Acoustical investigation of the cornetto

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The cornetto was the most important virtuoso wind instrument of the early seventeenth century. It is played using a small cup mouthpiece, and has an approximately conical bore with seven side holes.

A systematic study of the acoustics of the cornetto is being undertaken in collaboration with the performer and manufacturer Jeremy West. The present paper reports measurements of input impedance carried out on two modern reproduction instruments and one seventeenth century original. The measurement technique has been described elsewhere [1].

Two typical impedance curves are shown here, both obtained on a reproduction cornetto in filled resin made by Christopher Monk. In figure 1, all the side holes are closed, and the first four impedance peaks are close to harmonics of the playing frequency (shown as dotted lines). In figure 2, the lowest three holes are open, and the impedance peaks have a less regular pattern. These and other features will be discussed.

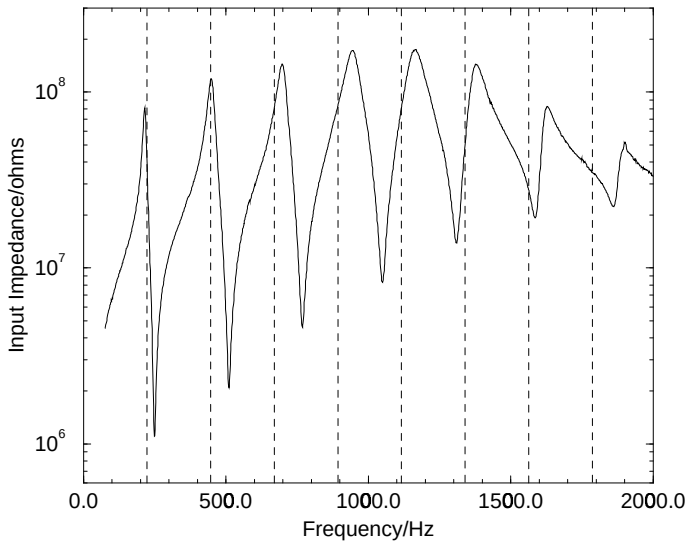

Figure 1: Cornetto with all holes closed

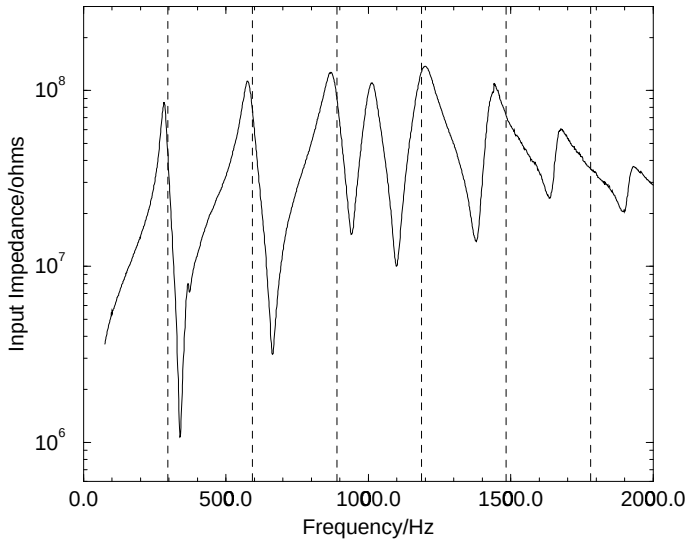

Figure 2: Cornetto with lowest three holes open

Acknowledgements
The instruments used in these tests were made available by Arnold Myers, the curator of the Edinburgh University Collection of Historical Musical Instruments.

References
[1] Campbell, D.M. (1987). "Input Impedance Measurements on Historic Brass Instruments." Proc.IOA **9(3)**, 111-118.