

Deep cleaning your track



Electrical
Impulses

Model Railroad Hobbyist | May 2025

1. This part of Jeff's layout had been unused for over 30 years, and was recently incorporated into the layout. After all this time of inactivity, the track needed a thorough deep cleaning.



JEFF JOHNSTON OUTLINES HIS THOROUGH TRACK
CLEANING PROCESS ...

I BUILT THE CENTRAL CAMP PORTION OF MY SUGAR PINE Lumber Company layout in the early 1990s, and it has seen almost no operation other than testing a couple of new track sections since. I finally incorporated it into the main layout recently.



J. Fugate

USING EFFECTIVE TRACK CLEANING METHODS

Jeff cleans the track with mineral spirits after removing heavy oxides with very fine-grit sandpaper. His choice of mineral spirits is not random – it's very deliberate based on MRH's findings about how to keep track clean longer.

Odorless mineral spirits are fine as well.

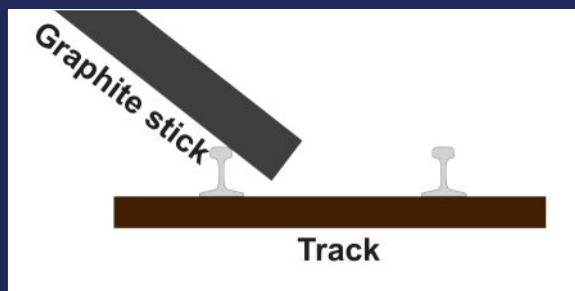
In past articles, I have referenced the findings that non-polar solvents keep track clean longer by inhibiting the “black gunk oxides” that form largely from electrical micro-arcing. It's also been shown the simple friction of wheels against the rail head also can create metal oxides, although not nearly as fast as micro-arcing.

If you instead clean with a polar solvent, it can get the track very clean, but it leaves the metal surface primed for micro-arcing. In other words, the track will get dirty again very quickly if you clean it with a polar solvent – so that's a no-no. Non-polar solvents, on the other hand, inhibit micro-arcing, which keeps the track clean a lot longer.

In addition, we have found adding a light application of graphite to the top inner rail head further inhibits micro-arcing [1a].

Track cleaned and treated with graphite as Jeff shows can stay clean for hundreds of hours of operation. We've had reports from modelers who operate their layout regularly that they do not need to clean the track again after such deep cleaning for one to two years.

I provide a list of non-polar and polar solvents in a table here. I recommend the red solvents as the very best ones to use. Note that a very light application of graphite is non-polar, but a heavy application of graphite becomes polar and is ineffective. With graphite, it's the very light application (you won't be able to see it) that does the magic.



1a. Apply the 4B graphite stick lightly to the top inner rail head only.



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USING EFFECTIVE TRACK CLEANING METHODS *CONTINUED...*

Solvent	Dielectric constant
Kerosene	1.8
Deluxe Materials Track Magic	1.9
WD-40 contact cleaner	1.9
CRC contact cleaner & protectant	2.0
DeoxIT D5	2.0
Gasoline	2.0
Neverstall	2.0
Diesel	2.1
Mineral spirits	2.1
Wahl clipper oil	2.1
Turpentine	2.2
Carbon tetrachloride	2.2
No-Ox-IDA	2.3
Go-Go	2.3
WD-40 (regular)	2.4
Graphite (microscopic thin layer)	1.8-3.0
CRC 2-26	4.6
Automatic transmission fluid	4.8
Rail-zip	4.8
Bachmann track cleaner	4.8
Butyl acetate	5.1
Butyl cellosolve	5.3
Ethyl acetate	6.0
Graphite (thick layer)	10.0-15.0
Isopropyl alcohol (IPA)	18.0
Methyl Ethyl Ketone (MEK)	18.9
CRC QD contact cleaner	20.0
Lucas contact cleaner	20.0
Acetone	20.7
Vinegar	24.0
Ethyl alcohol (e.g. vodka, wine)	25.0
Radio Shack electronics cleaner	25.0
Ammonia solution	31.6
Propylene glycol	32.0
Lacquer thinner	33.6
Glycerine	47.0
Hydrogen peroxide	60.0
Water	80.4

Non-polar

Semi-polar

Polar

Table 1. Solvent dielectric-constant chart. The red non-polar items are recommended. Don't use the strike-through solvents, however – they have other negative side effects.

The nickel silver rail heads were amazingly oxidized after close to 35 years of inactivity. I knew it would take significantly more than a casual dust-off and wipe with mineral spirits to get it going.

