

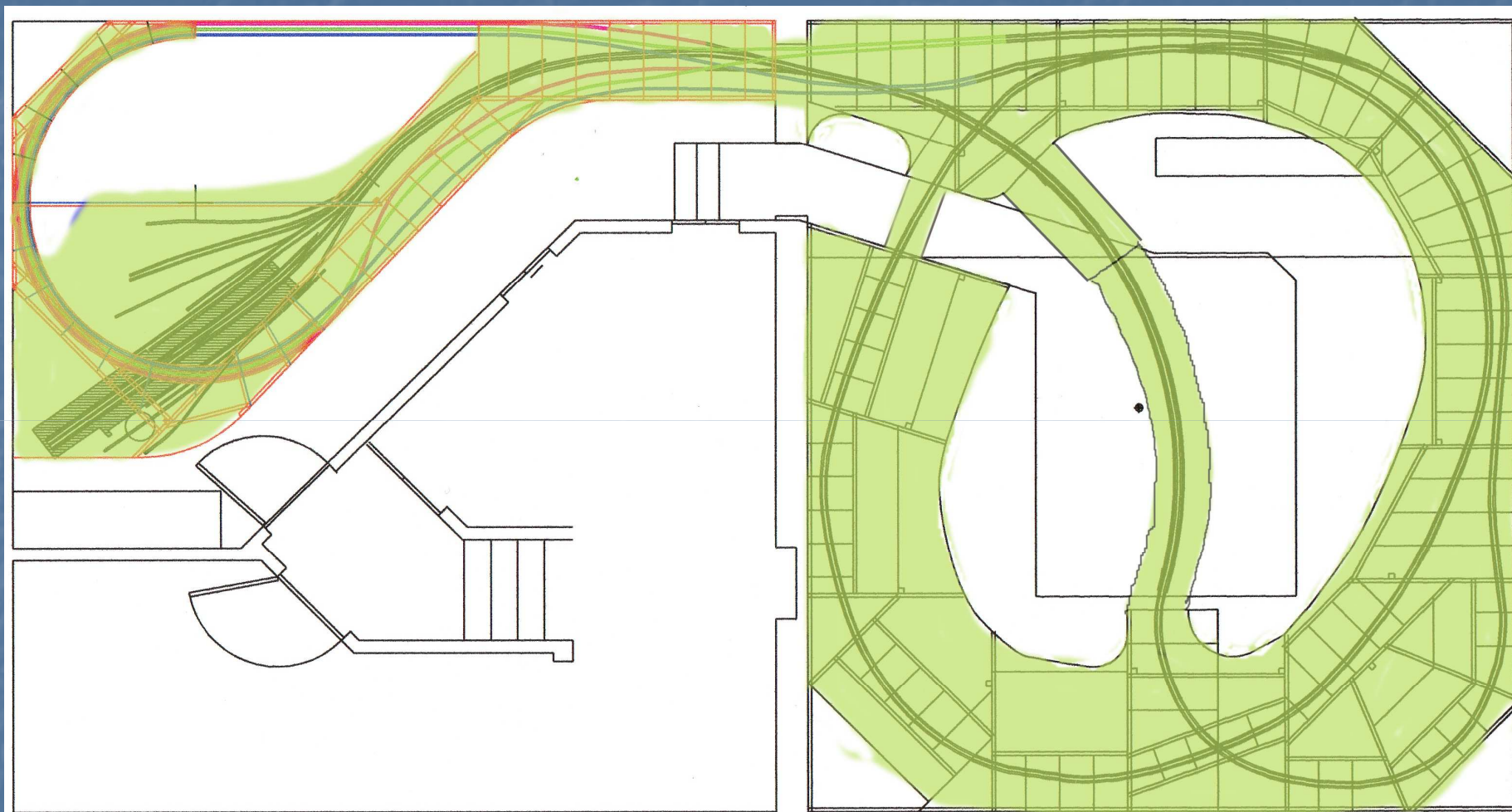
Go With The Flow

Track and wheel cleaning methods to
keep the juices flowing.

Presented by Mike Walton
at the
The Platelayer's Symposium
Brampton Ontario
May 2nd, 2009.



Lostock Junction Railway is a “OO” layout with over 700 feet of track.



Maintaining good electrical continuity became more critical when operating sessions started in 2002

Stalled trains are extremely frustrating and should not occur.



Operator's have the right to expect reliable operation !

Go With The Flow

There is more conjecture than “knowledge” on track cleaning.

My experience is based on nickel silver “OO” gauge trackwork.

Narrow gauge and Z gauges and other metals are much more critical.

Open group discussion is encouraged as we pass through the following subjects.

1. Finishing New Track Installations
2. Routine Track Cleaning and Surface Finishing
3. Track and Wheels Surface Coatings
4. Track and Wheel Cleaning Equipment
5. Improving Power Pick-up – Conductive Lubricants
6. Improving Continuity through Track Joints and Points.
7. Some Cleaners, Solvents and Coatings
8. Other Smooth Operation Factors

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1. Finishing New Track Installations

Abrasive Cleaning Bars and fine Emery

Bright Boy or Peco Track Cleaners are readily available at most model shops

We are all familiar with these products, good for removing flux, paint and glue.



Trax Stix are an alternative

They look very much like Ladies nail polishing boards

1000 + 2500 grit wet and dry also workes very well.



However!

After initial clean up, further use of abrasives should be avoided

Further steps should be improvements to a higher level

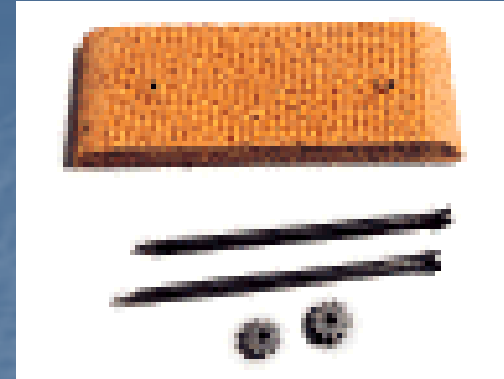
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2. Routine Track Cleaning and Surface Finishing

Burnishing and Cleaning Pads

Many experienced modellers use Masonite or hardwood blocks to burnish the rail and clean the track.



It is not totally clear why this works so well, but it does

Burnishing the rail removes the fine scratches and produces a hard finish which is conductive but resistant to further oxidation.

This is not unlike the patina finish produced by the carbon brushes rubbing on electric motor commutators.

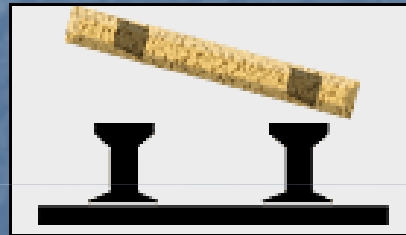
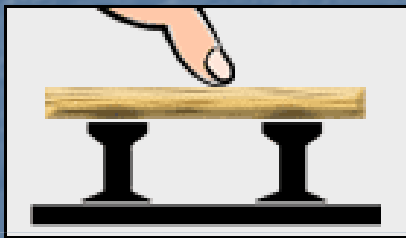
At the micron level to the surface looks jagged, burnishing makes it smooth.

Note, if you clean away the hard dark finish on your locomotive commutators, you may be doing more damage than good.

