

Small Shop – Big Results

Removing the Cast Iron Plate – Part 1

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To the fledgling shop owner, the removal of the cast iron plate from a piano might seem a bit daunting. Indeed, it's not a task to rush into without forethought. Break the plate, and you're basically out of luck. Broken down into a step-by-step process, however, there is really nothing about the job that can't be safely accomplished if one has the right equipment or at least sufficient manpower. The ability to remove the plate is essential if one is serious about operating a piano restoration shop.



*Photo 1: Now and then – The author removes plate from a Weber grand (circa 1880).
Inset – Paul Behm trying out new hoist in 1976.*

I began doing work on pianos that required removing the plate in the early 1970's. In 1976, I installed an overhead beam in my first shop, and my dad helped purchase a 1000-lb. chain hoist. On the occasion of his 70th birthday (Photo 1 inset), Dad came to Boone and we tried the setup for the first time. This was a big step up in the shop, as we had lifted plates out by hand previous to this. The hoist really made life easier. Thirty years and two shops later, I'm still using that same piece of equipment, although I now couple it to straps instead of chains (Photo 1).

In general, taking the cast iron plate out of a piano becomes necessary for two reasons. Those reasons are:

1. The pinblock is to be duplicated and replaced. The plate must be removed to gain access to the block. With the pinblock out of the piano, a new block may be cut and fitted to the plate. This allows drilling for factory size pins (#2), instead of settling for the installation of oversize pins. The pinblock in Photo 2 had already been treated with pinblock restorer by another technician, then repinned using size 6 pins! This piano is an obvious candidate for a new block, if there ever was one.

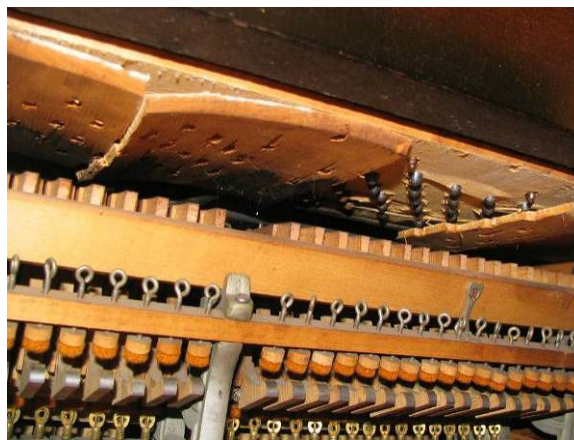


Photo 2: End of the line for this pinblock.

2. The soundboard is to be shimmed or replaced. With the plate out of the way, work on the soundboard can be done which would not possible otherwise. In Photo 3 the soundboard of an Apollo grand was afflicted with four major cracks. The cracks were shimmed, and the entire soundboard was then sanded and refinished. To complete the job, a new soundboard decal was installed.



Photo 3: A soundboard with serious problems.

(Removing the plate of a grand piano also makes stripping, staining and refinishing the inner rim of the case much simpler, but one would probably not want to remove the plate for that reason alone.)

The plate of an upright piano may also be removed, but for economic considerations, this is a more unusual situation, at least in our shop. It is occasionally done, however, as in the case of this 1885 Ludwig upright (Photo 4) with a badly cracked soundboard. Replacing the soundboard or repairing the cracks correctly without removing the plate would have been

impossible. An added benefit is that removing the plate in an upright makes it possible to install a new pinblock panel, a big step up from pinblock plugs or oversize pins.



Photo 4: A 123-year-old upright ready to be repaired.

To remove the plate from the piano, ten steps must be completed. These are:

1. Remove case pieces, action, and dampers. Store safely away.
2. Take digital photographs of anything unusual about the stringing of the piano. If, for example, there are singleton treble strings, take a picture showing their location. Take pictures of the felts used around and under the strings. You might think you will remember these details, but six weeks from now, when you're trying to reassemble the piano, you will be scratching your head and wishing you had taken a few moments with your camera to make a record. **If you plan to measure the bass strings or make a template, do it now.**
3. Take the tension off the strings. The strings should be loose.
4. Remove the bass strings in order and bundle them to send off to a stringing factory for duplication. Remove the treble strings and measure their diameters with a micrometer. Record the stringing schedule (sizes) on a chart which you must not lose.
6. Turn out and toss the tuning pins into the recycling barrel.
7. Measure the exact location of the plate for future reference.
8. Remove all plate screws, bolts and nuts and store them out of the way in a prepared screw holder.
9. Develop a plan for how to take the plate out and safely store it before actually lifting it out of the piano.
10. Using sufficient manpower and / or equipment, lift the cast iron plate out of the piano. Set in a safe place.

