



Preparing and Ballasting track

Ballasting is one of those subjects that really worries some modellers, yet in reality if it is taken quietly and done one step at a time, it can be both enjoyable and much quicker than you think!

In this article, we will list the tools, materials and methods that we use, and show you how its done.

It will not need expensive tools and material costs can be quite low, too. All you need to do make a good job of it is to take your time, pause between steps, relax and follow the instructions in the next few pages!

Tools:

For laying and wiring track you will need these fairly standard modelling tools:

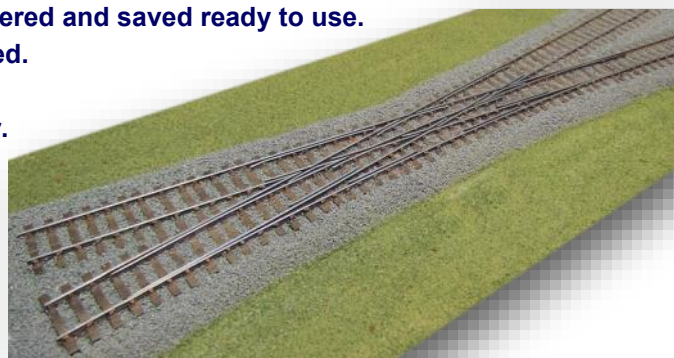
- * [Track cutters](#), [small files](#) for smoothing rail ends and a soldering iron, [solder](#) and [flux](#) for soldering droppers.
- * Low cost firm bristle art-type paint-brushes, a larger soft brush and glue in a dispenser bottle with a fine nozzle.
- * Spray bottle with fine-mist ability, an offcut of pine or softwood, a sieve (fine) and a vacuum cleaner with new bag.

Materials:

- * [Track-bed](#): We prefer our own range which uses quality closed cell EVA foam with ballast shoulders cut at the right angle to match the prototype (the angle of repose for ballast is 60 degrees).
- * [Ballast](#): Again, we prefer our own range! However, the choice is up to you.
- * Fine roadside dust: Take a trowel or small spade out and gather some—preferably from the area you model!
- * Fine local dirt: As for roadside dust. Gather some - preferably from the area you model!
- * [Weathering powders](#): We have our own range ...but again, the choice is of course up to you!
- * Grey Car undercoat: Brand will depend where you are, but **do** use automotive undercoat!
- * Wood stain: A 1 litre can will do several layouts. Matt in preference. Make it a dead, dark brown with not too much red or other highlight colour in it. Dark Walnut works well.
- * Model paints: The paint type (e.g. acrylic) should match the stain as they will be mixed. It could be model or any other paint but it should be matt. You will need a terracotta colour and some black.
- * Methylated Spirits: ...or Isopropyl alcohol, rubbing alcohol or anything similar. A 1 litre bottle is enough.
- * Window cleaner: Alcohol based. Normally in the kitchen. Also get a medium spoon. Don't get caught.
- * Glue: We have used PVA. You could use Bondcrete, Copydex or a water based carpet glue if you want : as long as it is water based, it is OK. We have a small bottle with a small nozzle for gluing track and one low cost sauce bottle for the glue that will be diluted for ballasting.
- * Pine offcuts: With the end grain soaked in paint thinners, they make a brilliant way to remove paint and stain from rail tops. Keep one soaking while doing all of this, soaking off excess and using it while the paint is still wet. In just moments, and with just a couple of swipes of the wood over the track, most of the hard work will be done.
- * Takeaway tubs: Ideal for storing the stuff you have gathered and saved ready to use.
- * Polythene bag: For dispensing ballast onto the track-bed.
- * Bottle with nozzle: Cheap plastic bottle for glue/water mix.
- * Light oil: ..or Vaseline for masking around tie-bar.

That's about it ...

You have what you need, so it is time to turn the page and read a little more so you can see how easy it really can be.



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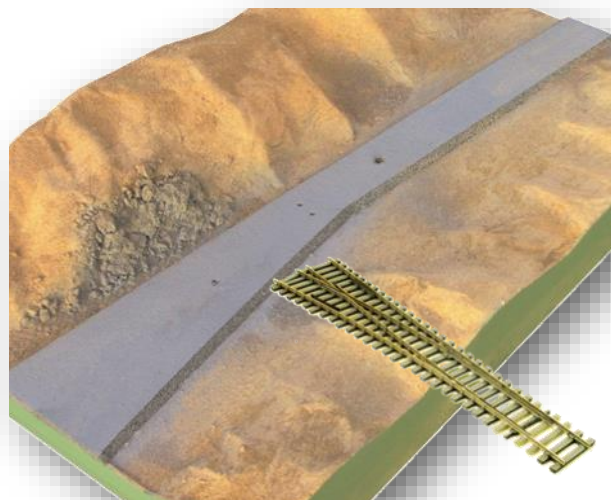
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Realistic track ready for tidy ballasting to be proud of with zero stress in just a few "easy to do" steps.!

