

Modeler's guide to **TRANSITION-ERA GONDOLAS**



Several gondolas populate East Yard on Bill Darnaby's Cleveland, Indianapolis, Cincinnati & St. Louis (Maumee Route) HO scale railroad. Gondolas add visual and operational interest to a layout. Bill Darnaby photo

Learn all about these versatile freight cars

By Tony Koester

Photos by Jim Forbes except where noted

Gondolas are the Rodney Dangerfields of a freight car fleet. They get no respect. It's not long before a shiny new gondola has dented, gouged, and bulging sides, thanks to scrap steel and other heavy, rigid loads dropped unceremoniously into them from heights that would flatten a heavy-duty pickup truck. Gondolas are also the last in line for trips through the car-repair and paint shops.

In this article I'll give you an overview of different types of gondolas and their uses from the late steam era through the steam-to-diesel transition era in the 1950s. You'll also find a list of

many readily available gondola models in N, HO, S, and O scales for that time period on page 57.

Gondola development

The first gondolas were flatcars with wood sides added so they could carry loads such as coal, gravel, sand, pipe, and any other lading that would easily fall off the deck of a flatcar. The prototype for the HO_{N3} model in **fig. 1** is a gondola that first served the Denver & Rio Grande Western Ry. as a flatcar.

The United States Railway Administration (USRA) designed a composite (steel frame with wood sides and floor) gondola, shown in **fig. 2**, as well as all-steel gondolas that stand as milestones in the transition from wood to steel freight cars. Most early designs like the model in **fig. 3** had deep fish-belly center sills. These sills disappeared with the advent of steel sides that had the dual role of containing the load and supporting the car.

In 1936, the Pennsylvania RR introduced a 52'-6" mill gondola as PRR class G27. Through 1939, the Pennsy

built a total of 4,500 G27 gondolas. Greenville and Bethlehem also made mill gondolas of a design very similar to the G27.

Sunshine Models produced an HO resin kit of the G27, available with either Dreadnaught or welded tray ends and either riveted or welded underframes and floors.

Tangent Scale Models just released a ready-to-run HO PRR class G31 gondola. Similar to previous PRR gondola classes, the G31 and its subclasses had an inside length of 52'-6" and featured welded steel construction. The Pennsy purchased 11,600 gondolas that used this body style from multiple builders.

Eastern Seaboard Models makes an N scale model of the 65'-6" PRR class G26 mill gondola, as shown in **fig. 4**. The long gondolas were noticeably narrower than other freight cars so they could maneuver through the tight confines and sharp curves of steel mills. These cars were also free of interior bracing and had drop ends.

During World War II, a shortage of steel plate led to the development of the

Additional reading

Check the online magazine index at www.ModelRailroader.com for a list of articles on modeling gondolas. You may also find the following books of interest. – T.K.

American Car & Foundry by Edward S. Kaminski (Signature Press, 1999)

Pullman-Standard Freight Cars, 1900–1960 by Edward S. Kaminski (Signature Press, 2007)

The Postwar Freight Car Fleet by Larry Kline and Ted Culotta (published by the National Model Railroad Association)

Era-appropriate editions of the *Car Builder's Cyclopeda* (published by Simmons-Boardman)

Various issues of *Railway Prototype Cyclopeda* (Edwin D. Hawkins, RP CYC Publishing Co.)

Ted Culotta's "Essential Freight Cars" series in *Railroad Model Craftsman* magazine

70-ton "war-emergency" gondola, like the model in **fig. 5** on page 54, which had fish-belly Pratt truss sides with wood planks. After the war, many railroads rebuilt the cars with steel sides.

Gondola classification

Gondolas aren't easily identified by their physical characteristics, unlike other steam- and transition-era freight cars, such as the 1937 Association of American Railroads [AAR] boxcar or the American Car & Foundry Type 21 tank car.

Pullman-Standard's PS-5 gondola series signified nothing more than a proprietary design for any gondola the company built, regardless of the car's build date, physical size, or capacity. Even the term "mill gondola" can describe a steel gondola from about 50 to 65 feet.

Gondolas are better defined by purpose, and the AAR class G categories, ranging from GA through GW, offer a



Fig. 1 High-side composite gondola. This Blackstone Models HOn3 gondola depicts a prototype that ran for decades on the Denver & Rio Grande Western. These 1000-series gondolas were rebuilt from flatcars.

