Twenty Models

Classic 1920s Railroading

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Canadian Pacific

195600-197999 Series

36’-8” Double Sheath Rebuild Box cars

Kit: BX-03

Introduction

Thank you for purchasing this model kit. It’s my pleasure to share models that I have made for my own model railroad with you. If you need help, have suggestions for improvements or new model ideas contact me at sales@twentymodels.ca.

History

Larger locomotives constructed in the early 1910s allowed for longer trains and the drawbar forces associated to it. Unlike US car manufactures, Canada was late in the game with migrating to steel frame freight car construction. CP started building the ubiquitous Dominion single sheath cars with steel underframes in 1911. However, there were hundreds of 36’-8” wood frame double sheath cars in service and an interchange ban coming in 1928 so, presumably, the choice was to either scrap relatively new cars or extend their life by rebuilding.

Many of these cars remained in service through into the 1950s and some continued for many years in company service.

Kit	Number Series	Built	Door Size	Door type	End	Side re-enforcement
BX-05	214000-214958	new: 1917	5ft	Wood	7/7 Murphy	Angle plates and bracket
BX-01a/b	160000-161595	re:1919-1921	5ft	Wood	Z beam	Brackets
BX-03	195600-197999	re:1924-1929	5ft	Wood	6/7 Murphy	Angle plates
BX-02	199347-199999	re:1924-1928	6ft	Wood	6/7 Murphy	Angle plates
BX-04a/b	199146-199346	re:1929	6ft	steel or wood door	Dreadnought	Angle plates

1917 newly built 214000 series 36'-8" double sheath cars came with steel channel center sills, 6 truss rods on wood beams, steel roof and 7/7 Murphy reverse end. The later rebuilt cars had riveted reinforce channel plates and steel beam posts, which allowed for the removal of the inner 2 truss rods. The car structure was further reinforced with steel roofs, gusset plates and reinforced ends.

The first group of 901 rebuilds was the 160000 series cars with steel center sills, Murphy steel roofs and Z steel reinforced end beams and end brackets between 1919 and 1921.

The second group was 3062 5' door cars, number series 195608-197999 and 800 6' door cars, 199347-199999, constructed between 1924 and 1928. This series of rebuilds are similar to the 1917 cars with Murphy steel roof, reverse Murphy ends and angle side plate bracing. One example, 197529, is preserved by Heritage Park Society, Calgary Alberta.

The last 200 6' foot door cars, numbered 199147-199346 were built in 1929. These cars were rebuilt with Murphy steel roof, reverse dreadnaught ends, like the Mini box, and side bracing along with Youngston steel doors or original wood doors.

For photos refer to Roger Chrysler's "Truss Rod Boxcar Rebuilds" in CP Tracks 8-2 and John Riddell's Morning Sun Books, Canadian Pacific Color guide to freight and Passenger Equipment, Volume 1 and 2.

Preserved examples: Alberta Railway museum, Edmonton AB, has 6' door, NAR 17092 (ex-CPR 199801). Heritage Park Society, Calgary AB has 5' door 197529 on display.

Kit components

Contents:

1) One-piece body shell, under frame, roof walk
2) Small details: tack boards, turnbuckles, KC air brake, airline hose and bits
3) Etched ladders, clevises and brake wheel, eyelets and stirrup sets
4) .010" x .030" styrene strip
5) Monofilament fishing line for truss rods
6) Decals appropriate for your model (early 1920s decal sheet is available on request)

You will need to supply the following:

1) 0.008" and 0.012" wire
2) Car weight. Use tape weights or, like I use, silicone two 9/16" or 5/8" bolts
3) Arch bar trucks – Kadee 501 or Tahoe Model Works AC&F truck (TMW-103 or TMW-203)
4) Couplers Kadee #58 or your preference

