threaded | spinning | abrading | possibly breaking 4.3.1
4.3.2
4.3.3_m

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This document contains information for how to stage the installation/performance piece *threaded | spinning | abrading | possibly breaking*. Each performance of this piece is given a unique code, 4.3.3_m for example, that gives the number of instruments used; the number of turntables used; and a number that is a running tally of instances of this particular number of instruments and turntables. A code can be appended by '_m' if the installation is interacted with by performers.

If wishing to incorporate more instruments/turntables, and for finding out which instance of a particular setup a staging of this piece would be, please contact the composers.

materials

- 3 variable speed turntables with pulley attachments
- classical guitar
- acoustic guitar
- viola
- 3/4 size violin restrung with viola strings
- 0.45mm monofilament fishing line covered with powdered double bass rosin
- colourful hard-cover bound pocket-size music scores

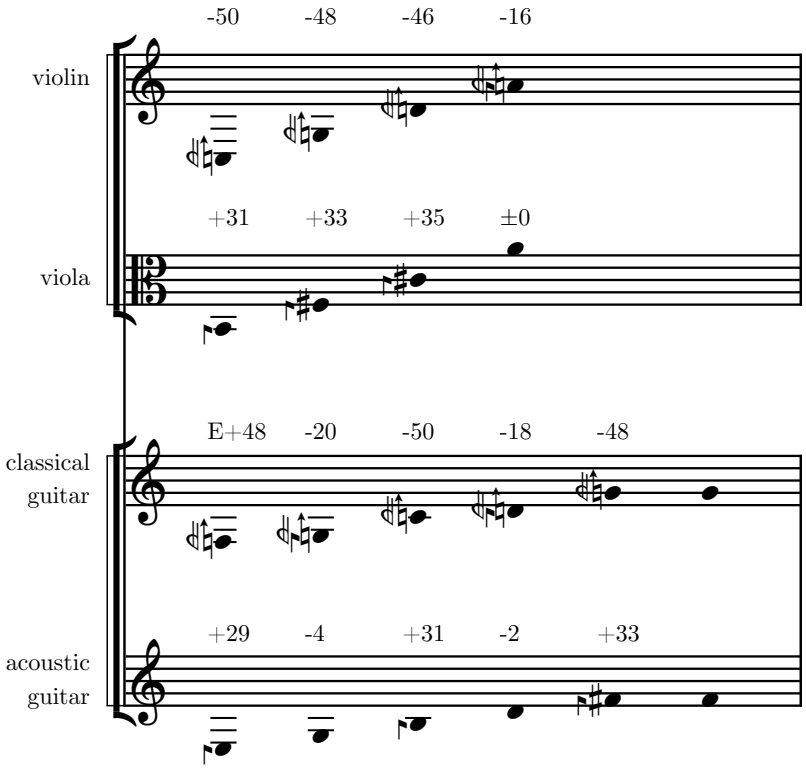
Optional:

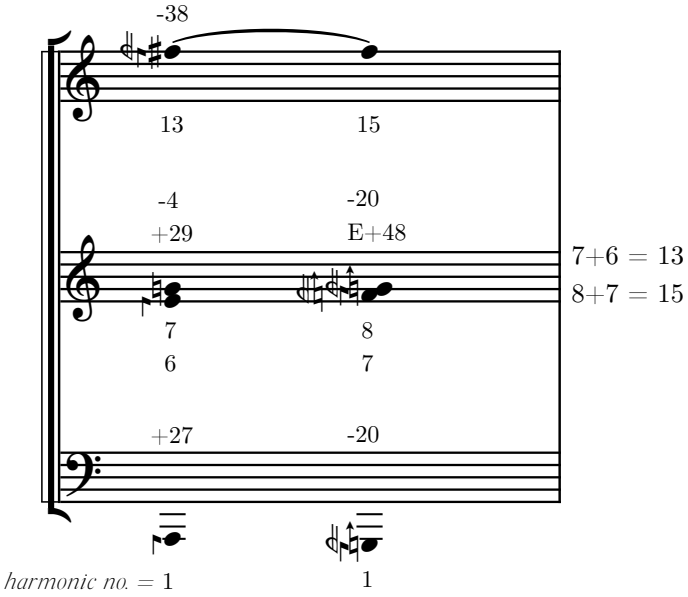
- preparations: foil, brass pins, aluminium paper clips, ebow(s),etc.*
- light amplification: 4 (or ideally 7) cardioid instrumental condenser microphones, and sound reinforcement speakers**

