

## **PRESSED STEEL CAR COMPANY'S 1901 37-FOOT HOPPER-BOTTOM GONDOLAS**

**PITTSBURGH AND LAKE ERIE/PITTSBURGH, MCKEESPORT AND YOUGHIOGHENY/RIO GRANDE WESTERN/DENVER AND RIO GRANDE/DENVER AND RIO GRANDE WESTERN**

### **HO-6000 SERIES**

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Revision 1, effective 10-30-2022.



**Thank you for choosing Zenith Model Works!** We recommend having at least some experience in building model railroad kits before you begin. Refer to sheet 2 for a history of the car, its specifications and lettering schemes. '

#### **IMPORTANT INFORMATION:**

Our models are 3D printed in resin. This material is similar to styrene plastic, but it is slightly harder and more brittle. The resin we use responds to ACC, but it will not work with most solvent cements. Unlike traditional resin kits, most of the major components are printed together and very little major assembly is required. Unfortunately, one drawback to resin 3D printing is that sprues used to support the model during the print job are inevitable. At the time of this writing, there is no way to print models without sprues; however, most sprues are easily removed with a fresh X-Acto blade. There may be subtle lumps or deformities in the material where sprues were located; these can be easily sanded or smoothed with contour putty. The resin cures under exposure to UV light. If the model is too soft to work with, place it in a sunny environment for a few days and it will harden. It will become more brittle over time, so use caution. When you receive your model, there may be areas where the resin hasn't fully dried. This residue can usually be wiped away using a small amount of rubbing alcohol without any significant changes to the quality of the model. 3D printing is a rapidly changing technology and we hope to update our kits as things improve. Thank you for your patience, and as always, thank you for choosing Zenith Model Works. Should anything be missing or broken, please email us at [info@3dptrain.com](mailto:info@3dptrain.com) and we will ship replacements at earliest convenience.

#### **RECOMMENDED TOOLS:**

Read the instructions thoroughly before beginning construction. Keep a pencil and/or highlighter handy to underscore key details or check off steps. The following tools are necessary to build this kit:

1. Metric ruler or similar measuring device
2. A hobby knife of your choice (a typical X-Acto® knife with a #11 blade works very well)
3. Needle-Nose Pliers
4. Wire Clipper
5. A pin vice
6. #76 and #78 drill bits
7. Flathead or Phillips screwdriver depending on your choice of bolster screw
8. Tweezers
9. ACC

It will help to have some familiarity with standard freight car features. You can add as much or as little detail as you like; feel free to omit certain steps or make modifications where you feel necessary. Wheels and couplers are included at this time.

#### **Preparation:**

1. If your car feels soft, allow it to cure in a sunny window for around 24 hours before beginning. This may make assembly easier and the model will take paint better if properly cured.
2. Start by removing sprue marks and cleaning any uncured resin off the model. A small amount of rubbing alcohol and a paper towel usually works very well.
3. Drill out the bolsters to accept a screw of your choice. These locations are marked by small holes included in the print. We recommend a self-tapping 2-56 machine screw, although drilling the hole out to remove residue first will always help.

#### **Grab Irons:**

4. **Side Grabs - All As-Delivered Cars:** start with drilling the holes for the corner grab irons. These must be drilled at an angle inwards to avoid splitting the corners of the car. Secure the 18" grabs in place with ACC so that they stick out about 4 scale inches from the car. **P&LE Family Cars:** On some cars, photos indicate the corner grabs were bent to extend outwards off of the ends, parallel to the sides. On all other cars, they jut out from the sides at a 90 degree angle.
5. **End Grabs - All Original Cars:** all end grabs were 18" long. Install them and secure them in place with ACC.
6. **Side Grabs - Safety Appliance Cars:** install the 24" grabs on the sides; secure them in place with ACC.
7. **D&RG/DRGW Safety Appliance End Grabs** - all end grabs were 24" long. Install them and secure them in place with ACC.
8. **P&LE/PMcK&Y Safety Appliance End Grabs** - the ladder on the left side consisted of two 24" straight grab irons and one 18" drop grab iron on the bottom (see photos). The center grab on the A end was enlarged to 28 inches and must be fastened from the .010 gauge wire included in the kit. Secure in place with ACC.