Instructions

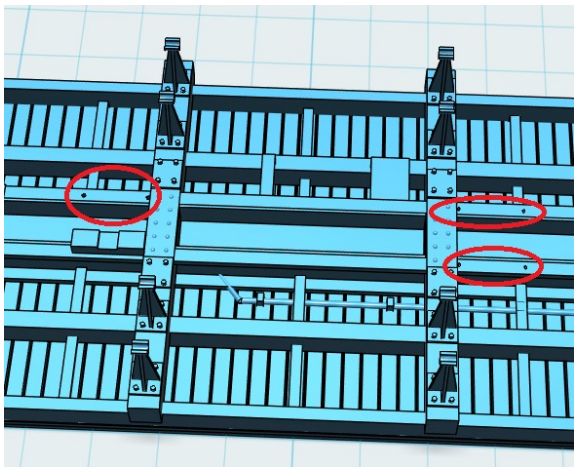
Prep Notes

1) The printer resin used is like polyurethane resin and will sand, drill, and tap as you would expect. It has some give but will break if bent too far.
   Tip: Avoid using knifes or razor blades. The material is too hard to control with a blade. Plastic nippers, course metal files or sand paper are better for removing a large amount of material. Then finish up with a small file and sand paper.
   TIP: Make yourself a large sanding block out of scrap wood. Glue different grades of sand paper on each surface so you have even surfaces to sand on.
   TIP: Warped flat pieces, like underframes, can be straightened by quickly warming in hot tap water or using a blow dryer until flexible, then weighted down to set in the desired position and let cool or immediately put under cold water to fix the shape.
   TIP: Instead of using a hand pin vise try the Tamiya Handy Drill.

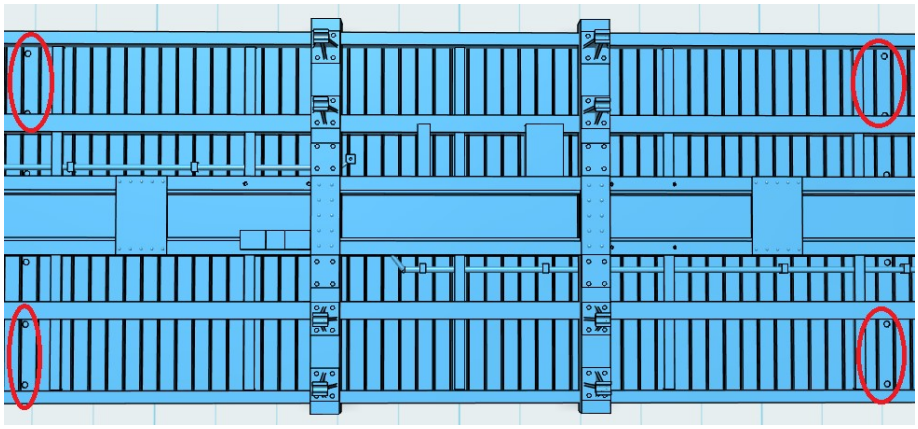
2) Carefully try to insert the underframe into the body shell and check the fit. Notice that the truss rod beams are wider than the underframe. A proper fit is when the beam rests on the car side edge. Carefully sand the underframe to slide into the body.
   TIP: The truss rod posts are delicate and can break if mishandled. Use the provided guard to prevent unwanted mishaps.
3) All drill points are marked on the model and should be easily found using the reference diagrams.
4) Once the fitting is done wash the parts in cool soapy water, rinse and let air dry.

Underframe

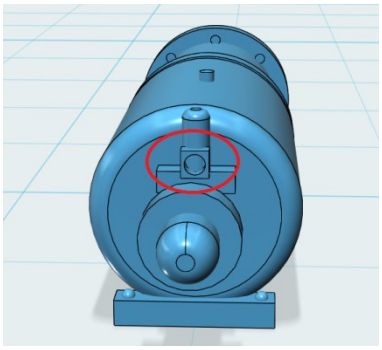
1) Place the underframe on your work surface in front of you with the 2 brake cylinder mounting pads closest to you. The “B” (brake) end of the car is on your left, the “A” is on the right. You can use a marker to write on the coupler pads for reference.
2) Drill out and tap the bolsters with your favorite screw sizes. I use nylon 2-56 screws.
3) Coupler boxes can be drilled out at this time too. If you’re using Kadee boxes then align the box end about 1.5mm over the end of the frame. You will find the mark on the coupler pad. Fit the underframe and confirm this is where you want it, drill holes and tap your screws.
4) Locate the brake bracket countersink holes and drill them out using a #79 drill



5) The airline on the frame has a cast spot to drill for cylinder airline to the frame. Drill it out with a #79 bit.
6) Locate the 8 truss rod drill points on the under frame and drill out with a #74 bit.

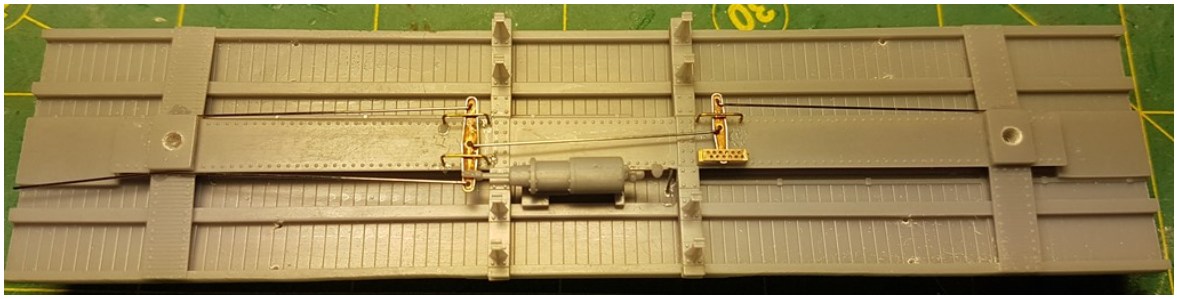


7) Glue weight to the underframe. You can use tape weights or, like me, glue two 5/8" bolts inside using silicone adhesive.
8) Locate the starter hole on the rear of the K Brake part and drill with a #79 bit deep enough for a wire to hold.