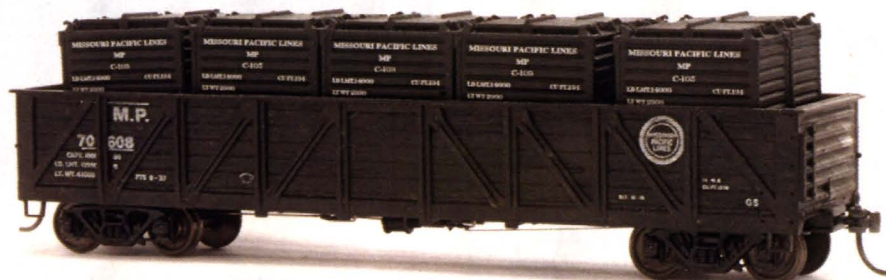


Fig. 2 USRA composite gondola. This InterMountain HO car represents a typical USRA composite gondola. The steel parts are molded plastic, but the model's wood sides and floor replicate prototype materials. The less-than-carload-lot (LCL) containers are Walther's models. Jerry Glow model, Tony Koester photo



Fig. 3 Fish-belly center sills. Modeler Jim Six modified an Ertl HO scale 42-foot gondola with a fish-belly center sill to backdate the car to model a specific Atlantic Coast Line prototype. Jim Six photo



Fig. 4 PRR G26 mill gondola. Mill gondolas, like the 65'-6" prototype for this N scale car from Eastern Seaboard Models, were noticeably narrower than other freight cars. This helped the gondolas negotiate the tight confines of steel mills.

Association of American Railroads gondola classes

The following list of Association of American Railroads gondola classes is from the Simmons-Boardman 1953 *Car Builder's Cyclopedia*. – T.K.

GA	An open-top car having fixed sides and ends and a drop bottom consisting of doors hinged crosswise to dump the lading between the rails. This type of car comes in handy when rock, gravel, or cinder ballast is being dumped.
GB	The plain-vanilla gondola. It has an open top and fixed sides with a solid bottom. The ends may be rigidly attached or may be dropped down to load long cargo such as pipe or rails. The AAR definition specifically cites the GB as "suitable for mill trade," the only class so designated.
GD	An open-top car with fixed or drop ends and a solid bottom, equipped with side doors for dumping. A typical use for such cars is coal.
GE	Fixed sides and drop ends plus drop bottoms having doors hinged crosswise to dump the load between the rails, as for track ballasting.
GH	These cars have fixed sides and drop ends, plus a drop bottom that's hinged along the center sill to deposit the load outside of the rails. The GH is commonly used to unload ballast.
GRA	A compromise between an open hopper and a gondola, with fixed sides and ends as well as one or more hoppers with drop-bottom doors that permit the load to be dumped outside of the rails.
GS	Fixed sides and ends and, like the GH, drop bottom with the doors hinged along the center sill to drop the load outside the rails.
GT	High fixed sides and ends for use with a rotary dumper.
GW	Well cars, which allow high loads to be carried lower in one or more depressions in the floor. They often have suffixes: GWS for permanent racks that accommodate special loads; GWC for cars equipped with coke racks; and GWR for cars equipped with a roof or covers to protect the load.

convenient framework to help us understand the different ways that railroads used gondolas. See "Association of American Railroads gondola classes" listed above.



Fig. 5 War-emergency gondola. Increased freight traffic and shortages of steel plate led to the development of the composite "war-emergency" gondola during World War II. This HO model is distributed by InterMountain (Tichy tooling).



Fig. 6 Steel girder loads. Gondolas were often built to handle standard lengths of structural steel. A 50-foot deck girder span fits readily into a 52-foot gondola. Jerry Glow built this Proto 2000 kit replacing grab irons with ladders. The bridge span is from a Micro-Engineering kit. Tony Koester photo



Fig. 7 General Service (GS) gondolas. Red Caboose makes this model of an AAR class GS gondola. Equipped with bottom doors, these cars carried loads as diverse as coal, crushed stone, beets, rails, pipe, and machinery.



Fig. 8 Caswell class GS gondola. This InterMountain HO model depicts one of the more than 8,000 Caswell gondolas that ran on the Atchison, Topeka & Santa Fe Ry. Caswell referred to the geared mechanism that operated the bottom doors.

