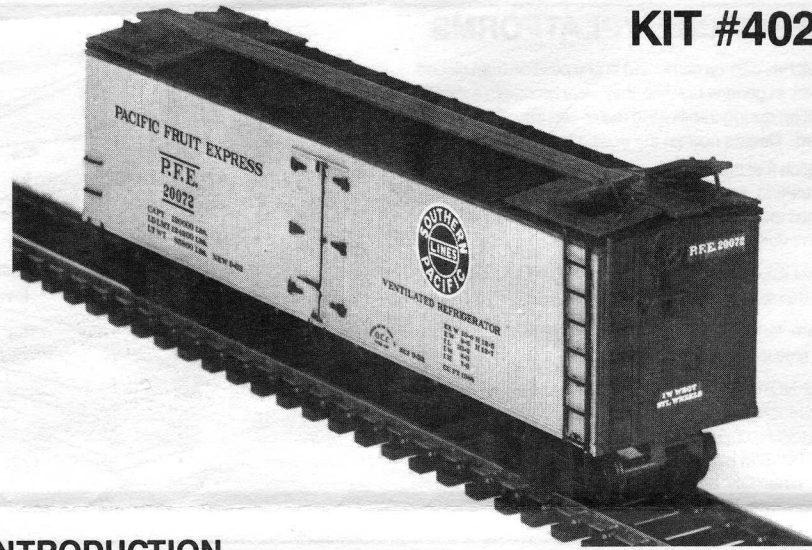


# PACIFIC FRUIT EXPRESS REEFER

## Class R-40-2

Era: 1928-1958

# KIT #4024



## INTRODUCTION

This kit, a class R-40-2, was designed in 1928 by the Union Pacific for the Pacific Fruit Express fleet which they owned jointly with the Southern Pacific Railroad. It was also used by the Western Pacific, and a number of privately owned cars were built to this design. The R-40-2 is visually similar to the R-40-4 (R-40-3), as well as being a "rebuilt" class design from earlier cars, especially the R-30-9 and R-30-13. The basic difference was a shop-built underframe on the R-40-2 rather than Bettendorf built. (There is indication that the R-40-3 was not built as such, but was, instead, built as the R-40-4 class).

The R-40-2/-3/-4 classes represent over 7000 cars, which together with numerous rebuilds totaled over 14,000 cars, many still in service as late as 1958. You can see that many options and possibilities are presented with this kit, either as-is or used as a starting point for other classes.

The history of the PFE fleet, including an almost overwhelming number of variations and sub-classes, is a study in itself, well beyond the scope of this brief introduction. It has been the subject of many magazine articles and several major books—a listing of some of these sources is below to assist you in modeling your favorite prototype.

This kit will assemble "as-is" into a rebuild class with ladders and horizontal brakewheel or vertical brake staff. A drill jig is provided to locate the grabirons (not included) if you wish to backdate the car, and parts are provided to convert from the type KC brake system to the later AB style (not included).

For clarity, the instructions show only the kit "from-the-box" with notes for options. There are a number of assembly sequences that may be used, but we suggest, at least for the first kit, that you follow ours, which is a group of sub-assemblies that will be pre-painted prior to final assembly.

Subassembly A: Underframe/Brake rigging

Subassembly B: Carbody

Subassembly C: Hatches, ladders, roofwalk, etc.

Final Assembly.

You may, of course, use your own experience to dictate the actual assembly sequence, but suggest you carefully study the instructions before making a decision.

This is a fun kit, with almost endless prototypes to follow. Assembly, less painting, should take about one enjoyable evening.

So, let's get started. . . .

## PLEASE READ BEFORE ASSEMBLY

Each "sprue", or group of parts, has an identification number and letter, and each part, or identical parts, has a number. Example: "A-3". Each part is attached to the sprue by a small "gate". When removing a part, cut close to the sprue, then carefully trim the gate to the part. **DO NOT TWIST THE PART OFF!** Do not remove the part until called for in the instructions, and don't let them snap off and into the carpet!

All plastic parts have a sharp "witness line", usually on an edge; this is where the mold halves come together, and should not be confused with "flash", a very thin area of plastic extending from the witness line. The witness line may be scraped with a modelers knife for a finer appearance.

We recommend ONLY "Liquid cement for plastics". Use ACC for plastic to metal joints. Test fit each part to see where solvent should be applied, then do so with a small sharp pointed brush, allowing solvent to "draw" into joint by capillary action. For larger parts it is best to "tack" the joint first, then apply additional solvent as necessary. "Tacking" can be compared to "spot welding".