2. Routine Track Cleaning and Surface Finishing

Balsa Wood or Cork Track Wipers.

Many experienced modellers use Cork or softwood blocks to further burnish the rail and clean the track.



This is really a variation of the Masonite method but being soft, the balsa or cork also cleans and burnishes the inside corner of the rails and absorbs the crud.

When the surface of the wood or cork gets loaded with crud it can be removed with sandpaper, if you have a belt sander that's even better.

2. Routine Track Cleaning and Surface Finishing Balsa Wood or Cork Track Wipers.

Wine bottle corks can be sawn in half to make a good track cleaner



I use the cork method

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3. Track and Wheel Surface Coatings

For some time it has been known that applying a drop of oil on the rails helps keep the tracks and wheels clean

“Just a dab will do ya” any more can cause the driving wheels to slip.

This minute amount of oil is enough prevent the rail and wheel surface from oxidising.

If the wheels skid, the exposed surface will be re-protected, think of it as a self healing protective finish.

Wahl Hair clipper oil has been a favourite among Modellers for many years.

I have been told that it has a special anti static quality to make it repel hair cuttings. The same quality causes it to repel dirt. I can't validate this theory but nobody wants to use other oils.

3. Track and Wheel Surface Coatings



Testimonial to Wahl Oil.

*As one who helps to maintain the model railway at the National Railway Museum in South Australia. we have tried just about all the different types of track cleaning as our layout runs from 10am to 5pm, 364 days a year, so you see we do not have sufficient time to shut it down to clean the track. We do one track at a time, cleaning off the gunk on the rails with a track cleaning block and then applying 1 or 2 drops of Wahl clipper oil to each rail and then running a locomotive around the track to spread the oil. **This keeps the track clean for months or more and takes very little time to do!***

Note - There have been problems with traction tyres and plastic wheels.

3. Track and Wheel Surface Coatings

Graphite

It appears that the Graphites are gaining ground from the Wahls.

In 1936 the Trix Twin folks found they could add two more carriages to a train if they used a pencil to apply graphite to the rails.

Stick graphite, similar to pencil lead is available from good artist's stores.



3. Track and Wheel Surface Coatings Graphite

The stick has a somewhat waxy binder and leaves a sticky finish on the track which could actually aid traction.

It has a burnishing effect and leaves a self healing protective finish like oil.

It lubricates the flanges which reduces the friction on sharp curves.

Brian Fayle has been a proponent of graphite for years.

"I was having difficulty in making the extremely light engines run on my O9 layout. After applying Graphite to the track the engines could crawl perfectly, and reliably, and would continue to do so for many hours without further attention"

On LOSTOCK I have started to use Graphite because amongst other things, it removes the bright finish and it's easy to apply.

I have not have any problems with the drivers on long trains slipping and we seem to be having fewer stalling problems Time will tell.

**to to Graphite is used
on Full Sized Trains**

Bottom Line

The Bottom Line family of on-board lubricants takes the bite out of maintenance-robbing every twist, turn and gear by optimizing wheel/rail interfaces by enveloping the rail and flange with a thin, dry graphite film. The Bottom Line family of lubricants turns into a dry, granular film under the heat and pressure of the wheel/rail interface. The resulting dry graphite film reduces rolling friction, vibration, chattering, reduces fuel consumption as well as wheel and rail wear. Bottom Line has no adverse effects on acceleration, climbing, braking and is environmentally friendly. Unlike greases, Bottom Line family of polymer compounds also repels water, grit and sand while maintaining top performance in the harshest temperatures and climates.

- ▶ Bottom Line® STS and SLIP Plate™ OEM
- ▶ Bottom Line® On Board Lubricants (OBL)

Bottom Line®



Go With The Flow

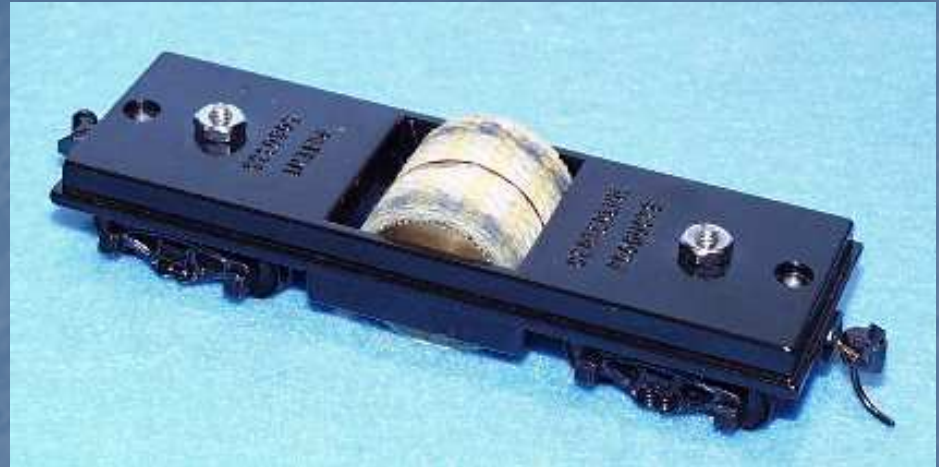
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4. Track and Wheel Cleaning Equipment

