



# Trainsimming Modern Czech and Slovak trains

Beta Part Two February 2004



EC 174 'Alosi Negrelli'  
Hamburg – Praha  
with CD's new  
EC stock

## **EMUs (Class 4 DC, Class 5 AC)**

### **451 and 452 (CD)**

62 Four car EMUs built 1964–1973 and used in Praha commuter services. Comprise two motor cars sandwiching an non motorised car EM 475.1 + N 475.1 + N 4751 + EM 475.1  
There are 37 Class 451 sets and 9 Class 452 sets in use, the later being modernised.

### **Class 460 and 560**

See next page

### **Class 470 (CD)**

Prototype EMU built 1991 with two single deck motorcars sandwiching two double deck cars.

### **Class 471 (CD)**

New 160 km/h with cooled air ventilation double deck EMU for commuter services comprising a motorcar, intermediate car and driving trailer 471 + 071 + 971. all double deck. 13 sets now in service.

[http://rail.czechian.net/CZ\\_SK\\_FR/CZ\\_RAIL/studenka.htm](http://rail.czechian.net/CZ_SK_FR/CZ_RAIL/studenka.htm) gives full details (in English). Up to three sets can be used in multiple, and the sets can be used without the intermediate car.

The ZSSK also has light rail sets for use on the narrow-gauge lines

Class:	<b>460</b>	<b>560</b>
Number	<b>86</b>	<b>34</b>
Built:		
Built:	<b>1971-78</b>	<b>1966-71</b>
Speed:	<b>110 km/h</b>	<b>110 km/hr</b>
Power	<b>1000 kW</b>	<b>840 kW</b>
System:	<b>3kV DC</b>	<b>25 kV AC</b>
In Use:	<b>26</b>	<b>0</b>
CD		
ZSSK	<b>32</b>	<b>16</b>

An EMU comprising two motorcars sandwiching three trailers.

The 560 is the 25 kV AC version used in Southern Slovakia

Colours:

460: CD Gray and sky blue ZSKK vermilion with Lt Gray upper

560: ZSSK Red with cream upper; Bordeaux with yellow stripes



A ZSSK 460. Model: Rado. This model has magnificent sounds

Class:	<b>680</b>
Number	<b>CD 7</b>
Built:	<b>Ordered</b>
	<b>ZSSK 4</b>
Built:	<b>Ordered</b>
Speed:	<b>2004</b>
Power:	<b>230 km/h</b>
Number	<b>3920 kW</b>
in Use:	<b>Not yet in service</b>

CD has ordered 7 Three system **Pendolino** tilting train sets for internal services and for the Wien-Praha-Berlin route.

Derived from the ETR 480, the trains will run under 3kV DC, 15kV DC 16.7Hz and 25kV 25 Hz.

They are seven car sets with two first class coaches, four second, and one second/bar. Top speed 230 km/h although the new lines will only have a top speed of 160 km/h. The train has 25kV/15kV pantographs on cars 1 and 7, and 3kV DC on 2 and 4.

Due to enter service for the World Ice Hockey cup in 2004. at the time of writing it was reported in Today's Railways that they had failed the acceptance test, and there were issues with the electronics.

ZSSK has ordered four sets, which should reduce the time between Bratislava and Koshice from 5 to 3 hours 30.



Pendolino on Test Run Model: Spanish team Repaint piku.

Class:	809	810	CD 811	ZSSK 811	CD 812 CD 912	ZSSK 812 ZSSK 812 Lux
Number	28	680	2	10	1	24
Built:					1	2
Built:	Rec. 1994-96	Rec. 1973-84				
System:	Hydraulic					
Speed:	80 km/h	80 km/h				
Power	155 kW	155 kW				
Multi:			Yes			
In Use: CD	0	536	0		1	
ZSSK	0	108		27	0	24
						2



CD and ZSSK make extensive use of small two axel railcars, accompanied by a driving trailer in their branch network, and are currently refurbishing sets, and converting non motorised driving trailers (**Class 010 and 011**) into motorised sets.

The 809, 811 and 812 CD are rebuilt 810. The ZSSL 811 are rebuilt 011 trailers.

