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Southern Railway 41' 6" Flat Car (S Scale)

Kit No. 64-F1 >> Complete kit, including trucks, couplers and decals
Kit No. 64-F1x >> Less trucks and couplers

WARRANTY: SMMW, Inc. will replace any part(s) found to be defective due to manufacturing or shipping. Send the damaged part(s) to us for replacement and include \$7.00 shipping to cover USPS Priority Mail return.

LIABILITY: SMMW, Inc. will not be held liable for personal injury or health problems, short term or long term, resulting from the use and/or misuse of tools, adhesives, material, castings, paints or any other product(s) used to construct this kit. This kit is recommended for builders over age 15.

WARNING: This kit contains polyurethane castings. Although non-toxic in its cured state, dust created during filing and sanding may cause temporary respiratory problems if air circulation or ventilation is not provided. Be sure to work in a well-ventilated area. Wear a dust mask or respirator and safety glasses for maximum protection. Wash hands when finished, especially before eating.

COMMENTS ON THE PROTOTYPE

In 1926, Southern Railway built 500 flat cars measuring 41' 6" and numbered them 116850-117349. Except for minor details and length, they were nearly identical to the AC&F 40' 6" flats built the previous year (series 116600-116849). Beginning in the mid-50s, transfer cabooses were built using the frames of a few cars; a total of 27 "xfer" cabs were eventually built and several of them exist today in museums. Over 100 flats were still in revenue service in 1970. Many lasted into the 1980s in MofW service (wheel flats, equipment haulers, wreck train service, ribbon rail train service, etc.).

Official Railway Equipment Registers from 1926 thru 1973 and Southern's 1972 Freight Car Diagram book were used to create the following life history of the cars. Not every ORER issue we have in our collection is shown below; only years where significant change in car quantity or service type is noted.

ORER Date	Qty. in Service	ORER Date	Qty. in Service	ORER Date	Qty. in Service
8/26	500 +	1/57	305	7/70	110
10/30	500	10/58	308	4/71	103
7/32	500	7/59	231	10/71	78
1/38	498	5/61	203	4/72	36
1/40	502 %	7/64	175	10-72	28
1/43	501	10/66	145	4-73	18
1/52	435	10/67	144	11-73	17
1/53	391	10/69	125		

"+" = Original 116850-117349 series "%" = Series increased to 116850-117354

SR stenciling diagrams do not specify carbody color but color photos of cars in MofW service show boxcar red with white "RR Roman" lettering was the norm. As the cars were modified for MofW service, they would have been painted black with gold lettering or orange with black stenciling. Some wheel flats were repainted N&W MofW green with white lettering following the 1982 NS creation.

CONSTRUCTION

Steps are outlined in a "photo essay". Each photo shows the car's appearance following completion of its related text.

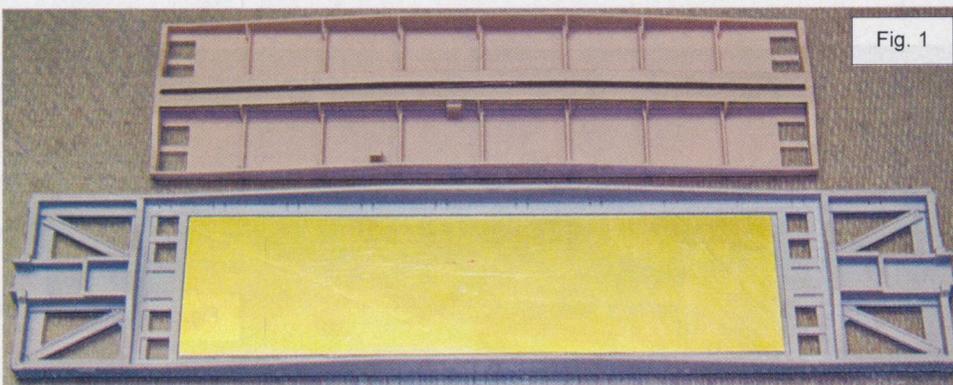


Fig. 1

Figs. 2a (below) & 2b



Step 1 (Underframe prep, drill holes and install weight): (See Figs. 1 and 2a/b) Remove flash between cross braces on the main frame, the (8) square openings on each casting and along the outer edges on both castings. Be particularly careful around the (3) small ribs above each coupler pocket. DO NOT remove the thin section in the center of the main frame (under the brass sheet in Fig. 1).

