



About this issue's
prototype modeling
columnist



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GETTING REAL: Choosing a Model Freight Car Fleet Appropriate Car Types and Numbers

Having a prototypical mix
of cars on your layout ...



Choosing may sound odd, when many of us already have a substantial car fleet. By "choosing" I mean one of two things: choosing which of your existing cars make sense and should be kept (and conversely, which ones might be disposable), or choosing new additions to your fleet.

There are many ways to go about these choices; from sheer impulse, to buying anything lettered for your favorite road, to rational fleet choices. Since the first two don't require guidance, I will talk about the third.

Rational Fleet Choices

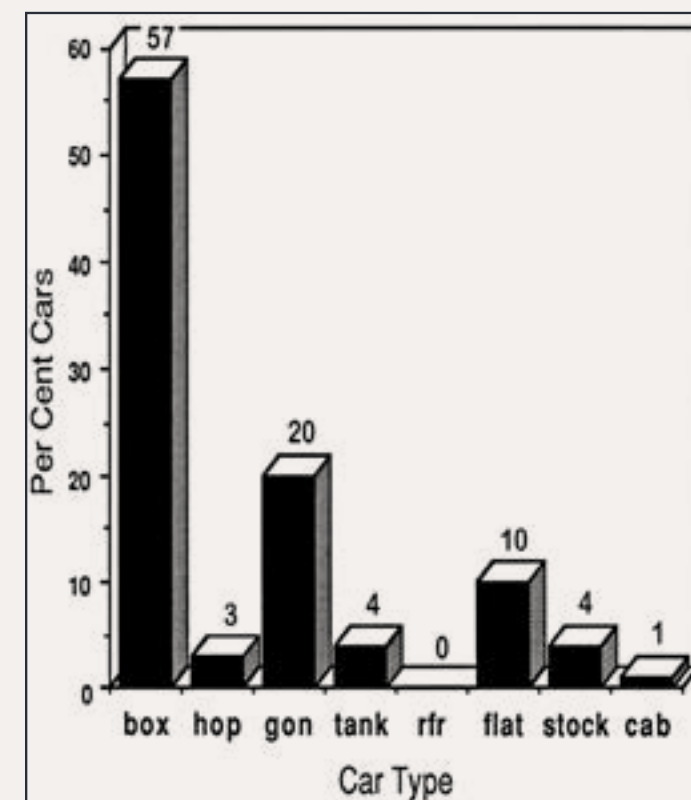
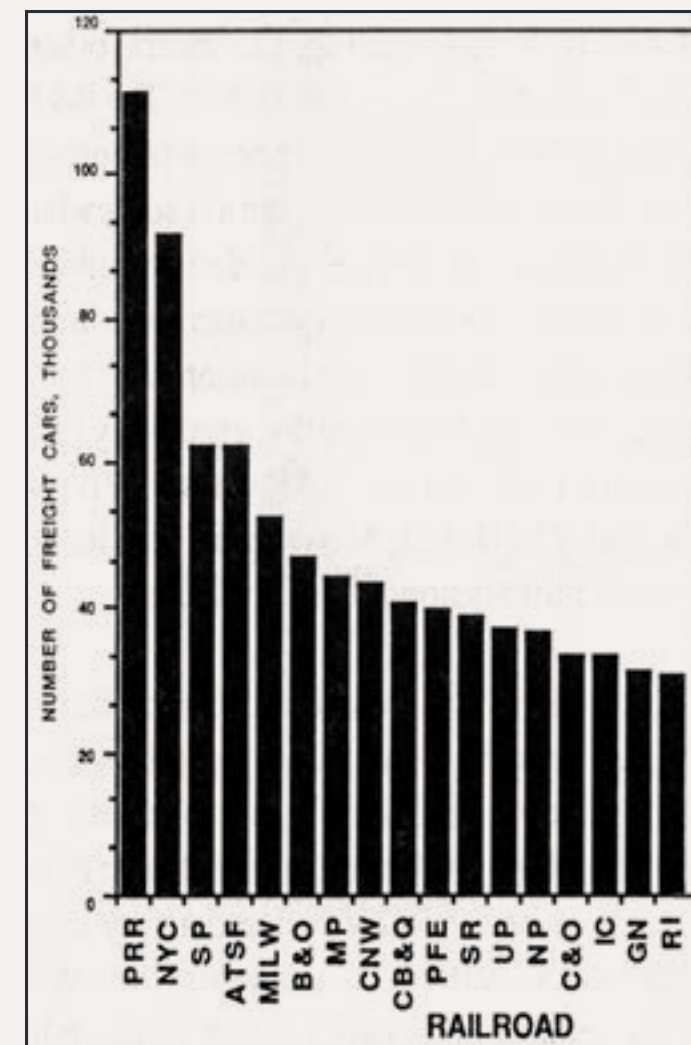
An approach that I like is to determine whether one wants a realistic mix of car types and owners. If so, the first decision is the proportion of home road cars. The division of car types within that group will depend on the individual railroad, and car fleet characteristics do vary widely (I'll come back to this in a moment). Next, the foreign cars need to be chosen. It was long believed that foreign road cars should be represented in proportion

to the inverse of the distance of the owning roads from the road being modeled (farther away means fewer cars, closer means more).

It's now recognized that this is often not true. Dave Nelson and Tim Gilbert (clinicians at many RPM meets such as Cocoa Beach and Naperville) analyzed data for many railroads in various eras, primarily for mainline railroads carrying a large proportion of bridge traffic. For those types of trains, they found an interesting pattern: the proportion of cars from each road was in proportion to that road's fleet size, as a

Figure 1: Data for the car fleets of the largest railroad car owners in 1950. Data are drawn from the Equipment Register for January 1950. Fleet size has been adjusted by removing hopper cars, ore cars, and ballast cars from the totals, since those cars were much less frequently interchanged in most cases. Accordingly these data are the ones needed for the Nelson-Gilbert approach on foreign cars.

Figure 2: The different car types are shown as percentages of the total fleet of Southern Pacific cars in 1950. Refrigerator cars were a large part of SP traffic in 1950, but all were owned by Pacific Fruit Express – see figure 1.





percentage of national fleet size. In other words, a road that owned 10% of the national car fleet would be found to have 10% of its cars in those mainline trains. This pattern is found across the country and appears to apply to railroads of all sizes.

“A table or graph of the principal railroad car fleets then becomes part of your fleet selection guide ...”

Further, this appears also to apply to the types of free-running car: box cars, gondolas, and flat cars (if the cars do not have special equipment).

More specialized cars, or cars in assigned or lease service will have very specific routes and usually return empty over the same route. Nelson and Gilbert were well aware that only the free-running car types fit their idea of national proportions governing car observations.

This tells us that the models of foreign road cars on our layouts, should follow that same pattern. A table or graph of the principal railroad car fleets then becomes part of your fleet selection guide (figure 1). If you find that your fleet overrepresents or under represents any of the roads shown, corrective action may be called for.

But Gilbert and Nelson clearly state there are definite exceptions to these findings: short lines and branch lines usually serve particular groups of customers, or even single industries – obviously their traffic won’t follow the proportion of the national car fleet idea. A coal branch is a good example of this.

Home Road Cars

What should be the proportion of home-road cars? A widely remembered idea, dating back to the 1940s and the writings of “Boomer Pete” (Al Kalmbach’s pen name) is that home cars would be around half of all cars,

Figure 3: Taylor yard in Los Angeles during the early ‘50s. Note the Mikado in yard service and the different types of freight cars present. – Photo courtesy the Southern Pacific Historical and Technical Society (SPH&TS).

depending on the home road’s characteristics and often on which part of the home road is involved.

However it has been recognized that the home-road proportion depends on the individual railroad, and on the region of that railroad, so a broad general rule doesn’t always

apply. It may be necessary to find more specific data.

Conductor Time Books

Conductor time books are not widely available, but are worth seeking out for your era and modeled locale(s). They contain a wealth of information about trains and the cars in them. Many are in private collections, but some are available through railroad museums, such as the [California State Railroad Museum](#). A few have been posted in the archives of the Steam Era Freight Car Yahoo list (STMFC).

These books are a wonderful source of data regarding the types of cars and their ownership in a train. Time books for the SP's Coast Division in 1948-1952 show a consistent pattern of about one-third home road cars.

Time books also show the proportion of car types, with fewer flat and stock cars on the Coast Division than on the railroad as a whole. The entire Southern Pacific fleet is summarized in figure 2.

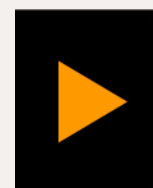
Photographs and films can help, but usually represent so small a sample as to be untrustworthy, compared to the hundreds or even thousands of cars listed in time books.

An appropriate pattern of car usage should be recognizable in the fleet of cars on a prototype based model railroad – both for home and foreign cars. Most railroads had distinctive proportions of car types. The Southern Pacific in 1950 is just one example – figure 2

shows a very large proportion of SP box cars but a very small proportion of hoppers (in 1950, nearly all those hoppers were longitudinal-dumping ballast cars). Construction of such a diagram for any railroad is simple with data from an Official Railroad Equipment Register or ORER, available as a reprint from the NMRA (nmra.org). Comparing this data with data from your own car fleet may show where you are planning too many or too few of a particular car type.

Understanding the details of such diagrams is often interesting. For example, the Southern Pacific carried a large majority of its lumber traffic on its own flat cars, even though general-service flat cars are free runners, that is, flats can be and often are confiscated as empties to be loaded, wherever they are. Why? Lumber traffic was vital to SP and they decided to protect those shippers with an adequate fleet of their own cars.

This is just one example of how region-specific data is helpful. All these suggestions are intended as ways to make a model car fleet more prototypical, and thus more realistic. We all make an awful lot of compromises in our modeling, with selective compression and many other approximations of reality. But car fleets are one area where it is possible to be fairly realistic. 



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About our
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John Drye is our N scale editor and columnist.
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COMME-N-TARY: Creating a Realistic Roster for the PRR
Modeling in the hobby's most eNgaging scale

Transition Era Freight Cars in N Scale

The release of new N scale freight cars over the past few years has made it easy to create a roster well-matched to the prototypes on the 1950s. If anything, the plethora of road names and options has made careful selection mandatory in order to not overwhelm the yard crews. After all, none of us have more cars than we can use, right?

Creating a Roster

I set out to create a reasonable and realistic roster of cars for a transition era (mid-50s) PRR layout, representing central Pennsylvania. The idea is to illustrate the freight car red era of railroading, where variety is provided by the different railroads' shades of boxcar red and the many different designs of 40' boxcars. A long train of boxcars can exhibit tremendous variety in color, height, construction material, and design, in addition to roadnames.

One of the Ground Truths in model railroading is that 50 percent of the cars on a Class I railroad are home cars. The rest are foreign roads and private-owner cars.

One way to test this theory is to look at photographic evidence for the period of interest. Fortunately, there are many books and videos available, not just for

the PRR of the 50s, but for pretty much any railroad from the 1940s to the present.

A careful examination, focusing on rolling stock on mainline trains and on active yard tracks, supports the 50 percent ratio. An added benefit is that this examination also sheds some light of the mix of road names on foreign cars. Another Ground Truth, according to long-time followers of the PRR, is that the first car in every Pennsy freight

train is a Northern Pacific boxcar. Well, not exactly, but quite a few cars from the NP and other northwest roads do show up.

Another approach is to look at the size of other railroads in your period of interest. It stands to reason that the largest railroads would have the most cars to send to the PRR (or your own railroad). The largest railroads in North America in 1950 (based on size of freight car fleet) are shown below.

North American Railroads			
	Railroad	Fleet Size(*)	Geographical Location
1.	Pennsylvania	190,000	NE
2.	New York Central	140,000	NE
3.	Baltimore & Ohio	89,000	NE
4.	Chesapeake & Ohio	84,000	NE
5.	Santa Fe	80,000	SW
6.	Louisville & Nashville	60,000	MW
7.	Milwaukee	59,000	NW
8.	Norfolk & Western	55,000	SE
9.	Illinois Central	54,000	MW
10.	Southern Pacific	54,000	SW
11.	Union Pacific	50,000	SW
12.	Burlington	47,000	NW
13.	Chicago & Northwestern	44,000	MW
(*) Approximate size: The source for this info and much of the data in this article comes from Official Railway Equipment Registers (ORER). These documents list almost all of the cars used on North American railroads by type and road for a particular year. The NMRA offers one from 1953: http://jdb.psu.edu/nmra/orer.html and others can be found on e-bay and at railroadiana shows. They are a fascinating read and useful source.			

Size and relative location suggests the number of cars one would see from these railroads. The NYC, B&O, and C&O, which operate in the Northeast with large fleets, each ought to contribute a significant number of cars to the foreign-road roster. So do roads with logical shipping routes, such as the roads in the Northwest that relied on the Pennsy to get merchandise to the east coast. That probably explains all those NP boxcars.