Gondolas vs. hoppers

Some gondolas had drop bottoms for unloading ballast, sugar beets, and other loose commodities. The hopper car was even better suited to bottom

unloading, but the advent of the open hopper didn't reduce the popularity of the gondola for several reasons.

The main reason was the gondola's versatility. You can ship coal or crushed

rock in a gondola, but you can't ship rail or pipe in an open hopper. See "Typical gondola loads" to the right. It's no coincidence that track was bolted together from 39-foot-long rails, which could easily fit inside a 40- or 42-foot gondola. Likewise many bridges were made of 50-foot-long steel girders, which tucked neatly into a 52-foot-long gondola, as demonstrated by the HO model in **fig. 6**. Freight car authority Rick Jesionowski, who worked for an electrical contracting firm in Toledo, reports that the most common lengths of telephone poles, 35 and 45 feet, could fit in 40- or 50-foot gondolas without the need for tie-downs.

Through the 1950s, many Western railroads preferred gondolas to open hoppers. The Atchison, Topeka & Santa Fe Ry. had more gondolas than hoppers. This was due to the gondola's greater utility and the decline of coal in favor of natural gas and oil. Richard Hendrickson, the author of many books on Santa Fe freight cars, notes that the elevated bunkers needed to unload hoppers were rare in the West, and coal traffic was seasonal.

Western railroads like the Santa Fe seldom shipped coal in solid bottom gondolas. Instead, they preferred class GS gondolas with drop bottoms, such as the cars shown in **figs. 7 and 8**. Both ATSF and Southern Pacific had fleets of about 10,000 class GS gondolas. In the 1940s and '50s, Rio Grande and Union Pacific RR moved all of Utah's coal traffic in class GS gondolas. After the 1950s, new GS gondola purchases virtually ceased, but the ATSF, SP, and UP all had substantial fleets of them into the 1960s.

In the first half of the 20th century, it was cheaper for a coal yard to pay a few laborers to shovel coal out of a gondola than to build a concrete unloading pit and buy a conveyor for a hopper. Small engine terminals often employed manual labor instead of building a coal dock or buying a crane with a clamshell as in **fig. 9** on the next page. The scene in **fig. 10** shows the more labor-intensive approach. Shoveling coal out of a flat-floored gondola was much easier and safer than doing the same task on the sloped sides of a hopper.

Some eastern railroads, such as the Norfolk & Western Ry. and the Virginian Ry., shipped coal to ports in high-capacity "battleship" gondolas, such as the car in **fig. 11**. The massive gondolas rode on six-wheel trucks. The lack of floor openings wasn't a factor, since these railroads used dockside rotary dumpers. Turning either a gondola or a hopper upside down to unload it was

Typical gondola loads

Clark Propst, who models the Minneapolis & St. Louis in HO, obtained a copy of a list of gondola loads in the late 1940s through the '50s prepared by M&StL mechanical superintendent Bill Landmesser and transcribed by Gene Green. Here's a sample of gondolas by reporting marks, road number, AAR type, and lading. — T.K.

Railroad	Road number	AAR class	Lading
B&LE	36601	GB	railroad ties
B&O	253772	GB	billets
B&O	450749	GB	steel
C&NW	71655	GB	rip-rap
CGW	1163	GB	rock
D&H	13594	GB	brick
EJ&E	33976	GB	steel roofing
GN	75795	GS	road scraper blades
GN	74756	GS	seed
L&N	49448	GB	coal
MILW	70980	GB	iron
MILW	86176	GS	auto frames
M&StL	30075	GS	logs
M&StL	30085	GS	company sand
M&StL	30201	GS	scrap wheels
M&StL	30315	GS	sugar beets
M&StL	30449	GS	refuse
MP	11162	GB	pipe
MP	12133	GB	wheat
MP	12535	GB	corn
MP	14991	GB	scrap
MP	22276	GB	coke
NP	59197	GB	pig iron
NYC	726160	GB	rafters
NYC	603003	GB	rail
PRR	383003	GB	tubes
PRR	613685	GB	aluminum
PRR	613695	GB	Allison Insulation
PRR	362199	GB	roofing
PRR	361262	GB	company material
PM	18701	GB	sheet metal
SAL	96260	GB	machinery
SOU	117720	GB	lumber
UP	22528	GB	ore
URR	6864	GB	moldings
W&LE	74740	GB	flour

faster than individually unlocking and opening hopper doors, and then waiting for the hopper to empty.

