

1022 - Victorian Railways 58ft ABW/U 1st & 2nd class passenger car.

Requires 4 wheel bogies to complete. Greenmax # 502-1 (5002) TR11, Kato equivalent or 3D bogies.

Thank you for purchasing this kit and I hope you get many hours of enjoyment from it. Chris Pearce (Spirit Design)



31 ABU at Spencer Street Station Courtesy Mel Skinner

Basic history notes: In 1911 the Victorian Railways Newport workshops constructed the first unit of a smaller country composite carriage based on the 'E' cars, the 'ABW'. Externally they were very similar to the larger 'E' cars. The 'ABWs' were mainly used on the cross country and branch line trains and were ideally suited where the larger 'E' cars could not go. For over 75 years they have formed the backbone of the Victorian Railways 1st & 2nd Class passenger service and regularly appeared with the larger 'E' cars in train consists. Originally lit with gaslights that were later changed to electric lighting during the 1920s using generators and large battery boxes slung beneath the cars. As with the larger E-cars, they were lavishly appointed with bevelled mirrors above the windows and 3 horizontal rails across the lower windows but were subsequently removed also during the 1920s. Auto couplers were fitted throughout the 1930's replacing the transition hooks.

The kit is based on units running from the 1950s-until withdrawn in the mid-1980s and as such bogie choice will be the kit builder's discretion. A small number have survived on properties and into restoration groups.

The kit can be put together in under 3 hours (when pre-painted) over a week. Only minimal tools and basic/intermediate skills are all that is required to build a very accurate model of a VR 'ABW/U' passenger car. It is suggested that you ***read through*** the instructions first to become familiar with the components and the essence of construction. There are a few steps that require close attention and they are highlighted in ***bold and italics!*** Parts referred to in the text are marked (P1), (P2) etc. ***Please become familiar with the prototype by studying the photos with the instructions before commencing the kit.***

Equipment & Materials:

Exacto knife (blade no 16 or similar), 800-grit aluminium oxide sandpaper, small flat needle file. Fast-drying wood glue like MDF PVA (which is sandable and goes off in under 5 minutes), Sellys 'Kwik Grip' water-based and super glue are the three required for completion (all recommended: usual disclaimers).). Also available which aids in dropping precise amounts of glue into fine lines or droplets is the 'Ultra-Fine Glue Applicator' available separately from Spirit Design



General assembly instructions: The kit sides and end walls should be painted before assembly with only minor touch-ups needed after assembly (see painting general notes below). The reasoning behind this is that it's easy to paint the window frames whilst the components are still lying flat or in the lasered sheet. Decaling should commence once the carriage sides are dry. If you want to spray your entire undercarriage in one hit then decal after painting the underframe so that your masking won't peel the decals off. The roof, underframe and other components can be painted at any time. Any piece cut from the laser sheet should have the holding tag sanded slightly as there is always a slight bump when a knife cuts it free from the surrounding area.

Painting general:

The main laser etch should be **lightly coated** (2 passing light coats not 1 heavy one) with a pale grey primer, Tamiya Surface Primer is ideal for this step. This will enhance the top colours.

Steam Era passenger car red or similar: sides, end walls and doors

Humbrol 40 with a few drops of dark brown: window surrounds

Humbrol Matt 29, or pale grey for the 1960s: roof including clerestory parts, water hatches, vents and covers

Matt Black or Grimy Black: Vestibule end closures, underframe, generator, air reservoir, truss rods and generator stitch panel

Masking the window surrounds for painting: On a painted red paint side, take the 'Quick Mask' sheet and peel the 'Smokey Grey' adhesive vinyl off the backing paper whilst making sure the window inserts remain behind on the backing paper.

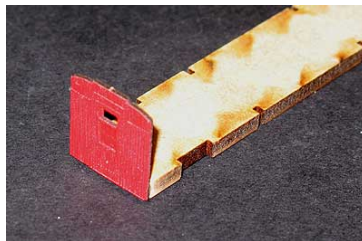
Hold the far left and right ends of the masking between your thumbs and fingers, and place it over the carriage side whilst looking through the window cutouts for alignment. The top row of window cutouts should be positioned so that edges match the window frames. You should now have a window frame exposed on two sides and a bottom for each window opening. Repeat on the other side. Once in position, apply pressure on the film over the window area with your finger.

