MALKY'S S.A.R. MODELS

2000 Class "Jumbo"

The Prototype: New suburban railcars were produced for the STA from 1979 to 1981 by Comeng. The body shape was based on the Budd Metroliner and Amfleet design. The first two cars were completed in Granville, NSW, but subsequent cars were fitted out by Aresco at Dry Creek. 12 power cars (2000 class) and 18 trailer cars (2100 class) were built. They were nicknamed Jumbos because of the raised driver's cabs and the resemblance to the Boeing 747 airliner. The power cars were originally powered by two MAN D3650 V12 engines which were replaced by two turbocharged 6 cylinder Cummins engines driving a Voith hydraulic transmission in the late 1980s.

For More Information:
Much of the information used in the development of the kit and presented here was gleaned from the notes of the ***Modelling the Railways of South Australia Convention*** pp 3-635 – 3-666, the line drawings in those articles, as well as photographs.

The Kit: The kit can be purchased from Shapeways https://www.shapeways.com/shops/malky-s-n-scale-models and consists of seven parts printed in Shapeways Smoothest Fine Detail plastic: a body shell, front and rear pilots, underframe detail, with bogie side frames to represent the unique bogies fitted to these cars. The kit requires preferably the Tomytec TM-13R tram chassis, but the TM-12R can be used. The TM-13R has longer wheelbase bogies, closer to the prototype. Microtrains 1015 couplers are required as well as the custom etched metal parts and decal sheet available from MNSSARM.

The kit consists of a body, a cab, a front and rear pilot and also a chassis extension piece, underfloor detail and bogie side frame detail for the Tomytec chassis. The etched metal components provide the radiator blocks and the superstructure including the fans.
The chassis needs to be modified in accordance with the separate instructions.

1. Clean the 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, assisted with a toothbrush.

2. Check fit the front and rear pilots into the body. They should be a light press fit into place – if necessary, file lightly to fit. Do not glue them at this time – they should be painted before final assembly.

3. Check fit the cab into the body. It should fit into place between the cab front and the back of the cab recess. Do not glue it at this time – it should be painted before final assembly.

4. Test fit the modified Tomytec TM-13R chassis. It should fit up against the stops on the inside walls of the body, which should also locate it longitudinally.

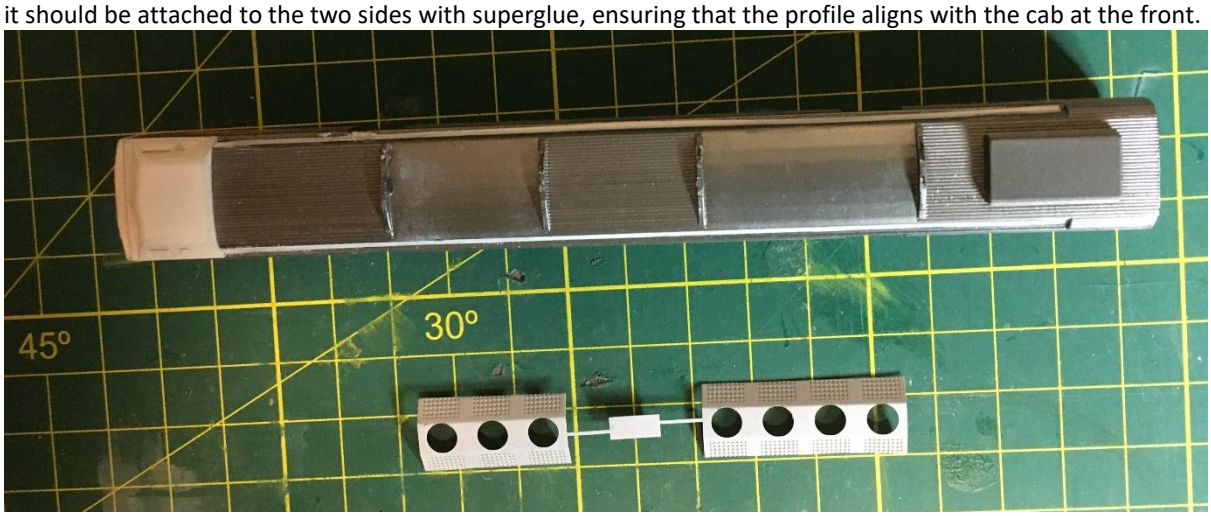
5. Separate the two etched metal components from their fret. If necessary, clean by soaking in vinegar for a few minutes, followed by a thorough rinse in clean water. The radiator frame needs to be bent to fit over the ridges on the roof. Use an etch bending tool to ensure a straight fold. Fold upwards on the side with the half-etched fold line. Check the fit on the roof. When satisfied, paint this component grey. Do not glue it in place until the remainder of the body has been painted.

