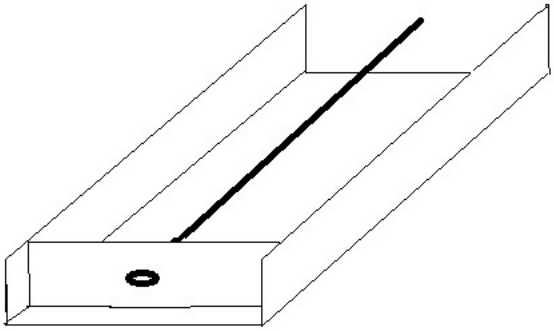
The ‘Doctor Who’ Bassline

I was recently asked how Delia Derbyshire created the bassline for the ‘Doctor Who’ theme tune, to which I had no answer. I queried this with Brian Hodgson who replied:

Dick is the only person who would really know.
She [Delia] was fond of a bass made from a tea chest and broomstick, but I don’t know if she used it for ‘Doctor Who’.

And indeed old tea chests were very popular in the early sixties as a cheap method of producing a loud bass sound, as required by skiffle bands of the time, including The Quarrymen, who later morphed into the Beatles. But, as usual, it was Dick Mills, having worked with Delia on the theme music, who came up with the final answer:

A simple steel wire was tensioned along the length of a standard 19" blanking plate from a jackfield bay (see attached sketch); this was plucked to provide a basic ‘note’ and the subsequent recording was fashioned into a tape loop for further treatment.



This treatment was principally to get a library of re-recorded tuned musical notes. Naturally this process altered the apparent timbre of each note as it was pitched-adjusted by speed-changing the original loop’s playback. Further timbre changes would have been incurred if reverberation (echo), feedback or further filtering had been applied.

Note that no sampling equipment was available at this time (1963) and the complete bassline had to be constructed from pre-recorded individual notes, although identical musical phrases would have been copied and re-edited in – the equivalent of today’s ‘copy, cut and paste’.

I hope this will help explain why any amount of experimentation with today’s equipment is unlikely to be able to match the audible results of our early efforts at sound manipulation.

Dick's last comment is indeed correct, since every pluck of the wire would produce a slightly different timbre, depending on the tension of the wire and the way it was plucked, resulting in a different initial sound and harmonic decay. With modern technology you might introduce some degree of randomness or even use some element of AI, but in the end it might just be easier to take a tensioned wire attached to a panel and pluck it!