Do not rub, as it may distort the fine lines between the window pairs. The alignment down the two sides and bottom of the window frames must be approx. 0.5mm open area for painting. When the paint has been applied, the resulted finish will resemble a squared bottomed "U" shape in the windowsills. Once the paint has been applied, wait about 30 seconds and gently peel the masking off and discard. Proceed with the assembly instructions below.

No paint should be across the top of the window frame – see prototype photo above for reference.

Assembly Instructions

1. Sand the MDF floor (**P1**) edges ever so slightly to remove the minor laser staining and to make the edges are a little more vertical. Turn the floor over so the marking 'U' shaped ones are facing the desk surface you are about to assemble on. These are the guides for the underframe.
2. Glue a carriage end wall (**P2**) to the MDF floor (**P1**) keeping it square and vertical



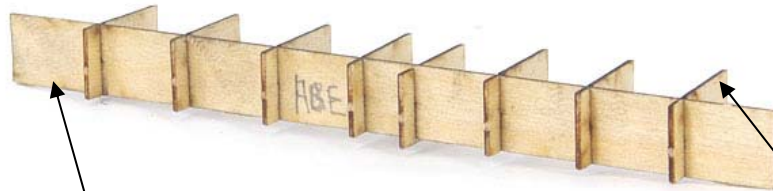
3. Glue doors (**P3**) in behind each opening of a carriage side (**P4**) & (**P6**). Make sure each door sits symmetrically around its opening. Its best viewed from the front of the carriage side to aid positioning



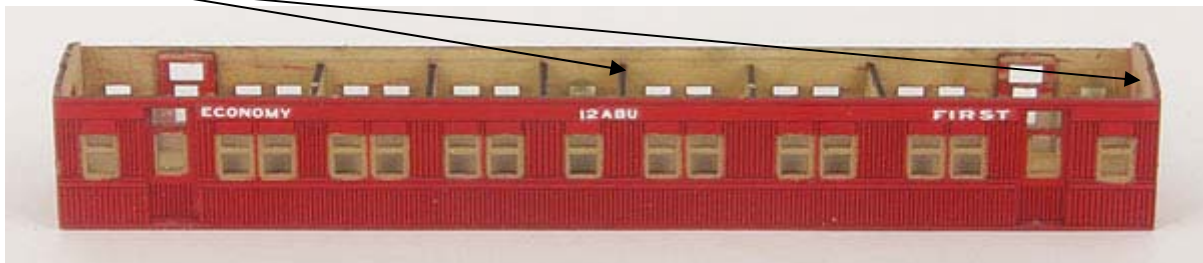
4. Glue a carriage side (**P4**) to the end wall edge (**P2**) and up against the MDF floor (**P1**) making sure the sidewall covers the end wall edge and stays in contact with the floor. Use weights or clamps if needed
5. Repeat the above procedure for the other end wall (**P2**) and carriage side wall (**P6**)



6. Once dry lightly sand the entire carriage base to make sure it is flat and square with the sides
7. Breakoff / separate 2 long sets of windows 7mm high x 82mm long (**P12**) from the clear celluloid (These have been pre-scored on the clear sheet and a few gentle bends will free them). Use Selly's Kwik grip to glue these in behind the carriage sides. Make sure that the glue does not creep into the area shown in the window proper. There should be a dab of glue between each set of window compartments.
8. Break off 4 door glasses 5mm highx8.5mm long (**P12**) and glue these in behind each door using 'Kwik Grip'
9. Break off 4 windows and glue these into the remaining (**P12**) single window openings of the carriage sides
10. Break off 2 windows (**P12**) for the end door of the carriage ends (**P2**)
11. Paint the toilet windows either white or grey on the inside of the carriage using the photo of 12 ABU below as a guide. Note the First-class end and the spacing between the windows on the prototype
12. Glue the partition units (**P23**) to the partition corridor (**P22**) using the slots provided. The picture below shows the ABE partition but the ABU is just a smaller version of the same arrangement



13. Note that the corridor partition is on the opposite side of the toilet windows. The partitions themselves should line up in the middle of each set of the windows and as the spacing is different between the 'First' and 'Economy' compartments. Glue once satisfied with orientation. See the picture below or the parts diagram. Toilet windows



