

# REVIEW Large Scale A German Shunter for the garden railway

Piko's V 60 adds eye-catching charm

Review and Photos by David Otte

DB Era IV Class 260 Diesel (#37520),  
MSRP: \$269.99

Multi Protocol Decoder (#36120),  
MSRP: \$139.99

Sound Unit for Class 260 (#36195),  
MSRP: \$149.99

DB Era V Flatcar with Container  
(#37706), MSRP: \$99.99

Piko America, LLC  
4610 Alvarado Canyon Rd., Suite 5  
San Diego, CA 92120  
619-280-2800 • Fax: 619-280-2843  
[www.piko-america.com](http://www.piko-america.com)

**I**N our December 2010 issue, we briefly introduced you to the Large Scale product line of Piko. Their Christmas Freight Starter Set offered a colorful initiation into modeling with these big trains, but there is much, much more available from this German manufacturer. For example, my experiences with their recently released Class V 60 shunting locomotive offered not only a great looking European prototype with sure-footed switching capabilities, but our sample came equipped with a performance enhancing DCC/Sound upgrade to boot.

True to the profile of the standard gauge Class V 60 Shunter, the Piko model has the same off-center control cab, large viewing windows, and hood arrangements. Keeping in line with its diesel-hydraulic design, the model correctly features a working crankshaft with counterweights and side rods connecting to the see-through spoked drive wheels, which offers some additional mechanical action that only steam locomotive enthusiasts usually get to enjoy.



Neatly and accurately decorated, the Piko V 60 we sampled represents the re-classed number 545 as it appeared in the 1970s and 1980s while in service with the state-run Deutsche Bundesbahn. Built by Krupp in 1960, V 60 545 carried serial number 3968. In January 1968, she became 260 545-9 and in 1987, 360 545-8. After being outfitted with remote control equipment, she carried 364 545-6 on her cab sides and entered the roster of the privatized DB AG in 1994 after Germany's reunification. In 2000, 545 was re-engined and classed as 362, before being re-lettered for service with European hauler Railion AG in 2003 and its successor DB Schenker AG in 2009 where she remains number 362 545-6.

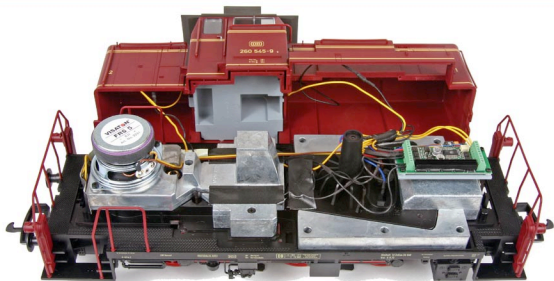
## A Shortage of Shunters

In the years following WWII, the young Deutsche Bundesbahn, the new state run railway of West Germany, found itself in need of small shunting locomotives (we call them switchers on this side of the pond) for working in the rail yards or hauling light goods trains. Working collectively with the major locomotive builders in the country, a design was implemented by the DB in 1955 for the new diesel-hydraulic type with a 3-axle wheel arrangement. Classed as V 60, 942 members of this shunter series were built by Krupp, Henschel, Deutz, Esslingen, Jung, and MaK for the DB from 1956 – 1964. Approximately 140 additional examples

of the V 60 were built for railroads in other countries including Turkey, Greece, Belgium, and Israel.

Stretching 34.3 feet (10.45 meters) in length over the buffers of its fully welded frame, the V 60 had a slightly off-center control cab with large windows offering excellent views. A highly reliable Voith hydraulic transmission was housed beneath, providing gearing for both shunting (maximum of 19 miles per hour) and running (maximum 38 miles per hour) duties. Out front under the long hood was a 12-cylinder, 650-horsepower (478 kilowatts) Maybach GT06 diesel engine as well as the cooling system and two Bosch generators providing 24 volts for lighting and recharging the starter battery. The rear-facing short hood protected the Knorr air compressor plus the air reservoir and fuel tanks. Finally, the V





60 was outfitted with an onboard coke oven for use in pre-heating the diesel before starting.

