

A review by Declan Clark (AKA) Xotla of

John O'Sullivan's book...

Eagle 53: My Ultimate Musical Tuning

Posted on Facebook: The Xenharmonic Alliance - Mathematical Theory

16th February, 2019

John O'Sullivan recently and generously sent me his book Eagle 53: My Ultimate Musical Tuning, to give a short review on. Just from the outset, the amount of careful thought and time put into designing this scale is incredibly impressive, and his book lays out his process and techniques of constructing and using the scale in a way that really caught my interest as someone who likes to try to tinker with why things work, including abstract things like musical scales. I'll link here a short piece of music I composed using the scale, and will continue to use it into the future.

His book is filled with insights not only into this tuning but into tuning theory in general, how he mathematically determines the strength of intervals to build scales, and his journey in discovering this tuning in particular. There's a good reason he settled on this scale as his ultimate tuning, as it is very dynamic and serves very well as a powerful alternative to 12 equal temperament, replacing each note with a differently tuned alternative to aim to maximise consonance and introduce some higher limit consonance too.

The Eagle 53 scale, a 12 note subset of 53 equal temperament, brings a huge number of 5 odd limit chords to within 1.6c of just intonation, and introduces a handful of interesting xenharmonic ones involving higher harmonics (with lots of interesting ratios involving 7 for those aware of the result of tempering the 225/224 comma, like making a major third plus a supermajor third equal a minor sixth). This allows for hugely powerful chord progressions with very interesting ornamentation. \*\*\*Every note, with the exception of the tritone, has on it at least one of a major (4:5:6), minor (10:12:15), or second inversion major (3:4:5) chord

within a miniscule 1.4c of just!\*\*\* The roots of these chords are within again a tiny 1.6c of 1/1, 16/15, 9/8, 6/5, 5/4, 4/3, 3/2, 8/5, 5/3, 9/5, and 15/8, making the whole scale incredibly close to just while having a huge number of chords! My understanding is that Eagle 53 aims to be an alternative to 12 equal temperament where most 12edo music could be transcribed into Eagle 53 and increase significantly in purity of most chords, and it does this very well.

While composing with Eagle 53, it outdid my expectations. This scale's flexibility in both a diatonic context and in a more exotic context cannot be understated. It never feels like a scale or progression is sacrificing purity, even when more xenharmonic chords show up around the tritone, they always feel like a natural part of the scale. I'll definitely be using it more in the future.

I believe John's book would be an invaluable resource for anyone who is looking to use Eagle 53 or particularly looking to create their own scales with some fantastic wisdom from someone who spent many years developing his own. I have already taken many of his learnings from his book and applied them to try to create my own scales with their own twists on Eagle, and to a good result. More on that in the future. I really have a very strong respect for the way this book discusses John's discoveries too, and how ever-changing theories are a natural part of learning.

The book contains detailed lists of intervals and assigned strength values, analyses of chords and what makes them work, and some really interesting and unique discussions of the construction of scales in general with reference to some of John's older scales. It also lays a really solid groundwork for people who are less familiar with tuning theory and microtonality so it never feels too complicated even when the subject matter is intrinsically complex, making it a useful resource to both knowledgeable microtonalists and those who are new to the whole tuning paradigm.

His book has definitely earned a place among my go-to compositional resources.

Visit John's website to learn more about his tunings and to get his book!  
[www.johnsmusic7.com](http://www.johnsmusic7.com)

Hear my piece in Eagle 53!

<https://www.youtube.com/watch?v=sIsfYQATouc>

## END OF DECLAN'S REVIEW

John O'Sullivan's words...

Declan made one mistake in his review (see the sentence beginning and ending with \*\*\*).

Eagle 53 is very close to this just scale...

1/1, 16/15, 9/8, 6/5, 5/4, 4/3, 7/5, 3/2, 8/5, 5/3, 9/5, 16/15, 2/1

Here are the chords that are available in Eagle...

A Major chord is 4:5:6 or 2:3:4:5:6:8

A Minor chord 10:12:15 or 10:15:20:24:30:40

Three chords that I consider to be "beatless" are 2:3:4:6:8,  
and 4:5:8:10:16 and 7:10:14:20:28.

All of the intervals in all of the chords listed below are within 1.41 cents of just except for the chord on the tritone (7/5).

1/1 Major and Minor

16/15 Major

9/8 4:5:8:10:16

6/5 Major

5/4 Minor

4/3 Major and Minor

7/5 7:10:14:20:28. (All intervals are within 8.474 cents of just 20/7~17/6)

3/2 Major and Minor

8/5 Major

5/3 Minor

9/5 4:5:8:10:16

15/8 Minor

There are thousands of other chords available, I'm just listing the obvious ones here.

John O'Sullivan

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[www.johnsmusic7.com](http://www.johnsmusic7.com)