



Bild: Wikipedia

The NS Plan U, officially the DE-3, was a 3-car Diesel multiple unit designed for service under the Nederlandse Spoorwegen. The cab's nose was used as a basis for the Mat '64 EMU, which operated under the same company until 2016. The trains were built between 1960 and 1963 by Werkspoor in Utrecht. They entered service under the 1xx classification, being numbered between 111 and 152. Other innovations compared to the older NS stock were the light construction, the central door locking by the conductor and a public address system. The trains were painted red, the new color for diesel trains introduced around 1960, which earned them the nickname "Red Devils". From 1968, they were painted in Nederlandse Spoorwegen's Yellow & Bluestripe colors. The engine compartment got 2 stripes instead of the normal 3. In 1972, the sliding doors were replaced by swinging doors that had been introduced and successfully tested on the Mat '64. Only the sliding door in the luggage compartment was retained.

In June 2000, it was decided to give 19 trains a lifespan extension. The trains would be equipped with air conditioning in the cabin, new upholstery for the seats and even a new diesel engine. In December 2003, the last sets were retired. Four Plan U trainsets have been preserved as museum material.

Quelle Wikipedia

Project settings and information:

Projekt no.: B009

The project was realised in the new 16-bit technology for ZIMO MS decoders and is customized for the H0 model of Artitec.

- The decoder must have at least software version 5.5
- The decoder can be controlled at address 3
- To ensure the functionality of the project, CV values should only be changed very carefully.
- A reset can be carried out using CV #8 = 8.



F-key	Function	Function output	Sound
F0	Light on/off	White lights (FO0fwd) on front in forward direction, White lights on short front end (FO0bwd) in backward direction	
F1	Red tail lights	FO1fwd / FO2bwd	
F2			Horn very short
F3			Horn short
F4			Horn long
F5			Conductor's whistle
F6	Halfspeed, shunting key and lights	White lights on both ends (FO0fwd + FO0bwd)	
F7			Curve squeal (when running)
F8			Sund on / off
F9			Mute (when on)
F10			Speed Lock
F11			Coupling / uncoupling
F12			Doors open / close
F13	Interior light	FO3	
F14			Lugage compartment door
F15			Cab door open / close
F16			Compressor
F17			Auxiliary diesel
F18	High beam		
F19	Stationary lights	FO1 + FO2	Hand brake
F20			Emergency brake
F21			Air drain
F22			Announcement
F23			Announcement
F24			Announcement
F25			Refuel
F26			Sanding
F27			Volume +
F28			Volume -

Sound on/off on F8 corresponds to the ZIMO standard:

If the sound is to be switched on/off with F1, the following CVs must be programmed:

- CV 401 = 8
- CV 408 = 1



Random generators:

Z1: Compressor after stopping

Z2: Compressor

Modified CVs:

