Denver & Rio Grande Western C-25

Prototype information

This locomotive, a 2-8-0 or Consolidation type, originally existed as # 103 of the Crystal River Railroad, a narrow gauge line located in the Elk Mountains of central Colorado. It was built in 1903 as C/N 21757 of the Baldwin Locomotive Works, had 33" drivers, 18x20" cylinders, and a tractive effort just short of 25,000 pounds. It was a standard Baldwin design, and other narrow gauge locos of this size and type were built for railroads in the Western Hemisphere.

The D&RG purchased this locomotive from the Crystal River in 1916, numbered it # 432, this number subsequently being changed in 1924 to # 375. Originally the locomotive was a class 112, this number reflecting the total weight of the locomotive, but eventually the D&RGW changed the classification numbers of their locomotives to reflect their tractive effort, and thus the classification of C-25. Interestingly, for a while the cab of this loco carried "C-25-112" as its classification.

The C-25 was affectionately known as the "Baby Mudhen" because its pulling power was close to that of the K-27 class, those engines being known as "Mudhens." The 375 when it was put into service in 1916 was the best steamer on the railroad at that time. Sadly, on June 21, 1949 the one and only C-25 on the D&RGW was scrapped at Alamosa, Colorado.

Source: Wikipedia

Sound project information

The engine is long gone therefore the chuff sounds are recorded from a similar surviving engine. The whistle sound is a story of its own. Using photos from the genuine whistle the dimension of each whistle chamber was taken. A church organ builder then calculated the pitch of each chamber. The resulting whistle sound, mixed from 6 single chime whistles, each pitched to the desired values, gives a surprising different whistle sound, compared to the typical Rio Grande whistles.

The sound operates both the thundering highball and the light coasting on flat areas. Use function key F15 to switch between the modes.

The sound project is based on Zimo Advanced Standard.

The decoder must have SW Version 33.14 or higher.

The sound project is designed for the new Zimo MX 697 sound decoder that fits the NMRA G-scale plug and play connector. All another Zimo sound decoders also work well, except the old MX 690 series, which cannot handle complex sounds with coasting.

FA 7 and servo1 can operate several electric couplers. The Kadee 11220 electric coupler can simply be plugged in on servo connector 1.

CVs 3, 4, 5, 57, 154 and 158 are important values for the sound project. Please change values very carefully!

By default the function number is the same as function key. All the functions can easily be assigned to other keys, using the Zimo function key mapping.

Program the desired key number as your value in the CV 400+Fu number and the whole function is mapped to another key. Please take care, as it is possible to map multiple functions to the same key! Please read the instruction sheet http://sound-design.white-stone.ch/Information.html

Function	Installation	Function output	Sound effect
F0	Light on	FA 0v+0r	Dynamo
F1	Bell		Bell
F2	Whistle l-l-s-l		Highway crossing signal
F3	Whistle long		Playable as long as you push
F4	Whistle l-s-s-s		
F5	Cab light	FA 5	
F6	Smoke generator on heater load controlled Also replaceable with Zimo blowing smoker	FA 6 heater, on 15 min timer to prevent burnout Fan output for cam operated blower	
F7	Cylinder valve		Blow down
F8	Sound on / off		
F9	Wheels screeching on curves		Sound of Wheels screeching on curves
F10	Shoveling coal	FA 8 flickers automatically	Sound of shovel and firebox door closing
F11	Blower	Smoke fan is on	Steam blowing
F12	Servo coupler opens and loco moves back and forth	FA7 and servo1 opens electric coupler	Uncoupling sound
F13	Coupling		Coupling sound
F14	Pop valve (safety valve)		Loud steam blast
F15	Full power / coasting		Switch between 2 sound modes
F16	Tunnel fader (muting)		Sound fades in or out in 2,5 sec
F17	Conductor		„All aboard! “
F18	Injector		Feeding water in the boiler
F19	Dual Westinghouse air pump, fast		2 air pump with different speeds
F20	Filling water into tender		Water splashing
F21	Marker Lights	FA9	

Random effect	Sound	
Z1	Dual air pump, fast	Every time the locomotive comes to a standstill
Z2	Dual air pump, slow	Maintaining air pressure
Z3	Shoveling coal	FA8 flickering
Z4	Blower	Fan blows smoke out of stack
Z5	Injector	Steam injects water into the boiler
Z6	Firebox door	Doors slams
Z7	Steam noise	
Z8	Safety valve	Loud popping of valve

input	sound	
1	bell	
2	whistle	
3	Cam chuff trigger	

Changing CVs values used by the reset

CV# 3 = 22
CV# 4 = 32
CV# 13 = 180
CV# 14 = 67
CV# 35 = 0
CV# 36 = 0
CV# 37 = 0
CV# 38 = 0
CV# 41 = 0
CV# 42 = 0
CV# 43 = 0
CV# 44 = 0
CV# 45 = 0
CV# 46 = 4
CV# 57 = 140
CV# 60 = 104
CV# 65 = 6
CV# 112 = 1
CV# 114 = 255
CV# 115 = 55
CV# 116 = 155
CV# 133 = 20
CV# 137 = 153
CV# 138 = 204
CV# 139 = 255
CV# 152 = 63
CV# 154 = 18
CV# 158 = 8
CV# 159 = 48
CV# 160 = 4
CV# 181 = 12
CV# 182 = 12
CV# 250 = 224
CV# 253 = 234
CV# 260 = 0
CV# 265 = 1
CV# 267 = 108
CV# 268 = 0
CV# 275 = 181
CV# 276 = 181
CV# 283 = 255
CV# 286 = 60
CV# 287 = 85
CV# 311 = 0
CV# 312 = 7
CV# 313 = 116
CV# 314 = 25
CV# 345 = 15
CV# 346 = 2
CV# 351 = 28
CV# 352 = 255
CV# 353 = 62
CV# 354 = 38
CV# 376 = 181
CV# 430 = 21
CV# 432 = 7
CV# 434 = 7
CV# 436 = 22
CV# 438 = 8
CV# 440 = 8
CV# 442 = 23
CV# 444 = 9
CV# 446 = 9
CV# 448 = 24
CV# 450 = 11
CV# 452 = 11
CV# 454 = 25
CV# 456 = 12
CV# 458 = 12