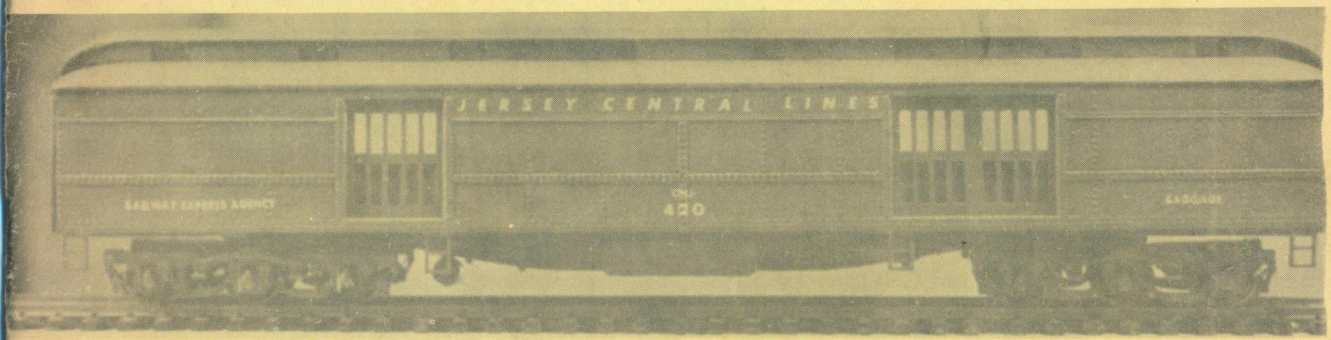
3/16" SCALE

Passenger Car Kits

INSTRUCTION BOOKLET



!#@*?! TRAIN STUFF

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

#24951 70' Express Baggage
AAR Class BE

The prototypes for this car are the CNJ cars built in 1924 by ACF. Car #420 can still be seen in Ringoes, N.J. It is now owned by the Black River & Western R.R.

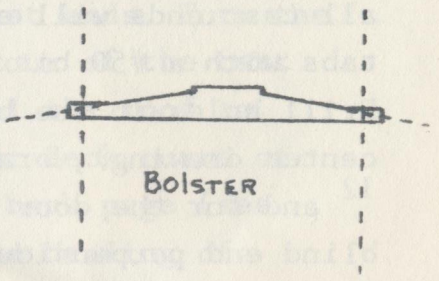
General Instructions

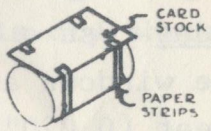
Unpack and inspect your kit against the parts list. Read the instructions thoroughly and familiarize yourself with the parts and the sequence of assembly. If the plastic sides are warped or bent they may be heated until soft under a 100 watt lightbulb then flattened under a heavy book until cool. For a smooth metal-like finish use sander-sealer or any clear acrylic spray (Krylon) on the roof and stripwoods. Sand with 00 steel wool after each coat. Three or four coats is fine for a smooth finish. Do this before starting kit assembly.

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

Floor-Place the sides on the floor. Make the length of the floor 3/32" longer than the sides. Cut the floor square. Mark the centerline lengthwise from end to end. Us ing a square mark the crossbeam placement and the

bolster placement (see center drawing for measurements). Cut the deep grooved centersill[1] refering to center drawing. Using template A (located on final page) and the 0.030" styrene cut out the four crossbeams[2]. These extend out from and perpendicular to the centersill[1]. 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 edge of the floor. Drill the holes for the kingpin[5] (truck screws), the roof screws[6] (countersink), the brake cylinders[9]. Use a #50 drill for the steamtraps, .0625 (1/16") drill for the brake cylinders, #37 drill for the generator, and 3/33" drill for the kingpins, and 5/32" drill for the roof screws.





AIR TANK DETAILS

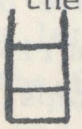
The dished heads (ends) of the airtanks are made by sandinf round the ends of the doweling. Mount the three airtanks on cardstock. Use a piece of the cover for this. See above drawing for size. Strap the airtanks with paper strips as shown. Mount the battery box and cover, steamtraps, UV valve, and the generator (center diagram for placement). The generator belt can be made from 3/32" wide 0.020" styrene and should extend from generator out to the trucks (normally the belt would go around the

truck axle, but on the kit leave the end open for truck removal.

