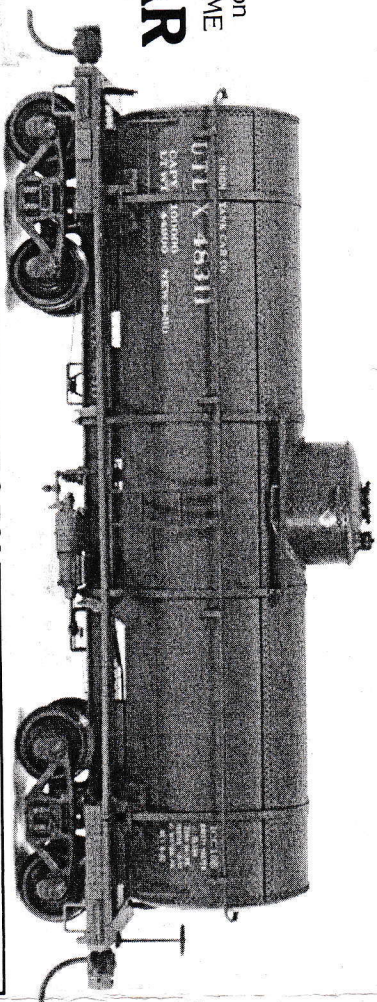


I.C.C. class 103
36 foot, 10,000 gallon
STANDARD 60" DOME

TANK CAR



PROTOTYPE HISTORY

This kit is based on the design created by the USRA in 1918. Although a "standard" design, the actual cars varied over the years in features such as trucks, tank saddles, platforms, end beams and especially dome size, depending on the carbuilder and specific requirements of the shipper.

Our companion kit (4020) reflects the original design with a 54" dome, while this kit features the larger and more familiar 60" dome. See the photo gallery on page three of these instructions for comparison. This kit offers an excellent starting point for conversion to other classes of tanker.

Used in large numbers, these cars were built over many years, and were a common sight in long "pipeline" trains throughout WWII, and into the early 1950's. Many are in service to day in Company Service, Diesel Fuel storage and fire protection duty.

As built, these cars were fitted with Westinghouse type K-C airbrakes, as included in the kit. Although many were converted to AB systems, the KC was used well into the 50's. Also, as built, the cars had only one platform and ladder.

For additional information and detailing, refer to the 1919 CAR BUILDERS DICTIONARY, and the TRAIN SHED CYCLOPEDIA No. 9. (Newton Gregg, publisher.)

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: 4020-A-3, or simply A-3.

Each part is attached to the runner by a small "gate". When removing a part, cut close to the sprue, then carefully trim and file gate to the part. Don't let the part "snap" off into the carpet! DO NOT remove parts until called for in the instructions, and DO NOT twist them off, as they will be damaged.

All plastic parts have a sharp witness line, usually on an edge, where the mold halves come together. This line should not be confused with "flash" which is a very thin area of plastic extending from this line. We try not to ship parts that have "flashed" as this indicates that the mold was not properly clamped, the part is thicker than intended and may not fit. For a neater appearance, this sharp line may be removed by scraping with the knife.

We recommend using ONLY "liquid cement for plastic". Use ACC cement for plastic to metal joints. Test fit each part to see where cement should be applied. Apply sparingly with a sharp pointed brush, allowing cement to "draw" into joint by capillary action. For larger surfaces, several "paint" passes may be required to soften the plastic.

