

Royal Arsenal Railways Ammunition Wagon

This model is based on the War Office designed wagons used on the 18 inch gauge Royal Arsenals Railway during the great war. Being a standard design means these wagons could have easily been built for two foot gauge for other war office sites as well. After the war, the war office sold large quantities of "war surplus" stock off to private enterprises and so some of these wagons could easily have ended up on your railway.

The wagons were of particularly rugged construction with thick wooden components bolted together with longitudinal and transverse bars. The main feature of the design was that complete body could be lifted off the chassis (four lifting eyes were securely bolted to the body ends) by crane to facilitate the swift loading of ships



General Assembly Instructions

Do take time to read through the instructions and understand how the parts fit together before reaching for the glue pot. Where ever possible parts have been designed to be symmetrical but occasionally parts have to be left or right handed so take care to follow the instructions carefully at these points.

Gluing

Wood parts may be glued with PVA wood glue, Cyanoacrylate adhesive (super-glue) or epoxy resin (Araldite). Beware of very cheap glues, their joints may fail! If you do use a “super-glue”, go for one which takes a few seconds to set rather than an instant “grab” one. This will give you a few seconds to adjust the parts position before it is too late.

Nylon parts (e.g. hinge plates and end supports) are best fixed with Cyano/super glue.

Painting

This is very much a matter of personal choice. This kit is laser cut from poplar plywood which will “delaminate” if allowed to get soaked with water so some form of protection e.g. coat of clear varnish is highly recommended. We like to apply a light wood stain followed by a couple of light coats of modeller’s matt varnish from a small “rattle can”. However you may also apply a light coat of interior acrylic varnish (from a DIY store) applied with ¼inch brush.

The nylon parts come pre-stained black which most customers find perfectly acceptable. However if you do decide to paint these parts, you will find the nylon is slightly porous so will need priming or at least 2 coats of paint.

The four floor support beams are 3D printed using a “wood coloured” filament and once they have been lightly filed to remove any printing imperfections should do as is. You may however paint these with any acrylic or enamel modellers paint if you wish.

Tools

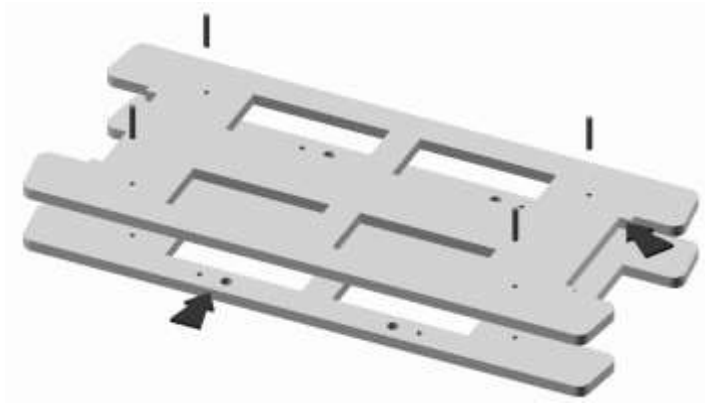
The following tools will be required:

- A sharp modelling knife or scalpel
- 1.5 mm and 3mm drill bits (for cleaning out holes)
- A small file, sand paper or an emery board “nail file”
- A small “Philips” screw driver, size 0
- A pair of wire cutters or a small hacksaw
- A flat board and small clamps or a flat heavy weight

The following tools are recommended

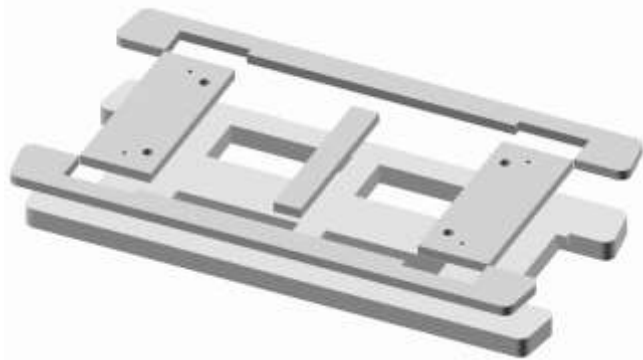
- A cutting matt
- Some small clamps, bulldog clips or rubber bands
- Round and flat section “needle files”
- A vice (to help cutting the brass rod to length)