Body- Check the cast ends by centering them 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 the 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 styrene sheet (0.020") for the lower doors backing, leaving a clearance for the floor. Drill holes and form and mount the hand rails (grab irons[14]) over the steps on the door jamb. Paint the sides now.

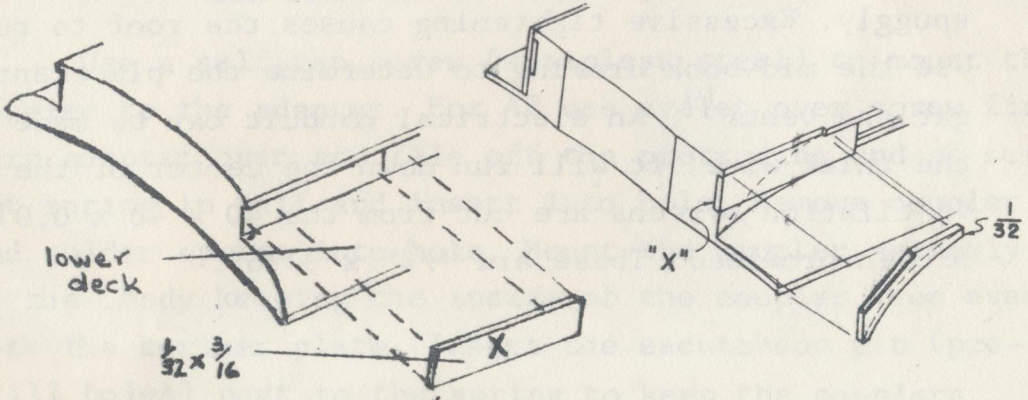
Cut the window material. Mount the plastic behind the upper windows of the doors.

Using a 0.035" drill bit make holes for the strap steps. Cut the ladder stock to look like so  . File the rough edges and epoxy these to each end and underneath the baggage doors.

Roof- Mount the four roof templates (found on back page) on the 0.040" styrene sheet (use white glue for this). To cut the styrene use a sharp knife to score the outline, then snap away the excess styrene and file the edges until smooth.

Lay the roof on the top of the cast ends. Turn the car body upside down and mark the contour of the cast end 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 found on back page (see diagram below). Build up the curve end beading of the clerestory. Make "X" 1½" long

Place the bead at a slight angle as indicated in drawing below. When bead is dry shape



the upper deck. Curves should be whittle with a knife or a rasp followed by coarse then fine sandpaper. The roof has extra length so that if the modeler is not satisfied with his first attempt he can cut off the unwanted section and start again.

Position the roof on the car and mark the contour of the cast 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 shaping the end of the roof.

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

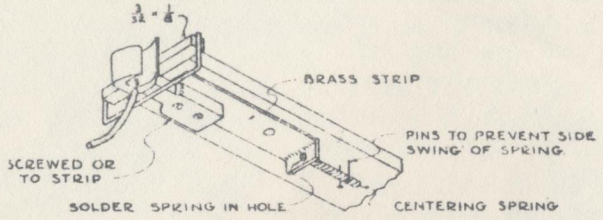
The roof is held in place by two #6 x 2" long flathead screws. Drill starter holes into the roof being careful not to drill through to the finished side. Tighten the screws only enough to hold the roof in place snuggly. Excessive tightening causes the roof to pull in Use the mid-book drawing to determine the placement of garland vents[19]. An electrical conduit can be made from the thick wire. It will run down the center of the roof. Ventilation screens are cut from the 40 x 40 x 0.010 screen provided. These are 1/2" x 3/16".

Final Details- It is best to paint the interior at this

time. If the car is to be illuminated paint the interior in light colors; otherwise paint the interior black to hide the lack of details.