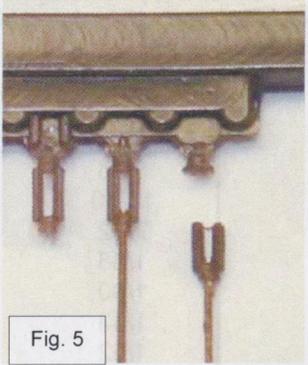
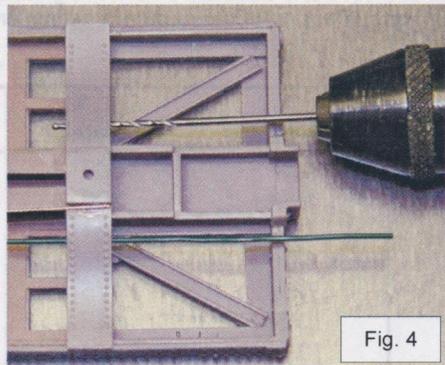
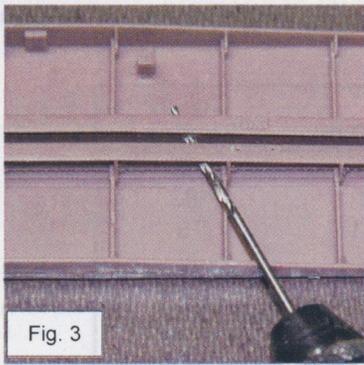
Stake pocket holes: I've found it best to drill all grab iron and stake pocket holes first, so that damage to the fragile brake installation is prevented. Use a No. 67 to drill thru the **CENTER HOLES** of each 6-hole pattern along the side sills. There are (24) such locations, totaling (48) holes. A variable-speed Dremel in a vise-equipped drill stand, powered by a foot pedal, works wonders (Figs. 2a and b). Press the underframe's top surface against the vise's backstop, lower the drill head until the bit barely enters the cast-on hole dimple, depress the foot pedal and drill thru the side sill. It's VERY important that the bit is NOT spinning before you've aligned the bit with the hole because the drill point can lead off and damage the side sill. Once you've drilled thru all (48) holes, remove any fuzz from the inside of the side sills with a brass brush or knife blade. The partially exposed holes have no bearing on the kit construction so don't waste time puttying them up.

Next, drill the grab iron holes using a No. 79 bit. It's a little tedious but the same rig as above can be used to drill the side holes or you can drill by hand using a pin-vise. The end sills **MUST** be drilled by hand as the vertical extension on the Dremel drill stand is too short for this. Note that the sidesill grab irons mount **below** the simulated rivet head and the endsill grabs mount **between** the same feature. Holes for steps will be drilled later.

Working on a sturdy, flat surface, such as a glass plate, lightly sand the recessed area (under the brass weight) and both sides of the brass weight with 400 grit paper to remove mold release and provide slightly "roughed up" surfaces for gluing. The brass will appear polished if sanded properly. "Work" the brass stock as necessary to flatten; there is very little vertical clearance between the brass and the center insert when all are glued together. Apply (3) thin strings of CA equally spaced along the full length of the cast recess area, center the brass weight in both directions, and drop into the recess. Press down for about 30 seconds to secure.

There are (2) small rectangular pads cast on the end sill to the left of the coupler box .. these denote the "B" (brake) end, which is on the right side of Fig. 1. Note the brown (grey in production kits) insert's orientation; the square post in the lower left is for the AB valve. When the brake parts are assembled, the cylinder will be mounted on the opposite side of the centersill, pointing to the "B" end.

