



## Grids

How do they learn all the methods for those multi-method Treble dodging minor handbell peals? There was some discussion recently on the ChangeRingers e-mail list when someone heard that the methods had been learnt using the grid system, and asked for an explanation.

The grid is a visual representation of a method's structure. It is the superimposition of the blue line for every lead (see *The Learning Curve* October 2004) and it shows how the method fits together in a way that the blue line doesn't. In that sense it shows a bigger picture, but the blue line has become so dominant that many ringers are unaware of this very powerful alternative way of looking at methods. Grids have illustrated a dozen or so *Learning Curves*.

Philip Earis, one of the band in question, helpfully responded to this request, though as is the way with discussion lists, not everyone liked his explanation. This article is based on his explanation, and some questions that it raised.

### Ringings by different methods

Philip felt that you couldn't easily define 'ringing by the grid', because people use several different methods in differing proportions when they are ringing. The grid graphically represents the place notation, and people sometimes talk about 'ringing by the place notation', which could also be hard to pin down. Philip believes strongly that knowing more about the structure of methods makes them a lot easier to ring, especially on handbells. Different ways that people learn and ring methods have featured in *The Learning Curve* before, notably in Raymond Kefford's concept of 'Cambridge beyond the blue line' (October 2004).

Philip demonstrated what he meant with a right-place method, Cambridge Minor. Figure 1 shows the grid, and the place notation is:

X 36 X 14 X 12 X 36 X 14 X 56, lead end 12.

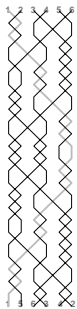


Figure 1: Cambridge Surprise Minor

Everything is driven by where the Treble is (see *The Learning Curve* Volume 1 Chapter 5). So when the Treble is dodging on the front, you know that 3rds (and hence 6ths) must be made.

With a bit of practice, knowing (and using) this can be very helpful. You can either infer what the notation is (where the places are made) from where the Treble is, or you can do it the other way

round and work out where the Treble is from what's going on. If you just ring one bell to Cambridge 'by the blue line', it almost always tells you what your other bell is doing!

'Blue line' bell	The other bell (In the descriptions, 'BLB' refers to 'Blue Line Bell')
makes 2nds	If it is on the front (ie below BLB) it must lead. If it is above BLB then it must dodge. (Also, the Treble is dodging in 3-4, which is the only time 12 is made in Cambridge.)
makes 3rds	If it is on the front (ie below BLB) it must dodge. If it is above BLB, then it must hunt. (Also, the Treble is either dodging in 1-2 or hunting through 4-5.)
makes 4ths	If it is below BLB then it must hunt. If it is on the back then it must dodge. (Also, the Treble is either dodging in 5-6 or hunting through 2-3.)
etc	...

Table 1: Rules for Cambridge Surprise Minor

Whichever way you do it, you are using the structure of the method to help you, and that should make ringing (and putting right) easier.

Relationships between methods are easier to see by looking at the grid. There is a 'periodic table' showing the grids for all possible Treble dodging Minor methods on the web at:

[http://ringing.8bit.co.uk/minor\\_grids.pdf](http://ringing.8bit.co.uk/minor_grids.pdf)

### Elegance

You might not think about the elegance of methods that you ring, but when learning more complex methods, it is extremely helpful to see some sort of overall order and rationale, rather than a random mess. Most people recognise the regularity of the blue line when you extend Plain Bob, Grandsire, etc to higher numbers. Anyone who learns Cambridge on different numbers soon realises too that there is a pattern in where the sets of places occur, and where the corresponding omitted dodges are. Once you know Cambridge Major and Minor, you can pretty well draw the line of Cambridge Maximus, even if you might find it daunting to ring. But what about Bristol? Bristol Major has a simple, elegant line, but look at Royal or Maximus and despite a few familiar fragments, it looks rather alien and confusing.

Philip used these two methods to illustrate the power of looking at the structure.

"Cambridge is maximal hunting when the Treble dodges, and maximal dodging when the Treble hunts."

"Bristol is treble-bob (with appropriate places made to pass the treble), except for three blows of hunting to a point either side of half-lead and lead-end."

To illustrate what these descriptions mean, half a lead of each method is shown in Figures 2 & 3. 16 bells are used to emphasise the patterns, but exactly the same principles apply on any number of bells.

Figure 2 (Cambridge) clearly shows the alternation between dodging and hunting for most bells, aligned with the Treble doing the opposite. It also shows how all the internal places act as a buffer between what the Treble does and what the others do. These places form a corridor around the Treble's path. That shouldn't surprise you if you know that the middle dodge in Cambridge

places is always with the Treble, but the grid shows it better.

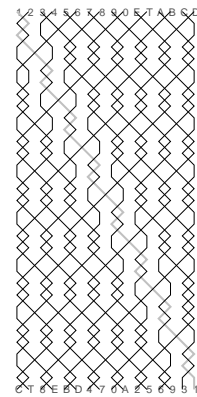


Figure 2: Cambridge Surprise Sixteen

Figure 3 (Bristol) shows the switch from forward to backward hunting on the back bells, at a row of points as the Treble moves from 1-2 to 3-4 (and the mirror pattern at the front when Treble is near the back). Then places separate the work with the Treble from the treble bobbing by all the other bells. (They are odd places, because the treble bobbing is backwards.) The grid looks much more orderly than the line.

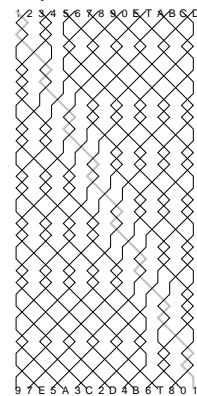


Figure 3: Bristol Surprise Sixteen

### How do grids help?

You might imagine that thinking about what other bells are doing as well as your own is more difficult, but knowing the structure can in fact save you a lot of effort, and you will know the method better. It does take effort, but not a lot compared with what you put into learning a whole blue line for every method you ring. Think of it as an extension to the awareness of what the bells immediately next to you are doing – for example the split between hunting and dodging in St Clements, or the way you run through your course bells when making places in Cambridge or Yorkshire. Start with simple methods and work up. Try ringing a few methods where the over work of one is combined with the under work of another, without learning the whole line.

You can draw grids in the traditional way with squared paper, or you can use Martin Bright's excellent free on-line method-printer at [www.boojum.org.uk](http://www.boojum.org.uk) (selecting the style 'grid').

Finally, if you would like to see them in action, Tibbets, Pipe and Earis will be ringing a handbell peal of treble-dodging minor at the Ringing Roadshow in September, and they will answer any questions in mid-performance!

Tail End

*The Learning Curve*, Vol 1 - 1999-2001 is available from CC Publications.