*The choice of preparations and how to then incorporate them into the system is quite free, some ideas might include: draping small sheets of foil over the fishing line between two instruments; chains of paperclips attached to either fishing line or an instrument; brass pins attached to the strings of an instrument.

**each instrument should be amplified individually, and if seven microphones are available, each turntable should be amplified (with the microphone directed towards the centre of the turntable). Speaker configurations can be explored freely.

string tunings



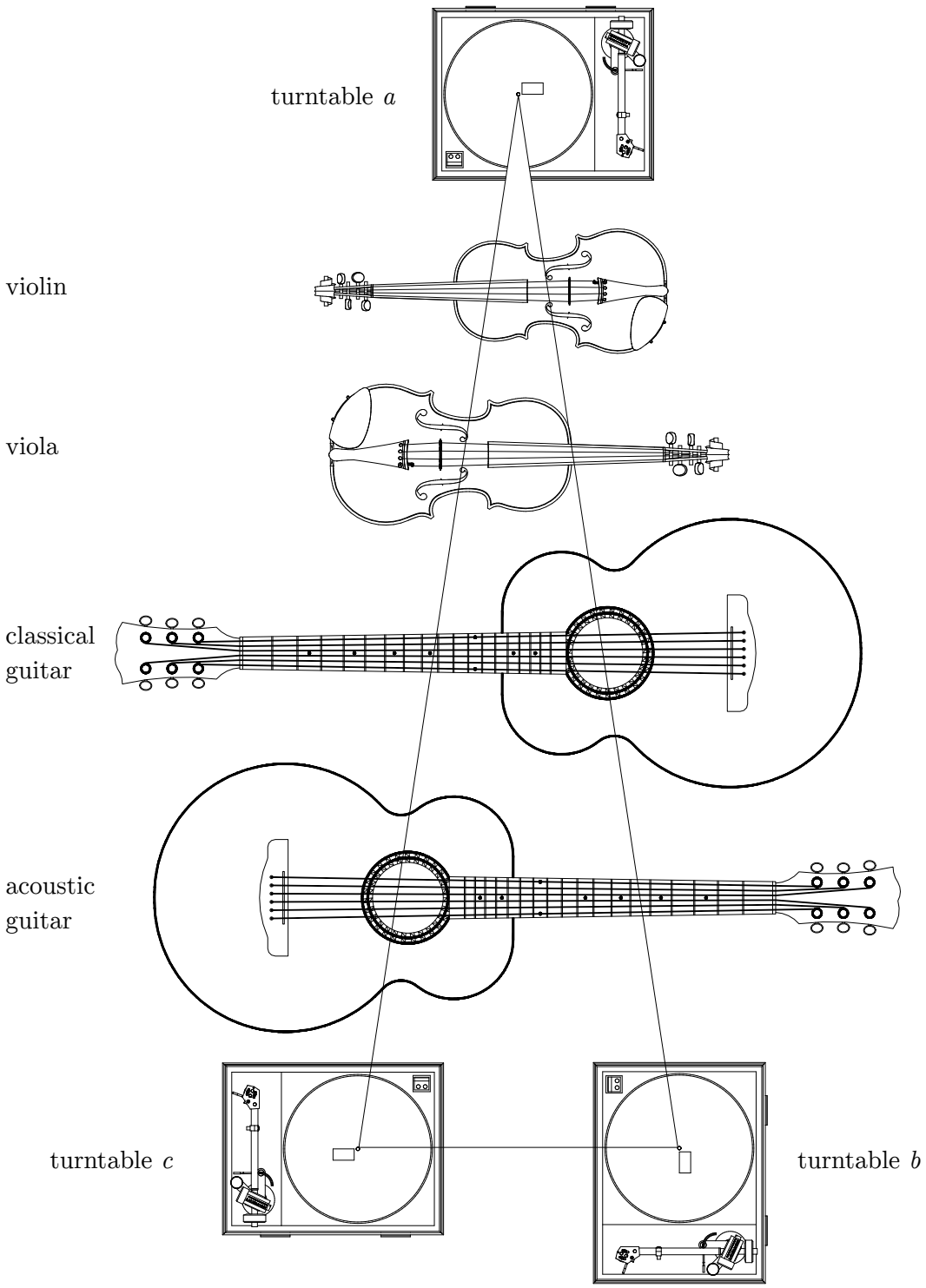


The second system shows some of why the tunings are the way they are: the lowest two open strings of the acoustic guitar move very slightly inwards in contrary motion to create the lowest two strings of the classical guitar, with both intervals sharing the same combination tone—7:6 (267 cents) moving to 8:7 (231 cents).

The rest of the tuning is an opening of harmonic space in 3:2 fifths

A very specific *out of tune* tuning

layout



There is the possibility of extending the system by moving turntables *b* and *c* away from the rest of the system by an arbitrary amount (several meters say), everything else should remain as shown in the diagram (instruments and turntable *a*). Though do keep in mind that this will affect the *composition* of the piece as the plucking sound achieved through the knot in the fishing line passing over the strings of each instrument will occur less frequently. With this in mind though, there is no ideal, those setting up this piece are free to experiment until a pleasing result is found.

set up

- Arrange the materials as shown in the diagram, pulleys should be attached to the centre-pin of each turntable.
- Cut a portion of fishing line with a distance long enough to extend round the system of turntables and tie a knot in it to create a loop, apply a small amount of heat to the knot to seal it (such as from a cigarette lighter).
- Place the loop of fishing line around the pulleys (attached to the turntables) (as shown in the diagram).
- The instruments should be aligned so that the loop of fishing line crosses both guitars over their sound holes and again over their fingerboards.
