

# Scientists Recreate Bach's Forgotten Horn (w/Video)

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Bach's forgotten horn - the recreated instrument in action

(PhysOrg.com) -- Cutting-edge computer modelling software has enabled a long-lost, trumpet-like instrument to be recreated - allowing a work by Bach to be performed as the composer may have intended for the first time in nearly 300 years.

The software was originally developed by a University of Edinburgh PhD student, funded by the Engineering and Physical Sciences Research Council (EPSRC), with the aim of optimising the design of modern

brass instruments.

Computer modelling is an emerging technology in [instrument](#) manufacture, but the new software offers unprecedented accuracy in terms of ensuring a brass instrument's design delivers the required shape, pitch and tone.

Following its use to improve trombone design, the software has been deployed to help the Schola Cantorum Basiliensis (SCB), who asked the University to recreate the instrument, which is called the Lituus - even though no-one alive today has heard, played or even seen a picture of this forgotten instrument.

The SCB are a Swiss-based music conservatoire specialising in early music, they gave the Edinburgh team their expert thoughts on what the Lituus may have been like in terms of the notes it produced, its tonal quality and how it might have been played. They also provided cross-section diagrams of instruments they believed to be similar to the Lituus.

"The software used this data to design an elegant, usable instrument with the required acoustic and tonal qualities," says Dr Alistair Braden, the software's designer. "The key was to ensure that the design we generated would not only sound right but look right as well."

Professor Murray Campbell, who supervised the software's development, adds: "Crucially, the final design produced by the software could have been made by a manufacturer in Bach's time without too much difficulty."

SCB has now used Edinburgh's designs to build two identical examples of the long-lost instrument. Two and a half metres long, made from pine and with a mouthpiece made of cow horn, the instruments are thin,

completely straight and have a flared 'bell' at the end.

Both were used in an experimental performance of the cantata 'O Jesu Christ, meins lebens licht' in Switzerland earlier this year. Written by Bach in the 1730s, it is thought that this is the only piece of music still existing that specifies the use of the Lituus - and has almost certainly not been performed using the Lituus since Bach's time.

"Sophisticated computer modelling [software](#) has a huge role to play in the way we make music in the future," comments Professor Campbell.

Source: Engineering and Physical Sciences Research Council ([news : web](#))

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