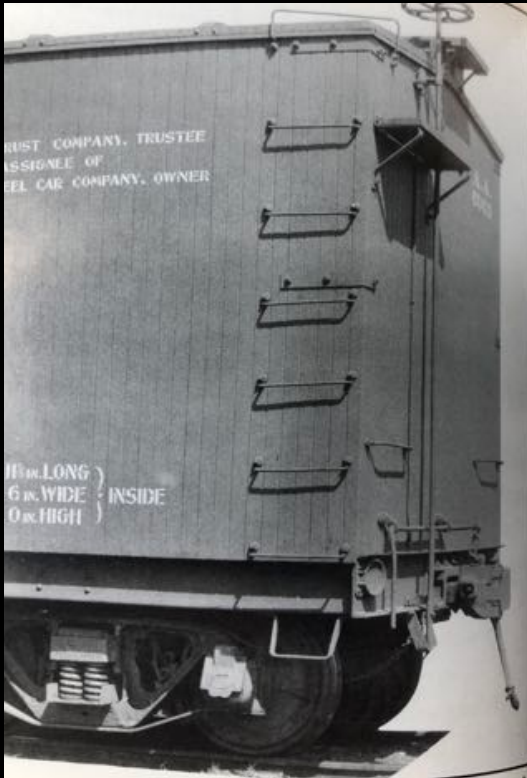


Prototype Boxcar Car Ladders of the Steam Era & Constructing Yarmouth Model Works Etched Ladders

By Ryan Mendell & Video by Pierre Oliver

- Prototype Ladders of the Steam Era
- Available ladders in HO Scale as Detail offerings
- Constructing YMMW Etched Ladders
- Installing Etched Ladders to Boxcars
- Installing grab iron ladders
- Detailing Prototypical Ladder Mounting
- Questions for Pierre or Ryan

Prototype Boxcar Ladder Examples



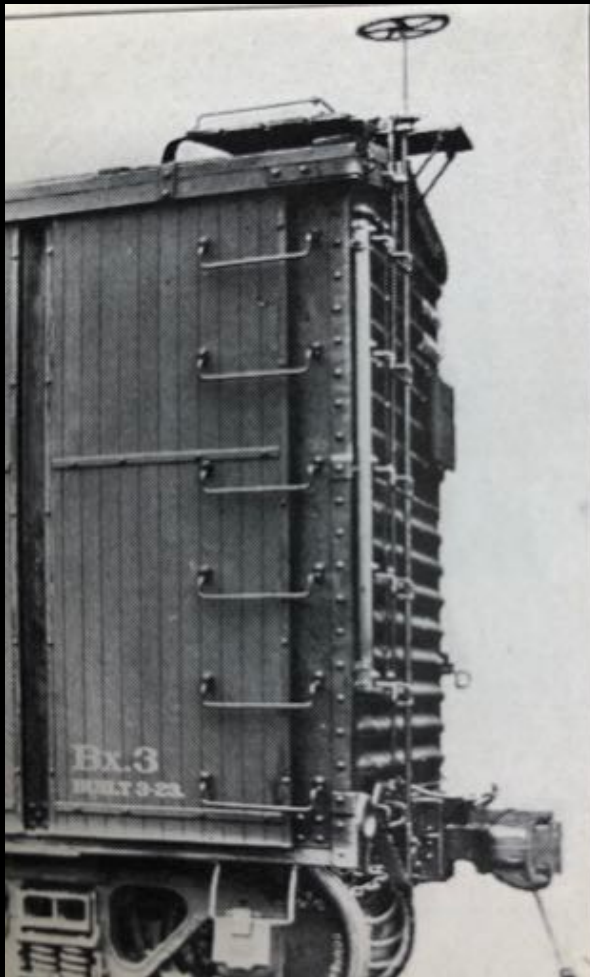
Grab Irons only on side of car



End Ladder with Wood Styles



Style on left side of side grab irons



Grabs straddle vertical rib



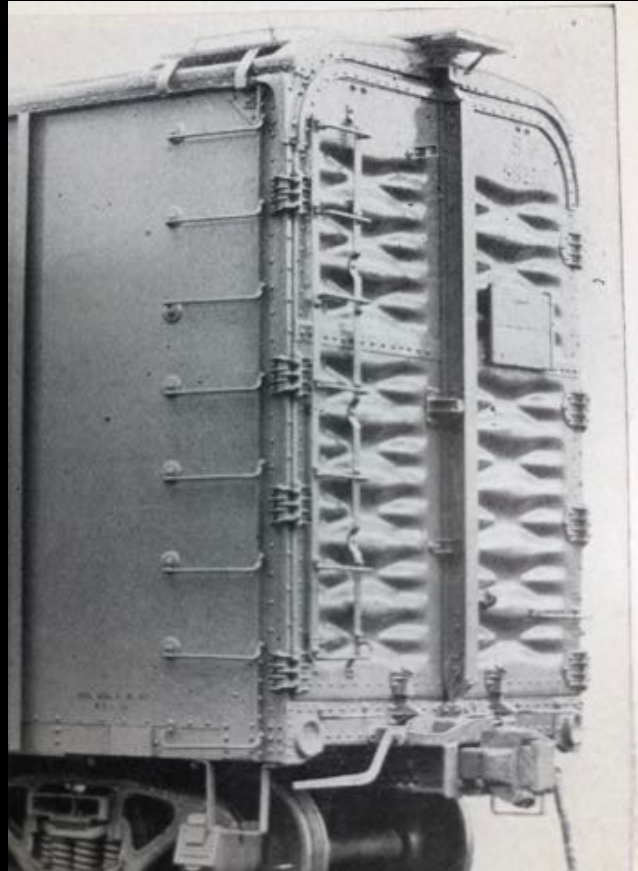
Grabs on side, grabs on angle and flat bar