For large layouts and for hidden track automation is a great advantage

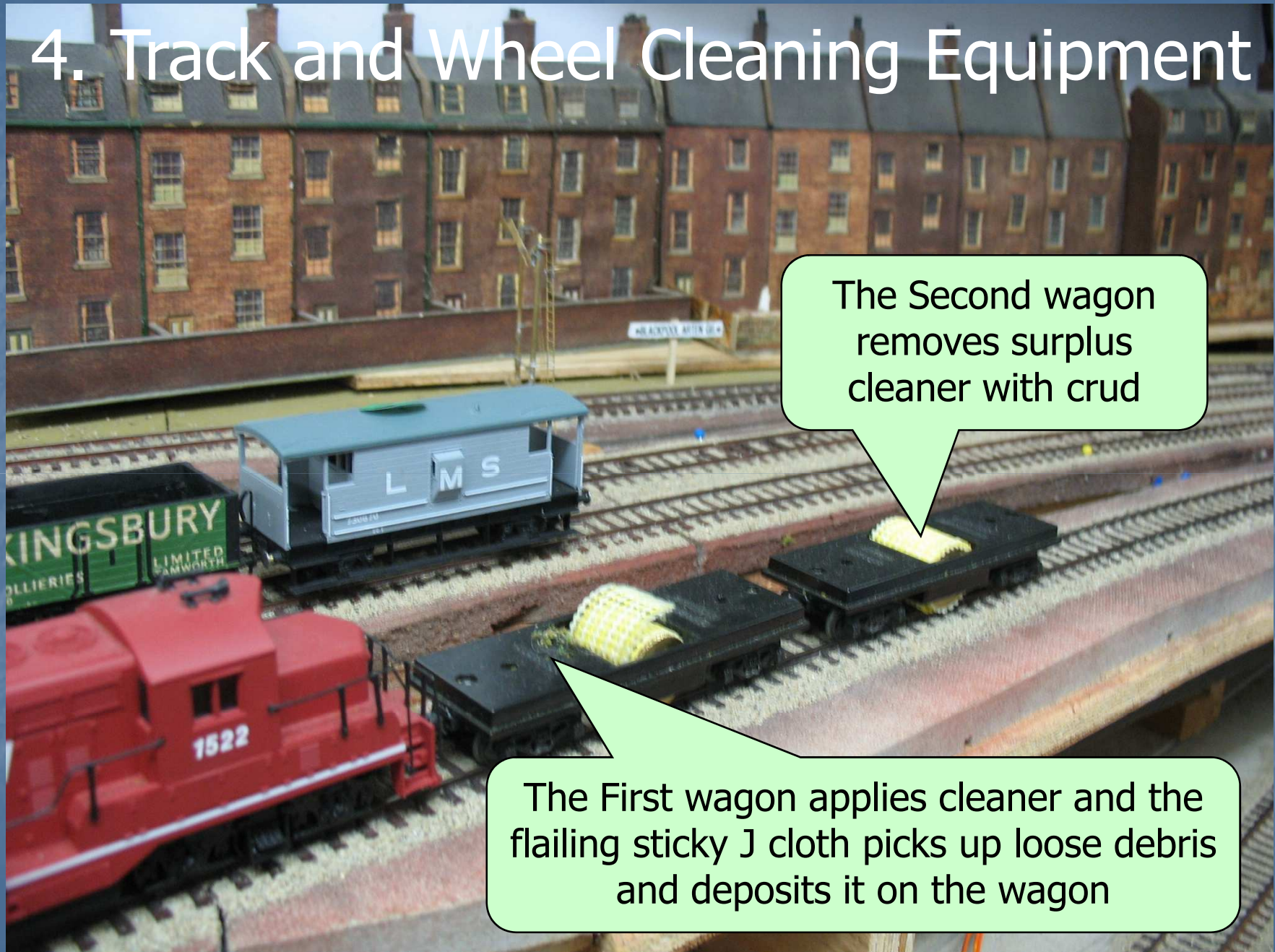
Centerline Products Rail Cleaner

Expensive but effective



- Limited slip rolling action that "scrubs" the rails for rapid removal of deposits.
- Totally non-abrasive -- leaves no particles or other matter for secondary clean-up.
- May be used "wet" (for rapid action and wheel cleaning).
- May be used "dry" (without fluid to clean the rails more slowly).
- May be used continuously without harm to rails or wheels.
- 100% Cleaning Contact with all rails at all times.
- Highly Snag and De-rail Resistant because of rolling action.
- Will NOT damage delicate turn-outs.

4. Track and Wheel Cleaning Equipment



The Second wagon removes surplus cleaner with crud

The First wagon applies cleaner and the flailing sticky J cloth picks up loose debris and deposits it on the wagon

Tomix (Atlas & Dapol) N Gauge Motorised Rail Cleaners



The Tomix N Gauge was introduced 2004 and has a good reputation

Tomix - Dapol N Gauge Motorised Rail Cleaners



Vacuum Disk Attachment



Wet Pad Attachment



Dry Pad Attachment



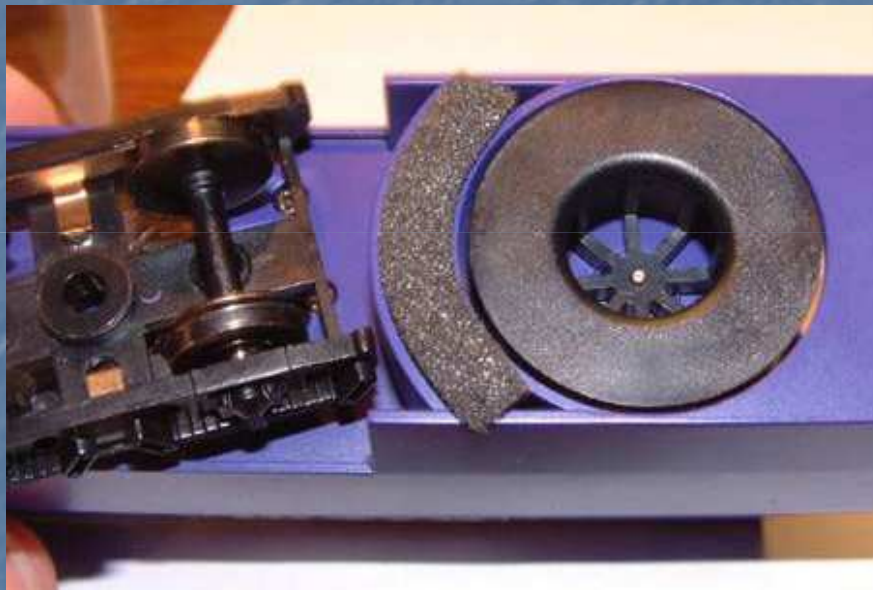
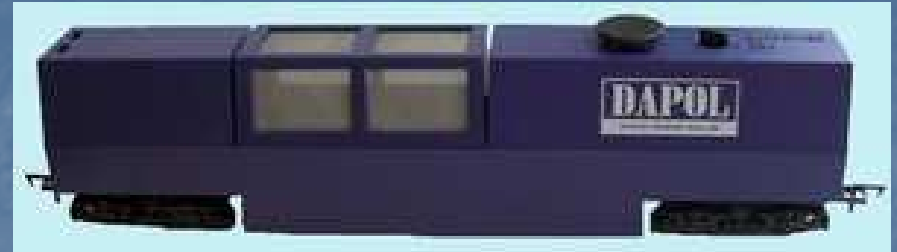
The Vacuum deposits the debris into this built-in container



Switch used to select speed or turn motor off.

Dapol OO/HO Gauge Motorised Rail Cleaners

Introduced 2009 and clearly based on the TOMIX design



The motor within the unit powers, at the modeller's choice, either the vacuum function or the sprung abrasive/polishing head.

DCC ready

Will work without decoder and DC (same as N Gauge version)

Can be used to level out minor misalignments in the railhead.

