

The Balsa Violin

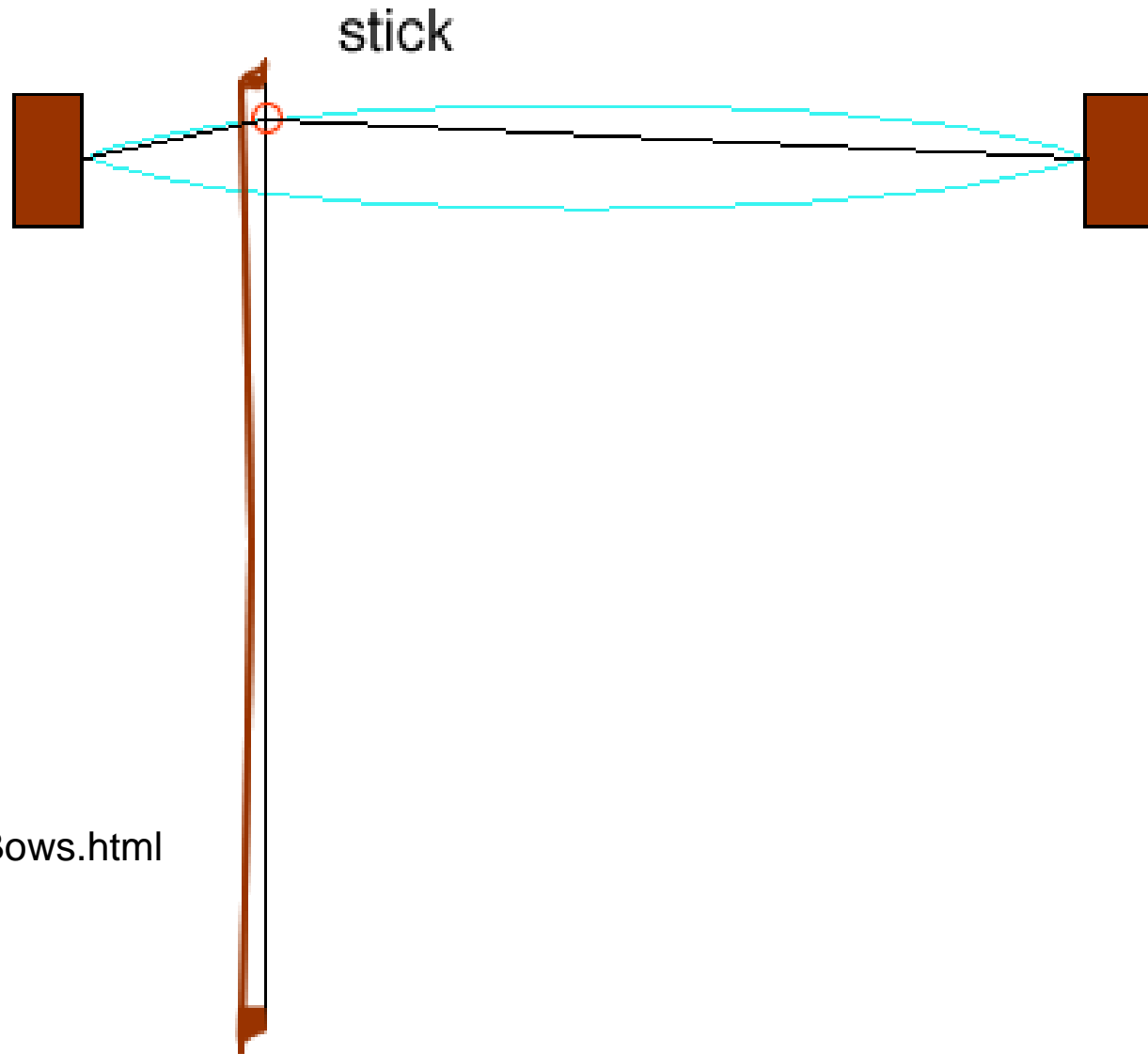
An exercise in applying physics to a
musical instrument

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TRIUMF 2008/10/25



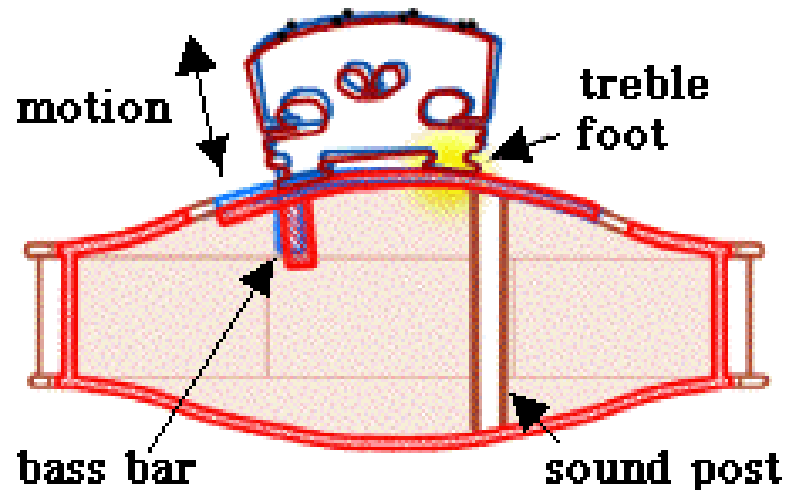
<http://www.phys.unsw.edu.au/jw/violintro.html>

