



## Setting the pace

In February 2000 *The Learning Curve* discussed ringing the Tenor and what makes it different from ringing other bells. On the question of 'the Tenor setting the beat' it said:

*In one sense, 'the Tenor sets the beat' means 'everyone else should ring at the speed which the Tenor ringer finds comfortable', so it is something the other ringers have to do! The Tenor ringer needs the confidence to find a comfortable speed and stick to it, rather than be bullied into changing to suit the others.*

One experienced ringer (ER) did not like this. It reminded him of dictatorial Tenor ringers who insist on forcing an unsuitable pace on the rest of the band. He felt the speed should be determined by consent.

ER is right that the band should agree on the speed. Of course it is unreasonable for one ringer to dictate a speed that is unsuitable for the majority, but that wasn't the point being made last February. The speed is more critical for the heavier bells because of the way they are rung, so it is sensible to make sure that the speed suits the heavy bell ringers, and in particular the Tenor ringer. There has to be some give and take by all the band (to obtain the consensus mentioned by ER) and as a practical necessity on the question of speed, the lighter bells should give more than the back bells.

Many ringers, most of the time are not aware of anyone in particular 'setting the speed' - it just happens. Often the speed that emerges in this way is perfectly adequate, but occasionally it is not. So what determines the speed and how do the ringers know at what speed to ring?

### What do we mean by speed?

Anyone outside the tower listening to first a ring of six and then a twelve would probably say that the twelve were ringing much faster than the six, but if you were in the ringing chamber watching the ringers, you would see that they were all ringing at much the same speed. In fact the ringers in the twelve bell tower would possibly be ringing a little more slowly! So why the difference?

The ringers outside respond to the sound of all the bells, whereas what you see inside - and what ringers mean by speed - is the rate at which each bell swings. Within each swing period, every bell has to strike, so the more bells there are, the quicker the rhythm that is heard, other things being equal.

Speed is normally quoted in changes per minute (cpm). 30 cpm is a bit faster than 28 cpm. Peal ringers like to convert the speed into the time that a peal would take, so instead of changes per minute, they talk about hours and minutes (per 5000 changes). Although people call it peal speed, it is not really speed, as the numbers are now the other way up and smaller numbers are faster - a 'peal speed' of 2h47 (30 cpm) is faster than one of 2h59 (28 cpm).

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At 30 cpm each bell takes 2 seconds (60/30) to swing from handstroke to backstroke and another 2 seconds to swing back again, ie 4 seconds for a whole pull. In changes, some swings are a little quicker and others a little slower, but this averages out since you keep coming back to the same place. The effect open handstroke ringing also averages out.

You can visualise the comparison between different numbers of bells by drawing the numbers round a circle, where time is the distance round the circle, see figures 1 & 2.

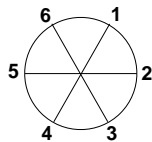


Figure 1

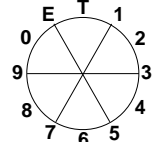


Figure 2

You can use the same idea to show the difference between quick and slow ringing on the same number of bells, by enlarging or reducing the size of the circle, and hence the time taken to go all round it, see figures 3 & 4.

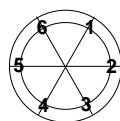


Figure 3

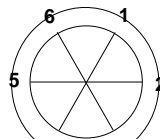


Figure 4

The circle analogy is a reminder that ringing is cyclic. There is not really a first and last, since the treble follows the Tenor.

### What is the right speed?

ER felt that any Tenor ringer worth his or her salt should be able to cope with ringing at the correct speed for the bells. But what is the correct speed? To understand that, you need to understand how a bell works, how the speed varies with the swing, and what makes it easier or harder to ring at different speeds.

Ringing faster means the bells do not swing so high. When a bell is ringing part way down like this it is much harder to vary the speed quickly and accurately in order to ring changes.

Ringing more slowly means the bells must swing higher, but once a bell is swinging up to the balance, the only way to make it ring more slowly is to hold it for increasingly long periods over the balance. In theory this can be extended indefinitely, but in practice the longer the bell is held stationary, the harder it is to maintain a rhythm and strike accurately.

These two factors limit the speed at which it is practical to ring changes. The optimum conditions occur between these two extremes, when the bell is ringing just below the balance. This optimum speed is different for the heavier and lighter bells in a ring, which brings us back ER's compromise, and the question discussed in February last year. In practice, the Trebles must ring somewhat over the balance in order for the Tenors not to be too far below it.

### How is the speed set?

There are two answers to this: how it ought to be set and how it often is set.

Members of an experienced band will have an idea about the speed before they start. They will pull off smartly, so the Treble's backstroke will probably follow more or less correctly after the Tenor's handstroke. Any slight mismatch will be quickly smoothed out as the ringers all automatically adjust slightly to fit in with each

other. If they know the bells, they might hit the right rhythm straight away, but if not they will quickly adapt. If the back bells sense that the speed does not feel right they will push the others along a bit, or hold back slightly. If the other ringers are responsive, this will be barely noticeable to anyone listening.

It is not always like that though. Less experienced ringers tend to hesitate before pulling off, and the cumulative effect can be a painfully drawn out first round with the Treble's backstroke chiming in before the Tenor's first handstroke (see figure 5). Even if the Treble holds up this spreads the delay into the following row and sets a very slow speed, with everyone struggling to stay behind everyone else. Getting a good rhythm from such a start is not easy, and will certainly take a while.

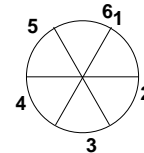


Figure 5

Even with a mistimed pull off, you can rapidly find the right speed, if you all listen and adapt. Experienced ringers automatically make small adjustments without realising it, but there is nothing magic involved. If there is a gap, the bells ringing either side move together to fill it. If some of the bells are crowded together, they move apart slightly.

### Doesn't 'the 2nd set the speed'?

You often hear people say this, but it is a bit misleading out of context. The idea that whatever interval the 2nd leaves after the Treble must be repeated by the others is clearly not sensible. Just think what would happen if the 2nd of a light six left a huge gap, say half a second. Ringing all six would take 3 seconds and carrying on like this would mean a speed of 20 changes per minute, far too slow for a typical six. Now imagine the 2nd of a twelve leaving the same gap and the others following suit. They would take 6 seconds, ie 10 cpm. It would sound incredibly turgid and a quarter peal would take over two hours!

In reality no single bell sets the speed - it is a joint responsibility. But what the 2nd does can have a disproportionate effect, because the other ringers subconsciously do tend to follow the pattern set by the 2nd. If the 2nd leaves a very small gap, the other bells often close up and the Tenor has to chase to keep up. What the Treble and Tenor do also tends to influence the speed more than the inside bells. On higher numbers the 2nd has rather less influence than on six, and the back bells proportionally more.

### What if it doesn't work?

Sometimes a steady rhythm does not appear at all. This might mean different people are trying to ring at different speeds, but with a less confident band it is often due to poor striking, over correction and a general lack of rhythm. In such cases it is more helpful to encourage the band to try to ring rhythmically together, than to argue about the finer points of speed.

### How do you know the speed is right?

A good speed feels comfortable and you can strike well. If you achieve that, don't worry about the speed someone. Quality of ringing matters, more than the stop watch.

*Tail End*