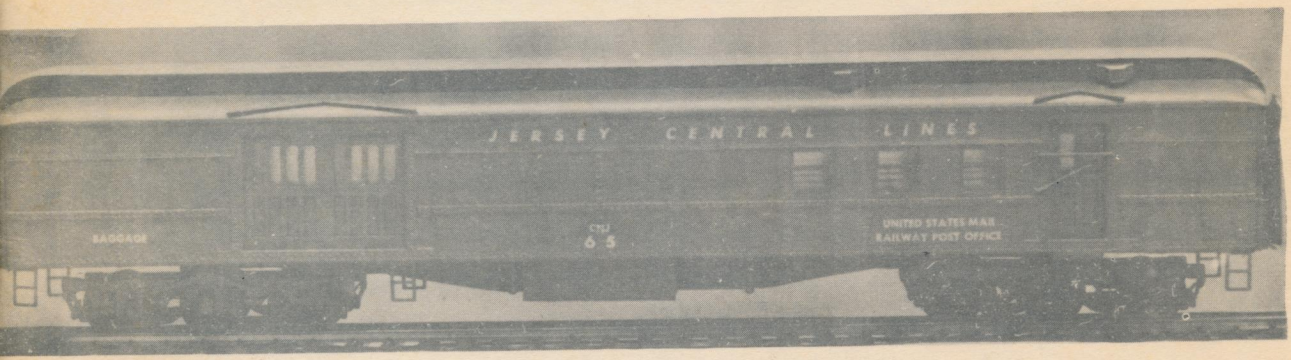
3/16" SCALE

Passenger Car Kits

INSTRUCTION BOOKLET



!#@*?! TRAIN STUFF

P.O.BOX 195
175 MONMOUTH BLVD.
OCEANPORT, N.J.
07757

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#24950 70' RPO/Baggage
AAR Class MB

The prototype for this car kit is the CNJ cars #64 to #74 built from 1914- 1923 by the H & H Company (65 - 71) and ACF (72 - 74). Car #72 can still be seen at New Hope, Pennsylvania. It is owned by the New Hope & Ivyland Railroad. (Note: Car #64 was converted to car #437 in July 1948.)

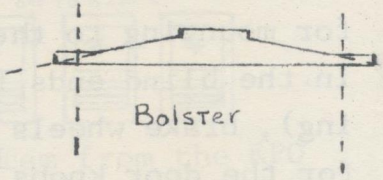
General Instructions

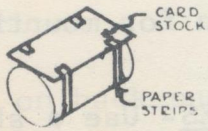
Unpack and inspect your kit against the parts list. Read the instructions thoroughly and familiarize yourself with the parts and the sequence of assembly. If the plastic sides are warped or bent they may be heated until soft under a 100 watt lightbulb then flattened under a heavy book until cool. For a smooth metal-like finish, use sander-sealer or Krylon on the roof and stripwoods. Sand with 00 steel wool or fine sandpaper after each coat.

Remove all the flash from the castings with a file, an emory board, or sanding block. Check for any air bubbles we might have overlooked and repair them with epoxy or filler compound.

FLOOR- Place sides on floor, make floor 3/32" longer than the sides. Cut floor square. Mark the center line (lengthwise). Using a square mark the crossbeam and the bolster placement (see drawing). Cut the deep grooved centersill,

and four crossbeams[2]. Use template A and the 0.030 styrene for these four crossbeams. Remove the overhang from the bolster ends (see drawing) and re-bevel them. Add the 1/4 x 5/64 stripwood[4] to continue the centersill from the bolster[3] to the end of the floor. Attach these to the floor. Drill the holes for the kingpin[5] (truck screws), the roof screws[6] (countersink), brake cylinders[7], generator[8], and the steamtraps[9]. Use a #50 drill for the steamtraps.





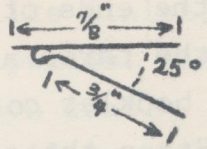
AIR TANK DETAILS

The dished heads (ends) of the airtanks are made by sanding round the ends of the doweling. Mount the three airtanks on cardstock. Use a piece of the booklet cover for this. See Drawing for size. Strap the airtanks with paper strips as shown. Mount the battery box and cover, steamtraps, UV valve, and the generator (mid-book diagram for placement). The generator belt can be made from 3/32 wide 0.020" styrene strip. Leave the ends of the generator open for truck removal. If desired, add piping and brake rigging now.

BODY- Check the csat metal ends by centering them on

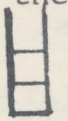
on the floor. Remove the part of the tab that overhangs (note that not all cast ends will extend too far). Drill holes in the end tabs with a #50 bit for mounting to the floor with screws. Drill holes in the blind ends for grab irons[14] (see center drawing), brake wheels[11], eyelets for brake chain[12] and for the door knobs[13]. Fasten (screw and glue) one blind end perpendicular to the floor. Check with a square. Use the side to determine the exact location for mounting the other end.

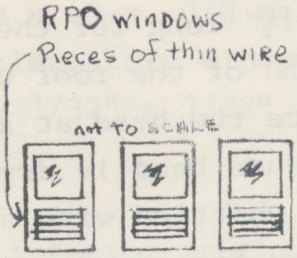
SIDES- Use a sharp Exacto knife to remove the flash from the windows and doors. Cut and mount a piece of the 0.020" styrene sheet for the lower doors backing, leaving a clearance for the floor. Using the drawing as a guide, form the mail pouch catchers[20]. Use the thick wire for this. Glue catchers to each side across the RPO door (see center drawing). Drill holes and mount the hand rails (grab irons[14]) for the baggage door. The sides can be painted now.