Clean your workspace before starting, and provide adequate lighting, working over a clean sheet of white paper for contrast. And remember, one of the most common problems is simply tipping over the cement jar!

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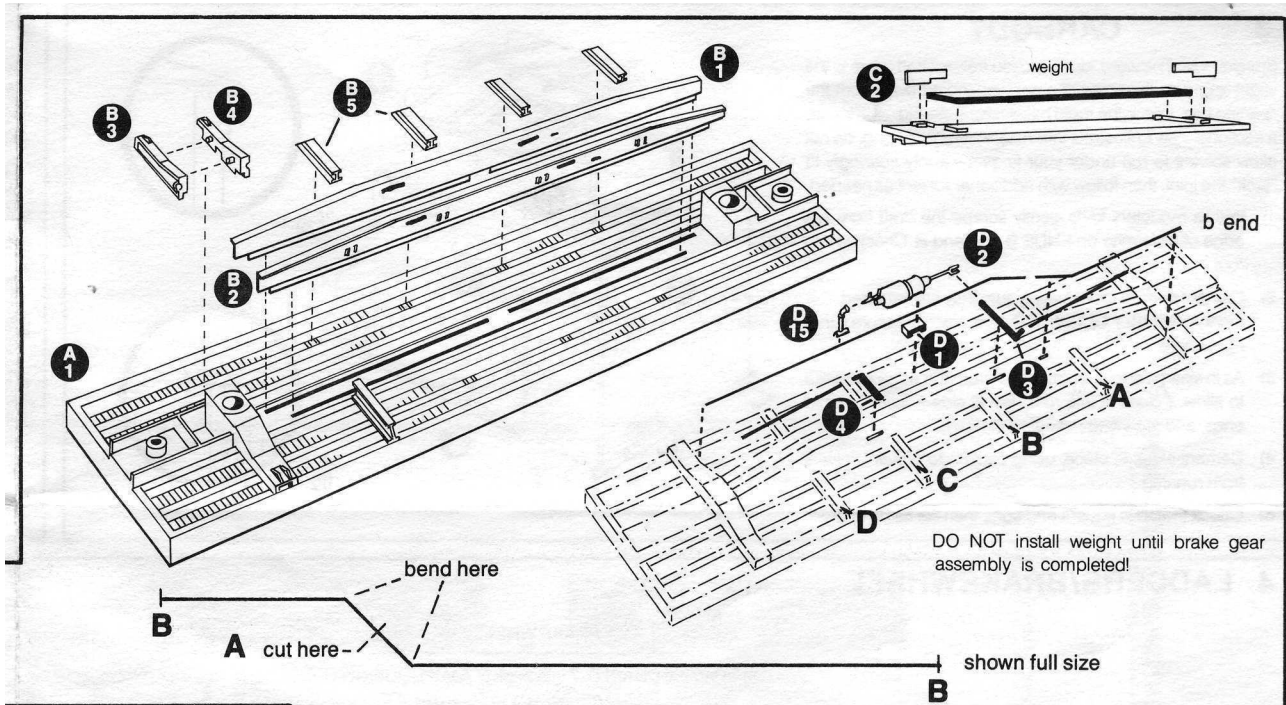
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## PARTS LIST

Quantity required in ( ). Spares are provided for the smaller parts.

