date



## **Byl421 - prototype 11 101-0:**

- ocean blue / beige livery with ocean blue underframe and beige line between frame and body
- rubber frame windows in the end doors
- setback end doors
- integrated train rear lights, as installed in the prototype in 1981 at the latest (unfortunately, the source for that date is not clear)
- correct revision date



## **Note:**

The two variants of the prototype vehicle do not have dynamic numbers. However, the home location and the train destination sign can be set as desired. Therefore, as explained on page 10, only the first two characters have to be entered as letters.



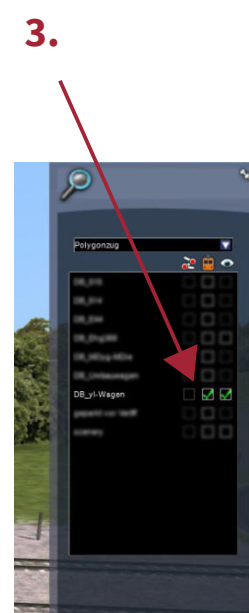
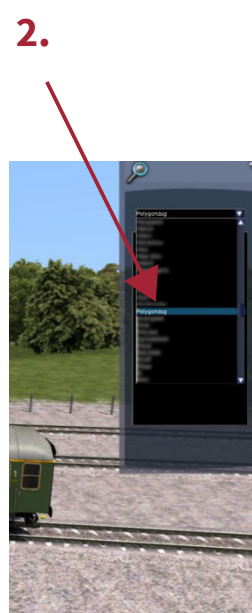
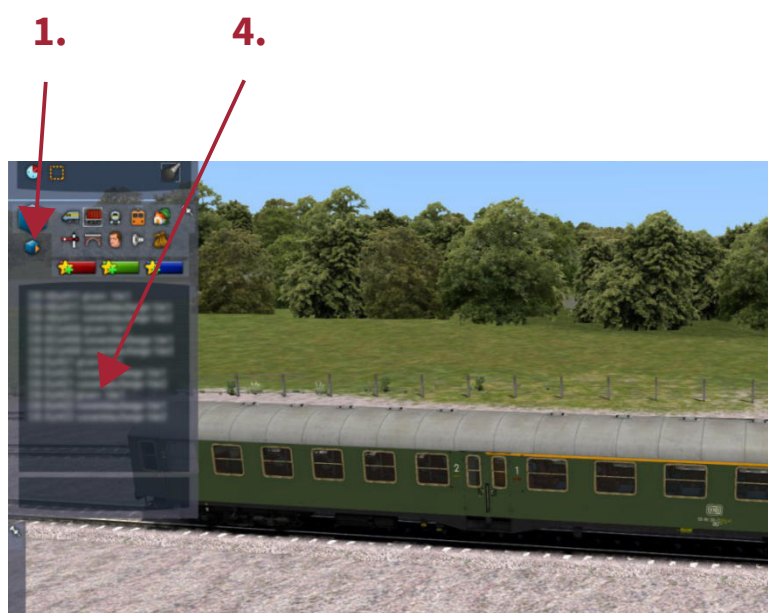
# How to install

To install the models, simply run the downloaded installation file.

## Note for scenario creators:

In order to use the coaches of this pack in your own scenarios, you must first activate them in the scenario editor:

1. Click on the little blue cube with the orange triangle in the left middle flyout of the Scenario Editor (activate object set filter)
2. A flyout should appear on the right side of the screen; scroll down to the list entry 'Polygonzug' and click on the text line
3. Tick the second and third option box in the line "DB\_yl-Wagen". If the green ticks are set, the models can be selected in the left middle flyout (1.) and placed on the tracks
4. Select the coach here; the full name becomes visible when the mouse pointer remains over the font for a longer time.



# Dynamic Numbering

## Settings:

When placing a model in the scenario editor, it is preconfigured with a prototypically correct vehicle number. If there could be found information about the home station of a certain coach, these home locations are predefined as well (source: [www.revisionsdaten.de](http://www.revisionsdaten.de)).

