Western Pacific 40’ 1916 Pullman Boxcars and Derivatives

KIT INSTRUCTIONS

REV 5

PROTOTYPE HISTORY

Pullman Library

WP 40’ Single-Sheath Boxcar (1916-1948)

The Western Pacific Railway began freight operations in 1909 using leased equipment from the D&RG. With no online customers and the destruction of the Gould railroad empire in 1915 by Wall Street bankers, it was reorganized in June of 1916 as the Western Pacific Railroad. With a fresh infusion of cash, the WP placed its first boxcar order, 1000 single sheathed boxcars from ‘The Pullman Car Company’ in Pullman, Ill as Lot #5267. The wood sided cars were built with steel underframes, steel superstructure and six vertical posts per side, three on each side of the side door with Howe truss type diagonal posts. The cars were “40 feet” (40' - 6" inside length) with a single metal reinforced 6’ wide 2 ½” vertical T&G wood sheathed side door and a wide but short lumber door on the B end. They were delivered with a Pullman designed sheet metal roof (3/32" thick) that had sections overlapped and riveted to each carline and covered with black car cement. The wood running boards were also a Pullman design with distinctive metal support saddles mounted towards the edges, leaving the area under the center of the running boards open. The latitudinal walks were also wood and were supported by metal straps. The cars were delivered with 5'-6" wheelbase arch bar trucks and KC brakes. As delivered, the cars were numbered 15001-16000. These sturdy, but soon undersized cars (80000# CAPY and only 7’ -11” IH) became the basis for many conversions to other uses throughout their careers.

In 1936, WP started converting many of the original boxcars into Maintenance of Way (MoW) cars and continued to the retirement of the final car, with at least 168 accounted for conversions. Trucks and brakes usually remained in the configuration of the original car, so varied over time. Most often they were repainted yellow/orange when rebuilt into bunkhouses, boom cars, tool cars, fuel service cars and the like, or left in the original color scheme and just the road number painted out. Many of these cars were still in MoW service until the end of the WP in 1984 and the merger with the UP.

Starting in 1937, WP began converting these boxcars into cabooses. The first 38 conversions had cupolas. In 1942, another 63 being were converted, but with bay windows built into the sides. When the project stopped in 1945, 99 boxcars had been converted to cabooses.

By the late 1930's, many of the nonconverted cars were beginning to be scrapped or stored owing to their age and weight/height limitations and the archbar trucks that would soon limit them from interchange in July 1940.

By 1940, the remaining cars of the original 1000 that had not been scrapped or converted still had their 1920's paint scheme, archbar trucks and KC brakes and could be found parked throughout the system, with only 47 still shown as active but restricted to "Online Only". Finally in 1947, 35 of the remaining cars were converted to company Stores service and in 1948 the original 15001-16000 series was no longer listed.

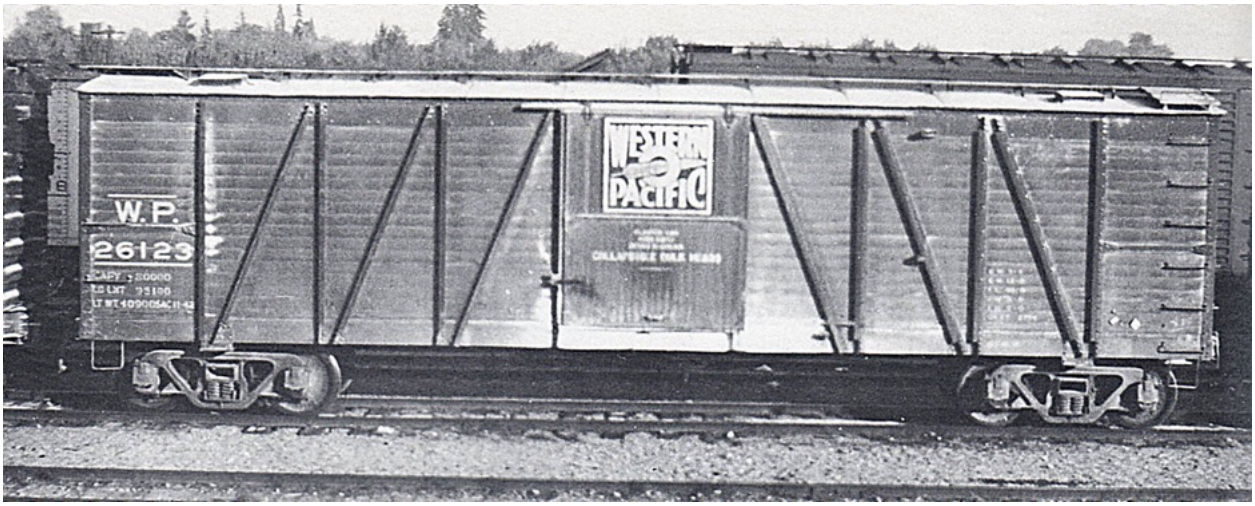
WP 40' Stockcars (1927-1965)

