

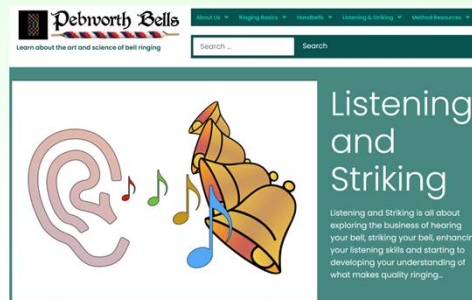
Listening and Striking

November 2023

www.noyes.org.uk then select "Training"

Pebworth bells tutorial & games:
<https://pebworth.icu/bells/listening-and-striking/>

Pebworth, Worcs. Ring of 10, 11-3-9



1

At the time of writing there is a good web page that has some notes on striking and listening, <https://pebworth.icu/bells/listening-and-striking/>

It also has a load of audio recordings of simulated bells as a series of "games" that illustrate faults in striking and various listening tests, to see if you can hear what is going on.

At the moment it just covers ringing rounds & call changes but it looks like method ringing sections are planned.

Even some of the rounds & call changes examples are really difficult, even for very experienced ringers (me!), so don't be put off if you get a few wrong!

What are we trying to achieve?

- Make it sound good!
- Even spacing between bells as they strike
- Closed backstroke leads
- Open handstroke leads (one silent blow)
 - Like a sort of punctuation mark

①②③④⑤⑥①②③④⑤⑥😊①②③④⑤⑥①②③④⑤⑥😊①②③...

- This is NOT EASY to achieve!
- Bells are tuned assuming bells won't clash
 - Clashes sound awfully discordant!



2

We are trying to ring the bells so that they strike with even gaps between each pair of bells. As we'll see later, if you watch the bells being rung, as they each pull off on the sally for example, then they might not start their pull with the same gaps between each bell, yet will strike with perfect gaps between them.

The spacing and speed of ringing doesn't matter as long as it is all the same: we're looking for consistency and it is a team game!

The backstroke lead should come in straight after the handstroke of the last bell in the previous row, so on six bells it should sound as if there are twelve bells all in a nice evenly spaced row: the six handstrokes followed by the six backstrokes.

The handstroke lead should be "Open", as if there is one silent bell (the "smiley face") between the last backstroke of the previous row and the first handstroke of the current row.

Note that "Devon call changes" are rung with "Closed" handstroke leads without this "silent bell", and is often known as "cartwheeling".

Bells for change ringing are tuned so that each bell sounds as a chord of 5 notes, and are not designed so that more than one bell should strike at the same time: in fact, clashing bells sound pretty awful. Other sorts of bells, such as most bells on the continent are tuned differently.

When does a bell strike?

- Just as it swings mouth upwards
 - Bell turns right over before it strikes
 - Clapper overtakes the bell as it slows up and reaches mouth upwards
 - Just about as your hands go up past your nose
- Big bells turn more slowly than small ones
 - Pull off closer to little bells
 - Pull off later when following bigger bells
- Bells may also be “odd struck”
- IF IT SOUNDS RIGHT THEN IT IS RIGHT



3

When a bell is turning full circle, it swings right the way over, starts to rise up the other side and slows up, and as the bell comes mouth upwards the clapper overtakes the bell and strikes it.

So the first thing that we have to get used to is the delay between pulling off the bell and it striking: typically one to two seconds!

Not only is this quite a delay, it will also be different for the different bells: a large bell will take longer to swing over and strike than a small bell. It is quite possible for a large bell when following a small bell, that the large bell has to pull off **before** the small one in order to strike in the right place after the small one: this is most notable on rings of twelve.

In fact there are a lot of factors in the design and manufacture of the bell and its fittings that can have an effect on when the bell strikes and it isn't just its size: the length and weight of the clapper, where the pivot of the clapper is in relation to the bearings, any counter balancing on the clapper, and the height of the top of the bell relative to the bearings, etc. In fact, the bell and clapper act as a complex compound pendulum with many factors that will alter when the bell strikes, and there is nothing to say that each bell in the tower has been designed in the same way!