The ZSSK 812 is a rebuilt from Class 010 driving trailers with Voith hydraulic transmission, and more will be reconstructed.

The CD 812 has a completely new body and will be used the new 912 low floor driving trailer built from Class 010 trailers. The 812 LUX is a first class only version.

A CD 810 Railcars and 010 Driving trailer. The gentleman unfortunately would not move out of the way for the picture. Roll on MST2. Model: Ondoej Janis

### CD 830 and 831

Large diesel electric railcars built in 1949-1960, with 41 reconstructed as 831 1981-91. 63 830 and 38 831s still in service with CD

### ZSSK 840

Modern two set DMU. 6 Built in 2003.

Class: 842  
 Number: 37  
 Built: 1989-94  
 Speed: 100 km/h  
 Power: 424 kW  
 System: Hydraulic  
 In Use: 37  
 CD  
 ZSSK: 0



CD 842 with a 460 in the background. Model: David Vasica

Diesel Motor car, used with a standard wagon class Btn.

Class: 843  
 Number: 31  
 Built: 1995-97  
 Speed: 110 km/h  
 Power: 600 kW  
 System: AC/DC  
 In Use: 31  
 CD  
 ZSSK: 0



CD 843. Model: Stimpý

A Diesel electric motor car, compared to the 842, which has a hydraulic drive. There is a matching trailer Class 943.

Class:	850	851	852	853	854
Number Built:	52	38	25	35	R 20
Built:	1966-67	1967-68	1968-69	1969-71	1997-2002
System:	Hyd	Hyd	Hyd	Hyd	Hyd
Speed:	110 km/h	110 km/h	120 km/h	120 Km/h	120 Km/h
Power:	515 kW	515 kW	588 kW	588 kW	596 kW
In Use: CD	15	16	18	32	20
ZSSK		22	0		



A CD 854. with Btn coaches. Model (854): JaMar Coach Ondoej Janis

DMU motorcars for fast regional trains. The opposite end to the picture has a corridor entrance through the driver's cabs. The 852-4 pull a standard type Btn passenger cars, which are equipped with their own passenger heating.

The 854 are rebuilt with Caterpillar engines and new electronics, retention toilets and double glazed windows.

## Coaching stock

The Czechoslovakian designation system is a variation on the UIC scheme, with a capital letter showing the major type, and smaller letters details of the carriage.

For example Bmz B class, Long distance over 24.5m, with central electric power supply from the main heating line (CZE)

The use of the letters changed from 1.1.2001, and some downloads use the old code, and some the new.

The following is my translation/adaptation of Alan Butschek's table at:  
[http://www.parostraj.net/katalog/ov/clanky/znaceni\\_2001/znaceni\\_2001.php3](http://www.parostraj.net/katalog/ov/clanky/znaceni_2001/znaceni_2001.php3).

Major letter: As UIC scheme

Salon	Saloon car	AR	1st Class with Dining car and Kitchen
WLA	Sleeping car 1st. class	ARD	1st class with restaurant, buffet and baggage compartment
WLB	Sleeping wagon 2nd Class	BR	2nd. Class with Dinner and Kitchen
WLAB	Sleeping wagon 1st. and 2 <sup>nd</sup> class	BRD	2ndst class with restaurant, buffet and baggage compartment
WLAD	Sleeping coach s 1 <sup>st</sup> class with baggage compartment	AD	1st. class with Baggage compartment
WLBD	Sleeping wagon 2nd. Class with baggage compartment	BD	2nd. Class with Baggage compartment
WLABD	Sleeping coach with 1st. and 2nd class with baggage compartment	ABD	Mixed 1 <sup>st</sup> and 2 <sup>nd</sup> class with Baggage compartment
WSP	Pullman coach	D	Baggage coach
WR	Restaurant coach	DPost	Baggage coach with Post compartment
SR	Saloon wagon with restaurant	Post	Post wagon
A	1st. class coach	BPost	2nd class coach with post compartment
B	2nd. Class coach	DD	Open Double deck car transporter (autotrain)
AB	1 <sup>st</sup> and second class coach	MD	Covered wagon on one level for the transport of cars (auto train)
		MDD	Double deck wagon for the transport of cars (auto train)