14. Add a minimum of 10 grams of weight to the floor using lead, nuts or discarded wagon weights. It is best to have the weight as close to the bogie pivot points for better running qualities

Carriage Roof:

15. The main roof (**P13**) is milled from 'Clear Pine' and the edges are prone to damage before gluing into the semi-completed passenger carriage. Where the doors of the carriage butt up against the underside of the roof you may need to remove a small section of timber so that the roof sits snugly down in the carriage
16. Glue the clerestory side (**P9**) with its base unit (**P11**) making sure that the (**P11**) is glued centrally towards the top (rounded corners) of the (**P9**) or 4mm in from the edge. Repeat the same with the other side (**P10**)

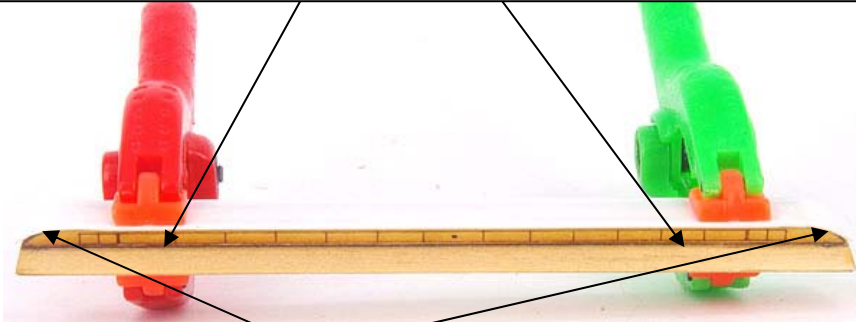


17. Glue the entire complete clerestory section centrally along the main roof (**P13**) making sure that there is an even spacing around the sides

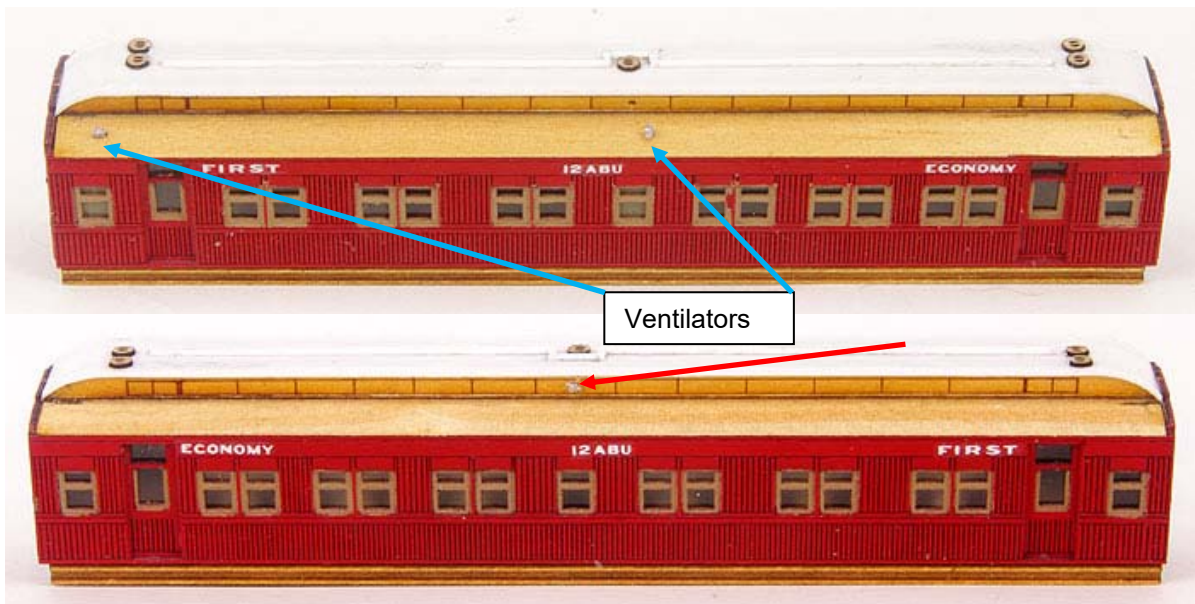


18. **The scored lines of the card roof (P14) face you when it is glued to the clerestory unit.** The scribed line deviates around the central water filling hatch. **This hatch should line up with each of the (P9) parts so that the hatch sits directly over the central clerestory vent with the holes marked in it.** It will be off centre if you have it around the wrong way
19. The styrene part in the picture has now been replaced by a cardboard piece as it makes it easier to assemble using glue you already (PVA) You can still clamp the part as in the photo if you wish

