The 2mm Scale Association

Instructions - Air Ministry 14T Tank Wagons
For Class 'A' & 'B' Liquids

Part 2-570 – Riveted Tank & Part 2-571 – Welded Tank

Read all this first and prior to doing anything else!!

Altogether you should have 4 sides of instructions, if not please contact the keeper of Shop 2 or download from the Association website (www.2mm.org.uk)

Sources of Information: The following books/articles are recommended: Modellers Backtrack magazine, April/May 1993. Model Railway Journal, issue 156. 'The 4mm Wagon - Part 2' by Geoff Kent (Wild Swan). 'Petroleum Rail Tank Wagons of Britain' (Tourret Publishing). Railways in Profile Series: No 14: 'British Railway Private Owner Tank Wagons' by R. Tourret (Cheona Publications).

Association & Other Parts Required:
2-041 top hat bearings, 2-213 6mm open spoke wheels (some tank photos show 3-hole discs 2-205), 2-441 ribbed base buffers, couplings of choice, 0.3mm Ø wire.

General – Etched Sheet:
Clear all holes (to take 0.3mm Ø wire) in vee hangers, brakes etc. prior to cutting parts off sheet. Use templates at sketch 3x) on page 4 for splash plates.

Due to a technical error, the 0.3mm holes next to the slots were omitted from the etch and need to be drilled out as per the templates.

Also open holes to 'just fit' top hat bearings prior to bending up chassis frame.

Most parts are common to both classes of tank, but some only relate to one or the other. See text below.

Half etched fold lines are on the inside of the bend - except for the brake handle retaining straps which are on the outside - see sketch 5 on page 4.

Leave tank securing straps as long as possible by including the tabs otherwise they may be too short!

Cast Items:
Clean off any 'flash' as necessary (this includes the resin tank casting) and open up buffer holes in main frame to be a fairly tight fit with buffer shanks (shank length may need reducing prior to fitting due to conflict with the etch).

Open up 0.5mm holes for brake retaining straps in solebars if blocked.

Check cast end supports and open locating holes for the wires if necessary. See sketch 8 on page 4.

Construction Notes:
Carefully bend down the sides of the etched chassis and then the ends.

Solder in the 'top hat' bearings from the inside of the frame, with the rim of the bearing set in the half etched area around the hole. Check all is square & flat.

File off the 'pip' on the end of each top hat, so as not to foul the springs later.

!! Do not yet fold up the 4 anchors (marked 'A' on sketch 1). These 4 anchors are for the two tank retaining straps..... later!

Note the brakes are independent both sides. Note also both long and short tabs and slots for these etches, (as 'B' on sketch 1).

Turn the chassis upside down and position the two brake etches, keeping these vertical. Use a length of 0.3mm Ø wire right through the vee hangers from side to side of the chassis to align things and solder the brake etch tabs in place. Leave sufficient spare length of wire protruding to fit through the separate outer vee hangers and the brake levers later on.

Now fold up the 4 tank strap anchors *but only vertical* for now. The second bend will come later, after the 'splash' plates are fitted over them. See page 2.

Fit the cast tank end supports to the cast main frame by locating the block of the support in the cut out in the frame (as shown in sketch 2). Make sure the fit is correct, and file the base if necessary before fixing permanently. Use glue or low melt solder, with care! You may find glue the better choice, unless you are well versed with a soldering iron.

If using Araldite Quick Setting, coat contact areas and fit together with the base on a flat surface. Check the top of the end supports are in line, and lay the tank resin casting in place temporarily, for checking the fit is correct. Ensure the tank lies central on the frame so that the cast end supports are at the correct angle, and in contact with the tank ends. When satisfied, lay the assembly aside to let the adhesive set fully. Do not fix the tank on yet, you need to do more things first!

The tee section end support castings can be slightly bent into position upto the tank, after the glue has set, if found necessary.

Now glue the etched frame accurately and centrally to the underside of the cast frame, and leave to set. Note the various diagonals and cross 'bracing' of the two frames (etched and cast) should match and assist in the lining up process.

Fit the half etched 'splash' plates (sketch 3) onto the top of the cast frame with the slot over the anchor strap 'A' (as previously noted on sketch 1). Note the plates are handed right and left, with the rivets towards the outer ends of the frame, and the slots nearer the outside - solebar of the frame. If the slots here need opening up, try poking in a piece of scrap etch that you have cut with a long wedge taper on one end. Also file the end thickness down very slightly, to provide a 'lead in'. Use this device as you would a fine file, by working back and forth to create the opening required. Due to tolerances, it may be necessary to file one end of the splash plate, so that it fits over the anchor strap and snug against the tank brace on the frame. When happy with the fit, the plates should be glued on top of the cast frame at the two areas where they make contact.

When fully set, you can now bend over at 90° the top of each anchor strap to face into the length of the frame. If not already done, drill a 0.3mm Ø hole in the plates, using the holes in the anchor straps as a guide (see sketch 3X templates). These will take the ends of the wrap around tank securing straps later.