Motor is fitted with thermal overload cut-out to prevent overheating

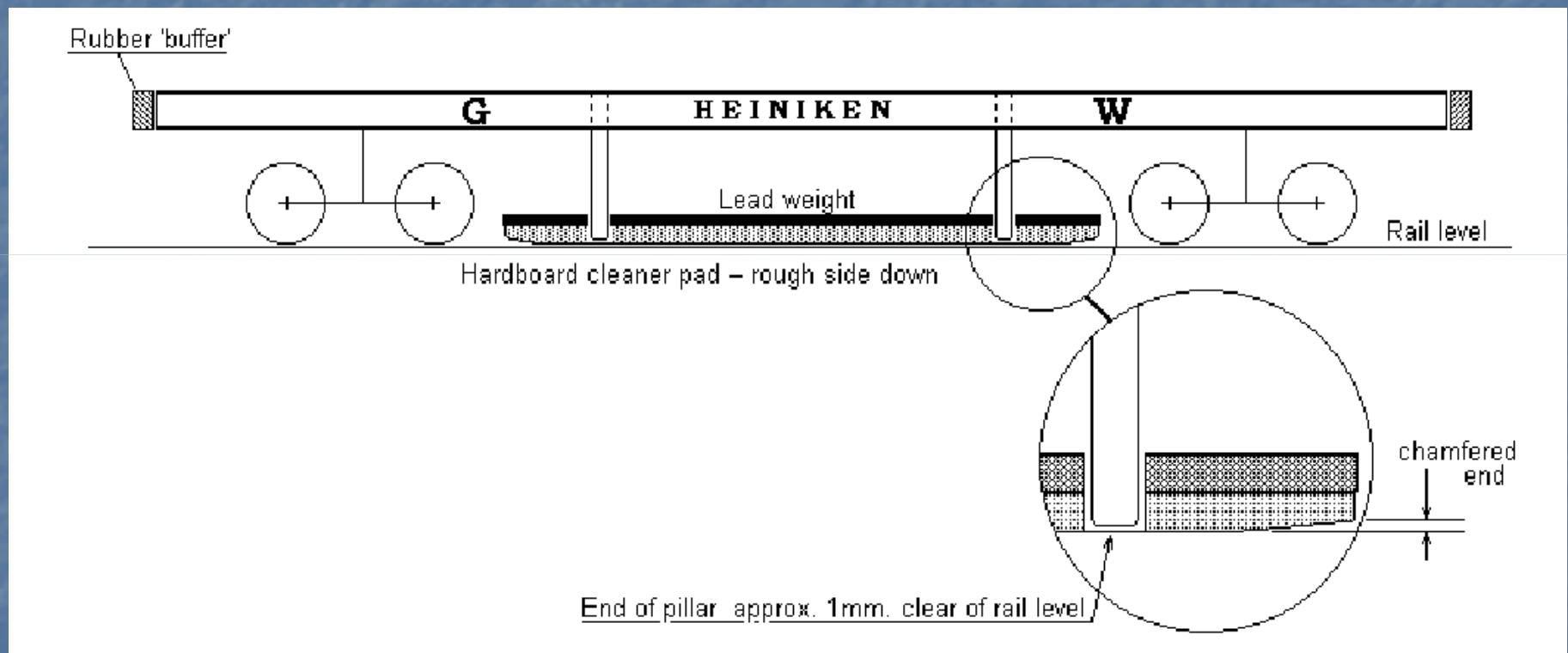
Question?

How long will it take to convert code 100 to code 70 rail

4. Track and Wheel Cleaning Equipment For the frugal modeller.

MERG Track Cleaner

Heiniken



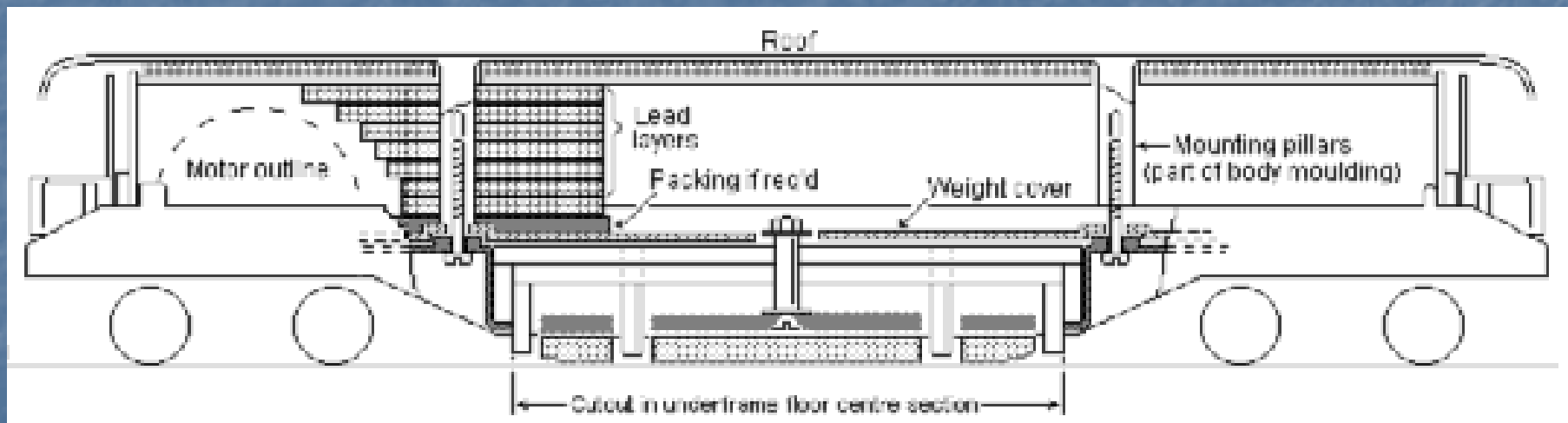
The cleaning vehicle was developed for service on the Pendon Museum railway. It is simply propelled ahead of a locomotive.

4. Track and Wheel Cleaning Equipment

MERG - Motorised Track Cleaner - The Flying Banana

With the putting to service of more lines and branch lines at Pendon Museum, the need for three more 'Heinekens', forced a rethink.

The *LIMA* GWR Parcels Car No. 36, made them the obvious choice for surgery to accommodate a Mark 2 Track Cleaner pocket.



There are other commercial powered and unpowered track cleaners.

4. Track and Wheel Cleaning Equipment

Relco Electronic Track Cleaner



I have used these in the past and found them very effective in cleaning both the track and dirty wheels etc..

They can destroy Escap and Portescap motors

Relco + DCC = Expensive Smoke Unit.

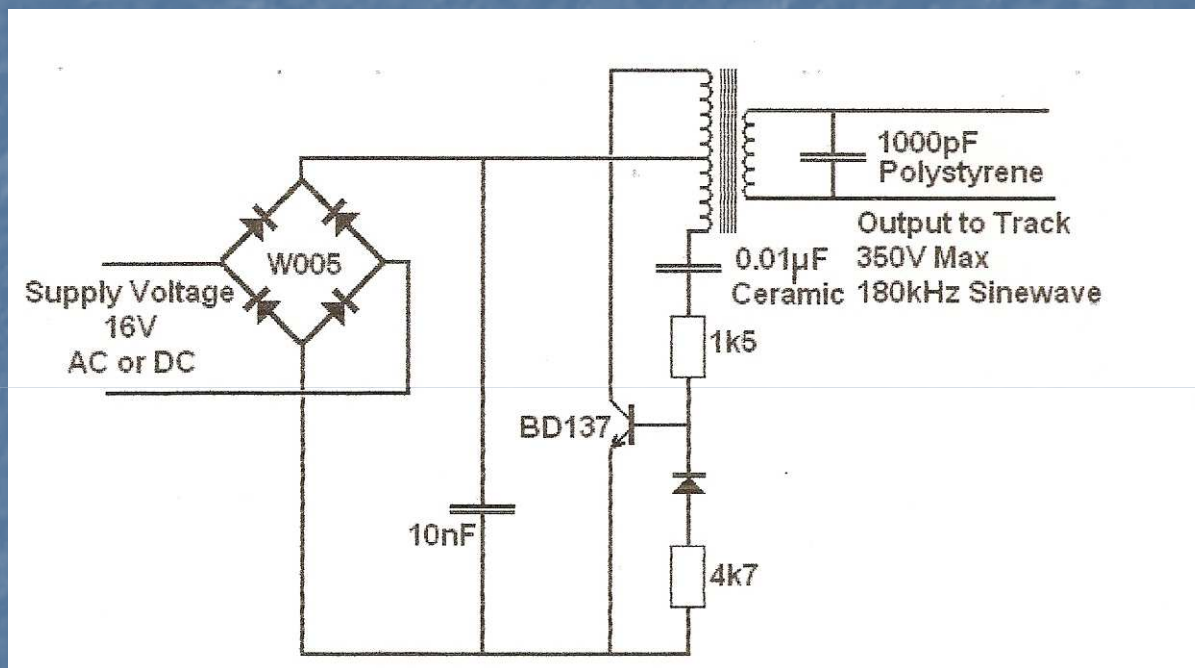
There are limitations as to how long the wires between the unit and track can be.