## Minor letters

	In use before 1.1.2001	In use after 1. 1. 2001 (if changed)
a	Tri-axel coach	Bi-axel coach
aa	Bi-axel coach	(Not used)
b	open, center aisle coach	Coach with handicapped access
c	Compartment coach with seats, which can be converted into couchettes	
d	Baggage coach for freight train	With space for bicycles
e	Coach with equipment for electric heating	(Not used)
ee	Passenger train car with central electric power supply from the main heating line (CZE)	
f	Diesel driven power supply	Driving trailer
g	Coach with compartment for alternative operating crew (doesn't seem to be used.	
h	open, center aisle coach	coach with handicapped access (Old code h uses code p)
i	Cannot translate but does not seem to be used.	(Not used)
j	Permanently coupled unit	
k	individual heating	
l	coach with sound system	(Not used)
m	Long-distance traffic compartment car longer than 24,5m	

n	Trailer coach for railcar without a central cable for electric heating	
o	Double deck coach for example used with DD, MDD	
p	Open, center aisle coach	(Code now uses code t)
r	Car with high speed brake	
s	Special arrangement for example compartment for handicapped, or Saloon compartment in WLA	
t	Open, centre aisle coach	
u	Narrow gauge	
v	Broad gauge (1524 mm)	With space for bicycles
w	Cannot translate but is only used with the Post-van Type Postw	
x	Coach for light railcar	
y	Open, centre aisle coach	(Not used)
z	Passenger train car with central electric power supply from the main heating line (CZE)	

**Passenger coaches in Use.**

The attached table shows the new and old code, the coaches in use at 1.1.2000, and where possible data on the build year and speed. **Red** are ZSSK coaches.

1.1.2001	31.12.2000	Class	Class (ii)	Built by	Date	Speed km/h	No CD	No ZSSK	Notes
A 64				Bautzen	1967	140		7	
A 150	A		A 64	Bautzen	1967-71	120	31	36	
A RIC			A RIC	Bautzen	1975,78	140		22	
AB 348	AB		AB 64 RIC	Bautzen	1964-73	140	2		
AB 350	AB		AB 64	Bautzen	1964-73	140	119	30	
AB RIC				Bautzen	1970,73	140		11	
Aee	Aeel		Aee RIC	recon	1995-96	140	15		recon Class B, Bh
Aee			Aee	Bautzen	1974-78	140		14	
Aee 145	Aee		Aee(61) RIC	recon	2001-03	140	1		Partially Climatised Aee recon A, AB
Amee				Bautzen	1987	160		19	
Amee RIC				Bautzen	1987	160		4	
Apee	Aheer		Apee RIC	recon	1997	160	10		recon Class B, Bh
Apee				recon	1994-95	140		5	
Apeer				recon	1997	140		1	
Apeer	Aheer			recon	1996-2000	160		16	
Ampz	Ampz		Ampz RIC	SGP	1999	200	9		New for EC trains

