Porter small engines

16Bit SOUND

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Prototype Information

The Falk is a very early logging railway locomotive with a steam winch mounted on the front. The locomotive built by Marshutz & Canterel is operational again in the State Historical Park Fort Humboldt, Eureka, CA. The design is very simple and handy for rough use.

Sound Project Information

The sound project reproduces strong steam highball. The clatter of the running gear in time to steam bursts can be heard. The whistle and the bell are also recorded from the museum locomotive.

The sound project is based on the Zimo Advanced Standard and uses various scripts. MX Decoder SW as from version 39 and MS Decoder SW from 5.0 is required.

The sound project fits all Zimo decoders, except the old MX 690 series, but is best suited with the new 16 bit decoders.

CVs 3, 4, 5, 57, 154 and 158 are relevant for this sound project. Changes can cause sound malfunctions! The final speed setting of the locomotive must be adjusted with CV 57 instead of CV 5!

The Moloco model of the Falk has a winch which can be adapted by skilled modelers to be driven with a hidden motor. The sound project supports this functionality, just as the light-sounding little bell can be equipped with a servo drive. A blowing Zimo smoke generator can be accommodated in the boiler by reattaching the smoke stack.

Drive your engine like a **real engineer with a throttle and a break valve.**
Please change the following CVs: CV4 value 255, CV39 value 0, CV309 value 5, CV349 value 20, CV 442 value 23, CV444 value 5, CV446 value 5.
Now the cab light is switching on/off with key 23, and key 5 is your break valve. The engine starts only if the break is released (F5 off). The engine increase with open throttle as you are used to, but if you close the throttle the engine starts to coast in idle mode for a long time with slightly decreasing the speed. If you need to stop apply with key 5 the breaks and your engine stops as before.
The value of CV 349 adjusts how much the brakes are applied. Have fun Mr. engineer!

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	Boiling Water (Oil burner)
F1	Bell	Servo 2	Bell
F2	Highway crossing Whistle		Long-long-short-long
F3	Whistle long		long
F4	Whistle short		short
F5	Winch forward	FA 3	Sound of the winch
F6	Winch reward	FA 4	Sound of the winch
F7	Cylinder blow down		Steam blast
F8	Sound on / off		
F9	Wheels screeching on curves		Sound of Wheels screeching on curves
F10	Cab light	FA 5	
F11	Smoke generator on heater load controlled	FA 6 heater, on 15 min timer to prevent burnout Ventilator output	
F12	Blower	Smoke fan is on	Steam blowing
F13	Woodfire	FA 8 flickers automatically	Sound of woodfirel and firebox door closing
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			
F18	Injector		Feeding water in the boiler
F19	Valve grumble		
F20	Filling water into tender		Water splashing
F21	Steam hiss		
F26	Deaktivating the whistle by start		No start whistle
F27	Volume -		
F28	Volume +		

Random effect	Sound	
Z1	Steam break	
Z2	Woodfire	FA8 flickers
Z3	Injector	Steam injects water into the boiler
Z4	Blower	Fan blows smoke out of stack
Z5	Grumble	
Z6	Steam	hissing
Z7	Safety valve	Loud popping of valve