"A" SPRUE	(1)	B-14	ROOFWALK	(1)	D-3	LIVE LEVER
(1) A-1 FLOOR	(2)	B-15	TRUCK WASHER FOR ATHEARN	(1)	D-4	FLOATING LEVER
(1) A-2 ROOF		"C" SPRUE		(2)	D-5	PLATFORM SUPPORTS
"B" SPRUE	(2)	C-1	SIDE	(1)	D-6	PLATFORM, AJAX STYLE
(1) B-1 FISHBELLY	(2)	C-2	WEIGHT RETAINER	(1)	D-7	CHAIN, AJAX STYLE
(1) B-2 FISHBELLY	(4)	C-3	ICE HATCH PLUG	(1)	D-8	AJAX BRAKE HOUSING
(4) B-3 BODY BOLSTER HALF	(4)	C-4	ICE HATCH	(1)	D-9	AJAX BRAKE WHEEL
(4) B-4 BODY BOLSTER HALF	(4)	C-5	LATCH BAR	(1)	D-10	ROCKER LEVER, AJAX STYLE
(8) B-5 CROSS SILLS	(4)	C-6	ICING PLATFORM	(1)	D-11	PLATFORM WITH RATCHET, VERTICAL STYLE
(2) B-6 COUPLER POCKET COVER	(4)	C-8	LADDER	(1)	D-12	UPPER BRAKE STAFF SUPPORT
B-7 N/A	(6)	C-9	GRABIRONS	(1)	D-13	LOWER BRAKE STAFF SUPPORT
B-8 N/A	(4)	C-10	END STIRRUP STEP	(1)	D-14	VERTICAL BRAKE WHEEL
B-9 N/A	(2)	C-11	DOOR STIRRUP STEP	(1)	D-15	BRANCH LINE, TYPE "A"
B-10 N/A	(4)	C-12	ROOFWALK SUPPORTS	(1)	D-16	BRANCH LINE, TYPE "B" NOT USED
(1) B-11 DRILL JIG	(1)	"D" KC BRAKE GEAR SET		(1)	D-17	LIVE LEVER, 30' CARS NOT USED
(1) B-12 ASSEMBLY GUSSETS	(1)	D-1	BRAKE CYLINDER BRACKET	(1)	D-18	FLOATING LEVER, 30' CARS NOT USED
(1) B-13a "A" END	(1)	D-2	BRAKE CYLINDER			
(1) B-13b "B" END						



## I UNDERFRAME

- 1) Remove FLOOR A-1 from sprue with sharp knife. Clean gates from edge with flat, medium cut file.
- 2) Place floor on *flat* surface, detail side up.
- 3) *Test fit* FISHBELLY B-1 into slot on floor—(note locator notch at center) it should seat firmly to full depth. If too tight, *lightly* scrape rib until it seats in place. When OK, cement, detail side facing out.
- 4) Repeat step (3) with opposite FISHBELLY B-2.
- 5) Cement BODY BOLSTER halves B-3 and B-4 together. Make four.
- 6) Cement four BODY BOLSTER assemblies to underframe. Locators provide position, but check for square by sighting to floorboards.
- 7) Cement eight (8) CROSS SILLS B-5 in position. Note correct relationship of "S" Curve from drawing. Cross sills overhang edge of floor, so **DO NOT** trim the ends flush. Leave underframe on flat surface, detail side up, and weight if necessary until cement has set. Note: Spare cross sill is provided to support the air tank if you are converting from the K brake system to AB type.
- 8) Bend TRAINLINE from .020 wire provided. After bending, cut at point A and trim to length at point B. Set aside. While underframe is drying, prepare SIDES C-1, ENDS B-13A and B-13B, and ROOF A-2. **NOTE:** When cutting and cleaning gates from SIDES, *be very careful* with the small gates at TOP (facia) corners. **DO NOT REMOVE** small protruding tips of facia board. Set parts aside away from the solvent bottle!

- 9) Install TRAINLINE as follows:

**SHORT LENGTH**-Feed wire thru cross sills "A" and above body bolster. Insert short bent end into slot in fishbelly between cross sills "A" and "B". Draw wire into slot, and insert, with tweezers, opposite end into molded hole in body bolster. Cement with ACC or similar. The trainline does not go thru the body bolster because it would prevent proper truck rotation.

**LONG LENGTH**- as above, opposite side, thru cross sills B, C, and D.

## 2 BRAKE RIGGING

Note the "B" engraved on the weight side of the floor—this indicates the "B" or "Brake end" of car.

- 1) Cement BRAKE CYLINDER BRACKET D-1 to FLOOR.
- 2) Cement BRAKE CYLINDER D-2 to bracket, with clevis pointing to "B" end.
- 3) Insert LIVE LEVER D-3 thru slot in fishbelly, and into clevis on cylinder. Align clevis on other end of lever to be parallel to center line of car—cement.
- 4) Cement FLOATING LEVER D-4 thru slot in fishbelly as in step 3.
- 5) Snap BRANCH LINE D-15 onto train line, cement end to dirt collector on K brake cylinder.
- 6) Cut brake rods to fit, from .010 wire provided, and cement in place with ACC.
- 7) Install weight with WEIGHT RETAINERS C-2. Several drops of ACC may be used for added security, but **DO NOT FORCE** the floor into contact with weight, as weight may have a curve.

Set completed underframe aside in a safe place.