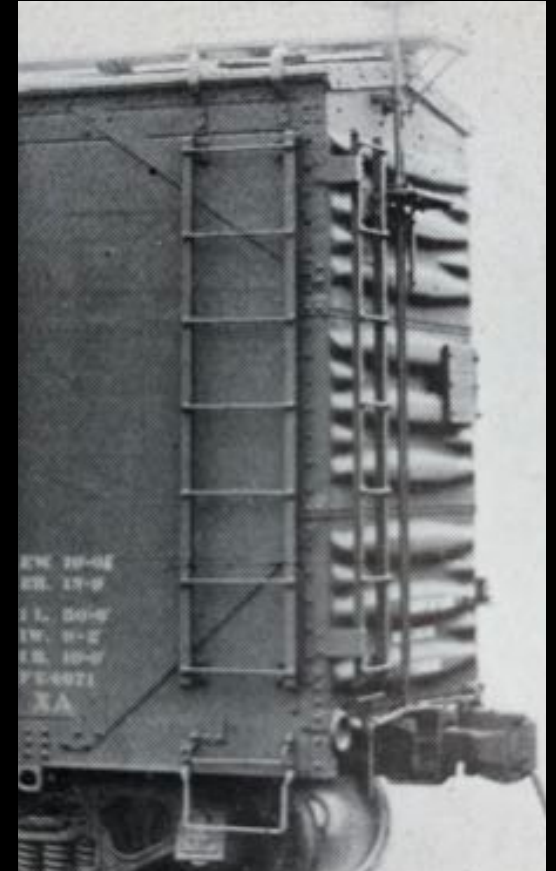
Grabs on end and flat bar



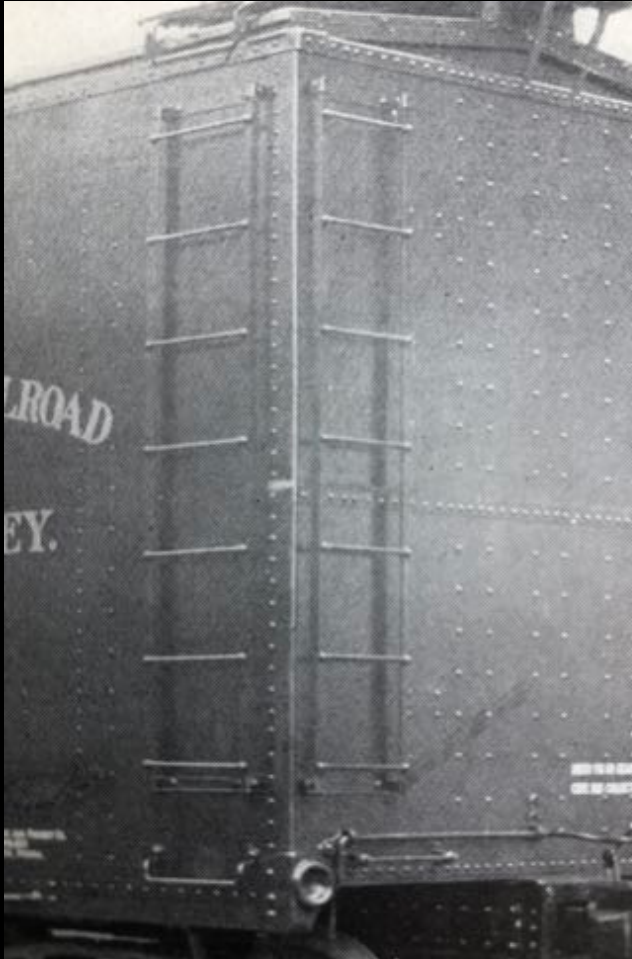
Attached Sill Step



Side reinforcement dimple



Ladder plus grab iron for bottom rung



Horizontal Mounting Straps plus separate grab



Lower grab is angled downward



X29 mounting brackets on inside of styles



Combo 'Style' and sill step bracket



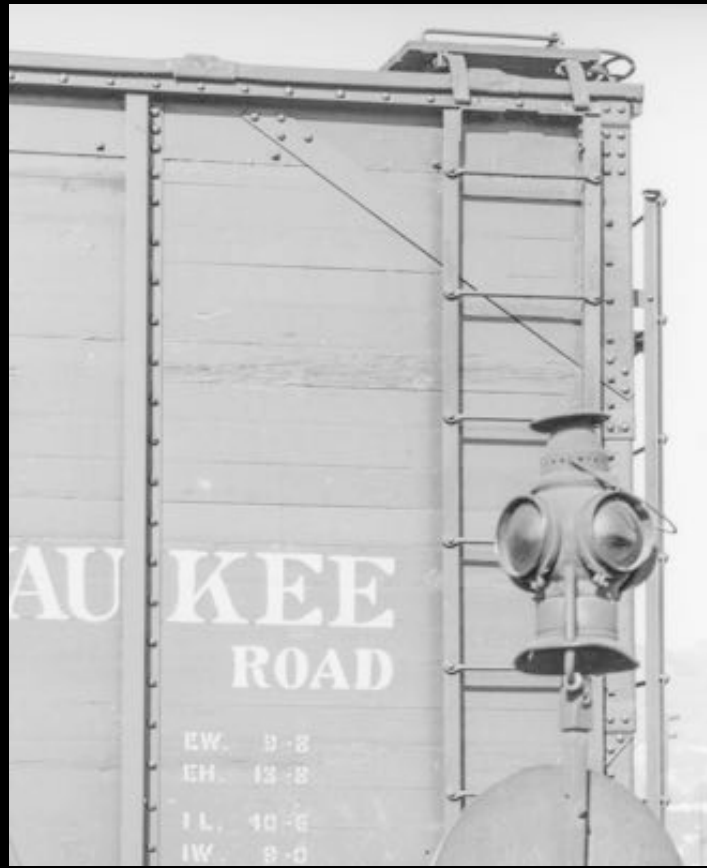
Right side of end rungs riveted to end brace



