

EMT
ELECTRIC TRAINS®

HO TRAINS THAT DO MORE



2009 No. 1

PROTO-SOUND® 3.0...

THE RICHEST SET OF FEATURES IN MODEL RAILROADING!

Whether you operate with a conventional transformer or in command mode with DCC or DCS™ (M.T.H.'s Digital Command System), the Proto-Sound 3.0 system found in every locomotive in this catalog offers more realism, more fun, and more variety than any other locomotive control system in any scale.

VIVID ENGINE SOUNDS

Proto-Sound features digital recordings with CD-quality playback. We strive to make our sounds as authentic as possible, using the characteristic whistle for a particular steam engine, for example. With the optional DCS system, you can tune each engine to your preference by individually adjusting bell, horn or whistle, and chuff volume.



STATION SOUNDS

Proto-Sound passenger engines offer Passenger Station Proto-Effects™, a complete arrival and departure sequence that you can activate from your DCC or DCS controller. In most cases, the station sequence features an actual name train pulled by that particular engine. Freight engines include Freight Yard Proto-Effects, a symphony of freight terminal sounds.

ATMOSPHERIC SOUNDS

Crew conversations, the whoosh of a steam engine opening its cylinder cocks, and a host of other atmospheric sounds play automatically at random when using a

conventional transformer — or can be activated manually from a DCC controller or the DCS handheld.

EXTRAORDINARY SLOW SPEED CAPABILITY

Proto-Sound engines can throttle down as slow as three scale miles per hour, highball down the main line, and maintain any speed in between. With certain DCC controllers, and any DCS controller, you can set engine speed in one-scale-mile-per-hour increments up to 120 smph. Go ahead, get out your stop watch and ruler and see how accurate our scale speeds are.

SPEED CONTROL

The Proto-Speed Control™ built into Proto-Sound 3.0 acts like the cruise control on a car, keeping your train moving at the speed you select, regardless of hills and curves. You can even switch off the speed control if you prefer.

LIGHTING EFFECTS

Proto-Sound locomotives feature prototypical Rule 17 lighting,

including a variety of realistic lighting effects. Depending on the locomotive, these may include constant-brightness headlights, illuminated number boards, lighted marker lamps, and alternating ditch lights. In DCS operation, many of these lighting effects can be individually controlled.

MULTIPLE UNIT CAPABILITY

In DCS command mode, all locomotives set to the same speed — 37 scale miles per hour, for example — will move at virtually the same speed. This makes it easy to double or even triple-head nearly any combination of Proto-Sound 3.0 locomotives.

GREAT SMOKE

Proto-Sound engines feature fan-driven ProtoSmoke™, the most powerful smoke system in the hobby. You can vary the intensity with the smoke "volume" control on the locomotive or remotely with any DCC or DCS controller.

SYNCHRONIZED CHUFF AND PUFF

Like a real steam engine, M.T.H. steamers feature puffs of smoke and steam chuff sounds synchronized with the drive wheels. Better than any other model train, an M.T.H. locomotive portrays the drama of a steam engine slowly chuffing and puffing as it pulls out of a station and gets up to speed.

BRAKE SOUNDS

Engine brakes squeal whenever you throttle back sharply or pull into a station. In DCS mode, you can trigger the brake sound with the Brake button on the DCS handheld.

FULL COMPATIBILITY WITH ALL HO OPERATING SYSTEMS

Right out of the box, every M.T.H. engine is compatible with all HO operating systems: conventional DC, DCC, and our own Digital Command System (DCS). No switches to flip or adjustments to make. Your Proto-Sound engine senses what kind of power is on the rails; just set it on the track and run it.

BI-DIRECTIONAL COMMUNICATION

Proto-Sound 3.0 engines not only receive commands from the DCS system, they can report back vital information, trigger other devices to operate, and diagnose your layout's wiring and signal quality. Query a Proto-Sound 3.0 locomotive to find out how many scale miles it's run or how many hours it's been powered up. Check out the strength of the DCS signal on the track or measure the track voltage at a trouble spot. Measure the length of your track in scale miles. All of this is possible today, but only with a Proto-Sound 3.0-equipped locomotive when operated using the DCS Digital Command System.

OPERATE 'EM ALL

In DCS command mode, unlike any other command system available today, you'll have one-touch control over every Proto-Sound 3.0-equipped locomotive at the same time. Imagine, with the ALL command, your DCS system will start-up every locomotive at the same time! Almost every DCS feature can be sent to all the active engines at once. Tell 'em to run at 10 scale miles per hour and they'll all start moving at the same time and at the same speed. Blow all their whistles at once, turn on or off their smoke, stop and reverse every active engine — all at the same time.

DCC Features

All Proto-Sound 3.0-equipped locomotives can be controlled in command mode with any DCC-compliant command control system. While you won't have access to all of the incredible features of Proto-Sound 3.0, you will have full DCC command control. This means you can use your existing DCC controller to independently control your other DCC-equipped locomotives in addition to your Proto-Sound 3.0 locomotives on the same track at the same time.

When using a DCC controller, the following Proto-Sound 3.0 steam locomotive features are accessible:

Steam Features*

- Headlight
- Bell
- Whistle/Horn
- Start Up/Shut Down
- Rear Coupler
- Front Coupler
- Engine Sounds On/Off
- Sound Volume
- Smoke On/Off
- Forward Signal
- Reverse Signal
- Grade Crossing Signal
- Cab/All Light On/Off
- Smoke Volume
- Coupler Close
- One-Shot Doppler
- Feature Reset
- Idle Sequence 1
- Idle Sequence 2
- Idle Sequence 3
- Idle Sequence 4
- Brakes Auto/Off
- Cab Chatter Auto/Off
- Clickety-Clack Auto/Off
- Coupler Slack Sound
- Labor Chuff
- Drift Chuff
- Train Wreck
- PFA Activate/Cycle

* Check your DCC Controller's manual to see how many features it can access. See page 16 for DCC diesel features.

EASY LASHUPS AND HELPER ENGINES

Want to run lashups of locomotives like the prototype, with double- or triple-headed diesels or steam engines — or even steamers and diesels working together? No other command control system does this as easily or reliably as the M.T.H. Digital Command System (DCS). With the DCS handheld controller, you can operate any combination of M.T.H. locomotives together as a lashup. They'll run in perfect synchronization with each other at any speed. You can even set your lashup so only the lead engine's bell and whistle will sound, as in real life multiple-unit operation.

Who is M.T.H.?

While our name may be new to HO model railroaders, M.T.H. Electric Trains is a seasoned model train manufacturer with a long history of innovation. In little more than a quarter century, M.T.H. has grown from a tiny business operated out of a spare bedroom into an 80+ employee company, headquartered in its own sprawling building in a suburb of Washington, D.C.

Over the past 29 years, we have cataloged nearly 15,000 different items in four scales: O gauge, One Gauge, HO gauge, and tinplate Standard Gauge. We are co-owners of two overseas facilities that make nothing but M.T.H. trains, and we use three other factories that are dedicated solely to our product line. This gives us more control of our manufacturing process and quality than many other train companies, whose products are often made in the same factories used by their competitors.

Our research and development team has received more than 10 patents on innovations in model railroading. We believe the Proto-Sound sound and control system found in every M.T.H. locomotive, in combination with our optional Digital Command System (DCS), makes our trains more realistic and more fun to operate than any other trains in model railroading.

Not all products depicted in this catalog are production models. In some cases, the items pictured may be models in HO scale, O scale, or another scale that have been altered digitally.

Each item's graphic features and content are subject to change after publication. All product features may be verified on their retail packages.

M.T.H. Electric Trains is in no way affiliated with any of the railroads featured in this catalog.

Products bearing Chicago and North Western, Denver & Rio Grande Western, MKT/Katy, Missouri Pacific/MoPac, Southern Pacific, Union Pacific, and Western Pacific names are made under trademark license from Union Pacific Railroad Company.



www.mthH0trains.com

See and hear 'em in action: Visit our site to see videos of M.T.H. locomotives in action, locate your nearest dealer, or learn more about our products.

Union Pacific 9000-Class 4-12-2



For much of the twentieth century, the Union Pacific had a love affair with massive, bigger-than-life locomotives. Some examples, like the Challenger, Big Boy, and DDA40X “Centennial” diesel, were great successes, while others like the gas turbines were noble failures. One of the UP’s earliest and most successful big engines was the 9000-class 4-12-2, which boasted the longest rigid wheelbase of any American steam locomotive. Designed for fast freight service, the eighty-eight 9000-class engines were built by Alco in 1926-30, during a period when low-speed “drag” freight service — the norm on American railroads for

decades — was being largely supplanted by freight trains running at passenger speeds. The 9000s could haul a mile-long train at 50 mph, twice the speed of the Mallet articulateds they replaced.