Photographer unknown, Collection of Ted Culottta

In 1927-28, WP converted 200 of the 15001-16000 boxcars into stock cars in the 75801-76000 series. These cars retained their KC brakes, archbar trucks, roofs and running board supports unless they were damaged. B-end lumber doors were swapped out with larger barred drover doors. These cars had wood roadname and number boards. In 1931, work started on converting boxcars into another series of similar stock cars, series 76001-76500. 21 cars were converted in 1931, and 11 more in 1932, for a total of 32 cars. Work apparently was stopped at this point due to the Depression.

In 1936, conversion work was restarted, with an additional 200 boxcars converted. These later cars were converted with AB brakes and Andrews trucks, new board roofs and sheetmetal roadname and number boards. This gave a total of 232 stock cars in the 76001-76500 series. The WP may have had plans to convert more of the boxcars, but changed their minds by 1939, when the car series was listed in the ORER as only 76001-76232. Over time, many of the earliest converted cars still in good shape were converted to Andrews trucks and AB brakes. The combined series, 75801-76232, lasted until 1965 with 35 cars still listed. In 1966, no stock cars were listed.

Gypsum or Plaster Cars (1937-1984)



Norman Holmes photo

In 1937, 100 of the boxcars were converted into plaster/gypsum service. These cars were renumbered into the 26001-26100 series. In 1942, 25 additional cars were added, updating the series to 26001-26125. They received AB brakes, Andrews trucks and new paint and updated lettering. The cars were used in captive service to ship bulk gypsum from the Empire Mine in Gerlach, Nevada to wallboard plants in Oakland, San Francisco and Union City, California and to construction material manufacturing plants (plaster & lath wall finishes) in Oakland and San Francisco for repackaging into plaster products. Bulk gypsum was also used as an agricultural soil amendment for clay soils throughout California and Nevada, where it was transloaded from sidings into trucks and wagons. The cars were used in dedicated service and were placarded or stencilled with “PLASTER CAR WHEN EMPTY RETURN TO GERLACH”.

Many of the plaster cars were equipped with roof hatches and collapsable interior bulkheads to aid in shipping bulk dried gypsum. By 1948, 20 cars had four hatches with two at each end of the car on both sides of the running board and 15 cars had 2 hatches, one at each end of the car, one on the left side and one on the right side, next to the lateral walkway. Some had interior half-height collapsible bulkheads installed on both sides of the side door opening and were stenciled “COLLAPSIBLE BULKHEADS” on the doors.

The cars with four hatches were numbered 26002, 26003, 26007, 26027, 26035, 26063, 26074, 26076, 26091, 26092, 26101, 26103, 26104, 26107, 26110, 26111, 26112, 26120, 26123, 26124.

The cars with two hatches were numbered 26004, 26005, 26006, 26010, 26014, 26041, 26044, 26045, 26055, 26056, 26059, 26062, 26068, 26079, 26098. These cars served until 1952, when the total series was down to 117, and 4-hatch car 20076 was dropped from the list.

By 1953, 86 plaster cars remained in service and three more of each hatch type had been dropped. The four hatch cars were now 26002, 26003, 26027, 26035, 26063, 26074, 26091, 26101, 26103, 26104, 26107, 26111, 26112, 26120, 26123, 26124. The two hatch cars were now 26004, 26005, 26010, 26041, 26045, 26055, 26056, 26059, 26062, 26068, 26079, 26098.

The plaster cars totals were down to 48 by 1955, with only 8 hatch cars remaining in service. The 4 hatch cars were numbers 26003, 26063, 26074, 26107, 26111 and 26112. The 2 hatch cars were 26010 and 26059.

In 1956, the total was down to 31 active cars, with 4 hatch cars 26074 & 26111 left and 2 hatch car 26059 remaining. The total active cars continued to decrease, with 18 left by 1961, consolidated down to numbers 26019-26125. The next year the cars were down to 14 and listed as 26025-26125. They kept this number series until 1972, with 6 total left listed, of which 2 hatch cars, 26111 (4), 26059 (2), had exceptionally long lives, remaining in service until 1973, when the listing finally showed 0 cars left. Decommissioned cars were scrapped but many ended up used as trash and garbage cars.

Photos exist of some of these 26000 series cars still in MoW service in the 1970's in their 1937/1942 paint, with at least a few lasting up to the UP merger of 1984.

