



TRIANGLE SCALE MODELS

P.O. Box 8483

Long Beach, California 90808

THE TSM D&RGW STOCK CAR KIT REPRESENTS THE CARS AS THEY APPEARED DURING THE LAST 20 YEARS OF SERVICE. OUR PLAN IS FOR THE LAST VERSION WITH THE FLYING RIO GRANDE HERALD BUT MATERIALS AND DIAGRAMS PROVIDED WILL LET YOU SELECT SEVERAL OTHER VERSIONS. PLANS AND PHOTOS OF THESE CARS HAVE BEEN PUBLISHED IN NEARLY EVERY MAGAZINE AND MANY BOOKS. REFERRING TO THIS MATERIAL WILL ASSIST YOU IN BUILDING AND LETTERING OTHER VERSIONS.

CONSTRUCTION

FRAME AND SIDES PARTS FROM BAG NUMBER ONE

- (1) Pick up the floor F1 and notch per fig. 2 for the feet on the sides, and drill #77 for the side support rods. Notch the ends of the boards which will show along the sides.
- (2) Find the center line of the floor, and mark 11" on either side of the center for the outside of the center sills. Now mark 1" in from the edge of the floor for the outside of the outside sills.
- (3) Pick up 2 F2 sills and the 4 F5 splice plates and cement per fig. 1a. Add nut and bolts to the sides by drilling #77 per fig. 3. Cement Grandt #1 nuts and bolts to the sides but not the bottoms. Cement C11 to the sills under the locations of the body bolsters. Notch to clear the coupler pockets and cement to the floor per fig. 1a and fig. 2.
- (4) Cement the four F4 brake hanger blocks to the floor per fig. 1a, and cement the F3 intermediate sills against the brake hanger blocks.
- (5) Cement the 2 F2 outside sills in place using the line from step 2.
- (6) Use the die cast end to cut three roof ribs from C10 material.

- (7) Remove the sprue from the ends and file smooth. File the ends of the floor flat. Using a square, cement one end on. Select one right and one left side, remove the flash and sprue, and cement in place. Repeat for the other end.
- (8) Cut 5 boards from B5 and cement to the lower inside half of each end. Cut 6 boards from B6 to plank the top portion of each end.
- (9) Trim B7 to fit on top of the sides and between the ends, and cement in place.
- (10) Cement the end door on, and save the side door runners. Add weight, because the finished car will only weigh two ounces. A good car weight is 3½ to 4 ounces for Sn3 so our model has 1½ ounces of lead glued inside of it.

ROOF AND FINAL BODY ASSEMBLY PARTS FROM BAG FOUR

- (1) ACC .016 wire onto the car sides for the side tension rods.
- (2) Cut C1 to fit between the ends, and cement on in the center of the car. Notch the roof ribs made in step 6 and cement on evenly spaced along the body.
- (3) Cement C2 roofing to the ends, roof braces, and roof ribs.
- (4) Select the top board arrangement for your car and cement the uppermost board in place. Be careful to keep the roof and sides straight. We will cut the boards to length and cut out the door opening when dry.
- (5) Place a C7 spacer on end against the top board, put the next board against it and cement the board on. Remove the spacer and repeat for the next two boards. Discard the spacer when finished.
- (6) If a flying Rio Grande is to be used, cut the C5 material to length and cement the letterboards in place per the plan. At this time, use C8 to fill in the upper side boards where the flying Rio Grande goes and under the ladders on the right side if you use the wide board on the top.
- (7) Use a piece of C8 to brace the floor under the side doors.
- (8) When the car has dried, cut out the door openings and trim the boards flush with the ends of the car.
- (9) Spray the inside of the car a muddy brown at this time if you are going to have a closed door car. Do not paint the outside yet.