Because the wiring involves further complications, I have never used them on Lostock Junction.

Some Z Gauge operators swear by them. On one layout they have been used since 1991 and some engines are fine after 500 hours running.

4. Track and Wheel Cleaning Equipment

I suspect that the Relco track cleaner is no longer made but there is a low cost alternative.



The above circuit was produced by MERG and was developed from an earlier EMGS circuit.

It could be very useful for inaccessible storage areas as a plug in device but
If you don't know what your doing stay away..

4. Track and Wheel Cleaning Equipment

Trix HO Wheel Cleaner



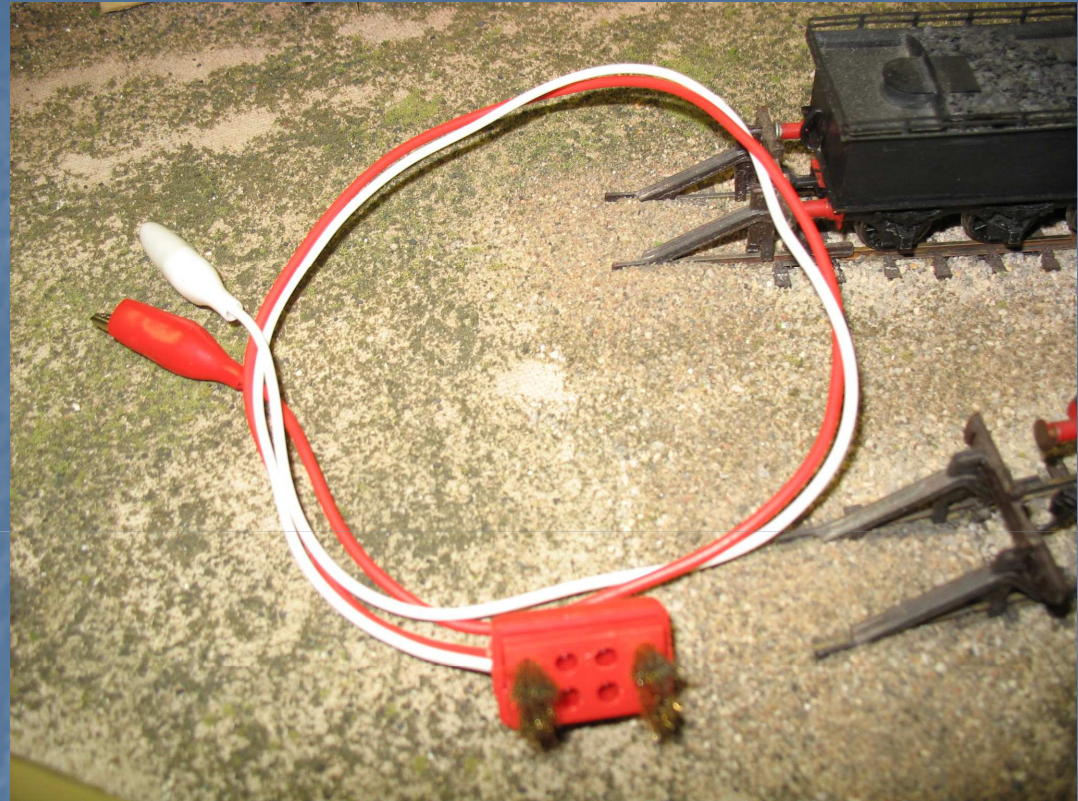
I use the Trix wheel cleaner and it works very well, the Germans always make good stuff.

It is perhaps a bit expensive at about \$25+.

It can be lengthened by attaching more brushes.

4. Track and Wheel Cleaning Equipment

Hand Held Wheel Cleaner



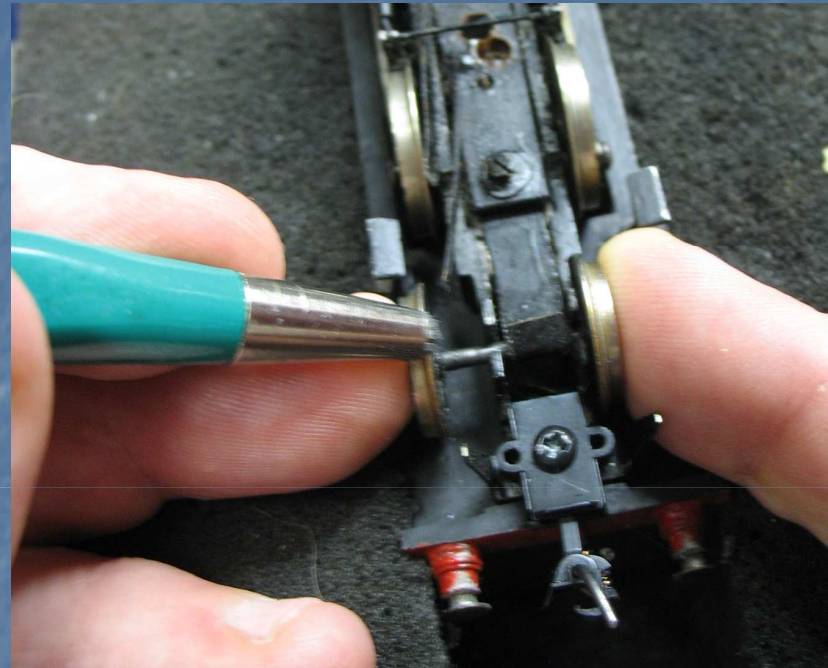
The one shown was made from a single brush type, bought locally by removing the centre bristles and adding a second clip lead.

Dual brush ones were available one but I have never seen one for sale

I think it would be possible to make one from a brass bristled wire brush

4. Track and Wheel Cleaning Equipment

Glass Fibre Pen



Unpowered wheels on locomotives and rolling stock can generally be cleaned with a fibre pen.

