



PRR 255212 is an H30 built in 1940, carrying the 1950s paint scheme and photographed in the early 1960s. The unique “truss bridge” side bracing and the car’s low profile versus the other cars in the scene are evident.

PENNSYLVANIA H30/H30a AND H32 COVERED HOPPER CARS

by James A. Kindraka

During a rather extensive period of research on the Pennsylvania Railroad’s covered hoppers, it became apparent that the average S scale modeler was going to have a devil of a time gathering correct prototype information on these cars. Because of Don DeWitt’s DISPATCH letter decrying just that fact, I realized that something had to be done. The only readily-available source of information on these cars is a two-page spot in the October 1981 issue of Model Railroader. While the photos and line drawing in the article are very helpful, much of the text is inaccurate! The following brief history and technical reference gives you the necessary information to correctly finish and letter these unique cars.

HISTORY

Major quantities of covered hoppers are a relatively “recent” railroad innovation. Until the 1930s, bulk-loaded quantities were generally hauled in the ubiquitous 40-foot boxcar. The New York Central began converting twin open hoppers to covered ones to haul carborundum (a very hard abrasive substance of carbon and silicon used in grindstones) in Detroit in 1929. In 1931 the Pennsylvania

Railroad also began making its own covered hoppers by converting open coal hoppers. These early covered hopper experiments were of limited success, but despite this, the concept of a top-loading/bottom-unloading weatherproof car for hauling bulk commodities had caught on with shippers. Conversion of open twin hoppers had the drawback of limiting capacity (about 1500 cu. ft.) and load weight (50 tons) due to the rather heavy empty weight of the coal hopper itself. In order to make the covered hopper concept pay off, this situation had to be addressed and corrected.

In 1934 the Pennsy sought to gain cubic footage with a 70-ton car in order to respond to shippers’ desires. The resulting car was designed from scratch, and beginning in March 1935 the first 100 of class H30 were built. Five more groups of H30 covered hoppers were produced over the next eleven years, bringing the final tally to 1325 units. These cars achieved the railroad’s desired 70-ton capacity and held 1973 cubic feet of material, a 26 percent increase in lading space over the earlier “covered coal hoppers.” Production and numbering were as follows:

H30 PRODUCTION

No. Built	Number Series	Date Begun
100	254251-254350	May 1935
300	254351-254650	April 1936
300	254651-254950	March 1938
100	254951-255050	April 1940
225	255051-255275	Nov. 1940
300	255276-255575	March 1946

While these cars are generally thought of as cement cars, they hauled many different commodities, some more dense and some less dense than cement. The general lading for these cars, in order of increasing density, included pulverized coal, soda ash (anhydrous sodium carbonate, used for industrial cleaning and chemical or soap production), lime (calcium oxide, used in making cement and mortar), cement, sand, sodium nitrate (saltpeter, used in fertilizers, explosives, and various chemical processes), feldspar (crystalline mineral mainly of aluminum silicates, used in metal alloys), and dolomite (mineral consisting of magnesium and calcium carbonates, used in the chemical and steel industries).

Many of the less-dense commodities shipped in the H30s would actually fill the cars before the weight limit was reached. Because of this, a different version of the H30 was designed. This car expanded the original by adding two additional compartments, and had a coupled length of 53'-6" versus 39'-6" for the H30. The height and width were virtually unchanged. Three hundred of the new cars, classed H32 by the Pennsy and numbered 253500 through

253799, were built between July and October 1948. The H32s are considered by many to be the forerunners of today's jumbo covered hoppers. They had 3500 cubic feet of capacity, a whopping 55 percent increase over the H30s, and yet the cars were only 3500 pounds (six percent) heavier! This was mainly achieved using newer lightweight alloy steel. Many of these alloys were probably the result of wartime innovation. The H32s were also all-welded, while the H30s were riveted cars. This is a major distinction of note to the modeler.

The final group of H30 hoppers were the H30a version. These cars were built from October 1951 through early 1952. Only 250 were built; these were numbered 255576-255825. The H30a was identical to the H30 in external dimensions and riveted construction. The minor differences that distinguished this subclass are covered later in this article. Just a few months after the last H30a was built, the PRR began work on a new hopper design, the H33. While still distinctly a Pennsy product, the H33 was heavily influenced by commercial manufacturers and closely resembled a standard ACF or Pullman PS-2 covered hopper. The era of building the unique "rolling truss bridge" car was at an end. The production period of the H30s, beginning in 1935 and lasting, in only slightly modified form, through 1952 was longer than almost any other class of freight car the PRR ever produced!

As previously mentioned, these cars hauled several different-density commodities. A unique feature of the cars

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PC 875304 is an old H30 repainted in PC green in 1974. The car's capacity has been increased from the original 70 tons to 77, but this car is stenciled "grain loading only" and it is doubtful that a low-bulk-density item like grain would ever approach this car's weighted capacity. The car is still equipped with friction-bearing trucks, well into the roller-bearing era.

was a cast-iron "loading instruction plate" welded or riveted to each car side. The plate listed several commodities with the proper filling level for each. There were three different plates — one for the H30/H30a, one for the H32, and a final one for the H33. A comparison shows that pulverized coal could completely fill all compartments of both the H30/H30a and the H32, while cement again fills all compartments of both classes but only the H30/H30a could be filled to the top. The plate on the H32 indicates that 3'- 5" must be the "distance from top of hatchway frame at side to top of load." For feldspar lading, the center compartment of the H30/H30a was left empty and the two outboard compartments were filled to within 2'- 4" of the hatch frame. The H32 was filled to within 4'- 11" of the hatch frame in four compartments, again leaving the center compartment empty. These plates first appeared in 1938 and, while many subsequent cars were not built with them (especially the H32), they were later applied to most. Those of you with access to the MR article can see the shadowy outline of the plate under the last "A" in PENNSYLVANIA" in the photo of car no. 255105.