Stores Material cars (1947-1958)

Photographer unknown, Collection of Garth Goff

In 1947 the 35 remaining original boxcars were converted to non-revenue company stores material service. The cars were not changed except to add 5 rung ladders to the left of the side doors on both sides in 2 styles. They were renumbered into series 8051-8085 with many still maintained to revenue service standards and some were used in normal WP train service, but only to haul company materials to outlying stations, mainly from the large Stores warehouse in Sacramento. Others were used as trash cars staged at various system locations. The cars were all off the ORER by 1958, having been replaced with early steel boxcars placed into similar Stores service.

++

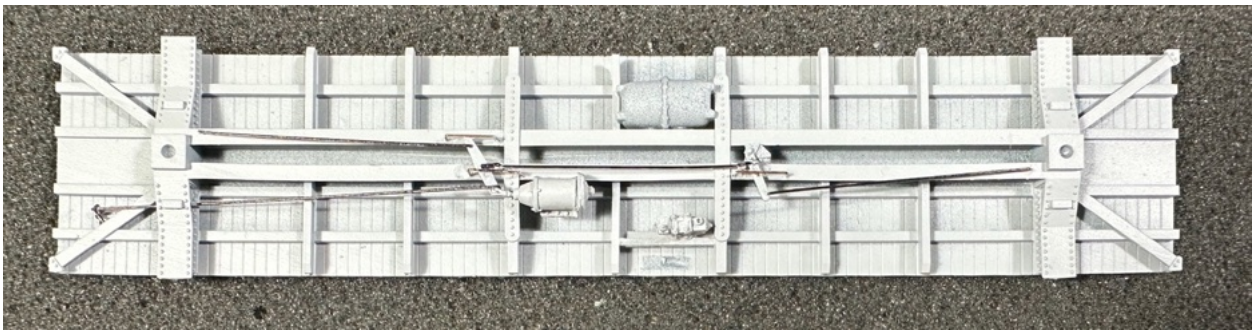
I would like to thank Fred Jansz for initiating this project years ago and Bill Kennedy for the decal designs and Todd Jones (Lines West) for the 3D printing and kits. The CAD designs and subsequent research is by me, RJ Dial.

ASSEMBLY

- ☐ Be careful handling and assembling the body so as to not break off any of the details such as the running boards, door stops and brake staff guide. Working with the car laying on a piece of soft packing foam is beneficial. If you do destroy a part, send an email to radiodial@comcast.net and I'll send one to you for the cost of shipping.
- ☐ Attach desired weights to the top of the underframe using silicone or 2-part epoxy. 5/8" nuts or tire weights work well. Sand the edges of the underframe and the inside body opening to get a smooth fit.
- ☐ Insert the included threaded inserts into the holes in the ears on the inside ends of the body. The lip on the bushing should be facing down on the body and up on the underframe. The holes are countersunk to allow this. They should just friction fit and will expand with the mounting screw.
- ☐ Coupler boxes. Designed for scale draft gear coupler boxes by Smoky Mountain (for Kadee) and Accurail (for Accumate & Sergent) couplers or can use the supplied coupler draft gear for Kadee type 158 couplers. If you do, use the supplied 2-56 screws to attach draft gear and underframe to body, threading into the brass threaded inserts. If you prefer to use other draftgear, attach the underframe to the body with the supplied 2-56 screws and attach your draft gear afterwards.
- ☐ Sill steps. Drill starts are provided on the underside of the sill. #74 drill and suggest using a standard desk staple. Bend with small flat nosed pliers to correct width and cut to length.
- ☐ Grabs-Sides. All protrude under the grab rivets. (Stockcar: the righthand 2nd from the bottom grab goes on top of the rivets) Use #77 drill to open up the predrilled 0.010" holes and install straight 18" Tichy grabs or bend your own from .010" wire. (Tip: for side grabs, first shorten the leg that goes into the corners). Spacing from the grab to the side is about .025". The RH bottom grab is "half-drop" style. Bend from .010" wire or bend one leg up on a 22" Tichy straight grab. (Original Boxcar: the top grab on the LH side wasn't added until the car was converted. Remove the top grab rivets)
- ☐ Grabs-Ends. Bottom end sill grabs are typical undermount straight grabs. The upper end grabs are a little more complicated. This non-standard grab width needs to be fabricated using 0.010" wire bent to the correct width. The outside corner post holes are below the rivets, the inboard legs on the Z-angles are even with and next to the rivets. Verify the holes are open with a #77 drill. Same as with the side grabs, suggest cutting the legs short that go into the outside corners. (Stockcar: the Drover Door grab on the top surface of the Z-angles is installed in the same manner. This can be duplicated by starting your drill bit at an angle in the corner seam of the Z-angle and then as you drill, straighten the drill and bit and the resulting hole will fall just outboard of the rivet on the Z-angle. The leg for this grab will end up next to the Z-angle wall but is hidden by the flat surface of the Z-angle itself. Bend this long grab using 0.010" wire).
- ☐ Roof Corner grabs. Drillstarts for #77 holes are provided next to the bolt heads on the roof corners (wood roof) and the latitudinal roofwalks (metal roof). Bend a piece of 0.010 or 0.012" wire in the shape of an L and add downward legs on the ends. Slip an eyebolt on for the middle leg and insert into the 3 holes and CA in place, spaced about 0.060" from the surface.
- ☐ Doors. (Stockcar: cut the openings along the perimeter using an Exacto knife and remove filler) On the Boxcars you may optionally remove this filler if you plan to model with doors open. Glue the doors into the desired position.
- ☐ (Stockcar) Door rails. Using a #77 bit, drill a hole in the side sill just below the RH door jamb and another to the right of the next Z-Angle. Bend two legs in a piece of 0.010" wire to fit between the