Other large railroads that had connections with the Pennsy such as the N&W, Santa Fe, and L&N contribute a smaller share. Smaller railroads (not listed) with direct connections in Pennsylvania, such as Erie, Reading, Lackawanna and the Lehigh Valley also make a significant contribution to the roster. Small railroads with no direct connection such as the Rio Grande, Central of Georgia and

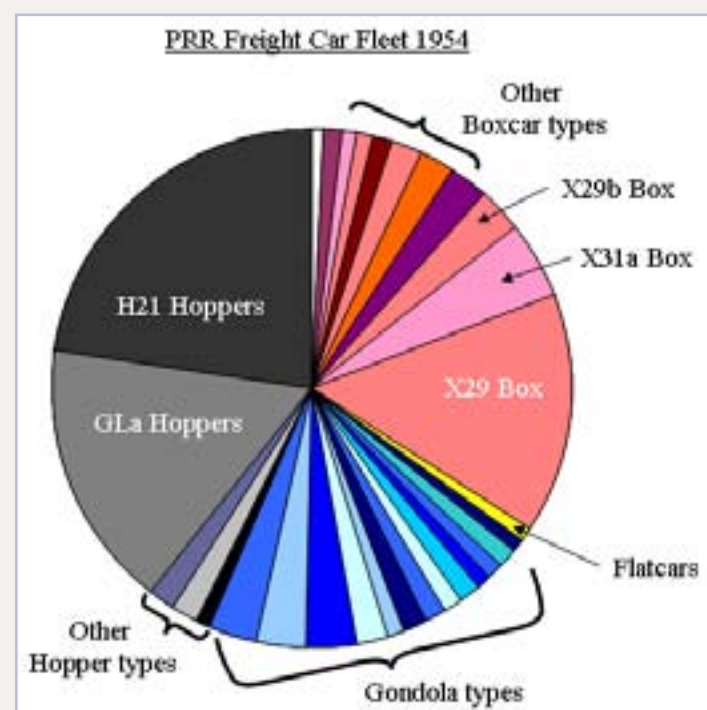


FIGURE 1: PRR Freight car fleet 1954. Source: ORER.

Florida East Coast might contribute just a few cars to the railroad.

In addition to the railroads, private owners operated large fleets of reefers and tank cars. Perishables moved east in solid blocks of orange and yellow cars owned by Pacific Fruit Express and others, and fresh meat traveled from Chicago in a colorful array of meat packer's cars. Fuel, oil and chemicals traveled in an ever-growing fleet of pressurized and un-pressurized tank cars.

In 1954, Pennsy initiated trailers-on-flat cars service called TrucTrain. By 1956, there were dedicated trains running regularly between major cities.

My objective is to create a fleet with a transition era feel—lots of red 40' boxcars, mostly steel but some wood, with a mix of heights and a few unique styles (still 40' and red). Hoppers are a mixture of 2, 3, and 4 bays and gondolas vary from 40 to 75 feet, but most are in the vicinity of 50'. The mix also includes a few flat cars and covered hoppers along with the private owner reefers and tank cars and the beginnings of intermodal service.

So, how do we create some order out of all this information?

The first step is to determine the size of your own fleet. In my case, the railroad needs about 500 freight cars to support the planned trains and industries. My fleet revolves around the Pennsylvania RR, but the same approach can be used to develop a rea-

sonable roster for any road, for either the 20th or 21st century.

Experienced model railroaders tell us that modeling the ordinary rather than the unusual creates a realistic model railroad. However, there is a little room for personal preference. For example, I'd like to include couple of cars from Kansas (KCS, perhaps) to recognize my siblings' birthplace and a few from the RF&P and Southern because both lines (now under different owners) run less than a mile from my house, and are the favorite roads of some of the crew. It's probably ok, since another red boxcar probably won't stand out enough to alarm the prototype police.

The PRR Fleet

We'll start with home road cars. As mentioned, half the roster, or 250 cars, ought to be from the Pennsy.. As we've seen already, the PRR had almost 200,000 cars in the mid 50's. We'll use

the prototypical proportions of that roster to determine the makeup of our model roster.

About a third of the PRR's freight cars were box cars and slightly more than a third open hoppers. About a quarter were gondolas, with a few flat cars, stock cars and covered hoppers. There were also some tank and refrigerator cars, largely for company service (Figure 1).

PRR Boxcars

Our PRR boxcar fleet ought to total about 80 cars (one third of 250). Of these, more than a third (about 30) should be X29s (the PRR labeled boxcar types with an "X" since "B" stood for baggage). X31As and X29Bs (modified X29s) should each be represented with about a dozen cars and the remainder of the boxcar fleet with a variety of less common types.

The PRR built almost 30,000 steel X29 boxcars in the 20s and 30s to replace its fleet of wooden cars,. Many of these lasted until the merger with NYC



FIGURE 2: Red Caboose's model of the ubiquitous X29 showing two different paint schemes.

in 1968. The X29 boxcar might have been the most common single car type in America if the railroad hadn't built so many hoppers. It was designed to comply with the tight clearances common in the east so had an inside height of only 8'6".

Fortunately for the N scale modeler, a great almost-ready-to-run model of this car is readily available.

Red Caboose Hobbies produces this common car in a variety of paint schemes appropriate for the PRR of the 1950s, including the attractive "Merchandise Service" less-than-car-load (LCL) scheme. Several variations are available with different brake systems and car ends. Red Caboose has released the car with different numbers, reducing the need to re-number with decals (Figure 2 previous page).

Micro-Trains also produces a ready-to-run car painted as an X29 that is quite close in most respects. The car actually represents the Association of American Railroads (AAR) design from which the X29 was derived. Fine N scale also

produces an easy-to-build X29 resin kit that is an excellent match.

Pennsy's next most common boxcar was the X31A. The class was first built in the 1930s to meet the need for a larger capacity car and was commonly used to transport automobiles. The car had a 10'5" inside height in the center and 10'0" at the sides. This roof design gave rise to the label of "round roof" or "wagon-top" cars. They were built with single or double doors and some had internal devices for special loads.

Fine N scale offers a resin kit in both single door and double door versions. The kit comes with decals and an etched brass roofwalk and brakewheel. The kit is easy even for a beginning modeler and well worth it for the baker's dozen we'll need.

The need to increase the capacity of the X29 was recognized quickly and modifications to the cars were made right up to the end of the railroad. The X29B utilized existing underframes with a new 10'6" interior height body. Almost 4500 such modifications were made in the 40s and 50s.

Class	Type	Model Manufacturer	Number on Roster
X29	40' steel	Red Caboose, M-T, Fine-N-scale (kit)	30
X31A	40' RR	Fine N scale (kit)	13
X29B	rebuilt 40'	M-T, IM	10
various	40' steel	Atlas, DL, IM	15
X32B	50' RR	M-T	2
various	50' steel	IM	4
various	40' wood	Atlas, M-T	6
		TOTAL:	80

FIGURE 3: Summary of the PRR Boxcar Fleet.

There is no perfect match for this car readily available in N scale, but both Micro-Trains and Intermountain produce cars labeled as X29Bs. The doors, ends and roofs on these cars are not a exact match, but the car is the correct height. These good-looking, good-running cars serve as acceptable stand-ins. Ten of these cars fill spots on the roster.

The Pennsy built an amazing variety of almost everything, including more than a dozen more sizable classes (1000 to 3000 cars each) of 40' steel boxcars in the transition era. Collectively, these cars ought to make up another 15 spots on our roster. While not perfect, Atlas, Deluxe Innovations, and Intermountain all make a



FIGURE 4: Atlas rebuilt X26C and IM X29B in one of the colorful "Merchandise Service" schemes illustrate the transition-era variety in boxcar height.



FIGURE 5:Two M-T 50-foot boxcars; the round roof X32B and double door X41.

variety of boxcars that represent AAR and other standard designs. Like the X29Bs, these are reasonable stand-ins and help provide the boxcar variety we are trying to achieve (Figure 4 previous page) .

By the 1950s, the PRR had built a number of 50’ and larger boxcars. The X32B was a longer car similar in design to the round roof X31A. Some of these cars had end-loading doors for large loads. When built, these were considered exceptionally large cars.

Micro-Trains makes a model that matches this class almost perfectly. Although few in number on the prototype, our roster will include two of these distinctive cars.

PRR continued to build 50’ cars through the 1950s and the end of steam. Intermountain produces a 50’ single-door car based on an AAR prototype that serves to represent these classes of cars. The roster includes an-

other four of these fifty-footers (Figure 5 previous page).

Although the PRR began to replace wood single and double-sheathed cars with the X29 in the 20s, wood cars lasted until the end of steam on the railroad. Micro-Trains and Atlas make a variety of wood cars that can represent these holdouts and we’ll fill out our fleet with half a dozen of them.

The roster (Figure 3 previous page) .does a pretty good job of portraying the PRR boxcar fleet of the mid-50s, and includes some excellent models of distinctive PRR cars (the X29, X31A and X32B) along with good representation of the variety in the PRR roster.

PRR Hoppers

As one of the nation’s leading coal haulers, the Pennsylvania operated a huge fleet of hoppers, more than 70,000 cars, or 40 percent of the PRR fleet in the mid-50s. This accounts for

about 100 of our 250 allocated cars. Almost all of these cars should come from two classes: four-bay H21A and two-bay GLa. The remainder are represented by smaller classes, including a few covered hoppers.

The largest group of PRR hoppers was the H21A class, built from 1911 to 1917. They were originally built as 50-ton capacity cars for coal or coke, and later upgraded with 70-ton trucks and saw-tooth, or paired, hopper doors.

Bowser Manufacturing has offered a variety of quality PRR rolling stock in HO scale for years. When they first offered an N scale version of the H21A, PRR modelers everywhere celebrated. This unique car is a key element of the roster.

The roster will need about 50 of these cars, so it is fortunate that it has been released in groups of 12 individually-numbered cars and a variety of paint schemes ranging from pre-WWII to the merger.

The railroad produced about 30,000 GLa’s between 1904 and 1920, both for the PRR itself and for independent

coal companies. Pennsy’s first steel hopper car was based on an 1898 design by Pressed Steel Car Co. Our roster includes 40 lettered for the PRR and another 20 for Berwind Coal Company and others (included in the foreign car portion of the roster.).

Like the H21A, the GLa’s come from Bowser. The Bowser model includes a lead weight shaped to match the slope sheets. This is a good solution to the problem of unobtrusively adding weight to open-top cars. We’ll borrow some of the GLa weights for the H21A’s that will run empty on the railroad. Loaded cars replace the weight with BBs or sheet lead, hiding under the coal load (Figure 6).

Before Bowser released the H21A and GLa, Pennsy modelers had to settle for Micro-Train’s 33 foot twin-bay hopper. This car is a good model of the less-common H31 class and there is room for 3 or 4 on the roster.

Micro-Trains also makes a composite side version of the H31. While most of the wood sides were replaced in the years after WWII, it is only a slight



FIGURE 6: Bowsers’ four-bay H21 and two-bay GLa are the mainstays of the PRR hopper fleet.

Class	Type	Model Manufacturer	Number on Roster
H21A	4 bay	Bowser	50
GLa	2 bay	Bowser	40
H31	2 bay	M-T	4
H31A	2 bay	M-T (composite)	2
H34	PS-2	Atlas	4
		TOTAL:	100

FIGURE 7: Summary of the PRR Hopper Fleet.

stretch to assume one or two made it to the mid-50s as-built. The cars also add a little more variety to the roster.

The Hopper roster (Figure 7 previous page) includes excellent models of the most-common PRR hopper types and includes appropriate numbers of the less-common classes on the mid 50s roster. Nothing says “Coal Railroad” (PRR in this case) better than a long string of loaded hoppers.

The increasing use of concrete in construction led the PRR to produce a variety of covered hopper designs beginning before WWII, eventually leading to production of a variant of the Pullman-Standard PS-2 covered hopper. The early PRR H30 and H32 designs have been available as kits, but are hard to find. Atlas’s PS-2 is close in most respects to the PRR-produced H34A and 3-4 PS-2s will stand-in until a few kits are located (Figure 8).

PRR Gondolas

The freight car graph shows that there was considerable variety in PRR gondola types. PRR gondola classes in the mid-50s ranged in length from 40’ to 65’, with 52’ 6” being the most prevalent length. Some cars were used to transport bulk commodities in containers and some were covered to protect the contents. Many were used to carry steel products from fabricator to customers. Our roster will need a total of 50 PRR gondolas.

The most numerous class were the G31 and variants. These were all 52’6” in length, with fixed or drop ends and steel or wood floors. The PRR acquired a total of almost 10,000 between 1948 and 1950, some built in their own Altoona shops and by American Car and Foundry (ACF). The cars varied somewhat in details.

