



Ears to hear

Biblical references don't often feature in *The Learning Curve*, but some are appropriate. The prophet Ezekiel wasn't writing about ringers, though he might well have been, when he said: 'Thou dwellest in the midst of a rebellious house, which have eyes to see and see not; they have ears to hear and hear not'.

Listening is the Cinderella of ringing skills. It is one of the most important, but it is rarely taught. Some ringers never listen and many listen less than they ought. Any ringer with normal hearing should be able to develop effective listening skills, but may need some help. So this month, we focus on use of ears.

Hearing and listening

First let us make an important distinction between hearing and listening. The dictionary defines 'to hear' as 'to perceive by ear' whereas 'to listen' is 'to give close attention for the purpose of hearing'. You can 'hear' traffic noise, background music or chatter without any particular effort. You would quite probably 'hear' when a touch fires out if you are within earshot. But that vague awareness is very different from the active mental engagement with the sound that you need while ringing, in order to detect and correct any errors. You must focus on both the overall rhythm and on the sound of your own bell. You need to hear what the rhythm should be, and acutely sense any deviations from it.

Does that sound hard? It is! Or at least it is hard until you have done it so often that it becomes automatic. Walking, or riding a bike, is hard too, but when you have done it often enough, it becomes so automatic that you can think of something else while doing it. Listening in ringing needs to get to that level.

Why doesn't everyone master it?

If listening can be likened to walking, why doesn't everyone learn to do it properly? There are several reasons. You learn to walk as a baby, when your whole life revolves around learning new things, and you spend hours a day trying to do it. Above all, you have the strongest incentive to succeed, because until you do, whole areas of life are out of reach. Everyone wants and expects you to succeed.

Contrast that with learning to hear your bell when ringing. Ringing itself is an optional extra in life (though some of us are so keen that you might wonder) and most learners are lucky to spend an hour a week doing it, during which time listening is rarely mentioned. Most things are explained in physical and visual terms. The only unforgivable sins seem to be banging the stay or missing the sally. So if listening accurately to your bell doesn't come naturally, if you are not actively helped to develop the skill, if it doesn't seem to feature strongly in everyone's expectations, and if you can get away without it,

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then there isn't much incentive to try. Some people give up trying, which is a great shame.

Why is it difficult?

Two things make accurate listening difficult: the precision required and the nature of the sound itself (though towers vary quite a bit).

We can get a feel for the precision by doing a little arithmetic. Let's ignore the effect of open handstroke leads, which makes the calculation easier. An average bell takes about 2 seconds to swing full circle. It varies a bit with different bells, but not a lot. With each bell striking roughly every 2 seconds, and with six bells, striking evenly, the gap between them is about 1/3 second. With eight bells it is 1/4 second, with twelve bells 1/6 second, and so on.

The aim is to ring completely evenly, with the interval between all blows the same. But how far can any individual blow deviate from the ideal, and still sound 'even'? The answer varies with the listener, but it is a lot less than 50% of the gap between blows (which in musical terms would be like playing a quaver instead of a crotchet). Many people can reliably hear deviations of 10 - 20% of the interval, and a few can hear 5%. 10% of 1/3 second (with six bells) is 1/30 second, ie three hundredths of a second.

You might think that all you have to do is to match the listening ability of the person outside the tower, but unfortunately, you have to do better. You need to detect, and correct, tiny deviations before they are audible to your audience. Whatever level you can detect, you must then correct, and however good your bell control, it can't be perfect, so most of the time there will be some small additional error. So if Joe Public notices errors of 20%, you probably need to detect at the 10% level, to give yourself a margin for error, and make your ringing sound 'even'. In a striking competition people often rate their own striking as being worse than those listening outside do. They are probably focusing on finer detail while ringing.

Now the nature of the sound. Figure 1 shows an oscilloscope trace of a recording of six bell ringing. It is nothing like as clear as you might imagine, and yet the bells were quite clearly audible. It is a good illustration of the brain's processing power that it can make sense of such a sound – and not surprising that it is quite hard to discern the subtleties needed to strike well.

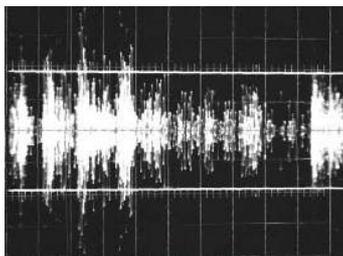


Figure 1: The sound of ringing

What if you are hard of hearing?

Listening to striking is very demanding on timing discrimination, but it is less demanding on the quality of sound perceived, unlike speech where you need to detect subtle differences in the component frequencies of the sound. Age or exposure to loud noises erodes frequency discrimination, making speech harder to detect, but such subtleties are less important for striking. It doesn't matter whether the bells sound angelic or like buckets, so long as you can pick out the steady tap of the clappers.

Ringers who have been unfortunate enough to find themselves ringing with both ears bunged up with wax, have also been pleasantly surprised that although everything is rather quiet, they can still hear the striking quite well. So some hearing impairment need not prevent effective listening to the striking, providing you develop the correct listening technique.

Practical steps

OK, so listening is hard for you. Maybe you weren't one of the lucky ones who picked up the knack during your formative learning stages. So how can you help yourself?

As you might expect, it takes time, effort and practice. But there are lots of opportunities to practice. You don't have to be on the end of a rope to listen, but you do have to focus, which is where many people fall down. Listen carefully to any ringing that you hear. Don't just let it wash over you. Focus on the rhythm and try to spot any wrongly struck blows. Close your eyes if it helps. At first count each blow in your head (12345...). Remembering the silent extra beat every other row, for the open handstroke gap. In changes, you can follow the sound of an individual bell if you know what places it is in. You may find it easier if you watch the rope, which helps to cue you to listen to the right part of the sound sequence. (The strike comes roughly when the hands pass the face). At first it might be easier to listen to the accuracy of the leading (are the handstroke gaps consistent) or to the bells at the back, but you must listen to the whole row to get the rhythm.

Teach your brain what good striking sounds like – listen to some. Even if you don't get much chance to hear good live ringing, you can buy recordings. You can also buy CDs with listening exercises (where you can check the answer and listen again if you didn't hear correctly the first time) or interactive software like !Strike that lets you correct the striking.

Listening exercises only go so far, and you must learn to listen while ringing. One useful way is to ring with a simulator. It makes the sound of the other bells, and having no ropes to look at forces you to ring rhythmically and listen. You might find it hard at first, but it is easier than you might think. The other bells strike perfectly (a luxury real ringers don't often provide) so it is easier to hear your bell. If no simulator is available, you can try facing out of the circle so you can't see the other ropes. Don't do it without warning though – you might alarm the other ringers. And wait until the bells are steady, to give yourself a reasonable chance.

For a more detailed description of listening, and how it contributes to ringing, see *Ringing Skills*, which also covers rhythm and ropesight. Ropesight relates to the other half of Ezekiel's complaint, 'eyes to see', which we will look at in a future *The Learning Curve* article.

Tail End

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