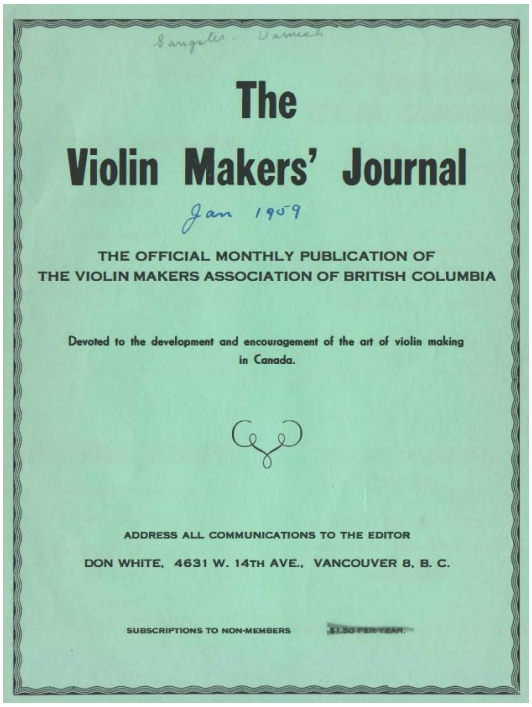
Dear Fellow Luthier,

In the spirit of the VMABC of old, we are going to attempt to put out a regular series of short informal newsletters to highlight activities of the group, and to generate interest in, and awareness of, the upcoming Competition and Exhibition (March 13th, 2027).



As some of you will know, the Association put out "The Violin Makers Journal" each month from 1957 to 1964. This publication was widely read beyond this province, and was influential in starting similar ventures south of the border.

Some of these journals stretched to 40 pages, including many articles written by members, and extensive advertising. I love the fact that Don White, who edited the journals in 1959, lived across the road from the house I have lived in since 1993. A neighbour of mine, a resident of the street since his birth in 1954, remembers seeing violins hanging on White's back deck, varnish curing in the sun.

Again, between 1992 and 2002, the Association put out more modest newsletters called "The BC Sound Post". It is in this spirit, that we try again...

Chris Waltham - President, VMABC.

