

REVIEW *Large Scale* Piko Mogul Mania

Review and Photos by David Otte

38210 D&RGW 2-6-0 Steam Locomotive and Tender, MSRP: \$249.99

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By-The-Numbers

2-6-0 Mogul

Piko

G 1:29 • Type: Steam Locomotive

Traction Tires? Yes

Pull Power (Ozs @ Full Slip)

Pull ÷	Loco Wt =	Efficiency
34.7	96.3	36.0%
Volts	Amps	
16	1.73	

Analog DC

Start Volts = 3.5

Volts	Amps	Scale MPH
3.5	0.47	4.9
5.0	0.55	7.9
8.0	1.12	18.4
11.0	0.95	44.7
14.0	0.86	62.0
17.0	0.81	79.1



NOW that Piko has firmly established its presence in the worlds of G gauge trains, the German-based company is taking a break from its extensive European prototype releases. Piko is currently focusing on a locomotive more akin to us Large Scale fans on the other side of the pond — the ubiquitous 2-6-0 steamer with tender. These mighty Moguls saw use throughout North America from railroading's earliest days right up until the end of steam. Featuring directionally controlled LED lighting, operating smoke unit, ball-bearing drive, and designed to accept a Piko DCC decoder and sound

system all for less than \$250, the new 2-6-0 appears to be the perfect addition to the burgeoning garden railfan's roster. Is this new release too good to be true? Follow along as I delve into the realm of Mogul mania and the nitty-gritty details of our recently arrived review sample.

Mogul Mania

The first locomotive with a 2-6-0 wheel arrangement was the *Pawnee* built by Millholand for the Philadelphia & Reading Railroad in 1852. Builders Smith & Perkins, Norris, and Baldwin later constructed a small number of additional copies of this locomotive. These



A "what if" paint scheme. The new Piko Mogul offers modelers a glimpse of what a D&RGW 2-6-0 might have looked like in the Flying Rio Grande scheme if the railroad's standard gauge Moguls had survived into the 1940s. I'm not a big fan of plated plastic handrails and other details, but they do add a bit of class to this paint scheme. Experienced modelers may even wish to add a steam delivery pipe with check valve and sanding lines to spice up the otherwise barren boiler.



Piko's latest G gauge offering — the Mogul type. Historians estimate that as many as 11,000 2-6-0 steam locomotives were built in North America between 1850 and 1930. Eventually replaced by the 2-8-0 Consolidation type on mainline freights, the Mogul would serve its remaining days on branchlines and in yards where its light axle loading made them useful up until the end of steam. Measuring 22.25 inches long over the pilots, this charming rendition of an American railroad icon, with its stubby boiler and short wheelbase, is the perfect addition to any size Large Scale pike. Check out the running gear — it's fully depicted, complete with power reverse appliance, Walschaerts valve gear, piston valves, multiple bearing crossheads, and main and side rods. The see-through spoked drivers and pony truck wheels are solid metal while tender truck wheels are plastic. Note also the familiar Piko engineer seated in the cab.

early 2-6-0's rigid lead wheels were only successful at slow drag service, which offered no real advantages over the 0-6-0 design. It wasn't until Levi Bissell's patented swiveling two-wheel lead truck design, introduced in 1858, that the 2-6-0 took off as a popular locomotive. Louisville & Nashville Railroad is credited as having rostered the first true 2-6-0s built in 1860 by Baldwin. Central Railroad of New Jersey followed suit with a 2-6-0 of its own in 1861, and Erie rostered a sizeable fleet of 2-6-0s by the mid-1860s.

William Hudson of the Rogers Works labored to enhance the 2-6-0's design by perfecting the three-point suspension, allowing the lead trucks and drive axles to work in harmony when passing over less-than-ideal track conditions. This enlightened design aspect made the 2-6-0 a true competitor for the widely accepted 4-4-0 wheel arrangement. The subsequent true age of the 2-6-0 then came in 1865 with a Rogers-built New Jersey Railroad & Transportation Company locomotive featuring the new Hudson equalizer suspension. The design's popularity grew and soon spread to railroads throughout the country. Baldwin factory records indicate that this locomotive type's production went from a meager three engines a year in 1868 to 26 by 1875.

The 2-6-0 proved itself very reliable in freight service because it tracked well and offered a 50 percent increase in tractive power over the 4-4-0. Although thousands of Moguls were built, pro-

Some of the separately applied details are actually left for the modeler to install. These include the coupler lift bar, pilot beam flag poles, smokebox handrail, headlight, bell, and brake cylinders behind the rear drivers — all snap on assemblies. Note the toolbox under the smokebox, the see-through boiler tube-style pilot with steps, the rather European-looking steam generator next to the stack, and the tread pattern molded into the running boards and pilot deck.



