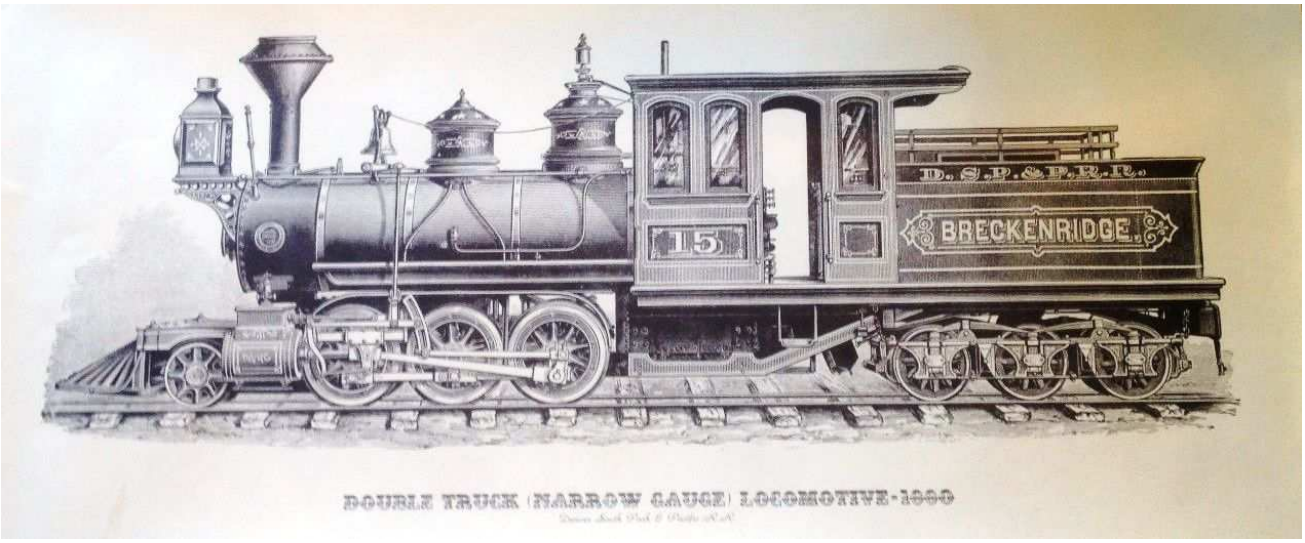
Mason Bogie



Prototype information

The **Mason Bogie** is a type of articulated steam locomotive suited for sharp curves and uneven track, once commonly used on narrow gauge lines in the United States. The design is a development of the single Fairlie, and is sometimes, and perhaps more properly known as the Mason Fairlie. The American licensee of the Fairlie Patent steam locomotive was the firm of William Mason, located in Taunton, Massachusetts. It became obvious that, for all the Fairlie locomotive's advantages, its disadvantages outweighed them. Mason developed an improved design, called the Mason-Fairlie, or more commonly the Mason Bogie (the word bogie is the British word for truck in the railroad sense). Similar locomotives developed in England were known as Single Fairlies.

Mason's idea was to remove what American railroad men saw as the biggest disadvantages of the Fairlie - its cramped space for fuel and water caused by its double ended design (not very useful on American railroads where there was always ample room for a turntable or wye), its cramped cab caused by the joined double boilers, and to some degree its poor riding.

He did this by removing one boiler of the double Fairlie and retaining only one power truck at the front. A much larger cab was fitted, and a fuel bunker and water tank behind the cab, supported by a trailing truck. The advantages of the Fairlie design were kept; the swiveling driven truck for a greater ability to negotiate curves, and the large open space between the trucks to fit a large firebox unrestricted by the wheels.

The Mason Bogie was still, though, plagued by one of the biggest problems of the Fairlie - the jointed steam pipes to the driven truck leaked far too much steam. Mason eventually changed to a different scheme, in which the pivot point for the leading truck became a hollow ball joint through which the live steam for the cylinders passed.[1][2] Mason also developed a sliding seal for the exhaust from the moving cylinder saddle into the smoke box.[3] Although better, Mason's improvements took up much valuable space in between the driving wheels, forcing Mason to use an outside valve gear, generally the Walschaerts valve gear. Additionally, the reversing shaft had to be mounted atop the boiler, with a long lifting link dropping down to the radius rod, a feature unique to Mason Bogies (this was necessary because the lifting link would swing to the side as the

truck pivoted, lifting the radius rod and changing the valve setting. Lengthening the link, and thus increasing the radius of its swing, minimized the amount of change.).

In the United States of America (USA) and Europe the 2-6-0 wheel arrangement was principally used on tender locomotives. This type of locomotive was widely built in the USA from the early 1860s to the 1920s.

Although examples were built as early as 1852–53 by two Philadelphia manufacturers, Baldwin Locomotive Works and Norris Locomotive Works, these first examples had their leading axles mounted directly and rigidly on the frame of the locomotive, rather than on a separate truck or bogie.[2] On these early 2-6-0 locomotives the leading axle was merely used to distribute the weight of the locomotive over a larger number of wheels. It was therefore essentially an 0-8-0 with an unpowered leading axle and the leading wheels did not serve the same purpose as, for example, the leading trucks of the 4-4-0 American or 4-6-0 Ten-Wheeler types that, at the time, had been in use for at least a decade.

The first American 2-6-0 with a rigidly mounted leading axle was the "Pawnee", built for heavy freight service on the Philadelphia and Reading Rail Road. In total, about thirty locomotives of this type were built for various American railroads. While they were generally successful in slow, heavy freight service, the railroads that used these first 2-6-0 locomotives didn't see any great advantages in them over the 0-6-0 or 0-8-0 designs of the time. The railroads noted their increased pulling power, but also found that their rather rigid suspension made them more prone to derailments than the 4-4-0 locomotives of the day. Many railroad mechanics attributed these derailments to having too little weight on the leading truck.

Source: Wikipedia

Sound project information

The sound operates both the hard thundering highball and the light coasting with clanking side rods 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 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 short		Short whistle
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	Firebox door closing	FA 8 flickers automatically	door slams shut after a few seconds of fire flickering
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	Dual air pump fast	Every time the locomotive comes to a standstill
Z2	Dual air pump slow	Maintaining air pressure
Z3	Blower	Fan blows smoke out of stack
Z4	Injector	Steam injects water into the boiler
Z5	Shoveling coal	FA8 flickers
Z6	Ash hatch	
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 = 65
CV# 60 = 60
CV# 63 = 51
CV# 65 = 0
CV# 112 = 1
CV# 114 = 255
CV# 115 = 66
CV# 116 = 145
CV# 124 = 3
CV# 127 = 8
CV# 132 = 72
CV# 133 = 20
CV# 134 = 72
CV# 137 = 153
CV# 138 = 204
CV# 139 = 255
CV# 152 = 3
CV# 154 = 18
CV# 158 = 8
CV# 159 = 48
CV# 160 = 8
CV# 163 = 255
CV# 167 = 255
CV# 181 = 12
CV# 266 = 65
CV# 267 = 85
CV# 275 = 181
CV# 276 = 181
CV# 281 = 3
CV# 284 = 3
CV# 286 = 64
CV# 287 = 75
CV# 288 = 80
CV# 301 = 13
CV# 302 = 16
CV# 303 = 21
CV# 310 = 8
CV# 311 = 0
CV# 312 = 7
CV# 313 = 116
CV# 314 = 25
CV# 345 = 15
CV# 351 = 204
CV# 352 = 255
CV# 353 = 32
CV# 354 = 2
CV# 376 = 181