



## **Safety:**

# **Oh Those Turntables!!**

By Ed Best

Rudie Niemi and I own two motorcars (MT19 and MT14), both with turntables.

We have weathered a number of exciting times with their installation, their use, and their failures. Although we don't consider ourselves experts, we can speak from some level of experience.

Turntables are a mixed blessing. For someone with a back that cannot take much abuse (such as mine), turntables are almost a necessity unless you are going to regularly impose on your friends with good backs. And, they save time on trip turnarounds when multiple cars can independently and simultaneously turn. They do bring some risks, however, and that is the subject of the following comments.

We have found that the advantages of turntables can be more than offset by their risks unless you are careful. The turntable, even when completely retracted and locked, is big enough and hangs down far enough to seriously reduce your clearance. In our MT14, when the turntable is fully retracted, the clearance above the top of the rails is just over 2 1/2 inches, and extends across about 40% of the inter-rail space. We have developed a habit of carefully scanning all grade crossings, and will slow down to a crawl if they appear to have a high center. We have also developed a sensitivity to debris between the rails and have been known to travel slower than most amongst larger rocks, etc. These risks can be anticipated and, with proper attention, controlled.

The bigger risk, however, is the unexpected event which can result from not ensuring the turntable is fully retracted and locked before you take off.

Unfortunately, under some circumstances the locking slide can be returned to a locked position without the turntable being fully retracted or its locking collar engaged. Since this can happen with the turntable only about 3/4 inch below its fully retracted position, a casual glance at it might be misleading.

Not only will the turntable start at a position lower than you may think, but when not locked, normal motorcar vibration can cause the turntable to creep down slowly, further reducing the clearance which you think you have

and eventually causing a problem.

It is probably obvious to everyone that since the turntable and its supporting hardware are big and solid, when the turntable encounters an obstacle, something other than the turntable is going to give. If the object it encounters doesn't move, the whole motorcar comes to a sudden halt or performs some acrobatics which can be equally as disturbing.

Both our turntables came with an audio alarm and a limit switch to activate it.

The theory is good: The limit switch activates the alarm whenever the turntable is not fully retracted. In practice, however, there are some fallacies. There could be a wiring problem or a power failure causing the alarm to be silent even if properly activated by the limit switch, or a weak alarm might not be heard by an operator with ear protection and the loud background noise of a running motorcar. A third (probably remote) possibility would be that one had disabled the alarm because it was so irritating when he (or she) was working on the motorcar, and forgot to reconnect it. It is, of course, necessary to make sure the limit switch itself is properly positioned and its operation is not obstructed by debris, dirt, or damage.

We decided that a visual indication in addition to the audio alarm was needed. We further decided that there must be a positive indicator that the turntable was up and locked, not just the absence of a negative indicator. This would cover the eventuality of faulty wiring or some other failure. The limit switches which came with both our turntables were double throw switches, although only one side had been used to activate the audio alarm. A simple wiring addition permitted us to get a positive voltage on one wire when the turntable was down (the original set-up), and a positive voltage on the other wire when the turn table was up (our addition). We now have both a large red light and an audio alarm which activate when the turntable is down, and a smaller green light which is on continually when the turntable is completely retracted in the up position.

If you don't have a double throw limit switch, get one. If you do and there are three wires, use a continuity check to determine which wire is the common, and which of the other wires connect to the common wire in each switch position. Battery power goes to the common wire, and each of the other wires drives the audio alarm and red light (switch and turntable in down position), or the green light (switch and turntable in up position). If you only have two wires from your switch, purchase a three wire cable from your local hardware store, open up the switch, and connect the wires as described above.

It is important to realize that these lights and the alarm are only warning indicators. Safe operation of and full retraction of the turntable requires careful attention to the correct turntable mechanical processes, which include:

1. Carefully retracting the turntable completely (visually checking it).

2. Ensuring that the locking slide is fully engaged in the locking position.

3. Pinning the locking slide handle in the fully engaged position to prevent vibration from working it loose.

Remember, you are safe to drive your motorcar only when the turntable has been properly positioned (using a visual check as well as the warning devices), and mechanically locked by ensuring the locking handle is fully inserted and pinned in place.

With both the locking handle properly positioned and locked, and a green light on, we are free to worry about something other than an unretracted turntable causing us a problem. Since the green light is on whenever power is on, we have wired it through our ignition switch to save the battery. If you don't have an ignition switch, any other switch will do just as long as you never move your car unless the green light is on. I'd also recommend an occasional glance during the trip to ensure the green light remains lit.

Turntables present one other potential for a prob-

lem, the possibility of tipping the motorcar when it is raised on the turntable. The cause is usually an imbalance because the turntable is not positioned reasonably close to the center of the car's weight, or lowering the turntable onto something less than a sound footing. The former is usually an installation problem. The latter can be easily controlled by ensuring the turntable foot straddles two ties or sits solidly on a hard surface.

Turntable safety should be an ongoing concern to those of us who have them. However, we could also use the help of others. If anyone happens to see a motorcar with a turntable which appears to be suspiciously low, or which catches your attention because something seems wrong, please alert the driver immediately. Speaking for myself, I would much prefer to have someone alert me to a potential problem, even if it turns out to be a false alarm, rather than not be informed. I think other turntable folks would agree.

*(Editor's Note: This article was reprinted with permission from the author. It originally appeared in the MOW newsletter, the Lineup, dated June 1996.)*