CONSTRUCTION

Physically, the H30/H30a hopper cars were unique because of their external construction. These cars had 48-degree diagonal braces angled opposite the slope sheets, which were also angled at 48 degrees. The lower sidesill member was angled in and the unloading bays were also angled at 48 degrees. The angled bracing opposite the slope sheet and the heavy side-brace construction gave the car

its unique truss-bridge appearance. Both the H30 and H30a were riveted cars, differing mainly in roof detail. This is a significant fact for the modeler, given that most layout models are viewed from the top. The H30 roof was flat steel riveted to the car with no overhang at the sides. The roof walks and brake platform were patterned rolled steel called "Alan-Wood Super Diamond." The roof walk was welded directly to the roof plate, not to separate supports as is more typical. The H30a roof was a more traditional design with stamped raised panels, angled stiffeners, and a slight overhang at the side sheets. The roof walk was open tread welded to supports. Hatch detail was also slightly different, but the number of hatches and their operation were identical. The H32 differs not only in length and all-welded construction, but also in that the angled braces are set at 70 degrees while the slope sheets remain at 48 degrees.

All of the cars were built with a fishbelly center sill, not a common feature for 1930s and newer PRR freight cars. Even more interesting, all the center sills were peaked at the top. This was an innovative way of providing a better support surface for the slope sheets above. The use of cast versus welded bolsters is not a defining feature despite MR's reporting to the contrary. The first 400 H30s were built with cast bolsters, but subsequent cars had welded ones of various designs. At first these fabricated bolsters were patterned after the cast ones, but as time went on the design varied. The H30a cars continued with the fabricated (welded) bolsters, but strange as it sounds, several of the cars were built with cast ones. Conjecture

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H32 885565 was repainted in PC colors in November 1968, relatively early in the merger. The car lacks a loading instruction plate, but the information from the plate has been stenciled directly on the car's side toward the right end.



H. W. Ameling Collection

PRR 255657 is an H30a photographed in 1966. Note the overhang of the roof and also the loading instruction plate below the angled brace. The paint scheme, applied in 1963, is a late version with number and reporting marks moved to the left end. The herald has been simplified.

is that the old cast bolsters were buried somewhere in storage from the early H30 production days and, having been “found,” they were simply used up during H30a construction. Whatever the reason, bolster construction cannot be used as a spotting feature between the H30 and H30a versions.

A final difference, also reported incorrectly in MR, concerns the trucks and wheelsets. The H30 and H32 rode on 33-inch wheels in 5'- 8" wheelbase friction-bearing trucks. The H30a cars rode on 36" wheels in 5'- 10" wheelbase trucks. Once delivered, the type of truck undoubtedly varied because of shopping, bad order, and parts availability. There is evidence of these cars riding on Bettendorf, Symington heavy-duty, Andrews, and National Type B trucks. It should also be remembered that the Pennsylvania was a very conservative organization and did not exactly rush into roller-bearing trucks with the rest of the industry. This was especially true when it came to retrofitting older cars. Consequently, very few if any of these covered hoppers ever moved on roller-bearing trucks throughout their lives under PRR management. In fact, there is photographic evidence of at least one H30a repainted in Conrail colors and still riding on friction-bearing trucks!

FINISHING

The H30 hoppers were delivered in tuscan paint with white lettering and a small circular PRR herald. The H32s of 1948 appear to have been delivered this way also. In fact, in both cases the lettering on both car types was identically placed except for the herald. All of the white lettering was placed on four body panels, two on either side of the car's center vertical member. On the H30 these are the only rectangular panels on the car side. The PRR circular herald was positioned in the triangular body panel above

the diagonal brace on the right end. However, on the H32 there were six additional rectangular panels (three on each end) with absolutely no lettering. The herald was placed on the far right end panel. Apparently the PRR paint shop didn't care how big the car was, they weren't going to change their stencils.

In the early 1950s, as the H30a began to be produced, a grey paint scheme with black lettering and a large keystone herald began to appear. This is not to say that all of the H30a cars were grey. The PRR builder's photo of the very first H30a, no. 255576, shows the car in tuscan paint with white lettering. Interestingly enough, the MR article shows two H30s coupled together. One, with a June 1946 builder's date and a March 1950 repainting date, is tuscan with white lettering. The other, in grey with black lettering, was built in November 1940 and repainted in October 1954. The prototype modeling rule of thumb would be to stick with tuscan paint and white lettering if you're modeling until 1950. If your modeling period extends later than 1950, then both paint schemes would be appropriate. The H-32 covered hoppers also appeared in both paint colors. The H-32 grey-scheme lettering stencil was changed to off-center the 13-inch-high letters of the word “Pennsylvania.” The first eight letters were placed left of the center vertical member and the last four to its right. This was balanced by the large keystone herald on the far-right panel.

These two paint schemes remained throughout the cars' lives under PRR ownership. Some of the tuscan cars, repainted in the 1960s, lost their heralds. In both cases, as the Pennsy became absorbed into the Penn Central, the word “Pennsylvania” was replaced with a simple 13-

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