Spotting features

Along with the list of some representative gondola models on page 57, the following spotting features will help you choose and detail a model to match a specific prototype.

Length: Standard gondola lengths are around 40, 50, 52, and 65 feet. The interior dimensions of some gondolas often match standard sizes of steel structural members.

Ends: Gondolas that hauled coal, gravel, beets, sand, or stone had fixed ends. Mill gondolas had drop ends. These ends could be folded inward to accommodate structural steel, pipes,



Fig. 9 Unloading cranes. Clamshell buckets on cranes were often used to unload gondolas at busy yards, such as in this scene on the Chicago & Northwestern in the mid-1940s. Chicago & Northwestern Historical Society collection

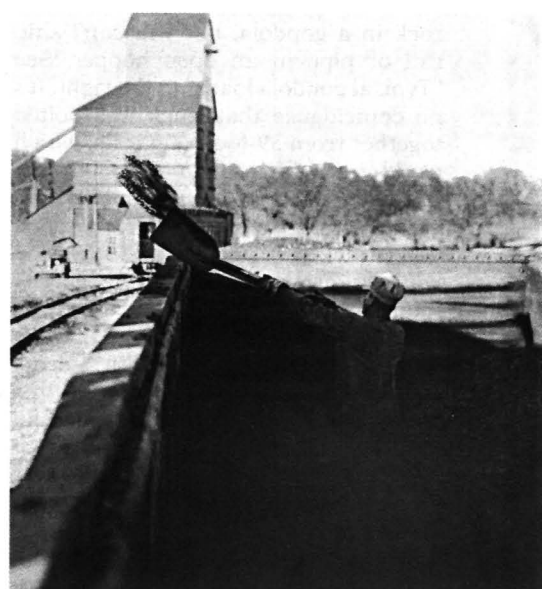


Fig. 10 Shoveling coal. An engine watchman shovels coal from a gondola into the bunker of a Santa Fe 2-6-2 at Burlingame, Kan. Small engine terminals often relied on manual labor to unload coal, rather than building a coal dock. Kenneth Goebel photo. Jared Harper collection



Fig. 11 AAR class GT "battleship" gondolas. The Norfolk & Western Ry. and the Virginian Ry. had a fleet of high-capacity "battleship" gondolas like this one at Victoria, Va., in 1950. Since the cars were unloaded with rotary dumpers, there was no need for bottom-discharge doors or hopper gates. H.W. Pontin photo. Kalmbach Publishing Co. collection

poles, or timbers that exceeded the gondola's length to be extended over an idler flat car at one or both ends.

Floor: Car shops built gondolas with wood, steel, or "nailable" steel floors. The floor could be solid, as in the case of a mill gondola, or equipped with drop-bottom unloading hatches that opened downward, as in the case of a class GS gondola.

Sides: Early steel cars, such as the USRA gondola, had fish-belly center sills that tapered to a visibly thicker cross-section between the trucks. Later gondolas had thicker steel sides to support the car, so straight center sills became the norm.

Exterior posts: One of the most obvious spotting features is the number of exterior posts along the sides. Also note whether the posts end flush with

the bottom of the sides or stop at the floor line.

Brake wheel or lever: The brake wheel or lever is usually mounted on the end of a fixed-end gondola. On drop-end gondolas, the brake wheel or lever is mounted on the side or made to fold clear of the open end.

Trucks: Within limits (say, 50 to 70 tons), the tonnage rating of a freight car can be increased simply by increasing the size of the weight-bearing journal surfaces without changing the basic style of truck sideframe. However, it's worth taking a careful look at the appearance of the prototype sideframe and trying to find a good model of it. (Note that looking for a model of a "Bettendorf truck" isn't sufficiently specific, as this company, based in Bettendorf, Iowa, made several types of

freight and passenger car trucks. Author Richard Hendrickson also points out that although Bettendorf first developed trucks with journal boxes cast integral to the sideframe, many other freight-car builders quickly adopted this design feature.)

Adding texture

More than any other type of freight car, the gondola prominently shows its battle scars. A pristine, new gondola won't stay that way for long. Gondola models are prime candidates for heavy-duty weathering.

Gondola loads are usually visible and eye-catching, which makes it easy for your operating crews to spot loaded cars at the correct industries.