Step 1 – Chassis

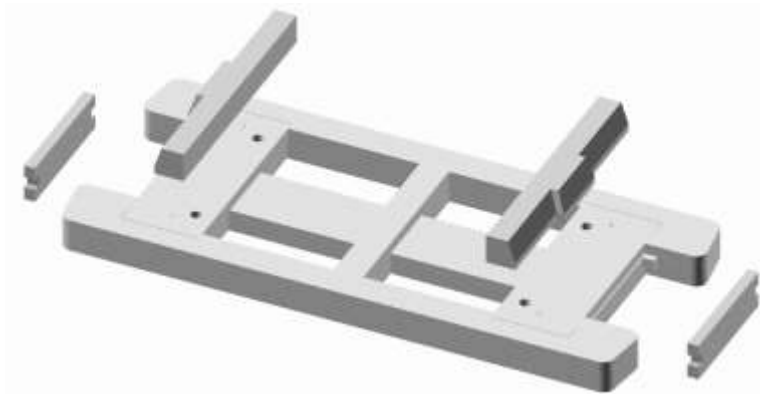


PVA wood glue is recommended for these steps or if you want to use a super-glue DON'T use an "instant grab type". Glue the 2 "chassis plates" together using four 9mm lengths cut from the supplied 1.5 mm diameter brass rod in the locating holes at each end.

Next glue the five chassis top pieces in place. Wipe off any glue that oozes out of the joints and either clamp the assembly to a flat board or place under a large flat weight while the glue sets



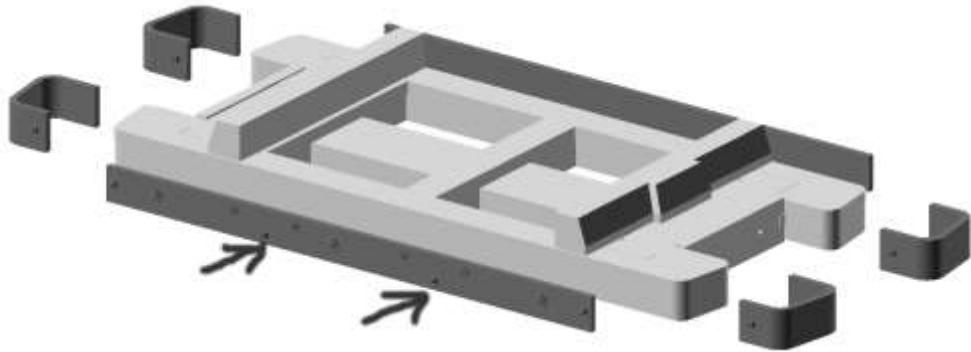
Sand any roughness off the two pairs of 3D printed mounting beams. Ensure they fit together nicely before gluing the chassis beams to the chassis. Note that the tapered lugs face outwards on the chassis.



Now glue the two buffer mounting plates onto the ends between the two dumb buffers. Once the glue has set, lightly sand the edges of the "plates" that now form the sole bars and dumb buffers to remove any excess glue and to provide a good surface to paint or varnish.

Now paint or varnish the complete chassis assembly to seal it against moisture.

Carefully separate the four curved buffer plates from their sprues and glue them over the dumb buffers. Carefully separate the chassis side plates and glue them to the chassis side. Note that they come as “left and right handed”. The two bolt heads directly over the wheel centres should be at the bottom