Weighing in at 17.3 ounces and the wheelbase measuring a scale 10 feet, 3 inches between truck centers, the tender is rather light and could benefit from the weight of metal wheelsets. However, this expensive feature would no doubt raise the cost of this very affordable model. Besides, I encountered no problems with its overall performance on the rails as-is. Note the arch bar freight trucks beneath as well as the add-on molded coal load, water hatch door, handrail, ladder, flagpoles, coupler lift bar, and standard hook and loop coupler.



ductions gave way to the popular 2-8-0 first introduced in 1866. Nevertheless, 2-6-0s continued to be built new up until the late 1920s. The 2-6-0's relatively light axle loading allowed them to serve on branchlines and in yards well into the post-World War II years, whereas larger (and heavier) steam power and even the newer diesel-electrics could not. For example, Southern Pacific's M6 and M9 class Moguls, all built between 1901 and 1918, were exceptionally handsome, modern appliance-equipped machines that served the railroad up into the 1950s, both around major hubs like Los Angeles as well as on many SP branches. In fact, of the more than 350 2-6-0s owned by the road, SP's M-21 class, weighing in at 185,000 pounds on the drivers and providing 42,400 pounds of tractive effort, has the distinction of being the heaviest and most powerful Moguls ever erected in the United States.

Finally, it's curious to note that the first endearing reference to the 2-6-0 as a

“Mogul” was found in a Baldwin advertisement in the *Poor's Manual of Railroads* of 1871–1872. Even before this use of the term, though, Central Railroad of New Jersey had named its 1866 Taunton-built 2-6-0 “Mogul” perhaps offering the entire class its now-familiar moniker.

Piko's Foray into U.S. Steam

As best as I can tell, the Piko Mogul does not follow any single prototype but displays characteristics of a variety of steam locomotives. While the manufacturer does not declare the scale of its model, my guess would be 1:29. At this ratio, the 2-6-0 and tender has a 54-foot length over the pilots, is 9 feet, 9 inches wide at the cab, and is 15 feet, 8 inches tall over the stack — all reasonable Mogul dimensions. Calculating some additional measurements yields 51-inch drivers, 24-inch diameter lead truck wheels, 33-inch wheels on the tender, a 69-inch diameter boiler, and an engine wheelbase of 19 feet, 11 inches. Comparing these dimensions with an assortment of 2-6-0 type diagrams suggests that this later measurement makes for a very short wheelbase. Most Moguls I surveyed had driver diameter sizes

that ranged between 56 and 64 inches.

The result is that the Piko offering is rather stubby in appearance, but perhaps this just adds to its overall charm. Constructed from heavy-duty plastics safe for outdoor use, the boiler, cab, roof, running board assembly, steam chest/cylinders, and pilot are separate castings as are the tender body and its frame. Minimal molded-in details represent delicate-looking rivets, boiler bands, tread pattern on the running boards, and recognizable piping, controls, and gauges on the backhead. Separately applied parts include various plated plastic handrail, whistle, bell, steam generator, stack, air pump, air reservoir tanks, brake cylinders, coupler lift bars, cab window glazing, cab seats compete with engineer, both headlight and back up light, and rear access ladder on the tender. A number of these pieces are bagged with the locomotive for consumer application in an effort to keep them safe during shipping. These are easily installed by following the included assembly illustrations.

Meanwhile, the running gear exhibits non-functioning Walschaerts valve gear, multiple bearing crossheads, and piston valves with working linkages suggesting a Mogul first built after the turn of the 20th Century or perhaps rebuilt in the decades leading up to World War I. Nevertheless, these features, along with the appropriately shaped main and side rods all formed from a durable engineering type plastic, and the see-through spoked metal drivers offer the 2-6-0 an upgraded appearance over the familiar



Piko has come up with a nifty drawbar connection for its Mogul and tender. Serving as both a mechanical and electrical coupling, the eight-pin, truck-mounted plug on the tender seats into the receptacle beneath the engine's cab with an outer metal bracket swinging down over the plug and grabbing onto the pins extending out from the sides of the receptacle.

0-6-0 tank engine found in Piko's U. S. starter set, which I reviewed back in the December 2010 issue.

While I'm pleased to see this improvement, the model could use some additional details to make it pop. A steam delivery pipe with check valve on the boiler, some sanding lines leading down from the twin sand domes, pop valves atop the steam dome, and perhaps a dummy knuckle and air lines on the pilot would be great improvements. However, I know Piko is trying to keep its latest offering at an affordable price point, so I'm only offering these comments as some constructive criticism for the manufacturer to consider while letting modelers know that there are simple improvements they can perform to make a great-looking model even better.