#### **Stirrups, Cut Levers and Couplers:**

1. **All Original Cars:** stirrups were originally of the shallow straight-drop variety. **All Safety Appliance Cars:** the stirrups were upgraded to be deeper and feature 2 steps. Remove the stirrups from their sprues using a fresh knife blade. Holes under the car should be drilled out to accept the ends of the stirrups; secure them in place with ACC.
2. Cut levers were mounted on top of the end beams. Drill out the existing holes using a #76 drill bit to accept eye bolts supplied in the kit. Cut a piece of wire to scale roughly 4' 6" long and bend it to match the cut lever shown in the supplied photos. Thread it through the eyebolts first, then insert

them into the holes you drilled. Secure in place with ACC. Use a small length of chain (not supplied) to connect the cut lever to the top of the coupler for maximum realism.

3. Our models come with coupler boxes that accept most standard HO scale couplers. Insert a coupler of your choice if you didn't purchase any with the kit. If the coupler doesn't fit, file away some material inside the box until it fits correctly. Drilling and tapping the couplers has a tendency to split the box, so we recommend gluing the cover in place when you are satisfied with your coupler design. ACC debonder can be used in the future if you decide you need to upgrade your coupler.
4. **Original P&LE Family Cars:** These cars were delivered with hooks and chains on either side of the coupler. We have included eye bolts for these, but chains are not currently available. We believe these were a very early feature that weren't utilized much later in the lives of these cars and they may or not be deemed necessary by the user.

#### **Brake Details:**

9. Most of the brake details are included in the print for ease of assembly. You could remove some of the detail and install your own brake system if you wish. These cars were delivered with a Westinghouse Split K brake system and probably never received AB brakes. **All Cars:** a rod ran along the side of the car from the cylinder to the B end (see renderings). Cut a piece of 0.10 gauge wire about 3 inches long, thread it through the hoop extending from the side and secure one end to the clevis included in the print with ACC (see renderings).
10. Cleave a turnbuckle in half and glue it onto the end of the rod to serve as an opposing clevis. On the prototype, a small chain was routed through a hoop and to the end of the brake staff. When the hand brake was set, the chain pulled on the rod and moved the brake cylinder into the set position. We omitted the chain to keep costs down and prevent operational interference.
11. Brake levers are added using 0.10 gauge wire. The two shafts connecting the inner and outer levers to the bolsters were about seven feet long. The shaft connecting the two levers was about three feet long. See diagram. You could use cleaved turnbuckles on the ends of the wires to replicate clevises if you so desire.
12. Cut a piece of 0.10 gauge wire to a length of approximately six feet. Glue the brake wheel supplied on the end of the wire, thread this through the hole in the brake platform on the B end and down into the end sill. Secure in place with ACC.

#### **Painting and Final Adjustments:**

1. Prepare the completed model for painting by washing with detergent to remove any skin oils. Wash and allow the car to fully dry before applying paint. Most commercially available model paints will work. View the history sheet for more information on color information.
2. Decals adhere best to a glossy surface. Gloss Coat the car if necessary, then apply our water slide decals with Micro-sol, Solvaset or a similar decal solution. Allow the setting solution to cure (at least 12 hours) before applying a flat finish.
3. Our trucks accept most standard HO scale wheelsets. It is advisable to install the wheels soon after you receive your kit, because the resin will continue to harden over time and may eventually break if strained too much. When fully assembled, test the coupler height. If the couplers are too high, file some material off the bolsters. If they are too low, you can use a washer to raise the height.
4. Congratulations! Your car is complete. For questions or comments regarding shipping or questions about 3D printing, feel free to contact [info@3dptrain.com](mailto:info@3dptrain.com). For questions, comments or corrections regarding the prototype and its history, please email [zenithmodelworks@gmail.com](mailto:zenithmodelworks@gmail.com). We appreciate your support.