Cut the window plastic material to fit into the recessed area behind the windows. Mount the plastic here. Use pieces of the thin wire to make the three bars for the lower windows on both sides of the car (see drawing. The bars will divide the lower windows into five

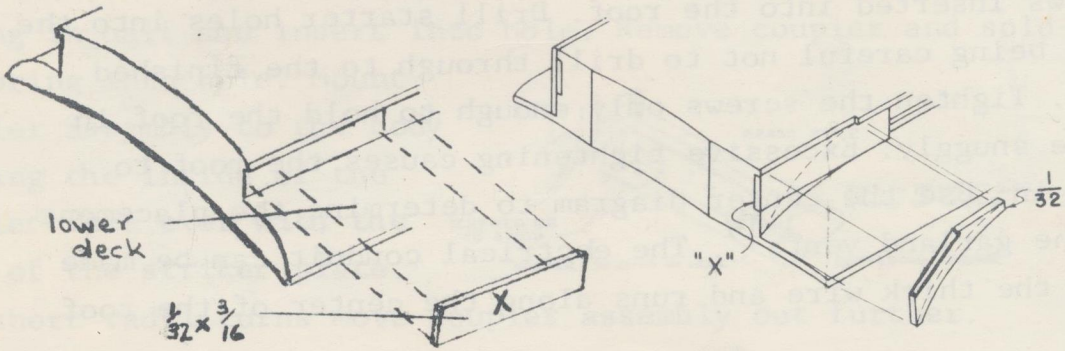
equal sections.

Using a 0.035" drill bit make holes for the six strap steps[16]. Cut the ladder stock to look like so.  File the rough edges and epoxy these to each end and under the baggage door. Trim off the stem from the RPO steps[15] and GOO or contact cement these under the RPO doors. Leave this step off if it interferes with the trucks (as in short radiius turns).

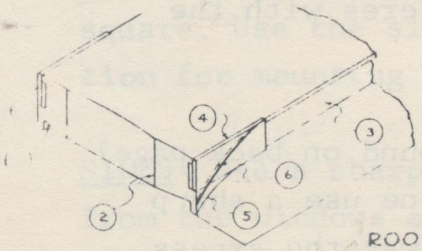


ROOF- Mount the four roof templates (found on back page) on the 0.040" styrene. To cut the styrene use a sharp knife to score the outline, then snap away the excess styrene. File the edges until smooth.

Lay the roof on top of the cast metal ends. Turn the car body upside down and mark the contour of the cast end on to the roof. This will be on the underside of the roof. Bevel the roof to match this contour. Next form the lower deck curve of the roof to match template "B" (see roof diagram below). Build up curved end beading of clerestory.



Make "X" 1½" long for the baggage end and 2" long for the RPO end of the roof using leftover 1/32 x 3/16 stripwood. Place the bead at a slight angle as indicated in drawing. When bead is dry shape the upper deck. Curves should be whittled with a knife or rasp followed by coarse then fine sandpaper. The roof has extra length so that if the modeler is not satisfied with his first attempt can cut off the unwanted section and start again.



ROOF END DETAIL

1. UNDERCUT TO FIT TOP OF ENDS
2. BEVEL TO MATCH ENDS
3. ADD STRIPS TO CLERESTORY SIDES
4. ADD END PIECES
5. SHAPE LOWER DECK
6. SHAPE UPPER DECK

Position the roof on the car and mark the contour of the end on the other end of the roof. Allow no more than 1/64" overhang on the ends of the car. Proceed with the previous instructions on carving the end of the roof.

Cement the drip strips[18] made of the 1/32" stripwood over the RPO and baggage doors (see center diagram).

The roof is held in place by two #6 x 2" flathead screws inserted into the roof. Drill starter holes into the roof being careful not to drill through to the finished side. Tighten the screws only enough to hold the roof in place snuggly. Excessive tightening causes the roof to pull in. Use the center diagram to determine the placement of the garland vents[19]. The electrical conduit can be made from the thick wire and runs along the center of the roof.

595-3147

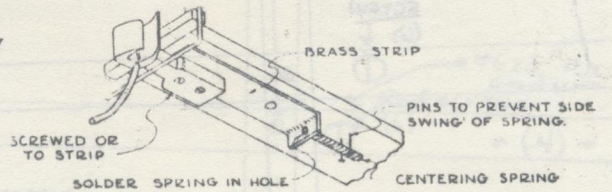
Ventilation screens are cut from the 40 x 40 x .010 screen provided. These are 5/8" x 3/16". The clerestory windows are ½" x 3/16" size. Frame the windows with 1/32" x 1/32" stripwood.