### 3 CARBODY

Special note: The word "draft" is used below. Draft refers to the slight angle on the edge of a part, extending away from the "parting line" where the mold halves separate. Fig. 1 shows a sectional view to illustrate this. Also, when cementing, do not allow solvent to run under your fingers—apply sparingly to "tack" the joint, then follow with additional solvent as needed.

- 1) With a modelers knife gently scrape the draft from top edge of facia strip on ENDS B-13A and B. Check fit into roof.
- 2) Cement ends to roof, making sure they are centered. Cement ASSEMBLY GUSSETS B-12 in place to assure a true right angle.
- 3) As in step (1) above, scrape draft from top edge of SIDES to allow a close fit into roof. Test fit side—Sides overlap ends, and facia and poling pockets interlock.
- 4) Cement sides in place, using caution to prevent solvent from running.
- 5) Check that all is square and tight, then set aside to dry.

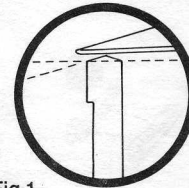
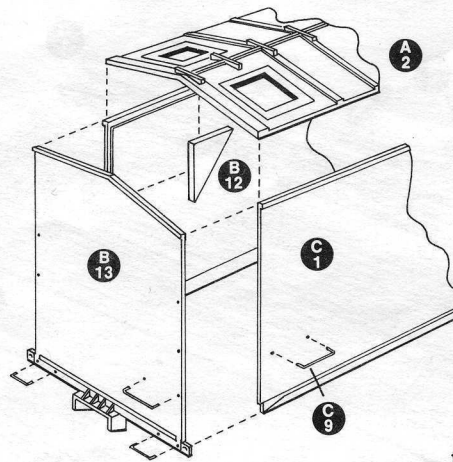


Fig.1



fig.2

### 4 LADDERS/BRAKEWHEEL

#### FOR AJAX BRAKE WHEEL ASSEMBLY:

There is a choice of ladder styles depending on the era and prototype being modeled. This kit includes molded ladders and AJAX style brake wheel to reflect the most common rebuild versions from the late 'thirties. It is acceptable to use the AJAX brake with the type KC brake system, as the conversion to type AB was made over many years.

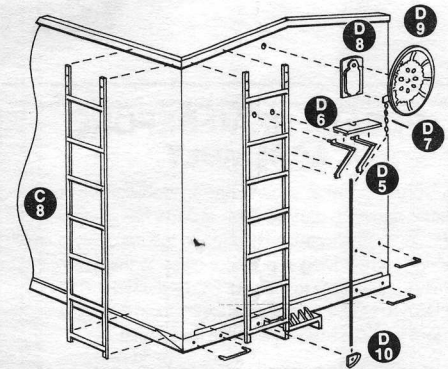
Both the AJAX horizontal and older vertical brake wheel is included for your choice. If you wish to backdate the model to the "as-built" version with grabirons instead of ladders, now is the time to do so. We do not include preformed wire grabs, but the DRILL JIG B-11 is included, designed to fit either DETAILS ASSOCIATES or WESTERFIELD grabs. The jig is dimpled, and must be drilled to fit the wire size prior to spotting the holes in the sides and ends. We suggest that you replace our molded grabs as well, if using wire.

If you are using the ladders, note that there are no locators, as this would require shaving detail and filling holes if you backdate the model.

You may choose to pre-paint the ladders and install after the carbody is masked and painted. See "Final assembly".

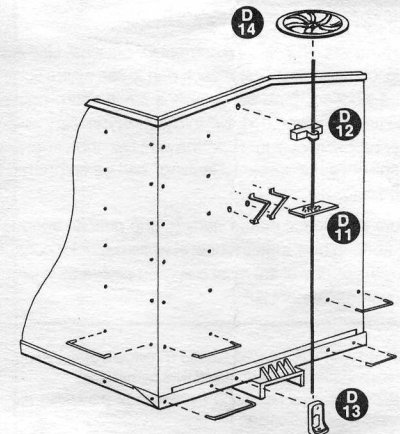
- 1) Using a NEW single edge razor blade (NOT modelers knife) carefully remove ladders C-8 from sprue and clean up gates.
- 2) Cement ladders to ends, then sides. Position them by eye, one board width in from corner of car, and flush with the nailing strip at the bottom.