#### **ACKNOWLEDGEMENTS:**

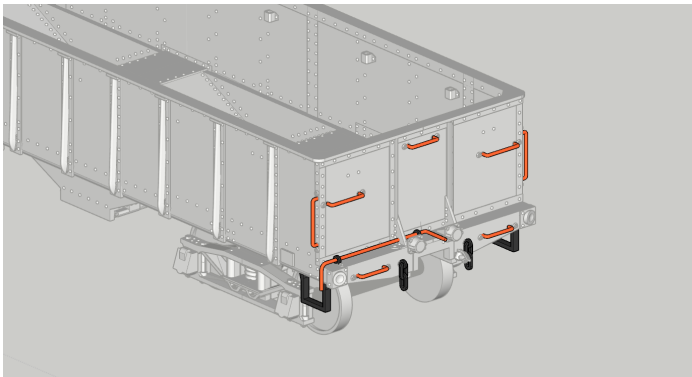
Zenith Model Works extends a gracious thank-you to Josh Bernhard of Great Basin Carshops for assisting in research, prototype testing and decal design, to David and Kristin Kmecik at 3DPTrain for assisting in prototype development and hosting production, and to Ray Breyer, Steve Hedlund and Eric Hansmann for supplying photos and historical information. Without the kindness and generosity of these individuals this project would not have been possible.

**The following is a series of digital renderings showing the builder where detail parts are expected to go.**

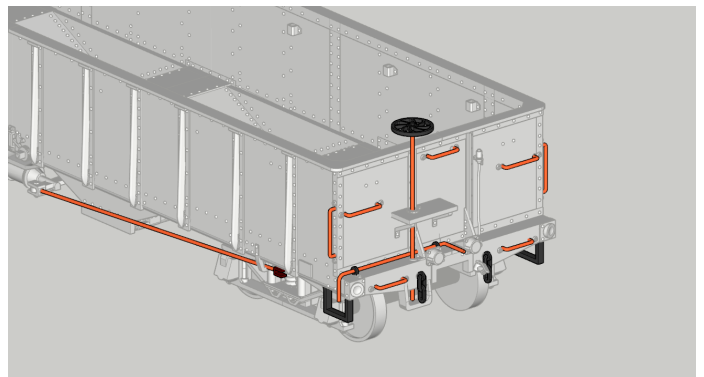
This includes details like grab irons, stirrups, lift bars, and anything not included in the print. To conserve resources, much of the brake system has been fully printed and does not require any additional modification by the user to be reasonably accurate. If the builder desires finer details, he or she may remove and replace some of the brake features with third party details. Please note that the details like grab irons in these renderings are slightly oversized. This is done to ensure everything is visible.