Micro-Trains makes a 50’ gondola that is at least superficially similar to the G31. It has the correct number of ribs, fish-belly sides and a side-mounted brake-wheel. It is two scale feet too short and off somewhat in other dimensions and details. But it is a nicely detailed and good-looking car, so 35 of these models will serve as a stand-in for this and similar PRR classes (Figure 9).

The PRR GRA and G34 classes were 40’ and 46’ long, respectively. Atlas makes a model of a 42’gondola that is the closest match to these cars. While not particularly accurate in a number of details, the short length does provide some roster variety and 10 of these cars will serve as stand-ins.

Among the longest cars of the transition-era PRR were the 65’6” G26 and modified G26A’s. These were designed to carry long lengths of structural steel and fabrications. Earlier this year, Eastern Seaboard Models announced a model of this class, so 5 spots on the roster are reserved for these long cars .

There is a considerable amount of compromise in our gondola fleet. Scratchbuilding or kitbashing is re-



FIGURE 8: The Athearn 52 foot GSC flat and Atlas PS-2 covered hopper illustrate two of PRR’s less-common cars.



FIGURE 9: MT fish-belly gondola, representative of the PRR 52-foot classes and M-T’s version of the X29 painted in a MoW scheme.

Class	Type	Model Manufacturer	Number on Roster
various	52’6”	M-T	35
various	40’	Atlas	10
G26	65’6”	Eastern Seaboard Models	5
		TOTAL:	50

FIGURE 10: Summary of the PRR Gondola Fleet.

quired to obtain prototypically-ac-
curate models of most PRR classes.
However, this roster does portray the
variety in lengths and styles of the mid
50-s PRR gondola roster (Figure 10 pre-
vious page).

PRR Flat Cars

In 1950, the PRR had only about 2000
flat cars, a pittance compared to the
vast fleets of hoppers and boxcars.
However, in 1954, just in time for our
era, the PRR introduced what became
“Pennsy TrucTrain Service” carrying
PRR trailers on modified 50’ flatcars.
By the end of the decade, PRR was
carrying thousands of trailers a year.
To meet this demand, in 1955 the PRR
purchased 200 new, specially con-
structed 75’ long F39 piggyback cars
from Bethlehem Steel.

Micro-Trains, Walthers and Red Ca-
boose all make a generic 50’ flatcar
which is an acceptable model of the
pre-piggyback car. Four such cars, two
with loads, represent the F30A class.
Open loads provide some of the most
interesting elements of model railroad.
The examination of prototype photos
and videos showed everything from
small boats to military cannon barrels.
If another couple of these neat cars
sneak onto the railroad, that would
probably be ok. We can satisfy some of
the demand for open loads by model-
ing the many varieties of steel loads in
the gondolas.

Fortunately for early intermodal fans,
the modified TrucTrain cars are, or

soon will be available from N scale Kits,
who are making the kits formerly of-
fered by Alan Curtis Models.

Our roster will need 12 of the 75’ and
4 of the 50’ TrucTrain cars, along with
28 trailers. The trailers can come from
a variety of sources, including Fine N
scale and Sylvan Scale models kits, as
well as ready to run metal models. The
number of trailers available, both in
terms of roadnames and styles provide
the variety of a 1950s intermodal train.

Other PRR Cars

In addition to the revenue cars, the ros-
ter includes a couple of diesel fuel tank
cars from Micro-Trains and some MoW
box and flat cars from Red Caboose.

Cabooses

Cabooses (Cabin Cars on the PRR) are
not counted on the roster, but are still
necessary for transition era freight
trains. In the 50s, PRR Cabin Cars were



FIGURE 11: Two cars from PRR's western connections; an Atlas wooden ATSF car and an M-T Northern Pacific boxcar to head up the consist.



Figure 12: An M-T B&O 1929 boxcar and Deluxe-Innovations ERIE ARA car.

Off-Line Freight Car Fleet								
	Box	Hopper	Gondola	Flat	Reefer	Tank	Stock	Total
Proportion	0.50	0.25	0.20	0.01	0.01	0.01	0.02	1.00
I: Large railroads in PA/NY.	0.25	31	16	13	1	1	1	63
II: Medium railroads in PA/NY.	0.20	25	13	10	1	1	1	50
III: Other large railroads	0.15	19	2	8	0	0	1	30
IIIA: Large Private Fleets	0.15				37			37
IV: End-to-end interchange	0.15	19	1	8	0	0	1	29
IVA: Small private fleets	0.05		20			12		32
V: Other railroads.	0.05	6	0	3	0	0	0	9
Total:	1.00	100	51	40	2	39	14	250

FIGURE 13: Off-Line Freight Car Fleet.

predominately N5 and N5C steel cars. A few wood N6B cars remained on the roster as well, along with a few newer N8 steel cabins. Bowser Manufacturing offers both the N5 and N5C, Cloor Craft makes a kit for the N6B and the N8 is available in brass. Fortunately, 90% of the cabins will be N5s and N5Cs.

Foreign Road Cars

We'll use the factors of size, distance and interchange to develop our foreign road roster. First step is to divide the 100 or so railroads that existed in the 50s into general categories:

- I: Large railroads with significant PRR interchange east of Chicago.
- II: Medium railroads with PRR-interchange in PA or NY.
- III: Other large railroads and large private owner fleets.
- IV: Medium railroads with end-to-end PRR-interchange outside PA or NY, and small private owners.
- V: Other smaller railroads.

Category I includes three railroads: NYC, B&O and C&O.

Category II includes CNJ, D&H, DL&W, ERIE, L&NE, LV, NH, NKP, P&LE, P&WV, RDG, W&LE and WM

Category III includes ATSF, L&N, MILW, N&W, IC, SP, UP, CB&Q and C&NW

plus PFE and other reefer fleets (N&W just misses my cut for Category I—you can create categories that work for your railroad).

Layout Decisions: Williamsport to Altoona

A key element of the layout design process is to periodically review your “givens and druthers” as John Armstrong so eloquently put it. A good time to do that is just before you start the benchwork.

As a result of my own review, the layout I'd planned to build moved about 60 miles to the south, from Williamsport to Altoona. Why?

#1: N scale excels in running long trains through interesting scenery and Horseshoe Curve certainly qualifies.

#2: The layout incorporates the main line from Altoona to Cresson in a sincere and prototypical fashion. MG tower (halfway up the mountain) is represented switch for switch, the layout incorporates the curve itself at 2/3 scale size (making a nice 30" radius sweeping curve), and the layout includes much of the interesting track at Gallitzin.

Trains run slowly in mountainous terrain, increasing the apparent length of the main line. There is lots of variety in the trains that ran over the curve in 1956 (that didn't change). They include reefer blocks, an empty gon train on the way back to Pittsburgh, coal from Berwind, early intermodal, and a nice variety of passenger and general freight trains.

The construction crew (future operators) were unanimously in favor of the change. We are all looking forward to the operational challenge of moving 100 trains a day up and down the hill. ■



FIGURE 14: Rib side, offset side and fish-belly hoppers shown here by M-T's Allegheny Midland and NYC cars, along with Atlas' C&O car (remember that a little creativity is more likely to get past the prototype police if it is subtle).



FIGURE 15: Both Athearn and I-M produce reefers for Santa Fe's large fleet, with 40-foot and 50-foot cars.

Category IV includes CN, CP, GN, NP from the west; ACL, SAL, SOU from the south; and BAR, B&A, B&M, CV, MEC from the east, plus most tank car fleets (UTL, SCL, Gulf Oil and other petroleum companies).

I apologize if this list omits your favorite railroad. Please let me know and I'll add a car to the roster. The ORER again can help with proportions of car types. The allocation of cars to the various types of railroads is a bit of an art, based on the photo and video review.

The table suggests an allocation of cars by railroad and type (Figure 13 page 93). It doesn't go so far as to specify "Six 1943 ARA Boxcars lettered for the Southern Pacific". Rather, it suggests, for example, "we ought to have about ten boxcars each from the NYC, B&O and C&O--31 in total for the three Category I Railroads"; or, "the Category II railroads ought to include a total of 13 hoppers."

Careful observers already will have noted that the percentages do not always add up. It's ok—this is a guide, not an edict.

The reefers are concentrated in Category IIIA: Large Private Fleets. These 37 cars include PFE along with reefers from Santa Fe and Northwest Roads. Less well known than the Santa Fe and SP/UP fleets, GN, CBQ and other roads forwarded a considerable amount of perishable traffic over the Pennsy to the east coast.

The overall percentage of hoppers is reduced because so many of these cars were in captive service and didn't stray far from home rails. That said, an SP hopper appears in the photo reference, far from home, so a spot is saved for a couple of such travelers. There are a total of 12 private owner tank cars and 20 hoppers from private coal companies.

Models

Many of the foreign roster cars can be represented by the more general types used to represent PRR classes. This is especially true of the AAR and other standard boxcar designs (Figures 11 and 12 page 93).

In addition to the PRR class hoppers listed, Atlas, Athearn, M-T and others produce hoppers in a great variety of styles (Figure 14 previous page). A look again at the video reference shows that PRR mineral trains usually included a sprinkling of foreign road cars in the consist.

The Atlas and M-T gondola models and all of the flatcars also can be used to represent foreign road cars.

All of the manufacturers listed, plus Athearn, make great models of the wood and steel reefers of the transition era (Figure 15 previous page). Many of these are also based on specific prototypes.

Intermountain makes a series of stock cars based on Santa Fe prototypes and M-T offers a car lettered for a number of roads (Figure 16).



FIGURE 16: I-M has recently released a Santa Fe SK-T stock car, shown here along with M-T's car, lettered for Burlington.



FIGURE 17: An Atlas 11,000 gallon car and an I-M 8,000 gallon car show the variation in the 1950s tank car fleet.



FIGURE 18: Fox Valley models has released a MILW horizontal rib boxcar shown here coupled to an Athearn B&O 65-foot mill gondola.

Atlas, Intermountain and Micro-Trains each make excellent models of transition-era tanks cars. Fortunately, these represent three different prototypes (Figure 17 previous page). The Atlas model is a pressurized car and the M-T and IM models represent two different sizes of unpressurized cars.

Various manufacturers also make railroad-specific cars. For example, Fine N scale makes an excellent kit of the B&O ribbed boxcar and Fox Valley Model Works has just released a model of the Milwaukee horizontal ribbed cars (Figure 18 previous page).

More and more manufacturers are entering the N scale market with great-looking models. Along with continuing releases from long-time N scale manufacturers, it's becoming harder and harder to keep the yards from filling up.

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Summary

Well, now I know exactly what additional cars I need to acquire in order to properly represent rolling stock traveling on the Pennsylvania Railroad of 1956. [don't tell anyone—but I think I might need to discard a few cars as well]. This was an interesting and informative exercise. Calculating (or estimating) fleet composition

did produce a few surprises—the large number of gondolas and X31A boxcars needed on the PRR, and the overall rarity of conventional flatcars, as examples.

The roster suggests some models that are good matches for PRR classes and some that are reasonable stand-ins. There are lots of other good-looking, good-running models out there usable for both PRR and other railroads (Figure 19).

Even if you don't model the PRR or even the transition era, you can use this approach to come up with a prototypical roster for your own railroad. ORERs, photos and video are available for almost any era and location. So are excellent books summarizing the freight car rosters of most railroads. They often masquerade as books on guides to paint schemes, but contain a wealth of information on car styles and production. So do the various railroad prototype societies. If you are interested in a specific railroad of the past or present you owe it to yourself to find one and join.

This approach is a pretty good way to accomplish the objective of modeling the ordinary. Your trains are less likely to raise eyebrows among visitors if they look just like the prototype. How far you stray is up to you. After all, it is your railroad. ☒



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FIGURE 19: The next step after organizing and assembling your roster is making the rolling stock look like it works for a living. Details and weathering go a long way towards making that carefully crafted roster look like it belongs on the railroad.