Bowing the strings



<http://www.phys.unsw.edu.au/jw/Bows.html>

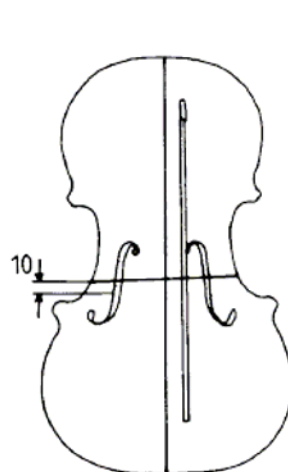
The Genius Part



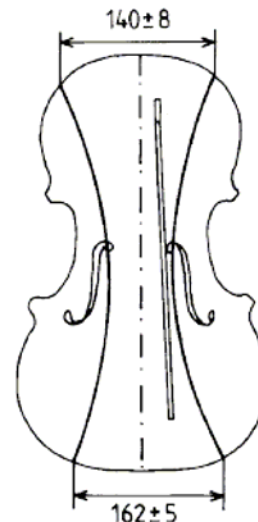
Tuning Violin Plates

Erik Jansson
KTH

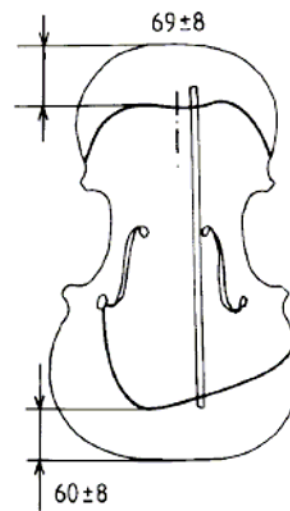
Top (belly): spruce
Bottom: maple



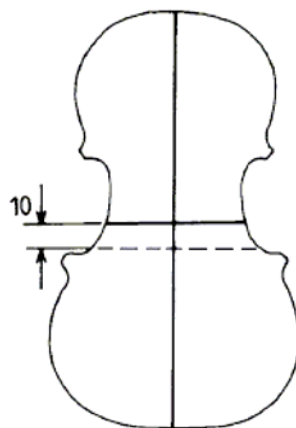
89 ± 10 Hz
D2# - G2
Q = 52 ± 8
L = $-2,6 \pm 2,5$ dB



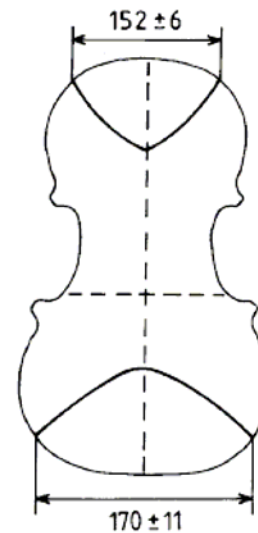
165 ± 24 Hz
C3# - F3#
Q = 58 ± 11
L = $-6,9 \pm 3,2$ dB



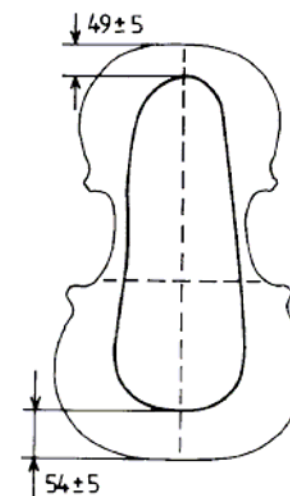
350 ± 34 Hz
D4# - F4#
Q = 62 ± 13
L = $-18 \pm 3,0$ dB rel 4s/kg



112 ± 12 Hz
G2 - B2
Q = 65 ± 12
L = $-6,6 \pm 1,6$ dB



171 ± 20
D3 - F3#
Q = 61 ± 11
L = $-1,9 \pm 1,6$ dB



369 ± 36
E4 - G4
Q = 57 ± 11
L = $-17,7 \pm 2,5$ dB rel 4s/kg



<http://www.phas.ubc.ca/~waltham/music/>

Freeware Sound Frequency Analysis

www.audacity.com