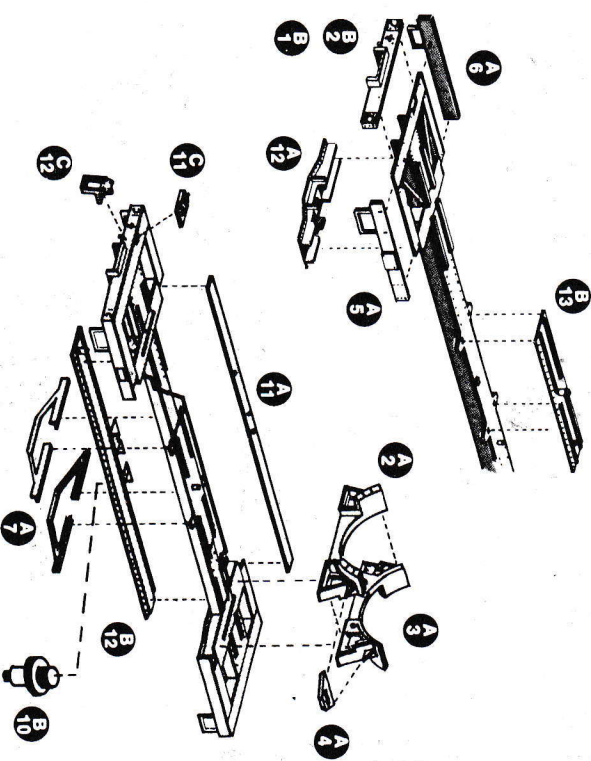
PARTS LIST

(1) .001 FRAME	(2) A-10 TRUCK PIN—KADEE®	(4) B-09 HAZARD PLACKARDS	(2) C-09 LADDER
(1) .002 TANK TOP	(2) A-11 RUNNING BOARD	(2) B-10 DRAIN VALVE	(2) C-10 BRAKE WHEEL
(1) .003 TANK BOTTOM	(2) A-12 RUNNING BOARD	(1) B-11 COUPLER PKT COVER	(1) C-11 RATCHET PLATE
(1) .004 TANK SIDE	(2) A-13 PLATFORM	(1) B-12 SILL FLANGE	(1) C-12 BRAKE STAFF SUPPORT
(2) .005 TANK SADDLE	(4) A-14 PLATFORM BRACKET	(1) B-13 CENTER PLATE	(8) C-13 FRAME GRABIRONS
(2) .006 TANK SADDLE	(2) A-15 TRUCK SPACER—ATHEARN	(1) B-14 STRAP RETAINER	(1) 005 WEIGHT
(2) .007 TANK SADDLE	(2) A-16 END BEAM	(1) C-01 PLATE ON GRABS	(2) 006 .020 x 4/16" WIRE
(2) .008 TANK SADDLE	(1) B-01 END BEAM	(1) C-02 DOME HANGGRABS	(2) 007 .020 x 7/16" WIRE
(2) .009 TANK SADDLE	(1) B-02 END BEAM	(1) C-03 DOME HANGGRABS	(1) 008 .010 x 7/16" WIRE
(2) .010 TANK SADDLE	(1) B-03 MANHOLE COVER	(1) C-04 BRAKE LEVER GUIDE	(1) 009 .13" PIECE STRAP MATERIAL
(2) .011 TANK SADDLE	(1) B-04 MANHOLE COVER	(1) C-05 FLOATING LEVER BRKT.	(1) 010 TRUCKS (ATHEARN)
(2) .012 TANK SADDLE	(1) B-05 SAFETY VALVE	(1) C-06 BRANCH LINE	
(2) .013 TANK SADDLE	(1) B-06 BRAKE CYLINDER	(1) C-07 HANDRAIL BRACKET	
(2) .014 TANK SADDLE	(1) B-07 FLOATING LEVER	(1) C-08 TANK END RAIL	
(2) .015 TANK SADDLE	(1) B-08 BRAKE LEVER		

1 FRAME ASSEMBLY

For reference, the "B" end, engraved on top of frame, refers to the brake wheel end. In most cases, "Lockout" pins are used to prevent misassembly, and locator pins are used for proper alignment.

- (1) Remove tab gate from frame, file smooth.
- (2) Cement CENTER PLATE B-13 to frame. Note four tabs on bottom of B-13 that fit to ears on frame.
- (3) Remove "sucker" ejector pins from A-2 and A-3. Cement A-2 to A-3. Make two. When cement has set, remove gate scars and file bottom smooth. Just even it out—don't remove too much material.
- (4) Cement STRAP PLATES A-4 to ears on ends of saddles.
- (5) Cement END BEAM B-1 to "A" end of frame.
- (6) Cement END BEAM B-2 to "B" end of frame.
- (7) Cement one BODY BOLSTER A-12 to "A" end ONLY. Other A-12 will be added AFTER trainline is installed.
- (8) Bend TRAINLINE from long (7 1/2") .020 wire, in two stages.