Known as a “Union Pacific” type for their wheel arrangement unique to the U.P., the 9000s were also the most successful three-cylinder rod

locomotives ever built in the United States. The third cylinder was placed between the two outside cylinders and drove a rod connected to the second axle, which was shaped like a crankshaft rather than a straight axle. A pair of hinged rods driven off the outer cylinders, and clearly visible on



**DIE-CAST METAL
CONSTRUCTION**

the pilot deck in front of the cylinders, operated the third cylinder's valve gear — a design borrowed from English locomotives like the Flying Scotsman, and known as Gresley valve gear.

The rest of the middle cylinder's machinery, however, was not so visible or accessible, and tended to receive less than the optimal amount of attention from shop crews. Despite the maintenance headaches of the third cylinder, however, the 4-12-2s proved versatile and dependable. When faster and more powerful Challengers and Big Boys replaced them as the UP's premier freight engine, the 9000s became the principal freight power on the Nebraska division, where they served until early 1956. Engine No. 9000 was saved from the scrapper and resides today at the Los Angeles County Fairplex in Pomona, CA.

New for 2009, the UP 9000-class joins the other historic locomotives that have graced the M.T.H. lineup. Featuring incredibly smooth operation as slow as 3 scale miles per hour and a correct six puffs and chuffs per driver revolution, our die-cast 4-12-2 boasts the wealth of added-on details you expect in an M.T.H. model — including operating third-cylinder Gresley valve gear on the pilot.

**FEATURING
WORKING GRESLEY VALVE GEAR**



www.mthOtrains.com

See and hear 'em in action: Visit our site to see videos of M.T.H. locomotives in action, locate your nearest dealer, or learn more about our products.

9000-Class 4-12-2



Features

- Die-Cast Boiler and Tender Body
- Die-Cast Metal Chassis
- Authentic Paint Scheme & Cab Numbers
- RP-25 Metal Wheels Mounted On Metal Axles
- Operating Lighted Marker Lights
- Constant Voltage Headlight
- Prototypical Rule 17 Lighting
- Detailed Truck Sides
- Detailed Cab Interior
- Powerful Balanced 12 Volt 5-Pole Precision Flywheel-Equipped Motor
- (2) Kadee-Compatible Scale Couplers
- Metal Handrails, Whistle, and Bell
- Sprung Drive Wheels
- Synchronized Puffing ProtoSmoke™ System
- Locomotive Speed Control
- Locomotive Cab-To-Tender Deck Plate
- Detailed Tender Undercarriage
- Interchangeable Traction Tire-Equipped Drive Wheels
- On-Board DCC Receiver
- Operates On Code 70, 83, & 100 Rail
- Quillable Whistle (see page 7)
- Unit Measures:
14 3/8"L x 1 3/8"W x 1 5/8"H
- Operates On 22" Radius Curves

NEW! Union Pacific - 4-12-2 9000 Steam Engine w/Proto-Sound 3.0

80-3152-1	Cab Number 9000	\$549.95
80-3153-1	Cab Number 9010	\$549.95
80-3154-1	Cab Number 9503	\$549.95*
80-3155-1	Cab Number 9512	\$549.95*

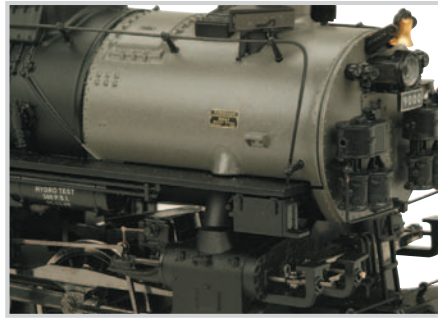
* Oregon Short Line Markings (UP subsidiary in Idaho and Oregon)



Union Pacific - 6-Car R40-2 Reefer Set
80-90003 \$169.95

**ADD 6-CAR REEFER SETS
EACH CAR INDIVIDUALLY NUMBERED**

Pacific Fruit Express - 6-Car R40-2 Reefer Set
80-90001 \$169.95
80-90002 \$169.95



DCC Steam Features*

- Headlight
- Bell
- Whistle/Horn
- Start Up/Shut Down
- Rear Coupler
- Front Coupler
- Engine Sounds On/Off
- Sound Volume
- Smoke On/Off
- Forward Signal
- Reverse Signal
- Grade Crossing Signal
- Cab/All Light On/Off
- Smoke Volume
- Coupler Close
- One-Shot Doppler
- Feature Reset
- Idle Sequence 1
- Idle Sequence 2
- Idle Sequence 3
- Idle Sequence 4
- Brakes Auto/Off
- Cab Chatter Auto/Off
- Clickety-Clack Auto/Off
- Coupler Slack Sound
- Labor Chuff
- Drift Chuff
- Train Wreck
- PFA Activate/Cycle

* Check your DCC Controller's manual to see how many features it can access.

According to *Pacific Fruit Express* by Thompson, Church, and Jones, "The Pacific Fruit Express Company was, by almost any measure, the greatest refrigerator car line in America for virtually its entire life; but it was also more. It became a pivotal part of the phenomenal growth of western agriculture in the first three decades of the twentieth century. It played no small part in the transformation of, for example, the orange, from a rare and treasured object to a commodity which could be enjoyed for breakfast every day of the year." For much of the past century, PFE reefers were a common sight on rails from coast to coast. The R-40-2 cars modeled here were part of a 1000-car order built by Pacific Car and Foundry in 1928, as the PFE upgraded to higher-capacity 40-ton cars, and were the last cars to have wood, rather than steel, framing under their wood-plank exterior. Like the prototype, our models carry a UP herald on one side and a Southern Pacific emblem on the other.



Norfolk and Western Class J 4-8-4



DIE-CAST METAL CONSTRUCTION

A visit to the Norfolk & Western in the early 1950s was like a scene from *Jurassic Park*: prehistoric beasts romping in their natural mountain habitat. At a time when other roads were letting their remaining steam engines rot away and giving them minimal service in dirty, dingy, soon-to-close facilities, the N&W was still running a first-class steam operation and even building new power. With its main line through some of the nation's richest coalfields, it was still betting on the future of steam; as late as 1955, the N&W didn't roster a single diesel. The majority of traffic was handled by what N&W fans call the "holy trinity of steam": the massive Y6 2-8-8-2; the articulated greyhound Class A; and the N&W's glamour girl, the streamlined Class J.

The Class J 4-8-4 was an engine of quiet superlatives. Handsome, powerful (5100 hp), and, as a test on the
6 Pennsylvania Railroad proved, capable of hauling 15 cars at

110 mph, it was designed and styled not by one of the big three builders (ALCo, Baldwin, and Lima) or a famous designer like Raymond Loewy or Henry Dreyfuss, but by the N&W's home-grown team of designers and craftsmen at the road's Roanoke, Virginia shops. For power and quick acceleration through mountainous territory, and to make room for the largest possible boiler, they equipped the streamlined J with 70" drivers — unusually small for a 4-8-4 and fully 10" smaller than the Southern Pacific's Daylight GS-4 of the same wheel arrangement.

Built in several groups between 1941 and 1950, a mere fourteen J's were able to handle 80% of the N&W's passenger traffic, because their designers addressed one of steam power's key weaknesses: down time for maintenance and repairs. Equipped with Timken roller bearings on all axles and rods, Timken-designed lightweight pistons and rods,

and an automatic lubrication system that reached more than 200 points including the bell bearings, the Js were designed to go a quarter-million miles between scheduled shop visits. Like a race car, they were engineered for quick pit stops: in less than an hour, a J could be fully serviced, lubricated, filled with coal and water and ready for its next dash over the road's 676-mile main line between Norfolk and Cincinnati, hauling the deluxe daylight *Powhatan Arrow* or the overnight *Pocahontas*.

New for 2009, our N&W J is more fun to operate than any previous version of this magnificent locomotive, with its N&W whistle, passenger station announcements, synchronized chuff and puffing smoke, and speed control so smooth you won't spill the water in the diner. For more information on our superbly detailed model and its prototype, including surviving J No. 611, visit www.mthHOTrains.com.



Engines 600-604 were part of the first group of J's built in 1941, while engines 611-613 were the last engines built, in 1950. Differences between the two groups of models include spoked vs. solid pilot wheels, valve gear linkage, shape of tender deck, and other prototypical details.