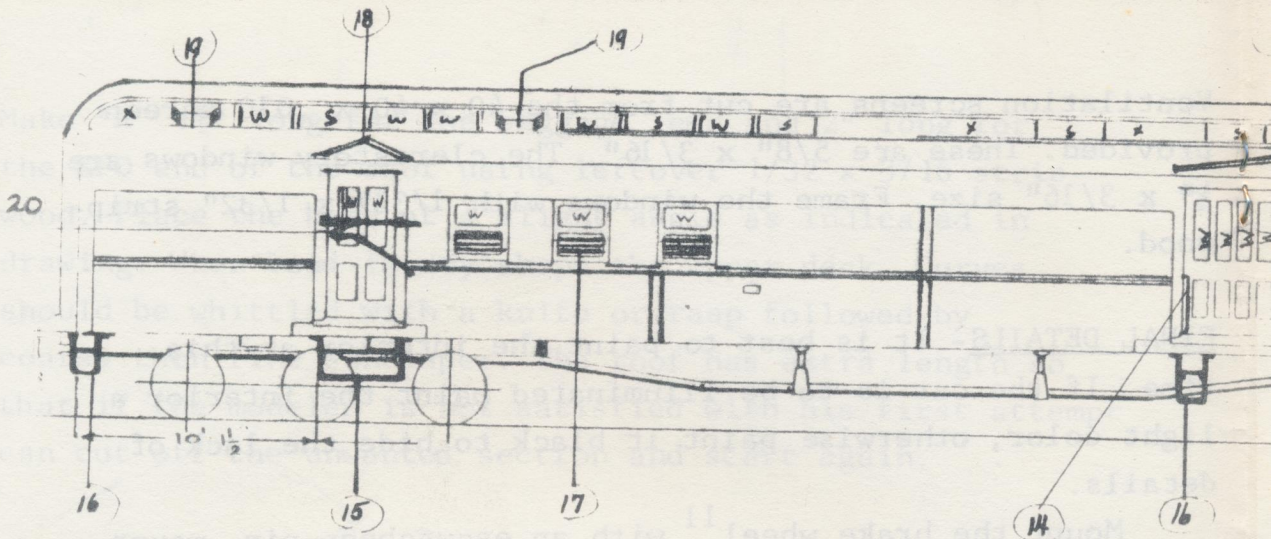
FINAL DETAILS- It is best to paint the interior at this time. If the car is to be illuminated paint the interior a light color, otherwise paint it black to hide the lack of details.

Mount the brake wheel[11] with an escutcheon pin, mount grab irons[14], chain and eyelet[12] now. Paint the ends, roof, and underframe.

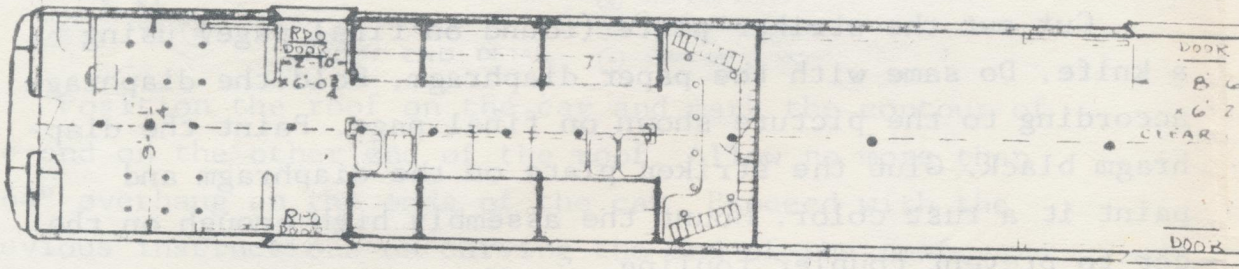
Cut out the striker plate (found on final page) using a knife. Do same with the paper diaphragm. Fold the diaphragm according to the picture shown on final page. Paint the diaphragm black. Glue the striker plate on the diaphragm and paint it a rust color. Mount the assembly high enough on the car to prevent coupler fouling.

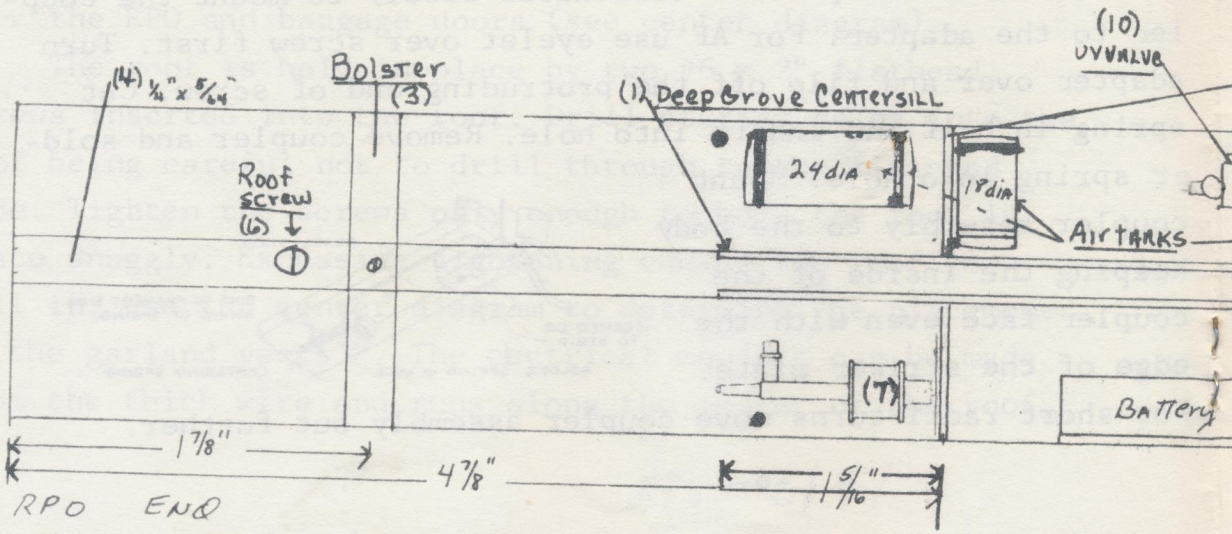
Use a self-tap screw (stainless steel) to mount the coupler to the adapter. For AF use eyelet over screw first. Turn adapter over and file off the protruding end of screw. Cut spring in half and insert into hole. Remove coupler and solder spring into hole. Mount coupler assembly to the body keeping the inside of the coupler face even with the edge of the striker plate. For short radii turns move coupler assembly out further.