Some have asked me for the details on my “deep track cleaning” methods – which differ from normal day-to-day cleaning and maintenance. This article covers my process.

BACKGROUND

There are probably as many ways to clean track as there are modelers. I’m detailing how I do “deep cleaning” on part of my layout that had not been cleaned for quite some time. The layout is in a clean room, and calls for only an occasional run-by with a dragger car, pushed ahead of an engine, to knock the dust off the rail heads prior to operation.

The process illustrated here works very well. It’s not an experiment; I devised this system to use tools I have on hand – I have used these same tools for some time now to do more thorough track cleaning.

REMOVE OXIDATION WITH EXTRA FINE SANDPAPER



2. I start with a piece of 1500-grit wet-or-dry sandpaper wrapped around the end of a Homasote scrap, and never touch the rail heads with anything more abrasive than the 1500-grit. This extra-fine sandpaper removes the worst of the oxidation without

making any troublesome scratches on the rails.

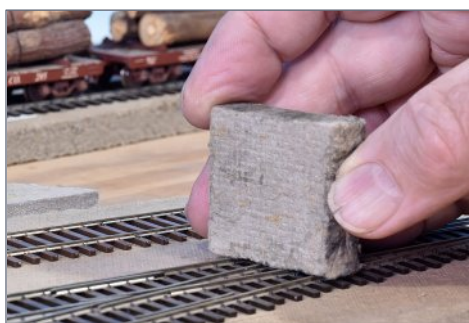




3. I keep the working surface of the sandpaper wet, and frequently wipe it with a clean rag, wet it again, and so on. The water helps keep the sandpaper from clogging and also lubricates the working surface.



4. I sand with the moist 1500-grit sandpaper to remove the ancient oxidation. Then I follow that with a 2500-grit wipe to leave the rail heads smooth and polished.



5. After the initial sanding, I clean the rails by wiping them with a dry Homasote block. These little blocks are really handy for various track-related cleaning and treatment jobs.

If you don't have any scraps of Homasote, Amazon sells a

12" x 12" square of ½" Homasote for a few dollars. See the shopping list link at the end of this article for details.

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CLEAN THE POINTS



6. I push a folded-over and moistened piece of 1500-grit through each set of points where the rails meet. I do this on the “closed” points, and the spring tension provides just the right pressure to do the job effectively. My switches all have hard-wired frog-to-point power, so this step isn’t completely necessary. But if you rely on point-to-

rail contact for power routing, then it’s vital.



7. Next, to clean the points further, I moisten a small piece of cardstock in mineral spirits to act as a “wiper.”



8. I pass the mineral spirits-moistened cardstock through the point contact area a couple of times to clean any sanding debris from the area. I wipe in the direction away from the frog end, toward the throw bar.



TREAT THE TRACK WITH MINERAL SPIRITS

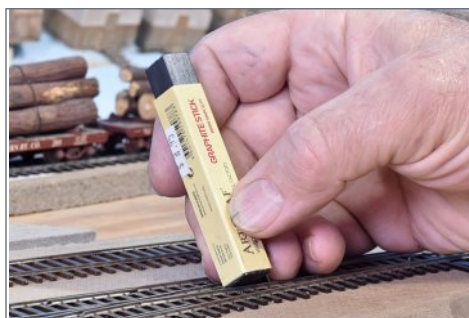


9. Next I dribble mineral spirits on one end of a Homasote cleaning block. I keep a variety of these blocks on hand for various cleaning purposes, and label them as to which liquid is applied to each.



10. I rub the rail heads with the mineral spirits-moistened Homasote block as the last cleaning step.

APPLY LIGHT COAT OF GRAPHITE



11. As the final step, I apply 4B graphite to the top-inner contact area of the rail head. A little goes a long way. If you add too much, it can cause wheel slippage and reduce a locomotive's pulling ability. Just a bit here and there will be spread around by the passing trains.

FINAL THOUGHTS

These steps combine to effectively clean the rails and help keep things running smoothly and reliably for a very long time. It's been great fun seeing this part of the layout fully operational after all these years. ☑

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JEFF JOHNSTON



Jeff works in video and film production along with being a career-long automotive journalist. He has been a model railroad enthusiast since his teenage years. Technical guidance by his hobbyist-uncle Dick helped establish his modeling and mechanical standards, and honed the artistic side of his work. Jeff and his wife Pam (a skilled modeler in her own right), model the Sugar Pine Lumber

Company circa September 1927 in HO scale, and look forward to setting up operating sessions on the layout. ■

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