Another problem is that some bells are “odd struck”. This usually refers to the bell striking a tiny bit later (or earlier) on the handstroke than on the backstroke; this is usually because the clapper hasn't been hung right in the centre of the bell. Modern bells have “twiddle pins” through each side of the headstock that press on the clapper shaft and can be loosened one side and then tightened the other

to move the clapper across the bell slightly. Note: slacken off BOTH twiddle pins BEFORE you remove a clapper or else than can damage the thread on the shaft of the clapper as you try and heave it out.

If your bell is odd struck then you'll need to pull off earlier (or later) on the handstroke or backstroke to leave the same gap on both strokes to the bell you are following. Not only that, but the bell that is following you will also have to compensate for you ringing the strokes quicker or slower as well!

All of this is suggesting that relying on LOOKING to make sure that you pull off at the correct time after each bell you follow isn't going to work well. Each bell you follow will need a different delay on the backstroke and handstroke for it to sound correct, which is a lot to find out and remember: and in some circumstances it won't work at all if you have to pull off before some bells in order to strike correctly behind them.

We need to find a better way than looking: we need to listen and adjust the gaps at handstroke and backstroke to correct the gaps. IF IT SOUNDS RIGHT THEN IT IS RIGHT!

What speed should we ring at?

- Depends on the bells, and how fast everyone wants to ring
- A big tenor will take longer to turn over
- More bells (10 or 12 or more) are usually rung more slowly than 6 or 8
 - Gaps are usually reduced to help compensate
- Lighter bells especially, may need to hold up more if the ringing is slower



4

The speed of ringing depends on how much gap is left between each bell striking: it is dominated by the weight of the bells (big bells take longer to turn over) and then to a lesser extent by how fast the ringers decide to ring.

If you're ringing on a larger number of bells then each row is longer so takes more time, but to help compensate to a certain extent the gaps between the bells are reduced. People often describe ringing on 16 as sounding like a stick running down some railings!

If the ringing is slow then it involves a bit more waiting on handstrokes and backstrokes, and this is especially noticeable on the light bells which turn over quickest and are already waiting a fair old time for the back bells to turn over. A common fault is the little bells not waiting for long enough and clashing or clipping the bell that they are following.

How can we get the striking right?

- Easiest in rounds
 - Adjacent bells are similar weight
 - Try to settle the rounds to set a RHYTHM
 - We're trying to reach a consensus on speed
- Look & Listen at the start
 - Give even gaps to bell you're following
 - Look 2 bells ahead & even up those gaps too
- Looking gets more unreliable in changes!
 - So rely more on LISTENING & RHYTHM



5

The easiest way to start improving striking is to ring “Rounds”.

You can do this largely by looking since the adjacent bells will be similar in weight and your neighbours will be leaving about the same sized gaps as you are. Then listen, pick out your bell, and adjust the gap to fit in with everyone else and keep listening and adjusting until it sounds right. The “tune” should be easily recognisable so you’ll know what it SHOULD sound like

It is ALWAYS a good idea to settle the rounds at the start of each piece of ringing to set a rhythm that everyone agrees on: some conductors won’t even start calling call changes or start a method until the rounds are nice and steady, on the grounds that the ringing isn’t likely to improve when the order of bells starts changing.

As soon as you move on to some call changes or start ringing a method you’ll be following larger/smaller bells and the idea of looking when to pull off will get very complicated: you would need to remember what size gap to look for on each handstroke and each backstroke for each bell and then have to adjust that a bit for the speed of ringing; as well as working out the call changes or the method!

A better way of doing it is to learn to ring with a consistent rhythm, and learn to listen to pick out your bell in each row, and make adjustments to the rhythm to keep the bells evenly spaced. If you stick to the rhythm then it’ll not matter which bell, big or small that you are following, since if they’re in the right place then the rhythm will have put you in the right place too; and if they’re not there then it’s their fault!