input	sound	
1		
2		
3		

Changing CVs values used by the reset

CV# 1 = 3 Loco address
CV# 3 = 20 Acceleration rate
CV# 4 = 20 Deceleration rate
CV# 13 = 0 Analog functions F1-F8
CV# 14 = 64 Analog functions F0, F9-F12
CV# 17 = 0 Extended Address High
CV# 18 = 0 Extended Address Low
CV# 29 = 10 DCC configuration (binary)
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# 39 = 0 Function mapp. F5
CV# 40 = 0 Function mapp. F6
CV# 41 = 0 Function mapp. F7
CV# 42 = 0 Function mapp. F8
CV# 43 = 0 Function mapp. F9
CV# 44 = 1 Function mapp. F10
CV# 45 = 2 Function mapp. F11
CV# 46 = 0 Function mapp. F12
CV# 57 = 100 Motor regulation: voltage reference
CV# 63 = 82 Effects cycle
CV# 114 = 176 Dim Mask FO0-FO6
CV# 121 = 1 Exponential acceleration
CV# 122 = 1 Exponential deceleration
CV# 125 = 8 Effects F0 front
CV# 126 = 8 Effects F0 rear
CV# 131 = 8 Effects F5
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 = 146 ZIMO configuration bits 2 (binary)
CV# 158 = 0 Several sound bits + RailCom variants
CV# 160 = 8 Effects F8
CV# 169 = 1 Servo 2 speed
CV# 182 = 201 Servo 2 - Function Assignment
CV# 266 = 65 Total volume
CV# 267 = 158 Chuff sound rate
CV# 269 = 10 Steam, accented lead-chuff
CV# 272 = 160 Drainage time
CV# 273 = 10 Starting delay
CV# 274 = 80 min. drainage downtime [0.1s]
CV# 283 = 204 volume at full acceleration
CV# 284 = 3 Threshold for noise reduction in delay
CV# 286 = 91 Volume reduced driving noise during deceleration
CV# 307 = 128 cornering squeal inputs
CV# 308 = 9 cornering squeal key
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 = 1 Random generator Z1 playback time
CV# 319 = 80 Random Z2 max interval
CV# 320 = 9 Random generator Z2 playback time
CV# 321 = 90 Random Z3 min interval
CV# 322 = 90 Random Z3 max interval
CV# 323 = 10 Random generator Z3 playback time
CV# 324 = 100 Random Z4 min interval
CV# 325 = 100 Random Z4 max interval
CV# 326 = 10 Random generator Z4 playback time
CV# 327 = 120 Random Z5 min interval
CV# 328 = 120 Random Z5 max interval
CV# 329 = 1 Random generator Z5 playback time
CV# 330 = 140 Random Z6 min interval
CV# 331 = 140 Random Z6 max interval
CV# 332 = 7 Random generator Z6 playback time
CV# 333 = 250 Random Z7 min interval
CV# 334 = 250 Random Z7 max interval
CV# 335 = 18 Random generator Z7 playback time
CV# 345 = 15 Sound-switch-key
CV# 346 = 2 Sound-switch-conditions
CV# 351 = 204 Smoke fan pwm at constant speed
CV# 353 = 51 Smoke heater max. operating time
CV# 376 = 255 Driving sound volume
CV# 394 = 32 ZIMO configuration 4 (binary)
CV# 395 = 150 maximal volume
CV# 396 = 27 Volume decrease key
CV# 397 = 28 Volume increase key
CV# 430 = 5 ZIMO Mapping 1 F-key
CV# 431 = 6 ZIMO Mapping 1 M-key
CV# 432 = 3 ZIMO Mapping 1 A1 forw.
CV# 434 = 3 ZIMO Mapping 1 A1 rev.
CV# 436 = 6 ZIMO Mapping 2 F-key
CV# 437 = 5 ZIMO Mapping 2 M-key
CV# 438 = 4 ZIMO Mapping 2 A1 forw.
CV# 440 = 4 ZIMO Mapping 2 A1 rev.
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# 516 = 115 F2 soundnumber
CV# 519 = 116 F3 soundnumber
CV# 522 = 117 F4 soundnumber
CV# 546 = 64 F12 soundnumber
CV# 547 = 91 F12 volume
CV# 548 = 72 F12 information on loop
CV# 549 = 114 F13 soundnumber
CV# 550 = 128 F13 volume
CV# 551 = 72 F13 information on loop
CV# 552 = 69 F14 soundnumber
CV# 554 = 72 F14 information on loop
CV# 564 = 68 F18 soundnumber
CV# 565 = 128 F18 volume
CV# 566 = 72 F18 information on loop
CV# 567 = 72 F19 soundnumber
CV# 573 = 71 soundnumber boilng
CV# 574 = 32 volume boiling
CV# 575 = 113 soundnumber change of direction

CV# 576 = 91 volume change of direction
CV# 577 = 50 soundnumber squeal
CV# 578 = 64 volume squeal
CV# 581 = 104 soundnumber starting whistle
CV# 583 = 100 Soundnumber drainage
CV# 603 = 120 cornering squeal sound number
CV# 604 = 91 cornering squeal volume
CV# 673 = 49 F20 soundnumber
CV# 674 = 181 F20 volume
CV# 675 = 8 F20 information on loop
CV# 676 = 73 F21 soundnumber
CV# 678 = 8 F21 information on loop
CV# 736 = 114 Soundnumber trigger 6
CV# 737 = 10 Trigger 6 to FO
CV# 744 = 103 Soundnumber Z1
CV# 746 = 8 Information on loop Z1
CV# 747 = 114 Soundnumber Z2
CV# 748 = 128 Volume Z2
CV# 749 = 8 Information on loop Z2
CV# 750 = 68 Soundnumber Z3
CV# 751 = 128 Volume Z3
CV# 752 = 8 Information on loop Z3
CV# 753 = 64 Soundnumber Z4
CV# 754 = 91 Volume Z4
CV# 755 = 8 Information on loop Z4
CV# 756 = 72 Soundnumber Z5
CV# 757 = 181 Volume Z5
CV# 758 = 8 Information on loop Z5
CV# 759 = 73 Soundnumber Z6
CV# 760 = 181 Volume Z6
CV# 761 = 8 Information on loop Z6
CV# 762 = 69 Soundnumber Z7
CV# 764 = 8 Information on loop Z7