The BC Sound Post

August 2026

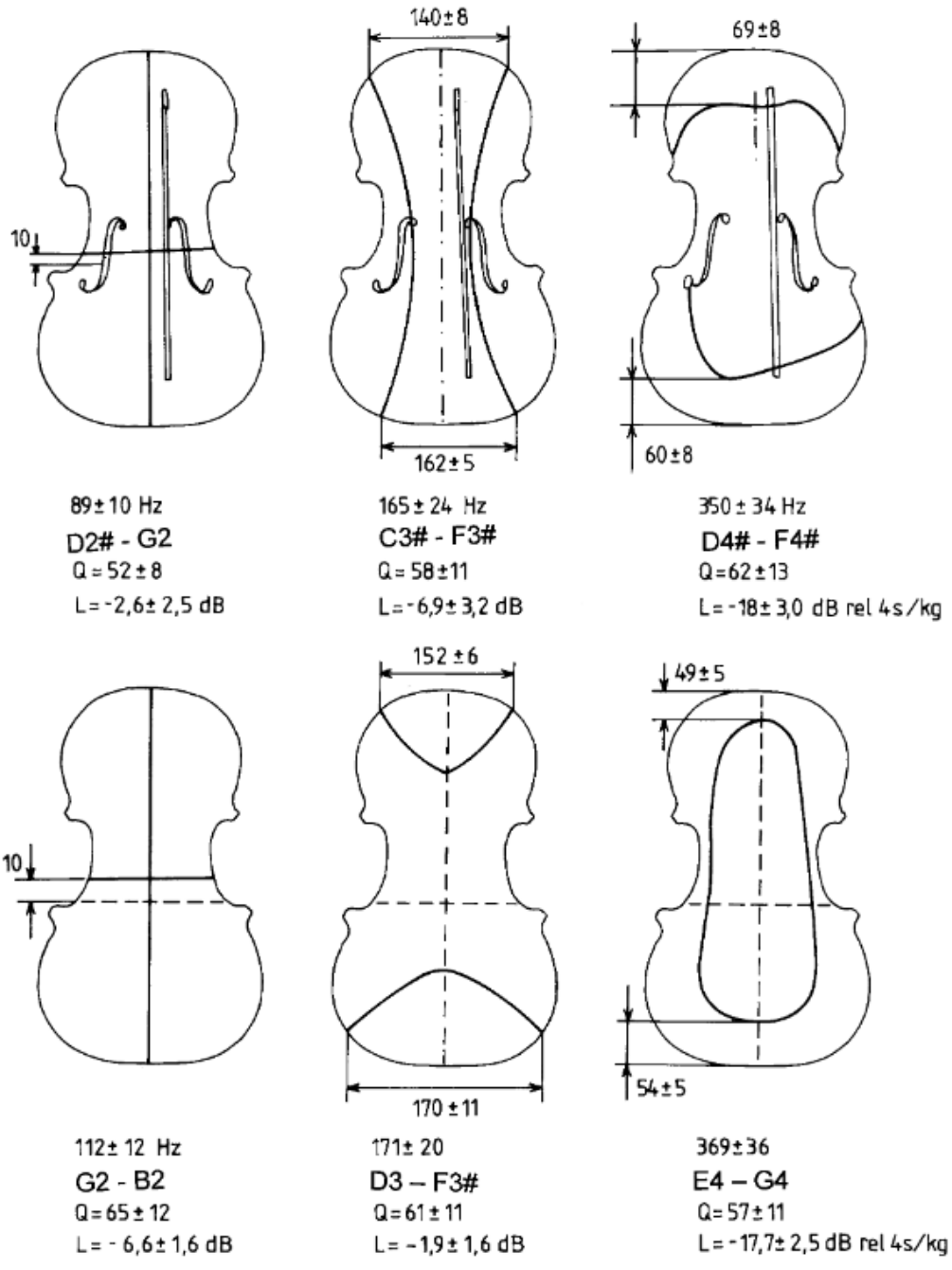
Tuning the Plates

A pivotal aspect of making a decent violin is graduating the plates so that they have key vibrational modes at the "right" frequencies. By "right" we mean similar to those found experimentally when old most Italian violins are taken apart. There is no "Fundamental Theory of Violin Plate Vibration Modes" – this is all empirical stuff. In any case, what matters is not how the individual naked plates vibrate, it is how the the entire box (with enclosed air pumping through the f-holes) vibrates. The physical relationship between these two sets of vibration modes (plates and box) is extraordinarily complicated. Even with sophisticated structural and

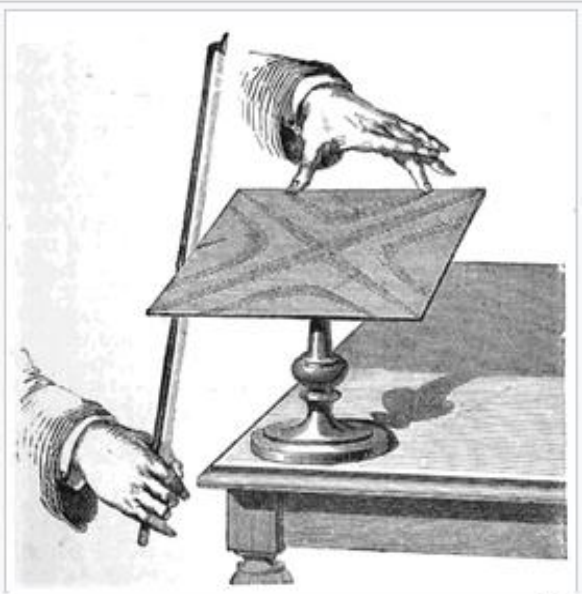
fluid-dynamical computation, there is no way we can (yet) deduce one from the other. If you are interested, see [Colin Gough's youtube video] on the subject.

So, the only option a luthier has is a to follow the example of old Italian instruments.

Erik Jansson at KTH-Stockholm has assembled a lot of measurements on old plates. This is how he summarizes the vibrational data:



https://www.speech.kth.se/music/acviguit4/part5.pdf



Sand highlights nodes on a Chladni plate.

Clearly, the top row is the belly plate and the bottom the back plate. The three columns are for vibrational modes, 1, 2, and 5 (there are two more intermediate modes that don't tell us much). The solid black lines are the nodal lines where there is no vibrational motion (like ones sees in "Chladni" patterns).

Mode 1 tells us the torsional (twisting) stiffness of the plates. Mode 2 tells us the transverse stiffness of the spruce belly and the longitudinal stiffness of the maple back. Mode 5 tells us the longitudinal stiffness of the spruce top and both stiffnesses for the maple back. Spruce, a softwood, is very anisotropic – it is very much stronger in one direction than another – hence the difference with maple, which is a more isotropic hardwood. It's all in the differing structures of these two wood types.

There are two ways of checking modal frequencies: by ear (like Stradivari did), or by computer (like I do). In each case, to isolate one particular mode, you hold the plate lightly near a nodal line, and tap it somewhere else. As all three modes are often close to an "F" in difference octaves (in fact F2, F3, F4 in piano notation), the tap will sound a pitch of F. A frequency analysis computer code can give more precise information, but hey, Stradivari didn't need that level of detail.

My ears are not that good. I use the code SpectrumLab, which alas is only available for Windows. In years of teaching the physics of vibration to undergrads, I have never found a stable equivalent for Macs. Someday I will write how-to on measuring modal frequencies and shapes using this code, but for now, let me press on.

Dean's Plates

A few days ago, association member Dean Markel told me he had produced a pair of very light plates – 66 g for the completed top and 99 g for the back. I would love to be able to achieve such weights. He tunes by ear, and suggested I come over and measure his belly plate with SpectrumLab. He had already glued the back plate to the ribs, so I could only measure the top.