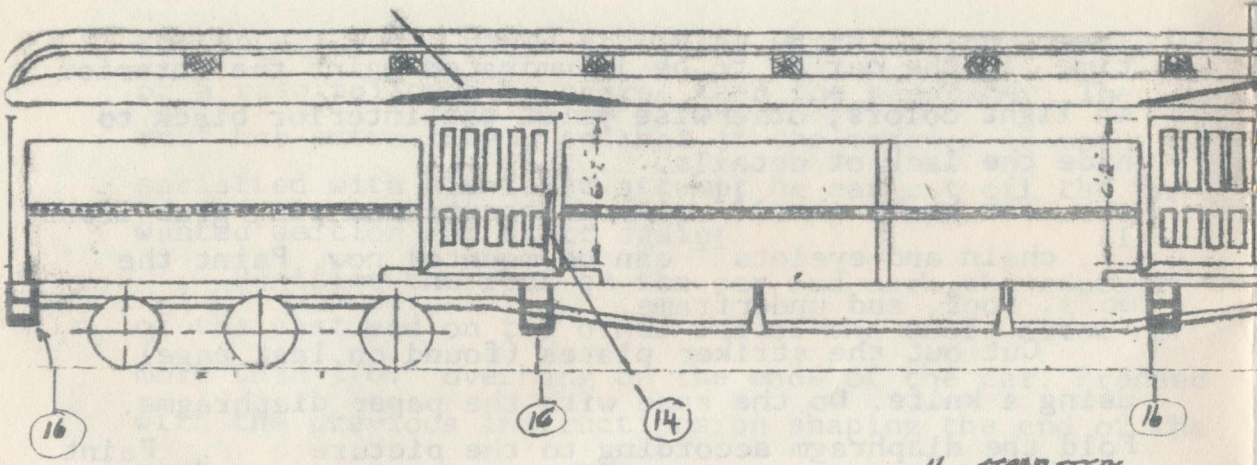
The brake wheel[11] with an escutcheon pin, grab irons[14], chain and eyelets[12] can be mounted now. Paint the ends, roof, and underframe.

Cut out the striker plates (found on last page) using a knife. Do the same with the paper diaphragms. Fold the diaphragm according to the picture Paint them black. Glue the striker plates on the diaphragms. Paint them a rust color. Mount the assembly high enough on the car end 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 the coupler assembly to the body keeping the inside of the coupler face even with the striker plate. Insert the escutcheon pin (pre-drill holes) next to the spring to keep the couplers centered. See drawing below.

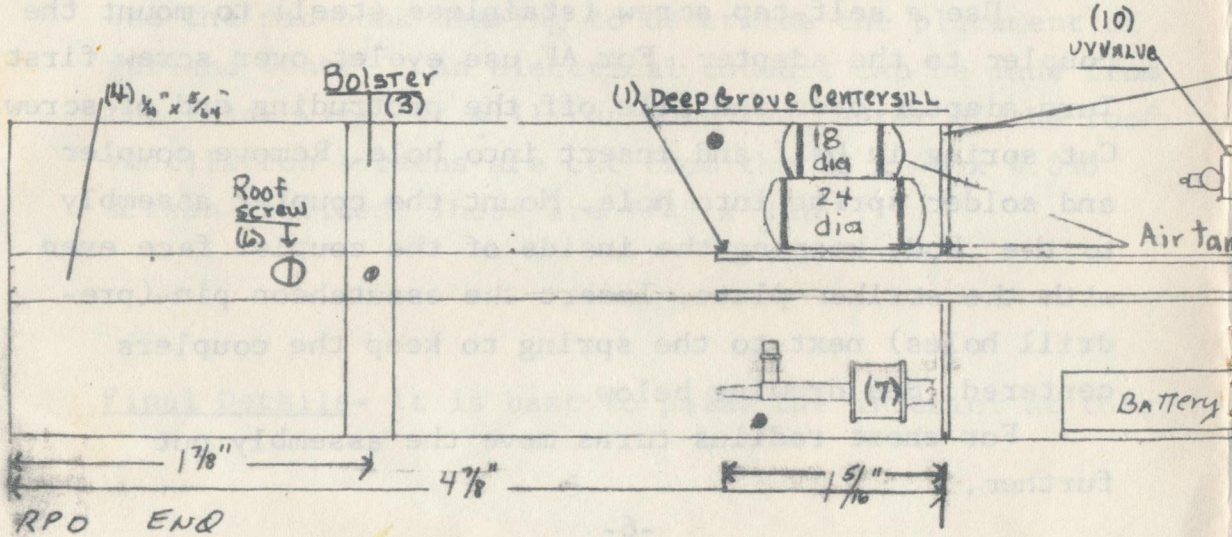
For short radiius turns move the assembly out further.