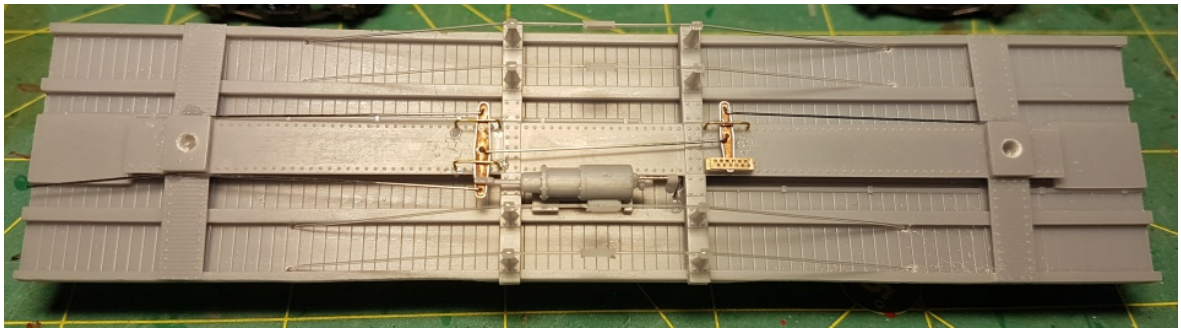


9) Glue the large brake clevis to the K brake part and then mount on the bracket pad. The cylinder has 2 pads on it. The piston rod and clevis point to the "B" end of the car.

10) The second smaller clevis has an end without a hole, glue this end on the underframe slack adjuster pad. Glue the slack adjuster plate on top.
11) Cut a 15mm piece of 0.12" wire make a 90° degree bend at 5mm. On the short end of the piece fish the air dryer through and fasten it close to the bend with the trap pointing (big end) to the ground.
12) Fabricating three 16" brake rigging brackets and glue them in place.
13) Using .012" wire, run brake roads to join the brake cleaves referring to diagram. Ensure that brake rods won't interfere with the trucks. (BX-01 underframe shown and similar layout)



14) Drill out the truss rod turnbuckles with a #77 bit. Leave the turnbuckle on the spur and drill through both holes. When the bit reaches through the second the part will be freed from the spur. Extras are included in case some break.
15) Next string the truss rods. To do this take the strand of fishing line and tie a large knot on one end. Then starting from one outer end hole, run the line through and glue to the frame. Then thread the line between hole and truss rods, adding a turnbuckle between the posts. Don't thread the line too tight. I find if I string the line taught enough to lightly touch the truss rod beams that there will be enough slack. Too much tension will break the truss rod saddle. Once the line is through the last hole, apply light tension on the line while carefully lifting and place the line on each saddle. Carefully adjust the slack between lines to get even distribution. Be careful not to apply too much tension. Finish up the by gluing the end of the line to the frame and then a dab of glue to hold to truss rod posts and turnbuckles.
16) Underframe complete, add a set of trucks and set aside for now. (BX-01 kit shown)



Body

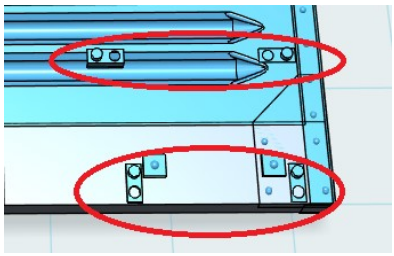
1) Referring to images, locate the grab iron and bracket drill points on the body and drill them out with a #79 drill. The model comes with two side grab irons which were specified January 31. 1934 to

conform to US interchange standards. Many cars were never retrofitted so you can remove the upper grab iron if you model earlier time period or by preference, by sanding the mounts off. I suggest referring to photos to pick your prototype car. The drill dimple is in the grab iron plate so, if you're careful, you will need only minimum to fill anything, if any.

T**IP:** Larger bit size, e.g., #78, are less likely to break.

