



Music to the ears

For many people, the sound of full circle ringing is indeed music to their ears, especially if they have been abroad and not able to hear it for a while. There is a magic about the sound of change ringing that many people recognise, but what is it? The music of ringing is very different from the music of Beethoven or the Beatles, but it is equally distinctive. In October 2001 *The Learning Curve* looked at similarities and differences between ringers and musicians. It said "Composers put considerable effort into the musical side of their work, yet only a minority of ringers understand it", so this month we will look at music in ringing.

Why is the music different?

First let us remind ourselves why a ring of bells is not suited to conventional music.

Most tower bells are large and heavy. If hung in a carillon, conventional tunes can be played on them, since they are stuck with hammers, but when the bells are swung, each acts like a pendulum, with a fixed period. Bells hung for change ringing swing 'full circle', turning through 360° in a couple of seconds, with the time taken for each swing adjustable by swinging it a little lower or higher (or pausing over the balance). This is the key to English style ringing, making it possible to ring bells accurately in sequence, by adjusting the timing of the bells to fit in with each other.

Although ringing like this permits very accurate control of the timing, the physics of the situation impose strong constraints on the type of music that is possible. For example, there can be no runs of quavers on the same note, since each note can only sound every couple of seconds. In practice, we choose to sound every note in sequence every time. The order of the sequence can be changed by varying the speed of different bells, but not by very much, because of the physical effort that would be needed. That is the origin of the almost universal rule about moving only one place at a time.

Familiar tunes

Rounds is a most basic tune - down the scale. It is a structured motif that stands out as a landmark when it occurs in conventional music.

The rows named for use in call changes also have clearly recognisable structures, with runs of ascending or descending notes, both when heard and when viewed as music, see figure 2.

Tittums is particularly interesting. There are two ways to see (or hear) it: as an alternating up-down pattern that gradually drifts lower, or as two interleaved sequences of high and low notes, each slowly descending.

The music of change ringing

All music relies on a balance between change and predictability. Change provides interest, and predictability adds coherence. In change ringing,

the close relationship between successive rows provides the coherence. It relates back to the physical limitation of only moving bells one place at a time.

Each change swaps pairs of adjacent bells, as shown in Figure 3 - the first few changes of plain hunt. With most methods most bells move at each change, giving a more dynamic effect.

Plain hunting is pleasant music, and many people find that after a while it becomes sufficiently familiar to predict the next row by ear (if they don't think about it too hard).

Plain hunting generates two different sorts of music: partial runs and alternating sequences (similar to Tittums). Figure 4 shows the lines for a course of plain hunting on eight bells, and Figure 5 shows the same things with the back bells (low notes) shown as black blobs and the front bells (high notes) as white blobs.

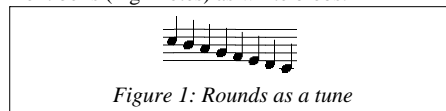


Figure 1: Rounds as a tune

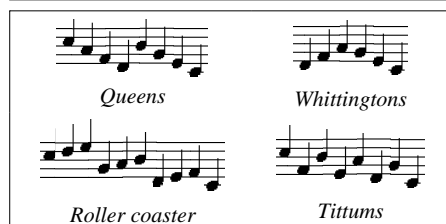


Figure 2: Familiar call changes as tune

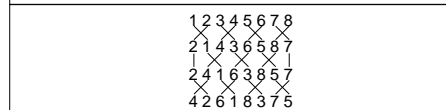


Figure 3: Swapping adjacent pairs

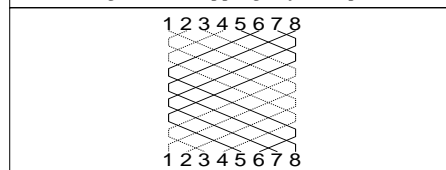


Figure 4: Plain Hunt on eight

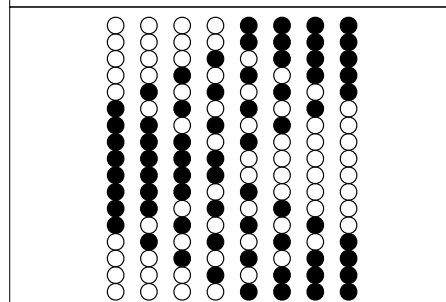


Figure 5: Alternating types of music

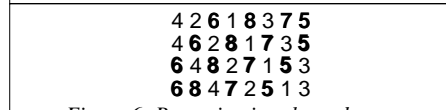


Figure 6: Repeating interleaved pattern

At the start and end, the high notes and low notes form two separate groups (at the left and right of figure 5). Half way through, they also form groups, but with the low notes first (on the left). This includes the familiar sound of reverse rounds, as low notes and high notes come together running up the scale.

Between these regions, the low and high notes move through each other, like bandsmen marching in a tattoo, and generate music that alternates high and low, a bit like Tittums. Figure

6 shows four rows from the interleaved portion. If you look carefully you will see the groups of big bells (and little bells) stays in the same order as they move through each other.

If you listen carefully to either the low note sequence or the high note sequence (it is quite hard to do both at once) you can hear the tune repeated each row, until suddenly the pattern dissolves and runs of high and low notes re-emerge. The effect is more apparent on higher numbers, especially if well struck.

Music in compositions

Musical composition is a subject in itself, but in a nutshell - some rows sound more attractive to the ear than others. If you can contrive to include them rather than the others, then what you ring sounds more musical.

In a plain course the music is fixed (though some methods are inherently more musical - which we hope to cover in a future *Learning Curve*). Longer lengths and peals offer more opportunities. Most composers worry about music for peals of eight or more bells. To be selective about which rows you ring, there must be more than you need, but you ring every row, musical or not, in peals on seven or fewer bells. Music on lower numbers is more to do with the sequences between rows, eg the repetitive effect of multiple dodging in methods like Stedman.

Roll ups

A roll up is a row with many of the bells in a familiar or musical order, for example xxx5678. Many ringers are unaware of roll ups, nor listen for them when ringing, which is a pity; they are key ingredients of bell music.

In the plain course, many methods have roll ups based on rounds. They can occur 'off the back' (as above) or 'off the front', eg 8765xxxx or 5678xxxx. Plain Bob has roll ups in most leads, and a conspicuous one when the Tenor makes seconds in the plain course with 18765432. This also happens in all methods with Plain Bob leads (ie most common methods). Either side of the roll ups, you might hear the bells 'getting near', though in some methods the roll ups come suddenly. Methods with multiple dodging often generate groups of roll ups, while the bells dodge with each other.

Composers argue about which rows are more musical. Some prefer 'Combination Roll Ups' (CRUs) ie rows ending with any two of 4,5,6 followed by 78 (eg 4678). Some prefer roll ups off the back to come at backstroke rather than handstroke, because they sound better before the open handstroke gap. Another musical effect is a 'wrap', a musical combination between one handstroke row and the following backstroke row, for example xxx1234-5678xxx or xxxxxx12-3456xxxx.

Listen for the music

Try to listen to the music whether you are ringing or not. Learn to spot the roll ups, and learn where they come. Try to make sure you strike them particularly well. Listen too for repeated patterns of the back bells moving through the others. If you can find some recordings of good ringing, especially on higher numbers it is worth listening to them too.

Tail End

This article is based on an illustrated talk on ringing music given to non ringers during a fund raising concert at All Saints, Wokingham in October 2001.