STEP 1 SIDE VIEW

THIS LEG FLAT AGAINST TEMPLATE.

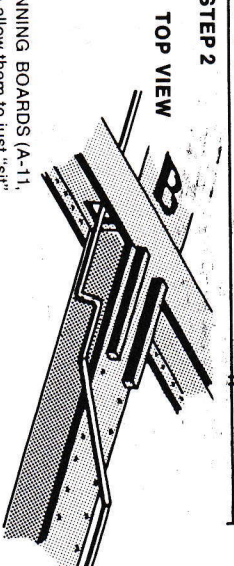
- (9) Test fit, insert trainline and cement other A-12 to "B" end. Secure with a drop of ACC at each end and at the point where it crosses frame.
- (10) Cement SILL PLATE B-12 to frame. HINT: Pass cement brush along edges of frame several times.
- (11) Cement SIDE SILLS A-5 and A-6 to frame with stirrup steps at END of car.

- (12) Carefully snap RUNNING BOARD SUPPORTS A-7 over frame with angles facing in. Cement to frame and ears. Note locator tabs on ears to aid alignment.
- (13) Test fit length of RUNNING BOARDS (A-11, and lightly scrape ends to allow them to just "sit" in place. If OK, cement, making sure gate edge is to center of car.
- (14) Cement DRAIN VALVE B-10 in place.
- (15) Cement assembled saddles in place.
- (16) Cement RATCHET PLATE C-11 in recess on "B" end of frame.
- (17) Cement STAFF SUPPORT C-12 to end beam, noting locator tab under beam.

NOTE: BRAKE RIGGING will be installed during final assembly.

STEP 2 TOP VIEW

THIS SECTION ABOVE TEMPLATE.

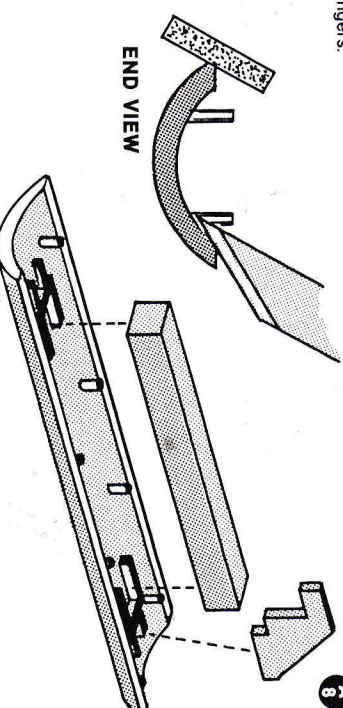


2 TANK ASSEMBLY

NOTE: Allow plenty of time for cement to set between operations. Be very careful not to let cement run between plastic and your fingers.

- (1) Preparation of the segments, FIG. 1.
 - A Remove tab gate from top/bottom segments—file smooth.
 - B With your knife, break (chanter) sharp inside edges of top/bottom.
 - C Using a flat smooth file, GENTLY break sharp edges of top/bottom to simulate the plate thickness. Don't over do it—just a few light strokes. Scrape small burr that will be raised. (watch those rivets).
 - D Remove gates from side segments.
- (2) Center weight in pockets in bottom segment. Cement RETAINERS A-8 in place, allow to dry at least 30 minutes. A drop of white glue or tube cement will prevent rattling.

END VIEW



2 TANK ASSEMBLY CONTINUED

(3) DOME ASSEMBLY: Note the four "print" lines on side of dome. These should be lightly scraped and polished, but don't create a flat spot.

(4) If weight retainers are completely dry, proceed with step 5.

(5) Note that SIDES have "TOP" engraved inside. This refers to the TANK TOP SEGMENT during assembly. Don't install them up-side-down. TEST FIT each part to see where cement should be applied, and where your fingers should be when applying it. Locators are not provided for end-to-end location, as this is one place where you can do a better than we. A very light filing of the completed tank will be necessary to even out the segments.

We suggest you "paint" the curved interlocks of the sides with several passes of the brush, but don't let the cement build up to where it could run or ooze out. Place parts together, hold firmly, and add a little cement inside if necessary. If cement should ooze, DON'T TOUCH! Let dry overnight and carefully scrape the surface and polish with #600 paper.