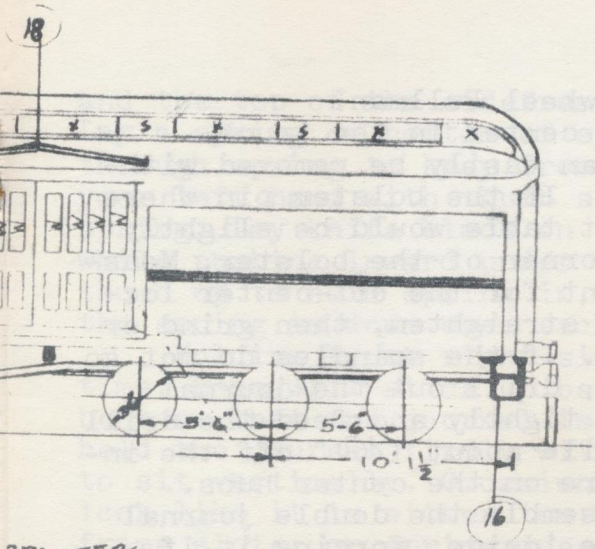




19-GARLAND VENTS 18-DRIP STRIPS 17-WINDOW BARS 16-STRAP STEPS 15 R
W-WINDOW MATERIAL S-SCREEN X 1/32" x 3/16" STRIP

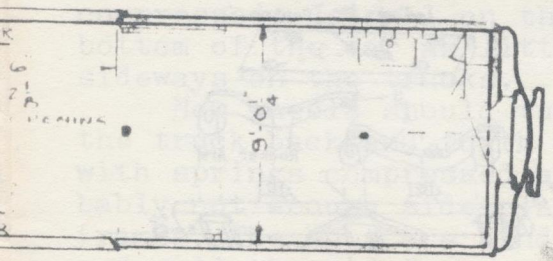


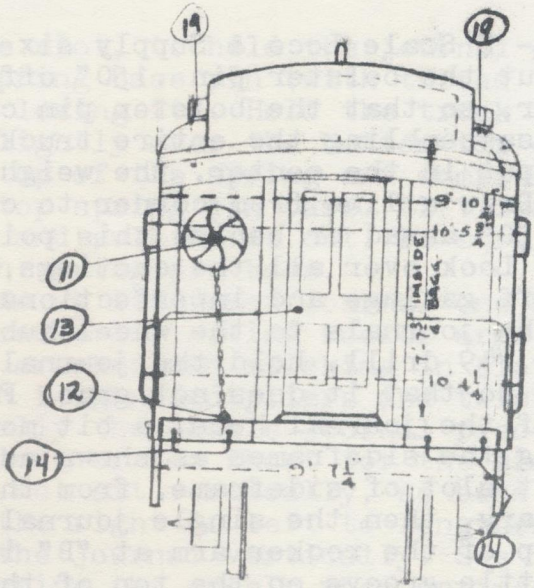




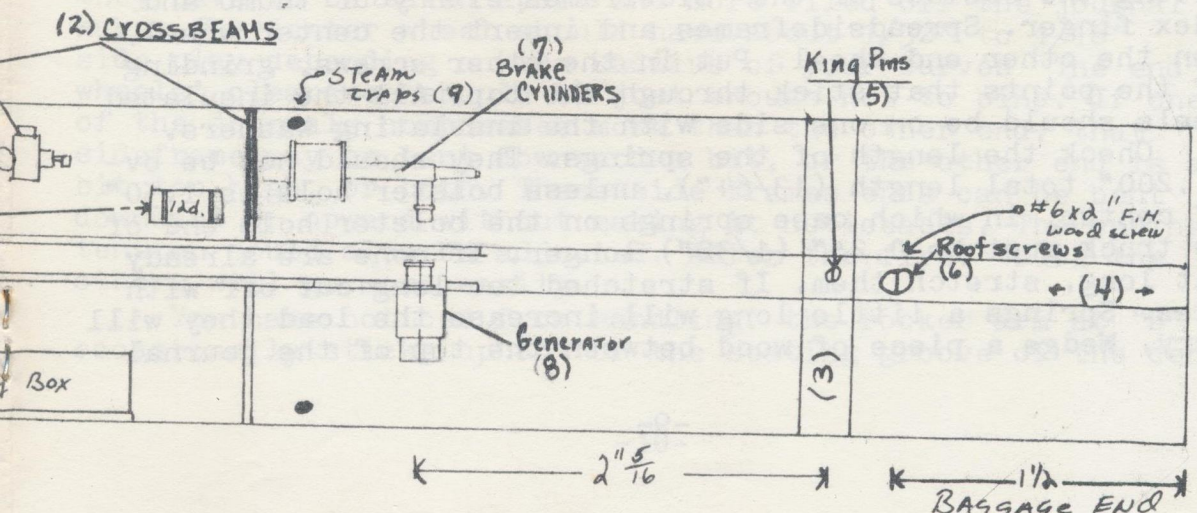
RPD STEPS
IPWOOD

14 - GRAB IRONS
20 - MAIL POUCH HOOK



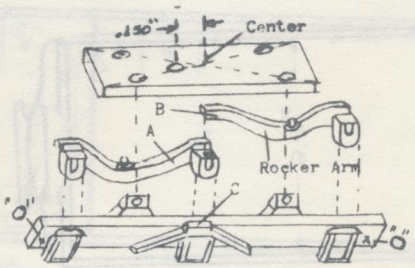


11 - Brake wheel
12 - Eyelet
13 - Escutcheon pin
14 - Grab Irons
19 - Garland Vents



TRUCKS- S Scale Loco & Supply six wheel Pullman.

Put the bolster pin .150" off center in the truck bolster, so that the bolster pin can easily be removed without disassembling the entire truck. If the bolster pin where to be put in the center, the weight table would be slightly high. Draw a line from corner to corner of the bolster. Measure .150" ahead or behind this point for the off-center location. Look over all the castings, straighten, then grind or file off gatings and imperfections. If the spindles do not go into the journals to the wheel hub, drill out the journal with a #49 drill, hold the journal tightly and feed the drill slowly so that it does not grab. File about 1/64" off the inside of the journal hubs, a bit more on the center hubs. Holding the sideframes as shown assemble the double journal in left slot of sideframe, from the inside, forcing it if necessary, then the single journal on the right side, with the tip of the rocker arm at "B" in the little groove on the top of the journal. This is only a preliminary fit. For preliminary assembly and fit, lay fiber bolster on top of projecting lugs on sideframe and screw wood screws in from the bottom to thread holes in the bolster to be sure the bolster fits lugs. Remove all but one screw and insert a wheel set where the screw was left in, holding the wheel in by holding the ousides of the sideframes eith your thumb and index finger. Spreadsideframes and insert the center wheel, then the other end wheel. Put in the other screws, grinding off the points that stick through the top. All the insulated wheels should be on one side with the insulating washers.



Check the length of the springs. They should not be over .200" total length (13/64"), unless bolster hole is 1.50" off center, in which case springs on the bolster hole end of the truck must be 0.25" (1/32") longer. If none are already that long, stretch them. If stretched too long cut off with dykes. Springs a little long will increase the load they will carry. Wedge a piece of wood between the top of the journal

and the top of the sideframe slot, to hold the journal down. Lay a spring on bottom of spring base pin (with thread through spring to keep from losing it). Hold the truck in your left hand with thumb slightly over the bottom tip of the spring. Lay knife blade on top of the spring and compress it while pushing inward under top spring pin base. Lift left thumb up to hold spring in, and pull knife out. Be sure that the spring is down over each spring pin base.