So what is a diesel-hydraulic you ask? Well, unlike the diesel-electric locomotives we are familiar with in the U.S., the diesel-hydraulic uses torque converters to convey power from the engine to the wheels. On the V 60, power was transmitted via a jackshaft, located between the second and third drive axles, on which each end contained a crank pin and counterweight. Connecting rods then extended out to the drive wheels. This design offers two advantages over the diesel-electric. First of all, the system is lighter in weight for the same power output offering lighter axle loads, an important factor for branchline operations. Second, the factor of adhesion is better and, thus, the starting tractive effort is superior — an especially important attribute for a switcher.

This is due to the fact that all the drive wheels are interconnected via rods, shafts, or universal joints requiring all axles to rotate at the same speed. This is in contrast to the individual electric traction motors powering the drive axles of the diesel-electric, which can slip independently of one another. While today's diesel-electrics now employ anti-slip control devices, for the era in which the V 60 was introduced, it was a superior switcher design.

Seventeen screws later...that's what it takes to remove the shell of the V 60 along with disassembly of the end-beams and forward side handrail. Once finished though, you have complete access to the interior of the carbody, the plastic chassis with its added weights, and the speaker and decoder/sound module mounting locations. While I did not personally install the electronics on our sample, the add-on components sold by Piko appear straightforward in their application and the end results are surely worth the endeavor, as I discovered during my test session.

The adhesion weight of these standard gauge shunters was 53.2 tons (48.3 metric tons), but a select number of the class were given heavier frames with a 58.4 tons (54 metric tons) weight rating and provisions for carrying extra ballast for heavy duties. Starting tractive effort was then rated at 26,400 pounds (117.6 kilonewtons) and 29,700 pounds (132.3 kilonewtons) respectively.

At first, there was no distinction in class between the two configurations, but in 1968, when the DB switched to computer-readable numbers, they were divided into the 260 (light) and 261 (heavy) classes. Subsequent renumbering followed in the years ahead as the original V 60s were reclassified as "Kleinloks" or minor locomotives (360/361), which reduced manpower costs; others would become radio controlled units (364/365), and many others would see their Maybach engines replaced with 12-cylinder Caterpillar prime movers (362/363). By 2003, members of the class without radio control were all retired, but a considerable number of those converted and re-engined units remain in operation today in the private sector.

### By-The-Numbers

**Deutsche Bundesbahn  
Class V 60**

**Piko**

**G 1:27 • Type: Diesel  
Hydraulic**

**Traction Tires? Yes**

#### Pull Power (Ozs @ Full Slip)

**Pull ÷ Loco Wt = Efficiency**

**25.9 118.5 21.9%**

**Volts Amps**

**12 2.83**

#### Analog DC

**Start Volts = 6.7**

**Volts Amps Scale MPH**

**7.5 0.68 15.9**

**10.0 0.77 34.7**

**14.0 0.92 53.8**

**18.0 1.06 75.5**

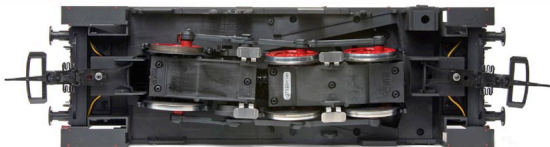
#### DCC

**shunting mode off**

**Min 1 0.7**

**Mid 14 21.1**

**Top 28 42.2**



While the prototype had a rigid wheel arrangement, the articulated gearboxes shown here allow the model to operate on minimum 24-inch radius curves, but each half remains sealed in order to keep dirt

and moisture out when operating outdoors. Note the four sprung slide shoes that aid in gathering power from the railheads as well as the hook and loop couplers made popular by LGB.