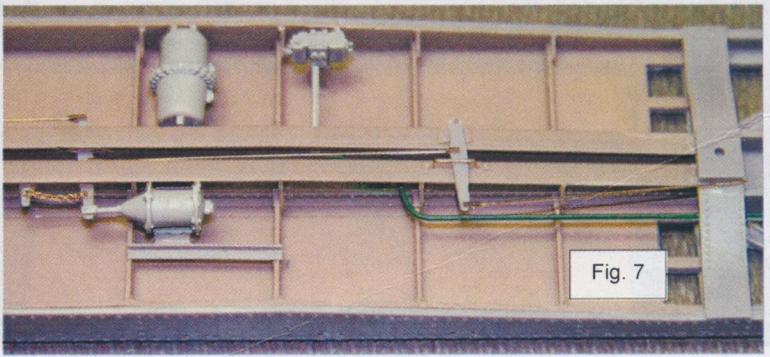
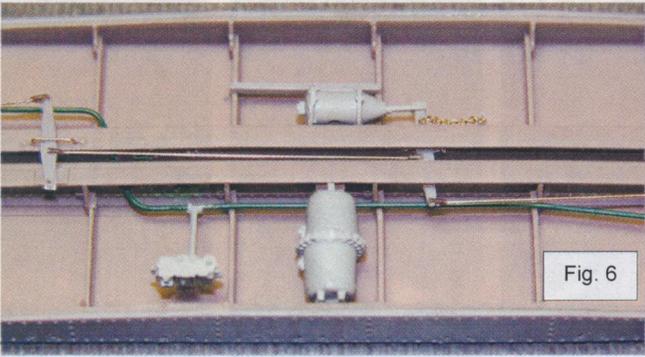
The insert will likely require sanding the fishbelly sides and filing to the square corners on the top. This is caused by minor mold and casting variations but is easily corrected. When properly seated, the insert's fishbelly profile will extend slightly below the main body profile. Double-check the brake mounting post orientation relative to the "B" end, apply (3) strings of CA along the brass weight, position the cast insert and press for 30 seconds until cured. File the insert's fishbelly profile to match the main body profile. Putty gaps between the side sills and sand smooth, taking care not to damage rivets along the bottom edge.



Step 2 (Add bolster pads, drill holes and make clevises): (Figs. 3 thru 5) Use a No. 52 bit to drill a diagonal hole thru the centersill for the main air line (shown as a green wire). CA both bolster cap plates to the underframe, centered across the gap between the main body and insert castings (middle photo). It's best to apply CA to the center "block" (under the screw hole) first, then place the plate casting. Use a short piece of wire to apply CA under either side of the plate, press against the underframe (noting the curvature) and let cure. Repeat for the other side. It's too tricky trying to glue both sides of the plate and the center "block" in one step.

Use a No. 62 bit to drill a hole thru the bolster for the brake rod (Fig. 4) and a hole for the air line, shown already installed.

Clevises really add a lot of character to the brake rigging and are easy to make from HO turnbuckles and .0125" phosphor bronze wire. Dip the wire's end in a puddle of CA, insert thru the turnbuckle and pull back until the tip is barely protruding into the open area. This action helps spread the CA thru the entire hole, not just on the tip. When cured, use an X-Acto knife or razor blade to trim the turnbuckle on the other end of the opening, thus creating a clevis.



WJM

Step 3 (Install air line and brake parts): Figs. 6 and 7 show both sides of the same completion point. The air line, made from 22 gauge "florist's wire" should be installed first. Bend 1/2" of an end around a jeweler's file handle (about 1/8" diameter) to about 135°. Slide the other end thru the bolster hole drilled in Step 2. Test fit the bent end thru the diagonally-drilled centersill holes until the bend is as shown in Figs. 6 and 7. Trim the length of the bend so that the wire does not extend beyond halfway between the centersills. Repeat for the other line.

Cut off the "long tee" from Grandt Line's pipe sprue, slide over the air line passing in front of the AB valve but do not glue to the wire. CA the wires to the centersill and bolster holes.

It's best to drill all brake part air line holes with a No. 78 bit before installation. There are (2) holes in the reservoir, (1) hole in the rear of the brake cylinder and (3) holes in the AB valve. Use a No. 63 bit for the 4th AB valve hole for the pipe tee connection in the upper right hole (see Fig. 8). The brake cylinder mounting bracket is located on the details sheet. Apply a drop of CA to the mounting flange that attaches to the centersill (behind the cylinder in Fig. 9). Note there are (2) shallow recesses in the intermediate sills to help locate the bracket. Once you've attached the bracket to the centersill, apply a CA drop in each recess and lower the bracket's L-angle into place.