Cast mounting brackets



Two rung left side



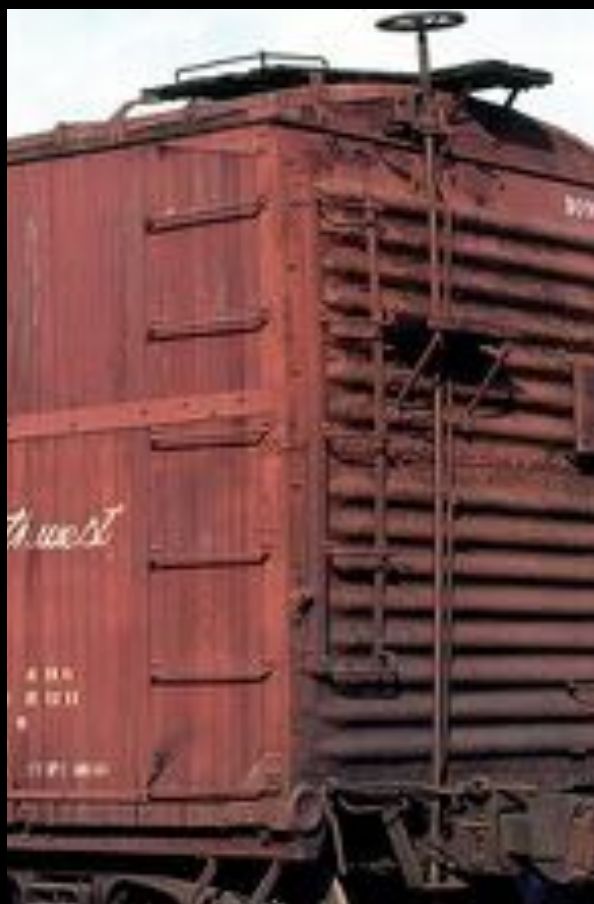
MILW Road with angles pointed outward



Grab iron above and below



B&O Wagon Top





10 Rung



B&O M55 - 1937 ARR Boxcar 10' IH



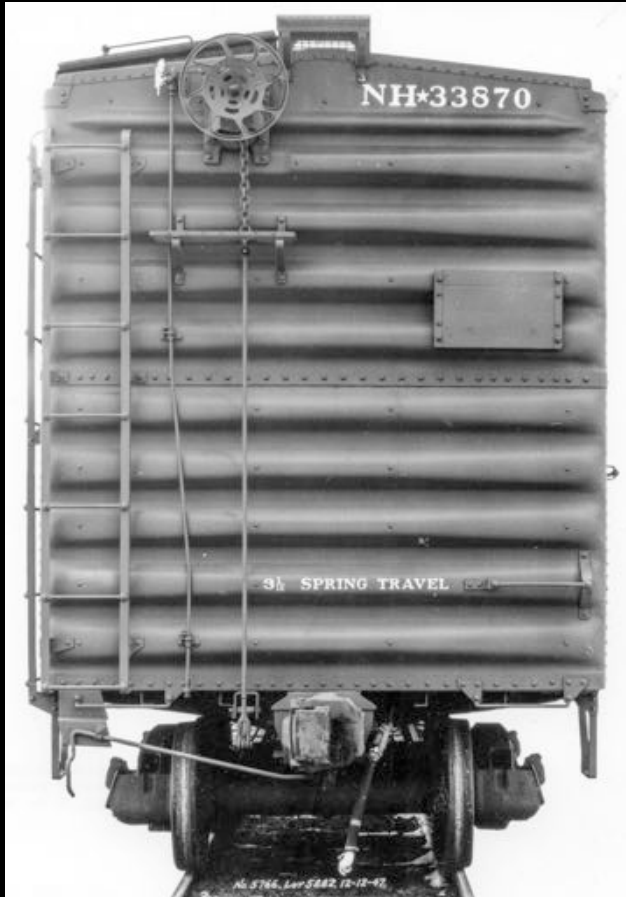
1937 Modified Box Car 10'6" IH



Offset style tops



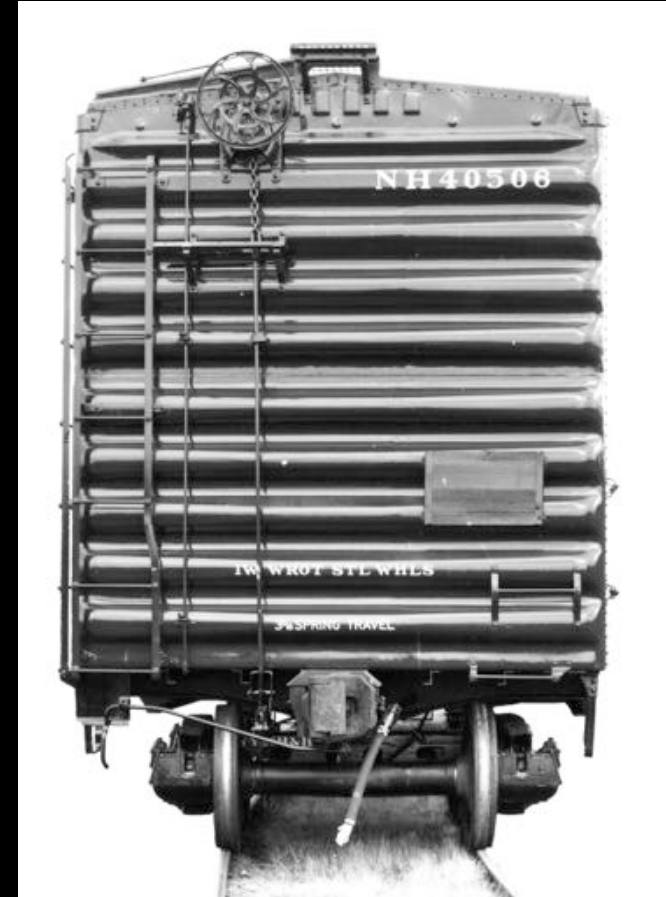
Post War Box Car 10'6" IH



Early Production PS1



Mid Production PS1

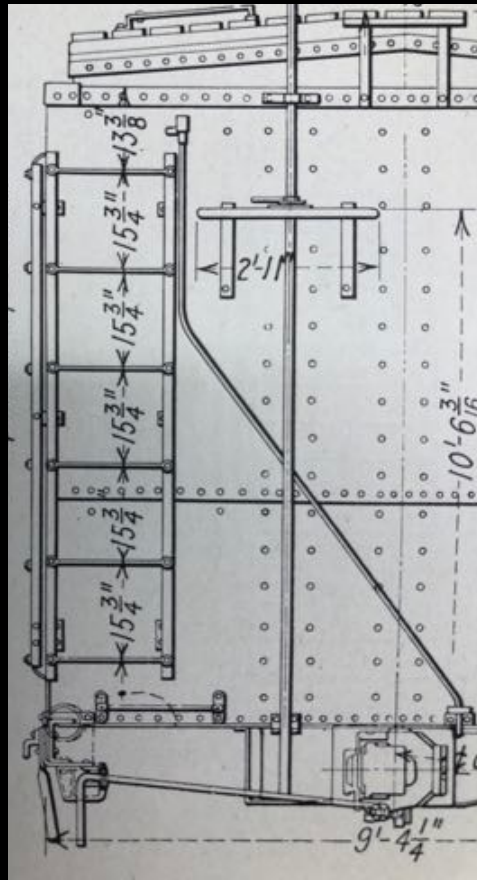


Late Production PS1

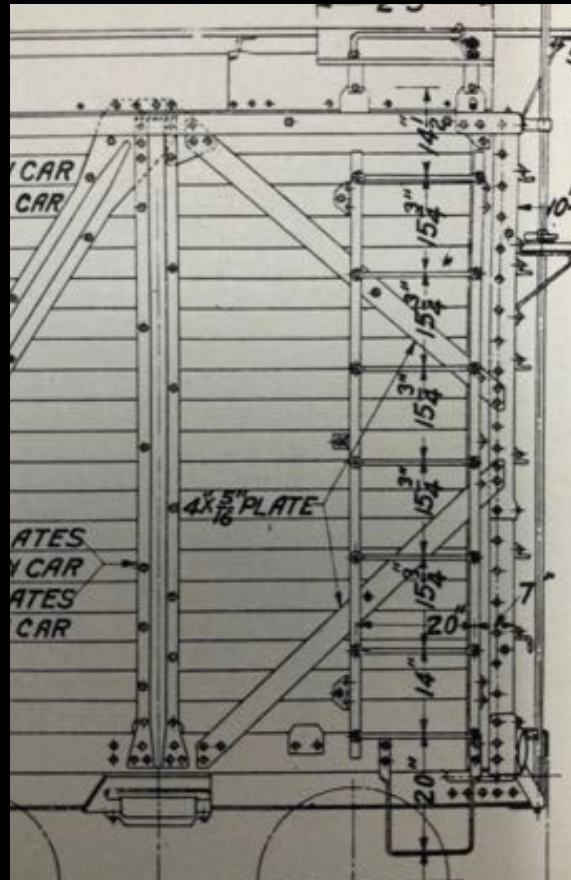


Typical Canadian and US Postwar Boxcar Ladder Configurations

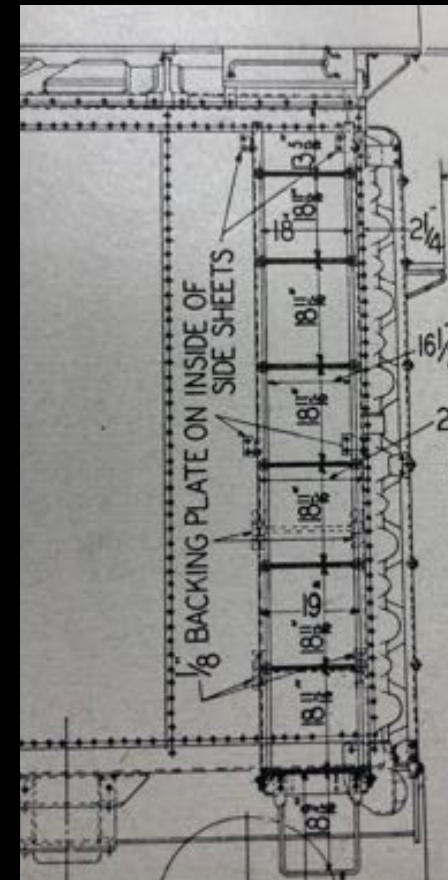
Prototype Boxcar Ladder Drawings



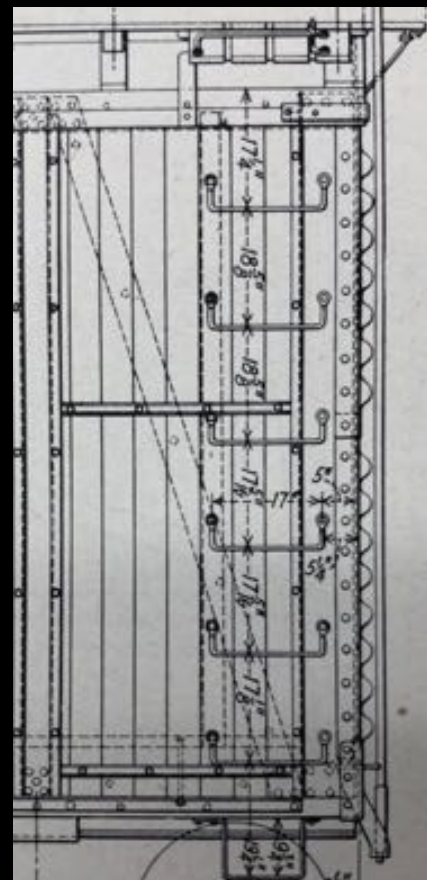
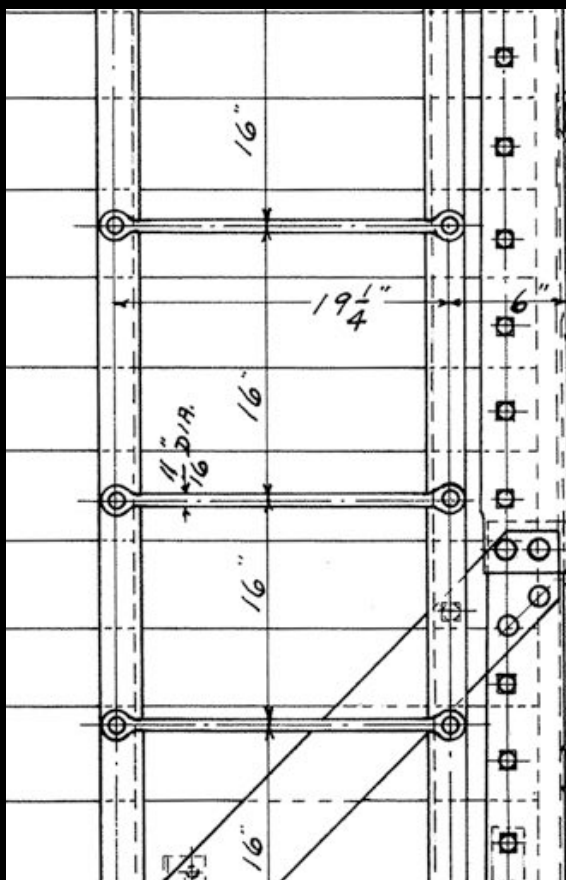
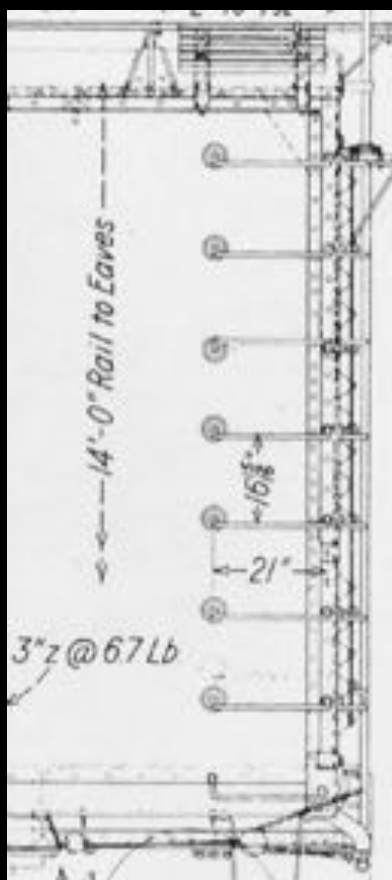
PRR X29