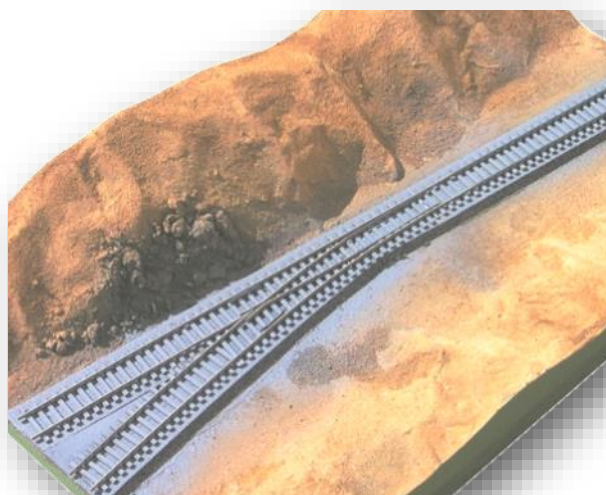
Assuming that you have modified the turnouts to look good (see how to do this on our website), it takes just a few easy steps to go from bare track to a realistic layout. We created a small demo module and photographed each step.

(Our quick scenery model is just card & brown paper dipped in diluted glue, colour is paint mixed with plaster and any initial texturing is dry stone powder from the roadside sieved on with a kitchen sieve onto the wet paint. Rocks are from the roadside).

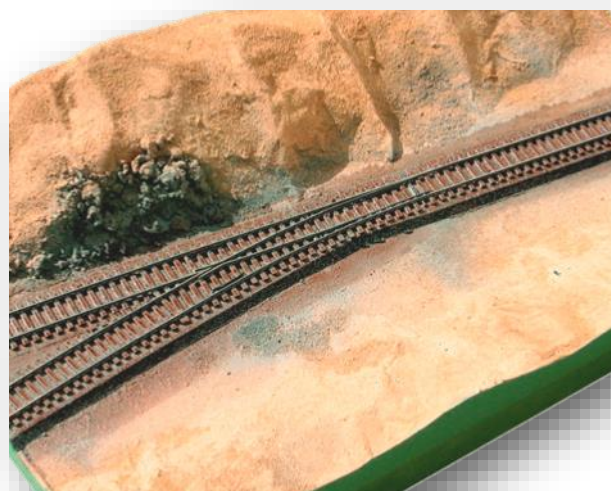
- (1) Create the scenery and lay the track bed. We've used our DCCconcepts closed cell foam track-bed, in this example [DCU-TBH5](#) (5mm).
- (2) Spray the track-bed with standard grey primer, masking the scenery roughly with paper or fabric.
- (3) Place and cut the track to fit and drill holes for the droppers and, in this example, drill for the throw-bar of the [Cobalt point motor](#).



- (4) Lay the track: We prefer to solder droppers on the under side of the rails so they can be fed through the holes at the same time as track is laid. We secure our track with PVA glue on every 3rd/4th sleeper (tie).
- (5) Mask the scenery again and re-spray the track area with another light coat of the grey undercoat and let it dry thoroughly (overnight is best).
- (6) Add a little black and terracotta or red-brown paint to some dark brown wood stain. The predominant colour we want is "aged sleepers and track" not a rusty look, so be heavier on black than red-brown.
- (7) When the grey undercoat is totally dry, give the stain/paint mix a good shake and, with reasonably soft 1~2" paintbrush, paint the whole of the track and underlay. Brush gently and be generous, be quick and don't be fussy. This whole module only took about a minute. When the paint coat is still wet go all over it again with a stippling motion to remove any brush marks. Because it is mostly stain, it will be a "see-through brownish colour" now with the grey still semi-visible. That is exactly what we want! In scenery, less is often more when it comes to colour!