A VERY slight amount (1 scrape) may need to be removed from locator pins on top/bottom to allow them to fit tightly to sides. See Fig. 1. This seems to vary according to the mix of parts, and is about .0015". So check the segments before assembly. We do the best we can, but most computer parts are not as tightly toleranced as ours!

(6) Cement one side to bottom. Let dry.

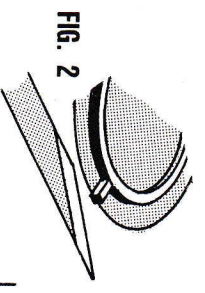
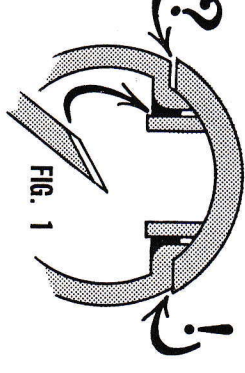
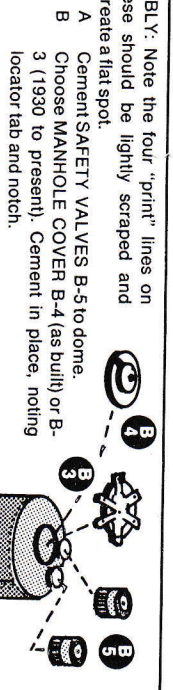
(7) Cement opposite side to bottom. Let dry.

(8) Test fit TOP in place, check fit, cement and hold till set.

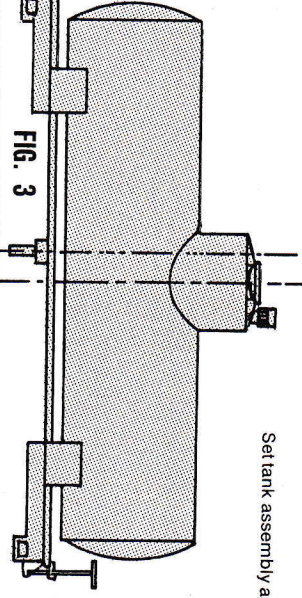
(9) Remove and clean gate from ENDS A-1, FIG. 2.

(10) Cement ends in place with small pin on bottom of end fitting between two small pins that rise from bottom segment. Apply cement only to tank edge and inside tank as cement will run quickly on end A-1.

(11) Note position of dome safety valves relative to tank drain, FIG. 3. Put drop of cement into hole on tank top segment, and paint the edge of dome with cement. Press dome into place and hold till set.



Set tank assembly aside to dry.



A Cement SAFETY VALVES B-5 to dome.
B Choose MANHOLE COVER B-4 (as built or B-3 (1930 to present)). Cement in place, noting locator tab and notch.

FIG. 1

FIG. 2

FIG. 3

3 FINAL ASSEMBLY

(1) Cement BRACKETS A-14 to PLATFORM A-13. Cement Platform HANDGRABS C-1 to A-13. Make two, and set aside in a safe place.

(2) Cement four TANK GRABIRONS C-3 to tank, with locator pin on top.

(3) Test fit tank to frame. Remember that drain valve and center plate is off center, STEP II, FIG. 3. Apply cement to hole and both saddles, place tank in position and hold firmly till set.

HINT: At this point, model is heavy and may distort stirrup steps if placed on them. We suggest you straddle the frame over the box lid while trimming parts or allowing cement to set up.

(4) From the provided white styrene strip (Evergreen Scale Models) cut two short pieces to the length shown in FIG. 1. Give strip a slight curl with your fingers. Insert one end into slot in saddle bracket A-4. Wrap strap around tank, between Anti-Alide dogs on top segment and insert into saddle bracket A-4 on opposite side. Center strap end-for-end and cement.

Now — CAREFULLY tack strap to tank with a TINY drop of cement at the dogs, also at each side. Avoid getting cement on tank, only between tank and strap. Do both ends.

(5) Cut the remaining strap material to length.
(6) With tweezers, gently bend strap just under 1/8" from ends as shown. Place end inside and tight against runningboard bracket, cement to center sill.
(7) Run strap around tank, between dogs, and cement to center sill. Be sure strap is tight, let set up.
(8) Cement STRAP CLAMPS B-14 in place.
(9) Tack straps to tank as in step 4.