ARA Boxcar from 1930 Car Builders Cyclopedia



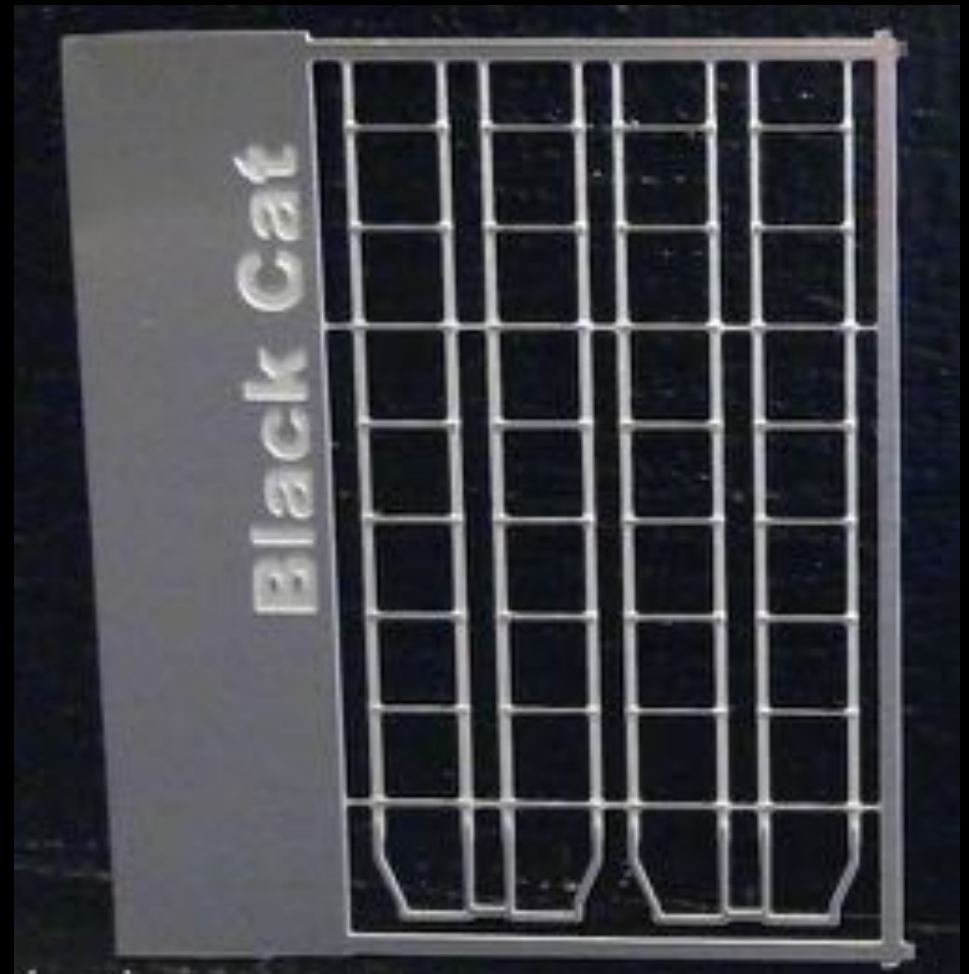
ARR Boxcar from 1953 Car Builders Cyclopedia



Available Ladders in HO Scale

Black Cat

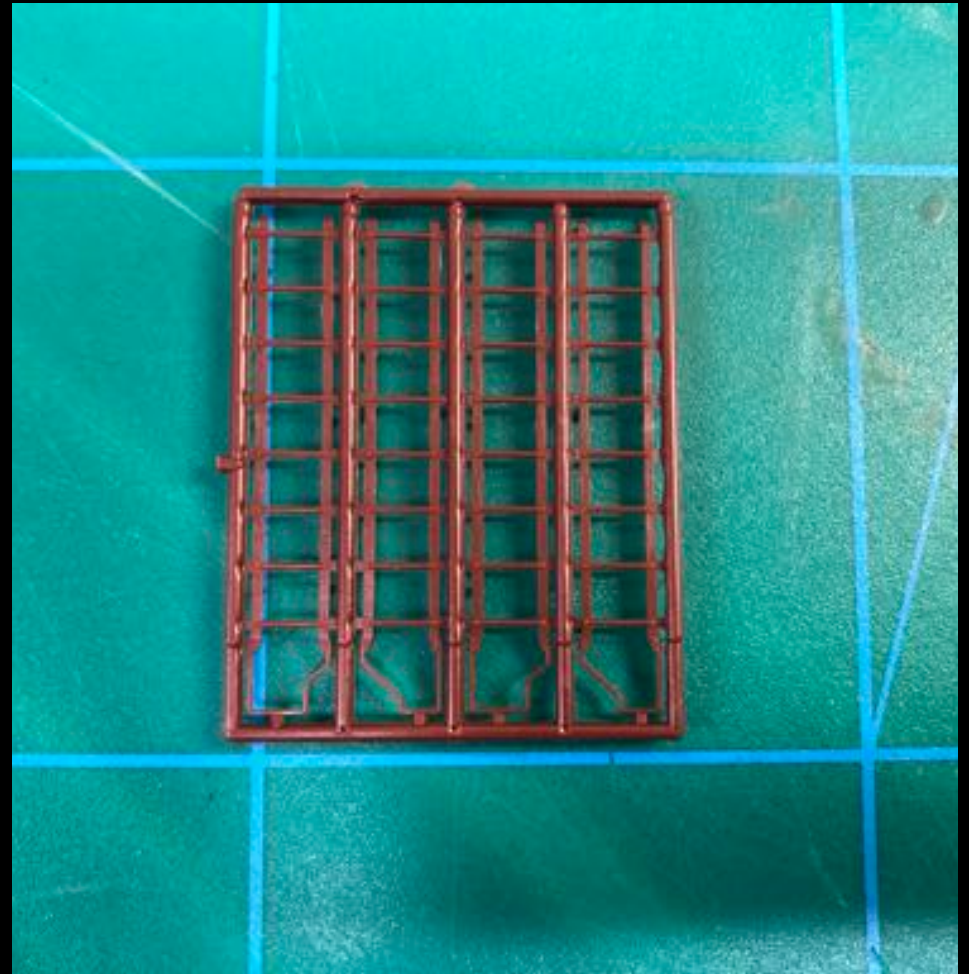
- 8 rung with attached sill steps
- 7 rung with attached sill steps
- 9 rung for CN/CP 8 Hatch Reefer



Available Ladders in HO Scale

Des Plaines Hobbies

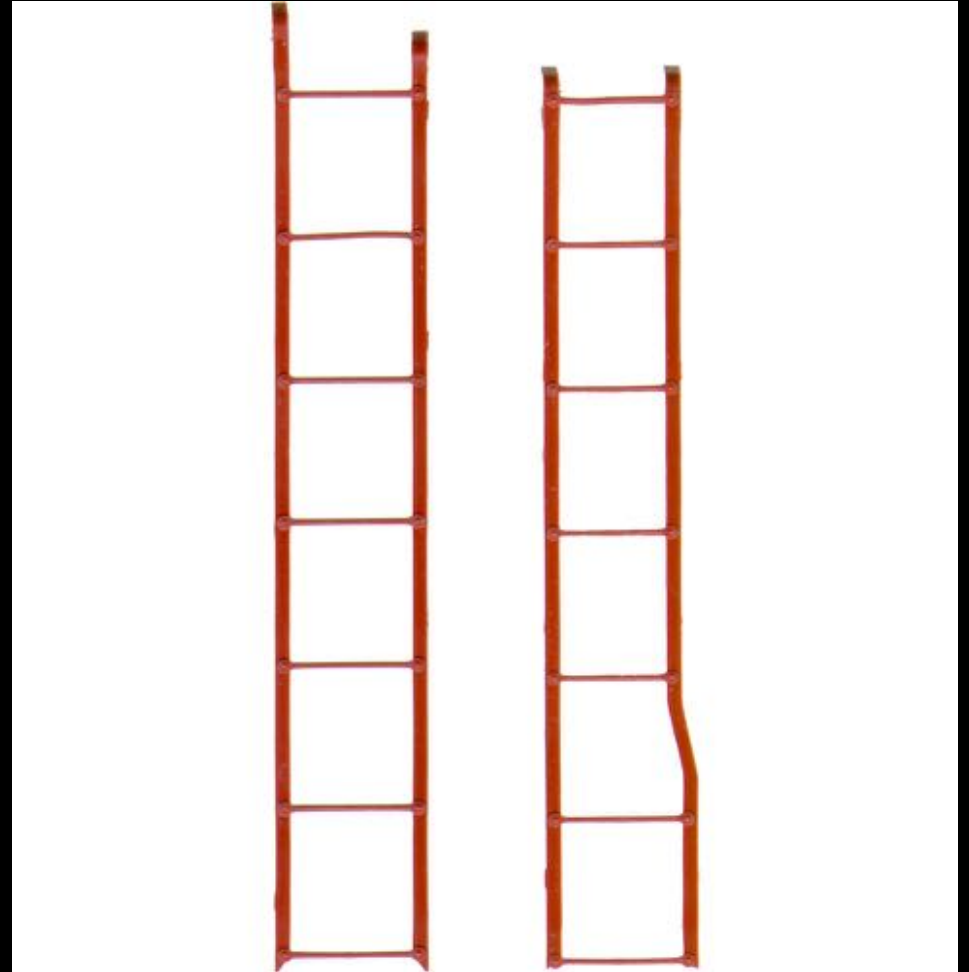
- 8 rung with attached sill steps- 14.5" spacing - 18" Width
- Mounting pins molded on back