Make sure that you fill the edges along this area with glue using an Ultra-Fine glue applicator



20. Using a toothpick, smear PVA along the rounded end of the clerestory section and using your fingers hold the rounded end down until bonded. Glue the rest of the clerestory down and repeat the round corner procedure
21. Glue the supplied 15 x 30 thou card strip (P7) centrally to (P14) along and around where the scribed line is etched
22. Glue a ventilator (P21) into a hole provided in the clerestory side wall above the single window **on only the corridor side.** See second photo below (red arrow)
23. Using the RHS side of the window frame painted toilet window as a guide, drill a hole 0.5mm and space it 5mm in from the edge of the roof near the end wall (P2) and centrally between the outer roof edge and the clerestory side wall (P9). Repeat for the other vent 59mm from the end wall edge. Then glue the two remaining white metal ventilators (P21) into the drilled holes See the first photo below (blue arrows) as a guide
24. Glue the round water hatches (P15) to the card roof where the circles are etched



25. Trial fit the roof into the carriage, make any adjustments deemed necessary for a nice fit
26. Paint the entire roof, Humbrol Matt, no 29 before gluing into the completed carriage

Carriage underframe and details:

27. Glue the underframe (P5) to the MDF floor using the 'U' shaped markings as a guide and with the aid of toothpicks line up the bogie holes. Note the position of the scribed centre line at one end of the underframe and this should face towards the first-class end when viewed looking down on the carriage

28. Trim the 'U' channel (**P8**) to the length of the underframe if necessary and then glue it to the MDF base so that the 'U' shape faces you when viewed side-on and the outer edge of the channel is flush with the outer edge of the carriage side
29. Using the parts diagram, glue the battery boxes (**P17**) to the underframe where there two scored lines are across 3 ribs. The rounded corners face away from the underframe and the detail markings on the units should face towards you when the carriage is viewed from side-on. If modelling later 70's-80's era do not glue the battery box on the toilet window side but I will leave it up to the modeller to decide using actual photos of their carriage
30. Glue generator switch panel (**P18**), air reservoir (**P19**), and generator (**P20**) onto the underframe using the parts diagram as a guide
31. Trial fit the truss rods (**P25**) into the MDF base behind the U channel. They should be pushed down until the sloped section just touches the underframe and the turnbuckle dimple should face the viewer. When satisfied with the fit, place a small dab of glue around each leg and where the sloped section touches the underframe. Take care when doing this as they are fragile
32. Glue the end wall door vestibules (**P16**) onto the carriage end walls (**P2**) matching the scribed line



Completed 12 ABU before some weathering

Decals: Using the prototype photos and the photo of the finished model, position the decals accordingly. Also, you can make use of the spare ABE sets from the numbers provided.

Weathering: Use pastels or paint to weather the carriage as per photos or to your liking. Don't forget the roof as smoke and diesel fumes stained it

Bogies: Greenmax #502-1(5002-1) or TR11 or Kato equivalent. Trim the brake clasps off as per the photo below and file the bolster plate down to the same height as the centre bogie hole.

Couplers: The best couplers to fit are MicroTrains 1015s. Packing pieces can be made from scrap timber leftover from the kit if they are needed



25ABU with single battery box in the consist of a country train 2/05/1978 near Warragul. Courtesy of Rob O'Regan



40 ABU courtesy of Mel Skinner Circa 1980ss



32 ABU Spencer Street 26/08/1979. Courtesy of Rob O'Regan

For more information and photos see: www.spiritdesign.com.au, Rob O'Regan's website <http://www.robx1.net/> or Mark Bau's <http://www.victorianrailways.net/> or Peter Vincent's <http://www.pjv101.net/index.htm>

Any alterations, suggestions or queries please contact me.

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ABU/W Parts list