Listening

- Learn to listen to pick out your bell
 - Some can do it by recognising the sound/note
 - Treble & tenor are the easiest
 - Others count the bells off
 - Some in twos, or fours, or sixes
 - Bell strikes as your hands go up past nose
 - Gives a pretty good guide



6

The point of listening is to pick out your bell as the bells strike, and gauge whether you are too close or too far behind the bell that you are following. There are various ways of trying to do this:

Some people can listen to all the bells and pick out when their bell strikes by the note of the bell and judge whether the gap between yours and the preceding bell is consistent. People with perfect pitch have a big advantage here! To practice this then best ring the treble or tenor to start, as the highest and lowest notes are the easiest to pick out.

Others count off the bells. If they are going to strike in 4ths (say) they count off the bells as they strike and judge if the gap between the bells in 3rds & 4ths are consistently spaced with the others.

If neither of these work for you then listen out for clashes or gaps as your hands go up past you nose ... that's when you bell strikes. If you're pretty sure your rhythm was good then ignore the clash; otherwise make an adjustment.

Good, consistent bell control

- Catch the sally in the same place
- Try not to let your hands slide on the rope
- Adjust rope end for a “comfortable stretch”
- Then adjust to even up the gaps
 - DOWN THE ROPE to increase the gap
 - UP THE ROPE to close the gap
 - Perhaps experiment; get it SOUNDING right
- Helps you to ring by RHYTHM
 - So your bell is in the same place EVERY time



7

Good bell control means far less work than pulling erratically: best be lazy, if you can!

The two key things for tidy handling are to pull down vertically (especially on backstroke, as the sally is going to follow your hands down, and so is easy to catch), and to keep tension on the rope for as long as you can (long pulls).

After that you want to work on a consistent and repeatable pull: see if you can catch the sally in the same place every time (assuming you're not trying to change the speed of your bell) and hold the rope's end so that when you reach up it is a comfortable stretch. Then you can make little adjustments to the place you catch and then length of rope's end to make small adjustments to your speed of ringing and fit in with everyone else.

When you have to change the place in the row that your bell must strike (call changes or when ringing a method), then you can make small adjustments to wait up or check in: and again you'll find that the adjustments will need to be of consistent amounts to keep fitting in with the rhythm.

What if the ringing speed changes?

- It will!
- The first few rounds are often quite slow
 - Big bells getting going
 - People not quite ready
- Often speeds up as ringers get accustomed to their bells
- Often slows up as ringers get tired
- Often slows up after mistakes
 - Of course, looking helps enormously here as an early warning that “trouble is afoot”!



8

With an experienced band the speed of ringing is usually pretty consistent over some considerable time: we're all trying to fit in with the rhythm on the assumption that it isn't going to vary much from one change to the next.

However, don't assume it will NEVER vary: keep listening for your bell to check it still fits in with everyone else, and make small adjustments if not.

As an aside, in recent times some ringers have been taught exclusively on a simulator with no other ringers present: this has caused some problems because they're used to a CONSTANT ringing speed and PERFECT striking from all the other bells, and haven't yet learnt the tricks for spotting and dealing with less than perfect ringing and less than perfect ringers!

