Waterslide Decals

Waterslide decals consist of a sheet of paper with a layer of water soluble glue on top and the decal on top of the glue. When the paper is dampened the glue dissolves and the decal can be slid off onto a model. When dry the glue holds it to the model.

Other types of decal are Pressfix which are pressed onto the model, and Methfix where methylated spirits is used to release the decals and cause it to adhere while the paper with the decal is pressed onto the model. Both are common for O gauge but rare for N Gauge. The decals produced by the HMRS are these types, but the smallest are 4mm scale.

Waterslide decals usually have a clear layer known as the carrier film as part of the decal to hold the letters of a word together. There are important differences between decals from different suppliers: is the printing is above or below the carrier, is the carrier only over decals or over the whole sheet, or is there is no carrier.

1. Printed on Top of Carrier Film. These are often produced on home printers, you can buy decal paper for both inkjet and laser printers. ALPS brand computer printers were unusual being able to print white hence can produce decals in all colours, despite their not having been made since 2010 there are still a number of small companies such as Cambridge Custom Transfers who use these printers. The ink on top of the carrier is easily damaged – for example, pulling a fingernail across can damage lettering. If you buy this type of decal, **immediately** spray the whole sheet with two coats of matt or satin spray varnish before handling it. This will protect it from damage when you apply the decals.

2. Screen-printed, Carrier on Top. Nearly all decals used to be like this, and many decals from large companies such as Fox still are this type. The colours are printed onto a sheet covered in glue, then a transparent layer – the carrier – is printed over the top. Most sheets are printed with only the minimum amount of carrier (spot carrier). A few have the carrier over the whole sheet. You can tell where the carrier is by looking at the sheet at a shallow angle with light reflecting off it. The carrier will show up, as it reflects the light differently.

3. Computer Printed UV Cured Ink. The current technology for producing decals is to use a computer printer with UV cured ink. The ink is a resin which hardens when UV light is shone on it. The printers are more expensive than home printer. The ‘ink’ on its own is strong, no carrier film is needed to protect it. If separate items like letters need to be joined together a clear ink is printed in between them. They have a matt finish.

Surface Preparation

The surface should be clean of dirt and grease; clean with Isopropyl Alcohol or similar (most hand sanitisers are Isopropyl Alcohol).

More important though is the surface finish. Ideally it should be gloss, at worst satin finish. Do not apply decals to a matt finish – they will not adhere well and the carrier will show up as silver because of air trapped underneath.

It is easiest if you can paint the wagon gloss to start, I usually use Halford's spray cans – there are equivalents for most railway colours. If the surface is matt coat with gloss varnish first, my preference is to use a very thin acrylic varnish painted on, it needs to be thin so it does not leave brush marks. Pledge Multi-Surface Polish is an acrylic varnish which is very

cheap and brushes on easily, the name keeps changing, and there are other similar floor polishes. You will need 2 or 3 coats.

Cutting out the Decals

Because most decals are on a light blue backing paper it can be very difficult to see white ones. Use magnification and a very bright light if you have difficulty. An enlarged print out of what is on the sheet is a big help: sometimes this is supplied, or it may be available on the manufacturer's web site, or you may be able to photograph the sheet and increase contrast in a photo editing package. Some people recommend using a marker pen on the back to darken the paper, but I find some of the colour gets through to the decal and shows up on the model.

If the sheet only has spot carrier (just over the decal) you can leave a wide border, but if the carrier goes over the whole sheet cut as close to the decal as you can – magnification is useful. Carrier on the outside of the printing will prevent it being positioned close to a rib or another decal. If the edge of the carrier is close to the lettering it is much less noticeable because the eye is distracted by the bigger contrast between the letters and background.

I cut out all the decals for one side at a time using a scalpel, but any sharp knife will do. If using scissors cut so the scissor blade is on the outside of the decal, to avoid damaging it. An advantage of using a knife is you can cut out a small hole leaving the rest of the sheet intact. This means you don't end up with lots of separate bits which can be hard to identify next time you use the sheet.

It is best to find a photo to work out just what decals you need to apply and where. If you are doing several wagons look for different photos – markings and their positions often varied considerably between nominally identical wagons.

If the decal is to fit in a tight space, for example between a stanchion and strapping on a wagon side, it is a good idea to check the decal (with backing) fits before wetting it, if not cut it closer or even cut a little of the decal off. Sometimes decals can be slightly oversize for what you want, in particular black backing squares may need cutting down. You don't want a corner of the carrier bent up against strapping, it is very difficult to get it to lay flat.

Wetting the Decal

Do NOT drop the decal into a cup of water. If you do there is a danger you will leave it too long, it will float off the backing and most of the glue will get washed off.

Instead hold the decal in tweezers and dip it in water for about 3 seconds, shake any drips off, then place it on the lid of a plastic box such as the ones most wagons come in. Alternatively put the dry decal on the lid, dip a paint brush in water and apply water to the edges of the decal, repeating after a few seconds so there is a little water round the edge of the decal. After about a minute it should have soaked up enough that the decal is loose and will slide around – prod it gently with a small stick to see if it moves, if not wait a bit longer, add more water if needed. The time taken to soak varies between different sheets.

If you get interrupted the decals simply dry out and can be reused.