### **Pittsburgh and Lake Erie Family Cars:**

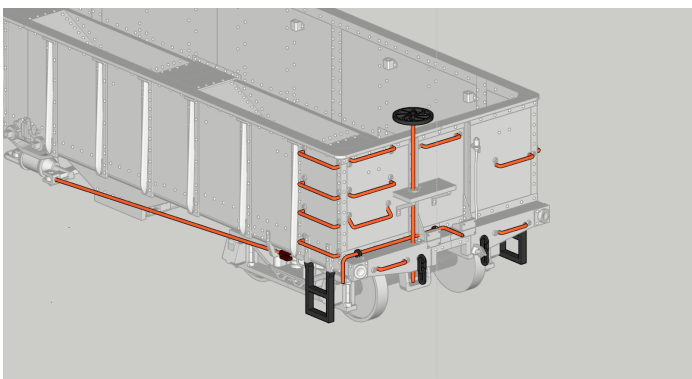
**Original “A” End**



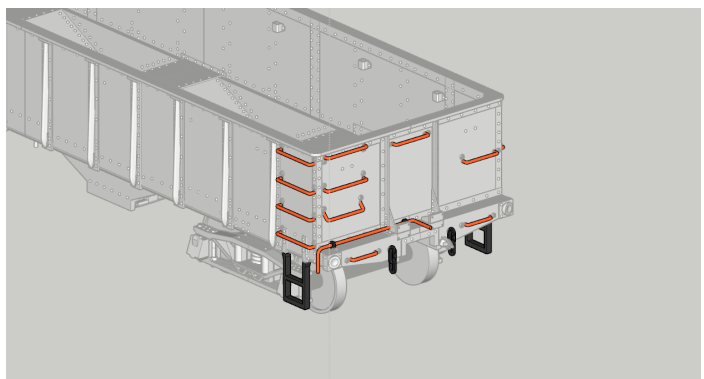
**Original “B” End**



**Updated “A” End with Safety Appliances**

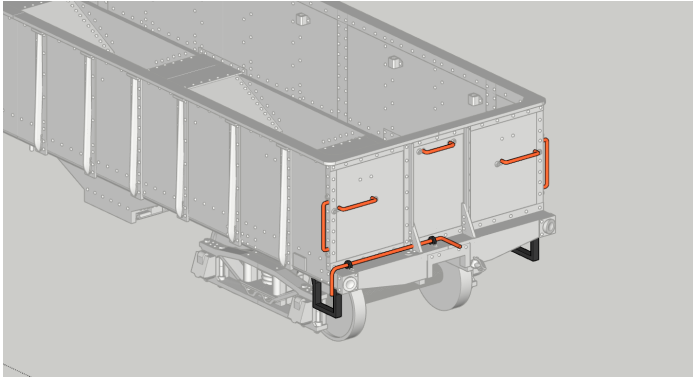


**Updated “B” End with Safety Appliances**

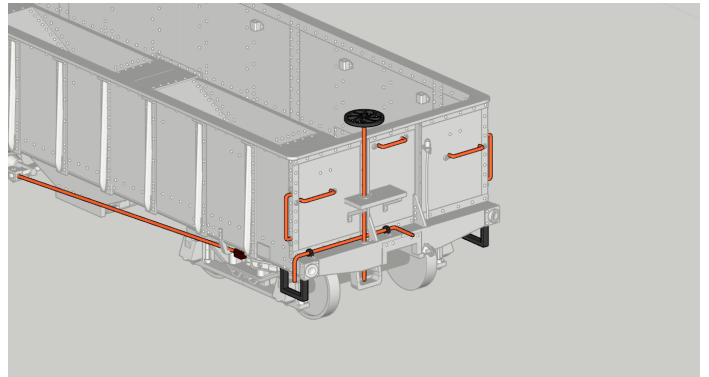


## Rio Grande Western Family Cars:

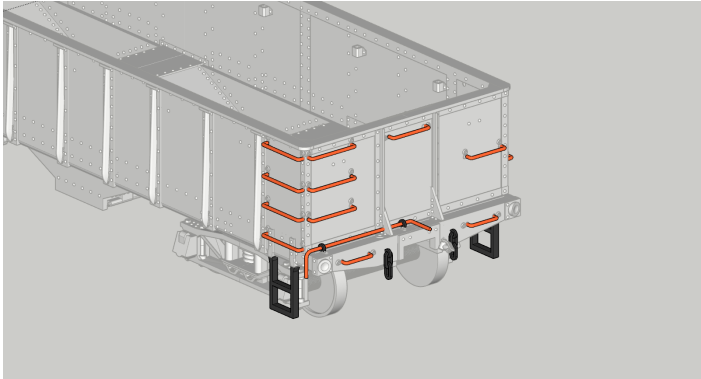
Original "A" End