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B Z AB				Bautzen	1965 -73	140		18	Coverted from AB
B 250	B		B 64 NDR	Bautzen	1965-73	140	262	65	
B 251	B		B 64 MR	Györ	1965-70	120	15	27	
B 255	B		B(Bc 74)	rec	1974-81	140	39		Recon of couchettes Bc 59-41
B RIC				Bautzen	1979-85	140		134	
B z BC74				Bautzen	1975	140		8	Coverted from Bc 74
Bc 663	Bc		B(VOJ)					31	Couchettes Conversion Bc
Bc 842	Bc		Bc 80		1979-94			10	Couchettes
Bc ZSR				Bautzen	1968-80	140/160		14	Couchettes
Bc				Bautzen	1980-84	140/160		20	Couchettes (2 types 140 and 160)
BD				Bautzen	1974 -81	140		61	
BD RIC				Bautzen	1981	140		11	With baggage compartment
BDbmrsee	BDmeer		BDbmrsee RIC	Bautzen	1987-88	140	16		Invalid drawbridge With Baggage compartment
BDbmsee	Bdmee		BDbmsee RIC	Bautzen	1987-88	160	22	11	With baggage compartment
BDbmsee	Bdmee		Bdbmsee	Bautzen	1987-88	160	28	9	With baggage compartment
BDdtx	BDix	022	BDdtx					3	
Bdmpee	Bymee		Bdmpee	recon				1	Regional traffic coaches with two sets of double doors recon Bymee – 68 seats
Bdmtee	Bymee		Bdmtee	Bautzen	1989-90			226	Regional traffic coaches with two sets of double doors
BDshmeer				bautzen	1987	160		10	
BDsee				Bautzen	1974-81	140		28	
Bdtmee	Bymee			Bautzen	1990			88	Regional traffic coaches with two sets of double doors
BDsheer				rec	1996-97	160		3	
Bdt	Bte		Bdt 90	Studénka	1990-92	120	78	177	Open carriage with space for cycles
Bdt 279	Bte		Bdt 87	Studénka	1986-87			158	Open carriage with space for cycles
Bdt754	Bpb	056	Bdt-056	recon.	1998-2000	120	2		Modernised trailer car
BDtax	BDaafx	012	BDtax-012		1976-83			70	Drving trailer for 810
Bdtax 783	BDaafx	014	BDtax-014					1	
Bee	Beel		Bee	recon	1997-98	160	40		Recon Class B, Bh, Bc They have a mixed interior with six 6-seat compartments and 22 seats in a large open compartment. The original benches for 8 passengers have been replaced by 6 seats.
Bee				Bautzen	1974 -85	140		55	
Bftn	Bhfnwr	943	Bftn-943	Studénka	1997	120	11		Driving trailer for Class 843
Bh				Gyor	1966-74	120		258	
Bheer				rec	2000	160		8	
Bmee				Bautzen	1986-87	160		40	
Bmee RIC				Bautzen	1986	160		15	
Bmteeo	Bmo		Bmteeo	recon	2001			0	Recom Bmo Doubledeck carriages
Bmto	Bmo		Bmto	Goerlitz	1976			46	Doubledeck cars
Bmz			Bmz RIC	SGP	2000	200	26		Climatised EC cars
Bp	Bpe		Bp	Studénka	1991-92	140	63		
Bpee	Bhee		Bpee RIC	recon	1997-98			35	Recon Class B, Bh
Bpeer	Bheer			recon	1996-97	160		14	
BRcm				Bautzen	1985	140		13	Buffet
Bt				Studenka	1972-75	120		113	
Bt 277	Bh		Bt MR	Györ				374	Open coach leatehrette seats
Btax	Baafx	010	Btax-010					589	Trailer for 810 Railcar
Btax 781	Baafx	011	Btax-011					2	
Btjo	Bpjo		Btjo					14	Double deck coaches that shared bogies. No Withdrawn
Btk	Bh		Btk(VOJ)					0	
Btn	Bnp	053	Btn-053		1969-70			83	Caoch for use with railcars