The two separate outer vee hangers should be cut off the fret at the "cut tab" marks. this should leave 0.5mm of half etch on the two ends, which should be bent over 90°. as shown on sketch 4. Using the 0.3mm Ø wire protruding through the brake etches, thread the vees on and glue onto the bottom flange of the cast solebar. Being fixed on the wire will help here with the location.

Cut off the 'pips' on the cast axlebox - spring arms so they can fit snug under the solebars. This was part of an early design on the castings that is not now required. Glue the castings onto the 'w' irons and over the top hat bearings.

Fold up the brake levers as shown on sketch 5. Fit the hole over the wire and on top of the vee hanger and the tab of the handle into the cast solebar. Ensure the vee hangers are at 90° to the chassis frame, apply minimum solder to the joint (lever - wire) & cut off surplus wire.

Solder the cross wire to the brake etches if not already done. As the brakes are 'independent', the wire should only span the brakes - inner vee hanger - outer 'glued on' vee hanger on each side. Cut away and discard the mid section of wire between the brake etches.

Class Variations: The kits have been designed as follows, but conversions took place and fittings were added/removed, and in the case of some of the catwalks, repositioned. Refer to "The 4mm Wagon" - part 2 by Geoff Kent (Wild Swan) for an in depth article on these (and other) tank vehicles, MRJ 156, and "Petroleum Rail Tank Wagons of Britain" (Tourret Publishing). Also any photographs you have available.

Class 'A' - see sketch 6 for tank fittings layout plan etc. Use the short etched catwalks, plus the cast round manhole cover, right angle vent pipe, and syphon (the syphon is the casting under the manhole cover on the sprue). Drill into the resin tank at the indents to locate the fittings. Use a 0.5mm drill for opening up for ladder and catwalk location tabs. For ladders, note the fold lines near the top to bend over and fit into the tank. **Before fiting any ladders, refer to the note on page 3 under fitting handrails. See your photos for ladder locations. When finished, the tank can be glued to the base and end supports, unless you prefer to apply your paint and tansfers first.

Class 'B' - see sketch 6 for tank fittings layout plan etc. These had the longer catwalks, manhole, vent pipe, handwheel base (glue etched wheel to 0.3mm Ø pip on top of casting). Some converted (class A to class B) retained the syphon. Also provided was the transverse discharge pipe. This is fixed via the two etched forked brackets as on sketch 7. Bend the brackets as shown, and glue to the tank body and etched chassis. The pipe is positioned to one side of the central vee hanger. Again, see photos.

Note according to the above Wild Swan -Geoff Kent book, ladders and catwalks rarely appeared in the pre-war period, and only became universal in later years. Also the position of these varied. They could be centrally fitted or offset.

Tank Securing Straps - leave as much length as possible for fixing, including the end tabs. If you have already painted the tank, you may elect to pre-paint the straps now. The ends of the straps should be located in the holes in the anchor plates ('A' on sketch 1), and through the holes you drilled beneath them in the splash plates. With the tank in place, crimp over 0.75mm of one protruding end of the strap with the aid of a small screwdriver on the underside of the splash plate. Now pressing the strap tight on the tank to get as much of the strap as possible through the hole on the other side of the chassis, crimp over this second end. Apply a spot of araldite to the ends, to keep them in place. Be careful not to damage any paint-transfers on the tank if already applied.

Handrails and Braces -Carefully cut to length your preferred wire for these. See sketch 8 basically the layout (as shown on page 114 of the Geoff Kent book) comprises a horizontal from one end support to the other, and diagonals from the end supports to the solebar in the middle of the chassis. The horizontal is fitted close to the tank and behind the raised bit of the end support casting which represents the banding for the diagonal brace. The top of the diagonals fit into little pockets in the underside of the banding on the end supports, and are glued over the middle raised splayed 'arms' on the solebar (above the outer vee hangers you glued on earlier).

If fitting ladders, it is best done with the wire at this stage, so the adhesive fixes them all at the same time.

Painting and Lettering - The liveries were many and varied. Consult your photographs, drawings and of course the Wild Swan book etc. already mentioned above. It really depends what you intend to model, and at what period. The book also helps with typical weathering conditions at various stages in the life of these vehicles.