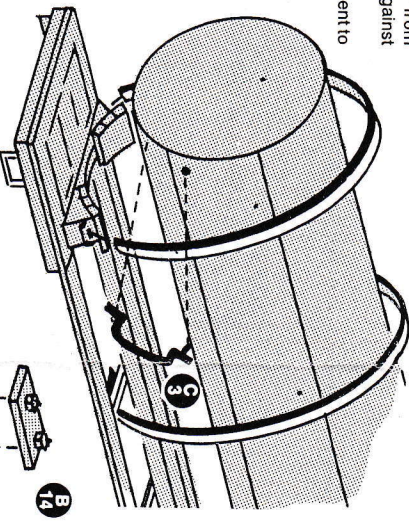
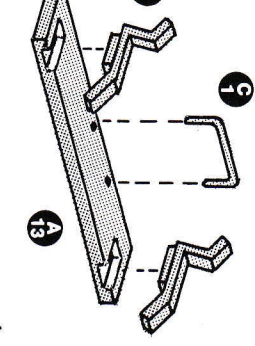


FIG. 1 FULL SIZE

MARK CENTER LINE ON STRAP

BRAKE RIGGING ASSEMBLY, FIG. 2.

(10) Cement BRAKE CYLINDER B-6 to brackets.

(11) Cement BRANCH LINE C-6 to DIRT COLLECTOR, snapping "T" over train line.

(12) Cement FLOATING LEVER BRACKET C-5 to frame.

(13) Cement FLOATING LEVER B-7 to Bracket C-5, at "right angle" (90°) to bracket.

(14) Cement LEVER B-8 to BRAKE CYLINDER CLEVIS, also at right angle.

(15) Cement BRAKE LEVER GUIDES C-4 (three) to frame.

(16) Cut brake rodding from .010 wire, to lengths shown FIG. 2. Cement each in place as shown with ACC cement.

(17) From .020 wire, cut BRAKE STAFF to length. De-burr both ends.

(18) Cement BRAKE WHEEL C-10 to staff with ACC.

(19) Insert brake staff into ratchet plate and support with ACC.

(20) Install GRABIRONS C-13 in eight places on frame.

(21) Install DOME GRABIRONS C-2 to each side of dome.

(22) Cement four HAZARD PLACKARDS B-9 to running boards.

(23) Cement completed PLATFORMS (remember those? Now the cement is dry!) to tank straps. You have to "eyeball" this one, but here's how: The "bolt" on the lower part of the bracket should be over the top row of rivets. Be sure brackets are parallel to tank joint and well secured.

(24) Cement HANDRAIL BRACKETS C-7 (spares provided) in four places on each side of tank.

(25) Cement ONE END HANDRAIL C-8 in place.

(26) Trim the two short pieces of .020 wire to the length shown. HINT: Wire should go from center to center of the two end brackets. De-burr both ends.

(27) Gently slide handrails into brackets, butting the one end against the previously installed end handrail.

(28) Cement other END HANDRAIL C-8 in place, and, for additional strength secure with a TINY drop of ACC.

(29) Cement LADDER C-9 to each side.