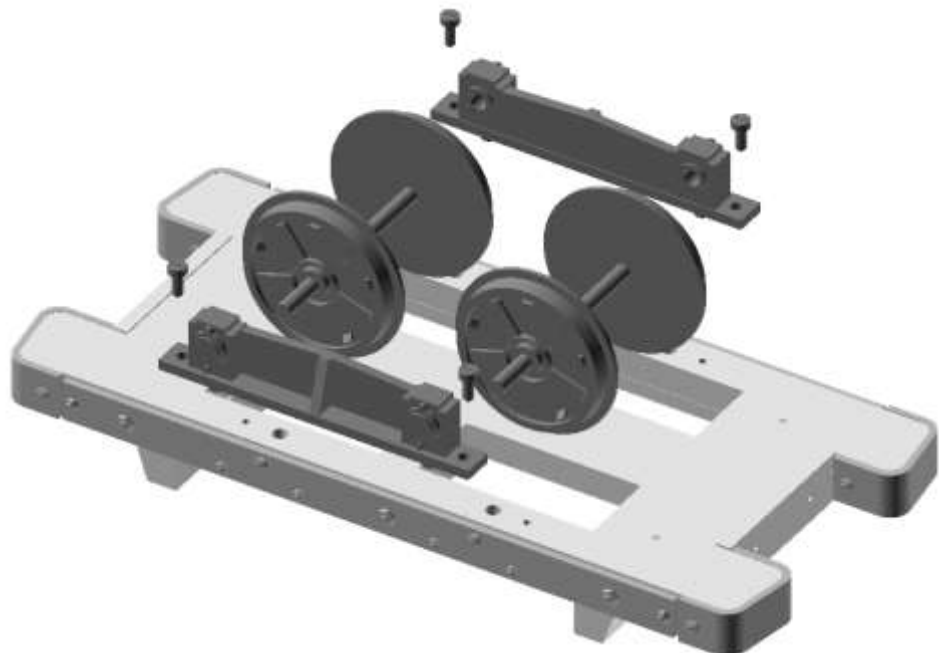
Step 2 – Wheel Preparation

Separate the four 3D printed inserts from their connecting sprues. Glue the inserts into recesses between the wheel rim and axle boss.



Step 3 – Wheel fitting

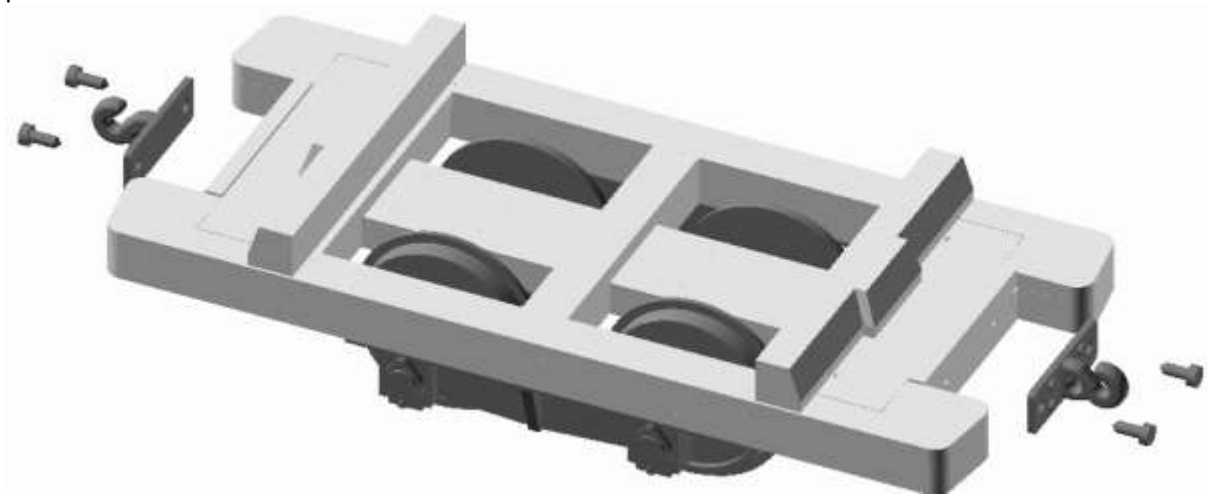
Separate the two 3D printed axle box casting with a sharp knife. **N.B. don't trim off the round locating pegs!** Clean out any printing dust from the journals by “twizzling” a 3mm drill bit in them. Check the axles are a nice running fit before screwing the axle boxes and wheels to the assembled chassis with four of the supplied self-tapping screws. We suggest applying a drop of thin lubricating oil into each journal first.