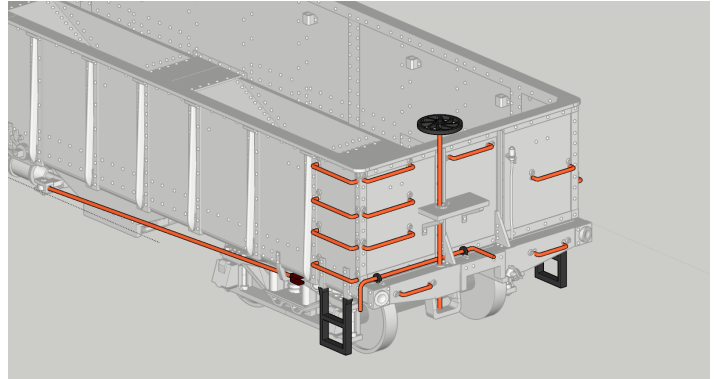
Original "B" End



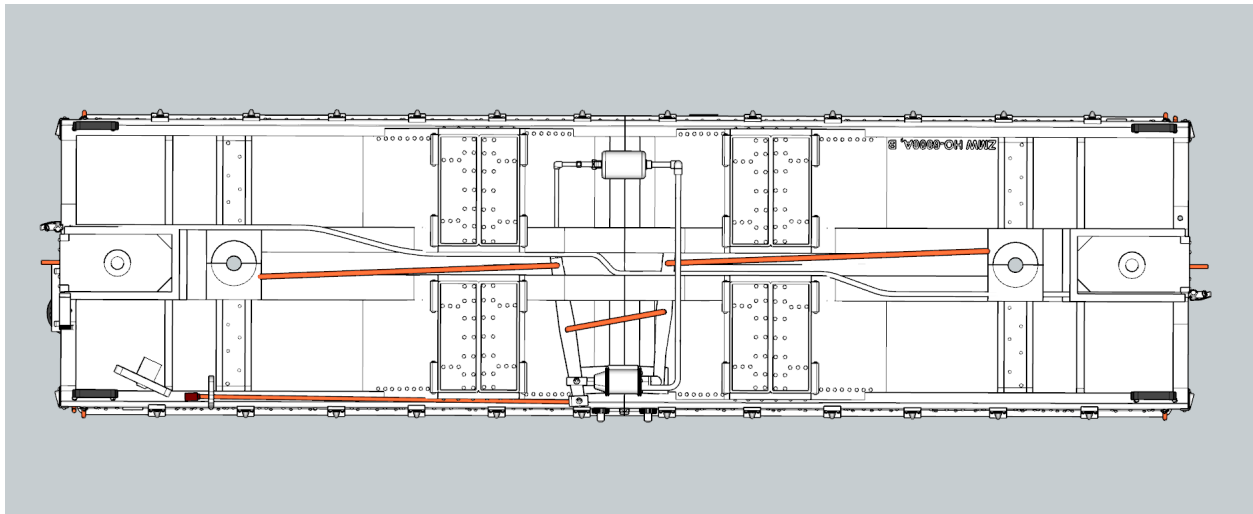
Updated "A" End with Safety Appliances



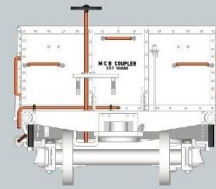
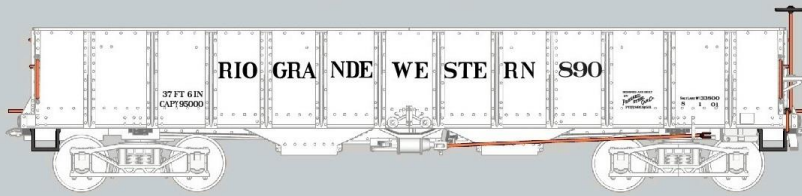
Updated "B" End with Safety Appliances



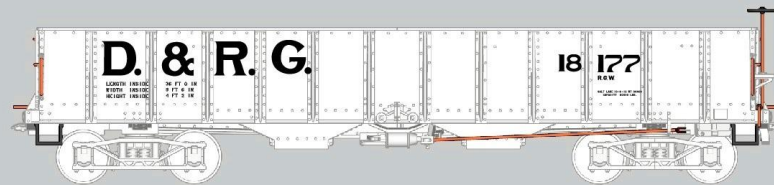
## Brake Lever Positioning, All Cars:



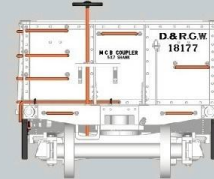
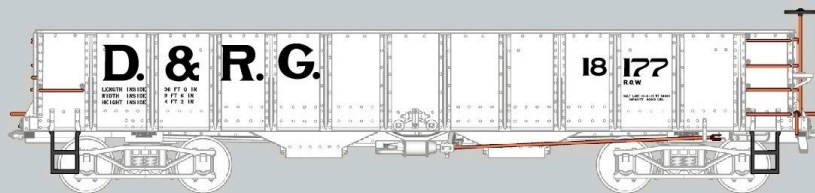
# LETTERING SCHEMES



