Norfolk & Western J-Class

Prototype information

The New York Central Hudsons were a series of 4-6-4 "Hudson" type steam locomotives built by the American Locomotive Company (ALCO) and the Lima Locomotive Works from 1927 to 1938 for the New York Central Railroad. Named after the Hudson River, the 4-6-4 wheel arrangement came to be known as the "Hudson" type in the United States as these locomotives were the first examples built and used in North America. Built for high-speed passenger train work, the Hudson locomotives were famously known for hauling the New York Central's crack passenger trains, such as the 20th Century Limited and the Empire State Express.

The Hudson came into being because the existing 4-6-2 Pacific power was not able to keep up with the demands of longer, heavier trains and higher speeds. Given NYC's axle load limits, Pacific could not be made any larger; a new locomotive type would be required to carry the larger boilers. Lima Locomotive Works' conception of superpower steam as realized in the 2-8-4 Berkshire type was the predecessor to the Hudson. The 2-8-4's 4-wheel trailing truck permitted a huge firebox to be located after the boiler. The resulting greater steaming rate ensured that such a locomotive would never run out of power at speed, a common failing of older locomotives. Applying the ideas of the freight-minded Berkshire type to the Pacific resulted in a 4-6-4 locomotive.

Streamlined Hudson at the 1939 New York World's Fair

NYC ordered prototype No. 5200 from Alco, and subjected it to intensive testing. A fleet of 205 J-1 class Hudsons were eventually built, including 30 each for the Michigan Central Railroad (MC road numbers 8200-8229) and the Cleveland, Cincinnati, Chicago & St. Louis Railway (“Big Four” - road numbers 6600-6629). In addition, NYC subsidiary Boston & Albany Railroad ordered 20 J-2 class (B&A road numbers 600-619), the latter 10 from Lima Locomotive Works (all other NYC Hudsons were built by Alco’s Schenectady works).[1] A later development were 50 J-3a class Super Hudsons in 1937–1938, with many modern appliances and innovations. After the MC, Big 4, and B&A locomotives were incorporated into the NYC numbering, the NYC Hudson locomotives had road numbers ranging from 5200 to 5474. The NYC J-1 road numbers were 5200-5344, the MC J-1s became NYC 5345-5374, the Big 4 J-1s became NYC 5375-5404, the J-2s (all from B&A) became NYC road numbers 5455-5474, and the J-3 road numbers were 5405-5454. The J-2 numbers are last because they were transferred to the NYC after the J-3 deliveries.

J-3a "Dreyfuss" Hudson on display at the 1939 World's Fair

The Hudsons were of excellent quality. In response to the styling sensation of the new diesel-powered Zephyr streamliner, Locomotive No. 5344 (the last J-1e) was fitted with an Art Deco streamlined shroud designed by Carl F. Kantola and was named Commodore Vanderbilt on December 27, 1934.[2][3] The streamlining was later replaced to match the last ten J-3a locomotives (5445-5454) that had been built with streamlining designed by Henry Dreyfuss. Two more J-3a locomotives (5426 & 5429) had a 3rd streamlining style fitted in 1941 for Empire State Express service.[1] The streamlined locomotives featured prominently on NYC advertising.

The forte of all Hudsons was power at top speed. They were poor performers at low speed and the presence of a booster engine on the trailing truck was an absolute necessity for starting. For this reason, they were generally favored by railroads with flat terrain and straight routes.

Wikipedia

Sound project information

The sound operates both the thundering highball and the light coasting on flat areas. Use function key F15 to switch between the modes.
The Decoder must have SW Version 39.0 or higher.

The sound project is based on Zimo Advanced Standard.

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, 6, 154 and 158 are important values for the sound project. Please change values very carefully!
The maximum speed should be limited exclusively with the CV 57!

