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**A psychoacoustical investigation into the effect of wall material on
the sound produced by lip-reed instruments**

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In order to investigate whether a lip-reed instrument's material of manufacture plays a significant role in determining the timbre of the notes it produces, tests have been conducted on five post horns. These post horns have identical geometry but are manufactured from different copper alloys.

Using a laser Doppler vibrometer, the structural resonances of each instrument have been established and the wall vibrations induced in each instrument when artificially blown have been measured. In this paper, these measurements are compared with findings from a series of blindfold playing tests carried out using professional musicians and with listening tests comprising notes produced by the different instruments.