- (8) When the first stain is dry, take a little of the stain and add more of the terracotta/red brown paint to it but **not too much!** This will be our colour for rusty rails and we want it to easily "wash" over the rails.
 - (9) Take a cheap child's paint brush (3~4mm max width) with stiff bristles. Shake up this slightly redder stain and quickly paint along the rail sides. We do not want to be overly careful as it doesn't matter if a small amount gets on the sleepers. So you can relax as you do it ... !
- Tip: Shake or stir the "stain-paint mix" often - the paint settles out quickly.
- (10) Pause now & admire your handiwork. If there's too much on a sleeper then spread it. If you want more rust colour, let it go tacky first then re-coat ...but not too much. We want it to settle and blend naturally. You will notice that the stain will have partially separated and the paint part has gathered around fixings and bolts. That is just what you want!
 - (11) Leave overnight. Touch up if you want but **do** keep it subtle as there's nothing worse than rails that look like they were painted. Nature is more subtle than that and there are **few** hard edges, even to colour!



EXPERT TIP: Making later clean-up easier and keeping things moving properly:

* **When you paint around rails, the tops are going to get covered... but its easy to clean them.** Before you paint, take an off-cut of soft timber like pine and put it end-wise into a saucer of thinners. As soon as you finish painting, shake it off and rub it over the rail tops. Paint will come off immediately leaving a nearly perfectly clean rail-head... needing only a quick pass of the rail cleaner later!

* **While the paint is drying move the blades occasionally so they don't get stuck hard.** If they do stiffen up a bit don't worry. When all the ballasting and detailing is done, just get a couple of tiny drops of thin oil and place it on and around the tie bar, work the turnout a little and it will free up - and the oil will spread into the ballast a little, just as it always does on the prototype!

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Ballasting is a job that modellers dislike and I've lost count of layouts ruined by those who speed through ballasting just to get it over and done with... but it can be a relaxed, easy process.

Now that we have the track in place and ready, we will start with the "cess". (The area between the ballast and the rest of the world). We start there as it's always best to use the same sequence as the prototype.

On the prototype, when track is laid the cess is a part of the track engineering that is completed before ballasting, so ballast should be on top of it. It is also the part on which nature encroaches so it should really be under greenery at the outer edge.

- (1) Get hold of some very fine "stone powder" from the side of the road.
- (2) Mix PVA and water about 3:1 and paint it from the edge of the track-bed to the edge of the other scenery; make the edge soft, wavy and natural.
- (3) Put the "stone powder" in a fine sieve and tap it so the glued area is well covered with fine stone grains. Mist the area with alcohol-based window cleaner. Leave until it's totally dry. When dry, vacuum up the excess.

Tidy ballasting is important. This is how to keep it that way with no stress and also reduce the amount of ballast you will need!

With the cess tidied up we will tackle just the angled shoulders of the track-bed as a first step. This is where you will really appreciate having the correct 60 degree shoulders on that DCCconcepts pre-cut closed cell foam trackbed!

- (4) Using a brush of about 5mm (1/4"), paint neat PVA or latex glue only on the ballast shoulders. Try to be neat and do only about a metre (3 feet) at a time.
- (5) Put ballast into a polythene bag and cut a small hole in one corner. Sprinkle a good layer onto the glue. When well covered, pat it all down gently with the tip of your finger then leave it alone totally until dry.
- (6) Without touching the ballast and cess areas, vacuum off the excess (we keep a small vacuum cleaner especially for ballast - so we get 100% recovery).
You'll now have a tidy edge to the ballast area that looks like it should!



Now the all important step... Ballasting around the track!

We already have tidy edges and it is these edges that hold the rest of the ballast as you spread it. This both keeps the job tidy and makes it much easier.

- (7) Put the ballast into a wide-mouth jar or dish. Borrow a medium spoon.
- (8) Place ballast one spoonful at a time and spread it with your finger tips.
- (9) When an area has been well spread, very gently tap the rail with the spoon. This will vibrate the rail a little and any bits that are alongside the rail will bounce away so there will be less to clean from rails later.
- (10) Stop adding ballast when you get to one "sleeper gap" away from the tie-bar on the turnout. We will do this area in a different way later!
- (11) Be fussy. If there are any grains on the sleepers or between guard rail and rail, remove them with the wet tip of a fine modelling paint brush
- (12) Make up a mix of glue and warm water in a plastic bottle fitted with a small nozzle. When that is well mixed, add alcohol or methylated spirits and shake well. Ratios are 1 part glue: 3 parts water: 3 parts alcohol.
- (13) Get a fine mist spray bottle and fill with methylated spirits or alcohol.
- (14) From far enough away to not disturb the ballast, mist the area to be glued with methylated spirits or alcohol until it is quite wet.
- (15) Shake the glue mix again and drip it onto the ballast with the plastic bottle. Do it from close up so you don't disturb the ballast. You do not need to use too much glue: it will soak in really well and spread easily. Do not touch the ballast now for any reason.
- (16) When you have added glue to the entire area of ballast to be fixed during the session, re-mist again with a generous amount of alcohol. Now walk away and don't touch anything until it is totally dry. If there are big globs of glue, you must resist the temptation to touch it but soak the rogue area with sprays of alcohol until it goes away. Drying time will be 6 to 24 hours depending on the weather.
- (17) When it is totally dry, rub a finger alongside each rail and put a toothpick between all guard rails. Rub any grains off the sleepers and generally tidy up. Because you didn't use a too strong a glue mix, this will all be easy. Vacuum up any loose grains.