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

Button Functions

F0: FA0v at Vw + FA0r at Rw
F1: Swing Bell NYC Hudson
F2: Hudson whistle HWC
F3: Hudson whistle Single
F4: Hudson whistle short
F5: Cab light FA5
F6: Smoke generator FA6
F7: Drain on/off
F8: User Sounds on/off
F9: Curve squeezing
F10: 2 cylinder engine
F11: Blower
F12: Uncoupling + FA7 + Servo1 + Servo2
F13: Coupling
F14: Pop Valve short
F15:
F16: Mute if on
F17: All board
F18: INJECTOR
F19: Composite air pump
F20: Taking water on Watertower
F21:
F22:
F23:
F24:
F25:
F26:
F27: Vol- (CV396)
F28: Vol+ (CV397)

Random sound

Z1 Air pump fast Whenever the locomotive stops
Z2 Air pump Slow air pressure hold
Z3 2 Zyl Motor
Z4 Injector water is injected into the boiler
Z5
Z6 Blower
Z7 Sieden Steam Noise
Z8 Safety valve Loud blow-off of the safety valve

Switching inputs

1 bell
2 pipe
3 steam strokes, tap on shaft

Changing CVs values used by the reset

CV# 1 = ---
CV# 3 = 40 Acceleration rate
CV# 4 = 40 Deceleration rate
CV# 7 = ---
CV# 29 = ---
CV# 35 = 0 Function mapp. F1
CV# 36 = 0 Function mapp. F2
CV# 37 = 0 Function mapp. F3
CV# 38 = 0 Function mapp. F4
CV# 41 = 0 Function mapp. F7
CV# 42 = 0 Function mapp. F8
CV# 43 = 0 Function mapp. F9
CV# 44 = 0 Function mapp. F10
CV# 45 = 0 Function mapp. F11
CV# 46 = 4 Function mapp. F12
CV# 47 = 16 n.a.
CV# 48 = 32 n.a.
CV# 57 = 150 Motor regulation: voltage reference
CV# 60 = 60 Dimming general
CV# 65 = 3 Sub-Vers. Number
CV# 112 = 1 ZIMO configuration bits (binary)
CV# 114 = 127 Dim Mask FO0-FO6
CV# 115 = 66 Uncoupler control
CV# 116 = 145 Automatic uncouple
CV# 124 = 0 Shunting keys configuration (binary)
CV# 129 = 8 Effects F3
CV# 132 = 72 Effects F6
CV# 137 = 153 Smoke generator at standstill
CV# 138 = 204 Smoke generator at cruising speed
CV# 139 = 255 Smoke generator at accelaration
CV# 154 = 18 ZIMO configuration bits 2 (binary)
CV# 158 = 0 Several sound bits + RailCom variants
CV# 159 = 48 Effects F7
CV# 160 = 8 Effects F8
CV# 163 = 255 Servo 1 right stop
CV# 167 = 255 Servo 2 right stop
CV# 181 = 12 Servo 1 - Function Assignment
CV# 182 = 12 Servo 2 - Function Assignment
CV# 260 = 170 Loading code 1
CV# 261 = 29 Loading code 2
CV# 265 = 1 Selection of the locomotive type
CV# 266 = 100 Total volume
CV# 267 = 123 Chuff sound rate
CV# 269 = 20 Steam, accented lead-chuff
CV# 271 = 0 Overlapping chuff beats
CV# 272 = 90 Drainage time
CV# 273 = 8 Starting delay
CV# 274 = 80 min. drainage downtime [0.1s]
CV# 275 = 60 Volume with no load slow travel
CV# 276 = 80 Volume with no load speed run
CV# 281 = 2 Threshold for full acceleration sound
CV# 283 = 140 volume at full acceleration
CV# 284 = 2 Threshold for noise reduction in delay
CV# 287 = 90 Threshold for brake squeal
CV# 312 = 7 Drainage button
CV# 313 = 116 Mute button
CV# 314 = 25 Mute fade time
CV# 315 = 1 Random Z1 min interval
CV# 316 = 20 Random Z1 max interval
CV# 317 = 10 Random generator Z1 playback time
CV# 318 = 100 Random Z2 min interval
CV# 319 = 100 Random Z2 max interval
CV# 320 = 50 Random generator Z2 playback time
CV# 321 = 130 Random Z3 min interval
CV# 322 = 130 Random Z3 max interval
CV# 323 = 15 Random generator Z3 playback time
CV# 324 = 160 Random Z4 min interval
CV# 325 = 160 Random Z4 max interval
CV# 326 = 18 Random generator Z4 playback time
CV# 327 = 0 Random Z5 min interval
CV# 328 = 0 Random Z5 max interval
CV# 329 = 0 Random generator Z5 playback time
CV# 330 = 250 Random Z6 min interval
CV# 331 = 250 Random Z6 max interval
CV# 332 = 15 Random generator Z6 playback time
CV# 333 = 210 Random Z7 min interval
CV# 334 = 210 Random Z7 max interval
CV# 335 = 18 Random generator Z7 playback time
CV# 336 = 250 Random Z8 min interval
CV# 337 = 250 Random Z8 max interval
CV# 338 = 15 Random generator Z8 playback time
CV# 341 = 10 Switching input 1 Playback time
CV# 342 = 3 Switching input 2 Playback time
CV# 351 = 204 Smoke fan pwm at constant speed
CV# 353 = 32 Smoke heater max. operating time
CV# 376 = 255 Driving sound volume
CV# 394 = 32 ZIMO configuration 4 (binary)
CV# 395 = 120 maximal volume
CV# 396 = 27 Volume decrease key
CV# 397 = 28 Volume increase key
CV# 508 = 0 ZIMO Mapping dimming value 1-key
CV# 509 = 0 ZIMO Mapping dimming value 2-key
CV# 510 = 0 ZIMO Mapping dimming value 3-key
CV# 511 = 0 ZIMO Mapping dimming value 4-key
CV# 512 = 0 ZIMO Mapping dimming value 5-key
CV# 513 = 16 F1 Soundnumber
CV# 514 = 181 F1 volume
CV# 515 = 8 F1 information on loop
CV# 516 = 24 F2 soundnumber
CV# 519 = 23 F3 soundnumber
CV# 521 = 8 F3 information on loop
CV# 537 = 28 F9 soundnumber
CV# 538 = 32 F9 volume
CV# 539 = 72 F9 information on loop
CV# 540 = 20 F10 soundnumber
CV# 541 = 91 F10 volume
CV# 542 = 8 F10 information on loop
CV# 543 = 30 F11 soundnumber
CV# 544 = 91 F11 volume
CV# 545 = 8 F11 information on loop
CV# 546 = 21 F12 soundnumber
CV# 547 = 128 F12 volume
CV# 549 = 27 F13 soundnumber
CV# 550 = 181 F13 volume
CV# 552 = 31 F14 soundnumber
CV# 553 = 181 F14 volume
CV# 554 = 8 F14 information on loop
CV# 561 = 13 F17 soundnumber
CV# 562 = 91 F17 volume
CV# 564 = 19 F18 soundnumber
CV# 565 = 64 F18 volume
CV# 566 = 8 F18 information on loop
CV# 567 = 32 F19 soundnumber
CV# 568 = 181 F19 volume