holes. Install the chain to the bottom of the door and the rail guide. This is best accomplished by connecting a short piece of fine link chain to the eye fitting on the bottom of the door and then inserting the other end of the chain onto the rail and then glueing the rail in place. The chain can be installed to the eye fitting by simply drilling it and installing a small stub of 0.010" bent brass wire, hooking the chain on the resulting hook. See photos.

Underframe



AB Layout showing the brake rod and lever locations (released position). KC brakes are similar with the cylinder portion in the same location as the AB brake cylinder. Train pipe and small interconnect pipes not shown for clarity

* Indicates optional details

- ☐ Air hoses. Drill pilot hole and mount on the bottom of the end sill. Recommend Hi-Tech rubber style with valve cock to avoid breakage during usage, but any bracket style with valve will do.
- ☐ Brake Hangers. Drill starts are provided for the 3 brake lever hangers on the bottom of the center sills. Use 22" Tichy straight grabs or bend from 0.010 or .012" wire. Space ~0.06" from the bottom of the sill.
- ☐ (KC Brakes only). Install Tichy KC Brake cylinder/reservoir in the cylinder location as shown in the photos. The cylinder is shown in the retracted position. Whichever position you chose, be sure that the clevis of the piston will align with the hangers and lever.
- ☐ *Brake Levers. Glue the included forward (B-end) lever and aft (A-end) levers in place as shown. If you plan on adding brake lever linkage, read the following 2 steps first in case you need to drill holes first. Note that the B-end lever non-clevis tip just rides on the brake hanger. The A-end lever is fixed to the pivot block on the underframe.
- ☐ *Brake lever linkage. Drill #77 holes the brake levers. Note the locations in the photos, the Pullman installation is non-standard. Bend a small "L" on both ends of 0.012" wire and CA one end to the hole in the lever with the other end to a hole drilled in the center sill near the bolster. Snip the extra wire length protruding past the brake lever. Alternatively, you can use Tichy turnbuckles to form a clevis on the end of the wire that attached to the levers.
- ☐ *Center brake lever connector rod. Attach a short length of 0.012" wire between the forward (B-end) and aft (A-end) levers. Note that it is attached to the aft (A-end) lever between the fixed end pivot and the hanger, which his unique to the Pullman design.
- ☐ *Hand brake linkage. Make a J-hook in the end of 0.012" wire and crimp on a short piece of small link chain. Insert other end of wire from the sill end into the hole provided in the bolster. Attach to the B-end brake lever near the brake cylinder clevis with the chain end in line with the end sill.

Alternatively, you can attach it to the lever with a Tichy turnbuckle shortened into a clevis. The chain will be secured by the shaft of the handbrake in a later step.

- ☐ *Air release handles/linkage. KC Brakes: Drill #77 holes below the door opening in the side sills inline with the reservoir. Routing is between the top of the air reservoir and the floor, through the centersills and through the other side sill. Bend both ends to form a handle 1/16" long after they protrude from the side sills. Optionally to drilling the centersills, you can terminate the wire at the centersills and glue in place.
  AB brakes: Drill a #77 hole below the door opening in the side sill opposite of the cylinder only. Feed a piece of 0.008" wire from that hole through the centersills and then bend the rod back towards the AB controller and attached to the poppet valve on the bottom of the controller. Bend both ends to form a handle 1/16" long. Optionally to drilling the centersills, you can terminate the wire at the centersills and glue in place
- ☐ *Uncoupling levers. These were straight top pin lifters. Easiest way to make is to drill #77 holes in the top of the end sills above the outboard leg of the LH end sill grab and another at the centerline of the end sill and CA in place 2 small etched eye bolts. Bend the end of a small piece of 0.008" wire to form a short 3/32" handle and then insert through the two eyebolts. Bend at the centerline and cut, leaving about a 3/32" leg.
- ☐ Handbrake/Brakewheel. Drill a #76 hole through the center of the top gear and pawl mechanism and the end sill, opening the pilot hole. Install a brake shaft winder stirrup below the end sill (a sill step or staple bent into a U works). It is easiest to install this by drilling holes in the bottom of the end sill and inserting the legs of the stirrup and glue. Install a brakewheel shaft (a length of 0.015" wire) from the top casting down through the end sill and onto the rung of the saddle. You can optionally insert the shaft through the end eye of the chain from the previously installed underframe handbrake linkage. Cut the shaft 1 scale foot above the running board and glue on the brakewheel.
- ☐ Trucks. The Stockcar 75800 series were initially Arch Bar style. Tahoe Model Works TMW-103/203 are a good choice. The later 76000 series and after WW2, all the surviving 75800 series were equipped with Andrews trucks utilizing the original journals. Tichy (3012/3016), Kadee (573) and Walthers (2003) all make appropriate trucks. The as-built Boxcars were also Arch Bar, with all of the conversions receiving Andrews trucks. Add a drop of Canopy glue or acrylic paint to the threads of the truck mounting screws to keep the screws from backing out over time.