CV# 1 = 3 Loco address	CV# 445 = 47 ZIMO Mapping 3 A2 forw.
CV# 3 = 22 Acceleration rate	CV# 446 = 46 ZIMO Mapping 3 A1 rev.
CV# 4 = 17 Deceleration rate	CV# 447 = 47 ZIMO Mapping 3 A2 rev.
CV# 5 = 220 Top speed	CV# 448 = 13 ZIMO Mapping 4 F-key
CV# 6 = 75 Medium speed	CV# 450 = 99 ZIMO Mapping 4 A1 forw.
CV# 9 = 58 Motor control frequency	CV# 452 = 99 ZIMO Mapping 4 A1 rev.
CV# 12 = 53 n.a.	CV# 454 = 18 ZIMO Mapping 5 F-key
CV# 28 = 3 RailCom Configuration	CV# 455 = 255 ZIMO Mapping 5 M-key
CV# 29 = 14 DCC configuration (binary)	CV# 456 = 14 ZIMO Mapping 5 A1 forw.
CV# 33 = 0 Function mapp. FOf	CV# 458 = 15 ZIMO Mapping 5 A1 rev.
CV# 34 = 0 Function mapp. FOr	CV# 460 = 19 ZIMO Mapping 6 F-key
CV# 57 = 140 Motor regulation: voltage reference	CV# 461 = 29 ZIMO Mapping 6 M-key
CV# 60 = 90 Dimming general	CV# 462 = 65 ZIMO Mapping 6 A1 forw.
CV# 105 = 145 User Data 1	CV# 463 = 66 ZIMO Mapping 6 A2 forw.
CV# 111 = 12 Emergency stop deceleration rate	CV# 464 = 65 ZIMO Mapping 6 A1 rev.
CV# 125 = 88 Effects F0 front	CV# 465 = 66 ZIMO Mapping 6 A2 rev.
CV# 126 = 88 Effects F0 rear	CV# 466 = 19 ZIMO Mapping 7 F-key
CV# 127 = 88 Effects F1	CV# 467 = 6 ZIMO Mapping 7 M-key
CV# 128 = 88 Effects F2	CV# 509 = 200 ZIMO Mapping dimming value 2-key
CV# 147 = 160 Motor regulation: minimum timeout	CV# 510 = 160 ZIMO Mapping dimming value 3-key
CV# 148 = 100 Motor regulation: D-Value	CV# 512 = 120 ZIMO Mapping dimming value 5-key
CV# 149 = 150 Motor regulation: fixed P-Value	CV# 516 = 41 F2 soundnumber
CV# 154 = 16 ZIMO configuration bits 2 (binary)	CV# 519 = 43 F3 soundnumber
CV# 155 = 6 Half-speed key	CV# 522 = 45 F4 soundnumber
CV# 156 = 6 Shunting key accel./decel.	CV# 525 = 40 F5 soundnumber
CV# 158 = 108 Several sound bits + RailCom variants	CV# 526 = 64 F5 volume
CV# 190 = 45 Up-dimming time for FO	CV# 543 = 32 F11 soundnumber
CV# 191 = 16 Down-dimming time for FO	CV# 544 = 64 F11 volume
CV# 254 = 9 Project-ID	CV# 545 = 8 F11 information on loop
CV# 255 = 1 Project-ID	CV# 546 = 33 F12 soundnumber
CV# 256 = 1 n.a.	CV# 547 = 128 F12 volume
CV# 265 = 101 Selection of the locomotive type	CV# 548 = 8 F12 information on loop
CV# 266 = 60 Total volume	CV# 552 = 37 F14 soundnumber
CV# 273 = 22 Starting delay	CV# 553 = 91 F14 volume
CV# 282 = 30 Duration of the acceleration noise [0.1s]	CV# 554 = 8 F14 information on loop
CV# 284 = 15 Threshold for noise reduction in delay	CV# 555 = 47 F15 soundnumber
CV# 285 = 20 Duration of the noise reduction with delay	CV# 556 = 128 F15 volume