- 3) Cement CHAIN D-7 into back of AJAX HOUSING D-8.
- 4) Cement two (2) PLATFORM SUPPORTS D-5 to "B" end. NOTE: Use the top pin in the support for AJAX application, trimming off the bottom pin.
- 5) Cement AJAX PLATFORM D-6 to supports, with notch to end of car.
- 6) Cement assembled brake housing to end, locating pin into car just below facia strip, and chain entering slot. NOTE: Trim chain to length, just entering slot.
- 7) Cement BRAKE WHEEL D-9 to housing.
- 8) Cement AJAX ROCKER D-10 to endsill, directly in line with chain.
- 9) Cut BRAKE ROD from .010" wire, to fit into cup under platform, and slot in rocker. Cement in place with ACC.



#### FOR VERTICAL BRAKE WHEEL APPLICATION:

- 3) Cement two (2) PLATFORM SUPPORTS D-5 to "B" end. NOTE: Use the bottom pin in the support for VERTICAL BRAKE application, trimming off the top pin.
- 4) Cement BRAKE PLATFORM w/RATCHET D-11 to supports.
- 5) Cement UPPER BRAKE STAFF SUPPORT in place, locating with the small hole in end just under the facia strip.
- 6) Cut BRAKE STAFF WIRE to length from .020" wire.
- 7) Using brake staff to line it up, cement LOWER BRAKE STAFF SUPPORT D-13 in place on endsill.
- 8) Cement BRAKE WHEEL D-14 in place with ACC.



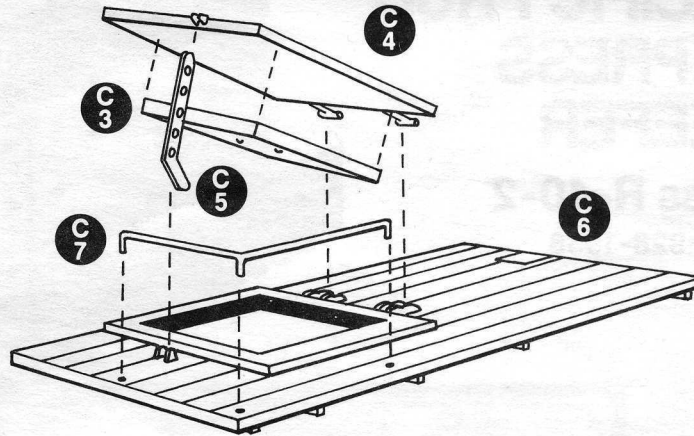


## 5 ICE HATCHES/PLATFORMS

The ice hatches may be cemented in any position from closed to fully open. In general practice, they were latched in a slightly open position during transit if the reefer was empty, and closed if loaded. Decide now on the position, and let's proceed.

NOTE: Notice that the latch mechanism is not centered on the hatch or platform, so during assembly each hatch must match up to a companion platform. Although the detail is quite delicate, the completed assembly is strong.

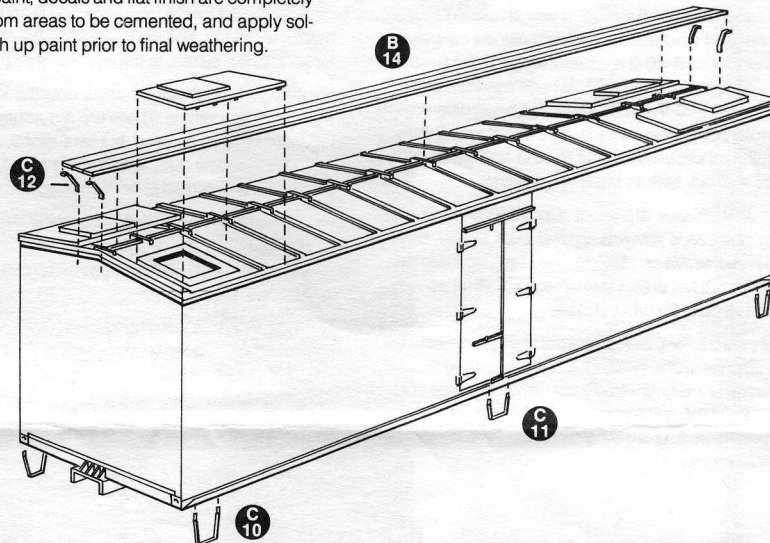
- 1) Cement ICE HATCH PLUG C-3 to HATCH C-4. Make four. (Omit this step if showing hatches closed.)
- 2) Prepare four (4) LATCH BARS C-5. (spares provided) Don't lose them!
- 3) READ NOTE ABOVE! Cement ice hatch hinge pins to hinge blocks on PLATFORM C-6 with TINY drop of solvent. Hold hatch at desired angle and, with tweezers, insert LATCH BAR in place. It will have a tight fit to allow adjustment. When OK, apply solvent sparingly.
- 4) Glue WIRE PLATFORM GRABS in place.



