

Appendix A

Troubleshooting

“The truth knocks on the door and you say, ‘Go away, I’m looking for the truth,’ and so it goes away.”

—Robert M. Pirsig, author of *Zen and the Art of Motorcycle Maintenance*

Buzzes and Rattles

Sympathetic vibrations are often produced by objects in the room, not the piano itself. To locate the source, have an assistant play the affected note while you listen for the exact location. Any hard object that touches another hard object could be making the sound. Common culprits are the china closet, chandeliers, picture frames, and decorative objects, such as plates, jewelry boxes, and figurines—but don’t rule out loose panes of glass in windows, air-conditioning registers, even doorknobs and floor tiles. Of course, the buzz or rattle may come from the piano itself.

Metallic Sizzling Noises

A metallic noise that accompanies certain notes and gets worse the louder the note is played is usually caused by the agraffes and the V bar. See “Grooved V Bar, Agraffes, Bridge Pins” on page 132

Short Metallic Rattle During Loud Playing

In grands, first check whether there is any **debris** on the soundboard hidden under the plate. You may be surprised what you find there. Use a piece of wire, a long feeler gauge, or a soundboard steel (a long strip of steel used for cleaning soundboards) to sweep under the plate, under the bridge shelf, and in recesses under the tenor side of the long bridge. Sweep *away* from the rim, toward an area where you can see and pick up whatever you find. Also check the **hinges** in the lid prop(s), music desk, and fallboard. If the hinge buzzes when you tap it, tightening down its screws may help. Hinge screws are notorious for

being loose and cross-threaded—plug and redrill their screw holes if necessary. The hinge pin itself may buzz. You may be able to tighten the hinge around the pin with a pair of pliers (line the jaws with leather), but if that doesn’t work, remove the pin and coat it with cork grease.

In grands, make sure the **front lid** has soft rubber buttons where it sits on the large lid. Check the **lid lock**, if present—the **key** may buzz in it. Is the large lid latch (the big knob on the curved side of the piano) loose?

In verticals, the **music desk** itself sometimes vibrates against the fallboard when closed. In that case, install rubber buttons on the desk. Also check the moderator rail and its spring, if used.

High-Pitched Metallic Buzz near Keyboard

If the piano is equipped with a front lid lock, try depressing its **escutcheon** (a small metal plate) in the middle of the stretcher. If that stops the noise and the owner doesn’t use the lock, pad the escutcheon plate with cloth or felt, otherwise remove and rebuild it. In pianos with a folding fallboard or a folding front lip (such as modern New York Steinways B and D), the buzzing may come from the **fallboard hinges**. Repair as explained above.

Rattles

Rattles are usually caused by loose case parts and lids or by loose soundboard ribs.

In grands, a common source of rattles is the contact between the **large lid** and the rim—if the noise goes away when you insert some soft cloth or felt between the lid and rim, replace the rubber or felt buttons on the lid with softer ones. The **front lid** also may rattle against the main

lid, and the **lid prop** against the plate. Replace or install rubber or felt buttons. A closed **music desk** or its prop can rattle loudly. Tighten the parts, and install rubber or felt buttons as needed. If the **fallboard** rattles, replace the felts on end blocks or whatever keeps the fallboard from touching the stretcher. Make sure its hinges are tight and fastened down. If there are screws that go through the plate into the **stretcher**, tighten them.

In **verticals**, check all panels, and lubricate their contact points with plain bar soap and/or pad them with felt, if necessary.

If all of the above is fine, inspect the **soundboard** as explained on page 261.

Echo

Pianos with duplex scales tend to have a high-pitched ring after you release the keys. This is considered desirable by most pianists, but can be a nuisance if too prominent. In some cases the piano will seem to have an echo, with the ring swelling after the dampers fall back.

The ring can be caused by a bad damper, usually in the bass or low tenor, but the partials (aliquotes) are recognizable and are part of the harmonic series of that note. Play all notes of the bass section loudly to eliminate the dampers as the cause of the ring.

If the dampers work well, check the stringing braid in the backscale (between the strings behind the bridges). If the braid is missing or damaged in the bass and low tenor sections, weave in a new one there (if you have to work between the bass strings, wear gloves and be careful not to damage the soft copper windings on bass strings). If the echo is still present, continue weaving the braid in between the bridge and rear duplex terminations, from the low tenor up into the middle section. Stop every two to three trichords and test the echo. After you damp the backscale of several unisons this way, you will notice the overall sound of the piano getting duller. Balance that with the need to reduce the echo.

If the echo has discernible pitches, pluck the rear duplex segments with a guitar pick, and mute only those strings that produce the offending pitches.

Another way to address the echo is to retune the rear duplex in the affected area by tapping the duplex bars toward the bridge. However, you can't be sure of the outcome and may introduce a new echo. If you decide to try this, be aware that it's more difficult (or impossible, without damage) to tap duplex bars *away* from the bridge. Be prepared to retune the piano.

Action Noises

This section lists noises commonly generated by the keyboard, action, and backaction.

Creaking and Oinking

Grands: If you hear oinking noises when playing, or a creaking or crackling noise when you slowly depress a key, especially at let off (when the hammer is closest to the strings), you need to lubricate the jack, repetition lever, and knuckle. See step 44 on page 156.

Verticals: Creaking noises are usually caused by poor lubrication between the jack and the hammer butt leather. As a quick fix, remove the bridle strap from its wire and swing the hammer all the way toward the strings. Rub a soft lead pencil (5B or softer) on the leather. If this doesn't cure the noise, remove the hammer butt, then brush and lubricate it like the grand knuckle (step 44 on page 156). Hold the jack tripped with one hand as you reinstall the hammer butt with the other, to avoid damaging the butt felt. Reconnect the bridle strap.

Damper Creaks in Verticals

When pressing the damper pedal causes a creaking noise, the usual cause is excessive friction between the damper lift rod and damper lever felts. If there is a similar but quieter noise, or a faint squeal or oink, when you play individual notes, it may be generated by damper spoons on damper lever felts, or by underlever springs in underlever notches. To remedy, see steps 35–37 beginning on page 192.

Squealing

Squealing noises during playing are usually caused by center pins. Apply a center pin cleaner/lubricant, such as Protek CLP, to the affected pins (page 148), or, if the problem is systemic, replace center pins and bushings throughout (page 244). If the squealing emanates from key bushings, ease and lubricate (page 352) or replace them (page 347). Leather bushings are known to squeak and squeal. Lubricate them with powder lubricant.

Damper Felt Noises

The characteristic damper noise is a *zing* made when the damper falls back to the strings, especially when the key is released slowly (e.g., during expressive *legato* playing). Following are the conditions that contribute to that and other noises related to damper felts. (Mechanical noises in the damper system are discussed above.)

- **Hard damper felt** and string oxidation on the felt makes damper emit a **zing** noise on return. This can be very frustrating to the pianist, because the noise seems worst during soft and expressive *legato* passages. To determine whether the damper felt is the culprit, play the note loudly and release it slowly. If the damper makes a metallic noise, the best solution is to replace it. If that is not an option, try to remedy it as explained in step 19 on page 190.
- **Dangling tips of trichord wedges:** When played loudly, strings will touch the tips of damper felt wedges