Rittenhouse dashpot warning

Applies to all Rittenhouse dashpot driven multi-note chimes to include
410, 520, 610, and others.

The natural aluminum color of the dashpot sequencer suggests to many people that it is a capacitor that somehow mysteriously makes the chime work. Not so- its chock full of electromechanical gizmos. The dashpot is a solenoid-based linear distributor in a sealed enclosure that contains an oil bath. A solenoid quickly pushes a commutator downward, which then is pushed upward by a spring and swipes four contacts. The plunger's return motion is retarded by oil metered through an adjustable port that counteracts the push of the return spring; that is what defines the chime sequence cadence. It is an interesting and ingenious piece of engineering, but ultimately too dependent on a delicate balance of spring compression and torsion, friction, lubrication, gravity, hydraulic resistance and your personal karma.

Many of these are still in service and still sort of working. When they fail, they fade slowly. Symptoms may be running really slowly, or not playing the last note, or getting stuck on a note leaving a striker solenoid powered and buzzing. The grim truth is that it has a finite lifespan, and the expiration date is long past. Replacements are extinct and there is no viable service procedure. I have attempted to repair a few with very minimal success, but no longer attempt that.

Aside from just being non-functional and non-repariable, they present a fire hazard. Any multi-note chime that is partially functional has that possibility. The solenoid coils which are intended for momentary operation became little low-powered heating coils when left powered-on indefinitely, due to the normal electrical resistance of the wire. This heating up can get to the point of begin able to ignite flammable material. Not kidding here- I was once contacted by a fire inspector who explained to me the risk of fire that doorbells in less than perfect working order can present, and in fact have caused numerous house fires.

Aside from being non-repairable and a potential fire hazard, it is likely that the oil inside the dashpot is laced with PCBs, as are most vintage electrical and electronic devices with oil in them. Think world-class carcinogen. Only an exposure if the dashpot is leaking or has been intentionally opened.

As much as I love old doorbells, I don’t consider them to be worth risking house, family and personal well being. I strongly advise against using any Rittenhouse dashpot chime whether it seems to be currently working or not! In truth, it may be difficult for you to determine if it is working or not, as a partially working one will strike some number of notes but not the entire sequence- which is an indication that it is at its most dangerous state.

I have a couple ideas for “repair”. The chime can be rewired to bypass the sequencer and made so that it will chime just one note. Easy enough to make it chime one note for the front door, and different single notes for up to three other doors. At least that way, it can be kept and put to some sort of partial use. The concept of making it ring a single note is really simple. Move the wire that serves the front door multi-note signal (that would be the wire from the front doorbell button) from the terminal it is currently attached to, and reconnected it to the terminal for the rear door signal, which rings just one note.

The terminal panel is cryptic and I can't remember which one it would be, but you can do it by trial and error without any risk to anything. On Model 410, that's probably the terminal on the far right of the panel.

The ultimate solution is to create a custom designed electronic sequencer to replace the electro-mechanical dashpot. I hope that someday some electronics expert will offer to develop that and make it available to me and others who may need it.

Until then, dashpot-based Rittenhouse chimes are trouble. If you have one, my condolences. If you are thinking of buying one, like on eBay, don't. If you have one that you are ready to give up on, don't send it to the landfill. I will gladly take it (or buy for a modest amount) to scavenge parts for other more wholesome chime models.