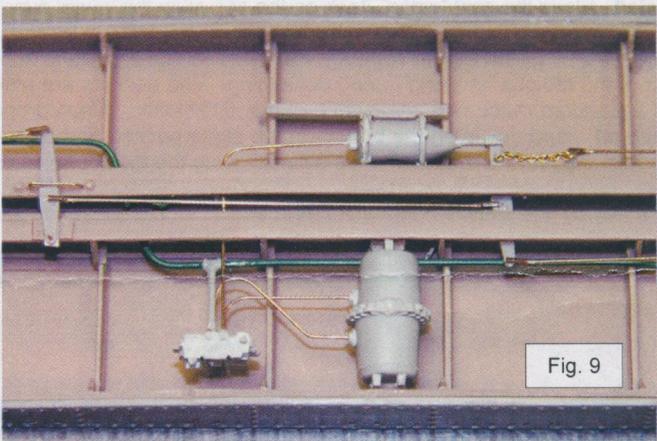
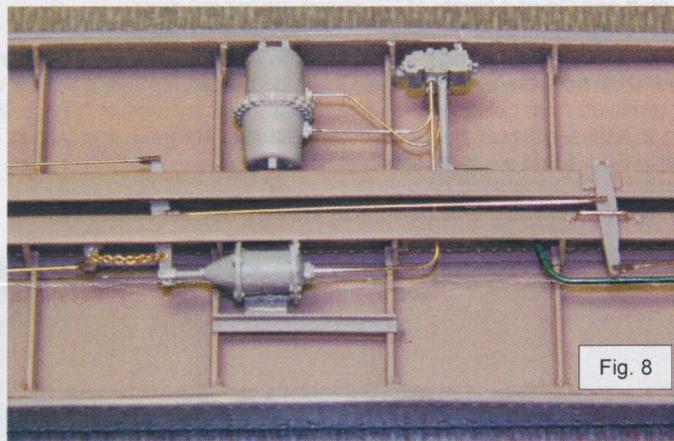
Remove the long brake lever from the details sheet, noting there are spares of all (3) sizes. Deflash both lever slots in the centersill with an X-Acto knife. Test fit the long lever until it fits easily but not loose. CA the brake cylinder to the mounting plate, slide the long lever thru both slots from the opposite side and position in the cylinder's piston rod clevis with a slight angle (the lever should not be perpendicular to the centersill). If properly positioned, the lever's center hole should be almost centered between the sills. If not, turn the lever around and check again. Once in position, apply a **TINY** drop of CA to the piston rod's clevis.

Drill a No. 64 hole in the AB valve mounting post and CA the valve in place. Test fit the reservoir, noting the (2) mounting tabs are inside of the side sill and that some filing/notching is required to clear the main "green" air line so it sits level on the mounting posts.

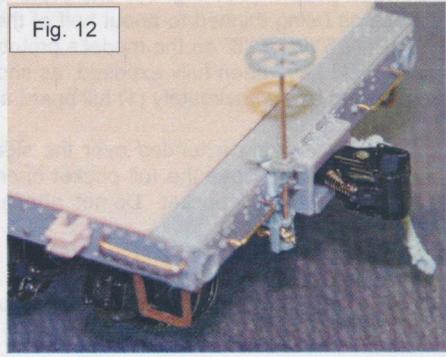
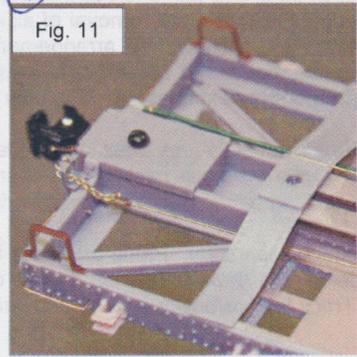
Trim the medium-length lever from the details sheet. Cut a 1/4" long piece of HO 1x6 styrene (provided) and CA to the cast-on lever pad, shown to the right of the AB valve in Fig. 9. Place the lever on the centersill with the middle hole centered between the sills. In this position, drill a No. 78 hole thru the lever and 1x6 pad, then remove the lever. Insert a piece of .0125" PB wire in the pad's hole, place the lever over the wire and position according to the photos. CA the lever to the wire, trim the wire flush to the lever and trim the 1x6 styrene pad to approximate the lever's profile.

The last lever is the "shorty" but you'll only use part of it. Cut this lever in two pieces, across the middle hole. Discard the short half. CA the long half in the slot in front of the brake cylinder (see Figs. 7 and 8). Apply a **TINY** CA drop to the brake lever and place one end of the chain in the drop. Hold the carbody vertically to let the chain extend downward. Use Xuron flush-cutting pliers to trim the chain to length, then place back on the workbench. Apply another drop of CA to the "shorty lever", hold the carbody in the air again and gently nudge the chain into this drop, using a knife blade or wire scrap. When cured, the chain will have a prototypical sag indicating a released brake.

Add (4) brake rods and clevises: (1) between the levers and (1) each from the levers to the bolster pads (Figs. 8 and 9). Lastly, drill (2) No. 78 holes for the medium lever retaining bracket (see photos below), form from .0125" PB wire and CA in place.