PAINTING & LETTERING

The original 1916 paint scheme had the roof, trucks and underframe painted black, while the sides, ends and roof running boards were Freight Car Red with WESTERN PACIFIC spelled out on 2 lines to the left of the door and a small circle & feather herald in the upper corner to the right of the door between the posts. Pretty much any darker freight car red will do. This lettering scheme lasted until the cars were converted or scrapped, with the only change being that eventually after 1920 the ARA reporting mark/road number changes were introduced and the roadname was changed to a single line to make room, and then again after 1927 when ARA capacity and dimensional data requirements were introduced. Evidence indicates that cars that were not used in interchange service after that date may have not been relettered other than a "FOR USE ON HOME RAILS ONLY" stencil applied until conversion or retirement. This post 1927 ARA lettering can be duplicated with our Transitional Lettering decals, and the 1920-1926 interim format with a combination of the As-Built and Transitional Lettering decals.

[Post 1927 ARA lettering, but lettered for online use only as the 1940 archbar deadline loomed, hence the LD LMT star and door stencil]

It is also possible that some of the remaining original cars still in-service by the late 1930's and prior to the final Stores Material conversion in 1947 received the newer paint scheme with the large square WP herald ("medallion") on the upper half of the door like the Plaster cars if they had their archbar trucks updated to Andrews. There just aren't any photos to prove it. WP cars usually retained black underframes and trucks and their black car cement roofs in this timeframe. If you want to model this car, you can use the Plaster car decals and rearrange the road numbers to the 15000-16000 series.

Cars converted to Stock Cars were repainted Oxide Brown (suggest TCP-83) with black underframes. Those retaining their original metal roof were still coated with black car cement. As the cars in the later 76001-76232 series had larger 1-piece sheetmetal road number plate, stripes were applied at the top and bottom, whereas the earlier 75801-76000 series with their wood 2-piece road number boards did not.

The cars converted to Maintenance of Way service that were not repainted MoW yellow likely did not have their lettering changed other than the addition of stencils denoting specific car usage.

Cars converted to Plaster service were repainted and relettered into the 26001-26125 series with the large square WP Feather River medallion painted on the upper half of the door and Bulkhead and Plaster usage stencilled on the lower half as previously noted. Underframes and trucks appear to be black with black car cement roofs. Body is WP Freight Car Red, such as TruColor TCP-204.

Cars rebuilt into Stores Material cars were renumbered into the 8051-8085 series and repainted (TCP-204) and updated to the large door herald with black underframes and roofs. Stores usage stencilling was applied to lower half of the door. At least some of the cars were repainted again in 1956 as seen in photos. In this late timeframe however, cars were probably being painted red all over. (TCP-204)

Painting Instructions (Generic)

