

Education Program Basic Skills Series



Module Eight

Maintenance

The following pages introduce the essential elements of maintaining a model railway

- Maintenance tools
- Track maintenance
- Locomotive maintenance
- Passenger and freight car
Maintenance

Maintenance tools

You don't need a huge tool kit to keep your model railway operational. The following tools will enable you to maintain your track, locomotives and rolling stock. You don't need to spend a fortune on these tools. Chain store basic tools are adequate for the job.

Small screw drivers

Manufacturers of rolling stock use a range of small screws to assemble rolling stock. A set of cross blade and Phillips head screw drivers will handle these screws.



Tweezers

For holding the fiddly little screws that secure bogies and couplers during dismantling and re-assembling models.



Fine nose pliers

Useful for holding parts during assembly and dismantling of models. The set in the photo are over forty years old.

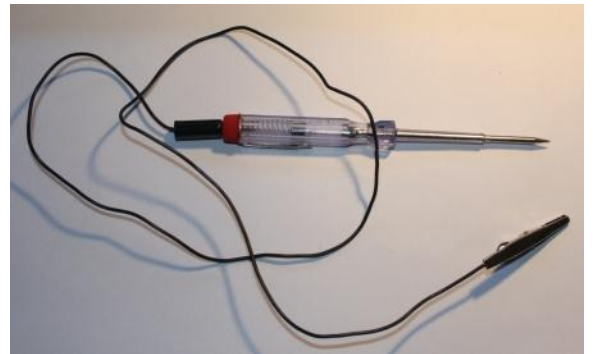


Desk lamp

Working under a good light allows you to see what you are doing, especially as you age.

12 volt Test lamp

A twelve volt test lamp provides a quick method of checking track power. If the light goes on the track has power.



NMRA Standards gauge



The NMRA standards gauge allows you to check both your track work and wheels. The gauge pictured was purchased in 1965 and has been in constant use since then.

Rolling stock servicing cradle

The cradle pictured suits HO and OO scale models. At a pinch the foam cradle many models are packed in can serve as a servicing cradle.



Track maintenance

Track cleaning

Clean track is essential for smooth operation of your model trains. The copper nickel alloy modern model railway track work is made of is corrosion resistant. Lightly rubbing an abrasive cleaner such as a PECO track rubber over the surface of your rails will clean your track quickly and easily. The running surface of your track is clean when the rail head is shiny to look at. Excessive use of abrasive cleaners will produce micro-scratches on the rail which collect dirt. Try and use non-abrasive cleaners such as cork or masonite (rough side) with a liquid cleaner such as Electrolube.

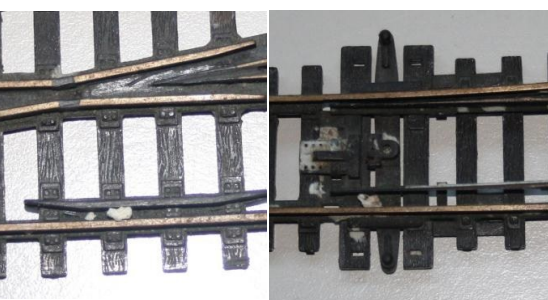
The best way to keep your track clean is to run your trains every few days. A variety of manufacturers offer track cleaning cars. These use either solvent soaked pads or abrasive pads to keep your track clean. The model in the photo is a abrasive pad type track cleaning car.

A drop of a contact cleaner such as "Electrolube" obtainable from electronics suppliers on the rail head every few metres of track as your trains are operating will help keep your track clean.

Track inspection

Track cleaning is only part of track maintenance. Regular inspection of your track can prevent problems from arising. Incidental damage to track work can cause derailments. Check the track visually for damage and repair if required. The NMRA standards gauge is a useful tool to check track and point work as

shown in NMRA RP 2 available from the NMRA web site <http://www.nmra.org/standards/sandrp/rp2.html>



Loose pieces of ballast as shown in the photos can become wedged in the flange ways of your point work or behind point blades preventing them from making contact with the rail can cause derailments. Regularly check your point work for foreign bodies in the flange ways and or behind point blades. Trial operating each set of points regularly will allow you to see the blades seat correctly in either position.

A test lamp will show the track power is getting to all parts of your layout.

After track cleaning, track inspection and power testing trial running a locomotive over the line at low speed will show your track work is fully operational.