Please proceed as follows if you like to change one or more of these variables:

1. Place the desired model on the tracks as described on page 9
2. A double-click on the model opens a right-hand flyout, where a six-digit combination of letters and numbers appears in the following format:

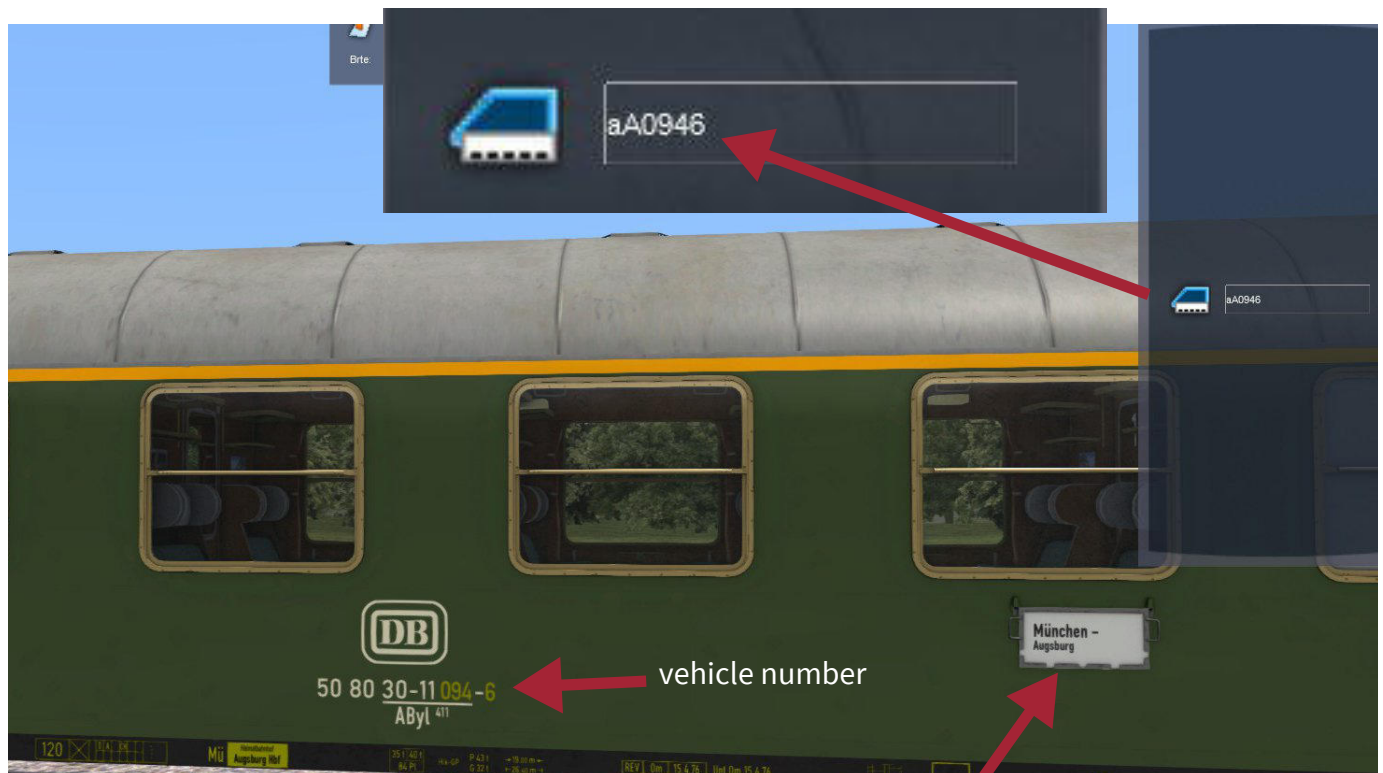
**xX1111**

The **first digit** represents the **train destination sign** and has to be entered as lowercase letter (please see page 11 for a list of all available destination signs).

The **second digit** represents the **home location / home station** and has to be entered as lowercase or capital letter (please see page 12 for a list of all available home locations).

The **third to sixth digit** represents the **vehicle number + check number**. Use only numbers here!

