



Small Shop - Big Results  
**Grand Action Reconstruction – Part 1**  
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The final leg of the restoration of the Weber grand which has been featured in previous installments of "Small Shop, Big Results" (Pinblock Replacement Using a Paper Pattern) was to recondition the action. If my original plan in regards to the piano action could be compared to sitting alongside a children's wading pool dangling my feet in the cool water (spot repairs / filing hammers / regulating), what I ended up doing was more along the lines of a running cannonball dive into the deep end (gutting the action / replacing all the parts). Looking on the bright side, although I got myself into many, many hours of unpaid labor (by my choice) to get the piano where I wanted it to be, I ended up plenty of photos and lots of raw material for this publication. Hopefully, the narrative that I put together concerning decisions made and actions taken will spark some lively discussion / debate. To that end, noted restoration specialist Anne Ackers, and highly regarded piano designer / builder Del Fandrich have kindly agreed to follow along and provide commentary. (As I mention this I have a recurring mental image of one of those little yellow ducks going back and forth at a carnival attraction with grinning folks standing on the other side of a counter, shooting at it with rifles. Why I bring this up, I don't know. The image just keeps popping up in my mind.)

To begin things off, I've come to the conclusion that every time I get in a hurry in writing up an estimate I pay the proverbial piper down the road at some point. For the piano in question, I recall that on the day I looked it over for the first time I sat down and played a tune or two. I noted that the action was for the most part working, although inefficiently. I aimed my flashlight in on the hammers, noted a couple of gaps where hammers were missing, but saw that there was plenty of felt left on the ones accounted for. I assumed that I could locate and fix the broken hammers / shanks, and do some shaping on the entire set of hammerheads and they would be good to go. I made the second assumption that when the piano was in the shop, I could give it an overall job of regulation and everything would be up to snuff.

Why didn't I pull the action to take a closer look? That's the \$64000 question and one that I've asked myself plenty of times since. A combination of factors I suppose – overconfidence in my abilities on the one hand coupled with an unfortunate deficit of knowledge about the action in question on the other. My mindset was that with the other work the piano was going to have done (case refinishing, repinning, restringing, etc), it was going to be in the shop for an extended stay. At that point, with the action on the bench, I would be able to work whatever magic I needed to work to put it into fine trim. I would do a little dance, sing a little song, and that would be that. Or so I thought at the time.

With the estimate given and accepted and the piano delivered to the shop, the first rumblings of a storm on the horizon occurred early on, when I disassembled the action far enough to pull the keys for putting on new keytops. Unlike a specialist such as Anne Ackers who deals with older styles of actions on a day-in, day-out basis, I'm admittedly spoiled by the more modern configurations where the action stack simply unscrews and is removed from the keyframe in order to access the keys.



*Photo 1: Hammers come out first.*



*Photo 2: Followed by the wippens*

In this piano, manufactured around 1885, breaking it down was considerably more time consuming. A separate rail to which the hammers and let-off buttons were attached was first removed (Photo 1). A second rail to which the wippens were attached (Photo 2) then needed to be taken off.



*Photo 3: Stickers that snap to the capstans*



*Photo 4: Wooden brackets are left behind.*

Before this could be done, however, the rocker arm type capstans that the piano was equipped with needed to be disconnected from the stickers at the bottom of each and every wippen (Photo 3). (This connection is similar in operation to "Snap-On" elbows.) The wooden brackets for this action are attached permanently to the keyframe (Photo 4) and remain behind.

My thinking at this early stage was that I had once again let myself into more work than I had counted on. Having at last disassembled the action to the point where I could remove the keys and recover them, the respective disassembled components were put aside for the time being on a lower shelf of a work bench to collect dust while other aspects of the restoration were attended to. And so, with the action parts temporarily out of sight and out of mind, I focused on other matters. Time passed, with my head firmly planted in the sand.

When I at last was to the point where I was ready to reassemble the action and do whatever it would take to set things right, I pulled the respective parts out from storage and put them on a bench to really look things over. In doing so, I began to have serious concerns about whether the action could be reconditioned and regulated at all without wholesale replacement of parts.