Holding truck right side up lift each journal one at a time. Some will stick up because in casting rocker arms are bent so that the journal is crooked and sticking in slot. So hold the journal firmly with long-nosed pliers and twist it to sit vertically. Occasionally the double journal piece will look like it is either too long or too short for the sideframe slots; or spring does not sit vertically, so bend rocker arm "A" near journal to the right or left to lengthen the journal spacing, then bend the journal vertically. See that the brake sjoes are not touching the wheels when springs are compressed. Journal on the car, point "C" should clear the bottom of the car as little as possible when the car rocks sideways on the trucks.

Now wheels should turn freely, even dry, after rolling the truck back and forth on the bench to wear it in, both with springs compressed and free. If not free there is probably not enough side-play of the wheels between the sideframes. The hubs are binding so either lossen wood screws and pull the sideframes apart, if they will not pull apart the sideframes can be bent outward without noticing it; or they have to be taken apart and more filed off the journal hubs. The center wheel should have about 1/32" to 1/16" side play depending on the radiius of your curves The end wheels' clearance should be just enough not to bind. If one of the journals compresses more than the other end, that sideframe may be bent downward a bit, or the other end is a bit too high, or both. These side frames ends can be bent downward or upward without making it noticeable. The spring tension could also be adjusted. After the first truck the others will go more easily.

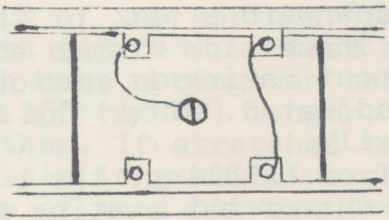
You have noticed from handling, the rocker arm at "B" occasionally sticks up out of the seating groove of the cen-

ter journal so remember this when handling the car. Otherwise the center journal will not spring. This can not happen in operation as the springs hold it in place.

There are a number of ways to wire the trucks. The drawings should work very well, giving least bending of the leads and breakage, and omitting all soldering possible which can be a source of trouble as breakage occurs there. Instead the wires are looped under the wood screw heads in the direction the screws are turned. One side frame wire could be soldered to the bolster pin head (as shown for one side pickup), with a soldering lug inside the car on the bolster pin, to carry the current. On one side pickup the wire is coiled around the bolster pin a full loop to reduce bending at one spot, and soldered to the bolster pin head. It would be a good idea on these to wire both sideframes together as shown, so spindles and journal on one side are not carrying all the current but dividing the flow to the other side through the axle and back to the first sideframe. It would be a good idea to have some solid detail or screw project below car bottom between the sideframes tp prevent trucks from turning clear outward when handling and pulling wires off or out of place, also a car looks bad for show with the sideframes sticking out.