The **third to sixth digit** represents the **vehicle number + check number**. Use only numbers here!



home location / home station (see page 12)

train destination sign (see page 11)



# Dynamic Numbering

## train destination sign - list of all available settings:

- a München – Augsburg
- b Augsburg - München
- c Köln – Düsseldorf
- d Düsseldorf - Köln
- e Köln - Koblenz
- f Koblenz – Köln
- g Koblenz – Trier
- h Trier – Koblenz
- i Hamburg - Hannover
- j Hannover – Hamburg
- k München - Garmisch-Partenkirchen - Mittenwald
- l Mittenwald - Garmisch-Partenkirchen - München
- m - w *freely configurable*
- x no train destination sign is displayed

# Dynamic Numbering

## home location - list of all available settings:

	home location	railway division		home location	railway division
A	Augsburg	München	X	Aachen Hbf	Köln
B	Garmisch		Y	Düsseldorf Hbf	
C	Kempten		Z	Köln Deutzerfeld	
D	München Hbf		#	Koblenz	
E	Hof	Nürnberg	-	Bielefeld	Essen
F	Nürnberg Hbf		+	Dortmund Bbf	
G	Regensburg		ß	Duisburg	
H	Würzburg		~	Münster	
I	Friedrichshafen	Stuttgart	!	Paderborn	Hannover
J	Heilbronn		,	Braunschweig	
K	Ulm		.	Hannover Hbf	
L	Tübingen		;	Oldenburg Hbf	
M	Freiburg	Karlsruhe	=	Osnabrück Hbf	Hamburg
N	Heidelberg		\$	Flensburg	
O	Karlsruhe Hbf		\$	Hamburg-Altona	
P	Mannheim Hbf		%	Kiel	
Q	Kaiserslautern	Saarbrücken	&	Lübeck	
R	Saarbrücken				
S	Trier				
T	Darmstadt	Frankfurt a.M.			
U	Gießen				
V	Kassel				
W	Limburg				



# Features

## Detailed separate interior model:

- large-capacity compartment of a type Byl421 coach
- windows with rain effect



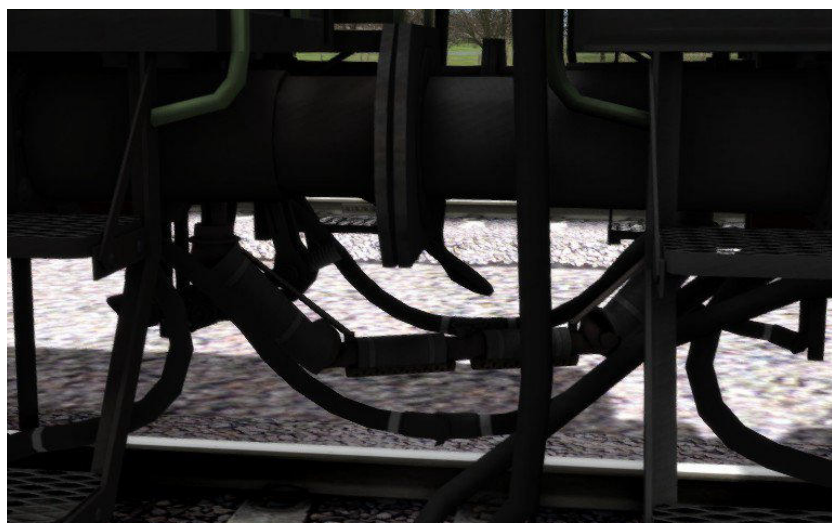
## animations of entrance and transition doors:

If coaches of this package are coupled together or with other coaches of Polygonzug coaches, the transition doors between the coaches are shown opened - the wide open passage is typical for the "MittleEinstiegswagen".



## Couplers and vehicle connections:

Brake hoses and steam heating couplings are automatically connected between models contained in this pack and also between them and other *Polygonzug* products.



# Policies

## Important notes about use:

These models have been tested on several computers and are compatible at least with Train Simulator versions from 2014 to 2020; general operation or operation without strange effects can not be guaranteed in older versions of the program.

I assume no liability for the correct function on user's computers as well as for damage to hardware and software that may arise from the use of the contents of this addon.

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# Credits

## **Persons involved:**

Modelling/ Textures/ Blueprints/ Sound/ Scripting: Heiko Müller

Sound sources: Heiko Müller, Ganderkeseer, Gainmaster

Beta test: Gainmaster, Loco-Michel

Installer: Ulf Freudenreich, virtualRailroads

## **Versions:**

1.1 09.01.2020

changes:

- door animations run slower
- display of heating steam improved
- dynamic numbering: display errors regarding home locations and train destination signs corrected
- scripting errors corrected
- small errors in 3D models and textures corrected
- new sounds
- two model variants (prototype vehicle) added
- Passengers added

1.0 first release (05.09.2019)

*Polygonzug*, January 2020

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