

The music of changeringing – 3

In the last article, we looked at ‘methods’, which generate set sequences of notes, with each constituent ‘row’ (similar to a bar of music) having a relationship to the ones before and after it. In this article, we look at composition, and also at change ringing on handbells.

Methods can be performed ‘as they are’, but a composition extends the performance – like a set of variations can extend a basic tune, and can also be used to generate particular musical effects.

The composition periodically switches the ringing onto a new course. Imagine a map (a very large and tangled one) with a junction for every possible row, and paths between the junctions corresponding to every permitted change. The rules for ringing the method are then like a string of navigational instructions (first left, straight ahead, second right, and so on). Starting from one point, the rules will take you on a given route, that leads back to where you started. At various points the conductor can make a call that overrides the normal rule (say turn right instead of turn left). If you then continue to follow the same rules as before, you will now go along a new track. At the next call, you turn onto a new track, and so on. Thus the composition joins together parts of many different musical routes, to form the overall journey.

Routine ringing performances normally last several minutes – say from 100 to 300 ‘rows’ (bars). The ‘gold standard’ performance is a peal (over 5000 rows) which typically takes 3 hours to ring. About 5000 peals are rung every year, and 12-14,000 quarter peals. So how does a peal composer set about filling 5000 ‘bars’ of music? There is one important constraint that normal music composers don’t have. The peal must be ‘true’, ie no two rows (bars) must be the same – anywhere in the performance. The concept of truth might seem counter intuitive, but it is deeply embedded in the history of changeringing, and it is so strong that if a peal is rung and later found to be false, it is expunged from the records.

The key to musical composition is having enough rows (sequences of all bells) available to be able to choose some and reject others. On lower numbers of bells, the number of possible rows is limited. You can ring all 120 possible 5-bell rows in under 4 minutes, but the choice increases rapidly with more bells. On six there are 720, which take about 25 minutes to ring, and on seven there are 5040, just enough for a peal. On higher numbers there are far more, so peal composers can be selective in what they include and what they omit. Ringing on higher numbers also creates a more diverse sound, with more notes, which provides a further attraction.

There are many views on what makes for good music in change ringing, but a core theme is frequent repetition of pleasing fragments as part of a row. Ringers call them ‘roll ups’ but you could think of them as leitmotifs. The diagram shows all upward and downward runs of adjacent notes in a ‘plain course’ (ie with no calls) of Plain Bob Major. Other combinations of low or high notes together give similar desirable effects.

1	2	3	4	5	6	7	8	1	3	5	2	7	4	8	6	1	5	7	3	8	2	6	4	1	7	8	5	6	3	4	2
2	1	4	3	6	5	8	7	3	1	2	5	4	7	6	8	5	1	3	7	2	8	4	6	7	1	5	8	3	6	2	4
2	4	1	6	3	8	5	7	3	2	1	4	5	6	7	8	5	3	1	2	7	4	8	6	7	5	1	3	8	2	6	4
4	2	6	1	8	3	7	5	2	3	4	1	6	5	8	7	3	5	2	1	4	7	6	8	5	7	3	1	2	8	4	6
4	6	2	8	1	7	3	5	2	4	3	6	1	8	5	7	3	2	5	4	1	6	7	8	5	3	7	2	1	4	8	6
6	4	8	2	7	1	5	3	4	2	6	3	8	1	7	5	2	3	4	5	6	1	8	7	3	5	2	7	4	1	6	8
6	4	8	2	7	5	1	3	4	6	2	8	3	7	1	5	2	4	3	6	5	8	1	7	3	5	2	4	7	6	1	8
8	6	7	4	5	2	3	1	6	4	8	2	7	3	5	1	4	2	6	3	8	5	7	1	2	3	4	5	6	7	8	1
8	7	6	5	4	3	2	1	6	8	4	7	2	5	3	1	4	6	2	8	3	7	5	1	2	4	3	6	5	8	7	1
7	8	5	6	3	4	1	2	8	6	7	4	5	2	1	3	6	4	8	2	7	3	1	5	4	2	6	3	8	5	1	7
7	5	8	3	6	1	4	2	8	7	6	5	4	1	2	3	6	8	4	7	2	1	3	5	4	6	2	8	3	1	5	7
5	7	3	8	1	6	2	4	7	5	8	1	4	3	2	6	8	7	4	1	2	5	3	6	4	8	2	1	3	7	5	6
5	3	7	1	8	2	6	4	7	5	8	1	6	3	4	2	8	7	6	1	4	5	2	3	6	8	4	1	2	7	3	5
3	5	1	7	2	8	4	6	5	7	1	8	3	6	2	4	7	8	5	6	3	4	2	8	1	6	7	4	2	5	3	6
3	1	5	2	7	4	8	6	5	1	7	3	8	2	6	4	7	1	8	5	6	3	4	2	8	1	6	7	4	2	5	3
1	3	2	5	4	7	6	8	1	5	3	7	2	8	4	6	1	7	5	8	3	6	2	4	1	8	7	6	5	4	3	2
1	3	5	2	7	4	8	6	1	5	7	3	8	2	6	4	1	7	8	5	6	3	4	2	1	8	6	7	4	5	2	3

The musicality of a composition is influenced by the choice of method(s). The musical scope of methods varies in two ways. One relates to the way that related sequences are grouped within the method. These are easy to see in the method’s structure, and easy to hear when it is rung. The other aspect of musicality relates to deeper structural properties that permit the composer to generate large numbers of roll ups while still keeping the composition true. This is not readily visible, and its understanding is mathematical rather than musical. In fact, the theory of change ringing has probably contributed to some aspects of group theory, and vice versa. For a more detailed discussion of music in changeringing, see: http://wiki.changeringing.co.uk/Music_in_Changeringing

Some ringers view odd bell methods as inherently more musical than even bell methods, because odd bell methods are almost universally performed on even numbers of bells, with the Tenor (lowest note) always last. So every ‘bar’ ends with the tonic.

Change ringing isn’t limited to tower bells. It is also performed on handbells, though rarely in public. The music tends to be more apparent, because of the ‘cleaner’ sound. The physical aspects are a lot easier, though you still need some rhythmic anticipation since the bell sounds when it stops moving, but the mental aspects are more challenging, because each person rings two bells.

Advanced handbell ringers develop the knack of keeping two different lines in their heads, but for simpler methods, most ringers exploit the patterns produce by the structure of the method. Their two hands work as a pair, and periodically switch between a number of standard patterns like those shown here. The lines show the paths of the two bells, and the dots show the number of intervening blows.

