

Can You Fix This?

What to expect from your piano technician

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Download at:
<http://pianosinsideout.com/Classes.html#CanYouFixThis>

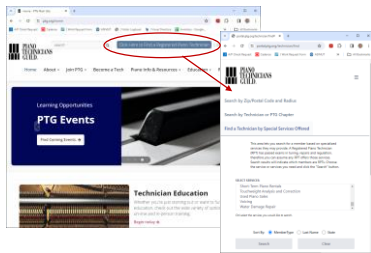
April 2, 2024

Technician skillsets

- Piano tuner
 - Tuning, repairs, maintenance
- Concert technician
 - Fine regulation, voicing
- Action rebuilder
 - Action parts, keys, dampers, strings?
- Piano rebuilder
 - Soundboard, pinblock, refinishing, strings, dampers

Finding a technician

- Recommendation
- College techs
- Rebuilding shops
- Piano dealers
- Ptg.org



Maintaining your piano

- Tuning 1-4 times a year
- Thorough service (1 or 2 days) every 2-3 years
 - Cleaning (grit = noise = premature wear)
 - Lubrication
 - Rejuvenating felts and cloths (e.g. key bushings)
 - Action regulation
 - Reshaping hammers
 - Voicing

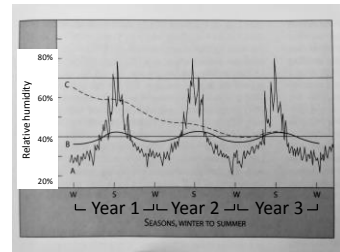
Maintaining your piano

- Control humidity
 - Ideal: 40-50% RH
 - Tolerable: 30-60% RH



Humidity

- Seasonal changes



Bruce Headley, Understanding Wood, p. 135

Humidity

- Seasonal changes
- Pitch follows humidity

Bruce Hoadley, Understanding Wood, p. 135

Humidity

- Seasonal changes
- Pitch follows humidity
- Sustain gets shorter with time
- The tone dies!

Bruce Hoadley, Understanding Wood, p. 135

Humidity

- Expansion, contraction (in piano soundboard: across the grain)

Humidity

- Expansion, contraction (in piano soundboard: across the grain)
- But wood is constrained:
 - Ribs

Humidity

- Expansion, contraction (in piano soundboard: across the grain)
- But wood is constrained:
 - Ribs
 - Glued to rim

Humidity

- Compression set

Bruce Hoadley, Understanding Wood, p. 129


Humidity

- Soundboard has nowhere to go



Humidity

- Soundboard has nowhere to go ... but up and down, affecting pitch



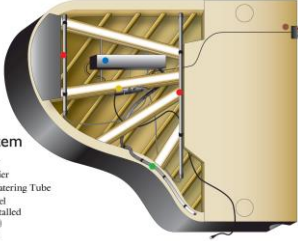
Humidity

- Wood eventually cracks



Humidity solutions

- Damp Chaser's Piano Life Saver System
 - Dehumidifier only
 - Full system



The System

- Humidifier
- Dehumidifier
- Easy-Fill Watering Tube
- Light Panel (Can be installed out of view)
- Humidistar

Humidity solutions

- Dehumidifier



Humidity solutions

Humidifier
Whole-house evaporative type with automatic control

- <https://www.amazon.com/HD1409-Whole-House-Console-Style-Evaporative-Humidifier/dp/B00KV8CLA/>
- Additive:
<https://www.amazon.com/Chemical-Humidifier-PRODUCT-CANNOT-SHIPPED/dp/B01LX7ECB2/>

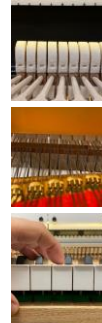


Tuning

- Pitch a440?
- Pitch correction
- Temperament
 - Octaves
 - Fifths narrow
 - Fourths wide
- Unisons
- False beats
- New strings

Action

- At rest



Action

- Damper lift



Action

- Escapement bump



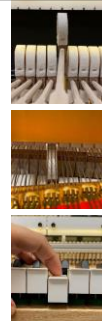
Action

- Letoff



Action

- Drop



Action

- Back-checked

Action

- Rise from backchecked (repetition spring)

Action

- Playing "off the jack"
 - Keep pedal depressed
 - Press key to escapement bump
 - Push key down

Playing "off the jack"

