

# LETTERS

## "Red-Face" Department

Sir:

I wonder whether there isn't a numerical slip, which might cause confusion, in Mr. Herlocker's article "Electronic Organ Tuning" (AUDIO for December, 1961). After examining his handy Table in Fig. 1, it seems to me that the 'indicated number of seconds' should be reduced by a factor of two, or that the frequencies assigned to the notes on the keyboard should be reduced by this same factor (i.e., that all notes should be lowered by an octave).

Consider, for example, the first fifth listed in the table, from A at 220 cps to tempered E at 329.63 cps. It is quite true, as Mr. Herlocker states, that in tempering the note E we have to reduce its frequency by 0.37 cps, i.e. from 330 cps to 329.63 cps. It is also true that if we were to sound untempered E at 330 cps together with tempered E at 329.63 cps we would have beats at the rate of 0.37 cps. However, it does not follow that we hear beats at this same rate when we sound together the note A and the tempered note E. In the latter case, the beating notes are the third harmonic of A at 660 cps and the second harmonic of E at 659.26 cps, so that the beat rate is 0.74 cps, rather than 0.37.

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Mr. Herlocker's Reply:

I have checked my figures, both mathematically and experimentally, and find, of course, that your values for tempering of the tones are correct. As you pointed out, beating one tone against another a fifth higher effectively beats the third harmonic of the first tone against the second harmonic of the second tone. For a given number of cycles per second detuning the second tone (as in tempering the scale), this beating of the harmonics will give twice that number of beats per second. The caption for my chart, therefore, should be altered to read that "fifths are flatted by *twenty* beats in the indicated number of seconds."

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## Kit Magazine

Sir:

I have been aware for years that AUDIO is a progressive magazine. My December issue has convinced me that it is also a novel magazine. The concept of issuing such a publication in "kit form" is certainly novel. However, I did not receive all of the parts for my kit. I would appreciate it if you would forward to me the copy for pages 60, 61, 64, 65, 68, 72, 73, 76, 77, 80, 81, 84, 85, 88 and 89, so that I may paste it in on the blank pages. As an alternate, a nice fresh, complete copy would do nicely.

DANIEL A. RICE  
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(Our experiment with a kit magazine proved to be unsuccessful. We are discontinuing production of this model and will replace it with a factory-assembled unit. Ed.)