

# MALKY'S N-SCALE S.A.R. MODELS

## Three Silo Cement Hopper (HCA, SHCX, APCX, APCL, APLY)



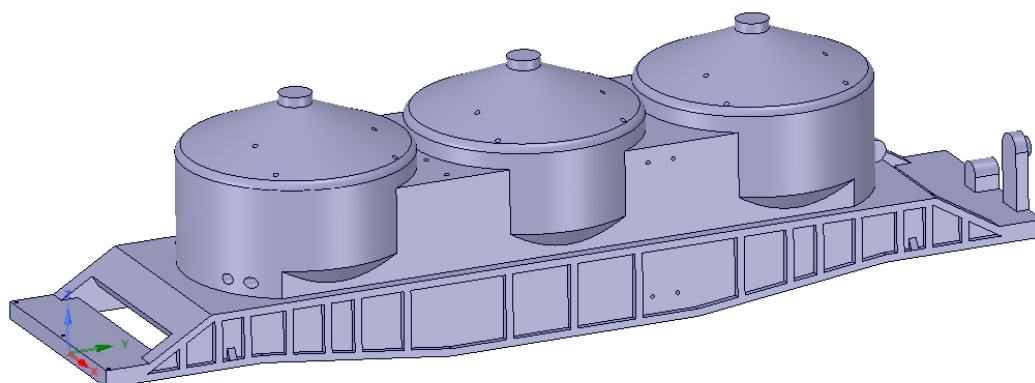
*Photo courtesy robx1.net*

**The Prototype:** Six three-cell pneumatically unloaded cement hoppers were built by the Islington workshops in 1961-2 and coded HCA and numbered 1 - 6. Under ANR/AN these were recoded APCY. A further 12 similar wagons were built in 1968 and coded SHCX, numbered 7 - 18. Under ANR/AN these were recoded APCX. Subsequently the wagons were recoded to other codes, including APCL and APLY.

**The Kit:** The kit has two elements: 3D printed parts, which can be purchased from Shapeways, and a pack of etched brass parts and decals available from MNSSARM. The Shapeways portion consists of two parts printed in Shapeways Smoothest Detail plastic: the carbody and underframe. In addition you will need Microtrains 1015 couplers, and suitable MicroTrains roller bearing bogies. The brass parts provide the walkways, ladders, brake wheel and guardrail for one end platform. You will need some brass or copper wire or alternatively styrene round of about 1 mm diameter to represent the hydraulic pipes at one end.

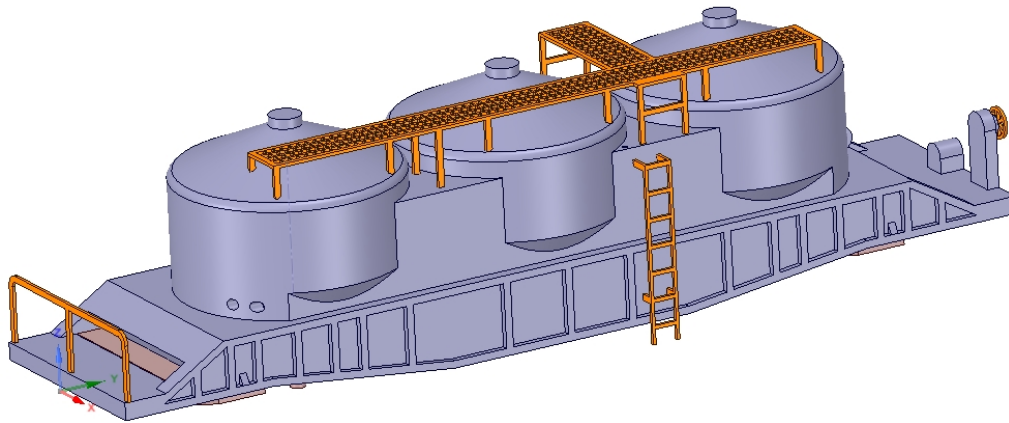
1. Clean the plastic parts thoroughly to remove any remaining wax from the printing process. This is essential to ensure good paint and glue adhesion. Cleaning can be by soaking in suitable solvent, such as isopropyl alcohol or metho, assisted with a toothbrush. Further cleaning and/or sanding may be needed to produce an acceptable finish on the plastic parts. The brass etch should be soaked for a few minutes in vinegar and then washed with clean water. Separate the parts from the fret with a sharp hobby knife or suitable snips.