It is best to use soft or distilled water; if you use hard water it can leave a chalky deposit when it dries. The water from a condensing tumble drier is good. It may help if it is warm, but it seems to make little difference.

Applying the Decal

Have a photograph of what you are modelling in front of you so you can see the exact position of each decal. If doing more than one wagon, try to find different photos, as there were usually variations in the positions of markings between wagons.

Pick up the decal and backing paper with a pair of tweezers and place it on the model, next to where it is to go and the right way round (again magnification can be useful).

With a small wooden stick – a cocktail stick or toothpick – push it off the backing paper into place. You may need to hold the backing paper with another stick or the tweezers while doing this. Throw the backing paper away, then push the decal around with the stick until it is in the correct position. If it won't slide, apply a little more water with a damp paintbrush; you can also use the brush to move it around. When correctly positioned mop up any excess water and press the decal down by rolling the end of a cotton bud over it. Then go on to the next decal on that side.

Let the first side dry for a while before doing the other to minimise the chance of moving a decal already applied to the other side.

Uneven Surfaces

If the decal is going on an uneven surface, for example over plank lines or panelling, when the decal is correctly positioned roll the tip of a damp cotton bud over it, pressing down. Roll it so it does not disturb the position of the decal. As the glue dries the decal should be sucked down further.

If this does not work it may be necessary to use a decal softening liquid, Micro Set for example. Dampen the area where the decal is to go with Micros Set before you put the decal on. You can use Micro Set on a decal that has not stuck properly: apply it over the dried on decal, leave a short time for it to penetrate, then press down as before. For really difficult cases, there is a much stronger softening liquid available, Micro Sol.

Micro Set and Micro Sol only work for decals with a carrier film. They do not work for decals with UV cured ink like those from Railtec, and indeed can damage the decal. Instead add a few drops of PVA glue to the water used to wet them when applying them to an irregular surface.

Varnishing

It is essential to varnish after applying decals to seal the decal so it does not lift off the wagon in future. More important though is that you want a uniform matt or satin finish over the whole side else the decal will stand out against the rest of the wagon.

The simplest way is a can of spray varnish. Having tried several matt varnishes I always use Testor's Dullcote for goods wagons – many model suppliers sell it, and in most people's opinion it produces the best matt finish. You may well need more than one coat to get a uniform appearance, a couple of thin coats is better than one thick one in any case.

For decals on a coach or loco you may want a less matt varnish, possibly satin. I usually use a varnish from an art shop, but there are many others available. For a change of loco number you may prefer just to varnish the cab side and leave the factory finish on the rest, either by brushing a matt or satin varnish on or by masking the rest out and spraying. Loco numbers were often rubbed with an oily rag so they were easily readable, which showed

up as cleaner and more glossy than the rest of the loco so err of slightly more glossy than the rest of the loco.

TIPS

Changing Numbers or Crests on RTR Models. Don't try to change just one digit of a printed number – it will not match properly and will look odd. Replace the whole number.

The aim is to remove the painted on number without removing the body colour paint underneath. Start with a craft knife or scalpel held at right angles to the body, and very gently scrape the numbers off. Take your time with many light passes. When nearly all the paint is off, just leaving a few small dots of paint, finish off by rubbing with an ink eraser sharpened to a point; moistening it can help. Don't worry if where you have removed it looks more glossy than the rest, you will have to varnish over it afterwards.

Creating Specific Numbers. If you are renumbering a loco from a sheet of full made-up numbers it may not have the one you need. Rather than cutting out individual digits, try to find two numbers that between them have the digits you need in the correct order, then cut out these as two decals. Individual numbers are difficult to apply so they look square and correctly spaced (particularly in N!). It is much easier to get two decals each with 2 or 3 digits to line up. For example, if you need 42573, you may find your sheet has 42541 and 45732. You can cut out 425 from the first and 73 from the second. Cut as close to the digits as you can. If you have to use 3 or more decals, start from the centre when applying.

Lining. Long lengths of lining are difficult to apply – they tend to get kinked or knotted. It is however surprisingly easy to position two lengths of lining so they join up perfectly. So I always cut the lining into sections not more than 1” long. This has an advantage when the lining needs to fit a particular length, you can make them slightly longer and overlap them to get the correct length. It is difficult to get coach lining to go over handles, it is often easier to cut it either side.

Suppliers

Searching the net for “model railway decals” will find many suppliers, a few of the larger ones are below. If you model post 1948 there is a good selection available, grouping era there is less choice, and pre-grouping is very patchy.

Fox Transfers. Very wide range of decals, their lining is particularly good.

Railtec. Wide coverage but specially strong for more recent eras.

Cambridge Custom Transfers. Large range almost entirely 50s/60s with a few GWR sheets. Well researched. They are produced on an ALPS printer so a coat of acrylic varnish to protect the ink is recommended before starting to use them.

Precision Labels. Good range, focussed mainly on modern eras.

Historical Model Railway Society (HMRS). They have an extensive range of Methfix and Pressfix decals and are particularly good for grouping and pre-grouping eras for members only, but only for 4mm and 7mm.

Scale specific societies often sell decals. The **N Gauge Society** has decals to match the NGS wagon kits. The **2mm Scale Association** has a few sheets for early eras.