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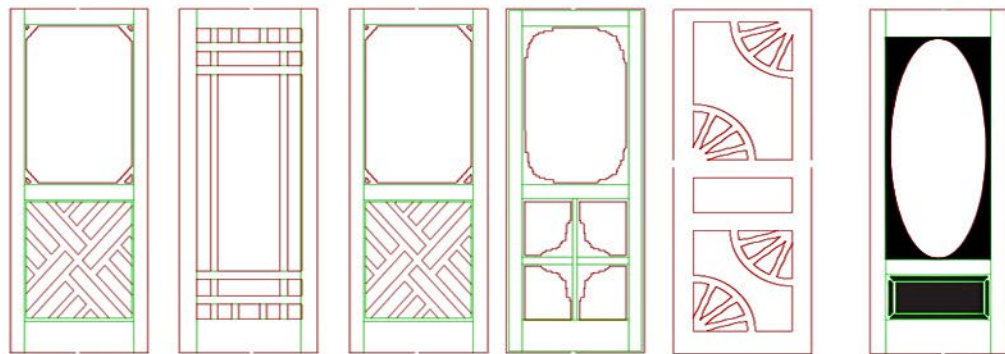
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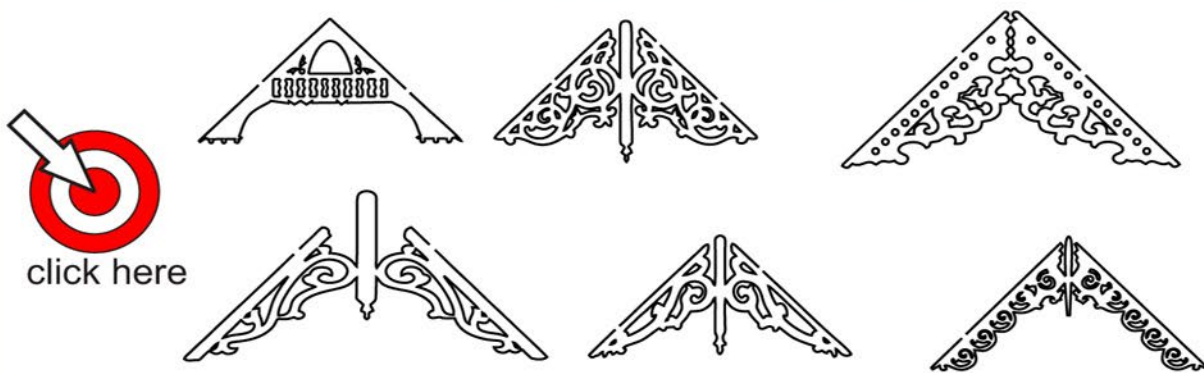
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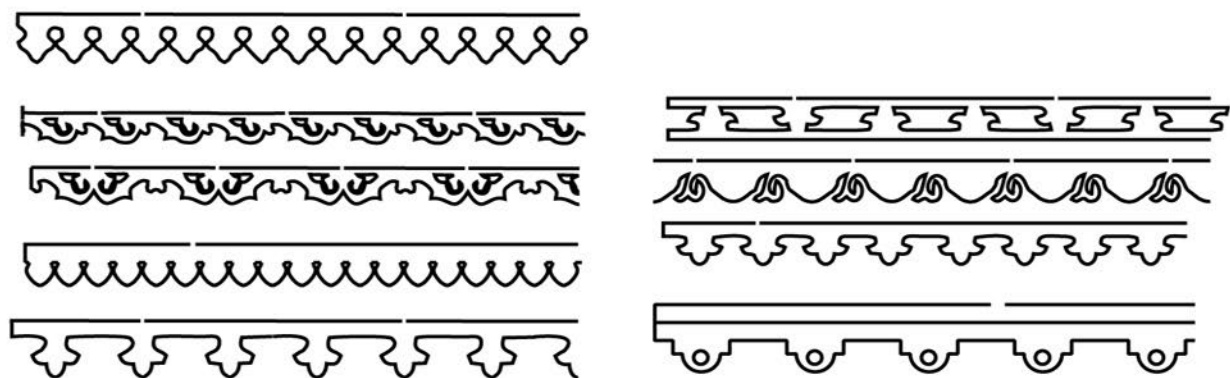
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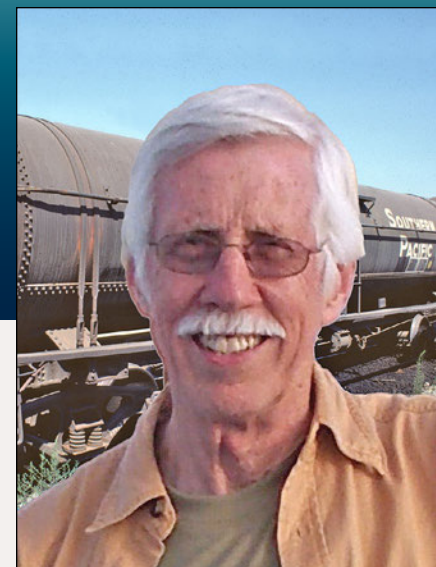
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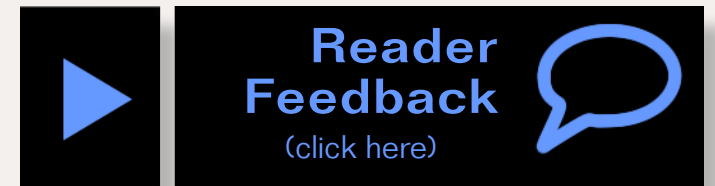
Modeling “signature” freight cars

A place to build realistic models



Getting Real column

by Tony Thompson



Examples of choosing models that are both significant and interesting ...

The topic I address in this column is the selection of model freight cars which are from “foreign” railroads, that is, owned by railroads other than the home road you model. How should they be chosen? You can of course choose whatever you want. But can the choices be made in a prototypical and still interesting (and fun) way? I think the answer is yes. My approach is based on choosing those foreign cars as “signature” freight cars.

What is a “signature” freight car? The term is sometimes used for unique cars of a particular railroad, such as the famous Milwaukee Road rib-side boxcars, but to me the meaning is broader than that. I use the term “signature” to mean a freight car which is *characteristic* of its owning railroad, meaning that it is reasonably distinctive, and is a car of which the owner’s roster contained a relatively large number. Unique cars can certainly qualify, but, to extend the Milwaukee example, so



would the USRA (United States Railway Administration) single-sheathed boxcars owned by the Milwaukee; they owned 4000 of them, out of a total production of 25,000 of those boxcars built under the USRA. These USRA cars were a dominant part of the Milwaukee fleet for years.

The foregoing comments illustrate the kind of evaluation I like to do in choosing model freight cars for railroads other than my “home road,” Southern Pacific, in the early 1950s. In what follows, I will describe single cars or pairs of cars, which I have chosen for their signature qualities, owned by various railroads other than SP, and show the HO scale models which correspond. As part of the description, I will also allude to sources of information you can use to understand these cars. My choices are of course personal, but with information resources like these, you can make your own selections.

“An important part of these foreign car selections is the idea that most railroads would be represented everywhere in the country ...”

An important part of these foreign car selections is the idea that most railroads would be represented everywhere in the country in proportion to the relative size of their fleet of freight cars. This idea was developed by Tim Gilbert and Dave Nelson. I presented that idea in my “Getting Real” column in *Model Railroad Hobbyist*, for December 2011, page 33 (issuu.com/mr-hobbyist/docs/mrh11-12-dec2011-ol?viewMode=presentation&mode=embed). Accordingly, I have approximately scaled my selections in this column to the freight car fleet sizes shown in Figure 1 of that column. These fleet sizes all reflect removal of hopper, ore and ballast car numbers from total fleet size, since in general those car types are interchanged much less than other freight cars, particularly so for western roads.

One important source of information about prototype freight cars is the *Official Railway Equipment Register*, or ORER, issued monthly before the Depression and quarterly since that time. Copies from various years can often be obtained from sellers of railroaddiana and railroad paper, but another source is the National Model Railroad Association (NMRA), which has reprinted the January issues for 1943 and 1953. Both are sometimes obtainable from used booksellers online, and the 1953 issue is still available from NMRA. Some libraries also hold ORER issues. Wherever you find ORERs, the point is that the exact size and makeup of each railroad’s freight car fleet is shown in each ORER issue.

I have omitted from this column some of the largest and most familiar railroads, such as Santa Fe, New York Central, and Pennsylvania (three of the four largest American freight car fleets), just because these roads are generally so well known, although cars from each of them naturally are well represented in my own freight car fleet. The roads emphasized in this column are generally less well known and, I think, less appreciated. I have also left out the Southern Pacific, which is the home road for my layout, and the fourth member of the top four.

“One important source of information about prototype freight cars is the Official Railway Equipment Register ...”

Since I have already mentioned the Milwaukee Road as an example, I will begin there. The Milwaukee Road owned a large fleet of non-hopper freight cars, in fact the fifth largest of all U.S. railroads (as I showed in my December 2011 column).

But many modelers seem to have a blind spot about the Milwaukee. I have chosen two models as signature cars of the Milwaukee, which are the two cars already mentioned. One is a USRA single-sheathed boxcar, and the other is one of the famous rib-side design boxcars.

Many railroads owned some USRA boxcars, but the Milwaukee was the second-largest owner, trailing only the Pennsylvania, so the Milwaukee cars were certainly significant. Moreover, unlike most other owners, the Milwaukee left their USRA cars with wood sheathing into the transition era. Information on the entire spectrum of USRA freight cars is clearly summarized and explained in an article by James E. Lane in the Railway & Locomotive Historical Society journal, *Railroad History* (No. 128, Spring 1973, pages 5–33). Much additional photography of the boxcars is available in Pat Wider’s article for *Railway Prototype Cyclopedia* (Vol. 17, 2008, pages 1–51). The Milwaukee’s 4000 USRA cars were numbered from 700000 to 703999, constructed by three different builders in 1919. My model is from a Tichy styrene kit (1).



1: This example of a Milwaukee Road USRA boxcar, one of 4000 such cars purchased by the Milwaukee, is a Tichy styrene product.



2: The Milwaukee Road owned quite a few 40-foot and 50-foot versions of their distinctive rib-side boxcars, of which this model represents just one example. It is a product of Rib Side Cars, in a ready-to-run styrene form.

For the justly-famous Milwaukee rib-side boxcars, there is a comprehensive and profusely illustrated article by Pat Wider in *Railway Prototype Cyclopedia* (Vol. 13, 2006, pages 1–75). These cars were built over a span from 1937 to 1950. Ultimately, the Milwaukee would build over 12,000 box and automobile cars with this distinctive rib-side design. My model, a Rib Side Cars version of the most common 40-foot cars, is MILW 23145, is from a group of 1000 cars built at Milwaukee shops in 1945, numbered 22188–23187 (2).

Another pair of boxcars I’ve chosen is from the Baltimore & Ohio. The B&O owned the sixth largest non-hopper freight car fleet in 1950, right behind the Milwaukee Road, as shown in that December 2011 column. The B&O built a series of box cars called “wagon top” cars, a unique design to the B&O, in

their way every bit as distinctive and unique as the Milwaukee rib-side cars. There is a fine article by Pat Wider about the wagon tops, in *Railway Prototype Cyclopedia* (Vol. 9, 2003, pages 1–25). Recently ExactRail has produced a superb model of a Class M-53 car, as shown here. This class was not the only wagon-top class, but was among nearly 5000 cars of this design built by B&O (3).

But the largest single class of B&O boxcars was the M-26 class, very similar in design and execution to the Pennsylvania X29 boxcar. Like the X29, the B&O M-26 cars were essentially built to the 1923 American Railway Association proposed standard all-steel boxcar. There were some 14,000 cars in six distinct sub-classes, a major group of boxcars for any railroad. A fine



3: My two signature Baltimore & Ohio boxcars are seen here together, the one on the left the M-26, one of more than 14,000 cars of that type, and on the right, the famous “wagon-top” class M-53. Both models are injection-molded styrene, and are from Red Caboose on the left, ExactRail on the right.



4: A vitally important D&RGW boxcar group, cars 66000–67499, remained a central part of the railroad’s fleet of boxcars into the 1950s. This one was built from a Westerfield resin kit, with Kadee Vulcan trucks.

article about the 1923 car designs is available from Pat Wider, in *Railway Prototype Cyclopedia* (Vol. 18, 2009, pages 1–113), with an entire section within that article about just the B&O M-26 cars (pages 61–79). My model is a Red Caboose styrene kit, lettered with Speedwitch decal set D117.1, which is especially for M-26 cars, including subclasses A, B and C. Mine is numbered within the M-26 car series 265000–266999, built by Pullman in 1925. The trucks, doors, AB brakes, and lettering represent replacements in later years. Of the original 2000 M-26 cars, 1952 cars were still in service in 1951.

Not every set of signature cars need be entirely boxcars. Denver & Rio Grande Western was a railroad with a fleet smaller than most of the roads described in this column, with

only 11,000 total freight cars in 1953. For the D&RGW, I chose a boxcar and a general-service gondola. The boxcar is an early single-sheathed design, built by Pullman in 1916, an order of 1500 cars in the number series 66000–67499. These cars were still prominent in the D&RGW fleet after World War II, with 986 cars still in service in 1953, even though they were almost 40 years old. This model was built by Dennis Williams from Westerfield kit 6453, with lettering and finishing by me (4).

The gondola is one of D&RGW's distinctive general-service (GS) or drop-bottom gondolas with 46-foot inside length, setting it apart from the numerous 40-foot GS gondolas owned by many other railroads. A group of 700 cars were



5: The distinctive 46-foot D&RGW gondola fleet, all drop-bottom or GS cars, is represented by this brass model from W&R Enterprises. The correct clasp-brake trucks with outside brake hangers were provided with the car. The cars were predominantly used in coal service, and Southern Pacific received Utah and Colorado coal in cars like these for domestic stove use in depots, section dwellings, cabooses, and so on.