Btn 752	Btfnw	042	Btn-042	recon			4		Coach for use with railcars . Recon Bnp
Btn 753	Bhfn	043	Btn-043		1998		32		Coach for use with railcar class 843
Btu	Balm/u	005	Btu				8		Narrow guage
Btx	Bifx	021	Btx-021	recon	1995-96		68		Recon Class 020
Btx 761	Bix	020	Btx-020				148		Trailer for use with Class 820 Railcar (Now withdrawn)
D				Bautzen	1957-62	120		14	Baggage car
Ds				Bautzen	1972	140		4	Ex Dsa
Dr				Bautzen	1974	140		29	Ex Dpost
Dsr				Bautzen	1976	140		5	Ex Post cans DsPost
Da(k)	Daa(-k)		Da nakl.vl.					412	Guards van
Ddax	Daafx	013	Ddax-013	recon				6	Trailer converted for baggage for Class 812 Railcar
WLAB 821	WLABv		WLAB 821 RIC	Goerlitz	1981	140		38	Sleeping car For braod guage 1524 mm
WLABmee				Goerlitz	1997	200		10	For broad or standard guage 160 km/h broad guage
WLAB				Goerliz	1985	140		17	
WLAB				Goerliz	1978	140		26	
WLAB (from WLABv)				Gortlitz	1981	140		11	For broad or standard guage
Salon				Goerlitz	1968	140/160		2	
SR				Gortlitz	1968,81	140		3	
WLABmee	WLABm		WLABmee(61) RIC	recon	2001 -01	160	0		recon Bmee 21-70 into climatised sleeping cars
WR	WR			Bautzen	1976	140	21	4	Restaurant car
WRm	WRRm		WRm 813 RIC	Bautzen	1978		14	15	Restaurant car Modernised with new interiors for EC trains
WRm 812	WRRm		WRm 78 RIC	rec	1992 - 93		6		Restaurant car Recon from WRab
WRmee	WRRm		WRmee(61) RIC	recon	1994	160		3	Restaurant car recon 88-41 049-051, climatised.
WRReer				recon	1997	160		3	
WRmz	WRRmz		WRmz(73) RIC	SGP	1997	200	10		Restaurant car For EC Trains

Notes:

Based on the table by Alan Butschek [http://www.pastroj.net/katalog/ov/clanky/znaceni\\_2001/znaceni\\_2001.php3](http://www.pastroj.net/katalog/ov/clanky/znaceni_2001/znaceni_2001.php3) . The speed and dates built from other information on this site.

Col III The Class 0XX is a coach for a railcar, Class 9XX is a driving trailer

Col IV. A fuller referance. NDR is Czech for the GDR (East Germany), and MLR for hungary. RIC means complies to RIC regulations for International trains.

Col V Bautzen and Görlitz are in (former) East Germany; Györ in Hungary and Studenka is Czech

Col VI In use figures for CD come from <http://spz.logout.cz/provoz/preosvoz.html>

Col VII In use figures for ZSSK from *Slovenske Zeleznice* (They were not in the original table)



**Colour schemes**

Unlike the locomotives the passenger wagon schemes for CD and ZSSK are essentially regular.

**CD**

EC Trains (Modern EC stock)

Most Passenger carriages

Sleeping cars

Restaurant cars

Carriages used with Railcars (Btn)

Double deck

Old Double deck scheme (also some in Green).



This model still has the CSD logo

**ZD schemes**

Reconstructed IC stock

Fast trains

Other stock

Night Trains



Not really too sure what is criteria for the magenta and the green stock.

Both CD and ZSSK have some special schemes, for example Warsaw - Prague train.

## EC Wagons CD



A Bmz, next to a CD 372. Model JaMar

In 1995 CD ordered from a consortium of Siemens SGP Vekehrstechnik GmbH and CKD Vagonka 9 Ampz first class open carriages seating 58, and 26 Bmz compartment coaches seating 66, and 10 WRmz restaurant bar all with pressure seal bodies, air conditioning, double glazed windows, retention toilets, with SGP bogies capable of 200 km/h, for use on international EC and IC trains, for example EC 175 Alloys Negrelli Hamburg to Praha is composed of 6 Bmz + WRmz + Ampz.

Strangely for EC trains, the CD has only compartment-cars in 2nd class and only open interior cars in 1st class.

They have recently ordered another 11 Ampz and 15 Bmz.

Colours: Red windows and white skirt.

## OSShD - Y

The Organisation for the Combined Operations of Railways (OSShD) was established as the equivalent of the UIC for international standards for Railways.

In 1962 the Deutsche Reichsbahn (East German railways) introduced a new generation of 24.5m four-axle coaches OSShD Type B on "Görlitz V" bogies.

From 1968 a further development which met UIC-Norms and known as Type Y (or "Y-B/70", was introduced built by Waggonbau Bautzen or "VEB Waggonbau Görlitz". in East Germany. This 24.5m wagon was supplied to all East

European countries, and is the basis for the bulk of CD and ZSSK wagon stock.

Many have been fully refurbished for 160 km/h with new interiors (including reducing the number of seats) and sliding doors, but because they are not air-conditioned or are fully airtight they do not meet UIC conditions. They are used on internal express trains.

