

# telephone bell

## the phantom caller

To many adults it is suprising how much pleasure that the youngest members of the house can derive

from a toy telephone. In their eyes the use of a telephone is akin to being 'grown-up'. This is a point for debate and the psychology is a little out of our province but we can add to the realism attached to this 'adult behaviour' (?) pattern.

Normally the toy telephone just sits, waiting for any one of a vast number of callers (including Santa Claus, the pet dog and even the Queen on occasion) to ring with some vitally important information that, seemingly, only our youngest and dearest can cope with. The problems that arrive at the local terminal to Imagination are quite beyond the comprehension of adults but we can help to ensure that these strife-torn folk do ring a little more often.

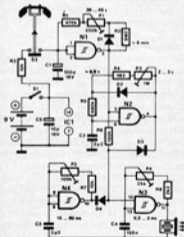
The circuit here produces a ringing tone similar to the modern telephone. This occurs every few minutes and stops when the handset is removed from the receiver cradle. Schmitt-trigger gates are used in the construction N1...N4. Gates N3 and N4 constitute the tone generator while N2

creates the ringing tone interval. The frequency of calls is left to gate N1 and with the component values shown this will be about every six or seven minutes. Of course, if this is not frequent enough for your own miniature tycoon, the value of C1 can be reduced to up the pace of business. This is also applicable to calls from grandparents.

Whenever the phone rings it can only be stopped (like any other phone) by lifting the handset. This closes switch S2 (a microswitch in the cradle) and halts both the tone generator and tone interval timer via N1. It also resets the call interval timer of course.

The siting of the on/off switch S2 really depends on the particular telephone used but anywhere will do providing it does not conflict with the appearance of the real thing.

One final word in the interests of the real world. Have you noticed that the children never seem to get a wrong number... a crossed line... and they can raise directory enquiries in pure seconds...!



N1...N4 = IC1 = 4060  
D1...D4 = 1N4148

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