6. Carefully shape the upper body superstructure. This has to be rolled so as to form the same profile as the cab. Work slowly and carefully, with the cab temporarily in place on the body to check the profile. The central portion with the fans remains flat, as do the lower portions which extend the body upwards. The portion in between should be rolled on a 5 mm diameter former, such as a piece of dowel or brass rod, to achieve the same 2.5 mm radius as the cab roof. Ensure that these two metal components fit neatly on the body before proceeding to paint any parts.

7. Paint the parts. Apply a primer, then the appropriate colour scheme. The painting sequence is important, but may be modified according to your own methods and skill levels. Initially the strip along the windows and the cab front should be painted orange. The rear end is painted grey. The fibreglass cab is painted white. It will be necessary at some stage to mask off the majority if the cab front, and the rest of the body, to paint the fibreglass fairing over the front of the cab white. The remainder of the body sides and roof, including the upper superstructure, should be painted to represent stainless steel. The underframe and bogie sideframes should be painted matt black. The rear wall, the front and rear pilots are grey, as is the radiator block on the roof. The cab and front outer rib should be painted white. The headlights should be picked out in silver, the marker lights red. See the photographs for guidance.

8. The order of assembly and finishing is, to a certain extent, variable, depending on your preferences for painting, masking, decaling and coating the decals. The decals may be applied before or after the two metal components are glued to the roof.

9. The radiator blocks should be attached to the matching ridges in the roof, using cyanoacrylate superglue. Note that the group of four fans is to the rear. When you are satisfied with the fit of the upper superstructure, it should be attached to the two sides with superglue, ensuring that the profile aligns with the cab at the front.



Radiator blocks, folded and painted, prior to attachment

Radiator blocks in place on roof

9. Once the upper superstructure is located, carefully locate and mark two points on the roof centred beneath the two circular openings for the exhaust pipes. Carefully drill two 2.5 mm diameter holes to suit Evergreen 223 3/32" OD tube. Chamfer the top of the pipe to match the superstructure at this location, measure the length and then glue into the hole in the roof, having first painted a suitable colour (grey or matt black). See prototype photograph below.


Details of roof, radiator fans and exhausts

10. Apply decals: the black numbers on each side at the cab end in the orange stripe. The STA logos inboard of the door at the cab end also in the orange stripe. The route numbers in the box on the right hand side of the front. Seal with Dullcote or similar.

11. Cement the pilots into the body shell – the front pilot goes at the driving cab end, the smaller rear transom at the flat end. Drill and tap for fitting of the Microtrains 1015 couplers. This should achieve close coupling. If your curves are tight, a Microtrains 1016 may be required at the rear end of one or more cars.

12. Fit the bogie side frames into the holes on the sides of the bogies in the chassis. They should be a light press fit and should not require any adhesive. If they are too loose, apply cyanoacrylate cement (superglue), if too tight, carefully drill or ream out the holes in the bogies to suit. Note that the triangular shaped plate on the bogie side should be located at the *inboard* end of each bogie.

Paint Colours
For the orange, I used Testors Traffic Light Amber lacquer; for the stainless steel, SMS Paints Stainless Steel; for the grey, Floquil SP Lettering Grey.

Acknowledgements
Master 3D design by Malcolm Jenkins. Great assistance with research by Geoffrey Biggs, a big supporter of this project.