Mount trucks and test car on curves. Adjustments may have to be made if radii proves to be too sharp for the cars, if so, move trucks closer to the coupler.

Chain and eyepins have been provided for attachment to trucks. Each truck has four chains. Solder the end of the chain to truck frame in front of the journal box yoke (see position "O" truck instructions. Cut eyepin to 3/8" length. Drill holes in sides and epoxy them into place with the eye pin open. Hook chain to eyepin. Check for interference on turns. Repeat on other locations.



Wiring diagram for trucks

85
6
5.10
8.50
#13.60
1.35
12.25

#24905 RPO/ Baggage Parts List

#	Qty.	Description	Price
N450	1	Floor	0.55
N550	2	Bolster	0.20
N390	1	Grooves centersill	0.50
T036	1	Styrene sheet (0.030")	0.10
N019	1	¼" X 5/64" stripwood	0.12
J412	2	Kingpins (truck screws #4 x ½")	0.10
J620	2	Roof screws (#6 x 2")	0.10
T903	2	Brake cylinders	0.50
T906	4	Steamtraps	0.40
T910	1	24" Airtank (doweling)	0.05
T911	1	18" Airtank (doweling)	0.05
T912	1	12" Airtank (doweling)	0.05
T913	1	Pulley driven generator (4 KW)	0.25
T900A	1	Battery box (wooden)	0.05
T900	1	Battery box cover (cast metal)	0.50
T905	1	UV Valve	0.20
T909	3	1" piping	0.20
T010	3	1 5/8" piping	0.20
T901	2	Blind ends	1.50
J114	4	Blind end screws (#1 x ¼")	0.25
T914	2	Brake wheels	0.25
N38111	4	Grab irons	0.20
N560	2/8	Eyepins (2 less trucks, 8 w/trucks)	8/0.10
T950	2	Sides, RPO/Baggage	4.00
T037	1	Styrene (0.020")	0.25
T915	2	Window material	0.25
N435	1	End steps	0.26
T908	2	RPO steps	0.50
V010	4	Garland vents	0.50
N440	1	Roof	1.10
N029	1½	1/32" x 1/32" Stripwood	0.05
C022	2/4"	Chain (2" less trucks 4" w/trucks	4"/0.50
W402.2	2	SSL & S six wheel trucks	6.60
M036	6	36" Scale wheels	2.40
A030	6	Highrail wheels	1.50
V005	2	Kadee #5 coupler /scale	1.10
T038	2	Coupler adapter	1.00

Parts list continued...

T039	1	Spring 1/8"	0.20
T040	2	Coupler screw (#2 x ¼- KD)(#2-56 x ¼-AF)	0.10
T013A	2	Coupler adapter screw (#2 x 3/8)	0.10
T011	2/4	Escutcheon pins (2 less trucks, 4 w/trucks	0.10
T032	4	Eyelets	0.50
G177	2	AF coupler	1.00

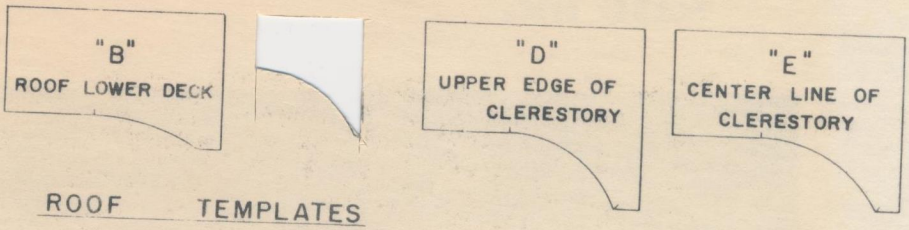
We would like to thank Bill Boucher of New Bedford, Mass. for the beautiful job he did on the patterns for our sides. Also a thanks to Tom Shortall of JC Models (Chester Streamliners) who did our metal castings, John Bortz of Delaware Valley S-Scale Supply for making available to us some of his patterns, and to Ed Petras of Roller Bearing Models for some hints on casting the sides. We appreciate being allowed to use some drawings from the "S Gauge Herald". Lastly, thanks to our friend Ron Wintriss.

More information on S-gauge passenger car construction can be found in the articles by Bill Boucher, 'Paste Board Pullmans' featured in the "S Gauge Herald", issues Jan '76, Mar '76, and May '76.

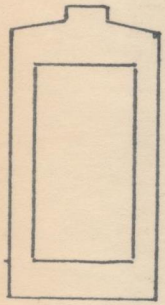
Enhorning S-gauge decals can be purchased from John Bortz, Delaware Valley S-Scale Supply, 3377 Papermill Rd, Huntington Valley, PA 19006; or directly from Enhorning Ind., P.O. Box 29, Ludington, Mich 49431. Decal catalogues can be obtained from both for 75¢, Dan Olsen, 7209 Woodlawn Ave. N.E., Seattle, WA 98115 has AF passenger car decals. These are the same type as appeared on the original AF cars.