NEW! Norfolk & Western - 4-8-4 J Steam Locomotive w/Proto-Sound 3.0

80-3148-1	Cab Number 600	\$449.95
80-3149-1	Cab Number 603	\$449.95
80-3150-1	Cab Number 604	\$449.95



NEW! Norfolk & Western - 4-8-4 J Steam Locomotive w/Proto-Sound 3.0

80-3145-1	Cab Number 613	\$449.95
80-3146-1	Cab Number 611	\$449.95
80-3147-1	Cab Number 612	\$449.95

Features

- Die-Cast Boiler and Tender Body
- Die-Cast Metal Chassis
- Authentic Paint Scheme & Cab Numbers
- RP-25 Metal Wheels Mounted On Metal Axles
- Operating Lighted Marker Lights
- Constant Voltage Headlight
- Prototypical Rule 17 Lighting
- Detailed Truck Sides
- Detailed Cab Interior
- Powerful Balanced 12 Volt 5-Pole Precision Flywheel-Equipped Motor
- (2) Kadee Compatible Scale Couplers
- Metal Handrails, Whistle, and Bell
- Sprung Drive Wheels
- Synchronized Puffing ProtoSmoke™ System
- Locomotive Speed Control
- Locomotive Cab-To-Tender Deck Plate
- Detailed Tender Undercarriage
- Interchangeable Traction Tire-Equipped Drive Wheels
- On-Board DCC Receiver
- Operates On Code 70, 83, & 100 Rail
- Unit Measures: 15 3/8"L x 1 1/2"W x 2 1/4"H
- Operates On 18" Radius Curves

See Matching Passenger Cars on Page 20

Quillable Whistle: Using a DCS controller (see page 28), you can "play" the whistle on any steam engine in this catalog, in the same manner that an engineer plays the whistle cord on a prototype steam engine.

2-8-2 USRA Light Mikado



During World War I, Uncle Sam nationalized the railroads when they proved unequal to the task of moving massive amounts of men and materiel for the war effort. The agency that ran the trains was the United States Railroad Administration, or USRA, and one of its chief accomplishments was the creation of 12 steam engine designs that lasted for decades. According to the American Society of Mechanical Engineers, USRA locomotives were "the first successful standardization of American motive power" — and the only standard designs until the diesel era.

The most popular of the USRA designs was the 2-8-2 Mikado, which was heavy main line steam power in the World War I era. USRA Mikados came in a light version with a smaller axle loading for lighter rail and a heavy version for use on heavier rail. Under the USRA, 625 Light Mikes were turned out by the "Big Three" American locomotive builders — Alco, Baldwin, and Lima — representing more than a third of all government-built engines.

Constructed with dozens of added-on detail parts, the USRA Light Mikado joins the M.T.H. HO lineup. While other manufacturers have offered fine models of this classic engine, we

believe none matches the combination of accurate details, sound quality, slow speed performance, and synchronized puffing smoke featured by our die-cast model.

For its initial run, we offer the Light Mike in two undecorated versions and decorated and correctly numbered for four railroads, with road-specific details including accurate, legible builders plates; footboard or boiler-tube pilot; smokebox or boiler-top mounted bell; and high-mounted or centered headlight. Each road name is offered in three engine numbers. For the B&O, we offer the first USRA locomotive ever built, No. 4500, and two of the additional 99 Light Mikes the B&O received from the government and rostered as Class Q-3. For the Pennsylvania Railroad, we offer three of the five USRA Mikes the Pennsy kept, painted in near-black PRR Brunswick Green; the other 33 Mikes it received were sent packing in short order and wound up on the Missouri Pacific and the Frisco. Our New York Central models represent three of the 143 USRA-built members of the road's Class H-6. And our Union Pacific engines are replicas of USRA copies ordered by the road in the 1930s. We invite you to check out these extraordinary locomotives at your M.T.H. dealer, or see them perform and learn more about USRA Mikes online at www.mthtrains.com.

Features

- Die-Cast Boiler and Tender Body
- Die-Cast Metal Chassis
- Authentic Paint Schemes & Cab Numbers
- RP-25 Metal Wheels Mounted On Metal Axles
- Prototypical Rule 17 Lighting
- Constant Voltage Headlight
- Operating Classification Lights On Smokebox
- Operating Marker Lights on Tender
- Detailed Truck Sides
- Detailed, Lighted Cab Interior With Crew Figures
- Glazed Cab Windows & Opening Cab Roof Vent
- Powerful Balanced 12 Volt 5-Pole Precision Flywheel Equipped Motor
- (2) Kadee Compatible Scale Couplers
- Metal Handrails, Whistle, and Bell
- Sprung Drive Wheels
- Synchronized Puffing ProtoSmoke™ System
- Locomotive Speed Control
- Locomotive Cab-To-Tender Deck Plate
- Detailed Tender Undercarriage
- Interchangeable Traction Tire-Equipped Drive Wheels
- On-Board DCC Receiver
- Operates On Code 70, 83, & 100 Rail
- Unit Measures: 12"L x 1 7/16" W x 2"H
- Operates On 18" Radius Curves



Pennsylvania - 2-8-2 USRA Light Mikado w/Proto-Sound 3.0
 80-3140-1 Cab Number 9630 \$449.95
 80-3141-1 Cab Number 9627 \$449.95
 80-3142-1 Cab Number 9631 \$449.95
 Footboard pilot, high-mounted headlight, boiler-top bell



Union Pacific - 2-8-2 USRA Light Mikado w/Proto-Sound 3.0
 80-3134-1 Cab Number 2498 \$449.95
 80-3135-1 Cab Number 2495 \$449.95
 80-3136-1 Cab Number 2486 \$449.95
 Boiler-tube pilot, centered headlight, bell mounted on smokebox



New York Central - 2-8-2 USRA Light Mikado w/Proto-Sound 3.0
 80-3137-1 Cab Number 6104 \$449.95
 80-3138-1 Cab Number 6109 \$449.95
 80-3139-1 Cab Number 6106 \$449.95
 Footboard pilot, centered headlight, bell mounted on smokebox

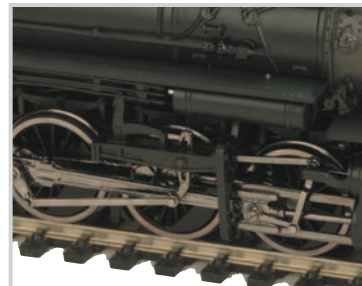
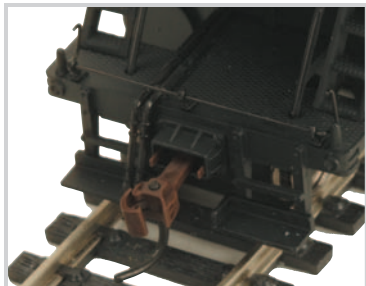


Baltimore & Ohio - 2-8-2 USRA Light Mikado w/Proto-Sound 3.0
 80-3131-1 Cab Number 4500 \$449.95
 80-3132-1 Cab Number 4519 \$449.95
 80-3133-1 Cab Number 4515 \$449.95
 Boiler-tube pilot, centered headlight, bell mounted on smokebox

Black Undecorated - 2-8-2 USRA Light Mikado w/Proto-Sound 3.0
 80-3143-1 w/ Low Mounted Headlight \$449.95
 Boiler-tube pilot, centered headlight, bell mounted on smokebox

Black Undecorated - 2-8-2 USRA Light Mikado w/Proto-Sound 3.0
 80-3144-1 w/ High Mounted Headlight \$449.95
 Footboard pilot, high-mounted headlight, boiler-top bell

Quillable Whistle: Using a DCS controller (see page 28), you can “play” the whistle on any steam engine in this catalog, in the same manner that an engineer plays the whistle cord on a prototype steam engine.



NYC L-3 and L-4 Mohawks



L-4b shown

While its competitors needed monstrous engines to conquer mountain ranges, the New York Central did not. Its Water Level Route from New York City to Chicago was a nearly level raceway built along rivers and the Lake Erie shoreline, and the Central's mainline steam engines were racehorses bred for speed on that route. By the early 1930s, the NYC relied on two locomotives for premier services: the 4-6-4 Hudson for its Great Steel Fleet of passenger trains and the nation's largest stable of 4-8-2s for fast freight. Although the 4-8-2 was labeled a Mountain on any other railroad, that would hardly do on the Water Level Route, so the Central named its engines Mohawks after one of the rivers its rails followed.

As the Depression waned in the late 1930s and traffic picked up, the need arose for a dual service locomotive that could augment the Hudson fleet and hustle freight as well, and the class L-3 Mohawks were developed. With over 5000 horsepower on tap, they were equally at home pulling the 20th Century Limited or more than 100 freight cars. Class L-3 engines were delivered in three subclasses. ALCo-built class L-3a Mohawks were dual service steamers with roller bearings on all axles. Class L-3b engines, built by both ALCo and Lima, and class L-3c built by ALCo, were originally intended for fast freight service. Lima-built L-3b's carried a cylindrical Elesco feedwater heater atop their smokebox fronts, while all other L-3's had Worthington feedwater heaters.

