The Learning Curve

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Does size matter?

As a general rule, a heavy ring of bells means that the area was prosperous when the bells were installed. Over the ages our benefactors valued a deep, rich sound (or perhaps they just liked to spend more money). Ringers too seem to value heavy bells. *Dove's Guide* lists the heaviest ringing bells, but not the lightest. People boast about ringing heavy Tenors but rarely about ringing light Trebles. So everyone seems agreed that bigger is better or do they?

People often prefer to teach on light bells. Very long length performances tend to be rung on light bells. Mini rings are becoming popular. So perhaps small is beautiful after all.

In *The Learning Curve* we are not mainly concerned with the majesty of the tone. Nor are we concerned about where it might be possible to knock off a quick 40,320. We are concerned with the skills needed to get the best out of whatever bells we ring, with how to acquire them, and how best to pass them on to those we train. From this perspective too, size can have a big impact. It affects how the bell needs to be handled, putting emphasis on different skills.

Courtesy of Whitechapel Bellfoundry Ltd

The effect of wheel size

Before talking about weight of the bell itself, let us consider something less obvious that goes with it. Heavier bells generally have bigger wheels to give the rope more leverage. There is more rope wrapped around a bigger wheel, and it goes up and down correspondingly more. The Tenor of a 20 cwt eight might have a 6' (1.8 m) diameter wheel, while the Treble has a 5' (1.5 m) wheel. The Tenor wheel is 3' (0.9m) bigger around the rim. Since the rope goes roughly two thirds of the way round at backstroke and one third at handstroke, the Tenor has over 2' (600mm) of extra rope and a sally that rises an extra 9" (225mm) from its lowest point. If you try to catch the Tenor's sally in the same way that you catch the Treble's, you are in for a surprise. Your shoulders will get a nasty jerk, and you will stop the bell rising as it should, starting the vicious circle described in *The Learning Curve* in November 2001.

The effect of bell weight

To ring methods (or call changes when you change) the bell changes speed. That needs energy - more for a heavy bell - from the ringer. It doesn't mean though, that a bell three times heavier needs three times more force - it is much less than that. In our hypothetical 20cwt ring of eight, the Tenor weighs more than 3 times as much as the Treble, but the bigger wheel gives the rope an extra 20% leverage and the increased rope movement can give you a 20% longer pull. So the Tenor only needs twice as much force as the Treble, not three times. In practice, it is even better, as we will see.

Ringing heavy bells

Strength in most cases is not the most important factor. Even a strong ringer can't force a heavy bell to make sudden changes, so you need to think ahead and prepare it for what you want it to do next. At each stroke, while placing this blow, you must also prepare for the next one. For example, on the over-blow of a dodge, you would hardly pull, to make it easier to check the under-blow the following stroke.

Ringing light bells

Light bells have less inertia and are easier to move than heavy ones, but that has a side effect - they are easily disturbed from their intended path. You need to be much more precise with your handling, since the slightest carelessness can have a big effect on your striking.

In March 2000 *The Learning Curve* discussed mini rings, which take lightness to the extreme. As the contributors described, mini rings require a correspondingly different technique, with much less arm movement (because of smaller wheels) and a far more delicate touch.

Tenors and Trebles

Heavy bells swing more slowly than light ones, so generally the Tenor should ring below the balance and the Trebles just over. In practice, people tend to ring light Trebles a bit further over the balance than heavy ones, increasing the force needed somewhat. Also, while over the balance, the timing entirely depends on your sense of rhythm, your ability to feel the bell and the accuracy of your handling, with less help from the bell's natural rhythm.

Also beyond the balance, you feel the bell's weight, and the further it goes, the more you feel it. If you misjudge the timing, this force can be significantly more than you need for normal bell movement. This does not happen when you ring a heavy bell below the balance - another factor reducing the difference in force needed with small and large bells.

A little overpulling

A lot of your effort when ringing is wasted. Even with a good ringing style, you have to overpull a bit, partly to keep the rope taut, partly to give a margin for the (small) corrections you continually need to keep the bell in the right place. Corrections can be either way - the bell might swing a bit higher than it should or a bit lower - so you must be able to pull less as well as more, and that means pulling more in the first place than you would otherwise need to.

Proportionately you need to overpull less with a heavy bell than with a light bell - the greater inertia makes it more predictable, reducing further the difference in force needed. There are two exceptions. Movement in the tower or bell frame, and mishandling by the ringer can both afflict heavy bells just as much as light ones, and if they do, then a lot of effort can be needed.

Long and short draughts

Another 'size' that affects bell handling is the draught - the length of rope between you and the bell. Bell and wheel size vary together, but the draught just depends on the design of the tower.

People don't like long draughts, especially if much of it is unguided, because more moving rope is can fly around unless your handling is meticulous. Ropeguides limit rope movement, but if there is a long run above them, they can still make the rope snake about if it does move.

Rope can weigh up to an ounce per foot so an extra 50 ft (15 m) means an extra 3 lb (1.5 kg). That might not seem much, but its weight, falling between back and handstroke is equivalent to an extra backstroke pull of over 10 lb (4-5 kg). It will certainly help you to keep your backstrokes in, and is the reason why many people find their backstrokes dropping unless they pull extra at handstroke. On the positive side, the extra weight makes it less likely that the rope will slip off the wheel.

A short length of rope is less likely to fly around, so rope handling is generally easier, but being lighter it provides less protection against slipping wheel. If the rope is very short, the sally might go through the ground pulleys, with extra risk of sticking there.

Best buy?

Which size bell is best? That is a bit like asking which sort of food is best. To be healthy, we need a varied diet, not just eating one thing. That is as true of ringing as it is of nutrition. It is particularly true when ringers are learning, because ringing on a varied diet of bells of different weight and style provides opportunities to develop the full repertoire of skills that a fully rounded ringer needs.

If you find you have become typecast, ringing a narrow range of bells and feeling uncomfortable or not striking well on bells a bit lighter or heavier than you normally ring, you might consider trying to broaden your range. Try different bells when you can, and try to adapt your style to the new bell. It might take a while to become proficient, but you should find it more rewarding than remaining confined to a narrow range of bells. Circling the tower on practice night is a good habit to acquire.

One ringer's experience

"I learnt to ring with my brother who was smaller than me, so I was put on bigger bells. Before long we were short of ringers, and I found myself ringing the Tenor. It was only 9cwt, but it felt different, and I felt important ringing it. When I went to another tower, I always tried to ring the Tenor, so before long I had rung bells up to a couple of tons. I liked ringing heavy bells. You could feel they were big, without much margin for error, but because they were predictable, it was easier to ring rhythmically. I didn't consciously avoid little bells, but I rang them less. My first 12 bell peal was Stedman Cinques on the Treble, and I found it needed a lot more concentration to strike properly than when turning in the Tenor. Over the years I stopped avoiding little bells and learnt to master them, but I still find it much harder than ringing round the back. Perhaps I should have rung them more when I started."

Tail End

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