Step 4 - Couplings

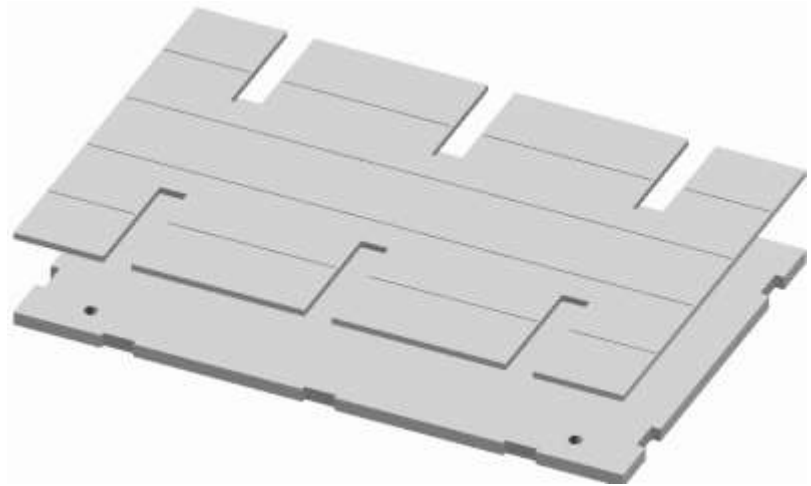
Separate the two coupling hooks with a sharp knife. The four white spots left where you trimmed off the sprues are best “coloured in” with a fine tipped black permanent marker pen. Screw to the chassis with four self tapping screws.

Note the mounting hole spacing is the same as used by our “extra large” bell mouth couplers if you prefer to use these.

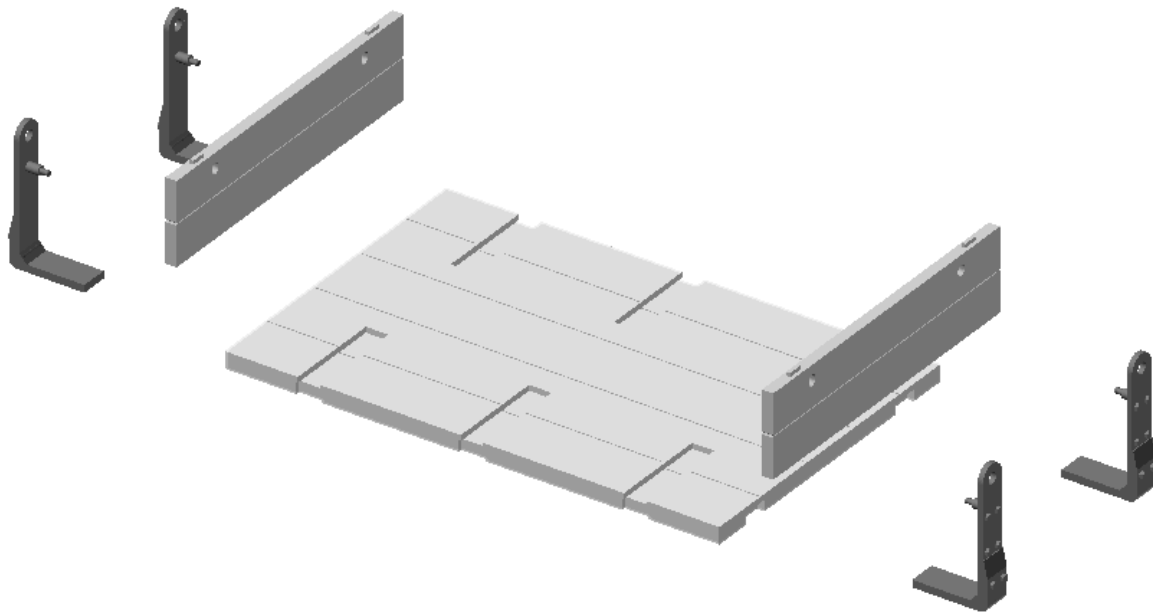


Step 5 – Wagon Body

Glue the upper body floor (1.5mm ply) to the lower body floor (3mm ply). Again clamp to a flat board or place under a large flat weight while the glue sets.



Separate the four L-shaped end brackets from their sprues and offer up to their locating recesses in the floor ends. You will find that you will need to file a 45 degree chamfer in the 1.5mm ply portion to clear strengthening fillet of the bracket.