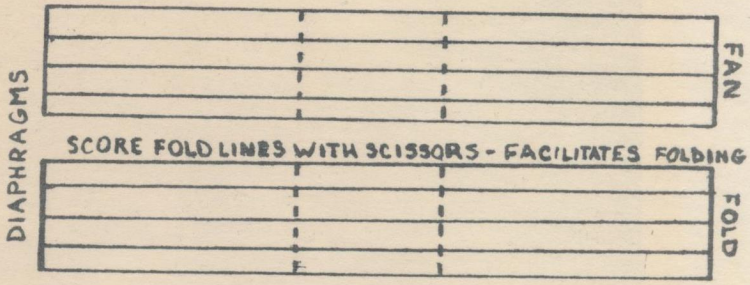
PASS CAR UNDERBODY — DEC 62 & JAN 63 MR
" " ROOF — MAR 63 MR
" " INTERIORS — MAY 61 MR

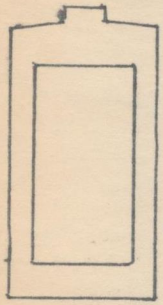
LABOR — $26.95
COUPLERS — 3.00
DIAPHRAMS — 3.50
TRUCKS — 12.25
CAL SCALE MAIL PEDEN CATCHERS — 2.95

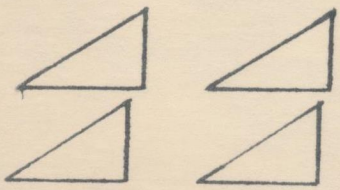


ROOF TEMPLATES

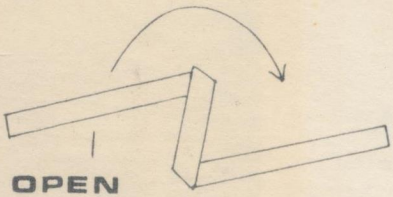


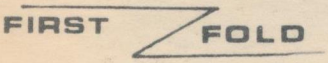




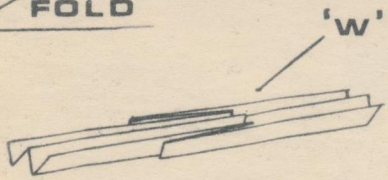


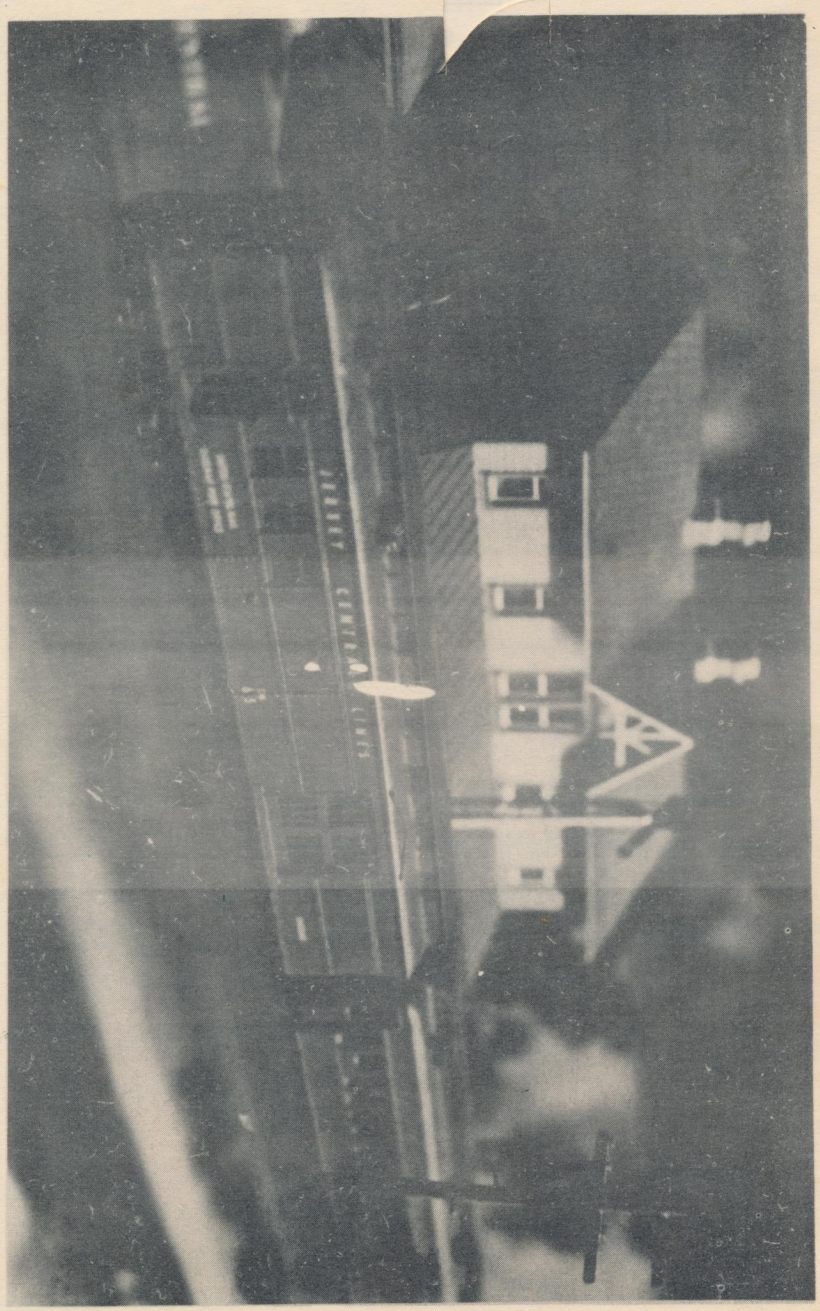
TEMPLATES 'A'





FAN FOLD
TO
'W'





ADDITIONAL NOTES

We have included the following drawings to suppliment our instruction booklets. Figure A will clarify the text in relation to the centersill and bulkhead attachment.