The pinnacle of Mohawk development was Lima-built wartime class L-4, with larger 72" drivers. Tenders on the final L-4's were upgraded with an expansion cistern behind the coal bunker, so water could be scooped at up to 75 mph without blowing the tender apart. Famed author Alvin Staufer noted that "The dual purpose concept had really taken hold on the Central and the wartime service the Mohawks performed was almost beyond belief. It was nothing for them to come in on a heavy freight drag, be serviced, and leave a few hours later at the head of one of the Great Steel Fleet. Whenever possible, the heavy War Trains were assigned to the L-4 Mohawks." Soon after the war, L-4 and L-3 engines were retrofitted with smoke deflectors (a.k.a. "elephant ears") to deflect smoke from the engineer's line of vision. Whether they worked, and whether they improved or ruined the look of the Central's premier freighter, remains a subject of debate among railfans to this day.

While the M.T.H. Mohawk is not the first HO model of this NYC racehorse, we believe it is the best — offering accurate detail for each subclass of L-3 and L-4; smooth performance from a three-scale-mile-per-hour crawl to full throttle; "cruise control" for steady speeds regardless of curves, switches, and grades; a wide range of steam locomotive, crew, and station sounds; prototypical Rule 17 lighting; and puffing smoke synchronized with driver revolutions at a correct four chuffs per revolution. L-3c and L-4b models are equipped with removable elephant ears, so you can model them before or after smoke deflectors were applied.

Features

- Die-Cast Boiler and Tender Body
- Die-Cast Metal Chassis
- Authentic Paint Scheme & Cab Numbers
- RP-25 Metal Wheels Mounted On Metal Axles
- Constant Voltage Headlight
- Prototypical Rule 17 Lighting
- Detailed Truck Sides
- Detailed Cab Interior
- Powerful Balanced 12 Volt 5-Pole Precision Flywheel Equipped Motor
- (2) Kadee Compatible Scale Couplers
- Metal Handrails and Bell
- Metal Whistle
- Sprung Drive Wheels
- Synchronized Puffing ProtoSmoke™ System
- Locomotive Speed Control
- Locomotive Cab-To-Tender Deck Plate
- Detailed Tender Undercarriage
- Interchangeable Traction Tire-Equipped Drive Wheels
- Onboard DCC Receiver
- Operates On Code 70, 83, & 100 Track
- Proto-Sound® 3.0 With The Digital Command System, Featuring Passenger Station or Freight Yard Proto-Effects™
- Unit Measures: 15 7/16"L x 1 9/16"W x 2 1/16"H
- Operates On 22" Radius Curves

See a List of DCC Features on Page 1



New York Central - 4-8-2 L-3a Mohawk Steam Engine
80-3123-1 w/ Proto-Sound 3.0, Featuring Passenger Station Announcements \$449.95
Cab Number 3006



New York Central - 4-8-2 L-3b Mohawk Steam Engine
80-3124-1 w/ Proto-Sound 3.0, Featuring Freight Yard Sounds \$449.95
Cab Number 3037



New York Central - 4-8-2 L-3c Mohawk Steam Engine
80-3125-1 w/ Proto-Sound 3.0, Featuring Passenger Station Announcements \$449.95
Cab Number 3064

Includes removable
smoke deflectors



New York Central - 4-8-2 L-4a Mohawk Steam Engine
80-3126-1 w/ Proto-Sound 3.0, Featuring Passenger Station Announcements \$449.95
Cab Number 3117



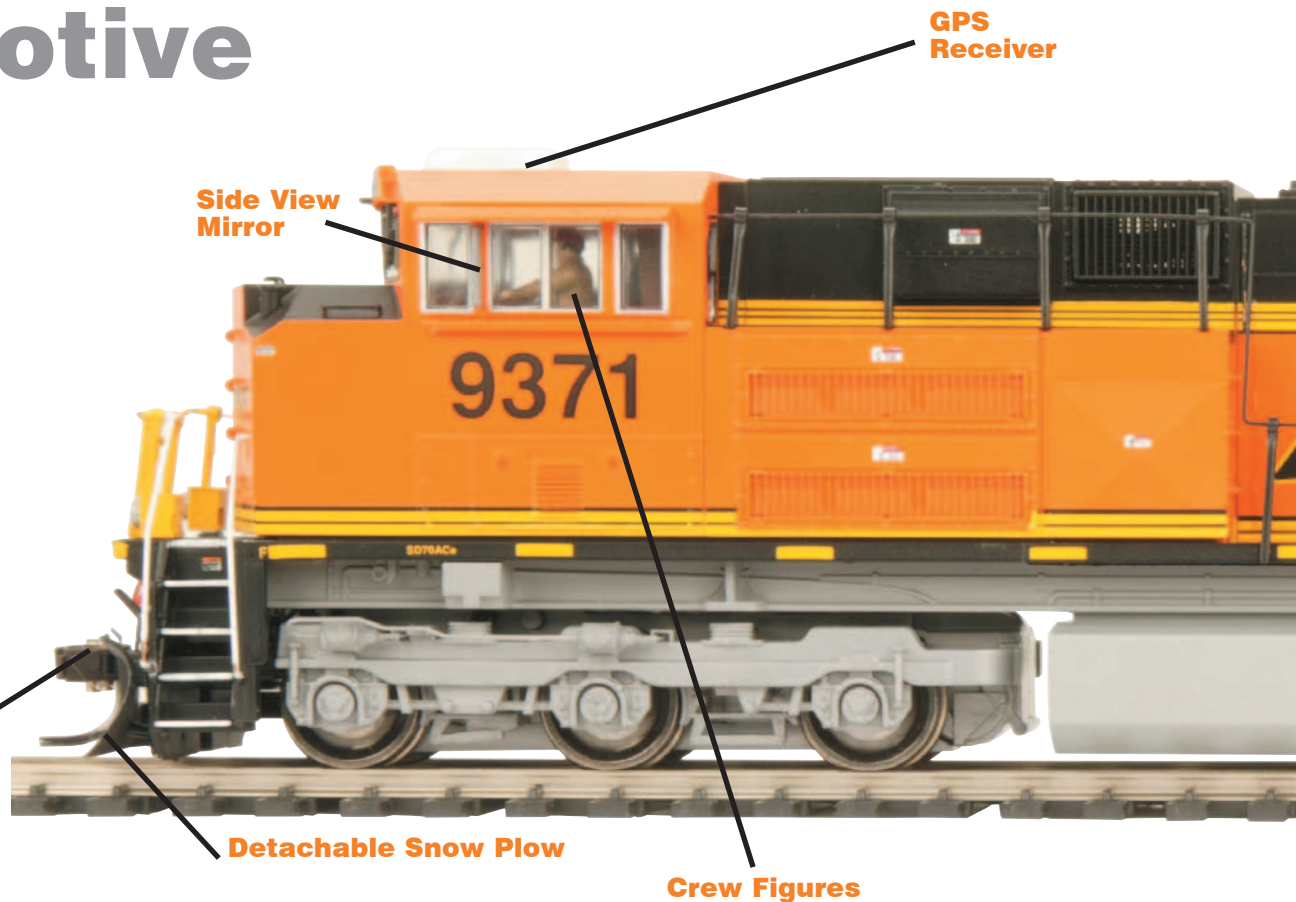
New York Central - 4-8-2 L-4b Mohawk Steam Engine
80-3127-1 w/ Proto-Sound 3.0, Featuring Passenger Station Announcements \$449.95
Cab Number 3125

Includes removable
smoke deflectors



Anatomy of an M.T.H. Diesel Locomotive

Look closely at any M.T.H. locomotive and you'll find a combination of superb detailing, prototype accuracy, realistic sound effects, and smooth, dependable operation that is unmatched by any other manufacturer. The Electro-Motive Diesel SD70ACe shown here, for example, features a wealth of separately-added detail parts and tooling that can be customized to produce different, accurate versions for a variety of railroads—by changing the location of vents, headlights, side panels, and other locomotive details.



