



## **Small Shop - Big Results**

**Rx for Mice—Pulling Out All the Stops**

**Part 1: Assessing the damage**

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**Central Iowa Chapter**

### **CAUTION – PLEASE READ THIS FIRST!**

**To the readers of the Journal: When I first began working on this article, it was with the idea of demonstrating that even a piano in a terribly neglected state may be given new life. The piano pictured on these pages was stored first in a barn and later in a factory, and had at some point been infested with mice. The damage done by this colony of mice, and the mess that they left behind, was above and beyond anything I had personally seen before.**

**Unwittingly, when Dave and I worked on this piano and began to clean it up, we were taking a chance with our very lives. Hantavirus is found in mouse urine and those who are infected with the disease often don't recover. In cleaning up after the mice that had inhabited this piano, effective measures should have been taken to prevent infection, or the piano should have simply been scrapped.**

**Accompanying this article is a Tuner's Health segment relating to this disease, and methods for avoiding infection. Please read this, copy and post in your shop. Where pictures taken during the restoration of the piano featured in this article depict unsafe practices, safety tips will be included for the right way to proceed.**

**Hopefully, by addressing this issue, others will avoid risking their lives, and will work to safely clean up pianos which have been thus infested.**

Occasionally in the restoration business, one writes an estimate for a job that is spot-on. When the piano arrives at the shop and disassembly and work begins, everything lines up exactly as anticipated. Too often, however, something has been missed, and either a call needs to be made to inform the owner that there will be an overage or, as is my practice, the shop owner eats the extra work and chalks it up to experience. More troubling than a simple case of an extra expenditure of labor, however, is when something has been missed which causes one to pause and wonder if in fact the problem can be fixed at all. Such was the case in the spring of 2009 when the 1915 Walworth upright which is the focus of this article was delivered to our shop (Photo 1, below).



*Photo 1: The brute is manhandled into the shop.*

What had appeared on first blush to be a straight-forward restoration took an unsettling turn as I began to actually disassemble the instrument. I had no one to blame but myself for missing what could very well turn out to be a deal-breaker. I wasn't at all sure if I could in fact remedy what seemed to ail the piano the most.

The problem was caused by mice. Lots and lots of mice. It wasn't so much the physical damage that had been done by the little critters however (which I could fix), as it was the stench. As Dave and I began tearing the piano apart in earnest, nearly overpowering waves of odor rolled off of the exposed keybed, making me wonder if at last I had truly met my match. Could such an odor ever be truly eliminated?

**Safety tip: Even at this early stage, Dave and I were taking a risk. For a piano infested to the degree that this one was, safety precautions should have been followed. Latex rubber gloves should be worn during inspection of the piano. Even if nothing else were done besides looking things over, the gloves should remain on during the entire procedure. Before removing the gloves, they should be washed with disinfectant or soap and water. Once the clean gloves are removed, one's hands should be also washed with soap and warm water.**



*Photo 2: Would you want to dig down under this mess?*

The mouse infestation which had occurred within the piano was hard to miss (Photo 2). The piano had been stored in a factory for more than a decade before being brought to our shop. The factory, sitting astride the lush corn fields of Iowa, was apparently at some point scouted out at by a squadron of mice who, recognizing the tactical advantages presented by the huge (from their perspective) edifice of the piano, promptly moved in their gear and made it their home—Fort Walworth, so to speak.

On the day I drew up the estimate, the piano had been moved to the loading dock area of the factory for me to look over. My main concern at the time was the condition of the soundboard, ribs, bridges and cast iron plate, which all checked out. I had spent little time inspecting the action and no time at all looking underneath the mess which the mice had created on top of the keys. I assumed that extensive repairs would be needed, and had estimated for rebushing of the keys, refelting of the keybed, anticipated repairs to damaged keysticks, etc. With the doors to the loading dock open to the spring day, and a refreshing breeze blowing through the facility, I paid little attention to the smell.

With the piano now in my shop, however, and the keys completely open to the air, it was becoming crystal clear to me that I should have paid more attention to the odor factor. Although I had often dealt with mouse damage to pianos before and had from time to time needed to air things out, I had never encountered a smell of this magnitude within a piano. My thoughts turned glum, as I considered the consequences that would arise if I couldn't solve the issue. The piano was destined to be delivered to a beautiful lodge on the shores of Leech Lake in Minnesota. It wouldn't do at all for the lady of the house to sit down at the keyboard and to have her wrinkle her nose in disdain at the odor wafting up from under the keys.

The primary reason for considering a restoration of this piano was simple. The owner of the piano (and also of the factory) had inherited the instrument from his mother. As a girl his mother had written her name, the names of her sisters, and the name of the aunt who had given them all lessons all on the cast iron plate. When I mentioned the approximate price for a restoration and the type of new piano one could buy with that type of investment, he responded by asking, "Would any of those come with my mother's signature?" Obviously not.

Now, having made a commitment to fix this piano, I had to make good on my promise. Stepping well back from the piano to take a deep breath, I paused to give myself a mental pep-talk. I could whip this thing (or so the voice inside my head was claiming). The first thing was not to panic, but to closely examine the problem with a cool head.