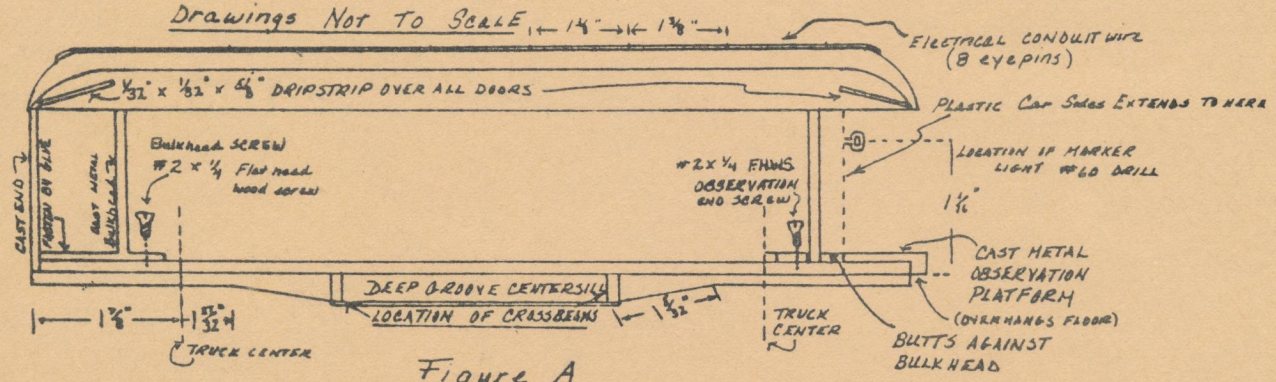
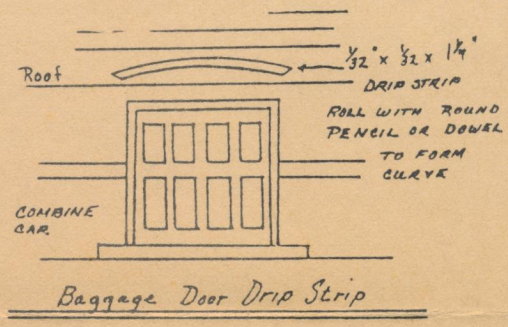


Figure A

Screwing the bulkhead to the floor eliminates the need to "Use some pieces of scrap wood flooring to wedge the bulkhead..." As you are advised in the final sentence of page 6 in the booklet.

We had changed the center drawing of the instruction book and that is the reason there are no drawings showing placement of dripstrips. Drawing A shows the placement of dripstrips over the vestibule doors, and Drawing C shows the placement of dripstrips over the baggage doors.

Refer to the instruction booklet, page 6, Observation only... Change the word underhang to the word overhang. Also, in the second sentence down from that, reading "The end curvature is the same (insert the words "as the vestibule end, template 'E') but it extends down further." See figures B-1 and B-2.



Baggage Door Drip Strip

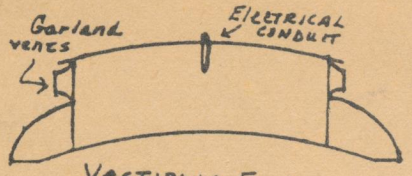


Figure B-1

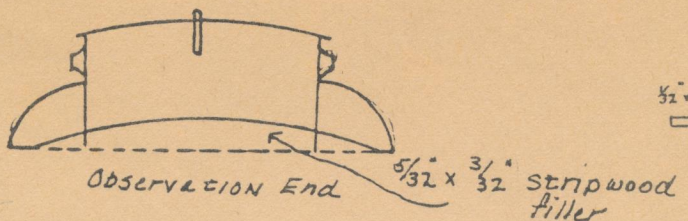


Figure B-2

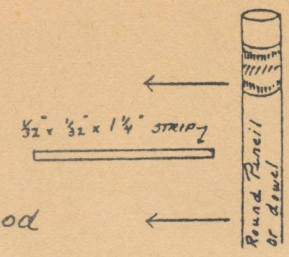
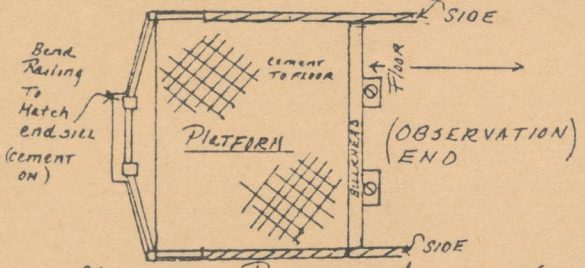


Figure D

If you are unsure of where to place the globe vents, the garland vents, or the box vents, use the instruction booklet cover drawings as a referance to locate the vents above the appropriate windows. Note that the globe vents are located above the lavatory windows.

Figure D shows a method for curling the stripwood for dripstrips by rolling it on a hard flat surface.

Electrical conduit location can be seen in figure A.



Observation Platform Assembly (Topview)