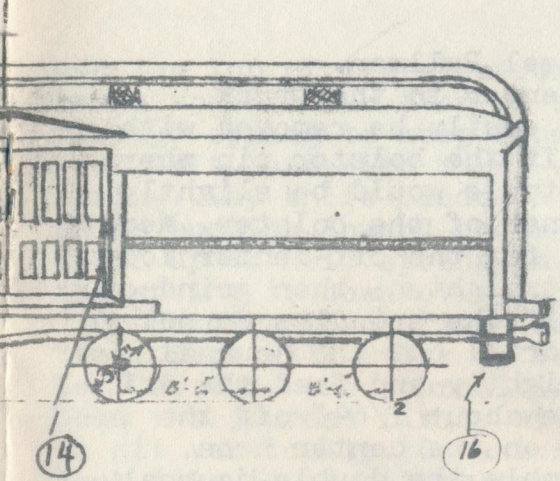


18 - DRIPSTRIPS

16 - STRAP STEPS

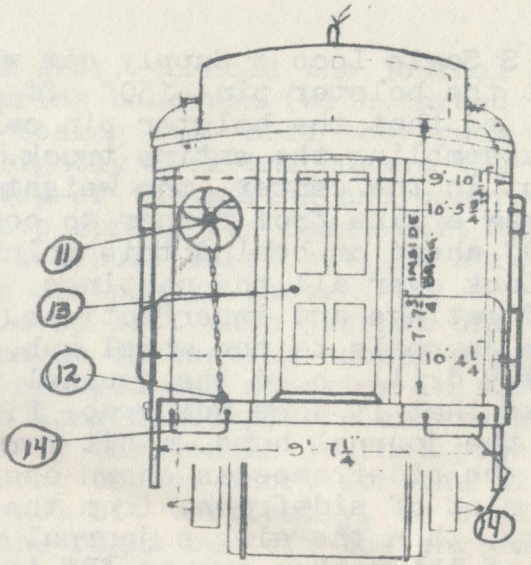
S - SCREEN X - 1/32" x 3/16" STRIPW



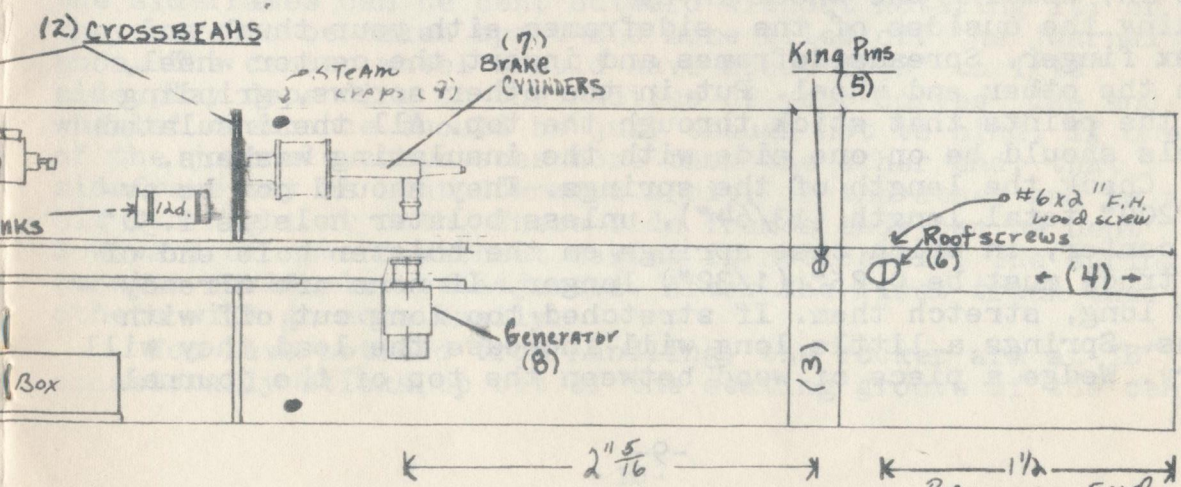


14 - GRAB IRONS

WOOD

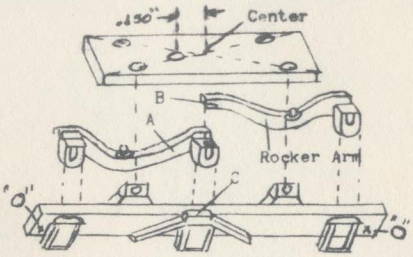


11 - Brake wheel
12 - Eyelet
13 - Escutcheon pin
14 - Grab Irons



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 side-frame 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 side=frames. 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.