Step 4 (Finishing the air lines): (See Figs. 8 and 9) Use .0125" PB wire to form (2) lines from the reservoir to the AB valve and from the AB valve to the cylinder, which requires drilling a #78 hole thru the centersills in the same fashion as shown in Figs. 3 and 4. Once all wires are installed, position the styrene pipe tee in the upper right AB valve hole and CA at both ends.



Step 5 (Couplers and trucks): (See Figs. 10 thru 12) There are (2) coupler pocket covers on the details sheet, designed to allow semi-scale swing and operation with a Kadee 802 coupler. Trim the cover's edges until it fits snugly in the underframe recess. Drill thru the cover's pin with a No. 52 bit, place the cover on the underframe and mark the hole location in the underframe with the same bit. Remove the cover and drill this hole thru the underframe with a No. 57 bit. File off any protrusion flush with the deck. Install a coupler and spring on the lid, flip the 3-piece assembly over and insert into the underframe cutout. Use the short, self-tapping screw to hold all in place. If tightened too far, either the coupler won't swing freely or you'll strip the hole ... or both. Remove the trip pin if you plan to install air hoses.

Drill a No. 50 hole in the bolsters, about 1/4" deep but not deep enough to break thru the deck. Use the #2 screws (provided) to self-tap the hole. Check coupler height against a Kadee gauge or similar method. Any adjustments will likely require lower the coupler height. Do so by filing off equal amounts from the bolster pad and/or the truck bolster ring, depending on truck supplier. Test often as it's much easier to remove material than to add it back! When the correct height is attained, remove the trucks until after painting and final assembly.

Step 6 (Miscellaneous details): (See Figs. 10 thru 12)

DO Before brake rodding, - Can't lower surf. -

Deckboard casting center support: The center section of the deck may have a slight "saddle" as a result of gluing the brass weight and center insert casting together. To prevent a similar sag when attaching the deck casting, CA a 5" length of HO 1x6 (provided) down the centerline of the body, centered end to end. Fig. 10 shows one end of the white styrene strip.

Grab irons: Install grab irons with CA and trim the visible extensions. **Steps:** Drill No. 68 holes for the PBL steps and CA in place, noting that the straight side is closest to the end sill. **Brake staff brackets:** Open the brake staff holes in the ratchet (gear) and staff bracket with a No. 74 bit. CA the brake staff support to the bottom of the "B" end. Trim off the pawl from the ratchet with flush cutters, slide over a 1" length of .020" PB wire (as a vertical/horizontal alignment guide) and CA to the end sill. Don't install the brake staff yet.

underframe - only have 5-bit ends - must fabricate for sides

Air hoses: (See Figs. 10 and 11) If you plan to install air hoses, trim the "green" air line so that its end is halfway across the thickness of the end sill. Slide a Grandt Line round coupling (there are (3) on the "pipes" sprue) 1/4 of its length over the wire, then apply a tiny amount of CA to the wire/coupling joint, not the front of the coupling. For maximum support, form a scrap of .0125" PB wire into a long "U"-shaped loop, drill a No. 65 hole thru the underframe under the air line, slide the U-loop over the green wire, CA in place and trim the extension flush with the deck. This simple addition greatly protects the air hose connection from breaking loose over time.

Riveted steel "cap" plate: (See Fig. 10) Remove a plate from the details sheet and deflash, noting the (3) **VERY** small gussets on the front edge. Apply a tiny drop of CA under the center portion of the plate and attach to the deck, noting that the front edge is **NOT** flush with the end sill when the gussets align. Lift up either side of the plate with a knife, apply CA under it with a wire, remove the knife and press down to cure. Repeat for the other side and other cap plate.

Brake rod clevis, brake staff, chain and wheel: Add a clevis to the brake rod behind the brake staff supports. CA the chain to the clevis and pass the other end thru the lower staff support. Insert the .020" PB wire thru the (3) brake staff bracket holes leaving a very small amount extending from the bottom. Place a tiny drop of CA on the staff and affix the chain to the staff leaving a small amount of "sag". Trim the chain at the staff. Place the cast "wood" deck on the car, slide the wheel over the staff and CA at a height of 22" above the "wood" deck.

Step 7 (Stake pockets and retainer valve): The stake pockets are attached to a mounting plate to simplify the casting process and eliminate most of the tedious handling during deflashing. The pockets are elevated .016" from the plate's surface so that you can remove one at a time with a standard razor saw, measuring about .011" thick. When properly removed from the plate, there will be a minor amount of "saw fuzz" to scrape off .. and this is on the bottom of the stake pocket, further helping to hide any variations caused by trimming. Remove one pocket at a time from the plate and attach to the side sill using the locator holes drilled in Step 1 and a minimal amount of CA.