6: Northern Pacific's massive fleet of double-sheathed cars like this survived in considerable numbers after World War II, and a representative of this car group is essential as a signature car. This one is a Sunshine resin kit.

built by Western Steel Car & Foundry in 1922, numbered 70000–70699. Fully 675 of them were still in service in 1953. Published information about these cars is sparse, but one source is Jim Eager's book, *Color Guide to D&RGW Freight and Passenger Equipment* (Morning Sun Books, 1996, page 76). Jim also wrote an article including these cars for the Rio Grande Modeling and Historical Society magazine, *The Prospector* (Vol. 1, No. 2, 2002) if you can find a copy (5).

My model is a brass car from W&R Enterprises. I tend not to purchase brass freight cars, but when a desirable prototype has only been done in brass, as in this case, I make an exception. This car is a good example of a prototype too rare to be likely in styrene, and difficult to cast in resin, so brass is an excellent medium. And this model illustrates W&R's well-deserved reputation for

accuracy and quality. I did add a route card board to the right of each car side, using scale 1 x 6-inch styrene, as well as Kadee No. 58 couplers. Otherwise the model is pretty much as-delivered, with weathering added. It is shown with a coal load.

A railroad of particular importance for SP modelers like me is the Northern Pacific, with which SP enjoyed a warm and cooperative connection at Portland, Oregon. My NP fleet is not limited to two cars, but I will show here two signature boxcars. One is from NP's massive fleet of virtually-identical 40-foot, double-sheathed cars, numbered 10000–13999 and remaining in service for many years. In the year I model, 1953, the original group of 4000 cars still contained 3809 cars! The first 3000 cars were built in 1923, 30 years earlier, and like so many NP house cars in that era, had the railroad's own design of metal-sheathed "circular" or radial roof. Published coverage of these cars includes Todd Sullivan's book, *NP Color Guide to Freight and Passenger Equipment* (Morning Sun Books, 1995). My model is from Sunshine resin kit 52.2, built by Dennis Williams and lettered and finished by me (6).

"A railroad of particular importance for SP modelers like me is the Northern Pacific ..."

The Northern Pacific continued to buy thousands of new box cars of all-steel construction, a substantial number before World War II of the 1937 AAR design, and many more after the war, which in appearance were largely conventional. Among them were the 500 cars obtained from American Car & Foundry in 1946, equipped with Improved Dreadnaught ends and numbered 29500–29999, the number group to which the model I built belongs. Fully 495 of these cars remained in



7: This example of a Northern Pacific postwar boxcar has the black roof and ends typical of practice at that time, and is being spotted in a switching move. It was built from a Branchline styrene kit.

service in 1953. Considerable information about the entire NP freight car fleet exists in a chapter by Richard Hendrickson, to be published in a forthcoming book by Patrick Dorin, entitled *Northern Pacific Lines East*. My postwar NP car was built from a Branchline kit (7).

I've also chosen a pair of Seaboard Air Line boxcars for my fleet. One of them is an example of the 1932 ARA design, of which Seaboard was the second biggest buyer. The complete story of the 1932 boxcars is told in Ted Culotta's book, *The American Railway Association Standard Box Car of 1932* (Speedwitch Media, 2004). Seaboard's purchase of 2000 of these cars, numbered 17000–18999, was second only to the Missouri Pacific (and subsidiaries). The Seaboard cars are an interesting variation of the 1932 design, because the railroad

chose to specify the flat steel ends and roof characteristic of the 1923 ARA steel-car design. Atlas recently produced a ready-to-run version of all the 1932 ARA cars, including the correct body for the Seaboard cars. I painted and decaled one of these cars to obtain the best possible lettering, using the Speedwitch Media decal set D103 (8).

The second car is a Pullman-Standard PS-1 car, probably the most heavily-purchased postwar design. In March of 1952, Seaboard received 500 of these cars, numbered 25000–25499, and among their noteworthy features was an eight-foot door opening, contrasting with the then-standard six-foot door. These cars are described in Edward S. Kaminski’s book,



8: This model portrays the Seaboard’s version of the 1932 ARA all-steel boxcar. The car carries the road’s “Orange Blossom Special” lettering and the plain railroad medallion. It is a repainted Atlas styrene model with decal lettering, an Ajax brake wheel, and a replacement wood running board.



9: The 1952 order of PS-1 boxcars by Seaboard included an 8-foot door, at the time an unusually large door opening. By this time, Seaboard had introduced the red heart in the railroad medallion. The model is a Kadее car, repainted and with decal lettering.

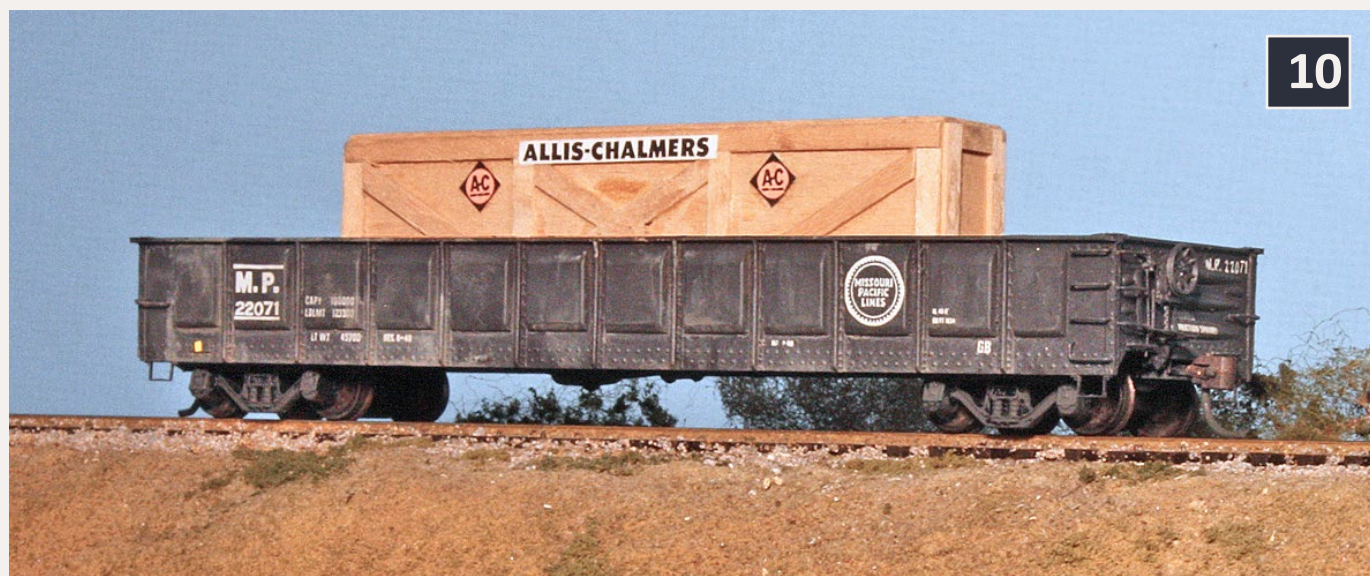
Pullman-Standard Freight Cars, 1900–1960 (Signature Press, 2007, page 68). I used a ready-to-run Kadее PS-1 car for this, but repainted it and decaled it myself, with the same Speedwitch decal set, D103. The slogan on these cars was “The Route of Courteous Service (9).”

The Seaboard is a good example of a railroad for which there are other, equivalently good choices for signature cars, such as the distinctive round-roof boxcars in Seaboard’s Class B-7 (and the automobile cars in classes AF-1 and AF-2). As I’ve already stated, the choices described in this column are my personal ones, and I would never claim that everyone should chose the same ones. As a modeler learns more about the signature freight cars of railroads other than his home road, the selection of cars to model

becomes broader, and also more focused on exactly which choices are most distinctive or attractive to model.

Another railroad that had one of the largest freight car fleets was the Missouri Pacific Lines, seventh overall in my ranking of non-hopper freight fleets. And in this case, as with the D&RGW, I have chosen a gondola as well as a boxcar for a pair of signature cars. The gondola is a distinctive design for two reasons: the inside length is 45 feet, and the sides have raised panels to increase somewhat the cubic capacity (10).

During 1937 to 1942, Pressed Steel Car and Mt. Vernon delivered 2400 of these cars to Mopac and its subsidiaries. The subsidiary lines included the International-Great Northern, Missouri-Illinois, and St. Louis, Brownsville & Mexico. But the majority of the cars, 1775, went to Missouri Pacific itself, and were numbered 22000–23774. In 1948, the railroad's DeSoto, Missouri shops built 1000 more of these 45-foot cars, though this time with smooth side panels.



10: A model of the distinctive Missouri Pacific panel-side gondolas, 45 feet long, of which 2400 were built and nearly all of which remained in service in 1953. The model is from a Sunshine resin kit. The machinery crate load is scratchbuilt.



11: This car represents one of more than 3200 box cars of 1932 ARA standard design owned by Missouri Pacific and subsidiaries (in this case, International-Great Northern or I-GN). At the time these cars were built, Missouri Pacific painted placard boards black. The model is an Atlas ready-to-run car.

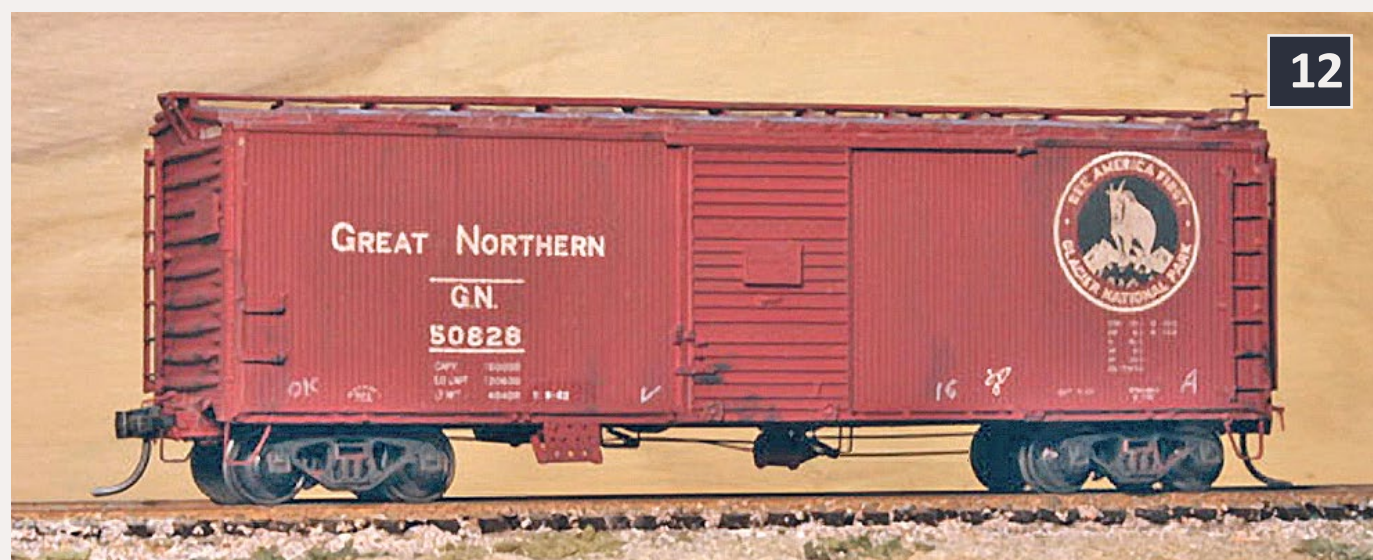
By 1953, most of these cars remained in service and were a prominent part of the Mopac gondola fleet. Though Mopac rostered only 14% gondolas, compared to a national average of 20%, these 45-foot cars nevertheless amounted to more than a third of all Mopac gondolas in 1953. Combined with its distinctive panel-side appearance, that makes it a significant car, in my view.

My second choice is one of the ARA 1932 boxcars. Missouri Pacific purchased the largest number of these cars of any railroad, 3250 cars, and given the pivotal importance of this car design in freight car history, it seemed an unavoidable choice as a signature car for Mopac. As already mentioned for the 1932 ARA design, the best and most complete source is *The American Railway Association Standard Box Car of 1932*

(Speedwitch Media, 2004) by Ted Culotta. On the Missouri Pacific, by 1953 almost 3100 of the original 3250 cars remained in service (11).

For the gondola model, I used Sunshine kit 1.1 (their very first kit), which I reviewed back in January of 1990 for *Railroad Model Craftsman* (Vol. 58, No. 8, pages 104–109), and in that review I described the construction process. I used Athearn AAR trucks and Kadee couplers and wheelsets.

The 1932 ARA boxcar design with Dreadnaught ends is well-represented by the Atlas styrene model. The one I acquired was lettered for International-Great Northern, from the first group purchased by Mopac. The I-GN cars were numbered 17001–17300, and were built by American Car & Foundry in 1936. I added weathering, chalk marks, and route cards to this ready-to-run model (11).



