Twenty Models

Classic 1920s Railroading

http://www.twentymodels.ca

Canadian Pacific

52250-59998 (Even) Series

36’-8” Standard 30 Ton Box car

Kit: BX-05a/b

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

CPR built 3158 standard 30 ton box cars between 1904 and 1907 in the 52250-59998 number series. The model may be appropriate for other early cars. I suggest you do your own research.

Constructed	Road number
1907	52250-52488
1905	52580-52998
1904	53432-55428
1904	55430-55682
1904	55684-56016
1905	56018-56219
1905	56218-57708
1905	57710-57998
1907	58000-58998
1907	59000-59998

An interesting feature in the construction of the cars from this time period was truss rods on the exterior ends of the car. They were robust enough that hundreds of cars were still in service in the early

1940s with the final 9 leaving revenue service in the 1950 roster. Many cars remained in company service in the 40xxxx series for many years.

Sometime after 1917 the end truss rods were removed and Z-beams substituted. I suggest thoroughly research your selected time period because there may be many subtle differences occurred between 1912 and 1927.

There were many hardware and stenciling changes done during service. I'll outline my research. Note that dates are starting dates and not an exact date when a car was modified. Cars would have been updated or modified when regulation required or major repairs were done.

Year	Comment
1904-1912	As built there were no left end grab irons and stirrup steps. The ladder side steps were square. Car stenciling had "Canadian Pacific" in a curved fashion. Capacity and dimensional information was written out completely.
1913	Left hand stirrup steps and hand rails were added. The stirrup steps under the ladders were changed to more modern design.
1917	Major stenciling change to the familiar straight block lettering with lines over and under road number and capacity information. Capacity and dimensional information continued to be written out completely.
1920	Capacity and dimensional information were changed to industry standard abbreviations.
1927	Brake safety K-1 or K-2 equipped and couple gear size information was added to the end.
1932	ARA standard stenciling changes were introduced.
1948	Draft gear inspection stenciling was introduced.

Kit components

Contents:

1) One-piece body shell, under frame, roof walk
2) Small details: turnbuckles, KC air brake, airline hose and bits
3) Etched brake clevises, 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

You will supply the following:

1) 0.008" and 0.012" wire
2) Car weight. Use tape weights or, like I use, 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

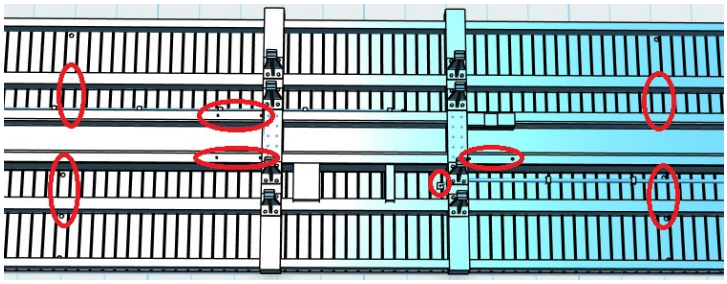
Prep Notes

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.
   TIP: To prevent breaking parts when removing parts from a spur, cut far from the part first, e.g., base of support structure, and then finish with a second cut close to the part.
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. Remember to use the provided guard to prevent unwanted mishaps while you build.
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.

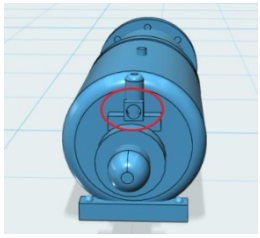
Underframe

NOTE: Please use the underframe truss rod guard to protect delicate parts during construction.

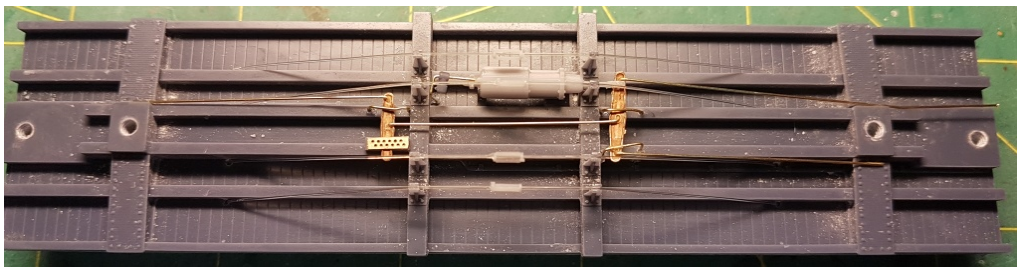
1) Place the underframe on your work surface in front of you with the 2 brake cylinder mounting pads closest to you. The “B” (brake) end of the car is on your left, the “A” is on the right. You can use a marker to write on the coupler pads for reference.
2) Drill out and tap the bolsters with your favorite screw sizes. I use nylon 2-56 screws.
3) Coupler boxes can be drilled out at this time too. Align the box end about 2.5mm over the end of the frame. 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, thread 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.
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 and then glue the line on the back side. 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.
16) Underframe complete, add a set of trucks and set aside for now.