Available Ladders in HO Scale

Kadee

- PS1 Ladders
- Drilling template available from YMMW



Available Ladders in HO Scale

Kaslo Shops

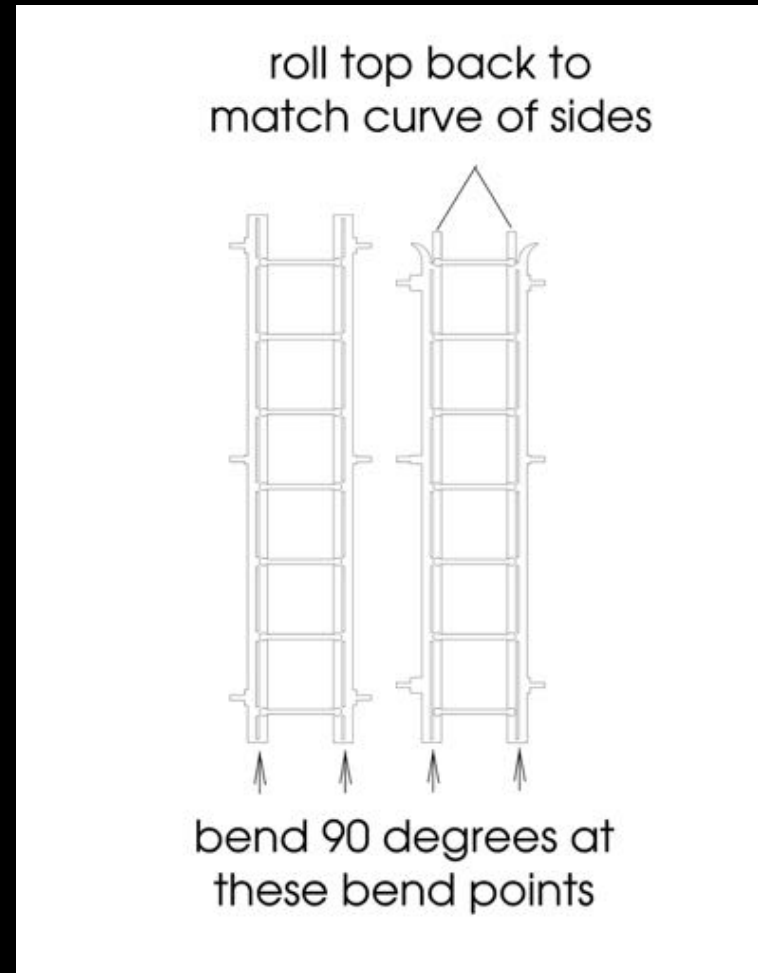
- 8 rung with sill steps - 16.5" rung spacing - width not specified
- 7 rung with sill steps - 16.5" rung spacing - width not specified
- 8 rung 19" rung spacing - width not specified



Available Ladders in HO Scale

Plano Model Products

- 7 rung - 18" spacing - 18" width
- Includes mounting tabs
- Prototypical rounded top profile



Available Ladders in HO Scale

San Juan Details

- 7 rung
- Two types
- rung spacing and width not specified



Available Ladders in HO Scale

Speedwitch Media (Coming Soon!)

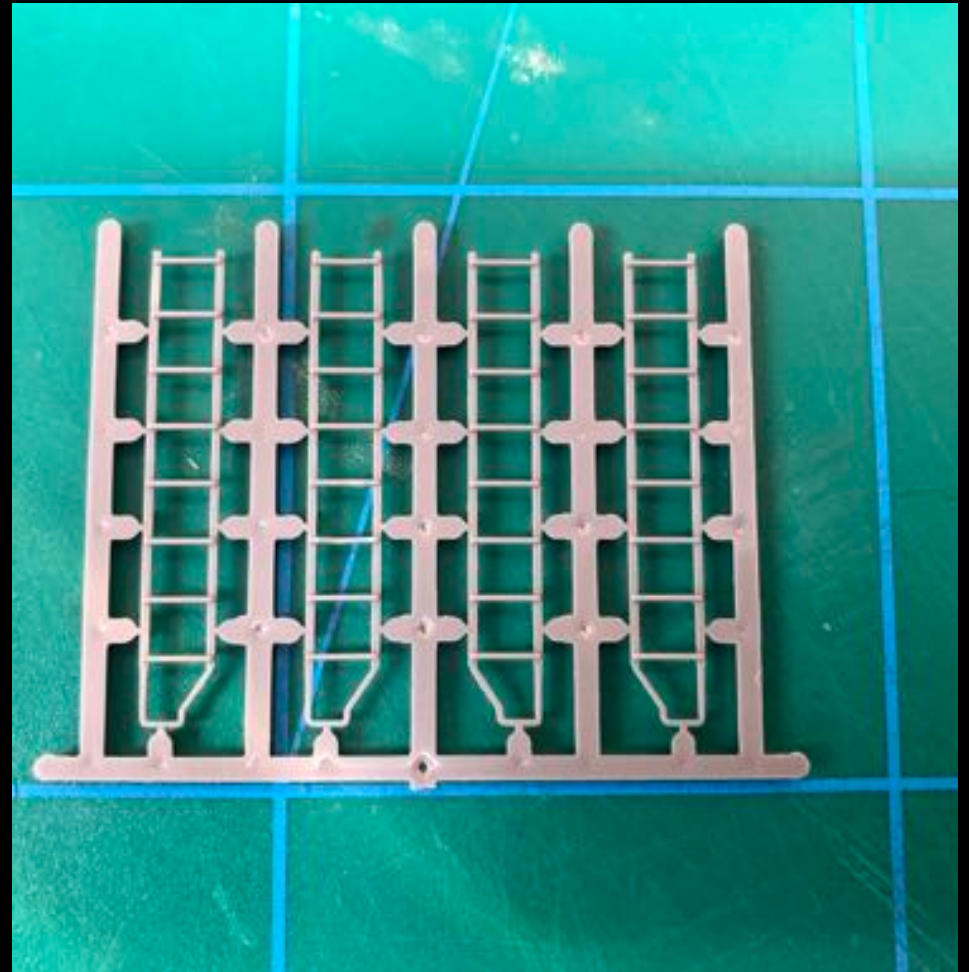
- Etched styles with multiple rung spacing
- Individually etched rungs in varying widths
- Rungs 'pinned' with wire to style and car body



Available Ladders in HO Scale

Tichy Train Group

- 8 rung -14" spacing with attached sill steps
- 7 rung -14" rung spacing
- 7 rung - Reefer ladders with extended top - 14" rung spacing
- 9 rung - 14" rung spacing