12: The Great Northern chose to build its 1937 AAR standard boxcars with tongue-and-groove wood side sheathing. This Sunshine resin model captures all the details of that distinctive car, along with the “front-facing goat” emblem in use when the car was built in 1937.



13: This model of a 12-panel Great Northern boxcar, with a diagonal-panel roof, represents thousands of such cars built by and for GN after World War II. It has Pennsylvania Railroad (off-line) reweigh and repacking data from a Sunshine decal set.

Another road for which I have carefully chosen freight cars is the Great Northern, whose freight car fleet was one of the top 15 in size, as I showed in my Dec. 2011 MRH column. Here I will just mention two. A distinctive and eye-catching part of the GN freight car fleet was the 1937 Association of American Railroads (AAR) design, which GN chose to build with wood side sheathing. My second choice was the postwar 12-panel steel boxcars, of which GN built about 3500 cars.

Information on both of these cars, and many other GN freight cars, is very nicely summarized in a book chapter about GN freight equipment, by Richard Hendrickson and Staffan Ehnborn; that chapter is in Patrick Dorin’s book, *Great Northern Lines East* (Signature Press, 2001, Chapter 6). The wood-sheathed AAR cars are described in Pat Wider’s article which

appeared in *Railway Prototype Cyclopedia* (Vol. 23, 2011, pages 1–41). Additional information about the postwar 12-panel cars can be found in Pat Wider’s earlier article in *Railway Prototype Cyclopedia* (Vol. 8, 2003, pages 75–105). Finally, there is good color coverage of both car groups in Scott Thompson’s book, *Great Northern Color Equipment Pictorial*, Book One, Box Cars and Stock Cars (Four Ways West, 1995).

My prewar wood-sheathed car is built from a Sunshine resin kit (kit no. 18.4), and is numbered within the first 1000 cars built in 1937, cars 50000–50999. By 1942, they had been followed by 7000 more cars of equivalent design, thus comprising a major part of the GN fleet. I lettered this car with the older style “front-facing goat” emblem, which these first cars of the series did receive when built (12).

“My prewar wood-sheathed car is built from a Sunshine resin kit ...”

My postwar 12-panel car represents part of the 3500 cars of this design acquired by GN during 1948–1951, specifically series 18000–18499, built in company shops in 1949. Great Northern was a major exponent of the 12-panel design in the years after World War II. My model is an InterMountain styrene kit, to which I added the correct Universal handbrake (not included in the kit) and a Plano etched-metal Morton running board. My kit came with a representation of a Gypsum running board, but this group of cars had either Morton or Apex running boards. Note that this car has the more familiar “side-facing goat” emblem, introduced about 1940 and thus correct for the time of construction of the car (13).



14: Boston & Maine 72597 represents a 40-ton box car, an ARA XM-1 design with plate ends. There were 2000 of these boxcars for this relatively small railroad and they are a good example of a signature freight car. The model was built from a Sunshine resin kit.

An example of a modeling detail on this car: the reweigh place and date shown are “P50,” a Pennsylvania Railroad symbol designating Enola Yard, one of the largest freight yards in the world, and the date, “6-51.” This car was built in early 1949 and like all new cars at that time, would have had to be reweighed in 30 months, thus this choice of reweigh date. Other than new cars, most cars only had to be reweighed every 48 months after January 1, 1949. A written description of reweigh rules is available on Google Drive, through this link: modelingthesp.blogspot.com/2011/03/reweigh-article-from-rmc.html. I usually use Sunshine Models decal sets for reweigh and repacking lettering, from the regional “Repack and Reweigh” sets. The same kind of detail can be seen on all but the newest other cars shown throughout this column.

A relatively small railroad for which I've chosen just one signature car is Boston & Maine. In 1953, their freight roster contained only 5300 cars, although 63% of them were boxcars. My choice was their version of the 1923 ARA XM-1 single-sheathed boxcar, to which they applied plate steel ends, making a distinctive appearance. There were 2000 of these cars, built by Standard Steel Car Company in 1929 and 1930, and they survived well; more than 1900 of them were still in service in 1953. For more information and photos, you can consult Pat Wider's article in *Railway Prototype Cyclopedia* (Vol. 18, 2009, pages 1–113). My model of one of these cars was built from Sunshine resin kit 91.6 (14).

I will conclude with the Illinois Central, another fleet size in the top 15 and a railroad with which the SP had a friendly connection at New Orleans. I have always liked single-sheathed



15: The model, built from a Sunshine resin kit, represents one of 1000 cars built for Illinois Central in 1927. In 1953, 941 of these cars remained in service, though being renumbered to 16000–16975.



16: This Illinois Central model represents a car built for IC in 1939. It began life as an Athearn metal car kit, which was upgraded and relettered to reflect its prototype body style. Fresh numbers for car capacity reflect a reweighing of the car.

boxcars and there were still a great many of them running in the early 1950s. One of my IC cars is such a boxcar, from a 1000-car order built in 1927 with massive fishbelly underframes, steel Dreadnaught ends, and Youngstown steel doors. Their original numbers were 176000–176999. Around World War II, they were renumbered in to the 16000–16975 series, of which 941 remained in service in 1953. These cars are good representatives of the late days of construction of single-sheathed box cars on American railroads (15).

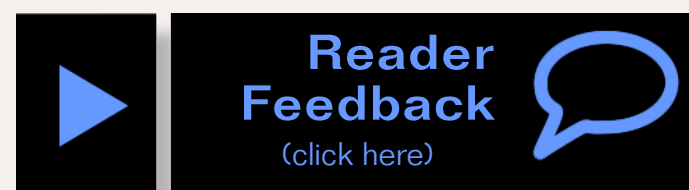
My model of this car was built from Sunshine resin kit 57.2. I acquired it from John Golden, and at some point I will renumber it into the 16000 series. I may do so with the same expedient used by the Illinois Central on some of the cars in this group, to simply paint out the “7” in the car number.

The other IC car I will mention is an upgraded Athearn metal kit from many years ago. I chose it to depict a car from Illinois

Central boxcar series IC 17000–18999, 2000 cars built by American Car & Foundry in 1938–1939. Although generally of 1937 AAR standard design, they differed in having 10 feet, 4 inches inside height instead of 10 feet, and only having 40 tons capacity. I chose to model one particular group in this series, IC 18400–18699, which had AAR trucks. This information, kindly furnished by Richard Hendrickson, comes from the Illinois Central freight diagram book. In 1953, 1971 of the original 2000 cars remained in service.

Those Athearn metal boxcars were pretty good representations of 1937 AAR boxcars, though often factory-lettered for post-war cars, as was this one. I fixed up the running board with wood and repaired a damaged underframe (and added brake rigging), to achieve a more contemporary standard of detail. I added Athearn plastic AAR trucks and Kadee No. 58 couplers. The original Athearn postwar car number and data block was painted out, and I then used Jerry Glow's fine Illinois Central boxcar decals to letter the car for IC 18545 (16).

So there are some of my selections of signature freight cars for some important foreign roads that operate on my layout. Your foreign cars can be anything you want, but I think choosing interesting and significant cars is a way to add interest to your modeling as well as to your layout operation. ☒



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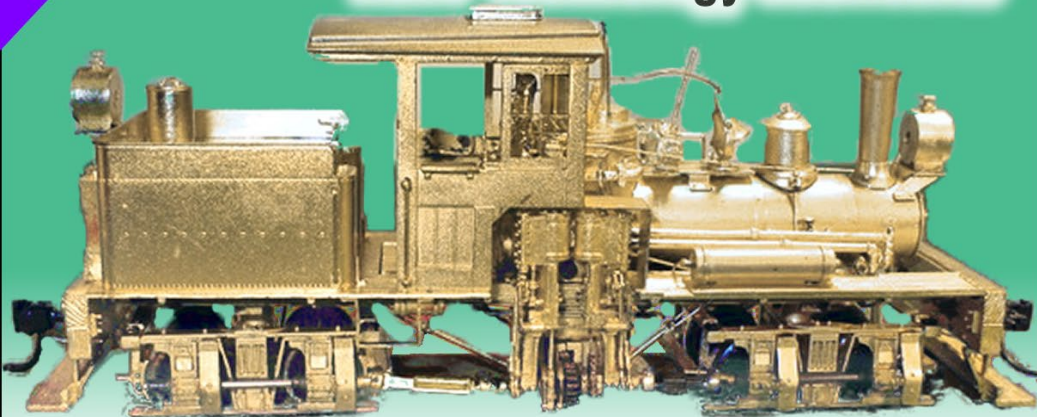
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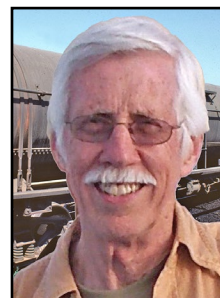
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GETTING REAL

column



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MORE "SIGNATURE" FREIGHT CARS | ADDITIONAL EXAMPLES OF ESSENTIAL ADDITIONS TO YOUR FLEET

IN A PREVIOUS MRH COLUMN, FOR APRIL 2013 (available at: mrhmag.com/magazine/mrh-2013-04-apr), I provided a set of what I called "signature" freight cars for nine railroads, deliberately omitting some of the largest roads. In this column I extend and complete that set of cars by adding more railroads.

The previous column covered the Milwaukee, B&O, Missouri Pacific, Denver & Rio Grande Western, Northern Pacific, Great Northern, Seaboard, Illinois Central, and Boston & Maine. In this column, I recommend signature cars for 10 additional freight car owners: Pennsylvania, New York Central, Santa Fe, Southern Pacific, C&NW, CB&Q, PFE, Southern, UP, and Western Pacific.

What is a "signature" freight car? The term is sometimes used for unique cars of a particular railroad, such as the famous Milwaukee

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Road rib-side boxcars that I described in the first column, but to me the meaning is broader than that. I use the term “signature” to mean a freight car which is *characteristic* of its owning railroad, meaning that it is reasonably distinctive *and* is a car of which the owner’s roster contained a relatively large number. Unique cars can certainly qualify, but there are many cases where a “standard” car design also qualifies, just because its owner had so very many of them. There are examples in this article.

Background

Before we talk about individual cars, how were these railroads chosen? In my first column in this series, in *MRH* for December 2011 (download it at: mrhmag.com/magazine/mrh-2011-12-dec), I showed some comparative data for the freight car fleets of a range of railroads, emphasizing their size. I show an expanded set of the

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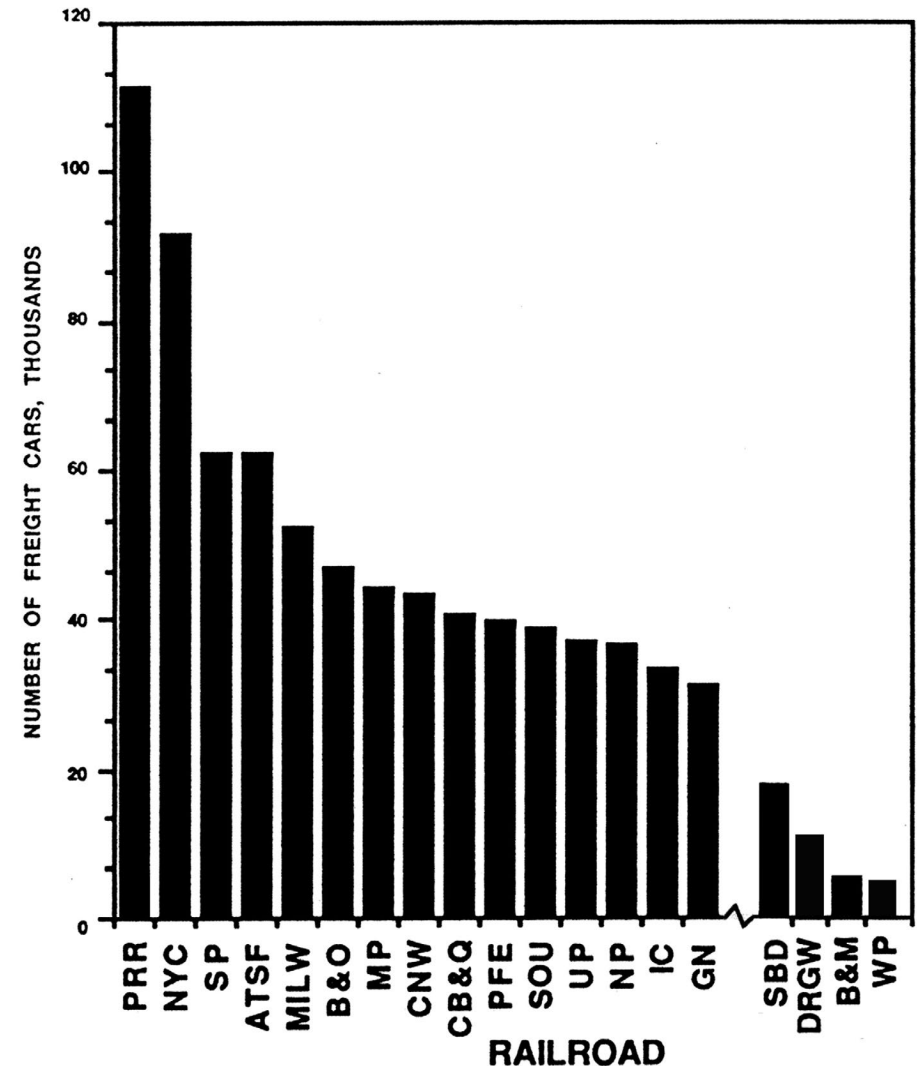
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same kind of data, slightly differently arranged, in Figure 1 to explain my railroad choices. The fleets are shown minus the car types which



1. Sizes of freight car fleets of individual railroads in 1950, minus coal, ballast, and ore cars, shown in size-order, with a break after Great Northern.

interchanged less frequently than the remaining car types, as I described in my first column, December 2011.