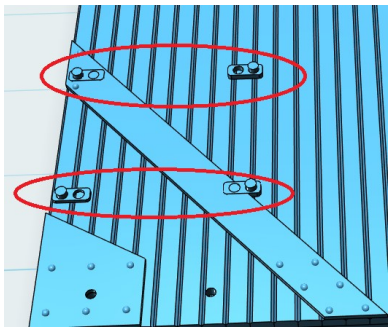
TIP: Don't force the drill bit and start with light pressure to start the hole and back out to clear chips so it won't jam.

Lower right end of car

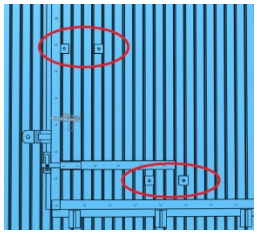


TIP: Drill the lower holes on an angle into the thicker part of the model so the edge doesn't break.

Side left grab iron and stirrup step.

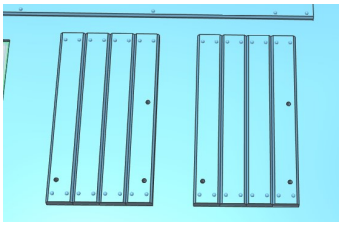


Each door has 2 handles



2) Locate the stirrup step drill points and drill with a #76 drill.
3) Fabricate four 20" grab irons from .012" brass wire and ACC in place. The grab iron on the lower edge of the end can be either straight or drop style.
4) Fabricate the door handles from .012" brass wire and ACC in place. Steel doors have 6" handles, wood are 10".

5) Locate the brake relief valve to on the end of the roof. The base of the valve has a dimple to drill a hold to fasten the relief valve line. Fabricate a relief valve line from the valve to the bottom of the car end using .008" wire by making a 90 degree bend on one end and put it in the hole. Then work the wire to go to the bottom of the side.
6) Separate the roof walk and route board parts from the spur and clean up the edges with files and sand paper.
7) Locate the 3 drill points for the roof walk corner pieces and drill them out.



8) On the corner roof walk glue an eyelet at 45 degrees and then fabricate and glue 20" right angle grab irons. Cut and file the wire bits protruding on the back side so it sits flush or as close as possible.
9) Glue the roof walk and walk ends to the roof. The roof walk has bolts in the pattern. Center the pattern with the roof walk cleats. The walk ends should be centered on their support braces.
10) The end of the roof walk has platform brackets. Fabricate them using .010"x.030" styrene. The plastic strip rests on top of the cast on pad.
11) Glue the body to the underframe. Ensure the "B" end of the underframe and body are the same orientation.
12) It's a good time to add couplers before the last of the body details are added. Carefully determine mounting coupler box position and drill and tap screw holes. Fasten the couplers when you're done. Yay, we're almost there!
13) Carefully drill the brake stem winder hole through the brake racket and down through the brake platform. Drill brake stem winder hole on bottom bracket. The drilling dimple is on the lower bracket's outer face.
14) Thread a brake stem wire through the lower bracket and glue. Then thread up from the bottom through the platform and racket holes and glue the brake winder bracket to the bottom of the car.
15) The brake wheel is metal and can be soldered or glued to the brake stem, thread the wire through the holes and cut stem winder shaft so its 3.5mm (1') above the roof walk height.
16) Cut the ladders to 37mm measuring from the stirrup step going up. The lower ladder rung is in line with the side of the car with the top of the ladder should reach the edge of the roof fascia. Test fit the ladder to see if it sits flat against the side bracket. You may need a bit of filing to get it to fit correctly.
17) The included stirrup steps are fashioned by bending them like so:
    a. Measure from one end 9.3mm and make a 60 degree bend. Repeat the bend on the other end.
    b. Measure from the end 4.6mm and clamp with pliers and then make a 90 degree twist.

c. Finish up by bending the tabs.
d. Finish shaping the stirrup and then glue in the mounting holes.

18) Optional: Add cut/uncoupling levers. There are extra eyelets included.
19) Optional: Install air brake hoses to dress up the end of the car. I have included airline brackets and hoses. A #65 hole in the airline bracket will be large enough for the hose to fit easily.

Painting tips

1) Wash the car and underframe in warm water and put aside to thoroughly dry.
2) Acrylic paints stick to almost everything, but if you're not sure, prime the model.
   Tip: Automotive spray can primer work well on resins. Apply in very quick light coats allowing time between so the paint doesn't run.
3) Paint the entire model box car red… trucks… everything.
   Tip: If your paint dries flat, apply a gloss coat so that decals can set properly.
4) Decal according to the provided illustration for your number series and flat coat when done.
   Tip: The decals are thin and can easily break. You can tough them up by airbrushing a light coat of Microscale Liquid Decal film thinned 50/50 with TruColor thinner or similar.
5) Reassemble and sit back and admire your work. Great job!