## Piko's V 60 Class Shunter

Appearing as robust as the prototype, Piko's model measures over 15 inches in length with its other general dimensions proportionally accurate for a 1/27-scale model. Its size, therefore, makes it applicable in both the traditional 1/22.5 setting of European models, as popularized early on by LGB, as well as the 1/29-scale "standard gauge" US prototype equipment made popular by Aristo-Craft and USA Trains. As G gauge (1.772 inches or 45 millimeters between the rails) track is the basis for many different members of the Large Scale family, locomotives and rolling stock can be mixed and matched as the operator sees fit.

Nonetheless, Piko has taken their job of replicating the Class V 60 diesel-hydraulic seriously, providing this model with not only sturdy construction suitable for outdoor play, but correctly detailing it per the 50-year-old prototype including many separately applied parts. The chassis, the one-piece short and long hood casting, and the cab and roof assembly are all molded from a high-quality weather resistant plastic that can withstand the otherwise degrading effects of the sun's ultraviolet radiation. Heavy metal weights have then been added to the top of the chassis and are hidden by the hoods in order to provide the V 60 with better adhesion on the track. The crisp cast-in details on the body components are further enhanced by a number of hand-applied details, including a one-piece cab interior with a painted Lokführer (engineer) seated at the controls, full window glazing and windshield wipers, cab roof mounted horns, antenna, and exhaust stack. Plastic handholds are appropriately located on the carbody, as is the handrail surrounding the chassis

walkways, and endbeams with buffers have been attached to the chassis.

Beneath the frame lies a faithful reproduction of the external components of the V 60's hydraulic drive system. At first glance, your eyes are immediately drawn to those brightly painted red drivers with their see-through spokes, which are made from diecast zinc. The jackshaft emanating from the housing of the Voith transmission is present, too, with both the counterweights and crankpins modeled appropriately. Thick plastic side rods connect all the wheels to the jackshaft and brake shoes with hangers are positioned on either side of each wheel.

I must admit, I've always been a little jealous of our European railfan brethren, as the prototypes they model seem so much more colorful than ours. I especially love those red painted drivers! The V 60 is a case in point with its matte crimson red finish and tan striping and lettering, which was flawlessly applied on our sample. The manufacturer has gone as far as accenting the molded-in cab door handles in silver, as well as the frame surrounding the side windows, while the simulated gaskets sealing in the balance of the glazing are highlighted in black. In particular, our shunter is numbered for Class 260 545 as it appeared between approximately 1970 and 1990 (referred to as Era IV by European modelers). Piko is offering this model decorated in the DB's handsome blue and beige scheme too, which was also popular during the same era.

## Shunting in the Garden

Unlike the real V 60's method of drive, the model is outfitted with a single can motor, which is housed in the forward section of the articulated,

sealed gearbox along with the first two axles. A dog-bone-style drive shaft then transmits power to the aft portion of the gearbox containing the third axle and jackshaft. In this method, the V 60 is able to negotiate the approximate 24-inch (600 millimeter) radius curves popularized by the many Large Scale starter sets on the market. In order to maintain accurate motion of the connecting rods, the middle side rods have an oval opening where they connect to



The purchaser of the Piko V 60 is rewarded with a well-built model tough enough to be played with, yet still exhibiting an ample supply of accurate details. The Large Scale replica features three forward and three rear-facing directionally controlled, bright LED lanterns, add-on handrail, cab window glazing, an engineer seated in the cab, windshield wipers, cab roof mounted antenna and signaling devices, and removable end-beams, offering the modeler the option of using the included double or single buffer style.

the crankpins providing the extra play required on these tight curves.

Electrical pickup is provided not only through the wiper contacts on all six drivers, but also via four sprung slider shoes that ride on top of the railhead, which are mounted fore and aft of the middle drive wheel. Three directionally controlled LED lanterns are mounted on either end of the model and chassis mounted LGB-style hook-and-loop couplers are employed. Finally, besides its 7 pound 6.5 ounce weight, traction effort has been further aided by the use of a single traction tire on the right rear driver.