The attached photo shows BR 40 152 testing the track work on a portable layout.



Model locomotive maintenance



Currently produced model locomotives are highly reliable and require little maintenance beyond bogies, wheels, current collectors and couplers.

A padded or foam servicing cradle like the one in the photo is a worthwhile investment for model locomotive maintenance. The cradle allows you to support your model upside down hands free while you inspect and clean the working parts.



Wheel maintenance

In the servicing cradle the wheels can be readily inspected for gauge. Out of gauge wheels cause most of our running problems. Wheel gauge can be readily checked with an NMRA Standards gauge. As shown in the photo you should be able to see daylight around both wheel flanges in the gauge.

Powered wheels can be cleaned by applying a soft wire brush to the wheel as the drive is running. PECO manufacture a wheel cleaner operating from your power supply that cleans the driving wheels as they are operating.



Current collector maintenance

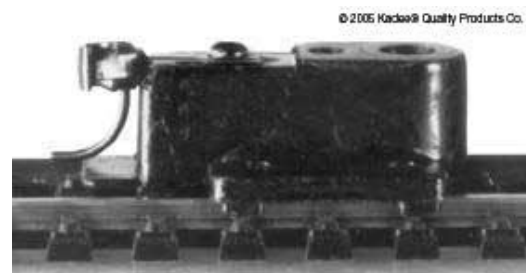
The location and design of the current collectors varies from manufacturer to manufacturer. Most designs have sprung wipers rubbing on the back of the wheels. Any build-up of Verdigrises' or crud can be removed with a tooth pick.

Running gear maintenance

The running gear of model locomotives should be routinely inspected. The mechanism should turn freely at low speed. If the mechanism does not turn freely look for lint or fibres in the gears, behind the wheels or around the drive shafts or a dislodged drive shaft.

The non powered wheels need to spin freely in their mountings.

The bogies need to be able to swing freely from side to side and rock fore and aft to follow the curves and undulations of your track



Coupler maintenance

Couplers need to be visually inspected for damage. The coupler should side swing freely in its mounting and return to centre when released. Any missing springs need to be replaced. The coupler height should be routinely checked for height using a coupler height gauge. The coupler trip pin clearance above the track needs to be routinely checked using the coupler height gauge to prevent the trip pin snagging on point work.

Passenger and freight car maintenance

Currently manufactured model passenger and freight cars after initial set up need little maintenance beyond wheels, running gear and couplers to operate reliably.

Initial set up

Its worth checking new equipment to ensure they are set up to operate reliably. The checks required are; all up weight, wheel settings, running gear set up and couplers.

All up weight

Long experience has shown adequately weighted rolling stock operates more reliably. (This includes steam locomotive tenders) NMRA Recommended Practice RP 20.1 provides a good guide to weighting rolling stock. A kitchen scales is adequate for weighing rolling stock . A good rule of thumb is the weight of rolling stock should be between 50 and 60 grams per 100 mm of overall length

Wheels

Out of gauge wheels cause most of our running problems. Wheel gauge can be readily checked with an NMRA Standards gauge. As shown in the photo you should be able to see daylight around both wheel flanges in the gauge. Don't force the wheels into the gauge especially if the model has plastic axles.



Running gear maintenance

The running gear of model passenger and freight cars need to be inspected to ensure

- The wheel sets need to spin freely in their mountings.
- The bogies are able to swing freely from side to side and rock fore and aft to follow the curves and undulations of your track.
- One of the two bogies is able to rock sideways to accommodate changes in cross level of your track.

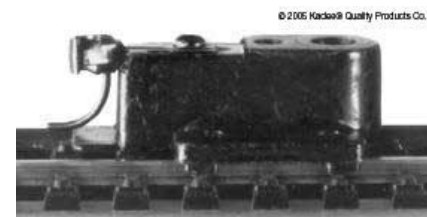


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Routine Maintenance

Routine maintenance can be regular checks or checks before operating sessions or if you are lazy like me when a model derails. The usual items causing derailments are out of gauge wheels, displaced wheel sets, jammed bogies and sagging coupler trip pins. These problems are readily diagnosed using the methods described and rectified using the methods described above.



References

NMRA (AR) web site Clinics

- Rolling Stock and Loco's – Brass Loco's (Gerry Hopkins MMR)