BODY DETAILING PARTS FROM BAG NUMBER TWO

- (1) Cut 5 boards from the C10 material and cement to the ends for the outer end boards under the upper left hand ladder.
- (2) Nut and bolt detail for ladders and grab irons
 - (a) Pick up the TSM Grab Iron Jig and drill #79 thru the three incents numbered 1-3.
 - (b) Measure the grab iron spacing from the plan and drill one side with a #78 drill. Using a pair of dividers, transfer the width of the #2 grab iron jig hole to the side of the car and drill the second hole.
 - (c) Use a #1 for the spacing on the upper boards (left hand ladder) on the car end and the cast on holes below and on the right side of the end.
 - (d) Use the #2 spacing for the 4 roof grabs.
 - (e) Cement #101 Grandt nuts and bolts in each hole.
- (3) Drill the sides #77 for the bolts for the lower side boards referring to the plan. Note that the number and letter boards also are bolted. Cement Grandt # 100 nut and bolt castings in each hole. The upper boards were nailed and nothing shows on a painted car.
- (4) Lay the body on the plan and mark with a pencil the locations of the roofwalk supports on the roof. Center a support on each end and cement on. Next, lay a straight edge against the supports and cement the rest of the supports in place.
- (5) Cement the three C6 roofwalk boards onto the supports.

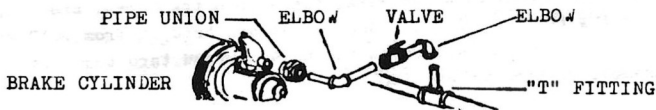
- (6) Drill #80 for the .012 wire grab irons, remembering that the lowest grab iron on each ladder is not straight across but starts under the nut and bolt on the right side, goes across to the left, then over the nut and bolt and into the car above the nut and bolt.
- (7) To use the grab iron bending jig, first bend the wire with a pair of pliers, insert in the drilled hole, go straight across to the line and bend down with your thumb. Cut the grab iron off and set aside. Repeat this until you have enough of each size to complete your car. The cast in holes on the car end are a little too small for the number 1 on the jig so you will have to drill an extra hole about .025 closer to the side of the jig for those grab irons.
- (8) Bend those lower grabs by hand and ACC all of them to the car.
- (9) Cement the Grandt bolster plate on the side of the car frame centered over each truck per the plan of the car.
- (10) Cement the middle (2 piece) corner bracket and top corner bracket on.
- (11) Cement the end roofwalk support on, and discard the rest of the sprue.
- (12) File the back of the Grandt door upper hanger and notch the TSM door runner until the backs are flush. (Of course the notches for an open or closed door are in different locations.) Cement the door to the runner and cement the assembly to the car with the door just barely above the floor. Add door stops made from 3"X4" styrene.
- (13) Drill #74 for the stirrup steps and ACC them to all four corners.
- (14) Lower door guide;
 - (a) Bend a small "U" of .012 wire and drill #80 holes in the lower right hand corner of the car door to receive the U
 - (b) Thread the chain thru the wire, press into the holes, and ACC.
 - (c) Drill 2 # 80 holes for the door guide and bend it from .012 wire.
 - (d) Cut the chain off just below the hole, thread thru the wire, assemble to the car and ACC.

UNDERBODY AND BRAKE SYSTEM

- (1) Cement a piece of C9 to the floor between the center sills. Carve the opening in the end beam wide enough and to the depth of the C9. Fit the coupler and drill the flat tab (joining it to the sprue) for a pin. Set the coupler pocket aside.
- (2) Drill the end beams #75 for the truss rods. Use the middle queen posts on the needle beam casting for the location and the indents on the end beam for the outer hole locations.
- (3) Cement a piece of the thin plastic rod to the retainer valve and set aside to dry.
- (4) Bend the .024 wire trainline to go up and over the center sills and back down in one piece. Cut to fit between the insides of the end beams. It is necessary to notch the brake blocks to run the trainline and clear the wheels. Assemble a Grandt "T" pipe fitting and ACC the trainline in position.
- (5) Pick up the needle beams, drill the holes clear and file to fit between the sills. ACC or epoxy to the car per fig. 1a.
- (6) Cut the body bolsters to fit between the side sills, bend to fit and ACC or epoxy per the sketch and plan. Assemble the bolster ends.
- (7) Cement a piece of 3"X4" to the intermediate sill to support the brake cylinder in a level position. Also 3"X4" pieces are cemented under the body bolsters to space down the truss rods and hold them against the floor.