Heavy grunge will often build up on the un-driven wheels

If the build up is heavy the it is best removed with an Xacto type knife

4. Track and Wheel Cleaning Equipment

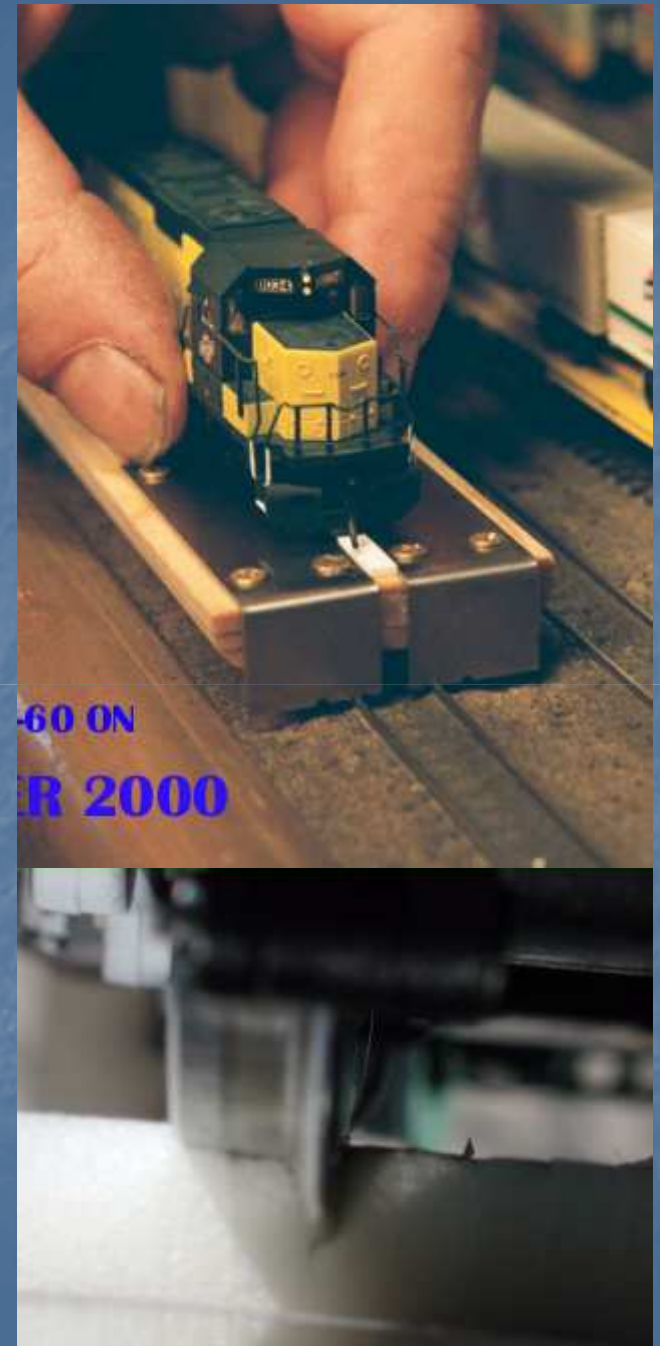
GUMBUSTER MODEL LOCOMOTIVE WHEEL CLEANING TOOLS

F. SKIDMORE PRODUCTS

A grooved foam plastic pad soaks and rubs the wheel treads and flanges with train or track cleaning fluids.

The foam plastic pads are cleaned by being squeezed under running water, or by pressing with a dry paper towel to blot out the dirty fluid.

I don't know how well this cleaner works but it will be less abrasive than the Trix Cleaner, which is good.



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5. Improving Power pick-up – Conductive Lubricants

Peco Powerlube Electrical Oil Model Lubricant (PL64)

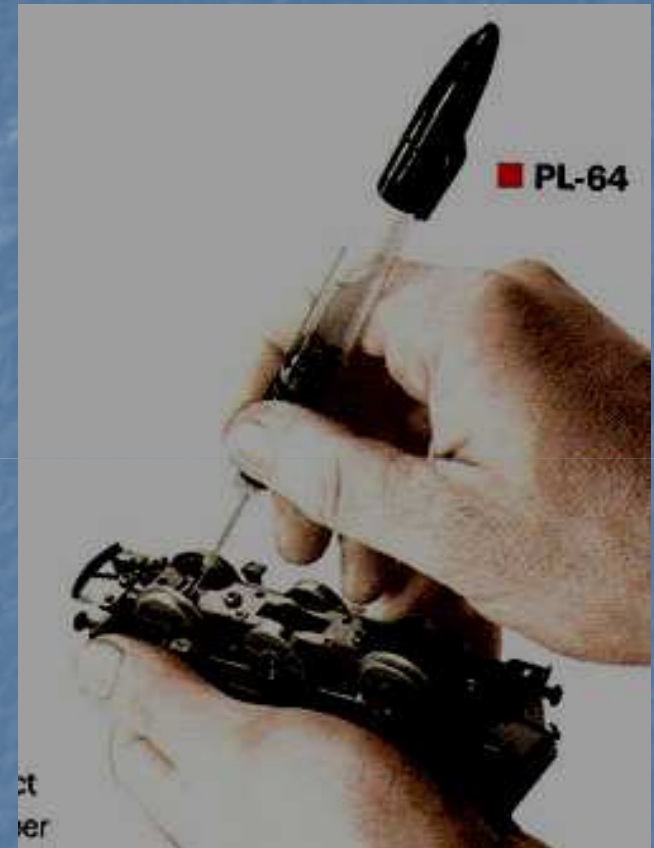
An old favourite but I don't know if this
is available in Canada

A penetrative lubricant which also cleans and
can help solve pick-up troubles and other
electrical problems. Can be used with most
plastics and is ideal for lubricating motors,
commutators and bearings

Peco used to call their electrical oil Electrolube.

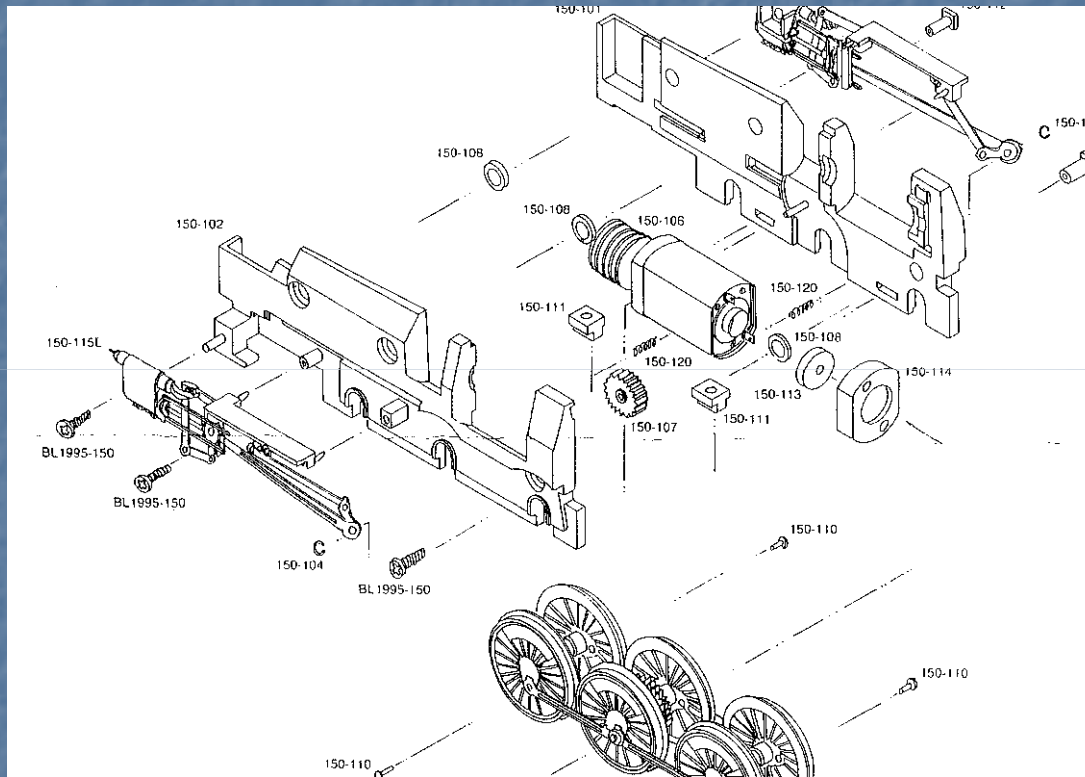
I believe this is a repackaged version of Electrolube contact cleaner