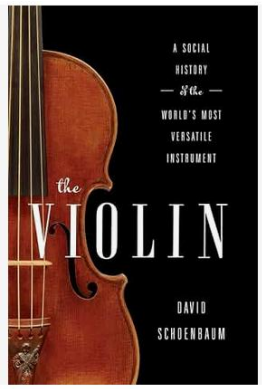
Dean's plates and my laptop, running SpectrumLab.

Results for the belly plate:

- Mode 1 – 86 Hz (~F2)
- Mode 2 – 146 Hz (~D3)
- Mode 5 – 344 Hz (~F4)

As you can see, these frequencies are well within the standard deviations quoted by Jansson in the figure above. The woods Dean used were very much on the low density side (0.37 for spruce, 0.61 for maple) but that often translates into thicker plates on tuning, thus offsetting the lightness. Indeed these plates were no thicker than "normal". We are agog with anticipation as to what this instrument will sound like!

Book Review



The Violin: A Social History of the World's Most Versatile Instrument

David Schoenbaum

W. W. Norton 2012

ISBN 978-0-393-08440-5

I wrote this review for an acoustics journal a few years back. I hope it is still of interest to Association members.

There is almost no acoustics or physics or any kind of science in this book, apart from a page or two (out of 672) devoted to personalities involved in violin science. Similarly, for the craft of lutherie; famous luthiers are discussed, but not how they did it. However, this does not mean that the book is uninteresting to acousticians, physicists or luthiers. The book is about everything else to do with the violin. It is billed as a social history of the instrument, but it could also be regarded as a history of the world (at least the Eurasian/North American bit of it) for the last four centuries, viewed through the lens of the violin.

The book is organized into four sections: “Making It”, “Selling It”, “Playing It”, and “Imagining It”. The introduction outlines how this small creation of a small town in Italy has taken the world by storm.

“Making It” charts to development of the “modern” instrument in the 16th century through the glory years of Cremona to the “factory towns” of Mirecourt in France and Mittenwald and Markneukirchen in the German lands, the appearance of Masakichi Suzuki in the late 19th century, to the “lengthening shadow of China” in late 20th. Bows are also discussed, before and after Tourte, to modern worries about the sustainability of Pernambuco.

“Selling It” spends much time on Hills of London, because W. E. Hill knew and dealt with everyone who was anyone in the violin business in Europe and North America, and left extensive candid and often ill-tempered diaries, which are a portrait of a bygone age. For most of their history, the price of violins rose at a unspectacular rates, but recently, like other art work increasingly viewed solely as investments, prices have taken off. Schoenbaum charts this transformation in considerable detail, which is interesting, if depressing (thinking of Oscar Wilde’s character “who knows the price of everything and the value of nothing”).

“Playing It” takes us on a tour through the history of how the violin has and is being taught and played. Schoenbaum talks mostly of the upper end of the ability spectrum but allows some time for amateur players, orchestras and teaching in schools. As an amateur violinist and luthier, I was pleased that he included the quote from G. K. Chesterton: “If a thing is worth doing, it is worth doing badly” – because where violins are concerned (as in much else), doing it yourself is much more fun and than listening or watching someone else, however brilliant, do it better. Having been the beneficiary of membership in a secondary school orchestra in England in the late 1960s I was fascinated to learn how the school orchestra movement got started there a hundred years ago, never having thought about it before. Regarding prodigies and super-stars, he touches on issues not only of socio-economics, but also of ethnicity and gender - the progression through the centuries of the predominance of Italian (all male) – Jewish (mostly male) – Asian (often female) virtuosi. Success is not all musicality and technique: good looks and a whiff of sex sells well (should we be surprised?). He mentions the often jaw-dropping behavior of star teachers (e.g. Ivan Galamian’s technique of improving posture by holding a lit cigarette lighter a few inches below a young player’s left elbow) and the mental toll taken on the lives of many super-stars who, to external appearances, have “made it”. There is also fair amount of levity; my favorite being Galamian (again) upon being introduced to the balding boyfriend of one of his young female students: “Your beau needs rehairing”.

Finally, “Imagining It” deals with the violin in other art forms: painting, literature and film. Maybe I was getting a little tired after 500 pages, but I did not find this section so compelling as the first three. At some point around here, the author discovered the word “trope” and started to use it to excess, which I found distracting.

“The Violin” reads like talking to a vastly knowledgeable friend whose monologue hops breathlessly from one topic/personality/century to another by the merest of association. I often had to go back a few paragraphs to read them more closely when I lost the thread of what country and century we were in at the time. This said, it was a vastly entertaining and informative read.

The book I read was an “Advance Reading Copy” with neither illustrations nor index, but many typographical errors. I assume these issues did not apply to the sale copies, none of which were available in my local or university library, and so I was not able to check.