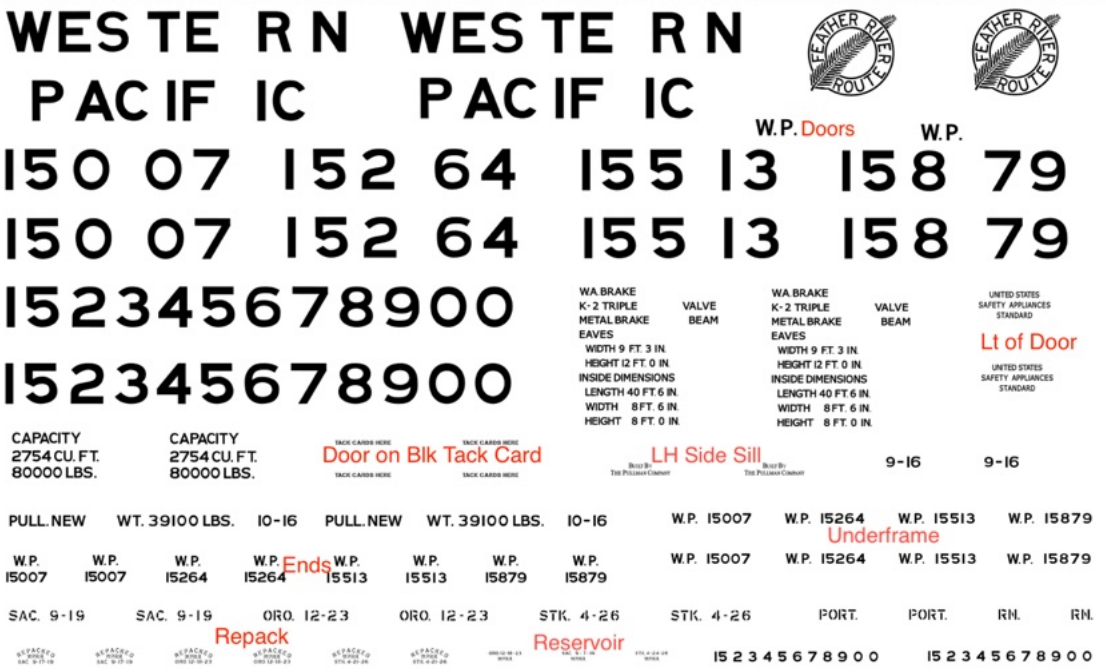
- ☐ Gently wash with warm soapy water with a soft brush and rinse and pat dry and allow to fully dry.

- ☐ Prime. Gray Tamiya Fine Surface or Mr Surfacer spray cans are good choices.
- ☐ Paint. Airbrush appropriate colors per above.
- ☐ (optional) Apply a black thin wash. Artist oil thinned with Gamsol works well and will not attack the other paints.
- ☐ Apply a light coat of gloss finish to prep for the decals.
- ☐ Decal. Cut and apply decals per the photos. The underframe road numbers go on the LH end of the centersill when facing the sides. Use 'decal setting solution' to hold decal in place, and then after drying apply a coat of 'decal softening solution'. Do not brush the decal, just dab on the solution. Once dried, apply coat of gloss finish to make the decal film edges disappear.
- ☐ Topcoat. Apply a few light coats of dull (matte) finish.
- ☐ (optional) Weathering. The only washing these cars received was from the rain with stockcars getting an occasion hosing down. If modelling time periods long after conversion or newly built, weathering should be towards the heavy side with fading and missing. Cars in service will have more black from steam engine soot and parked or stored cars will be faded and the lettering faint. Both of these can be done with PanPastels. Black, especially on the roof and streaks down the side. Fading can be accomplished using colors similar to the body color. Don't forget some swipes of tan or brown along the side sills to represent splash from the wheels.
- ☐ Add some chalkmarks with a white pencil and route cards on the doors or sides, and you will have a contest winning model!

Stockcar Decals

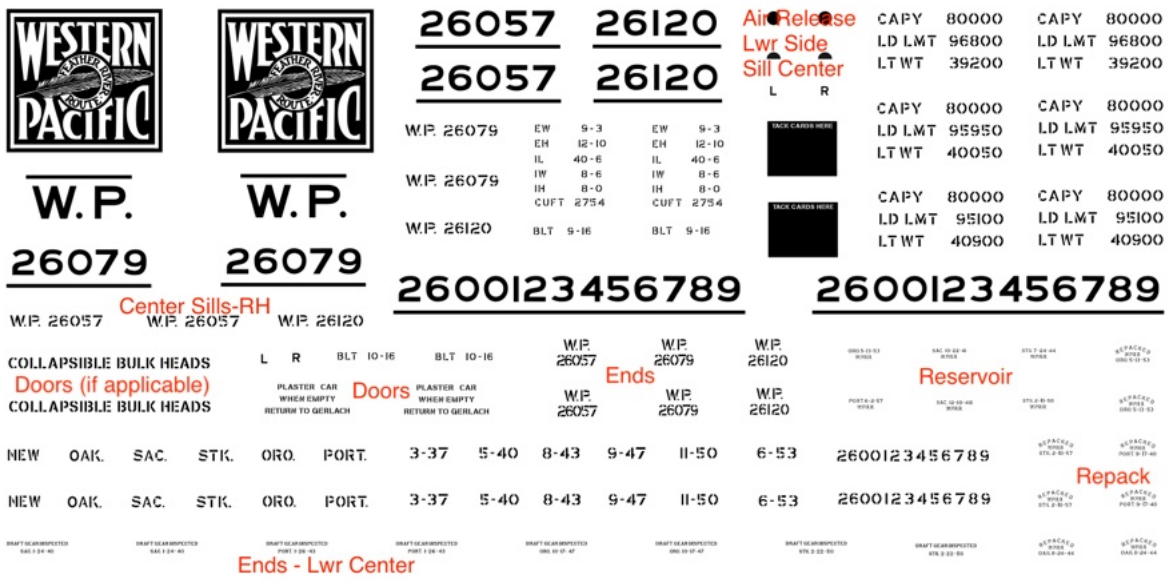
Boxcar Decals:

As Delivered

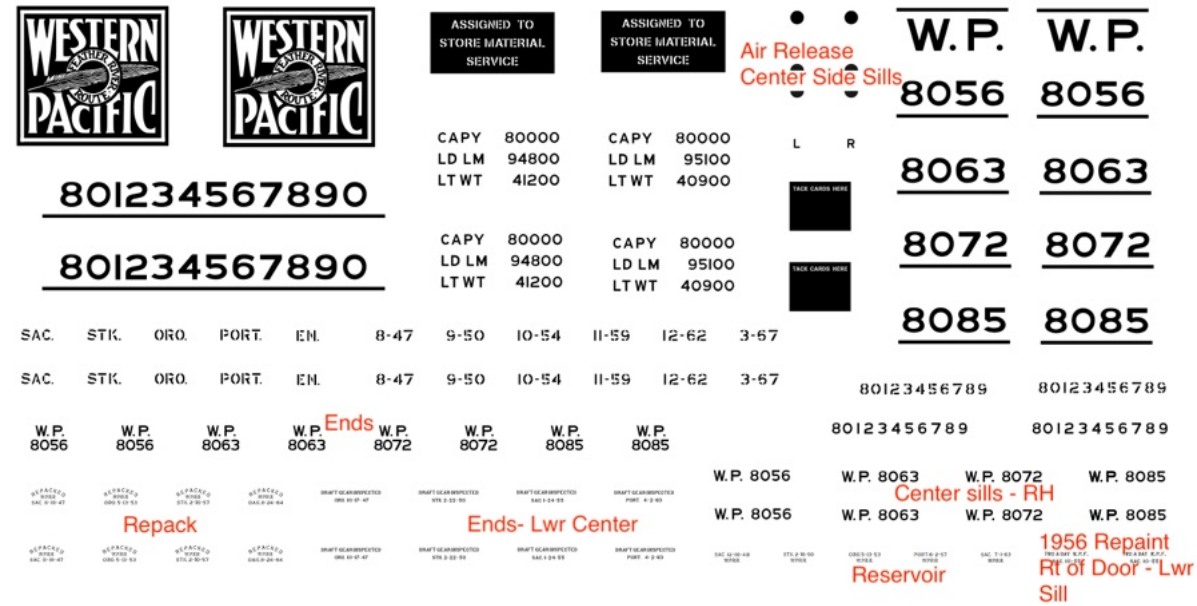


Transitional Post 1927 ARA Lettering

Plaster Cars and potential repainted Original cars:



Stores Material cars:



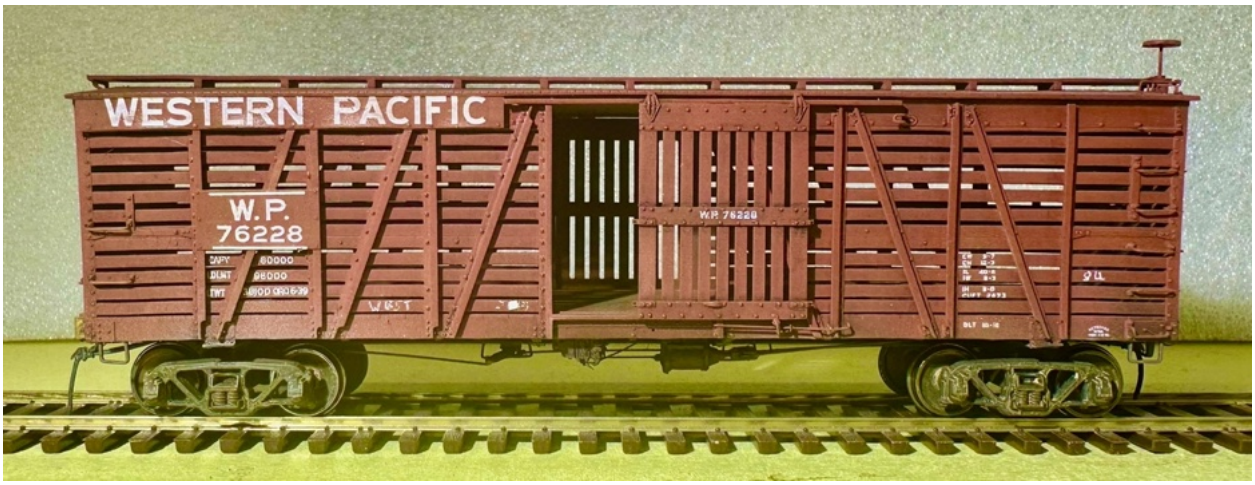
PHOTOS

2-hatch gypsum car. Some cars did not have hatches or the Collapsable Bulkheads lettering. See Prototype Details.