Directionally Controlled Headlights

Illuminated Number Boards

Windshield wipers

Sand Filler



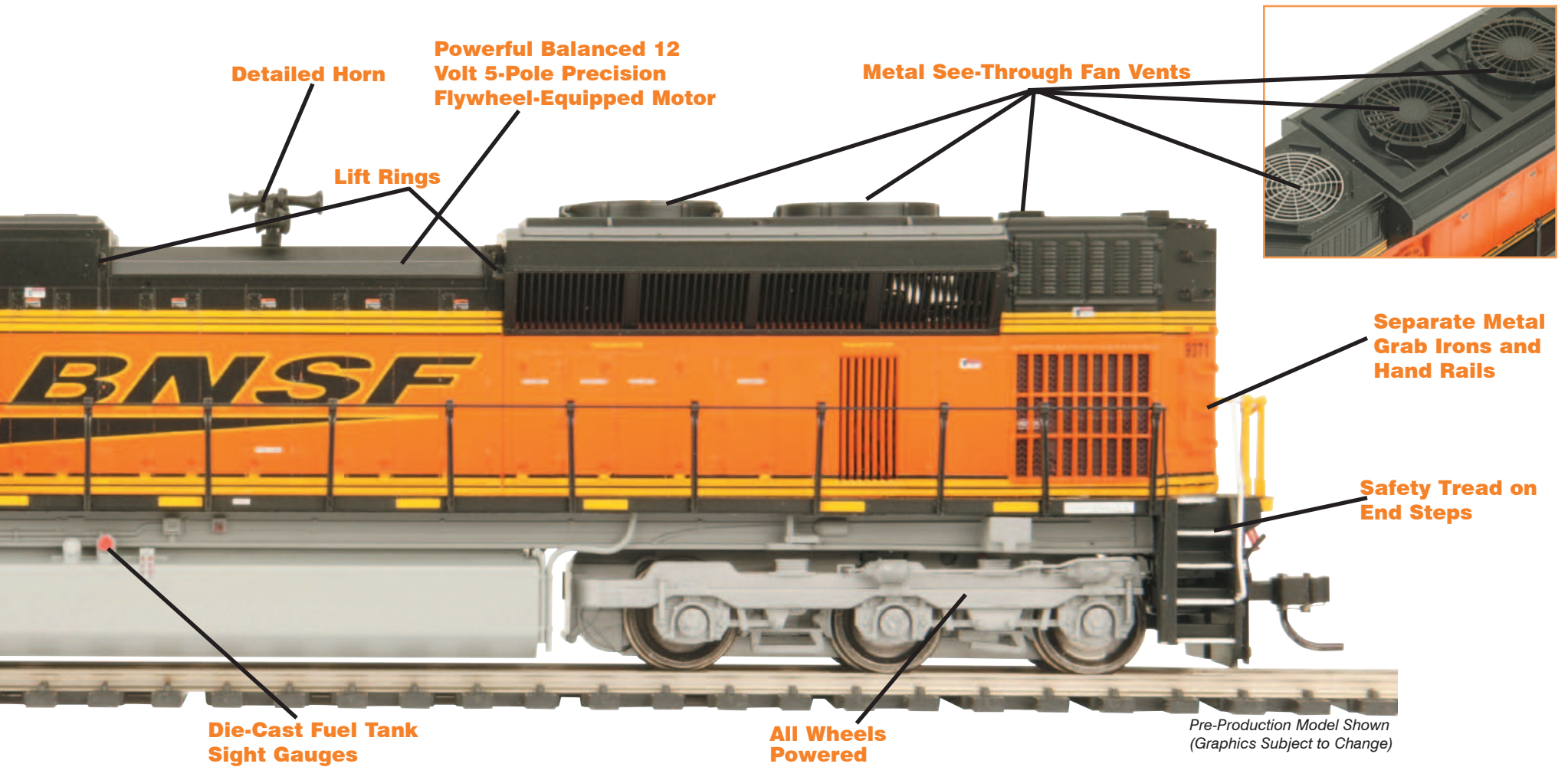
Shock Absorber

Brake Cylinders & Air Lines



Authentic Paint Scheme

Die-Cast Air Tanks and Fuel Tank



SD70ACe Diesel



Featuring Remotely Controlled Couplers: No Uncoupling Track Required

See Page 15

The SD70ACe is Electro-Motive Diesel's hope for the future. While designed to meet the Environmental Protection Agency's Tier-2 emissions requirements that took effect on January 1, 2005, this replacement for the SD70MAC also has a higher purpose: to recapture the lead in North American locomotive sales that EMD lost to General Electric in 1987.

Under the hood beats a third-generation model 710 diesel with 4300 horsepower; only slight modifications were needed to make the existing model 710 meet new emission standards. With 5000 such motors in service worldwide and a reputation for dependability, EMD reasoned that shop crews would prefer familiar technology. Other than the prime mover, however, virtually every element of the SD70ACe has been re-thought to create a

21st century locomotive. Ergonomics were a prime consideration. The engine's angular nose offers the crew far better visibility than most other locomotives, and the cab is comfortable for engineers of almost any size. Digital screens provide a range of information on what is happening both inside the locomotive and out on the road. The cab easily accommodates a crew of three — an important factor in a modern world without cabooses. And there is, of course, a cupholder for the engineer.

Our first-ever HO scale model of the SD70ACe is offered in a large variety of accurate paint schemes including the six-engine Union Pacific heritage fleet. Each one-of-a-kind heritage fleet locomotive honors a "fallen flag" railroad that is now part of the Union Pacific system. Our highly detailed model includes a broader range of features than

you'll find on any other HO scale diesel, including flashing ditch lights; smooth performance from a three-scale-mile-per-hour crawl to full throttle; "cruise control" for steady speeds regardless of curves, switches and grades; built-in decoders for DCC and the M.T.H. Digital Command System (DCS); and a full range of sounds recorded from a prototype Union Pacific SD70ACe.

Prototype Accuracy:

If you're looking for modern motive power that's accurately detailed, smooth running, and a great deal of fun to operate, it doesn't get any better than this. The M.T.H. HO SD70ACe and SD70M-2 models are constructed from 60 different molds that can be configured to produce 15 different variations, ensuring that each of the railroads we build will be accurate in appearance and just like their real-life counterparts.



CSX - SD70ACe Diesel Engine
80-2001-1 w/Proto-Sound 3.0 \$249.95
Cab Numbers 4833, 4836 & 4839



Union Pacific - SD70ACe Diesel Engine
80-2006-1 w/Proto-Sound 3.0 \$249.95
Cab Number 8321



BNSF - SD70ACe Diesel Engine
80-2003-1 w/Proto-Sound 3.0 \$249.95
Cab Numbers 9371, 9370 & 9374



George H. Bush - SD70ACe Diesel Engine
80-2013-1 w/Proto-Sound 3.0 \$249.95
Cab Number 4141



EMD Demonstrator - SD70ACe Diesel Engine
80-2004-1 w/Proto-Sound 3.0 \$249.95
Cab Numbers GM70 (Off-White Steps) GM71 & GM73 (Blue Steps)



Montana Rail Link- SD70ACe Diesel Engine
80-2005-1 w/Proto-Sound 3.0 \$249.95
Cab Numbers 4304, 4308 & 4311



Kansas City Southern- SD70ACe Diesel Engine
80-2002-1 w/Proto-Sound 3.0 \$249.95
Cab Numbers 4030, 4031 & 4051



Union Pacific - SD70ACe Diesel Engine w/Proto-Sound® 3.0
80-2023-1 Cab No.8444 \$249.95
80-2024-1 Cab No.8439 \$249.95
80-2025-1 Cab No.8453 \$249.95

Features

- Intricately Detailed ABS Body
- Authentic Paint Schemes & Cab Numbers
- Detailed Truck Sides, Pilots and Fuel Tank
- Die-Cast Metal Chassis
- Detachable Snow Plow
- Authentic sounds recorded from a UP SD70ACe
- Directionally Controlled Headlights
- RP-25 Metal Wheels Mounted On Metal Axles
- Powerful 5-Pole Precision Flywheel-Equipped Motor
- Locomotive Speed Control in Scale MPH Increments
- Lighted Cab Interior With 2 Cab Figures
- Illuminated Number Boards
- Operating Ditch Lights
- (2) Scale Kadee®-Compatible Remotely Controlled Proto-Couplers™ and (2) Optional Kadee-Compatible Magnetic Couplers
- Onboard DCC Receiver
- Operates On Code 70, 83, & 100 Rail
- Operates on 18" Radius Curves
- Unit Measures:
10 9/16"L x 1 7/16"W x 2 3/16"H

Remotely Controlled Couplers
Pick up or drop off a cut of cars or an entire train — anywhere on your layout — by opening the front or rear coupler remotely, using a DCC or DCS controller.

Images Shown are O-Scale Models.