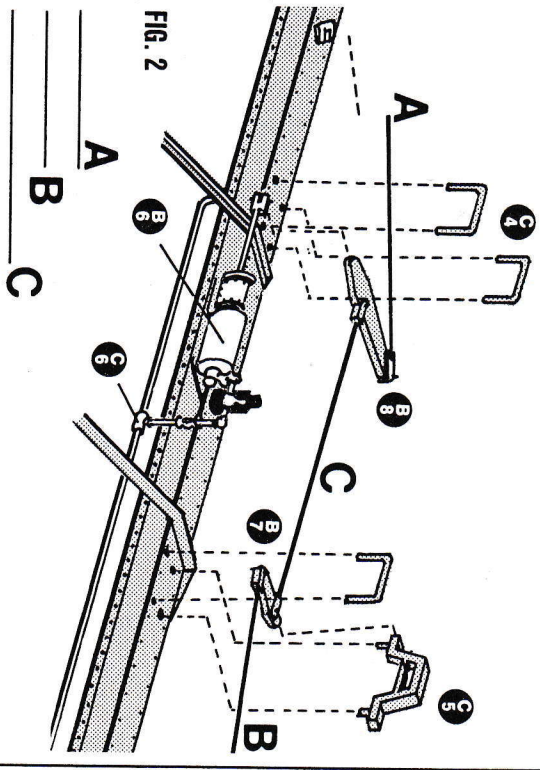
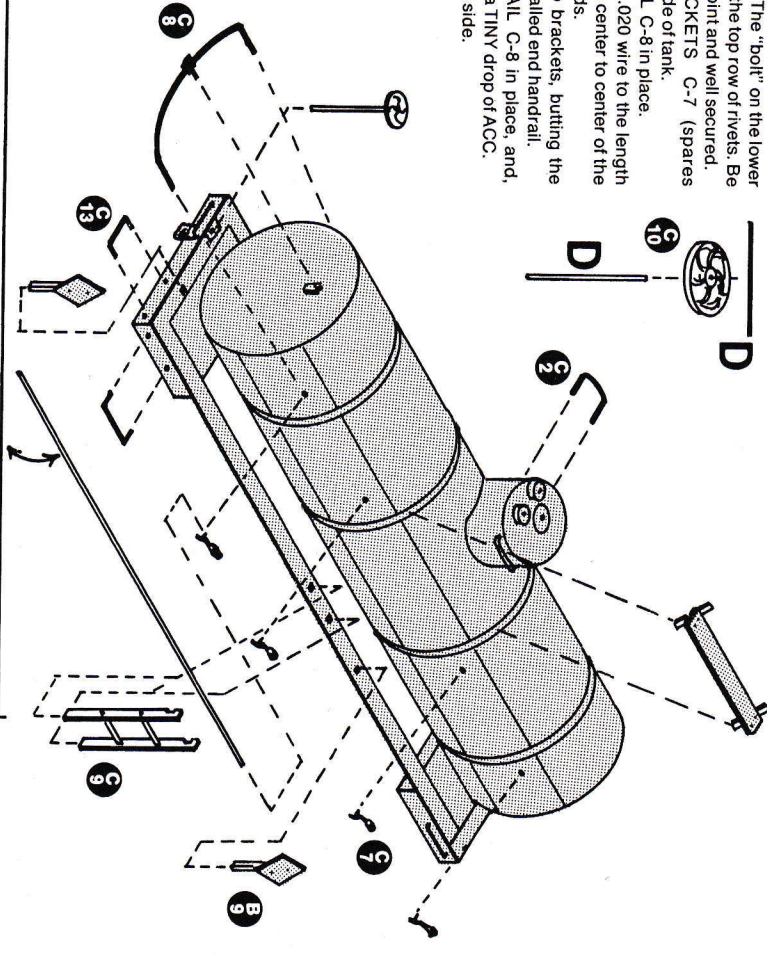


FIG. 2



WWW.TICHYTRAINGROUP.COM

If you should irreparably damage or lose a part it will be replaced without charge. Please return the part's to us with \$1.50 for shipping and handling — a replacement will be sent immediately. And, do drop us a line, we enjoy hearing from you with ideas, comments and suggestions for new products.

Copyright © 1989, TICHY TRAIN GROUP. All rights reserved. Any duplication of this kit or any of the component parts directly or indirectly, by rubber, wax, plastic or any other reproductive media for commercial purposes is expressly prohibited without consent in writing from TICHY TRAIN GROUP.



4**PAINT and DECALS**

We strongly urge the use of an airbrush for painting. If you have not tried this, you are missing a most enjoyable and creative part of the hobby. Your dealer can recommend one in many price ranges.

COLOR: Usually black, sometimes silver. Refer to your own research (another fun part of the hobby!) and to the catalogues and lettering diagrams published by the decal manufacturers.

One word of caution: DON'T WASH THE TANK CAR IN WATER! It fills up with predictable results! A touch of "rubber cement thinner" on a Q-tip will remove finger oils, and we use only paintable mold release during molding.