The following information provides a detailed description of the ten steps to use in removing a cast iron plate. Unless otherwise noted, the descriptions and photos are geared specifically towards the removal of a grand plate.

1. Remove case pieces, action, and dampers. Store safely out of way. Assuming that the piano you are about to work on is in your shop, prepare an area where the case pieces will be safely stored and out of the way during the project. If the case is to be refinished, pieces may be laid out either on a long bench, or on a parts trolley, as in Photo 5.



Photo 5: Player piano parts on a parts trolley.

Whichever method you choose, treat the case pieces with proper care. Piling parts of the case haphazardly around the shop is asking for trouble. Although you may choose to leave the legs and pedal mechanism on the piano for the time being, everything else must come off. The lid, music desk, lid prop and music desk guides should come off first. Put any screws removed in a container (a large muffin tin is ideal) with labels as to where the screws go. Next, remove the fallboard, keyslip and keyblocks and set aside. If refinishing is planned, this is the time to remove any hardware, such as the piano hinge joining the two parts of the lid. Store any hardware, or package to send off for re-plating if that is in the plans.

Once the case parts have been removed, the action may be slid out of the piano. Remove the small guide blocks (if any) from either side of the keyboard and carefully pull the action towards you. Be cautious about having any hammers raised, even the slightest amount, or risk leaving a hammer head or two inside the piano. Set the action aside.

Finally, remove and number the dampers. Before pulling the dampers out, scratch a line with an awl on the damper wire right above where it is inserted into the flange, for later reference. **If you prefer using a damper lift gauge, set the height of this gauge before you remove the dampers.** A 40" piece of 1 X 4, with 1/8" holes drilled every 1/2" along the center line and blocked up on either end, makes a handy holder for the dampers.

2. Take digital photographs of anything unusual about the stringing of the piano. Photo 6, for example, would clear up any confusion as to how the stringing of a particular piano was done originally, that you might otherwise forget. Print the picture and label it with the name of the

piano and the location of the strings involved. This picture, for example, would be “**Krakauer upright #13720, left hand, treble section.**” Not only the fact that you have two single strings here, but also the type of loop used on the ends of the strings is valuable information.



Photo 6: One picture =1000 words.

It is not just the strings and the plate that you should photograph, but everything involved with the rebuilding process. I admit that I get a little picture-happy when we are tearing a piano apart, but I’ve learned through experience that it’s better to be safe than sorry when it comes to creating a record of the teardown. There have been times upon reassembling a piano that I have kicked myself for not having a picture showing the location of a particular part, and I have had to line up screw holes to find where something goes. There have been those occasions, also, where we have finished a piano and had odd parts left over. This is not something you want to bring up to a customer.

Taking pictures, by the way, allows you to begin building a portfolio of your work. Eventually your pictures will be your greatest sales tools. If you have a book showing before and after pictures of dozens of pianos you’ve restored, you really don’t have to do much talking to convince your customers that what you are proposing for their piano is a good idea. They will think of that on their own. All you’ll need to do is outline the work you are suggesting, the costs and the timeline. I’ve never done a “hard-sell” on a customer, and yet our shop time for major rebuilding is usually booked at least two years in advance.

3. Take the tension off the strings. The strings when you finish should be loose. If you reduce tension before you cut or break the strings, you will not be surprised by a string flying out of the piano, injuring you, an agraffe, or the piano case. I know that some rebuilders say that carefully lowering the tension doesn’t matter. On heavily built pianos perhaps it doesn’t. It seems to me, however, that when you are working on piano built a century or so ago, it makes sense to play it safe, and baby it a little. I consider a cautious approach cheap insurance. It will require care and focus to complete this job, and I like to respect the piano from the beginning.

In the next issue of the *Journal*, I’ll detail steps 4 – 7 of the process of removing the cast iron plate.

Until next month, then, we’ll keep the coffee pot on. Stop by anytime.



The shop.

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