SD70ACe UP Heritage Fleet



**Featuring Remotely
Controlled Couplers: No Uncoupling Track Required**

See Page 15

DCC Diesel Features*

- Headlight
- Bell
- Whistle/Horn
- Start Up/Shut Down
- Rear Coupler
- Front Coupler
- Engine Sounds On/Off
- Sound Volume
- Smoke On/Off
- Forward Signal
- Reverse Signal
- Grade Crossing Signal
- Cab/All Light On/Off
- Extended Start Up
- Extended Shut Down
- Rev Up
- Rev Down
- Coupler Close
- One-Shot Doppler
- Feature Reset
- Idle Sequence 1
- Idle Sequence 2
- Idle Sequence 3
- Idle Sequence 4
- Ditch Lights Auto/On/Off
- Brakes Auto/Off
- Cab Chatter Auto/Off
- Clickety-Clack Auto/Off
- Coupler Slack Sound
- Train Wreck
- PFA Activate/Cycle





Missouri Pacific - SD70ACe Diesel Engine
80-2007-1 w/Proto-Sound 3.0 \$249.95
Cab Number 1982

Western Pacific - SD70ACe Diesel Engine
80-2008-1 w/Proto-Sound 3.0 \$249.95
Cab Number 1983



Katy - SD70ACe Diesel Engine
80-2009-1 w/Proto-Sound 3.0 \$249.95
Cab Number 1988

Denver & Rio Grande Western - SD70ACe Diesel Engine
80-2010-1 w/Proto-Sound 3.0 \$249.95
Cab Number 1989



Chicago & North Western - SD70ACe Diesel Engine
80-2011-1 w/Proto-Sound 3.0 \$249.95
Cab Number 1995



Southern Pacific - SD70ACe Diesel Engine
80-2012-1 w/Proto-Sound 3.0 \$249.95
Cab Number 1996

Electro-Motive Diesel SD70M-2



With a wave of consolidation behind it, North American railroading is once again a good business to be in. Freight traffic is booming. Locomotive orders are coming in at a record pace from the Big Six roads that dominate rail transportation on the continent: Union Pacific, BNSF, CSX, Norfolk Southern, Canadian National, and Canadian Pacific. And the two remaining diesel builders, EMD and GE, are locked in a battle to become *the* locomotive supplier for the 21st century.

The standard bearers for EMD, newly independent and no longer a division of General Motors, are its 70 Series road freight engines, the SD70M-2 shown here and the SD70ACe detailed on page 14. Both locomotives are powered by a two-cycle, 16-cylinder, 4300-horsepower model 710 prime mover and have a top speed of 70 mph. The biggest differ-

ence between the siblings is what's under the floor: traditional DC traction motors in the SD70M-2's trucks and AC traction motors in the SD70ACe. While AC traction motors put more tractive effort on the rails and enable an SD70ACe to start a heavier train with the same horsepower, that additional capability comes at a cost. AC-powered locomotives are both more expensive and more electrically complex than engines with DC traction motors, which most diesels have used since the 1940s. For that reason, the Norfolk Southern and Canadian National have found the SD70M-2 more suitable to their needs, and both roads roster large DC fleets. Regional railroad Florida East Coast has been another DC-power advocate.

M.T.H. introduces our accurately detailed SD70M-2 as a companion to the SD70ACe. Thanks to our unique Proto-Sound 3.0 sound and control system, these models offer a broader range of features than you'll find on any other HO scale diesel, including flashing ditch lights; smooth performance from a three-scale-mile-per-hour crawl to full throttle; "cruise control" for steady speeds regardless of curves, switches and grades; built-in decoders for DCC and the M.T.H. Digital Command System (DCS); and a full range of prototypical EMD sounds.

Did You Know?

Fully loaded, a 70 Series locomotive carries 4,900 gallons of diesel fuel, 420 gallons of lube oil, and 275 gallons of cooling water.



Norfolk Southern - SD70M-2 Diesel Engine w/Proto-Sound 3.0

80-2014-1	Cab No. 2649	\$249.95
80-2015-1	Cab No. 2651	\$249.95
80-2016-1	Cab No. 2654	\$249.95

Florida East Coast - SD70M-2 Diesel Engine w/Proto-Sound 3.0

80-2020-1	Cab No. 100	\$249.95
80-2021-1	Cab No. 102	\$249.95
80-2022-1	Cab No. 103	\$249.95



Florida East Coast - SD70M-2 Diesel Engine w/Proto-Sound 3.0

80-2029-1	Cab No. 106	\$249.95
80-2030-1	Cab No. 105	\$249.95
80-2031-1	Cab No. 107	\$249.95

Canadian National - SD70M-2 Diesel Engine w/Proto-Sound 3.0

80-2026-1	Cab No. 8000	\$249.95
80-2027-1	Cab No. 8010	\$249.95
80-2028-1	Cab No. 8023	\$249.95



EMD Demonstrator - SD70M-2 Diesel Engine w/Proto-Sound 3.0

80-2017-1	Cab No. 74	\$249.95
80-2018-1	Cab No. 75	\$249.95
80-2019-1	Cab No. 76	\$249.95

See Page 15 for Features

Remotely Controlled Couplers
 Pick up or drop off a cut of cars or an entire train — anywhere on your layout — by opening the front or rear coupler remotely, using a DCC or DCS controller.

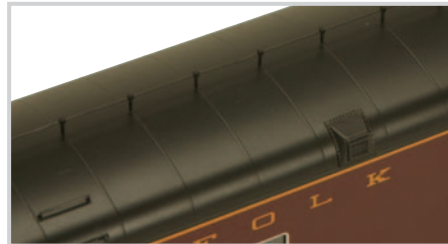
N&W Powhatan Arrow Passenger Cars



"Fine New Feathers for the NEW *Powhatan Arrow*" proclaimed a 1949 brochure for the N&W's premier passenger train, newly re-equipped with luxurious cars from Pullman-Standard. An all-coach daytime streamliner connecting tidewater Virginia to the Midwest, the *Arrow* covered the 676 miles between Norfolk and Cincinnati in under 16 hours behind the road's magnificent Class J steamers. Our 5-car set accurately models the train's regular consist of compartment (divided) coach, crew coach, regular coach, diner, and tavern-lounge-observation, while our add-on cars enable you to put on additional equipment when traffic warrants it, as the prototype did.

Features

- Intricately Detailed Durable ABS Bodies
- Metal Wheels and Axles
- Overhead Interior Lighting
- Die-Cast 4-Wheel Trucks
- Authentic *Powhatan Arrow* Paint Scheme in Tuscan Red With Gold Trim
- End-of-Car Diaphragms
- Separate Metal Handrails
- Detailed Car Interiors
- Detailed Car Undercarriage
- Each Car Measures Approximately: 11 1/2" x 1 7/16" x 1 7/8"
- Operates On 22" Radius Curves

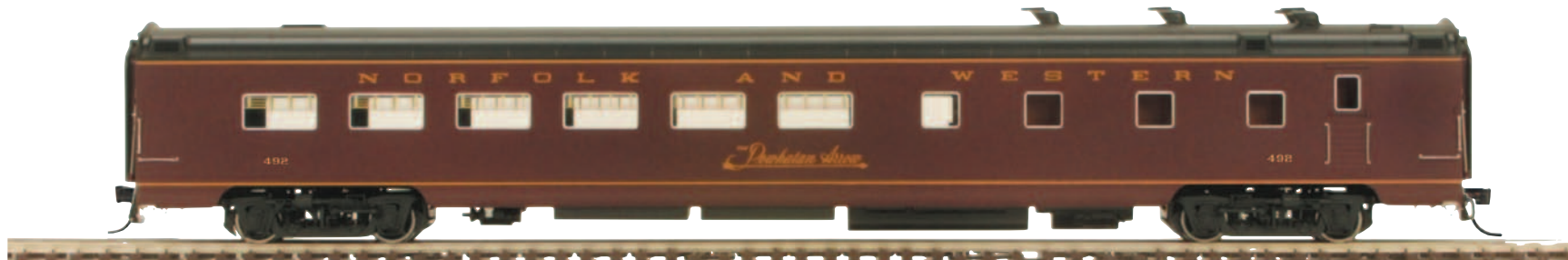




Norfolk & Western- 5-Car Passenger Set
80-60013 \$329.95

5-Car Sets Include:

- (1) Compartment (Divided) Coach No. 511, (1) Crew Coach No. 501,
- (1) Coach No. 532, (1) Diner No. 491, (1) Tavern-Lounge-Observation No. 581

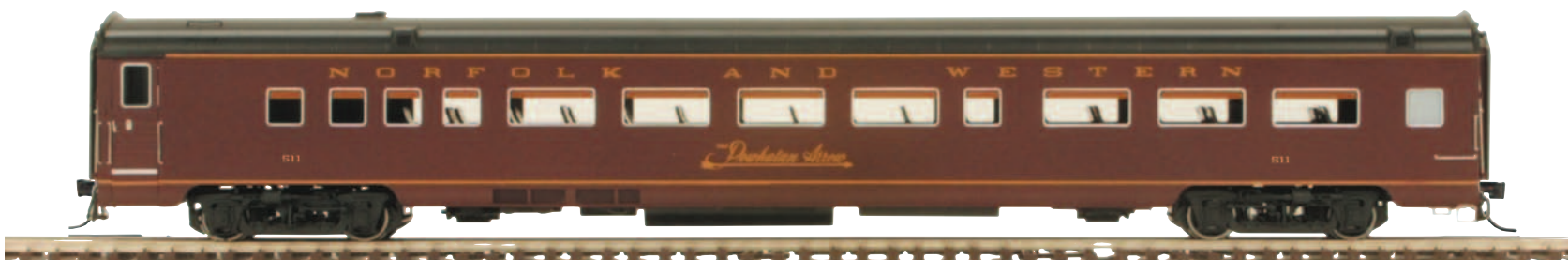


Norfolk & Western
Diner No. 492
80-60015 \$69.95



Norfolk & Western
Coach No. 540
80-60014 \$69.95

Norfolk & Western
Coach No. 537 (not shown)
80-60016 \$69.95



Norfolk & Western
Compartment (Divided) Coach No. 511 (included in 5-car sets)



Southern Pacific *Daylight* Passenger Cars



In 1941 the *Daylights* were re-equipped with new Pullman-Standard train sets that included articulated cars with full-width diaphragms and no bulkheads between the cars — presenting passengers with spacious interiors up to 130 feet long, in the case of the triple-unit coffee shop-kitchen-diner. Wide windows allowed chair car passengers to take in the glorious Pacific Coast scenery, and a rooftop radio antenna brought in news reports and music. Few passengers would argue with the Southern Pacific's claim that this was "the world's most beautiful train." M.T.H. offers these authentic Daylight train sets in the original Southern Pacific Lines livery or the later Southern Pacific livery that lasted well into the diesel era.