*Photo 5: Hodge-podge of replacement parts.*

The problem that really hadn't caught my attention before was the apparent brittleness of the wood of the original parts. Several hammer shanks were currently broken and needed fixing. I had noticed before that a number of parts had been previously replaced or repaired, mostly hammer shanks and flanges, and also other subcomponents of both the wippens and the back action. What I hadn't really paid attention to was the fact that these repairs were done on a number of occasions down through the years, as evidenced by the fact that a variety of replacement parts were used, most likely by different repairmen at different times. A total of four different types of replacement hammer flanges had been installed, for example. This hadn't been just a single occurrence where someone had pounded on the keys and broken a number of parts that required replacement. The piano action apparently had a history of breakage and subsequent repair.

My heart began to sink. Every piano repairman who has been around for any length of time has probably come across a spinet or console with plastic parts which have started to break. Models with multiple plastic parts are particularly vexing to try to repair, in that if you try to replace just one part, it's more than likely that another part will break

in the process. In my experience, I've occasionally seen a wooden action with a similar propensity (although not as drastic) towards breakage. (My own daughter has a Wegman upright in her home which I refinished for her with an action which continually has parts which break when she tries to play with any volume.) The most frustrating thing about this type of action is that a good share of the time, when one takes things apart to replace something broken, another part will break. There is little to no flexibility to the wood. Such an action has to be treated with kid gloves.

Fearing that I was dealing with the same type of beast, I removed a hammer shank assembly from the action and tried a simple twist test. Holding the hammer flange and the bottom of the shank firmly in my left hand, I applied a gently twisting motion to the hammer head. When I had rotated the head no more than a degree or two, the shank snapped like a brittle twig. Not good.



*Photo 6: The only repair item missing is bubble gum.*

I now took the time to look over the rest of the action. More breakage throughout. No fewer than 14 repairs had been done to various wippen parts. Some parts had been replaced, others glued together. One noteworthy repair (Photo 6) had been done with Scotchtape. Wonderful. My sinking heart was now fully submerged.

Although I have a great love for shop work in general and piano restoration in particular, there are times in which I'm not cut out for the unplanned complications and detours that seem to crop up from time to time. Of all the things that I hate having to do, calling up a customer to inform her that more work is going to be needed than originally planned for tops the list. I therefore waffled for as long as I could. I sent an email (the coward's way out, I realize), informing her that there were some breakage problems, and that at some point in the future the hammers (which, as it turned out were badly fitted replacements, not originals – more on that later) and shanks should probably be replaced, but that for the time being I would do the best I could with what I had to work with.



*Photo 7: Fixing the symptom, not curing the problem.*

For several days, I glumly worked off and on repairing previous bad fixes. I even took the opportunity to shoot some pictures and write up an article for the Schaff webstore on splicing broken grand hammer shanks (Photo 7), rationalizing all the while that I was making the best of a bad situation.

Finally, however, after stewing in my own juices for the better part of a week, I screwed up my courage, and made the call that needed to be made. I informed my customer that I had come to the decision that the greater share of the action (both the stack and the back action) needed to be replaced for the simple reason that I had no confidence in the integrity of the original parts. If she would (gulp) consider covering the costs of new parts (I gave her a ballpark figure of what I estimated they would be), I would assemble everything and make whatever adjustments necessary - no charge for the extra labor involved (the only way I felt right about doing this).

Her reaction when I called, to my great relief, was upbeat. Do the research on what available parts would work the best, and let her know how much the bill would be. With that behind me, I went to work exploring the options available.

I had first of all inherited from my dad samples of every available wooden grand action part which he was able to purchase when he was doing quite a bit of this type of work. These had not been gone through and sorted, unfortunately, and were at that time located in various boxes and drawers around the shop. I started to pull things out of hiding places to see if there were any spot-on matches.

At that point in time also, I had been reading up on the composite action parts being offered by WNG. They looked very good to me, and the reviews I had been reading sounded very favorable. I called the company, therefore, and ordered an available sample kit, so that I could compare the wippen assemblies, and hammer flange / shank assemblies with the original parts of the Weber.

An expert in piano design / building I'm sure would have used this opportunity to apply modern design theory and come up with an all new and improved configuration for the action. For my own part, however, I simply wanted replacement parts that matched the original parts in design as closely as possible, whether wooden or composite. Having made the decision to do the job with new parts, I therefore waited for the package from

WNG to arrive at my doorstep to finalize my decision. My hopes were high and my heart once again afloat.

More as to where this adventure all leads next month. Stop by anytime – the coffee pot's on.

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