Available Ladders in HO Scale

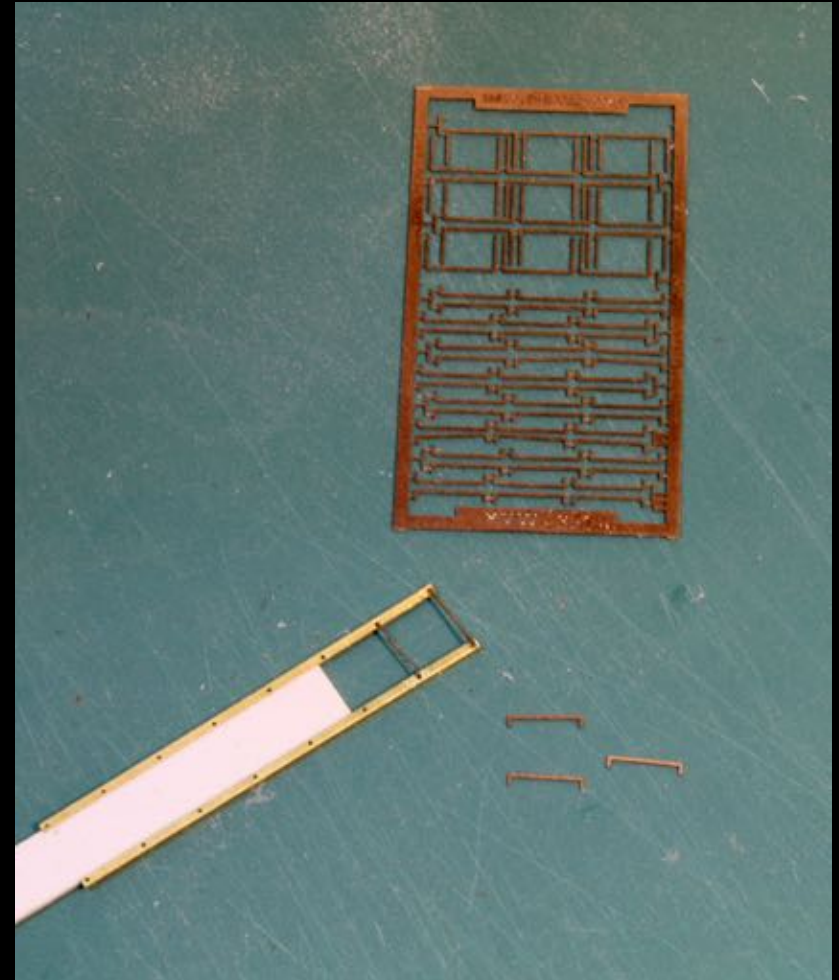
Yarmouth Model Works

Styles

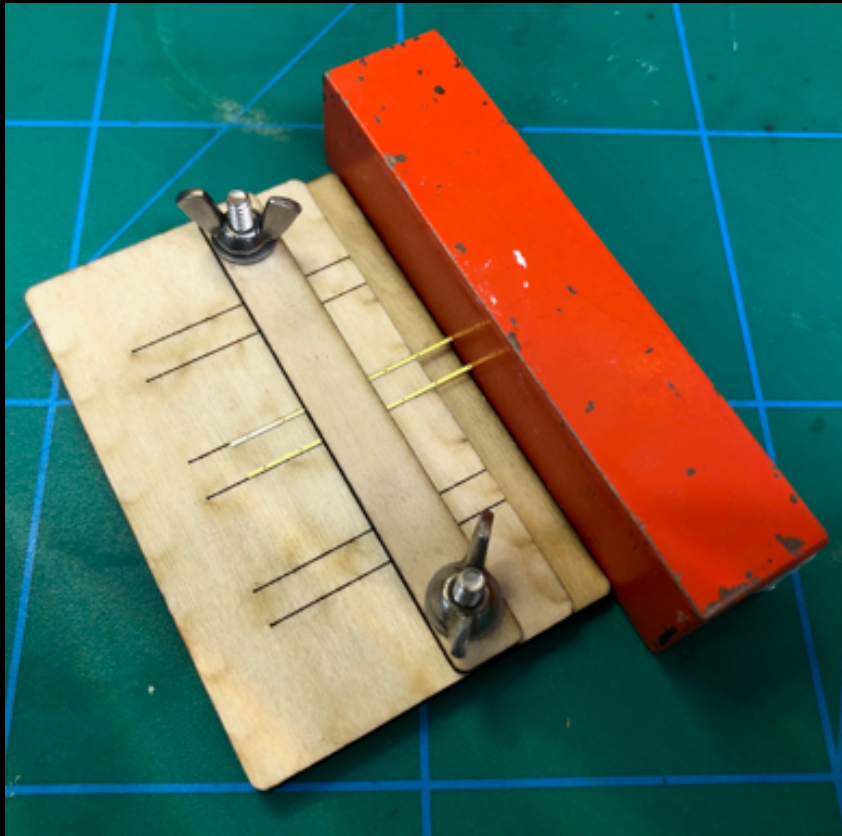
- 2 rung left side
- 4 rung - 19" spacing
- 7 rung - 16" & 18" spacing
- 8 rung - 14", 15.375" & 16" spacing

Rungs

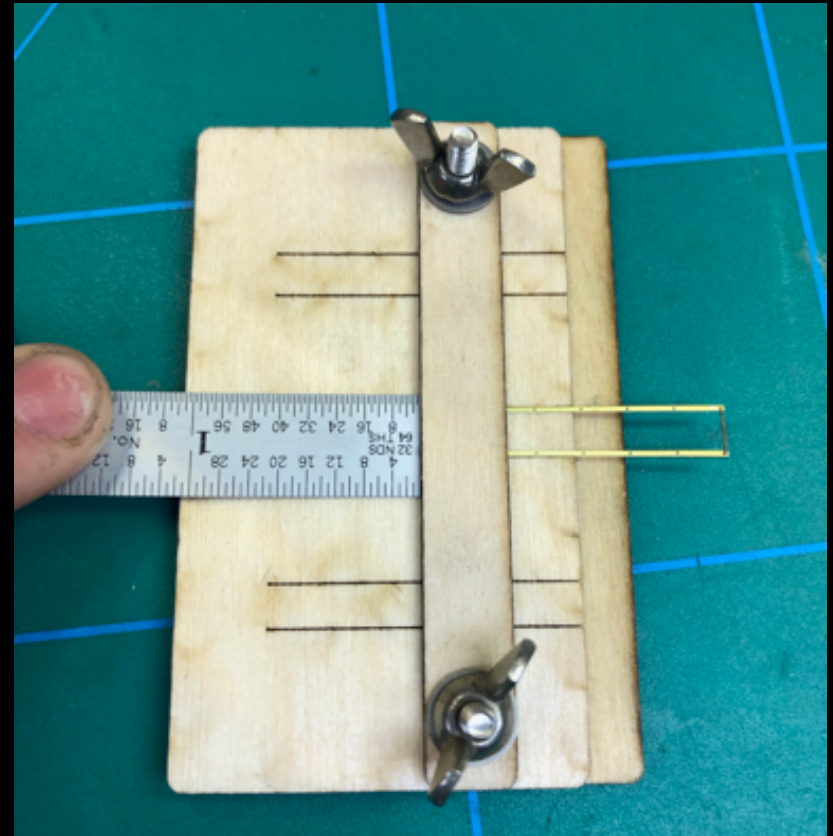
- 14" through 18.5" widths in 0.5" increments



Bonus Ladder Jig Tips



Set end of styles even with jig end



Use a thin scale push styles forward against clamp edge

Installing Etched Ladders

Materials & Tools

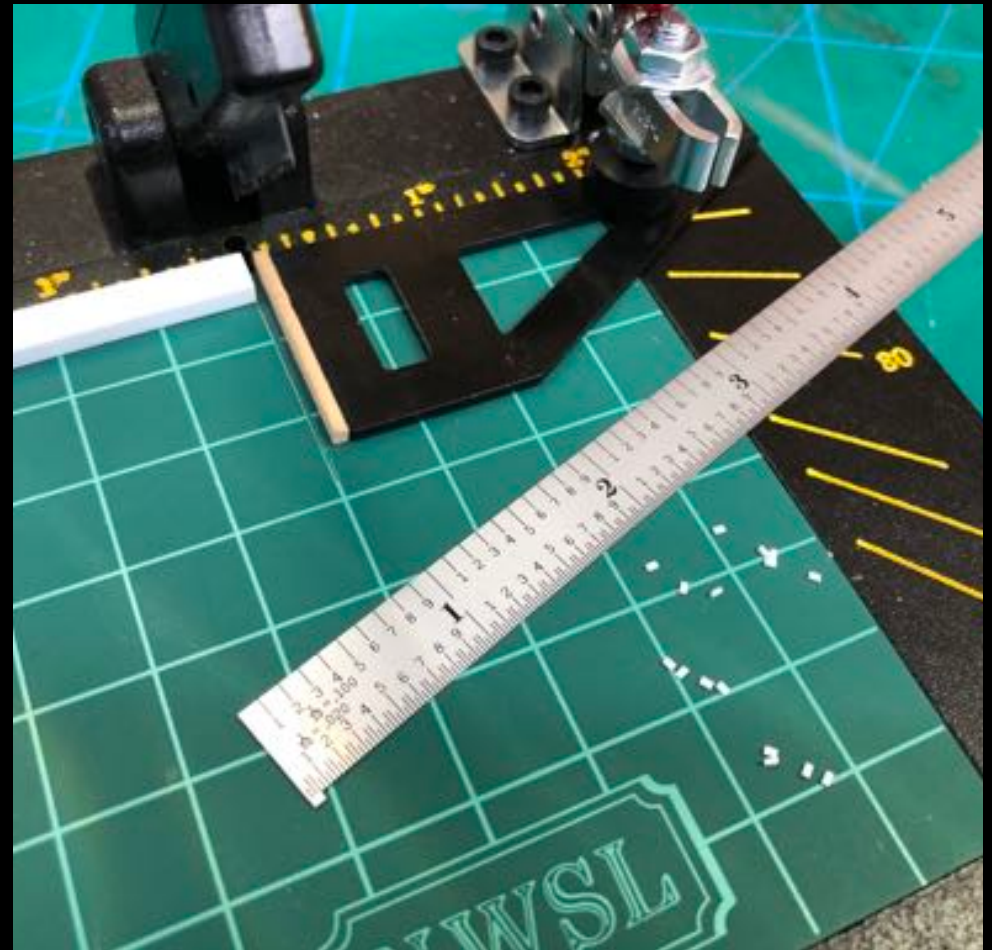
- 0.020" x 0.030" styrene strip
- CA glue
- Liquid Plastic Model Cement
- #79 drill and pin vise
- Wood strip
- Masking Tape
- Gauge blocks