When it comes to decoration, it seems to me that Large Scalers have always had a special affinity for Denver & Rio Grande Western, especially when it comes to its narrow gauge lines. Therefore, it makes perfect sense that for its first Mogul release, Piko would choose that railroad's post-1940 paint scheme with Flying Grande lettering and green boiler jacket. While D&RGW did own a handful of standard gauge 2-6-0s, none of them survived into the Flying Grande era. Thus, consider this a fantasy scheme with neither the "M 21" class designation nor the road number (No. 218 was a C-16 class narrow gauge 2-8-0) ac-

curate, but she sure does look smart with window frames trimmed in bright red paint, a freight car red roof, and graphite smokebox and fire box. Consistent with past samples, Piko applied smooth and opaque color and lettering to our Mogul — overall, a first-rate job.

Mighty Mogul on the Mainline

The muscle behind this Mogul is entirely housed in the sealed power brick or gearbox making up the chassis. With this design, the motor, gears, axles, and electrical pickups are all completely protected from the elements while still offering the prototypical clear view between the boiler and frame. Removing the gearbox cover, I found a precision can motor with brass worm gears mounted to its shafts, which, in turn, power the outer drive axles through a series of plastic reduction gears. Both drive axles feature roller bearings with some lateral motion permitted. The center drive axle is allowed to more or less "float" within its housing. In this way, the Piko 2-6-0 can negotiate G gauge R1 or 600 millimeter-radius curves (23.25 inches) with ease. Internal sprung copper pickups allow all six drive wheels to act as electrical pickups along with the slider shoes located between the first and second drive axle, which is the reason for the unequal driver spacing. Furthermore, traction tires outfitting the number one drive

axle wheels aid this six-pound-plus (thanks to a hefty boiler weight) locomotive in achieving an excellent tractive rating. Finally, the tender is equipped with a standard truck-mounted hook and loop coupler.

While the smokebox houses a voltage regulator for the working Seuthe-brand smoke generator, the bright LED lighting is controlled via the circuit board housed inside the tender body. The tender itself does not offer any electrical pickups due to its plastic wheels, but is the platform on which a Piko brand number 36122 digital decoder and number 36198 sound module with speaker can be installed; the tender frame already contains the appropriate mounting bosses and speaker grille for the associated electronics. Connecting the duo for operation is a novel all-in-one mechanical and electrical coupling device. Each half of an eight-pin plug is mounted to an articulated point beneath the engine and tender and, when mated, is held together by a hinged metal brace that swings down over the outer plastic pins jutting out from sides of the locomotive's half of the connector. The result is an easy-to-align and sturdy drawbar connection that allows even the youngest of engineers to easily get this locomotive up and running in no time.

All my By The Numbers data resulted from operating the Mogul on a test track equipped with minimum

Here's No. 218 on minimum R1 (600 millimeter) curves with a period wooden-style boxcar in tow. Weighing in at more than six pounds with traction tires installed on the front drive wheels, the Piko Mogul has excellent traction and easily matches an average 2-6-0 prototype in scale pulling power, which typically amounted to a 12- to 15-car consist on level grades.



R1 curves and turnouts using Aristo-Crafts' Everest 15 amp DC power supply and controller. Our sample exhibited a smooth, quiet gearbox with good slow-speed operation while scale speeds above 12 volts began to leave prototypical ranges. Note that, while the 2-6-0 began to edge along the track at only 3.5 volts, the headlight was not

consistently lit until about 4.5 volts. Also, Large Scalers will appreciate the 36 percent drawbar pull test ratio this model exhibited, which translated into an impressive consist of 11 freight cars plus caboose on my larger test track with R-5 1,240 millimeter-radius (48.8 inch) curves. Overall, I encountered no anomalies during my repeated test sessions. I enjoyed the addition of the Seuthe smoke generator, which, after supplying it with 10 to 20 drops of the included fluid, puffed out plentiful white smoke rings as the Mogul made her way silently around the track. I hope to remedy that latter effect in a future article with the installation of Piko's DCC decoder and sound module!

Truth Be Told

As appears to be the case in all the scales, model railroaders and manufacturers alike have had a tendency in recent years to go for the grandest and biggest motive power ever to roam the rails, so it's nice to see Piko offer this delightful, quality constructed 2-6-0 because it should have universal appeal to all regardless of layout size. Furthermore, its durable construction, ease of operation, and very affordable price (many dealers I surveyed are listing them for less than \$200) make it the perfect addition to the novice G-gauger starter set. The advanced garden railroader might like to take the Piko Mogul to the next level by enhancing its appearance and operation. Truth be told, the mighty little Mogul is a welcomed addition. It is great to see this relatively young Large Scale manufacturer begin to hit its stride in the marketplace. 