Playing "off the jack"

Touch

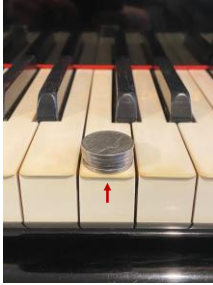
- Downweight
 - 10 nickels (44-52 g)

Keep the pedal down
Help the key go down first 2-3 mm

Touch

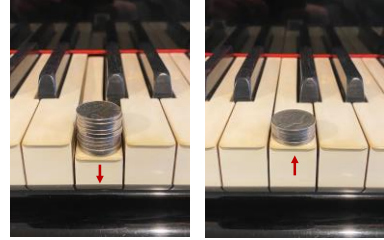
- **Upweight**
5 nickels
(20-28 g)

Keep the pedal down
The key doesn't have to go all the way up



Touch

- Why discrepancy?
- Friction!



Touch

- **Too much friction** (high downweight, low upweight):
 - Added resistance
 - Sluggishness (slow key return, poor repetition)
- **Not enough friction** (low downweight, high upweight):
 - Feels flyaway
 - No control
 - Feels like electronic keyboards

Touch

- **Static balancing** (affects *pp*)
 - Resistance to force
- **Inertia** (affects *ff*, repetition)
 - Resistance to acceleration
 - Heavy hammers: greater inertia

Touch

- **Key dip**
(9.8 – 10.4 mm)
- **Sharps height**
(12.2 – 12.7 mm)
- **Sharps dip**
(1 – 3 mm above naturals)



Touch

- **Excessive key dip**
 - Fingers move a greater distance
 - Distance is doubled:
0.1 mm extra dip = 0.1 mm taller sharps
 - Fatigue—feels like heavier action

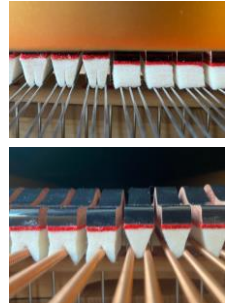


Tone

- Volume, brightness, power, projection
- Sustain, bloom
 - Pluck vs. hammer
- Room acoustics
- Old piano sound

Dampers

- Noise (whoosh)
- Effect on touch
 - Bass: up to 35 grams
 - Treble: 0 grams (no dampers!)
- Timing to key
 - Late damper lift: dry, light
 - Early damper lift: juicy, heavier
- Timing to pedal
- Upstop rail adjustment
 - Sharp key and pedal depressed:
damper moves up a small distance



Pedals

- Damper (right)
 - Lost motion (5-8 mm)
 - Depth of motion
 - Noises
- Sostenuto (middle)
 - No lost motion, no clanking
- Una corda or shift pedal (left)
 - No lost motion
 - Smooth shift
 - Full return
 - Slapping noise on return

Pedal height
(floor to top of pedal: recommended 50-70 mm)



2010 Hamburg D: 52 mm

1981 NY L: 96 mm
(larger replacement casters)

Strings

- Breaking
- Replacing
- Bass strings (rattles?)
- Rust
- Going out of tune
 - Tuning pins slipping?
 - String slipping?

Noises

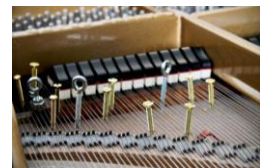
- Clicks
 - Before impact (key, damper)
 - On impact (hammer, key frame)
 - After impact (backcheck, action parts)
 - After release (action parts)
- Clatter (debris, looseness)
- Rattles, buzzes
 - Fallboard lip
 - Hinges
 - Lid prop
 - In the room?



<https://darksphoto.com/photo/less-than-grand-piano-14963/>

Prepared piano

- Degrease your hands
(alcohol wipes, cotton gloves, nitrile gloves)
- Careful with dampers!
- Use blue tape for labels
- Mark nodes with Sharpie
(cleanup with alcohol)
- No steel for sliding or plucking!
Rulers, credit cards, brass bars OK. Chisels are NOT!
- Bass strings (copper winding is soft)
- Bowing strings (no rosin on bass strings!)
- Screws, bolts (Cage)
Keep damper pedal depressed!



<https://www.acordimercan.org/2016/05/11/concert-preview-john-cage-corazis-and-interlude-ga-with-jesse-meyer/>

Q&A

Thank you!

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