Installing Etched Ladders

Cut standoffs

- Use 0.020" x 0.030" styrene strip to fashion stand offs
- Cut them 0.050" long using a NWSL chopper



Installing Etched Ladders

Glue Standoffs to styles

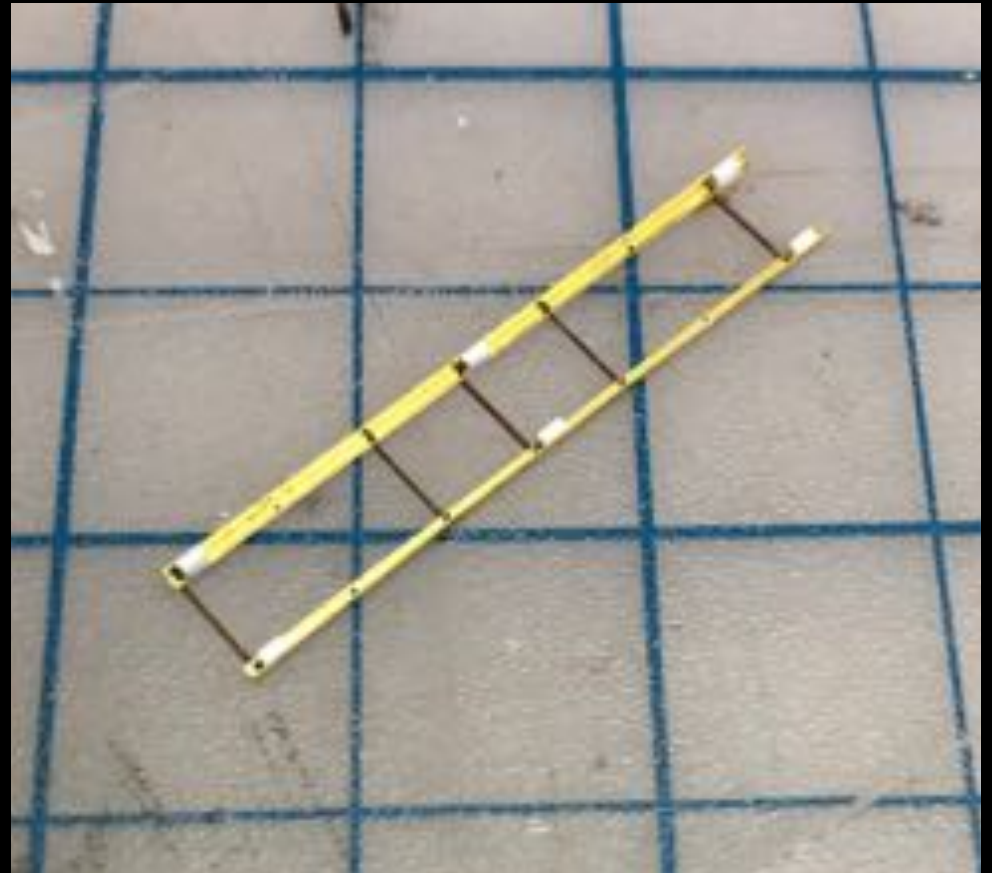
- Determine standoff locations from drawings or photos
- Use liquid cement and tack standoffs to styles
- This will hold them in place and give you time to wiggle them into position



Installing Etched Ladders

CA glue standoffs in place

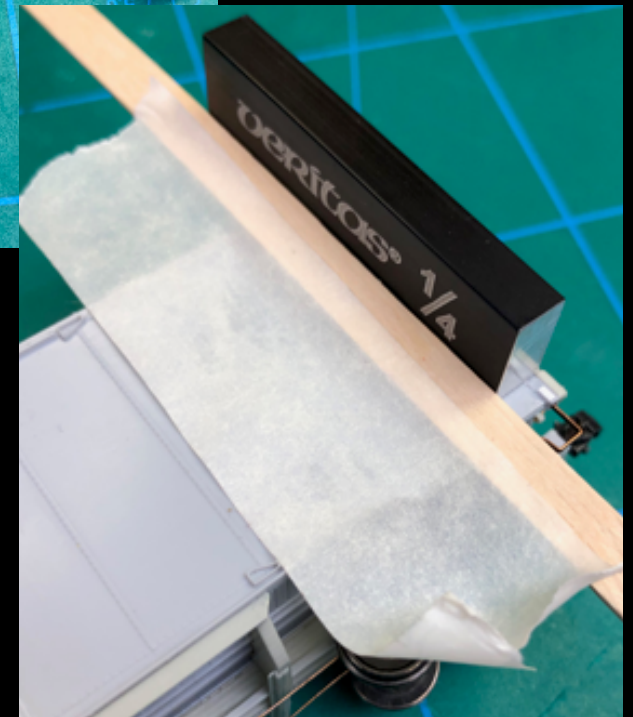
- Permanently glue to styles with CA after all stand offs are in place
- Gluing individual standoffs leads to CA wicking and building a fillet of glue on the inside of the style



Installing Etched Ladders

Tape alignment guide to car side

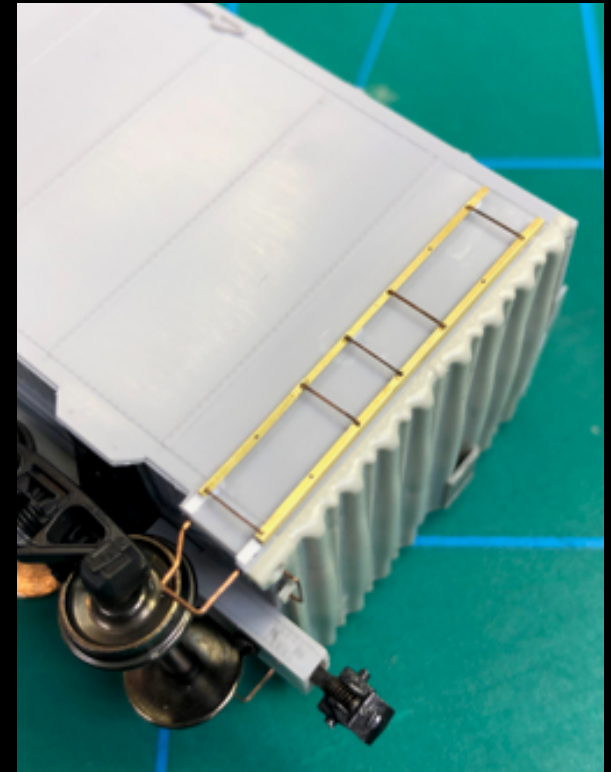
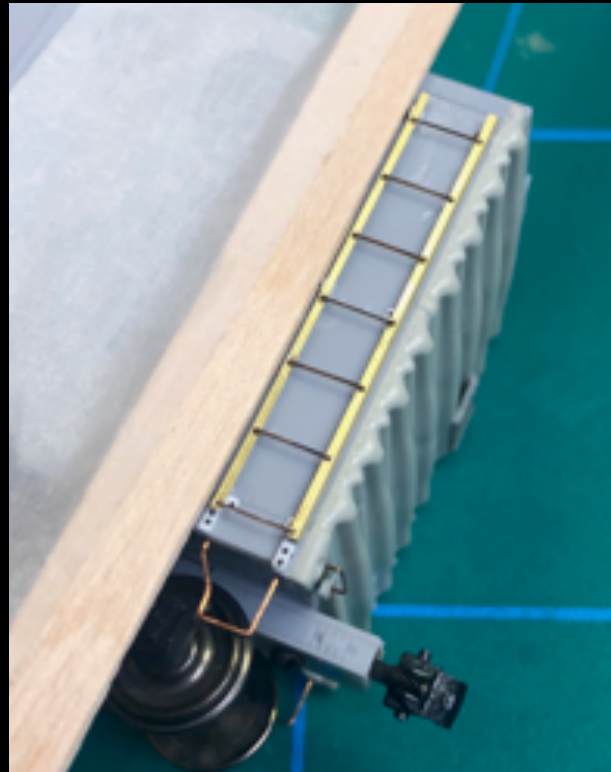
- Measure ladder width and add distance of style to end of car side
- Use a gauge block/blocks to offset a piece of wood strip to car side