Also good for point blade contacts



5. Improving Power pick-up – Conductive Lubricants

The old Mainline/Bachmann split frame chassis can start running erratically as the plating on the axle deteriorates



I have fixed the problem with LGB Graphic Lubricant on several engines.
It's not cheap (\$17.00)



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6. Improving Continuity through Track Joints and Points

I do not jumper all the track joints. About every third rail joint works fine

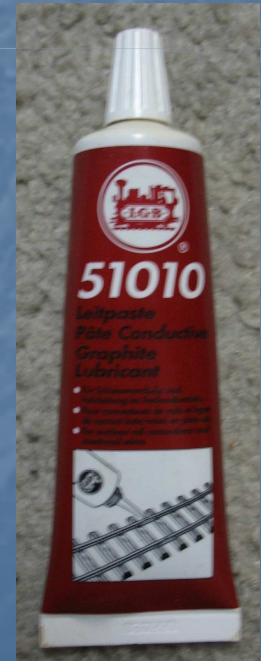
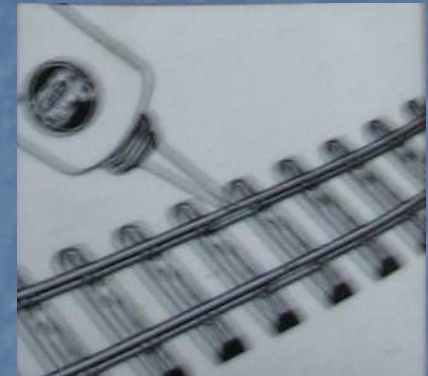
Rare problems are easily fixed with LGB 51010 conductive paste

This conductive paste is designed to fix joints on garden railway track joints exposed to the elements

Joints on indoor railways are a minor problem.

While I prefer something more permanent the LGB paste can also be used to improve the contacts on point blades

Canadian Tire contact paste for electrically heated windows also works, ask Geoff Meakin.

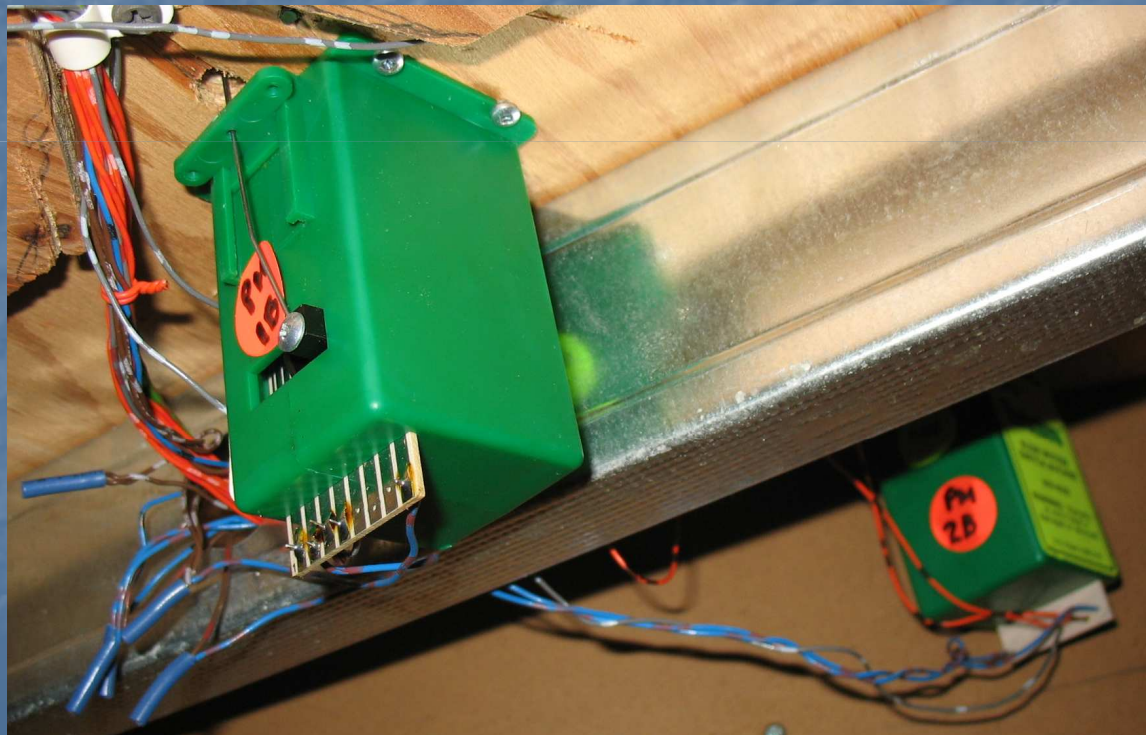


6. Improving Continuity through Track Joints and Points

Point blade contacts are unreliable at best.

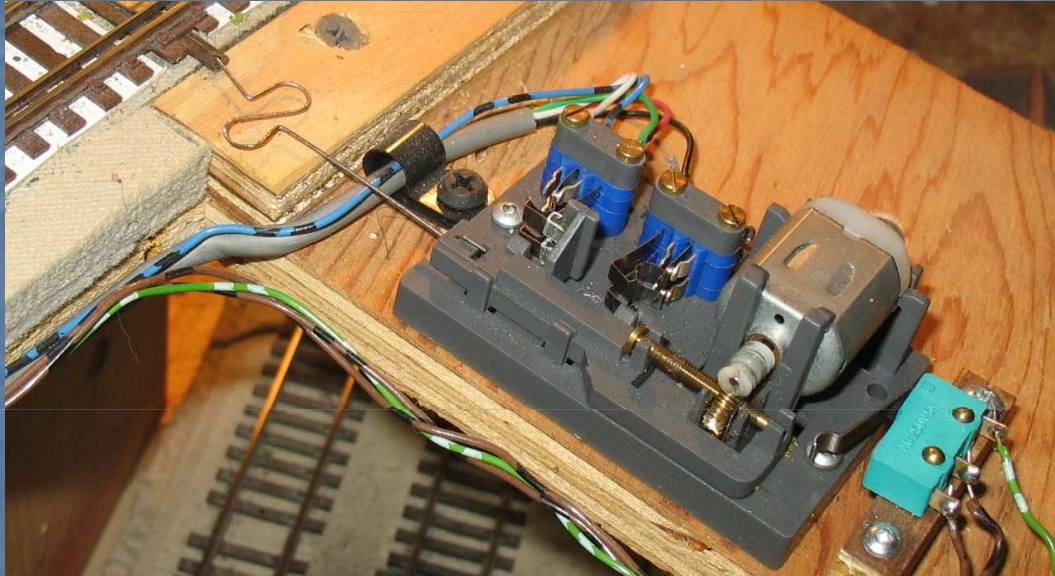
On Lostock Junction power to all point blades is switched, generally through the Tortoise point motor contacts

They are extremely reliable with two sets of contacts



6. Improving Continuity through Track Joints and Points

Lemaco motors are less reliable but can be surface mounted.



In this installation a micro switch provides an additional set of contacts for a safe section.

The safe section helps smooth operation.