Suitable transfers for the various post war period private liveries can be obtained from CCT:

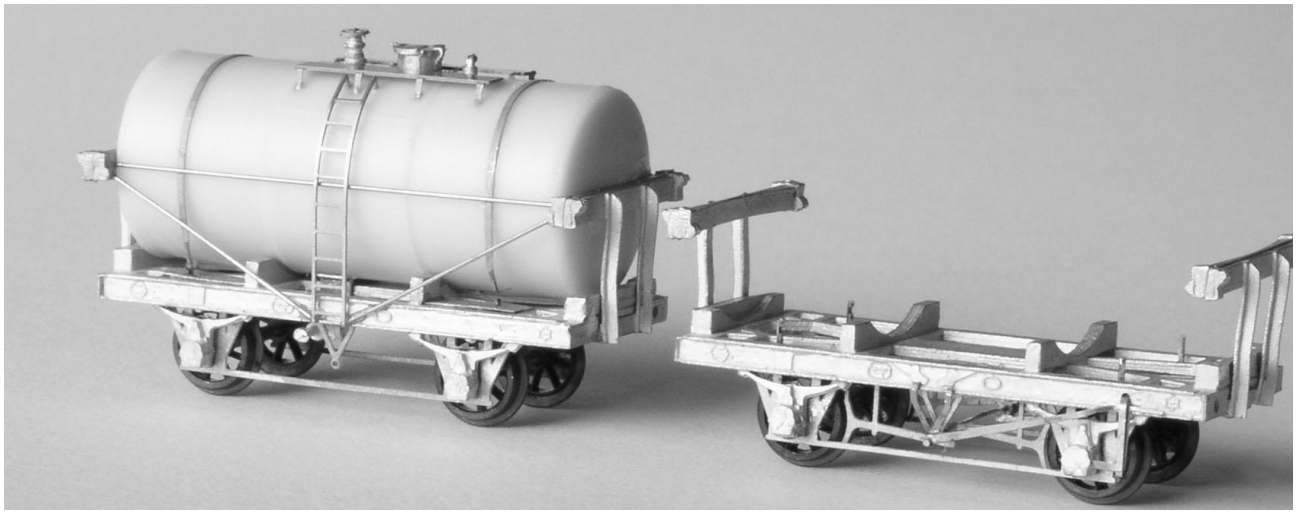
Cambridge Custom Transfers,
206 Nuns Way,
North Arbury,
Cambridge,
CB4 2NS

E-mail: cctrans@hotmail.com

Web: www.cctrans.freeserve.co.uk Go into the 'standard products' page and scroll down to sheets BL13/14/15/24. Some of the other sheets may also be useful as well.

The development of this kit was funded by members' sponsorship appeal during October 2005. Thank you to those members for their support. The kit was designed and developed on behalf of the Association by Bob Jones (Fencehouses Model Foundry), who holds the design copyright. Instructions, sketches and notes by Bob Jones and Edward Sissling, December 2005.

Development test models shown under construction by Bob Jones (Photo by Bob Jones)

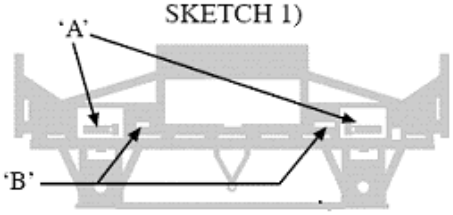


THE 2MM SCALE ASSOCIATION

2-570 - CLASS 'A' (WELDED TANK) & **2-571**- CLASS 'B' (RIVETED TANK)

PAGE 4 - SKETCHES

SKETCH 1)



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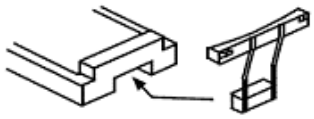
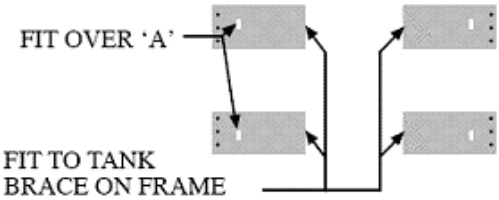


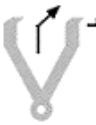
SKETCH 3)



SKETCH 3 X)

FULL SIZE
TEMPLATES

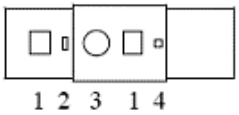
SKETCH 4)



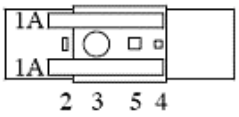
SKETCH 5)

SKETCH 6)

CLASS 'A'

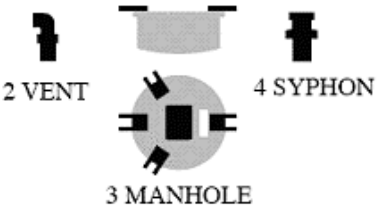


CLASS 'B'



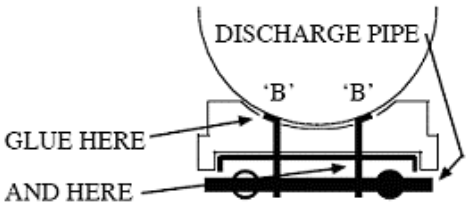
1 SHORT CATWALK
1A LONG DITTO
2 VENT
3 MANHOLE
4 SYPHON
5 HAND WHEEL

TANK FITTINGS



SHAPE
OF
LADDER

SKETCH 7)



5 HAND WHEEL BASE
FOR DISCHARGE PIPE
FIT ETCHED WHEEL TO
'PIP' ON TOP

SKETCH 8)