Installing Etched Ladders

Glue ladder to car side

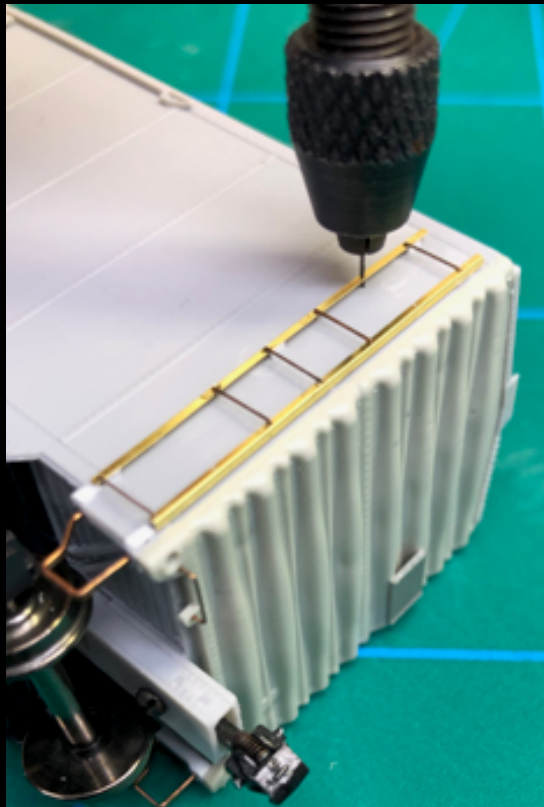
- Glue all standoffs if a styrene car using liquid cement
- Glue only right hand side standoffs if resin car with CA - don't want to glue the wood to the car side!
- Glue left style after removing wood off resin car sides



Installing Etched Ladders

Install long leg rungs

- Omit two rungs when assembling ladders
- Drill with #80 bit and glue in long leg rungs



Installing Grab Iron Ladders

Tools

- Divider with sharpened points
- Scale with fine etched graduations in 1/64" or smaller increments
- Small Square



Installing Grab Iron Ladders

Laying out Grab Iron Holes

- Place square on car side in line with right side of grab iron hole locations
- Mark location of first grab iron hole
- Walk divider up the edge of the square and mark other holes

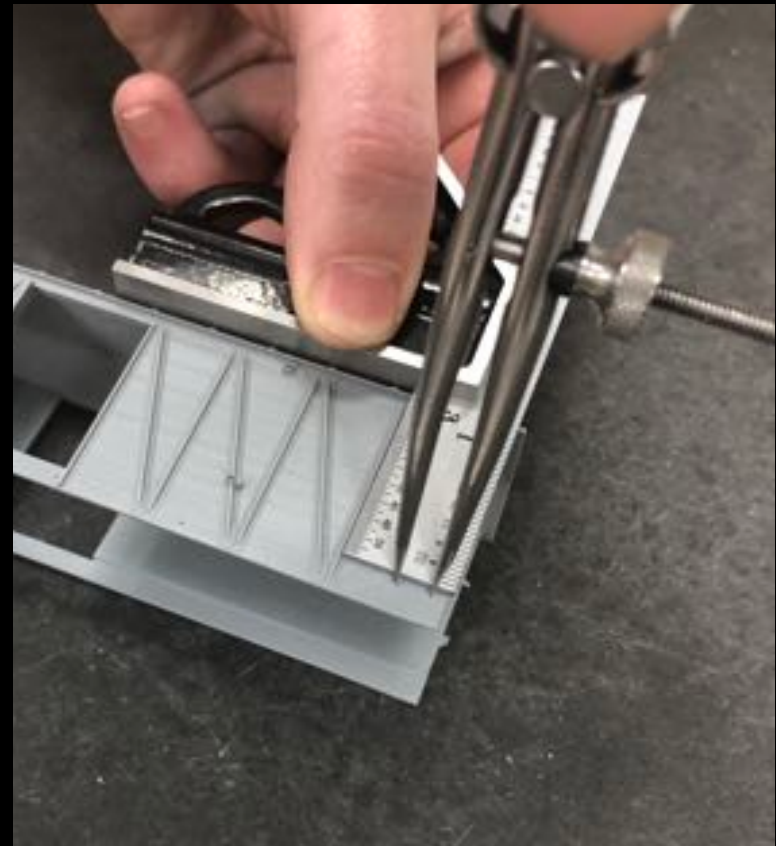


Walk divider up the car side against the square

Installing Grab Iron Ladders

Laying out Grab Iron Holes

- Set divider to width of grab iron
- Place square with blade extending to lower hole that is already marked
- Place divider in hole on right and hold against end of square and mark left side grab hole
- Move blade up and repeat



Detailing Prototypical Ladder Mounting

Materials & Tools

- 0.010" Styrene Strip in various widths or 0.005" thick strip cut from sheet stock.
- CA glue
- Liquid Plastic Model Cement
- Harvested Rivets
- NWSL Choper
- Photos or drawings



Detailing Prototypical Ladder Mounting

Add Brackets

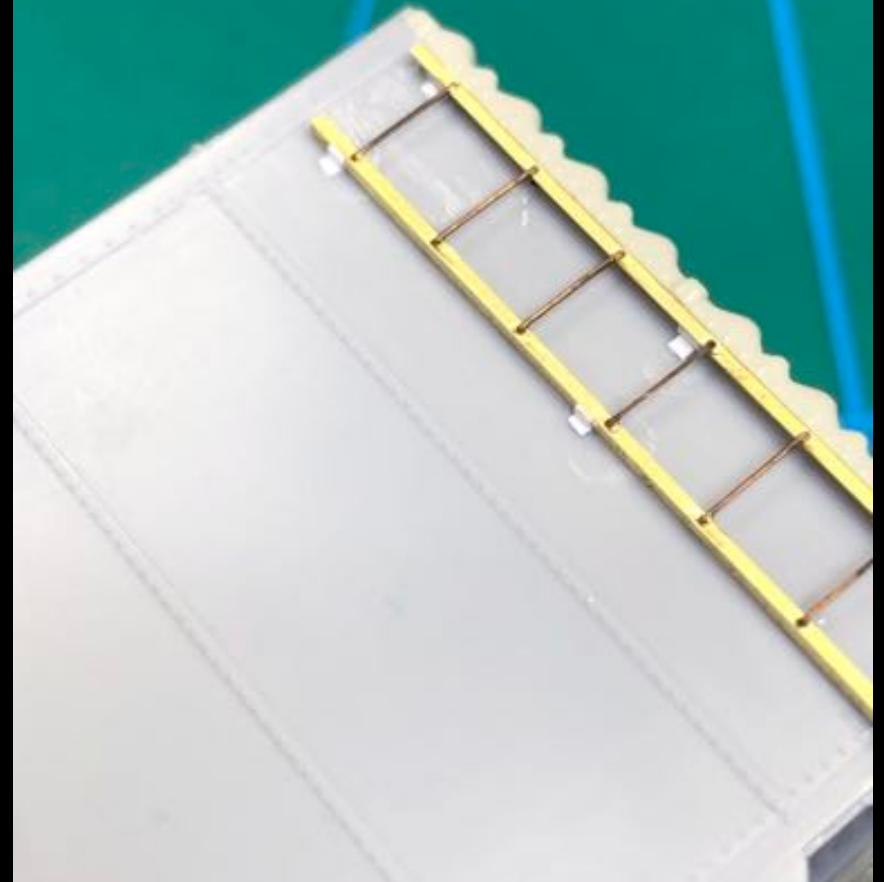
- Cut 0.010" Styrene Strip or 0.005" thick strip to length of mounting bracket
- Glue to car side first
- Use prototype photos or drawing for placement



Detailing Prototypical Ladder Mounting

Add Brackets

- Install part of bracket that goes against style next
- Tack in place with liquid styrene cement - gives you time to wiggle into position
- CA glue when happy with location



Detailing Prototypical Ladder Mounting

Add Rivets

- Single Harvested rivets are much easier to add then single Archer decal rivets (film can hinder placement)
- Tamiya Extra Thin (QuickSet)
- Place a drop of glue and put rivet into place - wiggle into position quickly



Ladder Mounting Examples



Ladder Mounting Examples



- Left style remove from kit ladder using sprue nipper and files
- Rungs glued to end Z brace

Ladder Mounting Examples



In Closing

- Prototype Ladders come in all varieties of different rung spacing and widths
- Number of rungs vary - sometimes even between the side and end ladders
- No two ladder mounts are the same, even from the same Railroad or Car Builder
- Using the right tools and techniques, assembling, mounting and detailing ladders is not insurmountable

Thank You

- Ted Culotta - photos
- Aaron Gjermondson - photos
- Pierre Oliver - Video
- Attendees - for watching

Questions?