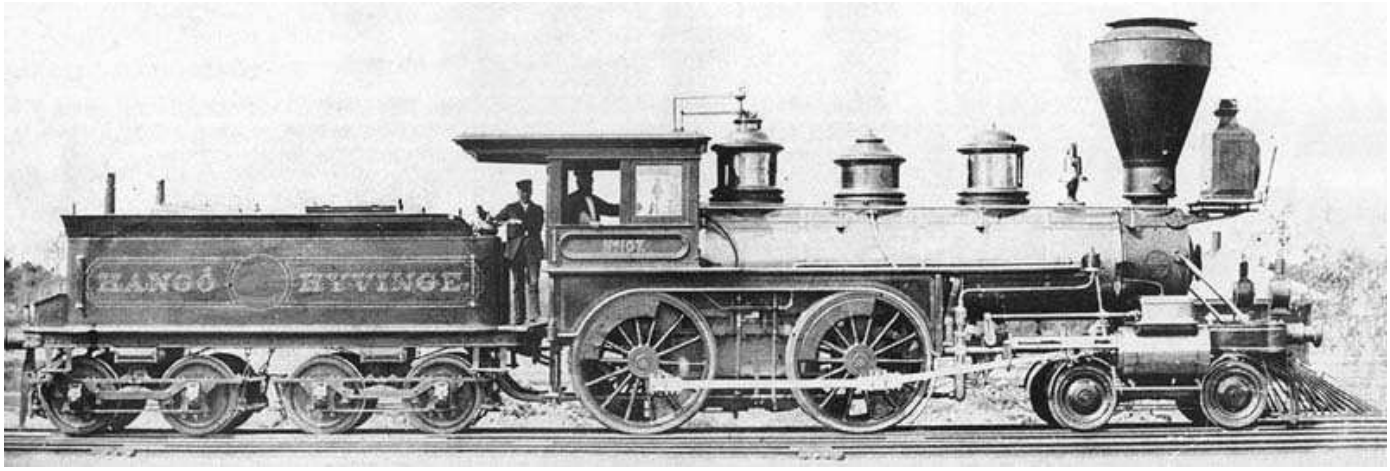
American Standard 4-4-0



Prototype information

Almost every major railroad that operated in North America in the first half of the 19th century owned and operated locomotives of this type. A large number of this type were produced and used in the United States, hence the 4-4-0 is most commonly known as the **American** type. Five years after locomotive construction had begun at the West Point Foundry with the 0-4-0 type *Best Friend of Charleston* in 1831, the first 4-4-0 locomotive was designed by Henry R. Campbell, at the time the chief engineer for the Philadelphia, Germantown and Norristown Railway. Campbell received a patent for the design in February 1836 and soon set to work building the first 4-4-0.

Source: Wikipedia

Sound project information

The sound records are taken from NG 4-4-0 Eureka during its guest appearance on the Cumbres & Toltec Scenic Railway.

The sound operates both the hard thundering highball and the light coasting with clanking side rods on flat areas. Use the F15 function key to switch between 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 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	
F1	Bell		Bell
F2	Whistle l-l-s-l		Highway crossing signal
F3	Whistle long		Playable as long as the key is pressed
F4	Whistle short		Short whistle sound
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	Fire box door closes	FA 8 flickers automatically	door slams after a few seconds of flickering fire
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	Westinghouse air pump, fast		Air pump with different speeds
F20	Filling water into tender		Water splashing

Random effect	Sound	
Z1	Air pump fast	Every time the locomotive comes to a standstill
Z2	Air pump slow	Maintaining air pressure
Z3	Fire box door slams	FA8 flickering
Z4	Blower	Fan blows smoke out of stack
Z5	Injector	Steam injects water into the boiler
Z6	Some ash door noise	
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 = 20
CV# 4 = 20
CV# 7 = ---
CV# 29 = ---
CV# 32 = 16
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 = 80
CV# 60 = 60
CV# 65 = 0
CV# 112 = 1
CV# 114 = 255
CV# 115 = 66
CV# 116 = 145
CV# 132 = 72
CV# 133 = 20
CV# 137 = 153
CV# 138 = 204
CV# 139 = 255
CV# 154 = 18
CV# 158 = 8
CV# 159 = 48
CV# 160 = 8
CV# 163 = 255
CV# 167 = 255
CV# 181 = 12
CV# 182 = 12
CV# 266 = 65
CV# 267 = 85
CV# 286 = 46
CV# 287 = 75
CV# 301 = 13
CV# 302 = 16
CV# 303 = 21
CV# 311 = 0
CV# 312 = 7
CV# 313 = 116
CV# 314 = 25
CV# 345 = 15
CV# 346 = 2
CV# 351 = 204
CV# 352 = 255
CV# 353 = 32
CV# 354 = 2
CV# 376 = 181