5**COUPLER INSTALLATION**

This kit is ready to accept KADEE® #5 couplers without modification. Simply install them per their instructions and snap in our **COUPLER POCKET COVERS** B-11, and secure with cement if desired. **HINT:** Rub a little soft pencil on the inside of covers, and on the spring surfaces for lubrication. Also, many modelers prefer to install couplers **AFTER** painting. (also our preference). If so . . .

These instructions also apply to NMRA Hornhook.

6**TRUCK INSTALLATION**

do after painting and lettering)

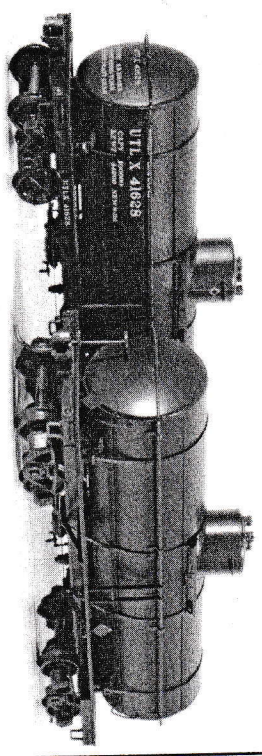
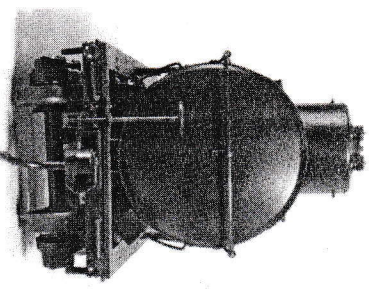
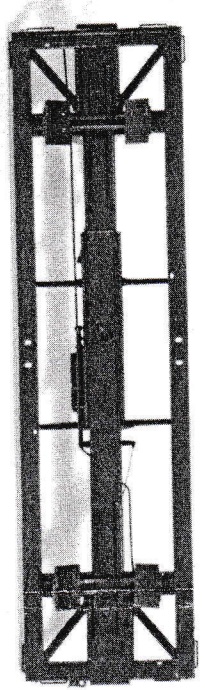
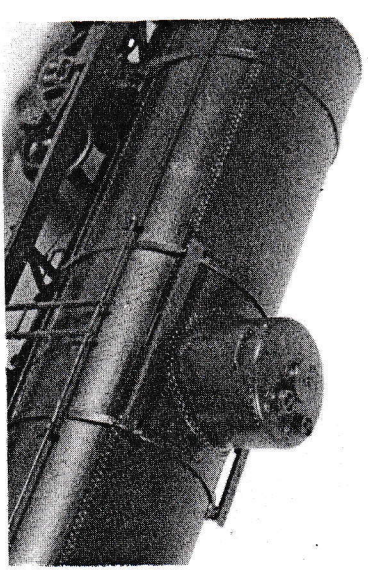
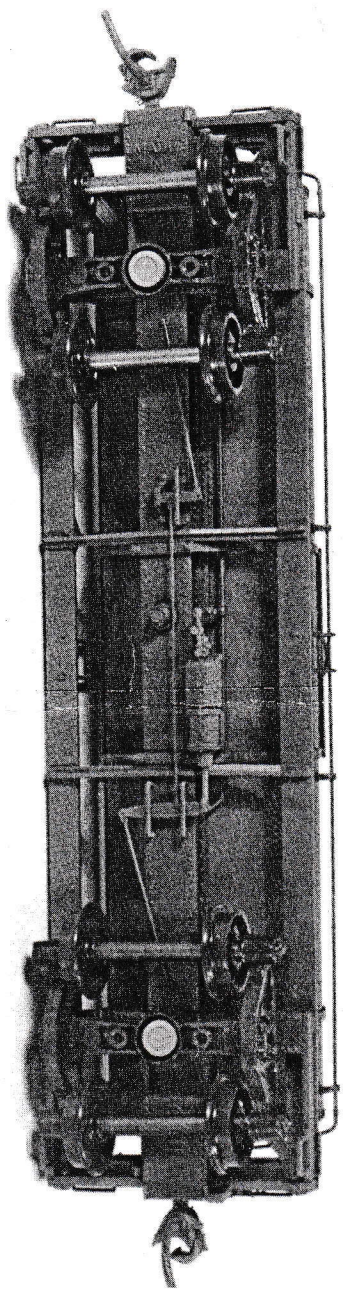
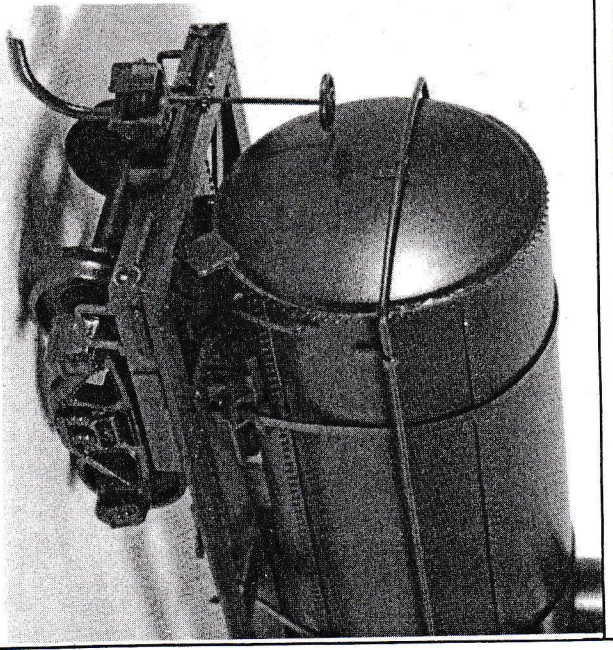
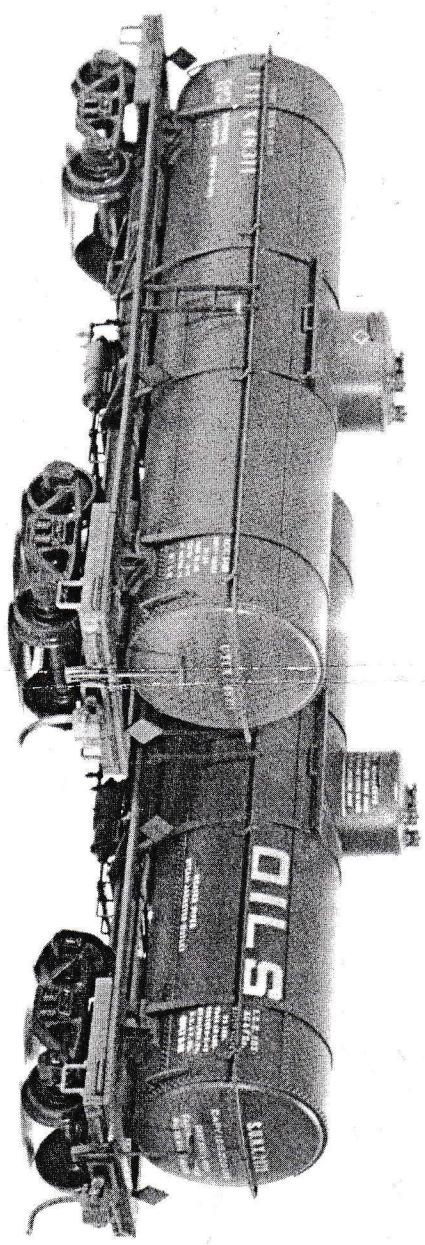
BETTENDORF style trucks are provided with this kit. As built in 1918, these cars were fitted with "ANDREWS CAST STEEL" trucks, available as part #3012. As heavier Bettendorf trucks were introduced in the 1920's, the Andrews Type were often replaced. This option adds considerable variety, and is a personal choice.

We recommend the use of 2-56 screws (included) and washer A-15 with our trucks.

For your convenience, we have included truck pins to fit either Allhearn (A-9) or Kadsee® (A-10). When using Allhearn trucks, also use **SPACER WASHER** A-15 to raise coupler centerline to NMRA Standards.

**PHOTO GALLERY TO HELP YOU ALONG THE WAY . . .**

The photo gallery shows both tanker kits, which are identical except for dome size.

**MODELER'S NOTE:**

This is a scale reproduction of the prototype, and, as such, has delicate detailing. The ladders, grab-irons, and hand rail brackets are easily damaged by rough handling. We suggest you handle this car as the railroads do — by the side sills and body (truck) bolsters.