Weathering done with simple PanPastels.

Stores (Company Material) car. 2 styles of ladders are provided. Note no dimensional data.

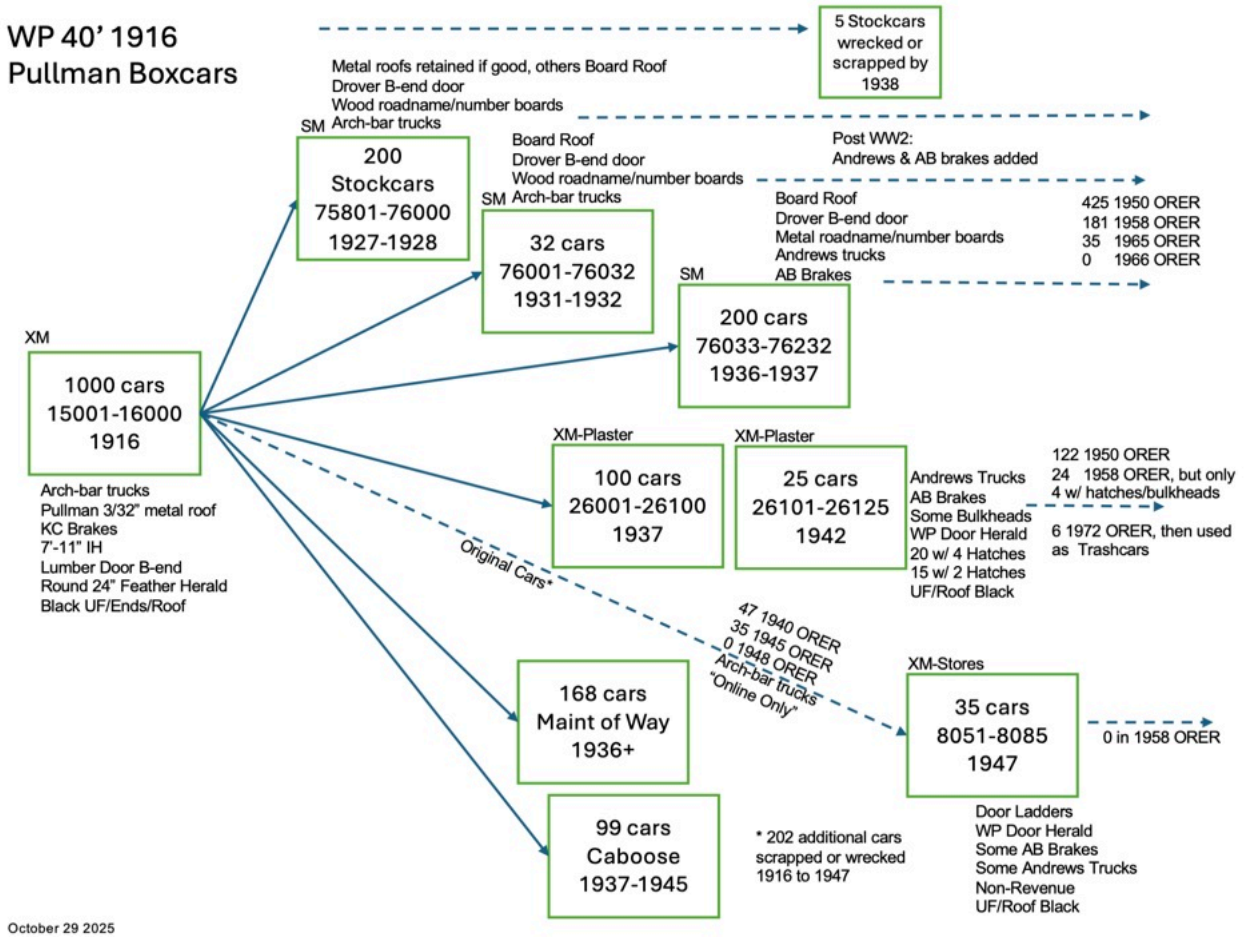
Early stockcar version with wood roof and roadname/number boards.



Later stockcar with metal roadname/number boards. Note that the 2 stockcars were both painted Oxide Brown, but with different lighting.

Stockcar door rail detail.

typical end detail



8076 with new 1956 paint job (note stencil on lower sill)