Drill a No. 76 hole between the tack board and 2nd stake pocket on the "B" end (see stenciling diagram); CA the PBL retainer valve in place.



Fig. 13

Step 8 (Deck prep): (See Fig. 13) The prototype deck extended just short of the line of cap plate rivets spanning the full width, requiring the last (2) boards being thinned to about half of the as-cast thickness and removal of all rivets **EXCEPT** the above noted row. The B&W pic of a similar car (40'6" vs. 41'6" on the model's prototype) on Page 5 shows this arrangement. As cars aged and deckboards were replaced, the full cap plate could have been fully exposed, as shown in the model and SR 992221. This does not require any rivet removal, only shortening the decking casting by approximately (1) full board and (2/3) of the next board, leaving only (1) nail hole of the 3-hole patterns across the boards.

The prototype's decking extended over the side sills by about 1/2", as does the model, requiring the boards above each stake pocket to be notched in order to expose the full pocket opening. Once the deck casting has been positioned, use a small, square needle file to remove boards above each stake pocket. Do not attach the decking until painting and weathering are done.

Step 9 (Painting the body): Paint the carbody and deck separately. Prime the entire frame with a light grey (like Floquil "Primer") to show any defects and provide a good base for the final color. Apply "boxcar red" or "freight car red" using lacquer-based or acrylic paint. Floquil's "Southern Freight Car Red" is too "red" for this era. Truck frames/bolsters were also painted but not the wheels.

Painting the deck casting: Wood decks took a beating from constant nailing of braces, multiple heavy loads and weather. It only took a few months of normal service for the oak color to grey; only a few months more and the boards would show split ends and cracks. Gouging a few boards with a file or knife tip simulates harsh wear; light use of coarse sandpaper creates "grain" without obliterating the nail holes. Just remember that a little "roughing up" goes a long way! Coloring is a matter of personal taste but I've found that light, brushed-on applications of basic colors do well. The following instructions are paraphrased from Don Tichy's HO Flat Car instructions (all are Floquil paints except the final acrylic black):

Spray an even coat of R-84 Foundation (or R-81Earth) over the entire deck. Let dry thoroughly. This is the most important step and success depends on this coat being truly dry. Fold a small 1/2" square of 120- or 150-grit wet/dry sandpaper to form a cutting edge. Lightly sand each board in a random pattern, just breaking thru the Foundation into the grey urethane. Don't overdo it .. leave about 75% of the painted surface untouched. This will add traps for the washes at a later stage.

Using a Roof Brown/DioSol wash (with a little Reefer Grey if desired) and a #0 or #1 brush, streak the individual boards in a random pattern. This is a semi-transparent wash, not "wood grain". Start light .. you can always darken it later. Also, do one board, skip 5 or 6, do another, and so on to the end. Vary your mix and technique, fill in some boards then complete with another mix. The result should be an overall "family" of color made up of individual boards. They should be darker in the sanded areas but you should also see the Foundation color thru the Roof Brown. Don't forget the board ends.

When the Brown has dried, lightly sand thru the Brown to the Foundation and a little grey urethane. Try to leave most of the Brown intact. Hint: if the Foundation was dry, you only have to wait about 15 minutes for the Brown to set up. But, as always, test!

Using Tamiya "X-1 Black" (or equivalent brand acrylic) and thinner, apply several thin washers to the entire deck. Don't get it too dark but do try to get it into the grooves and areas that were sanded .. acrylic dries quickly, so work fast. Remember to test first on the underside. When dry, use #0000 steel wool to lightly scuff the surface to add subtle grain. The final result is a "brown" (or grayish-brown) deck, somewhat transparent, with the Foundation undercoat providing a background. The black washes have collected in the grooves, details and the sanded areas, completing the effect of wood grain.

Paint the (4) "steel" hold-down straps Roof Brown for an aged appearance to match the weathered deck.

