

Bathroomity is a measure of "g.d. this place is too reverberant/echoey and/or too loud given the very few people talking in here!", and is proportional to reverb time T divided by volume V , i.e. in formula form:

$$B \propto T/V,$$

such that for the average bathroom* we set $B = 1$ Crapper, the units being named after Thomas Crapper, popularizer of the flush toilet (though not its inventor). To allow for various sound speeds, S , we could let

$$B \propto ST/V.$$

(To convince yourself that S needs to go in the numerator and not the denominator, you need only agonize over it for half an hour in case it's not immediately obvious.)

To calibrate this numerically in various unit systems, we need a constant of proportionality which we dub H , the Harrington Constant, named after John Harrington, as in "the John," actual inventor of the flush toilet. H has (pseudo-) dimensions of Crappers * length².

Thus we arrive at the final formula for bathroomity:

$$B = HST / V,$$

or as one anonymous educator recently put it,

$$B = SH^*T / V. \square$$

*which we shall physically formalize in an underground vault in Sèvres, France and designate as the International Standard Bathroom or ISB (Norme Internationale de Bain or NIB in French). The ISB is what will determine the value of the Harrington constant.

FAQ:

1. What is the significance of the Harrington constant?

Answer: One might speculate it represents the surface area of the "average bathroom", with an obvious tie-in to the Sabine equation. Not sure at this time.

2. Why does bathroomity depend only on the room's volume and not its surface area (too), as with the Sabine equation?

Answers:

- a. No good reason.
- b. Because it's a psychological effect, which seems intuitively (to me) to have more to do with volume than surface area, and given that most bathrooms are around 8 feet tall and fairly similarly shaped, it's unlikely to make much of a difference. ;-)
- d. Because, shut up, that would make it too much like the Sabine equation!! >:-[
- e. Volume is much easier to compute than surface area (just take area of floorpan * height).

3. What is the value of the Harrington constant (aka the "Harrington Area")?

Answer: Depends on whether we're using SI or Uhmer'can units of course, but this would require *actual measurements* anyway (screw that). In SI, I'd guess it's around 1/16, imagining an average room with a 0.5s reverb time and $V = (2m)^3$.

4. This is all a joke, right?

Answer: Most definitely.

5. Are you going to try to publish this?

Answer: Maybe! Is there something like the Journal of Irreproducible Results, only for deliberately silly

theoretical work? For example, the Journal of Poor Speculation or something? If so, let me know.

6. What *is* the relation of bathroomity to Sabine (or other forms of) absorption?

Answer: Dunno. Don't care. Actually that's not true, which is really sad. I'll probably spend the rest of the evening working it out. But without the surface area information, it seems kinda meaningless to try.

7. Can you derive the Bathroomity Equation from first principles?

Answer: If you can even *define* "bathroomity" using first principles, you are the greater physicist and I bow to you. Even the Sabine Equation is purely empirical.

8. Why do you keep referring to the Sabine equation when you should be referring to the Eyring-Norris equation and/or the Millington-Sette formula?

Answers:

a. Get off my back, man!

b. All three equations have the same functional dependence of Volume/Area, but the absorption coefficients are defined differently.

9. Yeah, how come absorption doesn't enter into the bathroomity equation?

Answer: Pretty much for the same reasons as given for question 2, above.