Peal speed for peal, Brighstone, 17-Sep-17, 8 Spliced S Major, 2h34

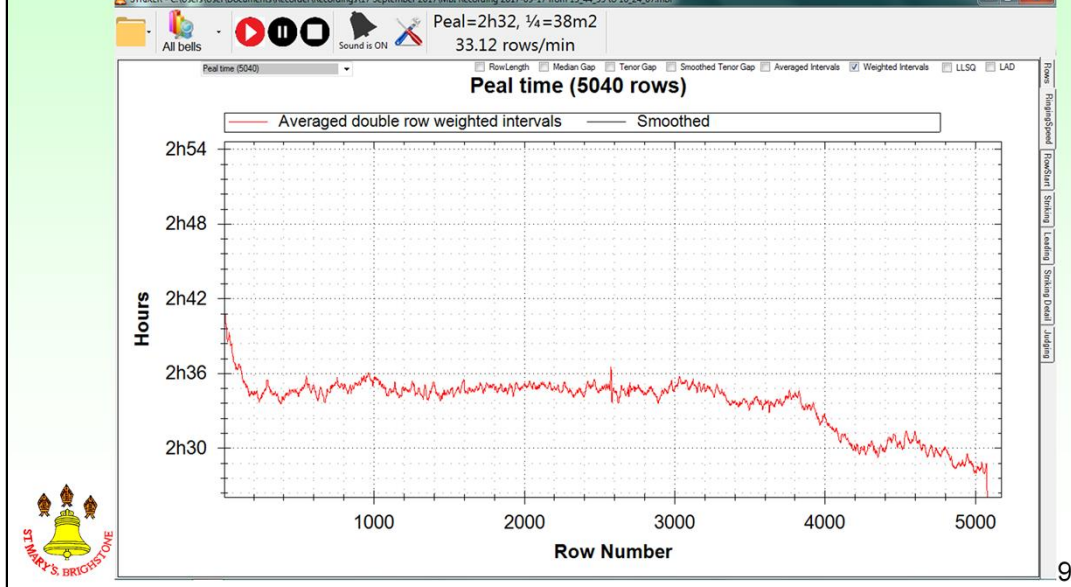


Illustration of the speed of ringing and how it varied throughout a peal at Brighstone.

Peal was 5056 changes of 8 Spliced Surprise Major, timed at just over 2h33, rounded up to 2h34.

Steady start at about 2h40 speed then ringing settled to an even pace, about 2h35 speed, for the next two hours.

Bit of a wobble just after half way (spike in line at about 1h15) caused by a method mistake.

Slight increase in speed at about 1h40

Started to speed up in the last half hour, finished at 2h29 speed.

No rise in peal time seen at the end as Brighstone bells are light and everyone kept going: nobody got really tired or had hands full of blisters!

A ringing conundrum

- What to do if the bell in front goes wrong?
- If you're ringing the 4th and the 3rd rings too close, what should the 4th do?

①②③ ④⑤⑥ or ①②③④ ⑤⑥

– Should the 4th have kept close to 3rd, or not?

- If you're ringing the 4th and the 3rd rings too late, what should the 4th do?

①② ③④⑤⑥ or ①② ③④⑤⑥

– Should the 4th have kept behind 3rd, or not?



- Generally: stick to the rhythm!

10

In all of the previous work we have assumed that you are ringing with a near perfect group of ringers and “all you need to do” is listen and fit in with their rhythm. What if one (or more) of them goes out of place?

In the top example, the treble & 2nd ring perfectly but the 3rd is too early
What should the 4th then do?

On the left, the 4 has kept with the rhythm and assumed the 3rd was wrong; on the right the 4th has followed the 3rd and is now out of place compared to 1,2,5,6.

In the bottom example, the treble & 2nd ring perfectly but the 3rd is too late
What should the 4th then do?

On the left the 4th has kept the rhythm of the 1 & 2 but is clipping (or even clashing) with the 3rd; on the right the 4th has waited for the 3rd but is now out of place with the 1.2.5.6.

In these examples the choice leads to a row that sounds equally bad: the top example has a clash and later a gap; the lower example a gap and later a clash.

However, in the two examples on the right the 4th has chosen to break with the previous rhythm and follow the 3rd, and there is now the danger that the 5th and 6th will also follow the 4th in the same way, and the rhythm of the latter part of the row will get quicker (top example) or slower (bottom example): and in all likelihood this change in rhythm will propagate into the next row.

Generally, the ringing will improve if you keep to the rhythm, and the bell that wobbled may then learn to put their bell in the right place.

Ringling by listening & rhythm

- More reliable than relying on looking
- Takes a LOT of PRACTICE
 - As soon as the rounds settle, don't look directly at the bell you're following
 - Try looking AWAY from the bell you're following for a short time
 - Try looking down at the floor
 - Try ringing facing the wall
 - Try on a simulator with JUST the sound



11

Looking and keeping consistent gaps between the sallies etc. is only going to get you so far. We've seen that the bells swing right over and don't strike until it comes mouth upwards again: this period depends on the weight of each bell, will vary from bell to bell, and may be unreliable (odd struckness etc).

If you can learn to ring more by rhythm then it is more reliable, with listening and making small adjustments to the rhythm to adjust the gaps ... but it takes a lot of practice!