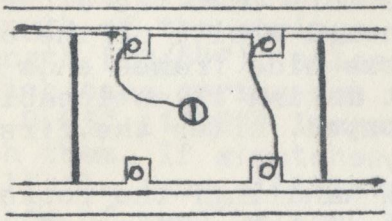
You have noticed from handling, the rocker arm at "B" occasionally sticks up out of the seating groove of the cen-

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

#24951 Express/ Baggage Parts List

#	Qty.	Description	Pric
N450	1	Floor	0.55
N550	2	Bolster	0.20
N390	1	Grooved 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 W)	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	2	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
T951	2	Express/Baggage sides	4.00
T037	1	Styrene (0.020")	0.25
T915	1	Window material	0.25
W435A	1	End steps	0.26
N440	1	Roof	1.10
N029	2	1/32" x 3/16" stripwood	0.40
T916	1	40 x 40 x 0.010 screen	0.25
N001	1	1/32" x 1/32" stripwood	0.05
W402.2	2	Six wheel trucks	6.60
M036	6	36" Scale wheels	2.40
A030	6	Highrail wheels	1.50
V005	2	Kadee #5 coupler, scale, highrail	1.10
T038	2	Coupler adaptor	1.00

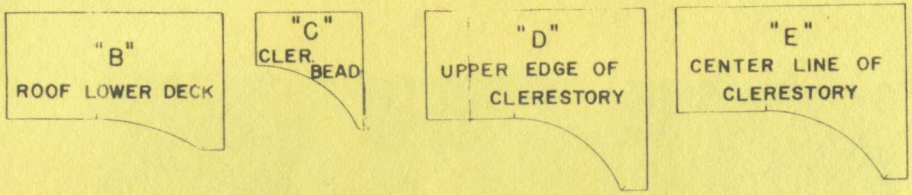
Parts list continued...

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

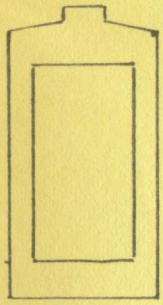
We would like to thank Bill Boucher of New Bedford, Mass. for the beautiful job he did on the patterns for our sides. Also a thanks to Tom Shortall of JC Models (Chester Streamliners) who did our metal castings, John Bortz of Delaware Valley S-Scale Supply for making available to us some of his patterns, 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.

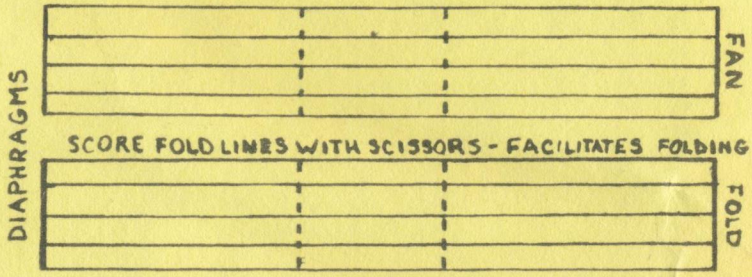
More information on S-gauge passenger car construction can be found in the articles by Bill Boucher, 'Paste Board Pullmans' featured in the "S Gauge Herald", issues Jan '76, Mar '76, and May '76.

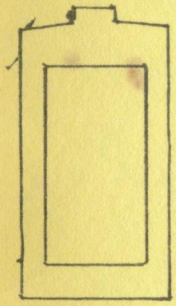
Enhorning S-gauge decals can be purchased from John Bortz, Delaware Valley S-Scale Supply, 3377 Papermill Rd, Huntington Valley, PA 19006; or directly from Enhorning Ind., P.O. Box 29, Ludington, Mich 49431. Decal catalogues can be obtained from both for 75¢. Dan Olsen, 7209 Woodlawn Ave. N.E., Seattle,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

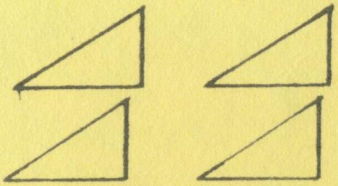


ROOF TEMPLATES









TEMPLATES 'A'