CV# 569 = 8 F19 information on loop
CV# 573 = 14 soundnumber boilng
CV# 574 = 23 volume boiling
CV# 577 = 25 soundnumber squeal
CV# 578 = 181 volume squeal
CV# 583 = 17 Soundnumber drainage
CV# 584 = 181 Volume dewatering
CV# 673 = 29 F20 soundnumber
CV# 674 = 181 F20 volume
CV# 675 = 8 F20 information on loop
CV# 734 = 30 Soundnumber trigger 5
CV# 735 = 255 Trigger 5 to FO
CV# 736 = 20 Soundnumber trigger 6
CV# 737 = 5 Trigger 6 to FO
CV# 738 = 16 Soundnumber swithing input 1
CV# 739 = 181 Volume switching input 1
CV# 740 = 23 Soundnumber switching input 2
CV# 744 = 32 Soundnumber Z1
CV# 745 = 181 Volume Z1
CV# 746 = 8 Information on loop Z1
CV# 747 = 33 Soundnumber Z2
CV# 748 = 128 Volume Z2
CV# 749 = 8 Information on loop Z2
CV# 750 = 20 Soundnumber Z3
CV# 751 = 16 Volume Z3
CV# 752 = 8 Information on loop Z3
CV# 753 = 19 Soundnumber Z4
CV# 754 = 64 Volume Z4
CV# 755 = 8 Information on loop Z4
CV# 759 = 30 Soundnumber Z6
CV# 760 = 91 Volume Z6
CV# 761 = 8 Information on loop Z6
CV# 762 = 15 Soundnumber Z7
CV# 763 = 64 Volume Z7
CV# 764 = 8 Information on loop Z7
CV# 765 = 31 Soundnumber Z8
CV# 767 = 8 Information on loop Z8
CV# 777 = 0
CV# 778 = 0
CV# 779 = 0
CV# 780 = 0