They have a characteristic arched top, rather than a curved top. Which can be seen in the picture below.



CD Bpee a reconstructed OSShD - Y - Note the domed roof. Model: Rado



ZSSK Apeer on IC 120 Kosican with CD Aeel behind 2001. Model: Rado



A ZSSK 263 with stock in Apple green July 2003



AB coach in ZRS (now ZSSK) red livery. Model Ondřej Janiš

### UIC X Stock

Stock built in the eighties is to UIC-X standard, some for 140 km/h and some for 160 km/h. note that the carriage roof is less

high and rounded, and it is 26.4m long, compared to the Y series. 24.5m.



CD Mid entrance stock Bdmtee based on UIC X Model Rado.

### Trailers

Conventional coaches, with independent heating used in conjunction with the 852 – 854 Rail cars by CD. They have a Red/ cream scheme similar to the Rail cars



Btn Coaches with an 854 Model: Ondøej Janiš

### Night

Both CD and ZSSK have a Sleeping wagons. The ZSSK scheme is mid blue overall, while the CD scheme is shown below.



CD WLAB in sleeper scheme.

### Double Deck stock



A local service with a 753 and two BMOs in CSD scheme 2002. The newer scheme is sky-blue with white bands. Model Thunderbird.

CD has double deck stock built in East Germany, some of which it has refurbished, although one type the Type Btjo and Bjo (in a green scheme), have recently been retired from

service. Unusually double deck stock is used on local Branch routes

### ***MSTS Routes***



The loco shed at Hradac, with the passenger sidings/good yard in the background. Vysocina Route

As far as am aware there is only one Czech of Slovak route Vysocina, which is an imaginary route set in Bohemia.

It includes a double track electrified line about 70 km, passing through the major railway station of Hradac above, with a single non electrified line at one end of the line.

Beautifully detailed with full signalling. The author's site with lots of screenshots is <http://www.tesnetwork.cz/00009012/index.htm>

Available by download (200 Mb) with an activity pack and 200Mb freeware rolling stock from <http://zelpage.goo.cz/vlcek/vysocina/>

## Resources

*Maly atlas lokomotiv 2002* – give full details of current locomotive stock in Czechia and Slovakia, Unfortunately in Czech

*Slovenske Zelezince* gives technical details of ZSSK locomotives and stock, and has a Czech, German, English glossary.

The In use figures came from the European stock list, and other details from Maly Atlas

European rail server has stock lists and pictures  
<http://mercurio.iet.unipi.it/list/>

[http://www.bueker.net/trainspotting/voltage\\_czechia.php](http://www.bueker.net/trainspotting/voltage_czechia.php) for details of Czech and Slovak electrification, and maps of Czech system.

The Kade rail Page <http://rail.czechian.net/> has pictures of engines and English descriptions.

<http://prototypy.bilysklep.cz/hlavni.htm> has picture of engines and descriptions in Czech

<http://www.chrissi.fsworld.co.uk/CSR.html> is a photo essay in English of a trip to Czechia – very good pictures.

There are full details of coaches (in Czech) at <http://www.parostroj.net/katalog/ov/> Go to the catalogue page.

<http://zelpage.goo.cz/skut-zel/razeni0304/> has side profiles of long distant trains formations

## MSTS

Felip Havels' site <http://zelpage.goo.cz/fhavel/index.html> is one of the best MSTS sites I have seen.

It has a catalogue, with descriptions (in Czech) of MSTS models available, with links to other sites, as well as extensive material that can be downloaded from that site.

It also has links of other Czech and Slovak MSTS sites.

He also has a rail site <http://fhavel.wz.cz/index.html>

From [Philip.Chesters@trainsimming.com](mailto:Philip.Chesters@trainsimming.com)

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**Also in this series:**

**Modern German Railways (Three parts)**

**Modern French Railways (Three parts)**

**Modern Swiss railways**

**Modern Italian railways (Three parts)**

**Modern Austrian Railways**

**From:** <http://www.train-sim.com/>