- (8) Brake cylinder assembly
- Remove the cylinder from the sprue, and push the cast on clevice out from the back with a piece of .024 wire. Ream with a #71 drill.
 - Measure the length of the longer clevice and rod and slip into place but do not glue yet. The pin must be removed from the clevice so it will fit the brake lever.
 - Clip a short length of sprue and use it to align the cylinder and reservoir. Cement together.
 - Cement the cylinder to the mounting plate and one reservoir strap and to the car. (It may be necessary to file the bottom of the mounting plates smooth.)
- (9) Drill two #77 holes for the short lever bracket and cement on. Lay both levers and correct lengths of .020 plastic rod on the plan and cement all of the rods including the brake cylinder rod to the long lever. Cement the rod from the short lever to the truck to the short lever. When both assemblies are dry, slip the rods from the long lever thru the needle beam and into the brake cylinder. Assemble the short lever to the bracket and cement all plastic joints and ACC to the body bolsters. Bend three plastic rod "U" to represent brake hangers and cement to the center sill.

- (10) Measure the distance between the trainline and the brake cylinder. Fit the piping and cement per the sketch below. When dry, slip the pipe union over the pipe union cast on the brake cylinder and the open elbow over the "T" and cement. ACC the "T" to the trainline.



- Install the nylon truss rods. Thread the four separate truss rods, one at a time, thru the end beam, under the body bolster up over the queen post. Slide a turnbuckle on center and finish in reverse order. ACC one end, then pull tight and ACC the other end. Position the turnbuckles and ACC them.
- Cut the sprues off the large nut and bolt castings and cement over the ends of the outside truss rods and install the grab irons on the end beam.
- Pick up the coupler pockets and drill the brake hose bracket #71 and ACC the delrin air hoses to the bracket. If you wish to solder the coupler pocket together, it is necessary to do so before attaching the air hoses. Epoxy the coupler pocket to the car and pin also.
- Cement a piece of 1X3 to the end fascia to support the retainer valve and the upper brake staff bracket.
- Drill #75 on the car end for the retainer valve and cement the valve and retainer line (with a suitable bend) to the car.
- Cement the lower brake staff bracket to the car.
- ACC the delrin brake wheel to the .020 wire and slip the upper brake staff bracket on. Next put the wire thru the lower bracket, and ACC. Last, cement the upper bracket to the roof and end. Finish with a piece of chain around the wire, thru the chain roller and ACC.

Separate the side rod ends from the flat portions of the sprue and ACC to the bottom of the outside sills under the side tension rods.

- (18) Drill four #80 holes for the eyebolts which mount the coupler lift bars. Bend the lift bars from .015 wire, slide on the eyebolts, assemble to the car and ACC in place.
- (19) Bend the air release rod from .010 plastic rod. It goes over the brake cylinder. Drill four #80 holes in the bottom of the outside sill, bend two "U"s of .012 wire to hold the rod to the sill. ACC the wire and cement the plastic.

Trucks

- (1) Using an Exacto knife, ream slightly the holes in the sideframes for the journal lids. Install the type which is hinged at the top.
- (2) Trim the slots in the bolsters and the ears to allow the sideframes to pivot, allowing the truck to track better.
- (3) Lubricate with grafito or neolube thoroughly coating the ends of the axles or the inside of the journals.
- (4) Check the wheels with an NMRA gauge, file the back of a wheel if necessary.
- (5) Gently snap one sideframe onto the bolster. Do not force, if it fits too tight simply file a little more off. Assemble the wheels and second sideframe. Ream the bolster if necessary to provide free movement on the shoulder of the screw.
- (6) Drill the body bolster #60 for the screw.

Painting

The entire car is black, but as pure black will hide many of the details we suggest a mixture of 1/2 black and 1/2 grimy black. Keith Brown's fine article in the July, 1982 Gazette will help if you want a much used look.

After painting, install Kadec #4 couplers and stake the bottom of the coupler pocket on and or epoxy together.

Drill the body bolsters #60 and thru to the plastic underneath. Drill a clearance hole thru the bolster and assemble the trucks.