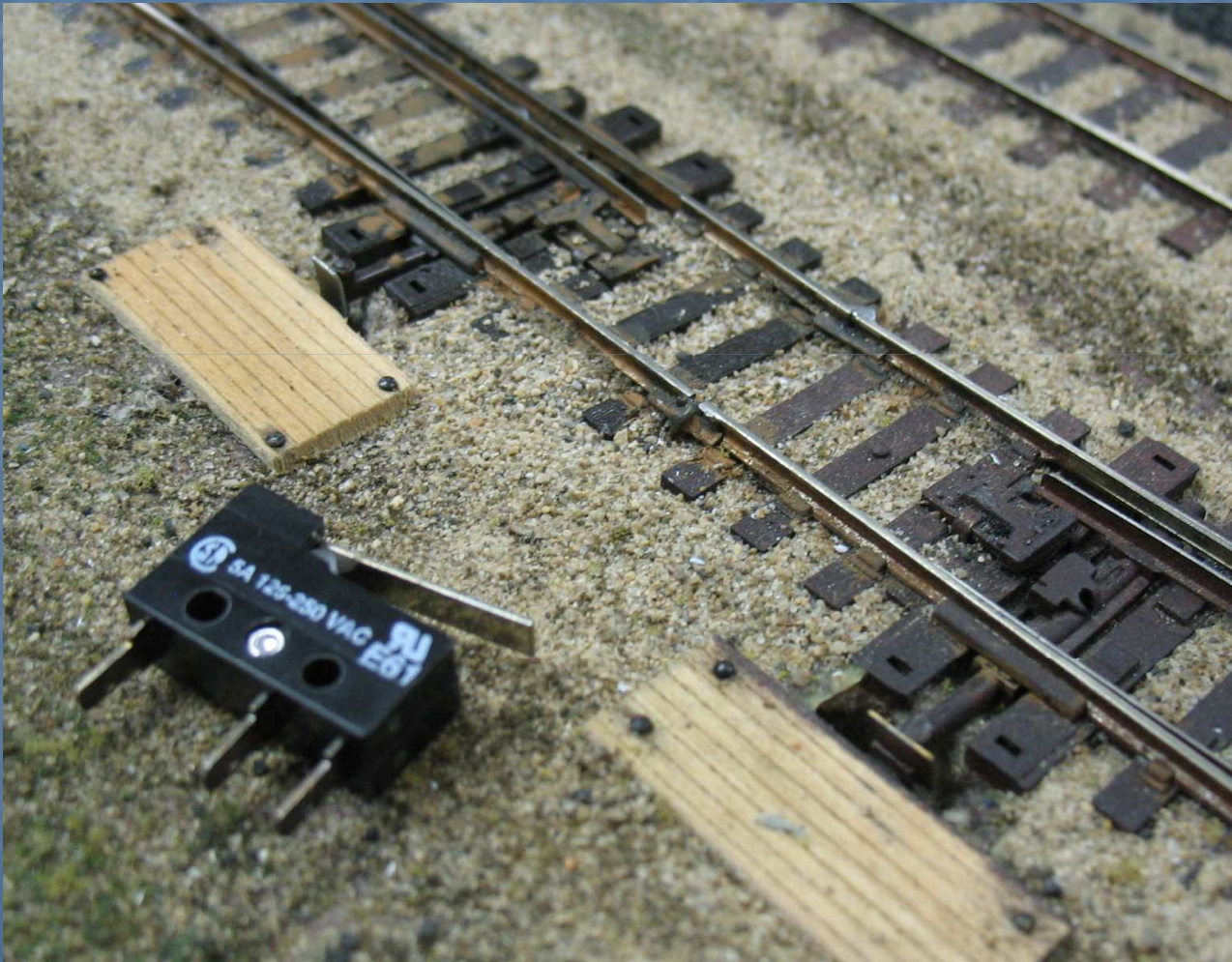
To explain the safe section further.

If we rely solely on the point switch to protect the point, a train running against the frog section will cause a short and disrupt operation.

By putting a safe (dead) section ahead of the frog section, the train comes to a standstill without further disruption

6. Improving Continuity through Track Joints and Points

For hand operated points, micro switches are cheap and easily installed to switch power to the blades.



While working the points by hand may look crude, it does contribute to smooth operation.

It's far less confusing for the operators.

Hands on, no messing about.

6. Improving Continuity through Track Joints and Points

Crossovers



Wheels can cause mini short circuits on Peco Crossovers

This is often enough to stall a slow moving train.

All crossovers on Lostock Junction have been fixed in this way

A rotary direction switch can be used to energise both the points and switch power to the appropriate rails only



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7. Some Cleaners, Solvents and Coatings

GOO-GONE



Best used for cleaning heavy or aged accumulations of gum and grime.

Leaves a minute residue of orange citrus extract on wheels and rails which can eventually cause oxide formation.

Can temporarily soften and expand some traction tyres but tyres return to normal.

I have used Goo-Gone in my track cleaner but now use something less corrosive.

7. Some Cleaners, Solvents and Coatings

ACT- 6006 TRACK CLEANER (F. SKIDMORE PRODUCTS)



For routine maintenance of track and rolling stock

Leaves a beneficial film that enhances electrical contact conductivity and prevents oxidation during train operation.

It is a fluid that is conductive but not corrosive.

Does not have the dissolving power of Goo-Gone and takes longer to "cut" gum .

I now use this rather than GOO-GONE in my Centerline track cleaner.

Too much will make tyred wheels slip for a while

7. Some Cleaners, Solvents and Coatings

RAIL-ZIP TRACK & WHEEL CLEANER **F. SKIDMORE PRODUCTS**



Used for slot car racing and model railways

Eliminates accumulations of oxide, which insulate and interfere with smooth electrical conductivity.

Removes oxide and prevents oxide formation.

Only a thin film required.

I view this as an alternative to Wahl Oil.

Has a reputation for having an adverse effect on traction tyres

7. Some Cleaners, Solvents and Coatings

CONDUCTA LUBE & CLEANER

F. SKIDMORE PRODUCTS



Enhances electrical contact areas such as motor brushes and commutators, wheel and loco pick-ups

A very thin lubricant that conducts electricity.

It cleans and prevents oxide formation

Can reduce motor current draw by as much as 1/3 but should be used sparingly on commutators to prevent arcing

I view this as an alternative to Peco Powerlube or Electrolube

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8 – Other Smooth Operation Factors

- Flatness and stability of baseboard and track bed
- Quality of trackwork
- Performance of Locomotives and rolling stock
- Standardisation and condition of couplings
- Reliability of control system
- Simplicity of control system
- Clearly understood and practiced operating protocol
- Good team communication, spirit and flexibility
- Skilled and focused operators

But that's another story

Go With The Flow

Summary

For Lostock Junction the strategy is

Clean the tracks every six months

Use ACT 6006 Track Cleaning Fluid

Use Centerline track cleaner on the mainline and wine bottle cork wipers in the sidings.

Follow up with Graphite coating

Send rogue stock to the bench for service immediately

Any Questions?

Some Links and References

Cleaning Z-Scale Track

- <http://www.zscale.org/articles/cleaning.html>

Railpage, Australia and New Zealand

<http://www.railpage.com.au/modules.php?&name=Forums&file=viewtopic&t=11318399>

Southern E Group on Relco Electronic cleaners

<http://freespace.virgin.net/c.gardner/semg/relco.htm>

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By Mike Walton

The Platelayer's Symposium
Brampton Ontario
May 2nd, 2009.