As delivered, this is a pretty straightforward model that has a smooth-running drivetrain free of gear noise and very bright lighting when powered by 0-24 volts analog direct current. However, our particular sample had been further enhanced by a multi-protocol decoder and sound module. As the installation was performed on our behalf by Piko, I cannot directly comment about the process, but I can surmise from the wiring diagrams included in the model's instruction booklet that it looks pretty clear-cut.

While the onboard lighting circuit has no standardized plug for connection with this decoder, which is suitable for both NMRA compliant DCC or Motorola based operation, color-coded wiring is used and attached to the labeled positions on the decoder using


a screw terminal; the existing lighting board is to be discarded. The sound module appears even easier to install, as it is equipped with a four-wire interface that directly plugs into the decoder and includes a loudspeaker that can be fastened to a resonator chamber already designed into the chassis of the V 60.

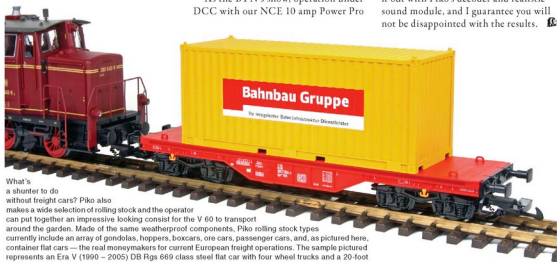
Both the decoder and auxiliary sound module have a full array of control variables that the DCC programming aficionado will enjoy manipulating, but a couple of the functions were real standouts for me. First of all, the sound module has "intelligent sound control" meaning that it syncs the sound effects with the action of the model. For example, the locomotive will not advance from a stopped position until the sounds of the prime mover's revolutions have ramped up. When the locomotive stops, brake squeal can automatically be heard. Function key [F1] provides both realistic start up and shut down engine sequencing while [F3] toggles the model between the aforementioned shunting and running modes realistically limiting the model to a maximum shunting speed of 21 scale miles per hour as clocked on our sample. [F2] and [F4] provide two different horn sounds, the former more apt to the high pitch tone German loks are known for while the latter is a deeper sounding air horn typical of U.S. motive power. Pretty cool effects, but unfortunately, the sound module does not function in analog mode.

As the BTN's show, operation under DCC with our NCE 10 amp Power Pro

system allowed for the most realistic scale speed operation, while the balance of the testing was performed in analog mode using Aristo-Crafts' Everest 15 amp DC power supply and controller. I shoved a string of a dozen or so mixed scale/manufacture freight cars around my test track with the V 60, which it handled with relative ease. I must note though, that on 24-inch radius curves and despite the articulated gearbox design, the model does slow down, noticeably drawing quite a bit more current in its effort to pull itself through the turn. So, while I wouldn't hesitate to recommend this locomotive as a modeler's first purchase in expanding their starter set, I would suggest investing in larger diameter curves for the smoothest operation possible.

### Add a Little Variety to your G Gauge Pike

Personally, I find European prototypes fascinating simply because they are so different in shape, color, and operation from the usual North American fare with which I have grown so familiar. European modelers here in the states have probably already taken note of this Piko replica, but for those of you steeped in F-units, Geeps, and SDs who have never considered "going European" on your indoor or outdoor layout before, think about putting a little spice in your pike and add one of these shunting engines to the roster. Furthermore, trick it out with Piko's decoder and realistic sound module, and I guarantee you will not be disappointed with the results. 



What's a shunter to do without freight cars? Piko also makes a wide selection of rolling stock and the operator can put together an impressive looking consist for the V 60 to transport around the garden. Made of the same weatherproof components, Piko rolling stock types currently include an array of gondolas, hoppers, boxcars, ore cars, passenger cars, and, as pictured here, container flat cars — the real moneymakers for current European freight operations. The sample pictured represents an Era V (1990 – 2005) DB Rgs 689 class steel flat car with four wheel trucks and a 20-foot container of the Bahnbaugruppe — the railway construction division of the Deutsche Bahn AG. The bright yellow and red colors of this car are sure to brighten up the most dingy of garden railways!