**RIO GRANDE WESTERN**  
Original Lettering Scheme  
Kit HO-6000A

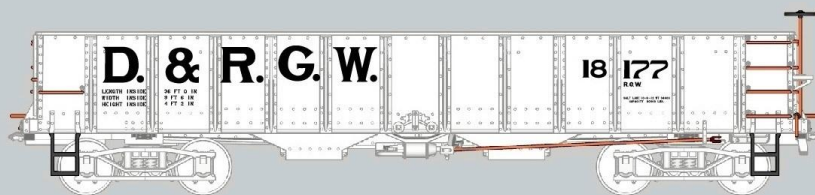


**DENVER AND RIO GRANDE**  
Post-1909 Merger  
Kit HO-6000B

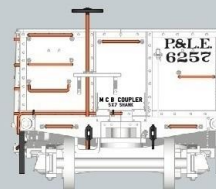
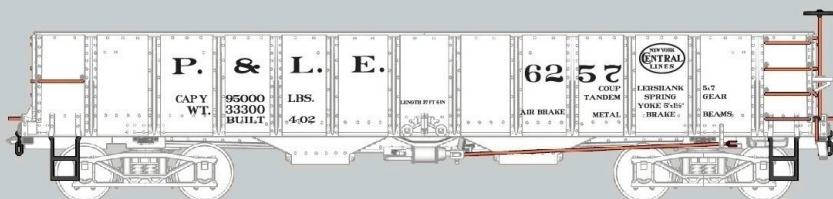


**DENVER AND RIO GRANDE WESTERN**  
Safety Appliances Added After 1911  
Kit HO-6000C

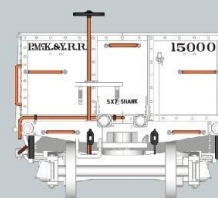
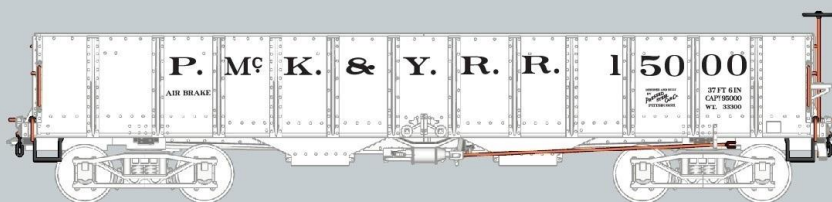




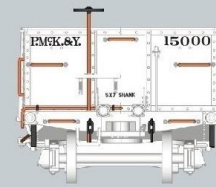
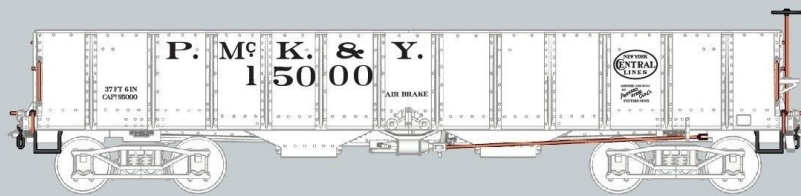
DENVER AND RIO GRANDE WESTERN  
1923 Patch  
Kit HO-6000D



PITTSBURGH AND LAKE ERIE  
Post-1911 update with additional stenciling  
Kit HO-6000H



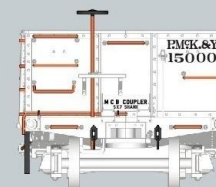
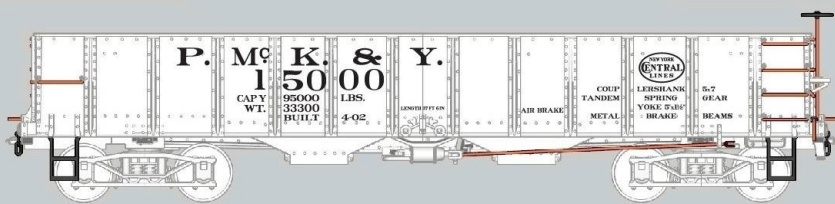
PITTSBURGH, MCKEESPORT AND YOUGHIOGHENY  
Original Lettering Scheme  
Kit HO-6000I



## PITTSBURGH, MCKEESPORT AND YOUGHIOGHENY

January 1905 Update with New York Central logo

Kit HO-6000J



## PITTSBURGH, MCKEESPORT AND YOUGHIOGHENY

Post-1911 update with additional stenciling

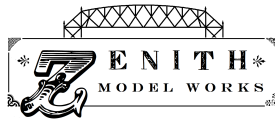
Kit HO-6000K











## **PRESSED STEEL CAR COMPANY 37-FOOT HOPPER-BOTTOM GONDOLAS**

**PITTSBURGH AND LAKE ERIE/PITTSBURGH, MCKEESPORT AND YOUGHIOGHENY AND RIO GRANDE WESTERN/DENVER AND RIO GRANDE/DENVER AND RIO GRANDE WESTERN**

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### **HO-6000 SERIES**

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Revision 1, effective 9-30-2022.