Don't disregard the lowly gondola on your transition-era layout. These

Gondola models

The following list is of some readily available gondola models in N, HO, S, and O scales. The list includes kits and ready-to-run models. – T.K

Model manufacturer	Description	Inside length	Scale	Model manufacturer	Description	Inside length	Scale
Accurail	AAR steel ca. 1941	41'-6"	HO	Micro-Trains	Composite fish-belly sides, drop ends	50'-0"	N
Arnold Rivarossi	Steel "type E"	40'-0"	N	Micro-Trains	Composite straight sides, drop ends	50'-0"	N
Athearn	Flat or peaked ends	40'-0"	HO	Model Die Casting (Athearn)	C&O 36000-series with peaked ends	40'-0"	HO
Athearn	With or without cover	50'-0"	HO	Model Power	Steel	50'-0"	N
Athearn	Mill	52'-0"	HO	Model Power	Steel	40'-0"	HO
Athearn	Mill	65'-0"	HO	P-B-L	High-side gondola	32'-0"	Sn3
Atlas	Steel	42'-0"	N	P-B-L	Drop bottom	32'-0"	Sn3
Bachmann	Steel	40'-0"	HO	Red Ball (Wabash Valley)	Mill	65'-0"	HO
Bachmann	Steel	40'-0"	N	Red Caboose	USRA composite drop-bottom	40'-0"	N
Bachmann	Wood	32'-0"	On ¹ / ₂	Red Caboose	General Service drop-bottom	41'-0"	HO
Blackstone	D&RGW wood	32'-0"	HO _{N3}	San Juan Car Co.	Wood for pipe loading	30'-10"	On2-1/2 and On3
Bowser	General service	40'-0"	HO	Sunshine	L&N and SOU drop-bottom	40'-0"	HO
Bowser	PRR GS	40'-0"	HO	Sunshine Models	Various limited-run resin kits		HO
Dimi Trains	Sugar beet	40'-0"	N	Tangent	PRR G31 mill	52'-6"	HO
Dimi Trains	Drop-bottom	40'-0"	N	Tichy	ACL flat with wood sides	40'-0"	HO
Durango Press	D&RGW wood high-side	32'-0"	HO _{N3}	Tichy	War-emergency composite	52'-6"	HO
Eastern Seaboard Models	PRR G26 mill	65'-0"	N	Trainworx	Drop-bottom	40'-0"	N
E&B Valley	PRR G26 mill	65'-0"	HO	Ulrich cast metal (Walthers)	War-emergency composite	52'-6"	HO
Ertl	Low-side gondola	42'-0"	HO	Walthers	Composite	40'-0"	N
Funaro and Camerlengo	NYC 9-panel	40'-0"	S	Walthers	USRA steel	46'-0"	HO
Funaro and Camerlengo	USRA NYC rebuild	40'-0"	O	Proto 1000 from Walthers	USRA 50-ton drop-bottom composite	40'-0"	HO
InterMountain	USRA NYC rebuild	40'-0"	HO	Walthers	Mill	65'-0"	HO
InterMountain	USRA composite drop-bottom	40'-0"	N and HO	Proto 2000 from Walthers	Greenville-design mill	52'-6"	HO
InterMountain	Caswell composite	41'-0"	HO	Westerfield	Various resin kits ranging from 36-ft. wood coal gondolas to N&W "battleship" gondolas		HO
InterMountain	General service	46'-0"	N				
InterMountain	Wood-chip	41'-6"	N				
InterMountain	USRA composite drop-bottom	41'-6"	O				
Mantua	Steel	40'-0"	HO				
Micro-Trains	Composite	33'-0"	N				
Micro-Trains	Steel fish-belly or straight sides, drop ends	50'-0"	N				

versatile cars are visually interesting and can be used to model a variety of operations. Gondolas add "texture" to your trains and railroad. **MR**

I'd like to thank freight-car authorities Ray Breyer, Richard Hendrickson, Frank Hodina, Andy Sperandio, and Tony Thompson for their help. Any misinterpretations of data are my own.

Read more articles on transition-era freight cars

I've written two previous articles about specific types of transition-era freight cars, which you may find useful. Both articles describe common spotting features and include a list of representative scale models. "Modeler's guide to steel boxcars" and "Modeler's guide to transition-era tank cars" appeared in the May 2006 and December 2008 issues of *Model Railroader*. – T.K.