

Re-railing Methods for Locomotives & Heavy Train Cars

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Background

Derails happen anytime, anywhere. Whether a derail event is a curse or an adventure depends on your attitude, experience and what equipment you have brought with you.

Some of our criteria are:

- Safety
- Single-handed re-rail capability
- Self-contained--all tools are carried with the train at all times
- No damage to the equipment--ever!

The tools and techniques have evolved as a result of handling more than 50 derail events with the UP 9391-9809 locomotives (Mountain Car Co. Dash 9s) and numerous assists to others in all three scales.

The demonstration shows what we have found to work. Variations exist and can be debated. If you know a method offering a material improvement, let us know.

An important thing is to avoid using “pry bars” as they likely will damage the locomotive.

I carried a pair of 5 ft pry bars and in five years used them exactly once--to assist the re-railing of a K-36 steam locomotive. Its coupler broke during a conventional re-rail attempt. I no longer carry them.

Note: The degree of re-railing difficulty is usually a direct function of your handling of the train. You can't avoid all derails, but if you are going fast and are not quick to stop, the problem gets much worse very quickly.

These notes discuss the methods we typically use in the preferred order of use. The starting point and method depends on the nature of the derail.

General Process

When the derail is minor, it is preferable to use something placed on the rails such that the locomotive can, under its own power, be moved slowly and the derailed axle(s) will wind up back on the rails.

When this simple solution is not feasible, the basics are to **“Lift & Shift.”** First, employ a mechanical aid to lift the wheels and truck above the rail head level. Then shift (move/slide) the locomotive body sideways to get the truck aligned over the rails. Finally, lower the locomotive onto the rails.

1. Custom Plate (Halvorsen/Smith (former OCME members) design)--a commercial version from Roll Models (RMI) is not suitable for 1.5 inch scale as the guide bars are too tall and are unlikely to fit under your locomotive when it is off the rails.

This plate features two slots that rest over the rails, an inclined surface to **lift** the wheels and a flat plate with guide bars to **shift** the wheels. Mike Getscher at OCME has made a CAD drawing of this plate including improvements.

It can be used when the lateral movement needed is small (one or two inches) and when there is clearance to put it into place.

This is a favorite as locomotive power is used to get back on track.

Sometimes the wheels roll over the guide bars. This can be avoided by pushing on the truck side frame when the wheels are on the plate.

It is okay to roll other trucks over the plate as the guide bars will keep them from derailing. This could be necessary if there is not enough clearance between the locomotive belly and the rail to

remove the plate once your truck is on track.

A flat plate can also be used, but you may have to **lift** the wheels to get onto the plate and use a lateral **shift** to get them aligned.

2. Lever Lifter (wheel barrow handle)--commercially available at

www.discoverlivesteam.com; wheelbarrow handle from Home Depot. Total cost around \$115.

Dan O'Brien also makes a version using this concept.

This design has been around a long time and we've seen many variants.

Use it when you have access to a coupler. It is fast and easy to lift one end of the locomotive by the coupler. The coupler could break, but it is not expensive to replace and one avoids damage to other parts of the locomotive which will be more expensive and much more difficult to replace.

Basically, the end of the lifting lever is placed under the coupler; the locomotive is lifted until the truck clears the railhead and then the lever is rotated about its vertical axis to get the locomotive closer to the track or placed on the track.

It helps to have someone align the truck to the track. In some cases (especially 3 axle trucks) it may be necessary to manually lift one end of the truck up to clear the rail.

This is the best device around. It is also the fastest way to move equipment a long distance sideways. The only disadvantage is the lever bar is long and some creativity may be needed to store it on the train.

We used this to re-rail a giant RMI boxcab 2.0 inch scale unit which had rolled onto its side. It took several **lifts & shifts** to move it back to the track and then onto the track while three big guys leaned on the cab to prevent it from rolling over again.

3. Jack and Bar (perfected by Kevin Tolan at OCME)--commercially available components

This comes into play when a drawbar connects at one end of the locomotive or units can't be easily uncoupled (powered slugs with hoses); i. e. the Lever Lifter won't work. Note: this method is the most risky since it is very easy for the bar to slip off the jack. Keep hands clear at all times.

The jack (small automotive floor jack) is placed on the ground on the side of the locomotive away from the track. The bar (steel tube--1 . dia strongly recommended as larger tubes are harder to fit under the drawbar/couplers and smaller are too flimsy) goes under the drawbar and is supported on the end toward the track by wood blocks. Carry several thicknesses (3/4 , 1 1/2 and 3 1/2). Slowly raise the jack until the truck clears the track. Then push the locomotive down the now inclined bar toward the track. Gravity helps a lot in moving sideways. It is common to need to reset the jack and blocks several times until things finally line up.

Bottom line, this is the most versatile but most time consuming method. All six OCME locomotive sets have been equipped with jacks, bars and blocks.

Special Considerations

If both trucks are off, you may need to work each end toward the track in stages. Most trucks have limited lateral movement, so trying to force a big lateral move in one step is asking for trouble. If possible, uncouple rolling stock.

Sometimes the de-railed truck may be over a switch. Your preferred tool may not work. For example, the Custom Plate will not fit on a frog or between the two pairs of rails. So another method must be used. It is possible sometimes to move the locomotive by its own power to get to a better spot to use one of these methods, but great care is needed as you may seriously damage the track or switch in the process. See the picture of the locomotive and car re-railer on Page 4.