That's the worst of it done! On the next page, we'll do the area around the tie-bar and add a little more "easy weathering".

At this point, the key issue is tidy ballasting.

We will refine the overall look and blend the colours in the next few easy to follow steps



Your track will now look something like this...

It will be natural and well ballasted, with no lumps of ballast where they shouldn't be and no need to spend hours picking excess off the rail sides and sleepers. This is all because you were relaxed about it, took it one step at a time and used the right tools and glue mix!

Also, the bonus of using alcohol and not washing up liquid to relieve surface tension is that there are no shiny bits!

If you want to do more than a short length at a single session, still do only a metre at a time but do another metre further up the track leaving a gap.

Do all the sections with one process at a time - in other words, do several 1 metre lots of ballast edges, then do several lots of ballasting between the sleepers.

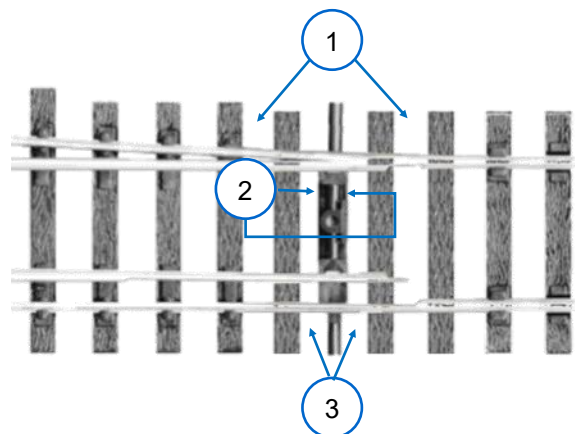
When they are finished and dry, start on the untouched sections between them.

Because we are being careful, deliberate and using a step-by-step process, it will all seem much less of a chore... and because each step uses the same process, the gaps you fill later will be totally seamless, blending the separate tasks together as if you did it all at once!

Ballasting around the tie-bar.

This area needs care so take your time. Even if you take your time and are very cautious, all this step will take is 5 minutes per turnout !

- (1) Take a reasonably fine modelling paintbrush. Carefully paint neat glue between the sleepers (onto the track-bed only) alongside the tie-bar.
- (2) Use another similar brush and paint a little light oil or vaseline onto both sides of the tie-bar itself. This will stop any glue or ballast sticking to it.
- (3) Now, paint glue into the gap either side of the tie-bar itself. You do not need a lot of glue, but the roadbed should be well covered. If you do get a little too much on, pick it up with the brush and remove it. Be fussy!



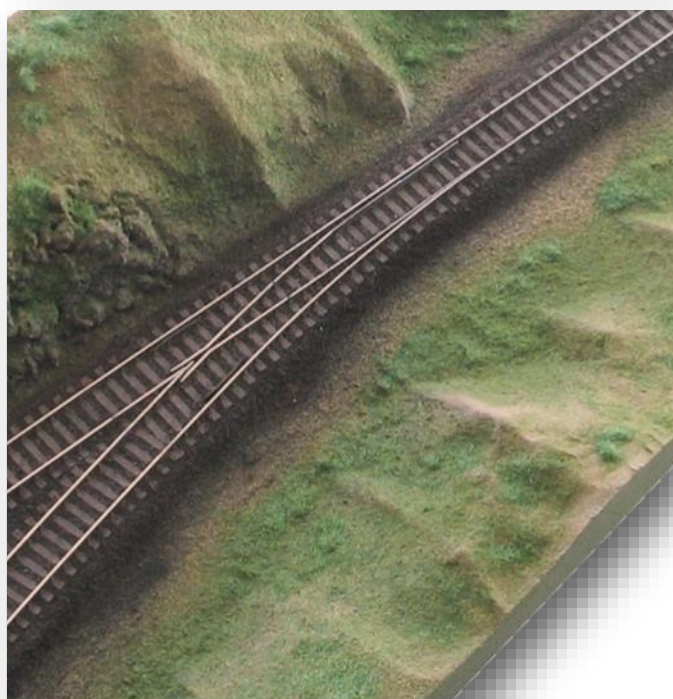
- (4) Pick up a little ballast on a spoon and sprinkle onto the glue. When it's all in place, pat down with a finger, mist it with the alcohol and then just leave for several hours.
- (5) When its dry vacuum off, tidy up and that's it - all done. Congratulations!