The trouble with mice infesting a piano is that once they've broken the perimeter and gotten inside, they're usually there to stay. And in this case, stay they did.



*Photo 3: Home sweet (mouse) home.*

Not only did they set up sleeping quarters, as is the custom of mice, but they also freely regarded the inside of the piano as their private restroom, as is evident in Photo 3, above. Not the occasional mouse dropping, but piles of droppings lay heaped about. The tops of the balance rail pins apparently served for the mice to relieve themselves the other way, for each pin was corroded to an extent that I've never seen before.



*Photo 4: A well-thumbed copy of the Reader's Digest*

Before removing the keys (realizing full-well that I was stalling—I didn't really know if I wanted to see what was underneath, considering the chaos on the topside of things), Dave and I paused to consider the half-eaten copy of a Reader's Digest resting on the keys in the bass (Photo 4). Was the magazine already in the piano, we wondered, or did a team of mice haul it in? Considering their obvious industriousness, it wouldn't surprise me. We had to laugh at the mental image of two rows of mice hoisting the magazine onto their shoulders and carrying it all the way into the interior of the piano.

With that humorous thought in mind, I began brushing aside the rubble and pulling out the keys. The pile of debris on top of the keys paled in comparison to the amount of material that had been stuffed in between the keys and the keybed. The depth of the nesting material rose to the tops of the keyframe rails (Photo 5). A veritable flood of trash, with waves lapping up against the levies!



*Photo 5: Mouse Central.*

**Safety tip: Once removal of contaminated material becomes necessary, either for further inspection or for actual clean-up, all potentially infected materials should be thoroughly wetted down with either a general purpose disinfectant, a household detergent or a 10% bleach solution. Once the materials are wet, carefully lift out as much material as possible with a wide putty knife or similar implement and bag. Then finish removing remaining materials with a damp towel. Materials removed, including towel, should be bagged and disposed of properly. Finish by wetting down any exposed areas which might be contaminated. Clean any tools thus used with soap and water.**

**After the clean up site has air dried, more ordinary methods may be employed to finish clean-up. Wear proper protective clothing and mask if clean-up involves vacuuming or other activities which would spread particles into the air.**

Not only was the keybed area a disaster zone, but the stench of mouse urine seemed to intensify, if that could be possible. Dave, standing well behind me as I lifted out the last of the keys summed up his feelings in one word. “Wow!”

With no more ado (after snapping some pictures for the record), I wheeled in our industrial Shop Vac and went to work. Cleaning up the debris itself was, of course, no problem. Five minutes later and the mess itself was a thing of the past. What remained, as I feared it would, was the odor. Not just a lingering odor, but an overpowering odor. Mouse urine had soaked into every exposed surface. The keys themselves stunk. The keyframe, once it was removed, stunk. The keybed stunk.

**Safety tip: As far as vacuuming is concerned, it would be recommended that you first follow the procedures outlined in the previous safety tip box. Vacuuming should only be done after any potential Hantavirus are killed by the application of a bleach solution or other liquid agent.**

**This obviously will make the process more time consuming, but should result in a process that is far less risky.**

This, I was afraid, could sink the deal. If I couldn't fix this problem, and fix it right, the restoration was most likely a no-go. However, after seeing how enthused the owner was at the prospect of having his mother's treasured piano restored, failure was an unacceptable option to me.

The morning was up, Dave went home for the day, and I took my dog for a walk in order to think things over. I needed to step away from the problem for a bit and come up with a plan of action.

Above all else, I needed to remain positive. A defeatist attitude would not help matters. It never does. So resolved, I decided that the problem would be fixed, no matter what I had to do. First of all, I would log on my computer to research the problem. Possibly there would prove to be a simple solution—some sure-fire way to neutralize the odor. That seemed entirely too easy to be plausible, but I would look into it.

Secondly, I decided that if necessary I would replace whatever needed to be replaced. For some things, replacement was a forgone conclusion. Obviously everything felt would be new. Ditto the front rail pins and balance rail pins. But if needed, I would go to the extreme of building a new keybed and keyframe. The only thing I couldn't do on site would be to replace the keys entirely. If a new set of keysticks needed to be manufactured, I would have outsource that. Everyone has limits to their capabilities, and that particular job would be best left to an expert.

By the time Max and I returned from our two mile walk, I felt a new resolve. I would not let this get the better of me. I would do whatever it would take to set things right. I let Max inside the house and returned to the shop.

As soon as I step inside the big room of the where the upright was being dismantled, I realized I would need to keep up the positive attitude. Despite the fact that the windows and garage door of the shop were wide open, the odor of mouse urine permeated the entire room. My work was cut out for me.



*Photo 6: Appearances are deceiving. It looks so clean!*

Next month Dave and I go to work to tackle the problem head on. We will overcome this!

**(A sincere thank you goes out to Journal editors Ed Sutton and John Granholm for shedding light on this hazard by bringing it to my attention. If I was uninformed of the danger involved in cleaning up infested pianos, it's likely that other technicians are as well. Hopefully the cautionary information provided in conjunction with the article will make things safer for everyone. Chuck Behm)**

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