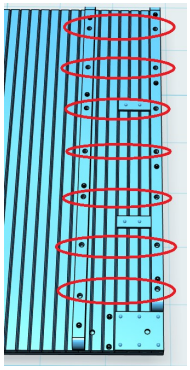
Body

1) Referring to images, locate the grab iron and bracket drill points on the body and drill them out with a #79 drill.

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

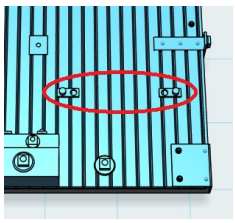
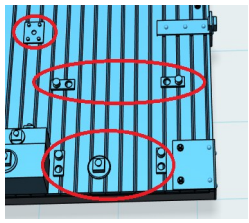
   TIP: Don't force the drill bit and start with light pressure to start the hole and back out to clear chips so it won't jam.

   - **Ladders – be careful drilling the rear outside ladder side rail as it is close to the side wall. I suggest drilling in only as deep as the side rail itself.**

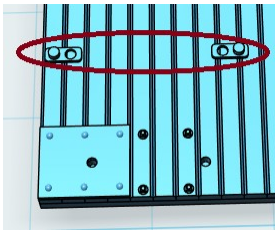


   - **Lower right end of car grabs, truss mounts and ladder**

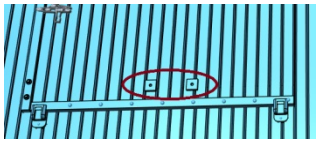
A – Kit **B - Kit**

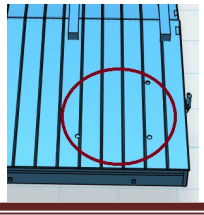
   - **B-kit has side left grab iron and stirrup step.**



   - **Each door has 1 handle**



   - **Roof grab iron**



2) Fabricate twenty-four 20" ladder rungs and 2 end grab irons from .012" brass wire and ACC in place. The lowest ladder rung is special and will be made in the next step. If you have a B kit, you will make 2 more grab irons for the end. The grab iron on the lower edge can be either straight or drop type.
3) Fabricate four lower ladder rungs. Make a 22" wide rung and bend the right side at the 20" mark so that the rung is 20" wide.
4) Fabricate 10" door handles from .012" brass wire or flat bar and ACC in place.
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 follow along the ladder to the bottom of the side.
6) Referring to your time period, decide whether to install end truss rods or Z-beam.
   Truss rods (prior to 1917): There are 8 end truss rod queen posts (4 on each end) found on the etching fret. The part is done as 2 halves and you bend it over to make the item. Drill out the hole on the pad and then glue.
   Z-Beam (after 1917): There are a set of beams included. The rivet pattern on one side of the beam plate, is on the inside, facing the other beam (like the BX-01 kit). You will remove the buffer block's outer NBW in order to fit it. Gently remove the bolt heads on the truss rod plates and align the beams over the truss rod post plate.
7) Cut 4 end truss rods out of .012" wire to 35mm. Make a slight bend measuring 13mm from each end. Thread the end through the outer ladder side rail, queen posts and the right side mounts. When happy with the arrangement glue in place.
8) On the roof glue an eyelet at 45 degrees for the roof grab irons and then fabricate two 20" right angle grab irons.
9) Separate the roof walk from the spur and clean up the edges with files and sand paper.
10) Glue the roof walk 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.
11) 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.
12) Glue the body to the underframe. Ensure the "B" end of the underframe and body are the same orientation.
13) It's a good time to add couplers before the last of the body details are added. Yay, we're almost there!
14) Carefully drill the brake stem winder hole and through the brake racket. The drilling dimple is on the lower bracket's outer face.
15) Cut a piece of .012" wire 45mm long. 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) The included stirrup steps are fashioned by bending them like so:
   A kit – 4 steps (18.3mm length)
   a. Measure from one end 7.1mm 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. Repeat on the other end, ensuring engraved rivets are both on the same side.
c. Bend the mounting tabs.
d. Finish shaping the stirrup and then glue in the mounting holes.

B kit – 6 steps (21.8 length)

a. Measure from one end 9.3mm and make a 90 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. Bend the mounting tabs.
d. Finish shaping the stirrup and glue in the mounting holes.

17) Optional: Add cut/uncoupling levers. There are extra eyelets included.
18) 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.

Notes:

1) The car series were <u>even</u> road numbers only
2) Refer to the table in the history section to determine build date
3) Load and dimension data

A kit – As built

Load: Capacity 60000, Tare 36200 A, Tare (blank) B

Dimension: Inside Length 36ft 0in, Inside Width 8ft 6in, Inside Height 8ft 0in

B kit -1917 and later

Load: Capy: 60000, Ld Lmt: 96200, Lt Wt: 36200

Dimension: IL 36-0, IW 8-6, IH 8-0 CU FT 2448

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!