CV# 287 = 75 Threshold for brake squeal	CV# 557 = 8 F15 information on loop
CV# 288 = 85 Brake squeal time spent driving	CV# 558 = 29 F16 soundnumber
CV# 290 = 100 Thyristor pitch at medium speed	CV# 559 = 64 F16 volume
CV# 291 = 200 Thyristor pitch at maximum speed	CV# 560 = 72 F16 information on loop
CV# 292 = 60 Thyristor gear for medium speed	CV# 561 = 46 F17 soundnumber
CV# 293 = 40 Thyristor volume at constant speed	CV# 562 = 91 F17 volume
CV# 294 = 50 Thyristor volume during acceleration	CV# 563 = 72 F17 information on loop
CV# 295 = 40 Thyristor Volume at delay trip	CV# 577 = 36 soundnumber squeal
CV# 296 = 60 Electromotor largest volume	CV# 578 = 128 volume squeal
CV# 297 = 85 Electromotor: begin of audible noise	CV# 579 = 19 Thyristor Sound number
CV# 298 = 50 Electromotor: begin of full volume	CV# 581 = 27 soundnumber starting whistle
CV# 299 = 50 E-motor noise depend. on speed of pitch	CV# 582 = 128 volume starting whistle
CV# 313 = 109 Mute button	CV# 585 = 20 Soundnumber electromotor
CV# 314 = 45 Mute fade time	CV# 676 = 24 F21 soundnumber
CV# 315 = 20 Random Z1 min interval	CV# 679 = 50 F22 soundnumber
CV# 316 = 20 Random Z1 max interval	CV# 682 = 49 F23 soundnumber
CV# 317 = 7 Random generator Z1 playback time	CV# 685 = 48 F24 soundnumber
CV# 318 = 110 Random Z2 min interval	CV# 688 = 39 F25 soundnumber
CV# 319 = 150 Random Z2 max interval	CV# 689 = 91 F25 volume
CV# 320 = 8 Random generator Z2 playback time	CV# 690 = 72 F25 information on loop
CV# 356 = 10 Speed Lock Key	CV# 691 = 30 F26 soundnumber
CV# 357 = 110 Thyristor control/volume reduction	CV# 692 = 64 F26 volume
CV# 358 = 5 Thyristor volume reduction curve	CV# 693 = 72 F26 information on loop
CV# 372 = 50 Electromotor volume acceleration	CV# 744 = 29 Soundnumber Z1
CV# 373 = 50 Electromotor volume deceleration	CV# 745 = 64 Volume Z1
CV# 395 = 80 maximal volume	CV# 746 = 8 Information on loop Z1
CV# 396 = 28 Volume decrease key	CV# 747 = 29 Soundnumber Z2
CV# 397 = 27 Volume increase key	CV# 748 = 64 Volume Z2
CV# 430 = 29 ZIMO Mapping 1 F-key	CV# 749 = 8 Information on loop Z2
CV# 432 = 46 ZIMO Mapping 1 A1 forw.	CV# 980 = 91 Script 3 volume sound 1
CV# 434 = 47 ZIMO Mapping 1 A1 rev.	CV# 981 = 64 Script 3 volume sound 2
CV# 436 = 1 ZIMO Mapping 2 F-key	CV# 982 = 0 Script 5 volume sound
CV# 438 = 65 ZIMO Mapping 2 A1 forw.	CV# 983 = 128 Script 4 volume sound
CV# 440 = 66 ZIMO Mapping 2 A1 rev.	CV# 984 = 128 Script 6 volume sound
CV# 442 = 6 ZIMO Mapping 3 F-key	CV# 990 = 35 Script 2 timer
CV# 443 = 1 ZIMO Mapping 3 M-key	CV# 991 = 20 Script 5 timer
CV# 444 = 46 ZIMO Mapping 3 A1 forw.	

Sound Samples:

24 Bremse Luft.wav	39 Tanken.wav
25 Zwangsbremmung_Druckluft.wav	40 Schaffnerpiff_NS.wav
26 SiFa_NS-Signal.wav	41 Horn_hoch_0.20a.wav



27	Bremse entlüften.wav	42	Horn_hoch_0.37a.wav
28	Bremsen.wav	43	Horn_tief_0.40a.wav
29	Kompressor_02.wav	44	Horn_tief_0.90a.wav
30	Sanden.wav	45	Horn_tief_4.20a.wav
32	Scharfenberg_on-off.wav	46	Hilfskompressor.wav
33	Türe-öffnen-schließen_3x.wav	47	Gepäckraumtür_auf-zu.wav
34	Schienenknarren_kurz.wav	48	NS Stoptrein Enkhuizen.wav
35	Kurvenquietschen_2.wav	49	NS Sneltrain Zwolle.wav
36	Bremsen_03.wav	50	Stoptrein naar Haarlem.wav
37	FS-Tür_auf-zu.wav	51	Handbremse-zu.wav
38	Maschinenraumtür.wav	52	Handbremse-auf.wav

Scripts:

Script 1: Dimm lights at diesel start

Script 3: Curve squeal

Script 5: Emergency brake

Script 2: Cab light of when running

Script 4: Emergency brake warning noise

Script 6: Hand brake functional

fits
mfx The project is equipped with mfx function symbols and prepared for the use of locomotive pictures: the mfx product number 8xxxx applies to the BR xyz.

In order to ensure automatic registration with key symbols on an mfx-capable command station, the (DCC) CV# 12 must be programmed to the value 117.

The new decoder generation from ZIMO:

...is called MS decoder. These are multi-protocol decoders (for the DCC, MM or mfx format), which are also capable of analogue operation (DC, AC). An audio section with 16-bit resolution, 22 kHz sample rate and 128 Mbit sound memory means an even more powerful and sonically dynamic ZIMO decoder than before. ZIMO is thus taking a further step in the direction of model fidelity. Of course, all the valued features and familiar options of the MX decoders are retained.

For technical data, see: <https://www.zimo.at/web2010/products/ms-sound-decoder.htm> (small decoders) and <https://www.zimo.at/web2010/products/ms-sound-decoder-grossbahn.htm> (large scale decoders).

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