Make four assemblies and set aside in a safe place to dry.

## 6 FINAL ASSEMBLY

Proceed only after paint, decals and flat finish are completely dry. Scrape paint from areas to be cemented, and apply solvent sparingly. Touch up paint prior to final weathering.



- 1) Cement ROOFWALK to ROOF. Do as many supports as possible.
- 2) Cement two (2) ROOFWALK SUPPORTS C-12 to each end of roofwalk.
- 3) Cement ICE HATCH assemblies to roof.
- 4) If ladders are pre-painted, note location of standoffs and scrape paint from carbody only where ladder is to be cemented. See also Section 6. Option: use ACC cement without scraping.
- 5) If GRABIRONS and STIRRUP STEPS are not installed (see section 4) do so now. Note that DOOR STEP C-11 is correct if installed at center of door, or off-center to the right, depending on the prototype.
- 6) Install couplers following manufacturers instructions, but using our COUPLER POCKET COVERS B-6. Our pockets fit KADEE® #5 or ATHEARN horn-hook.
- 7) Insert UNDERFRAME into CARBODY and cement in a few places.
- 8) Install TRUCKS with screw provided. To ensure correct coupler height use TRUCK WASHERS B-15 with our trucks (included). Do not use washers if using KADEE® trucks.
- 9) Touch up paint, weather to suit, and send it out of the shops!

Please note: We now include wire grabirons

# KIT #4024

## P.F.E. REEFER

### Class R-40-2

#### PAINTING AND LETTERING

The exact paint and lettering scheme varies somewhat depending on the era and prototype being modeled, so use your research for accuracy. Although designed in 1928, it is safe to assume that the R-40-2 followed the standards adopted in 1929, as follows, based on "Floquil" brand colors.

SIDES: "DAYLIGHT ORANGE", 90%; "RIO GRANDE YELLOW", 10%. (Note: Reefer Orange is too dark)

Roof, underframe, trucks, all side hardware, vertical brake staff/wheel (if used) "ENGINE BLACK".

Ends, Ajax brake, roofwalk, ice hatches, platforms, side fascia trim, panel below door: "BOXCAR RED". (Try Boxcar red, 70%, Tuscan red, 30%).

Ice hatch plugs: Dirty grey-brown canvas.

Decals are available from MICROSCALE, WALTHERS, and CHAMP, while excellent dry transfers may be obtained from CLOVER HOUSE especially for the R-40-2. All should be available from your dealer. Follow the lettering diagrams and manufacturers instructions included with the lettering sets.

The R-40-2 cars were numbered 36563-37562, and 37563-38562.