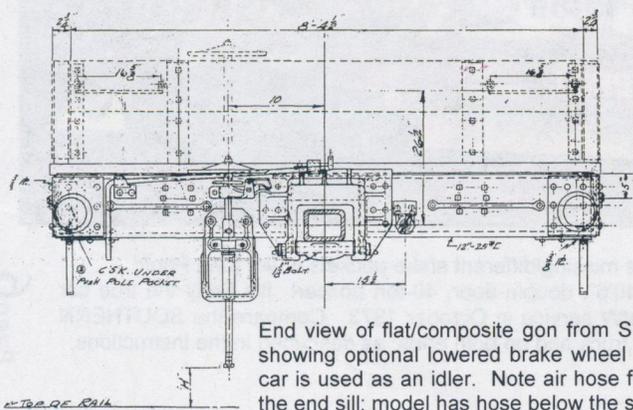
Wood deck option: If you're really ambitious, use 2x8 Sugar Pine strips to simulate the decking. Nail holes can be impressed with a scribe. Tie-down strips are included on the details sheet if you choose to model a "real" wood deck. To model a relatively new deck, sand each strip with 220-grit paper to bring out the grain, scribe "splints" on the ends and lightly score boards at random across the full width and length with a dull #11 blade (don't use a fresh blade as you're trying to create wider cuts than a new blade will allow). Cut each board with a NWSL "Chopper" (boards above stake pockets are shorter), attach to a scrap of cardboard with double-sided tape, and stain each board separately using a mix of (1) drop of India Ink to about (2) ounces of Isopropyl Alcohol. Let dry, sand the boards again and re-stain.

CA the individual boards to the underframe working from the center of the car outward. Once dry completely, add the (4) 5-rivet, resin tie strips using the resin deck as a guide. "Gap filling" CA works best on wood. Dry brush rust on the strips and grime around the strips to represent dirt and trash that accumulates in the corners.

Step 10 (Decals): Apply decals and clear coat per instructions below. Note the enlarged, black-line layout of the decal sheet for your convenience as it's VERY difficult to read the white decal text. Install the trucks and weather as desired. CA the deck in place noting any alignment issues with the deck notches and stake pockets.



Southern 116691 • Built 1-25 • LD.LMT. 130700 • Reweighed 7-54
 Repacked C&O 1955 • San Diego, CA • 12-15-56 • Bob's Photo Collection
 NOTE: This is a 40' 6" flat from the AC&F group built in 1925. Our model is a 41'6" car built in 1926. This photo is included because it's the only one I've found in revenue service. The model's prototype had bottom-mounted steps, not side-mounted as shown above.



End view of flat/composite gon from SRHA Archives showing optional lowered brake wheel location when car is used as an idler. Note air hose fitting cuts thru the end sill; model has hose below the sill.

I hope you've enjoyed building this replica of a "vintage" Southern Railway piece of equipment. If you have any questions, call or email using the contact info on the header and I'll do my best to answer them. Thank you for purchasing this kit.

Jim King
 Smoky Mountain Model Works, Inc.

ON GONDOLA CARS ONLY



Stenciling diagram from August 1940 (flats and composite gons) (SRHA Collection). 41'6" cars had bottom-mount steps; the 40'6" cars had side-mounted steps (both are included in kit). Retainer valve is shown next to the tack board in the far right of the bottom drawing. Note that SOUTHERN and road number spacing are different than prototype photo at bottom.

Decal layout for flat and composite gon. "LD.LMT" and "LT.WT." are stacked as matched sets; do not cross-mix from each row. Key to repacking info: ALX = Alexandria VA; SR = Spencer; K = Knoxville; HE = Hayne Shops. Built 2-26 applies to series 116850-117349 (41'-6"); built date of -28 and -29 applies to composite gondolas. There are MANY extra characters in this set. Smallest SOUTHERN and road numbers and largest SOUTHERN are for composite gons. Flat cars had no end lettering. Although the model represents a 41'6" car, there are decals to letter the 40'6" version. Flat cars had load limits in the range of 130700; composite gons had a lower limit in the 110000 range.