2. Before fitting any other parts to the underframe, drill for fitting the bogies and couplers.



3. Prepare for fitting the brass detail parts to the body by locating and drilling the various holes for the walkways, ladders and other parts. There are a total of twelve holes in the tops of the hoppers for the walkway supports, plus two more in the platform between the two hoppers at the non-ladder end (see picture above). In addition there are four holes on each side for the ladders. There are also three holes in the end platform at the non-ladder end for the guardrail. Finally there are four holes in the end face of the hopper at the non-ladder end for pneumatic pipes. All of these are marked by small depressions in the printed body.

The holes for the ladders and guardrail should be drilled 0.3 mm. For the walkway support legs the holes should be 0.5 mm. The pneumatic pipe holes should be about 1 mm, depending on the material chosen to represent the pipes.



4. Separate the walkway from the etch fret using a sharp hobby knife or suitable snippers. Carefully fold down the 14 support legs at 90°, preferably using a jig. **Note that all folds are towards the side of the sheet with the half-etched fold line.** Then fold down the two ladder pieces to obtain the shape shown in the picture above. Then carefully fit each of the legs into the matching holes in the body. Gradually ease the walkway down until the four ladder legs rest on the platform between the hopper cells, and the walkway itself is level. Once a satisfactory fit is achieved, the legs can be secured with drops of CN superglue applied inside the hoppers.



Photo showing placement of SAR shrike and X symbols

5. Separate the two ladders from the etch fret and carefully bend up the four mounting brackets. Fit them into the appropriate holes on the sides. Note that the upper bracket has a shoulder and should only be inserted up to that shoulder.

6. Separate the end platform guardrail from the etch fret and insert the three legs into the holes in the end platform.

7. Separate the brake wheel from the fret and fix it to the bracket on the ladder end. A small piece of wire can be placed through the wheel and pushed into a hole drilled in the bracket to assist in mounting.

8. Finally select the appropriate material for the four pneumatic pipes, cut to approximately 4 – 6 mm and fit into the holes in the end of the hopper (see photographs).

9. The underframe fits up into the car body. Ensure that a good, neat fit is achieved. Before final fitment, drill the underframe for bogies and couplers. Determine if added weight is needed. Note also that portions of the underframe are visible through the gaps in the body near the end platforms, so it needs to be appropriately painted.





10. Paint the parts, firstly with a suitable etch primer for the brass parts. The car body should be overall SAR grey, or alternatively AN green and yellow. The visible parts of the underframe could be grey or matt black.

11. Apply decals: the car numbers and brake symbols on the black panels to the left hand end of each side; the SAR shrike on each side on the centre hopper (see photographs). The bogie exchange "X" symbol on each side and end (see photographs). Seal with Dullcote or similar.



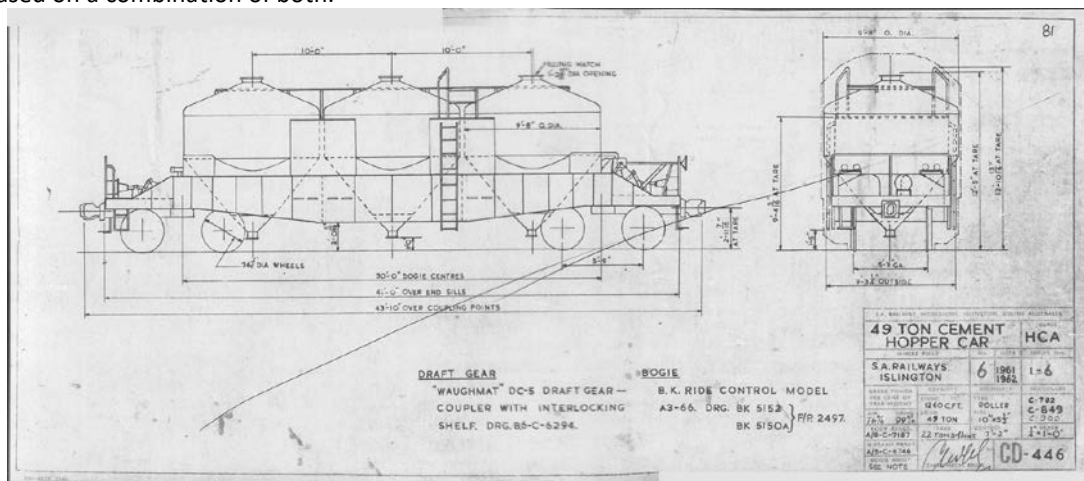
Example of AN colour scheme



Detail of markings

12. Added Details. Various other pipes and details can be added (see SAR diagram and photographs).

It should be noted that variations exist between the SAR drawing No 81 (CD446) and the available photographs. This model has been based on a combination of both.



**Acknowledgements** Photographs courtesy of robx1.net,

SAR publicity brochure 1954