We modified this Peco turnout, laid the trackbed and track, ballasted and “weathered” it all in a total of two hours of actual work, start to finish (with the odd pause to let things dry) .

You really can do it, too !

Our advice on ballasting and weathering works for all scales! Only the track and ballast sizes change.

If you are still “on a roll” with ballasting, the next page shows more weathering and more tips....



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The modified Peco point

This easy modification has been mentioned and the exact procedure can be found on our website. Search for “making peco better”.

Can you see how much better it looks with more realistic tie bar and replacement sleepers either side of it?

Blending ballast and cess

The colours of the ballast and cess are those of the railway and the area that is close to it.

Nature gradually spreads that colour as a fine “dusting” over everything. Look closely and you will see that as a result there are no quick colour changes and that areas blend in tone, with a common “cast”. It is quite easy to recreate it too... By using nature's own materials!

Take a trip to the area you are representing in your model. Also take with you a trowel and a couple of sturdy bags to hold your materials when you gather them.

Get as close to trackside as is safe and legal then fill one bag with the “Fines”- the dust and tiny rocks. Do the same with the local non-railway soil and perhaps get some “roadside dust” as well. When you get home, use several sieves to sort the dust from heavy/sandy stuff. To grind them smaller, attack any larger bits with a hammer, or use a mortar and pestle, .

Unify the overall area by using a very fine sieve and dusting it with the “dust” grades that you have created. When its all done, use a soft brush to work it in as needed, unifying the scene.



DCCconcepts weathering powders

Found as “Weathering Set Track and Environs”, this can provide the final touch. Use these powders carefully: aim to use about a quarter of what you imagined on a brush and carefully brush it in.

If you have overdone it, never try and brush it away—you will only embed it more into the ballast or scenery! Use a heavy misting of water to flush excess or bad weathering away.

Typical weathering would be the dark oil stains along the centre of the track, black stains around the working parts of turnouts —as always, study the prototype or photographs and recreate.

Attempting to create effects from memory rarely works!

Customising the Steam Era (Black) ballast: double-dyed to introduce some colour versatility

- (1) Get hold of a fine-mist spray bottle and add a mix of diluted ammonia based bleach to it. Initially try a mix ratio of about 1:10 or 10%.
- (2) Using a rough-cut mask (to protect area you do not want to lighten) held a couple of inches above the ballast. With the other hand spray the mixture at a distance of about 300mm onto the specific areas you want to lighten until they are quite damp. This distance is important so as not to disturb the ballast.
- (3) Once that is done, get rid of the mask and spray a little around that area - just a bit. Do not disturb the area at all when doing this. It needs just a misting.
- (4) The loosened dye will partly bleach and partly absorb into the surrounding area to make the transition quite natural. Now wait!
- (5) When it looks about right, take another spray bottle with plain water mixed with a little alcohol, and spray the area to slow/stop the reaction - then let it all dry.



Steam Era ballast, bleached ballast & Brown Ballast at the bottom. Imagine the subtle possibilities around the shed, station or goods yard...

DCCconcepts products

We prefer our own range ...but the choice is, of course, up to you!. However, these are the items mentioned:

Track Cutters: [DCT-XTC](#), Solder: [DCS-S179](#), Flux: [DCS-SFNC](#), Weathering Powders: [DCW-TRK](#); Small files: [DCT-FS6](#).

Dropper Wires: [DCW-DSRED50](#), [DCW-DSBK50](#) and [DCW-DSGRN50](#). Also [Pink](#), [Grey](#), [Blue](#), [White](#), [Yellow](#) and [Orange](#).

Track-bed: [DCU-TBH5](#) (5mm), [DCU-TBH3](#) (3mm), [DCU-TBN3](#) (N gauge). Also 600mm x 300mm sheets [DCU-TBS3](#) and [DCU-TBS5](#).

Ballast: [LB-4BB](#) (4mm scale Brown Blend), [LB-4SE](#) (Steam Era Black), [LB-4LG](#) (Light Grey), [LB-2BB](#) /[LB-2SE](#) /[LB-2LG](#) (N gauge).

There are also 5 litre Ballast “[Club Tubs](#)” in all our colours and scales.

We hope this article has been of help to you. Enjoy the hobby!

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