The 19 railroads shown in size-order in Figure 1 are the same railroads listed at the start of this column, with the four smaller ones (Seaboard, D&RGW, B&M and WP) at far right. That is the simple basis for railroad choice: fleet size. This accords with the Gilbert-Nelson idea which I discussed in that first column, and won't repeat here, except to say that the proportional visibility of a railroad's car fleet throughout the nation is believed to reflect the proportion of the size of that car fleet to that of the whole nation.

Individual railroad selections

There is not space to show the composition of each individual railroad's fleet as to car types. I will just mention that the most comprehensive source of such data is the *Official Railway Equipment Register* or ORER. Historical issues dated between 1885 and the present are available in both digital and print form from libraries and other sources.

Also of great value, if they are available, are the freight car diagram books of individual railroads. Several historical societies have reproduced these, and originals may be found for sale in Internet auctions from time to time.

Turning to the specific railroads, I will present them in order of size, starting with the Pennsylvania Railroad.

Pennsylvania. For decades the owner of the largest fleet of freight cars in North America, the Pennsylvania Railroad dominates any summary of freight car ownership. A single class of PRR boxcars, the X29, was built in numbers of more than 29,000 cars, more in that one class than the entire fleets of all but a handful of American railroads. Though they are not treated



2. This Red Caboose model, with some detail upgrades, and heavy weathering typical of PRR in the transition era, represents well the iconic X29 of the Pennsylvania Railroad. The model was built and weathered by Richard Hendrickson.

here, there were classes of hopper cars even larger than the X29 class. So one could readily select several freight cars to represent the PRR. But I will restrict myself to three.

First, of course, is the X29. Its distinctive appearance, with flat roof and ends (on most cars) and low car height, is easily recognized. It is so major a feature of the freight car scene that Ted Culotta, in his outstanding series of articles on "Essential Freight Cars," devoted two articles to this one class. They are articles 35 and 36 in the series, published in *Railroad Model Craftsman* for January and February 2007.

There is also a very complete and detailed article about the X29 cars by Patrick C. Wider in *Railway Prototype Cyclopedia* No. 24 (2012), which does full justice to this distinctive car design.

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Luckily we now have an excellent model basis for this car, the Red Caboose X29, which I show in [2].

Perhaps the next most distinctive Pennsy boxcar design would be one of the round-roof or “wagon-top” designs, 9,000 of which were built in both 40 foot and 50 foot versions and with two different roof styles. An excellent article about these designs, by Patrick C. Wider, was in *Railway Prototype Cyclopedia* No. 22 (2011). Additional modeling information can be found in Ted Culotta’s “Essential Freight Cars” series, article 27, in *Railroad Model Craftsman*, January 2006. I have chosen the X31c to represent this group, [3]. It has a “flush” roof, meaning that the roof sheets curve smoothly onto the sides. Earlier X31 cars had a “notched” roof, with a narrow ledge between the roof sheets and the top of the side.



3. An example of PRR class X31, in this case subclass X31c, with the “flush roof.” Note that the car, originally equipped with auto racks and thus with a white stripe on the right-hand door, has been taken out of that service and the stripe painted over. This car is a W&R Enterprises brass model.

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Finally, the Pennsylvania also had a considerable number of gondolas. The elderly gondolas in the PRR fleet up to World War II were rapidly retired thereafter, as the railroad built more than 11,500 new gondolas, placed in several subclasses of class G31. Most were of welded construction, and an excellent article about these cars by Ed Hawkins was published in *Railway Prototype Cyclopedia* No. 19 (2009). I have used the outstanding Tangent model of a member of this class as my signature PRR gondola. It is shown in [4].

New York Central. Just as the Pennsylvania Railroad built a huge number of cars of a single all-steel boxcar design, the X29, so did the New York Central build many thousands of all-steel boxcars, but of a different design, based on improvements to the USRA steel boxcar (which was not built under the USRA). A good background of this was provided by Ted Culotta in article 34 in his series,

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“Essential Freight Cars,” in *Railroad Model Craftsman*, for October 2006, and Richard Hendrickson covered them in *Railmodel Journal* for March 2007. A much more detailed account by Patrick C. Wider, was in *Railway Prototype Encyclopedia* No. 21 (2010).



4. Starting in 1950, the Pennsylvania built more than 11,500 gondolas as subclasses of class G31. This excellent Tangent model of class G31B shows the welded construction used for most G31 cars.



5. The many thousands of New York Central steel boxcars built to a modified USRA design, together with their long survival in service, made them an unmistakable signature NYC car. This model is by Broadway Limited, with added weathering and an indication of the beginning of paint failure on the roof.

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The recent release by Broadway Limited of styrene models of these cars is a great convenience for modelers who need a bunch of them. One of the Broadway cars is shown in [5], with added weathering and a little paint failure indicated on the roof.

Also noteworthy for the New York Central were rebuilding programs they carried out with older cars. I have chosen one representative. During 1916–1918, New York Central acquired 9,500 double-sheathed auto cars. In the 1930s, over 5,800 of these cars were rebuilt as boxcars with steel sides. There were over 4,000 such rebuilt cars in service in 1953, when I model; the car shown in [6] is from a Sunshine resin kit.

Lastly, the New York Central, like the Pennsylvania, had a very large fleet of gondolas, and they went everywhere in the country. After World War II, the Central purchased 4,600 Greenville-design gondola cars of 52-foot, 6-inch interior length, and 6,000 more for subsidiary Pittsburgh & Lake Erie. By 1953 these were

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6. Before 1920, New York Central acquired 9,500 double-sheathed auto cars. In the 1930s, most of these cars were rebuilt as single-door boxcars with steel sides. This is a representative example of one of the rebuilds (there were over 4,000 such rebuilt cars in service in 1953); it is Sunshine kit 64.1, built by Dennis Williams and lettered and weathered by me.

a visibly dominant part of the NYC System fleet, thus their selection as a signature NYC car. For more about these cars, there is a fine article by Ed Hawkins and John Spencer, in *Railway Prototype Cyclopedia* No. 3 (1999), about all of the Greenville-design 70-ton mill gondolas. Figure 7 shows my model of one.

Santa Fe. This large railroad car fleet is like other Western railroads in that it was dominated by boxcars. But an additional feature of interest is that it included refrigerator cars, unlike practically all other roads shown in [1]. Because such cars were not part of other railroads, they were excluded from the Santa Fe data in [1], but if added to [1], would make Santa Fe easily the third-largest car fleet, behind the New York Central.

For all Santa Fe boxcars up to the 1950s, there is no better reference than John C. Dobyne's magisterial book, *Santa Fe Boxcars*

1869–1953 (Santa Fe Railway Historical & Modeling Society, 2001). He covers both the boxcars I selected.

The first boxcar I selected is the distinctive rebuild Santa Fe performed on its Bx-12 and -13 classes, to raise their roof height for service in World War II. During 1929–1931, Santa Fe had purchased 6,500 cars in classes Bx-11, -12 and -13, and early in the war, 4,200 of them had their roofs raised. There is a very good Westerfield kit for the rebuilt car, and mine is shown in [8].

My other Santa Fe boxcar choice is the largest group of all-steel boxcars on the railroad, class Bx-37. They were slightly modified versions of the 1937 AAR standard boxcar. In addition to Dobyne's coverage, there is also a detailed article about these cars by Patrick C. Wider in *Railway Prototype Cyclopedia* No. 25 (2012). The model is shown in [9].

As I said in opening this section, Santa Fe also had a large contingent of refrigerator cars under its own Santa Fe Refrigerator



7. Among the large New York Central gondola fleet was this design from Greenville Steel Car. There were more than 10,000 steel gondolas like this one in the NYC System fleet by the early 1950s. It is built from a Proto2000 kit, with a load of aluminum pipe.



8. The distinctive Santa Fe raised-roof rebuilds of classes Bx-12 and -13 are true signature cars, being unlike any other railroad's boxcar. This model is from Westerfield kit no. 4751.



9. Santa Fe's biggest class of steel boxcars was Bx-37, 5,010 cars strong. This is an Innovative Model Works kit product, built and weathered by Richard Hendrickson. Note door and end placards, and scraped paint next to the door.



10. A representative of 18,000 refrigerator cars operating under SFRD reporting marks, this model of class RR-32 shows the inward-opening ice hatches standard in SFRD practice until the 1950s (they were later reversed to accommodate icing machines). It was built from an InterMountain kit by Richard Hendrickson.

Department (SFRD), and as there were some 18,000 of the cars in a wide variety of arrangements, it seems incumbent on any serious prototype modeler to have models of one or more of them. The considerable complexity of their construction, rebuilding, and history can be found in an excellent book, *Refrigerator Cars*, subtitled *Ice Bunker Cars 1884–1979*, by C. Keith Jordan, Richard H. Hendrickson, John B. Moore, and A. Dean Hale (Santa Fe Modelers Organization, 1994). with their 5-foot doors and unusual ice hatch arrangements. I was lucky enough to receive a model of one, an RR-32 class car, from Richard Hendrickson, and it is shown in [10]. This class was a group of 500 cars, rebuilt from



11. Southern Pacific's class B-50-14 cars were built in large numbers, but were being scrapped rapidly after 1950. This photo shows a model of one of these cars with a retrofitted Dreadnaught end, a change made for most -14s in the 1930s. It was built from Sunshine resin kit 17.18.

USRA refrigerator cars in 1940, and though a small group, it well represents one of the 18 classes within which Santa Fe classified more than 10,000 USRA rebuilds.

Southern Pacific. I turn next to the SP, another Western railroad whose fleet was dominated by boxcars. The primary prototype reference here is Volume 4, "Boxcars," in the series, *Southern Pacific Freight Cars*, which I wrote (Signature Press, revised edition, 2014).

One candidate car type would be the Z-bar-braced, single-sheathed cars of classes B-50-13 and -14, of which over 7,000 were built in the early 1920s. Ted Culotta, in fact, included this car in his "Essential Freight Cars" series, article 6, in *Railroad Model Craftsman*, September 2003. As late as 1950, a lot of these cars still survived in service, but extensive scrapping started soon thereafter. Figure 11 on the previous page shows a model



12. This Innovative Model Works kit represents SP class B-50-21, which were 2,000 of the 5,244 cars built like this for SP, with the distinctive W-corner-post ends.

of one of these cars, but as I am indicating, they probably should not be among the primary SP choices, for my own modeling year of 1953.

Among the biggest purchasers of the 1937 AAR standard boxcar was Southern Pacific. They bought 2750 cars of the original design, followed by 5244 cars of the modified design with W-corner-post ends (only 750 of those cars were for the Texas & New Orleans). The latter group, then, is a major part of the SP fleet, representing SP classes B-50-20, -21, and -23, and is illustrated in [12].

There were two big postwar groups of SP boxcars. One group, with 12-panel car sides, totaled 5,600 cars (of which 2350 were for T&NO). These can be modeled with a few upgrades to the InterMountain 12-panel boxcar. But I choose the other group,

3,350 cars of class B-50-27. This is a distinctive group of cars, with diagonal-panel roofs, and some had Superior panel doors [13].

Lastly, SP did have a fairly large number of gondolas, most of them drop-bottom or GS (General Service) types. All are described in Volume 1 of the series, *Southern Pacific Freight Cars*, which covers gondolas and stock cars. The 4250 cars of this type that SP purchased in the 1920s were mostly still in service in the 1950s. I added brake piping and rigging to an Ulrich kit, along with Tahoe Model Works Dalman trucks, to create a model of class G-50-12. The completed model is presented in [14].

Chicago & North Western. This large Midwestern railroad had many different groups of its dominant car type, the boxcar, so some discrimination is needed to choose which ones might be signature cars. I have chosen one of the rebuilds done by C&NW



13. SP class B-50-27, modeled with a C&BT Shops kit cut down to 10 feet inside-height, with an added top end rib, upgraded detail parts, and Superior doors.



