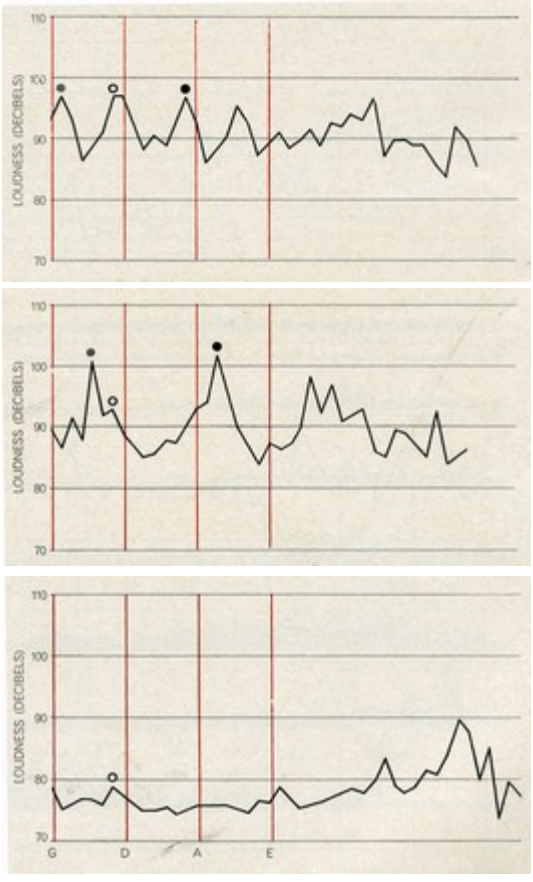
VIOLIN "LOUDNESS CURVES"

To make a “loudness curve” a violin is bowed normally, but without vibrato, at semitone intervals over its entire range to produce the loudest tone possible at each note. A sound level meter records the loudness of each tone. I often comes as a shock to a musician to discover his instrument is much louder at certain notes than others.

[Here we] compare the maximum sound levels produced at semitone intervals by



- a good 1713 Stradivarius *(top),*
- a poor 250-year-old violin of doubtful origin *(middle)* and
- a poorer, somewhat older instrument credited to P. Guarneri *(bottom).*

Only the first shows desirable spacing and strength of the key resonances:-

- wood (black dot),
- "wood prime" (gray dot) and the
- air (open circle).

Letters at bottom indicate tuning of open strings.

[extract from “The Physics of Violins” by C M Hutchins, SciAmcn, Nov 1962, p. 87]