Features

- Intricately Detailed Durable ABS Bodies
- Metal Wheels and Axles
- Overhead Interior Lighting
- Die-Cast 4-Wheel Trucks
- Authentic Paint Schemes
- End-of-Car Diaphragms
- Separate Metal Handrails
- Detailed Car Interiors
- Detailed Car Undercarriage
- Each Car Measures Approximately:
11 1/2" x 1 7/16" x 1 7/8"
- Operates On 22" Radius Curves





Southern Pacific

Articulated Chair/Chair Passenger Car Set w/Antenna

80-60002 \$134.95

Southern Pacific

Articulated Chair/Chair Passenger Car Set w/Antenna

80-60003 \$134.95

Southern Pacific Lines

Articulated Chair/Chair Passenger Car Set w/Antenna

80-60008 \$134.95

Southern Pacific Lines

Articulated Chair/Chair Passenger Car Set w/Antenna

80-60009 \$134.95

Each car individually numbered — see online for numbering details.



Southern Pacific

Articulated Chair/Chair Passenger Car Set

80-60004 \$134.95

Southern Pacific

Articulated Chair/Chair Passenger Car Set

80-60005 \$134.95

Southern Pacific Lines

Articulated Chair/Chair Passenger Car Set

80-60010 \$134.95

Southern Pacific Lines

Articulated Chair/Chair Passenger Car Set

80-60011 \$134.95



Southern Pacific

Chair Car
80-60006 \$69.95

Southern Pacific Lines

Chair Car
80-60012 \$69.95



Southern Pacific Lines - 8-Car Passenger Set

80-60007 \$499.95

Southern Pacific - 8-Car Passenger Set

80-60001 \$499.95

8-Car Sets Include:

(1) Baggage, (1) Coffee/Kitchen/Diner Articulated Set, (1) Tavern Car, (1) Parlor Car, (1) Single Chair Pass Car, (1) Observation Car

Flat Cars

Between 1964 and 1975, Trailer Train (now known as TTX Co.) acquired a fleet of 5,000 modern 60' flat cars. Similar cars are rostered by most major U.S. railroads. Built by ACF, Thrall, and Pullman Standard, the TTX cars were assigned to various classes to handle loads as diverse as auto frames, logs, military vehicles, farm equipment, and construction equipment. Some were even modified to handle TTX's bread and butter, intermodal containers. Our model is based on the TTX class F60GH cars built in the mid-1970s by Pullman Standard. Equipped with four rows of tie-down tracks, two astride the center sill and one along each side, these wooden-decked cars are assigned to heavy-duty equipment service. Our model replicates the prototype's intricate details and is offered with several appropriate loads of heavy machinery.



TTX
60' Wood Deck Flat Car w/163H Motor Grader
80-98023 \$34.95

Also Available:
60' Wood Deck Flat Car w/315C Hydraulic Excavator
80-98031 \$34.95
60' Wood Deck Flat Car w/950G Wheel Loader
80-98015 \$34.95
60' Wood Deck Flat Car
80-98007 \$29.95



Santa Fe
60' Wood Deck Flat Car w/315C Hydraulic Excavator
80-98029 \$34.95

Also Available:
60' Wood Deck Flat Car w/163H Motor Grader
80-98021 \$34.95
60' Wood Deck Flat Car w/950G Wheel Loader
80-98013 \$34.95
60' Wood Deck Flat Car
80-98005 \$29.95



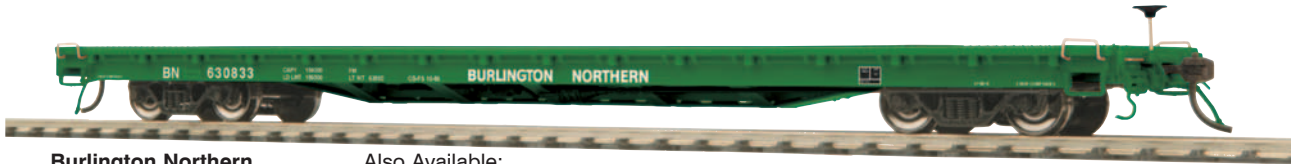
Southern
60' Wood Deck Flat Car
80-98006 \$29.95

Also Available:
60' Wood Deck Flat Car w/163H Motor Grader
80-98022 \$34.95
60' Wood Deck Flat Car w/315C Hydraulic Excavator
80-98030 \$34.95
60' Wood Deck Flat Car w/950G Wheel Loader
80-98014 \$34.95



Union Pacific
60' Wood Deck Flat Car w/950G Wheel Loader
80-98016 \$34.95

Also Available:
60' Wood Deck Flat Car w/163H Motor Grader
80-98024 \$34.95
60' Wood Deck Flat Car w/315C Hydraulic Excavator
80-98032 \$34.95
60' Wood Deck Flat Car
80-98008 \$29.95



Burlington Northern
60' Wood Deck Flat Car
80-98002 \$29.95

Also Available:
60' Wood Deck Flat Car w/163H Motor Grader
80-98018 \$34.95
60' Wood Deck Flat Car w/315C Hydraulic Excavator
80-98026 \$34.95
60' Wood Deck Flat Car w/950G Wheel Loader
80-98010 \$34.95

Each car is supplied with tie-down chains and load adjusters, which you can use to create a super-detailed load.

Each Item Number is Available in SIX Different Road Numbers



Canadian National
60' Wood Deck Flat Car w/163H Motor Grader
80-98019 \$34.95

Also Available:
60' Wood Deck Flat Car w/315C Hydraulic Excavator
80-98027 \$34.95
60' Wood Deck Flat Car w/950G Wheel Loader
80-98011 \$34.95
60' Wood Deck Flat Car
80-98003 \$29.95



BNSF
60' Wood Deck Flat Car w/950G Wheel Loader
80-98009 \$34.95

Also Available:
60' Wood Deck Flat Car w/163H Motor Grader
80-98017 \$34.95
60' Wood Deck Flat Car w/315C Hydraulic Excavator
80-98025 \$34.95
60' Wood Deck Flat Car
80-98001 \$29.95



Great Northern
60' Wood Deck Flat Car w/315C Hydraulic Excavator
80-98028 \$34.95

Also Available:
60' Wood Deck Flat Car w/163H Motor Grader
80-98020 \$34.95
60' Wood Deck Flat Car w/950G Wheel Loader
80-98012 \$34.95
60' Wood Deck Flat Car
80-98004 \$29.95



Features

- Intricately Detailed Durable ABS Body
- Metal Wheels and Axles
- Fully Sprung Die-Cast Metal Trucks
- Decorative Brake Wheels
- Separate Metal Handrails
- 1:87 Scale Dimensions
- Simulated Wood Decking
- Kadee® Compatible Couplers
- Detailed Undercarriage
- Unit Measures: 8 7/8" x 3/4" x 1 1/2"
- Operates On 18" Radius Curves



Operating Action Cars

 = Imagination and Fun


While we take pride in the prototype accuracy of most of our HO products, you will find items in this and future catalogs bearing a  designation (and item numbers with an "81" prefix) that may feature imaginary graphics or stray from historical accuracy. These  products are exciting and enjoyable for railroaders who like to use their imagination and just have some fun. Imagine if the BNSF developed a "Heritage Series" of locomotives like the Union Pacific. A SD70ACe in Santa Fe livery would be a knockout!