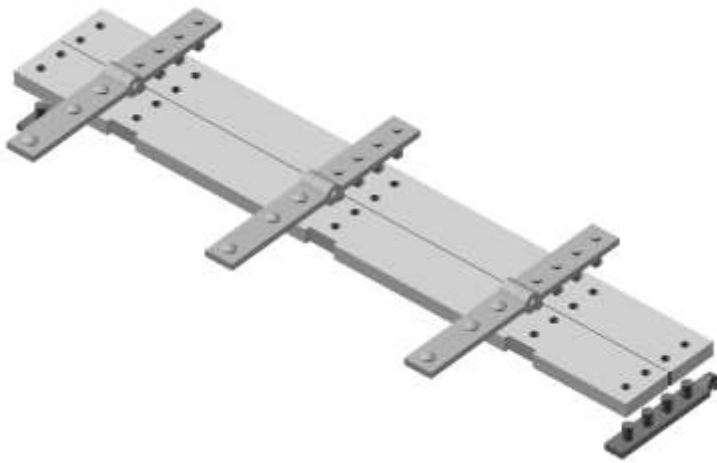
Glue brackets to the wagon ends (pushing the door hook pivots through the locating holes in the wagon ends and then glue the ends/brackets to the wagon floor.

Step 6 - Doors

Separate the door hinge components from their printing sprues (again colouring in any white spots). Cut six 7mm pieces of brass rod.



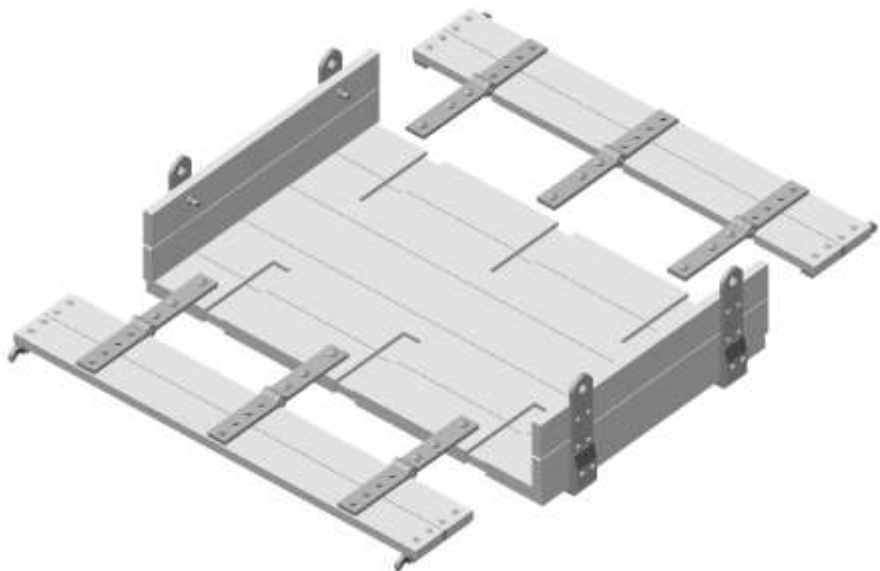
Push the rod into the hinges as shown. (You shouldn't need any glue)



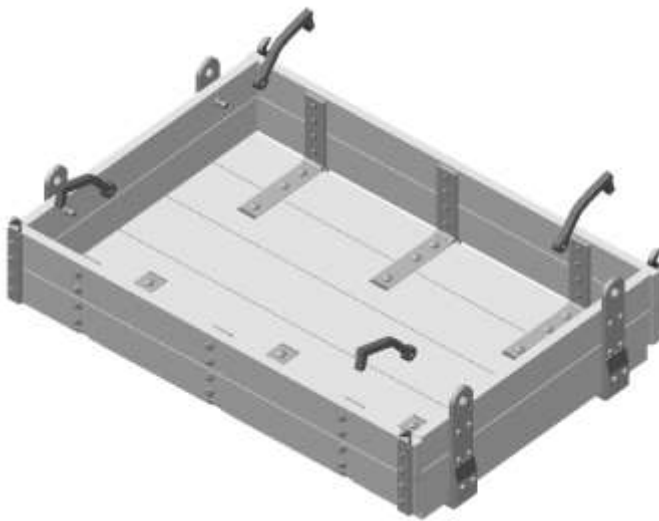
Glue three hinge assemblies to a door, pushing the "bolt heads" through locating holes