- Thread the loop under string III (though you may also experiment and choose a different string) of both the violin and viola (similarly, it could be a different string for each instrument) with it crossing the instruments at approximately normal bowing position and again over the fingerboard (as shown in the diagram).
- After all this, the fishing line should be relatively taut, realign the system if necessary to achieve this.
- Turn on all the turntables, the fishing line should pass over the instruments, bowing them, and lightly plucking them when the knot passes over their strings.
- While the system is on, and this may either be done prior to or during an installation/performance, apply the powdered rosin to the fishing line. This may be periodically re-applied or not and the amount of rosin used can be experimented with to find a desired sound.
- The hard-cover scores should be used to help position the instruments in relation to the fishing line: explore angling the violin and viola, tilting them on their side; and/or resting the instruments upon the scores to raise the instruments. Each instrument's response will vary depending on its contact with the fishing line and so the hard-cover scores are used to secure instruments in different positions while experimenting with finding different sounds.

performance

Performers are welcome to devise their own scenarios but here are two suggestions.

1) once the system has been running for an unspecified length of time, two performers enter the concert space: they proceed to slowly rosin the fishing line; after leaving the system to run for an unspecified length of time they may either repeat rosining the fishing line or proceed to detuning all of the instruments until all strings are completely slack—exploring this process freely—during which one may also experiment with the positioning of the instruments as well; once all the strings are completely slack (the bridges of the violin and viola may have also collapsed), proceed to turn off the turntables one by one.
2) Again, once the system has been running for an unspecified length of time, two performers enter the concert space: rosin the fishing line, leaving/repeating as desired, they proceed to slowly explore variations of pitch achieved by detuning/retuning the instruments, moving away from and returning to pitches, perhaps also moving towards the pitch of another instrument; this should then be followed by the first performance option (detuning all strings and turning off the the turntables one by one).