These new operating action and aquarium cars take their inspiration from popular O gauge cars issued in the 1950's. There were in fact a number of prototype cars built to carry live fish, perhaps the most famous being the Nautilus owned by Chicago's John G. Shedd Aquarium but of course none had glass sides! Our new Operating Action cars feature backlit scenes that move as the car rolls by, with aquatic-themed cars featuring wavy glass to simulate water.




Tropical Fish
Operating Action Car
81-99005 \$54.95 



Large Mouth Bass
Operating Action Car
81-99008 \$54.95 



**CHROME
PLATED!**

Coors Light
Operating Action Car
81-99001 \$54.95 



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Harley-Davidson®
Operating Action Car
81-99003 \$54.95 

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SEE IT IN
ACTION
ON THE WEB

www.mthHOtrains.com

See 'em in action: Visit our site to see videos of M.T.H. products in action, locate your nearest dealer, or learn more about our products.



Budweiser
Operating Action Car
81-99002 \$54.95

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Davey Jones Pirates
Operating Action Car
81-99010 \$54.95



M&M'S®
Operating Action Car
81-99004 \$54.95

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©MARS, Incorporated 2009



Maryland Crabs
Operating Action Car
81-99006 \$54.95

Features

- Intricately Detailed Durable ABS Body
- Metal Wheels and Axles
- Fully Sprung Die-Cast 4-Wheel Metal Trucks
- Kadee® Compatible Couplers
- Decorative Brake Wheels
- 1:87 Scale Dimensions
- Unit Measures: 6 1/8" x 1 1/8" x 1 15/16"
- Operates On 18" Radius Curves



No Matter How You Run It

Your new Proto-Sound® 3.0 locomotive has more features than any engine you've ever owned

Analog DC

With just an ordinary DC transformer, you get operating features unmatched by any other HO locomotives:

- **Synchronized puffing smoke and chuffing sounds:** billowing smoke correctly synchronized with the drivers at four puffs per revolution; at rest, smoke wafts out of the stack steadily, just like the prototype. As with smoke, chuffs are correctly timed, in sync with smoke puffs at four per driver revolution
- **Squealing brakes:** slow down quickly and hear the squeal of a brake application
- **Idle sounds:** at track voltages between about 6-8 volts, your engine idles and plays random maintenance sounds — like the whoosh of steam cocks being opened
- **Prototypical Rule 17 lighting:** the headlight dims automatically when the engine comes to a stop, and the tender light illuminates for backup moves
- **Speed control:** set any speed and your engine maintains it, regardless of load, hills, or curves
- **Automatically smooth reversing:** flip your transformer's reversing switch at any speed and watch your engine gradually come to a stop, turn on the appropriate directional lighting, and smoothly accelerate up to speed in the opposite direction



DCC

If you operate with Digital Command Control (DCC), you'll find Proto-Sound 3.0 locomotives take full advantage of the capabilities of DCC and are completely compatible with all DCC motive power. In fact, Proto-Sound engines are already equipped to use DCC functions 0 through 28, even though controllers that access these NMRA standard functions are just now becoming available..

With today's standard DCC controllers, your Proto-Sound 3.0 engine has all the features available with analog DC and these additional functions activated by your controller:

- **Full command control**
- **Bell:** listen for the realistic last half ring when you release the bell button
- **Whistle/Horn:** depending on how long you blow the whistle or horn, you'll hear one of several different end signatures
- **PFA (Passenger and Freight Announcements):** passenger engines offer a complete passenger station arrival and departure sequence that you can activate on command; freight engines allow you to play a symphony of freight terminal sounds
- **Startup and shut down sounds**
- **Volume control**
- **Sound mute**
- **Smoke on/off**
- **Lighting on/off**
- **Plus 19 others**



(see page 1 or 8 for the complete list)

DCS Commander

MTH's Digital Command System (DCS™) unlocks the full sound and operating potential of Proto-Sound 3.0. Insert a DCS Commander in the wires from your existing DCC system to the track and you can switch back and forth between DCC and DCS with the push of a button. Or use the Commander alone with your own DC power supply.

The DCS Commander offers intuitive control of multiple Proto-Sound engines; for each locomotive, more than 32 functions are available at the touch of a single, clearly-labeled button. In addition to the features available with DCC and analog DC, the DCS Commander unlocks a long list of Proto-Sound operating possibilities, including:

- **Speed adjustment in one-scale-mile-per-hour steps**
- **Independent feature control:** tune your engines' sound, lights, smoke and acceleration/deceleration settings
- **Smoke on/off**
- **Doppler sounds:** simulate the classic sound effect of a train approaching and then whizzing past
- **Accent sounds:** activate any one of 7 individual sounds, including forward and reverse signal sounds, coupler slack, engine start-up and shut-down, engine labor and drift
- **Activate Passenger Station and Freight Yard Sounds**
- **Individual locomotive control:** control up to 99 Proto-Sound 3.0 engines at the same time, on the same track
- **Selectable control configurations:** choose between analog DC, DCC* and DCS modes

* Customer-supplied DCC system required

DCS Remote Control System

Run your entire layout from one wireless handheld — or several. With a DCS Remote Control System, you can operate up to 99 Proto-Sound 3.0 engines in command mode at the same time, with full access to all locomotive functions. Add an optional Accessory Interface Unit (AIU) and the same handheld controls hundreds of switches or accessories. For group operating sessions, equip each guest with their own full-featured handheld.

**Unlike the DCS Commander, the DCS Remote Control System is not compatible with DCC systems.

Two Choices of DCS



DCS Commander Controller
50-1028 \$149.95

DCS Commander System
w/100 watt power supply
50-1029 \$229.95



DCS Remote Control System
50-1001 \$299.95
(requires separate power supply)



More Features Than Analog DC or DCC Command Control

SMOKE - Turns Smoke Unit on & off
HDLT - Turns Headlights on & off
ENGINE SOUND - Silences Engine Sounds
DOPPLER - Activates Proto-Doppler™
PFA - Activates Passenger/Freight Sounds

CONV - Activates Conventional Mode
DCS - Activates Command Mode
MOM - Adjusts Engine Momentum
ADD - Adds PS 3 engines

EDIT
Edits engine addresses

DEL
Deletes engines

RESET
Resets PS 3 engines

PASS THRU
Sends DCC signals to track from DCC system**

E STOP - Cuts power to all tracks

BELL - Rings Bell

ENG - Engine Menu (To Select and Control Engines)

SEL - Selects or activates a setting

LCD DISPLAY

SFS - Plays Forward Signal Sound
SRS - Plays Reverse Signal Sound
VOL+ - Globally increases all sounds
START UP - Activates sound, smoke & lights
VOL- - Globally decreases all sounds
SHUT DOWN - Deactivates all sound, smoke & lights

SCS - Plays coupler slack sound
LIGHTS - Turns loco lights on & off
ALL - Selects all engines
STA MODE - Selects Station Mode
STA SEL - Activates Station Stop sounds
STW - Plays Train Wreck sound

AUX 1-3
Auxiliary buttons

CPLR-F/CPLR-R*
Fires front & rear couplers

BOOST/BRAKE
Temporarily raises or lowers speed

LABOR/REV UP OR DRIFT/REV DN
Makes an engine sound like it's working harder (labored steam chuff or higher revving diesel) or easier (drifting chuff or lower revving diesel)

W/H - Whistle/Horn

DIR - Changes locomotive direction

THUMBWHEEL
Sets throttle speed & voltage setting

The DCS Commander is the easiest way to access the dozens of command control functions already programmed into your M.T.H. HO locomotive. The Commander features clearly-labeled, one-button control of more than 32 engine functions; no function keys or special codes to remember; and more features than any DCC system made today. Use the engine menu to select and control up to 99 different DCS engines from a single Commander at the same time on the same track — or switch back to DCC or analog DC operation with the push of a button.



In DCS mode, the large LCD screen identifies your locomotive's number and provides readouts for scale speed and active features.



In conventional mode, the LCD provides track voltage and amperage level readouts, making the Commander a full-featured DC controller.

Adding a DCS Commander to your existing layout is simple: just insert it into the wires that connect your DC transformer or DCC system to the track. The Commander can accept any power input (AC, DC or DCC) and output analog DC with volt and current display. The Commander also acts as a passive conduit for your DCC signal until you press the button to switch to DCS or conventional operation.

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M.T.H.'s DCS Digital Command System has received U.S. Patent No. 6,457,681. M.T.H.'s Proto-Sound® system has received U.S. Patent No's 6,457,681 B1 (sound system), 6,457,681 B1 (Proto-Speed Control), 6,604,641 (Proto-Coupler), 6,280,278 (Proto-Smoke).
M.T.H.'s RealTrax has received U.S. Patent No. 6,019,289.
M.T.H.'s Z-4000 Transformer has received U.S. Patent No's. 6,281,606 & 6,624,537.
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* Operating couplers are available only on diesels at this time.

** Customer supplied DCC system Required

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