SOUTHERN	116	116	116	117	117	117	2222222	<small>RPKD. ALX 10-3-58 SOU. RY.</small> <small>RPKD. ALX 10-3-58 SOU. RY.</small> <small>RPKD. ALX 10-3-58 SOU. RY.</small> <small>RPKD. CAO PAR 12-22-55</small> <small>RPKD. CAO PAR 12-22-55</small> <small>RPKD. CAO PAR 12-22-55</small> <small>No 2+ BRAKE BEAM</small> <small>No 2+ BRAKE BEAM</small> <small>No 2+ BRAKE BEAM</small>	SOUTHERN SOUTHERN SOUTHERN		
SOUTHERN	3333333	4444444	5555555	6666666	7777777	8888888	9999999			0000000	
SOUTHERN	7777777	8888888	9999999	0000000							
<small>L 41-6 L 41-6 L 41-6 L 40-6 L 40-6 L 40-6</small>	<small>ALX SR K HE 6 7 8 9 10 11 12-24 1-41 2-41 3-47 3-49 5-50 6-51 7-52 7-55 8-58 9-60 10-61 11-62 12-63</small>	<small>ALX SR K HE 6 7 8 9 10 11 12-24 1-41 2-41 3-47 3-49 5-50 6-51 7-52 7-55 8-58 9-60 10-61 11-62 12-63</small>	<small>ALX SR K HE 6 7 8 9 10 11 12-24 1-41 2-41 3-47 3-49 5-50 6-51 7-52 7-55 8-58 9-60 10-61 11-62 12-63</small>	<small>116 116 116 117 117 117 2222222 3333333 4444444</small>	<small>5555555 6666666 7777777 8888888 9999999 0000000</small>	<small>CAPY LD.LMT. 130700 130S00 130900 129900 130600 110000 110300 110100 109900</small>	<small>100000 LT.WT. 3S300 3S200 3S100 39100 3S400 42500 42700 42900 42600</small>	<small>CAPY LD.LMT. 130700 130S00 130900 129900 130600 110000 110300 110100 109900</small>	<small>100000 LT.WT. 3S300 3S200 3S100 39100 3S400 42500 42700 42900 42600</small>	<small>BLT. 1-25 2-26 3-27 4-28 5-29</small> <small>BLT. 1-25 2-26 3-27 4-28 5-29</small> <small>BLT. 1-25 2-26 3-27 4-28 5-29</small> <small>I. W.WRT.STL.WLS.-2</small> <small>I. W.WRT.STL.WLS.-2</small> <small>I. W.WRT.STL.WLS.-2</small>	<small>A.B. BRAKE</small> <small>A.B. BRAKE</small> <small>A.B. BRAKE</small>
SOUTHERN RY. 41'6" FLAT CAR & COMPOSITE GONDOLA • S SCALE • SMOKY MTN. MODEL WORKS, INC. ©2008											

Suggestions for Applying Laser-Printed Decals

Custom, laser-printed decals are provided based on artwork supplied by the SRHA. Thin-film, laser-printed decals will not stand up to rough handling. Avoid sliding metal objects across the characters and excessive flexing of the sheet. DO NOT use scissors to cut out decals.

The pilot model is lettered to represent a car that was repacked and reweighed at Alexandria, VA in 1958, denoted by the dark brown patches under the "capacity block" and where the "new" date was located. Refer to the decal layout, stenciling diagram and photos to select your decals. All lettering was applied and set in place *except for the areas that will be applied over the dark brown patches.*

Fold a household paper towel into quarters, place in a saucer and dampen with water, similar to a stamp collector's backing paper removal box. Press the decal into the towel in the area you want to cut. The backing paper will absorb a little and darken, showing you where to cut. Use a new X-Acto® #11 blade to cut decals, angling the blade toward the center of the decal while cutting. This will taper the decal's edge and make it less visible. It is reported that the decal lettering can be smudged by resting the hand on the sheet while cutting. Use a sheet of waxed paper between your hand and the sheet if excessive handling is necessary.

We use a Bob Harpe trick for decal setting solution. Fill a small bottle with 40% Walther's Solvaset®, 40% distilled water and 20% isopropyl alcohol (used to break the surface tension). While the decal is floating in a shallow dish of water, brush this mixture in the area to be decaled. It should lay smooth and not bead up. Remove the decal from the water and place on a paper towel to drain. Slide the decal off the paper backing into the puddle of setting solution, slowly letting the decal push the excess solution ahead as it is positioned.

Move the decal into the final position using a toothpick or equally dull tool to avoid tearing. When mostly dry, poke any air bubbles with a pin or tip of a sharp blade and re-apply the 40/40/20 solution. Repeat this until all bubbles are removed. Lastly, brush on *full-strength* Solvaset® across the surface of the decal, then let dry thoroughly. Use water and a Q-tip to remove excess decal glue.



SR 992221 • Lynchburg, VA • Nov. 3, 1987 • Awaiting trip to scrapper (note missing/different stake pockets • Jim King Photo NS' 1988 "Company Service" roster lists this car as former SR 272253, a 1935, 40'6", double-door, 40-ton boxcar! It's likely the true car history is shown for SR 992220 in NS' roster. SR 117147, a car converted to MoFw service in October 1973. Compare the SOUTHERN spacing to the stenciling diagram above and the missing deck boards above the left truck and on both ends, as described in the instructions.