#### **General History:**

Riding on the success of the designs of its predecessor, Schoen Pressed Steel Company, the Pressed Steel Car Company of Pittsburgh, Pennsylvania began building some of the first universal steel freight cars in 1899. A standard 37 foot hopper-bottom gondola was designed in 1901, and so far as we can tell, three railroads purchased this design: Pittsburgh and Lake Erie, its affiliate, the Pittsburgh, McKeesport and Youghiogheny, and the Rio Grande Western. These cars rode on Pressed Steel's distinctive Diamond arch-bar trucks. The hopper bottom gondola was quickly phased out by the PSC Company's next development, the 36-foot steel drop bottom gondola introduced in 1906, which was the basis for the USRA "General Service" gondola standards.

#### **Rio Grande Western/Denver and Rio Grande Western Version**

The Rio Grande Western received 100 cars in May 1901. Photos suggest these were painted oxide brown, consistent with the rest of the railroad's freight car fleet. In 1909 the Rio Grande Western merged into the Denver and Rio Grande in 1909. Effective October 1909 these cars were renumbered 18100 to 18198. They retained these numbers for the rest of their lives. Not long after the D&RG took over these cars were probably repainted black. In 1923 the Denver & Rio Grande was bankrupt and reorganized as the Denver and Rio Grande Western railway; the cars were initially patched, given a W at the end of the original reporting marks. They were repainted again beginning in August 1926 with the "Royal Gorge Route" button herald. Beginning in June 1936, the herald was updated to say "Royal Gorge - Moffat Tunnel Route" (Bernhard). We offer both heralds with our decals. 92 cars remained in December 1930, 69 cars remained in January 1940, and all were off the roster by 1950.

#### **Pittsburgh and Lake Erie/Pittsburgh, McKeesport and Youghiogheny Version**

1,000 units were split evenly between the P&LE and the PMcK&Y during 1901 and 1902. They held P&LE numbers 5900-6399 and PMcK&Y numbers 15000-15499. These cars featured cushioned striker plates that later disappeared from Pressed Steel's offerings. Photos suggest these were deemed unnecessary and removed as the cars were shopped at some point prior to 1911, so our safety-appliance version doesn't have these features. These cars were probably painted black. The "New York Central Lines" herald was to be applied to self clearing hoppers, gondolas and double deck stock cars, effective January 31st, 1905 (Link). At this time, the "R.R." stenciling was removed from the reporting marks. In addition, the road number was placed underneath the reporting marks. At some point prior to 1915, a block of updated weight, capacity and build date stenciling was placed under the road number; it probably remained there

until these cars were retired. Official Railway Equipment Register entries indicate that the P&LE either retired or sold off the majority of its fleet during 1924. In May 1925, 5 cars remained on the P&LE. 2 cars remained in April 1926. On the PMcK&Y, 5 cars remained in January 1925 and 2 cars remained by April 1926. All were off the roster by 1930.

**Roster Data:**

<b>Railroad:</b>	<b>Number Series:</b>	<b>Builder:</b>	<b>Year Built:</b>	<b>Total Number:</b>
RGW	801-900	Pressed Steel Car Co.	1901	100
D&RG/D&RGW	18100-18198 (renumbered 10-1909)	Pressed Steel Car Co.	1901	100
P&LE	5900-6399	Pressed Steel Car Co.	1901	500
PMcK&Y	15000-15499	Pressed Steel Car Co.	1902	500

**Bibliography**

Bernhard, Josh. Personal correspondence. 2022.

Link, Terry. "New York Central Freight Car Roster." *Canada Southern Railway*,  
<https://www.canadasouthern.com/caso/NYC-MODELS-FREIGHT-PAINT.htm?fbclid=IwAR274slwmKNxSNb2fVxhKe82Hnt1aAyNqd4IKB2cmYvQ47gdcNvsFUgoKHY>.