Fit two of the end straps to the other side of the door. The little hook going at the top

Offer up the doors to the body as shown. Again you may need to file little chamfers in the floor recesses to clear the hinge bodies. Once you are happy that the doors swing up to the vertical position correctly, glue the six hinge plates to the wagon floor.

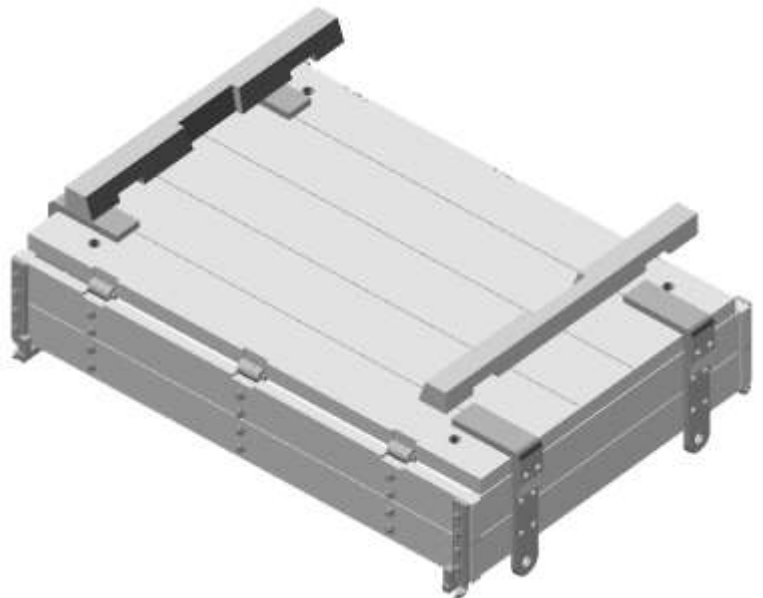


Step 7 – Final Assembly

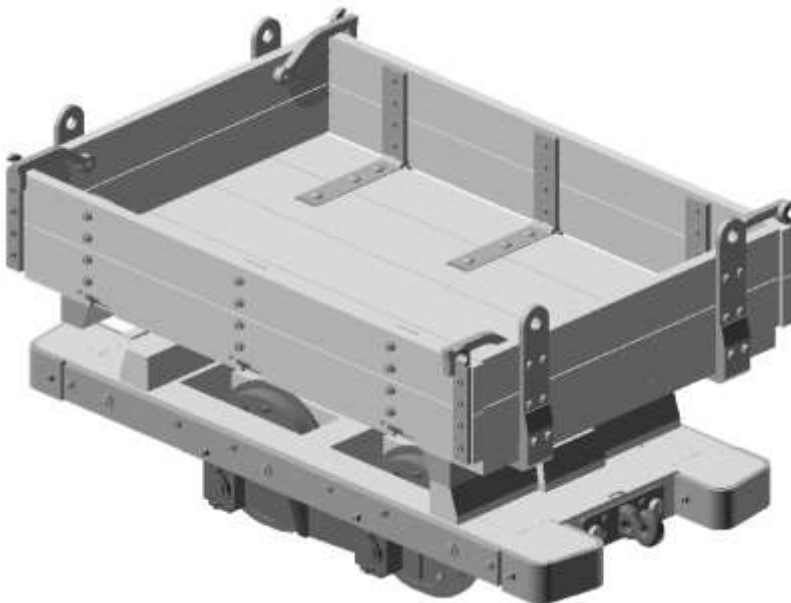


Separate the four door catches from their sprues and remove the white spots left. "Pop" the door catches onto the protruding pivot pins. You should not have to glue these in position.

Now glue the other two mounting beams to the underside of the body



Once dry; paint, stain or varnish the body as you see fit.



If desired glue the body to the chassis

Job Done!