Reference pitch

Go through the compositions for the entire performance. Assess the named notes that are required. List the naturals, sharps, and flats separately: for example, if the composition needs both F-natural and E-sharp, these are two different notes.

Lean toward 1/6 comma in the naturals, rather than 1/4 comma. The differences between sharps and flats will be less severe, and easier to handle gracefully.

Does the music have many major 10ths or 17ths above the bass, where the bass note has a flat? 1/4 comma or 1/5 comma in the naturals might work OK.

Will the keyboard be played with other instruments, especially fretted or unfretted string instruments? Yes Lean toward 1/6 comma in the naturals, rather than 1/4 comma. 1/4 comma may be too tight for the fretted instruments, especially.

1/4 comma or 1/5 comma in the naturals might work OK.

Lean toward 1/6 comma in the naturals, rather than 1/4 comma. The differences between sharps and flats will be less severe, and easier to handle gracefully.

Do the keys for the entire performance stay near D minor, G minor, F major, C major, and G major? Yes Lean toward 1/6 comma in the naturals, rather than 1/4 comma.

1/4 comma or 1/5 comma in the naturals might work OK.

This is a continuum of tasteful adjustment, not necessarily hitting any given comma size exactly.

The core of a temperament is the set of naturals C-G-D-A-E, tuned “regularly” with the same amount of slight narrowing each. The above questions, and other musical experience, have helped to determine what that regular size ought to be: somewhere in the range of 1/4 to 1/6 comma, or occasionally as lightly as 1/8 comma.

By default, the remaining notes are generated with the same regular size that was used in the core naturals. C-F-Bb-Eb and E-B-F♯-C♯-G♯.

Reset naturals

Although other instruments will not be matching the keyboard’s placement of every note exactly, some attempt should be made in tuning the keyboard to accommodate the schemes of the other instruments that will be played with it. Other instruments do not play “in temperaments”.

There is no expectation yet that Eb and G♯ will connect with one another, or ever be used together.

Ideally, this should be C, or a second choice of F. The use of A as a reference is both less historically sound, and more problematic in practice.

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Adjustments

Need both G# and Ab?
- Yes: Raise it to a compromised position at or near the midpoint in E-G# and Ab-C. Consider also lowering Eb, and/or raising C#, to improve those 5ths with G#/Ab. Check the semitones melodically: G#-A, G-Ab. Check the tones melodically: F#-G#, Ab-Bb.
- No: Lower it to a compromised position in B-D# and Eb-G. Consider slightly raising B. Consider lowering Bb. Consider raising G#, if you didn’t already. Check the semitones melodically: D#-E, D-Eb. Check the tones melodically: C#-D#, Eb-F.

Need both D# and Eb?
- Yes: Raise it to a compromised position at or near the midpoint in A-C# and Db-F. Check for a good 5th from G#, maybe slightly impure in either direction. Consider slightly lowering F. Consider raising G#. Consider raising G#, if you didn’t already. Check the semitones melodically: C#-D, C-Db. Check the tones melodically: B-C#, Db-Eb.
- No: Lower it to a compromised position, but keep Bb-D better than F#. Consider slightly lowering F. Consider raising F#. The 5ths Eb-Bb and Bb-F might be slightly impure in either direction, or possibly pure. Check the semitones melodically: A#-B, A-Bb. Check the tones melodically: G#-A#, Bb-C.

Need both C# and Db?
- Yes: Lower it to a compromised position in B-D# and Eb-G. Consider slightly raising B. Consider lowering Bb. Consider raising G#, if you didn’t already. Check the semitones melodically: D#-E, D-Eb. Check the tones melodically: C#-D#, Eb-F.
- No: Raise it to a compromised position at or near the midpoint in E-G# and Ab-C. Consider also lowering Eb, and/or raising C#, to improve those 5ths with G#/Ab. Check the semitones melodically: G#-A, G-Ab. Check the tones melodically: F#-G#, Ab-Bb.

Need both A# and Bb?
- Yes: Slightly raise F#, keeping good 5ths B-F# and F#-C#, possibly pure, possibly slightly impure in either direction. Keep D-F# smaller than Gb-Bb. Consider also lowering Bb, and/or raising B. Check the semitones melodically: F#-G, F-Gb. Check the tones melodically: E-F#, Gb-Ab.
- No: Consider raising C# or slightly lowering F. Recheck the C#/Db relationships with its neighbors. Keep Bb-F pure, or slightly impure in either direction. Keep F-C regular, or slightly less tempered, or perhaps pure, but probably not wide. If you moved F, check F-A. Check the semitones melodically: E#-F#, E-F. Check the tones melodically: Eb-F, F-G.

Need both B and Cb?
- Yes: Consider raising B. Keep E-B regular, or slightly less tempered, or perhaps pure, but probably not wide. Keep B-F# regular, slightly less tempered, or perhaps pure. Keep G-B narrower than B-D#. Check the semitones melodically: B-C, Bb-Cb. Check the tones melodically: A-B, B-C#.
- No: Assess results

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There is too much space between the flats and sharps to make convincing compromises. The contrasts are too strong. Choose a lighter amount of tempering for the core naturals.

Was it necessary to compromise more than two or three accidentals for double duty?

Yes

Reset naturals

No

Play through the program to assess the sound of the music in practice, and not merely in speculation from the required notes. You might be finished with the task of tempering.

Are your musical colleagues able to perform with it without serious problems?

Yes

No

Consider using a different regular size in the core.

Does the overall sound match your artistic and historic goals?

Yes

No

Go back to its decision point, and correct that note.

Do any individual notes sound “wrong”?

Yes

No

Assess results

If your temperament must be reproducible, take notes where everything ended.

Yes

Finished!