

# Advanced Topics in Tuning Stability

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### 3 Sad Stories

The Mystery Tuner  
Schumann Fantasy  
Cecile Licad

### External factors:

- Stage lighting
- HVAC
- Outdoor concerts
- Sun on the strings
- Working with, not against, seasonal changes
- Humidity control

### Preparing the Piano for Tuning

- Tighten plate and pinblock screws
- Seat strings at hitch pins
- Seat strings on bridge
- Tighten/straighten tuning pin coils

### Tuning technique

- Analyze the existing tuning
- Tuning hammer technique

Start by putting counterclockwise pressure on the pin

Always make sure the pin turns in its entire length in the pin block

Except sometimes

Move the tuning pin in the smallest possible increments

Bring the tuning pin slightly sharp of desired ending pitch

By a process of “bracketing” the pitch, find the center and leave the pin

“centered”

Strike the key firmly enough to aid in equalizing string tensions between speaking and non-speaking lengths

Try to make your last movement the same on each pin.

- How hard to hit?
- The forearm smash

### **The Theory of Reactivity**

- Tuning pin tightness vs string-bearing friction
  - Tight tuning pins increase reactivity
  - Low bearing friction increases reactivity
  - No tuning pin bushings increases reactivity
  - Looser tuning pins decrease reactivity
  - High bearing friction decreases reactivity
  - Tuning pin bushings or open-face pinblock reactivity
  - In general, newer (or recently restrung) pianos tend to have more reactivity than older pianos because bearing friction tends to increase over the time and tuning pins tend to get less tight over time
  - In general, those tuning pins closer to the bearing points will be more reactive than those farther away
  - Understanding the concept of reactivity and knowing how to approach different reactivity characteristics are important for solid and efficient tuning
- Dealing with low and negative reactivity
  - String lubricants
  - Lifting strings at understring felts
  - Tuning hammer position: Closer to 3:00 on grands, 9:00 to 11:00 on verticals (it helps to be left-handed).
  - Tuning hammer technique: less or, in negative lag, no overshoot. Less or no centering of pin.
  - Testing the string

- Dealing with high or excessive reactivity
  - Tuning hammer position: Closer to 12:00
  - Tuning hammer technique: Push down on tuning lever (grands) when raising pitch to decrease overshoot and increase control
  - Expect more overshoot
  - Centering the pin is critical

#### The Art of Touching Up a Tuning

- Why touch up?
- How long do you have?

#### Troubleshooting tuning instability

- Hammers fitted to strings?
- Strings seated?
- String camming
- Unisons: dead-on, or on the edge?

A happy story! Evgeny Kissin