#### REFERENCES:

The Great Yellow Fleet

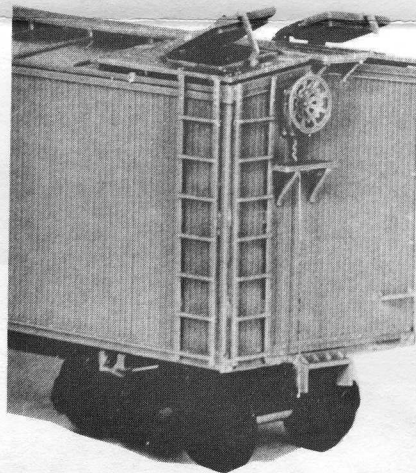
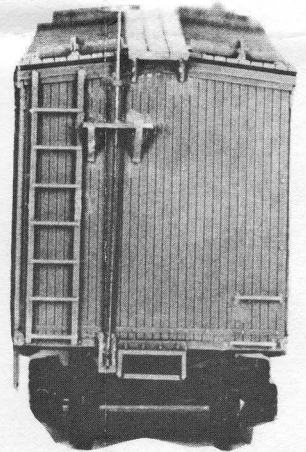
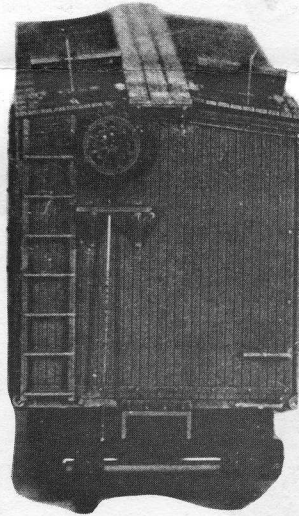
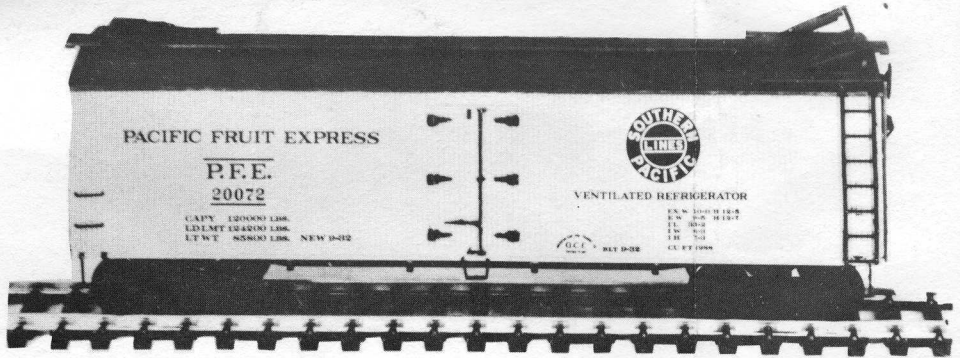
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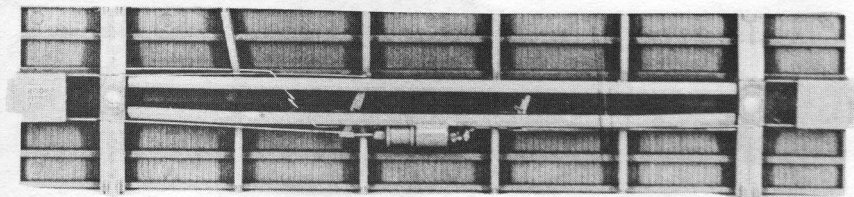
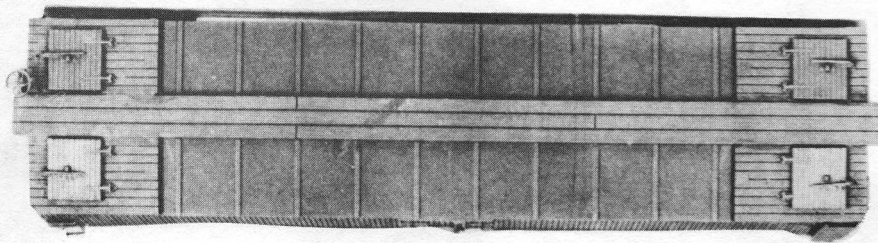
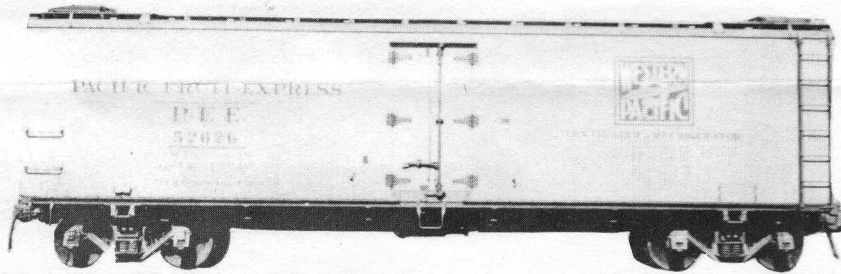
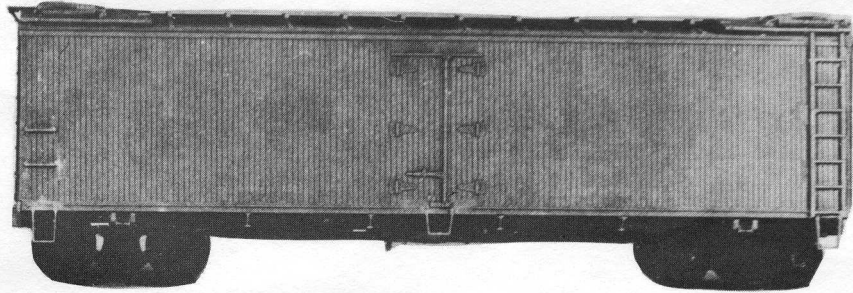
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