14. An example of a classic HO kit still useful is this Ulrich gondola, with some detail upgrades to represent a GS gondola of SP class G-50-12.

of its numerous USRA double-sheathed boxcars. A description of these rebuilds is contained in Patrick C. Wider's article, "Rebuilt USRA Double-Sheathed boxcars," in *Railway Prototype Cyclopedia*, No. 24 (2012). A model of one of these is shown in [15], built from a Sunshine resin kit. It represents the replacement of wood superstructure framing and sheathing by addition of steel sides and roof, with increased size evidenced by the inserted smooth panel to increase the height of the corrugated end.

Another choice of boxcars to model for C&NW would be the single-sheathed cars the railroad owned, which were similar to USRA cars but still distinctive. These were described by Ted Culotta in the "Essential Freight Cars" series, article 7, in *Railroad Model Craftsman*, October 2003.

After World War II, C&NW continued to buy new boxcars. Among these all-steel cars bought new by the C&NW, the



15. This model depicts one of C&NW's rebuilt USRA double-sheathed boxcars, with extended height indicated by the smooth added panel in the corrugated end. It was built from the second kit ever produced by Sunshine Models (kit 2.1) by Dennis Williams, and lettered and weathered by me.



16. One of Pullman-Standard's best customers for the all-welded PS-1 boxcar design was C&NW. This model, built from an InterMountain kit, represents those cars.



17. This model represents one of the 5,000 cars built by the Burlington at its Havelock shops during 1940 through 1944, all with W-corner-post ends. It is an InterMountain ready-to-run model.

standout type is the Pullman-Standard PS-1. The North Western was one of the biggest buyers of these cars, which arrived in a substantial number of small orders (some of them riveted rather than welded). Considerable information on these cars is in Edward S. Kaminski's book, *Pullman-Standard Freight Cars, 1900-1960* (Signature Press, 2007). The model I built is from an InterMountain PS-1 kit, and is shown in [16].

CB&Q. The Burlington choices are clear from CB&Q rosters. Among the cars built in the immediate pre-war and postwar period, the XM-32 class stands out, eventually totaling more than 16,000 cars, built at the company's Havelock shops in Lincoln, Nebraska. But not all cars in the class were the same, because ends, roofs, and doors varied over time. The large single group of 5,000 cars, built during 1940 to 1944, all had the same ends (W-corner-post), roofs and doors, so they make an obvious choice. My model is from that group, as shown in [17].

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There was a special issue of the Burlington Society magazine, *Burlington Bulletin No. 7*, entirely devoted to the XM-32 cars. Written by Hol Wagner, it covers 25 pages and would be hard to beat as a source of complete freight car information.

For more than 25 years, nearly all new Burlington boxcars were single-sheathed. The most numerous group was the 1922 class, XM-25 (and the twins of XM-26), so these are my choice as a second signature car for the Burlington.

These 3,000 cars were described by Ted Culotta in his “Essential Freight Cars” series in *Railroad Model Craftsman*, article no. 10, in February 2004. There were 2,000 cars built in 1922 for class XM-25, and 1,000 more built in 1926 as class XM-26. I built one of the Speedwitch Media kits for the XM-25 boxcar.



18. The largest class of single-sheathed boxcars, among many such boxcars on the Burlington, was class XM-25 and its near-twin, XM-26. This model was built from Speedwitch Media kit K106.1, equipped with Andrews trucks (the original XM-25 trucks) from Accurail, and lettered with the Speedwitch kit decals.

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19. Easily the stand-out group of PFE refrigerator cars in the transition era was class R-30-9 (among which were a few cars with 40-ton underframes, designated as class R-40-9). Red Caboose makes an excellent model of this wood-sheathed rebuilt class, which totaled more than 7,700 cars. The model shown here has its ice hatches latched open in ventilator service. The car represents one of the late rebuilds (PFE 95737–98718) which received pressed-steel ice hatch covers, and is shown in the 1950 paint scheme.

PFE. Pacific Fruit Express, though of course not a railroad, was the owner of an immense fleet of refrigerator cars, the largest in the world. Information about the PFE fleet was contained in a previous “Getting Real” column, in October 2013 (it’s at: mrh-mag.com/magazine/mrh-2013-10-oct), so I will only highlight here the most important cars you might choose. There is extensive background available, much of it contained in the detailed book, *Pacific Fruit Express* (2nd edition), by A.W. Thompson, R.J. Church and B.H. Jones, Signature Press, 2000).

The largest single group of cars on the PFE roster in the

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transition era was rebuilt class R-30-9, more than 7,700 cars. If a modeler were to have only one PFE car, this would be the one to have. There is an accurate Red Caboose model of this class, available intermittently as a ready-to-run car, and an example is shown in [19].

To choose a second PFE car, the largest group of steel reefers was the 5,000-car R-40-23 class, available as a superb kit and in ready-to-run form from InterMountain. I illustrate this model in [20].

This class is also the prototype of the old Athearn steel ice reefer, and though that model has its shortcomings, it can be upgraded to serve as a representative of this class also. My model in [21] was built with open ice hatches, suitable for placement at an ice deck, though not for use in moving trains.



20. The InterMountain model of PFE class R-40-23 is excellent in all respects. This one was built from a kit, with open ice hatches to represent a car in ventilation service. Having a representative of this 5,000-car class is essential as a PFE signature car.

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21. The prototype of the old Athearn steel ice reefer is PFE class R-40-23. As it comes from the box this is not a model with details and accuracy that are up to today's freight car standards, but the car can be upgraded to better represent the prototype. This car was modeled with open ice hatches to be photographed at an ice deck like this one.

Southern. The Southern was the largest railroad in the South, and rostered a very wide variety of cars. But boxcars were dominant, as for most railroads. Here the best reference is George Eichelberger's book, *Southern Railway Equipment Drawings and Photographs*, Volume 1, Book 1, 40-ft. boxcars (Southern Railway Historical Association, 2004). Its very complete contents enable choice of two major car types.

In the mid-1930s, the Southern was saddled with an aging and substantially obsolete fleet of 36-foot box cars. In response, then, from 1937 to 1940 the Southern purchased 8,500 new steel boxcars, following the 1937 AAR standard boxcar design, though all were of 40-ton capacity. [22] shows one of these cars, in the form of an Innovative Model Works kit.

In 1946 and 1947, Southern again purchased some groups of

40-foot cars. Among them were 1,000 cars with 8-foot doors, an unusual size at the time, and Improved Dreadnaught ends. Speedwitch Media had a conversion kit, KC111.1, to build one of these cars with a Branchline body. There also was a C&BT Shops kit with an 8-foot door; that kit was built and upgraded, as shown in [23].

Union Pacific. One of the busiest bridge roads in the U.S., Union Pacific also owned a considerable freight car fleet of its own. The cars are ably summarized by Terry Metcalfe, in his pioneering book *Union Pacific Freight Cars, 1936–1951* (Metcalfe Publications, 1989). This book, in fact, inspired the creation of several of the books cited earlier in this column.

Like many railroads, UP added new boxcars to its fleet as soon as the 1937 AAR standard boxcar design was available. There were two big classes purchased during 1936 to 1938, B-50-19



22. This model, built from an Innovative Model Works (IMWX) kit, represents one of the Pullman-Standard-built cars among the 8,500 cars purchased by Southern before World War II, all with only 40 tons capacity. It carries the pre-war Southern emblem.



23. After World War II, Southern was among the pioneers of the 8-foot door on boxcars, as represented in this model. It was built from a C&BT Shops kit with upgraded details, and is lettered (top right corner) for one of Southern's subsidiaries, the New Orleans & Northeastern (NO&NE). It also has the 1945 emblem.

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and B-50-21, containing a total of 3088 cars. All had “original” or sharp-cornered Dreadnaught ends. Red Caboose has a fine kit (also available as ready-to-run) for this car, and mine is shown in [24].

But the truly distinctive part of the UP boxcar fleet, with far more cars of this type than any other road, was its cars with Alternate Center Rivet (ACR) construction. The idea behind this construction method was to use thinner steel for side sheets, thus saving weight; but thinner sheets were also less stiff, and one solution was to add an additional side post in the center of each side sheet panel, and attach it with double-spaced rivets (compared to those along panel seams).



24. Between 1936 and 1938 Union Pacific bought two big classes of cars that followed the 1937 AAR standard design. This is one of them, repainted into the sans-serif or “Gothic” lettering scheme adopted in June 1939. The model is a Red Caboose kit.

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25. This builder photo of UP 187085, class B-50-24, was taken in July 1939 and shows the ACR rivet pattern. (photo from Terry Metcalfe collection, courtesy Richard Hendrickson)

The prototype photo in [25] shows the ACR appearance clearly. Between 1938 and 1953, UP bought more than 14,000 boxcars with ACR construction. As time went on, ends and then roofs changed, but the distinctive side panels are a signature appearance essential to modeling UP boxcars.

In addition to a detailed ACR description and photo coverage in the Metcalfe book cited above, Ted Culotta discussed many of the ACR car classes in a ten-page article in his “Essential Freight Cars” series, article 44, in *Railroad Model Craftsman*, February 2009.

There have not been many HO scale models made to accurately represent this rivet pattern. Trix made a ready-to-run car like this (though its underframe would require considerable modification to operate on an American model railroad). Speedwitch Media made a resin underframe to substitute in the Trix model, and there was a Sunshine kit for an ACR UP class B-50-32. Speedwitch also made a kit for the UP class B-50-38.

One could also convert an otherwise-correct car body from any of several sources. The way to do that would be to use an Archer

Transfers set of decal rivets, specifically researched for use as ACR rivet rows. It is set AR88030.

The simplest approach, used for the model in [26], was to substitute an Innovative Model Works underframe for the underframe in the Trix model of a class B-50-24 ACR car. My model specifically represents that 1,900-car class, but with modifications could represent other classes among some 12,700 boxcars of UP classes B-50-23 to B-50-33 and also B-50-41. In 1947, UP changed its boxcar paint scheme to an all-yellow version of the previous scheme, so the model in [26] represents a repaint some years after construction.



26. This model represents the thousands of Alternate Center Rivet (ACR) construction boxcars owned by Union Pacific, shown as repainted after 1947 into the all-yellow lettering scheme. The model comprises a Trix B-50-24 body with an Innovative Model Works underframe and floor.



27. Here is my single signature car for the Western Pacific. For many years the most numerous cars on the WP, the 16001–18300 series of double-sheathed boxcars had steel underframes; the first 800 cars were built in 1917, the balance in 1918. The WP applied steel ends in the 1930s and thereafter. The model was built from Sunshine kit 59.3 by Dennis Williams and lettered and weathered by me.

Western Pacific. The Western Pacific was a small road, far smaller than any of those in the preceding material, and I only include it here, as I did in the first column on this topic, to illustrate that the same kind of “signature car” approach can be used with smaller roads also, though I have only chosen one such car in this instance.

WP had several groups of boxcars, but one car group stands out as a signature design, WP 16001–18300, cars which were built by Mt. Vernon Car Company, in 1917–1918. These double-sheathed boxcars later received steel ends, and these survived in service well into the 1950s. My model, built from a Sunshine kit, is shown in [27].

Concluding comments

An important goal of mine in assembling the material of this column, as with its predecessor on signature freight cars, was to illustrate a method of choosing freight cars from railroads other than your personal favorite. This approach can be used if you are evaluating additions to your freight car fleet with cars from the major railroads, or equally well if you are refining the content of your fleet to better reflect realistic fleet proportions.

Use of resources such as books and magazines, especially the *Railway Prototype Encyclopedia* issues and the Ted Culotta series, "Essential Freight Cars," provides both information and helpful photos. For the actual data, there is no substitute for the ORER. Both can be essential in making the kinds of choices I have described.

I should also mention that I have omitted Canadian railroads CN and CP from [1] and from this discussion, even though they had fleets which would rank them numbers 3 and 4 in [1]. Why? Because most data indicate that 10% or less of Canadian freight cars moved to and from the United States, so realistically the huge CN and CP fleet numbers have to be divided by 10 to show their U.S. interchange impact, dropping them out of [1].

Beyond that, I have also made assumptions and simplifications which suit my modeling, but which may not suit yours.

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For example, as a Western modeler, I removed coal, ore and ballast cars from [1]. Modelers in other regions likely will wish to reverse that removal in thinking about these issues. Knowing the railroad you model, as well as its region and its traffic, are vital to these decisions. However, I hope the ideas of how to identify, extract and use the various pieces of information which can go into a model freight car fleet will be useful.

Summing up

Choosing whether to have signature freight cars in your model fleet is obviously a personal decision. I advocate it because these are interesting cars in their own right, and help represent the style of their owning railroads. I have deliberately mixed models made from resin kits, from styrene kits and ready-to-run cars, and brass models. All have their place, in my opinion.

But as I have discussed previously, the further choice is whether you wish to make sure you have representative cars from the largest railroads, as [1] suggests. This has been demonstrated to be a realistic and prototypical approach for many model railroading situations, but does remain a personal choice. ☒

