



## Pieces of eight?

What has a currency made famous by stories of piracy got to do with ringing? In the 15th Century, Spanish dollars or pesos could be physically cut into smaller pieces – halves, quarters or eighths. You didn't need to learn the values of different types of coin; it was obvious because you could put the pieces together and see how they made up the whole. The whole coins were known as pieces of eight, because they could be cut into, or made up from, eight bits (or reals).

When learning the line of a method, most people look instinctively to see natural ways that it can be broken into pieces. This normally makes it easier to learn and remember. But whereas you can always see how to divide a circular coin into two halves, four quarters, and so on, it is sometimes less obvious how to divide a blue line in a way that is helpful. Let's look at an example.

## Double Court

*Tail End* recently received a request for help with Double Court Bob Minor:

*"I cannot get to grips with the division into leads. Clearly there are four pieces of work, but five leads seems an unnatural division. So it's hard for me to remember the starts. With Plain Bob, on the other hand, the work of the method and the lead ends fit nicely together"*.

There are two separate aspects to this question: how to divide the line, and how the division relates to the lead ends.

First, why did the questioner say there were four pieces of work? There are several ways the line could be divided up. Many people think of 'work' as anything other than plain hunting. Figure 1(a) highlights eight 'pieces of work': two lots of places, four single dodges and two pairs of dodges. (Note that the dodge at the top is paired with the one at the bottom.)

Figure 1(a) gives a hint for further grouping, by rolling the three adjacent blobs into one, as shown in Figure 1(b). The resultant four groups are separated by the long stretches of hunting between back and front.

But this is not the only way to produce four groups. For some people, similarity of work is more significant than mere proximity. On this basis, all the dodges can be seen as two groups of similar items, despite the large gaps between some of them, and they are separate from the places, which are different. This different view also gives four groups, as shown in Figure 1(c). Note that the dodging groups are not treble-bobbing, because there are no 3-4 dodges.

This 'clumping' approach is not the only way to divide a line. There is another way, based on symmetry. All normal methods have 'end to end' symmetry, meaning that there are two points on the line where it can be reversed to give the same result. Double methods, like Double Court, have an additional symmetry that allows the line to be

reversed front to back while giving the same result. The front to back reversal also causes a shift, and a neater way of looking at it is to see that there are points about which the line can be rotated half a turn to fit over itself. The lines in Figure 1(d) show how the line of Double Court is divided into four equal parts by these points of symmetry.

Different people group things in different ways. How you do it will depend on what seems 'natural' to you. That might be to do with the way your mind works, or it might just be the first way you happened to see it, in which case if someone else points out a different way, you might find that helpful too.

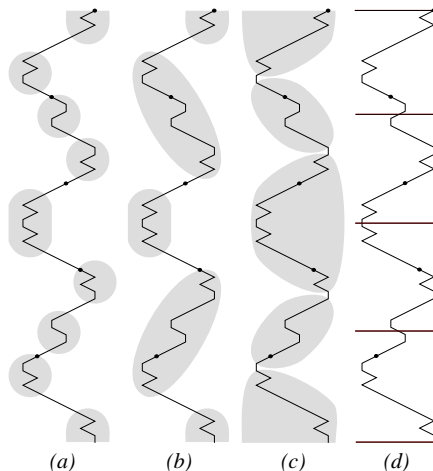


Figure 1: Subdividing Double Court Bob Minor

## Place bells by structure

While any grouping can help you to remember the line, none of the groupings described so far split the line into five, and none of them are any use for helping you to know where the place bells start (see the dots in Figure 1). So we are no closer to answering the original question.

But there is a better way if you are aware of the method structure, because that **does** link directly into the leads. The structure of Double Court Bob Minor was described in April, and is shown in Figure 2(a), with the place bell starts marked. Knowledge of the structure quickly tells you enough to find your place on the line:

- 2nd place bell will run in to the Treble and 3rd place bell has just run out from the Treble.
- 4th place bell hits Treble in 2-3, and so must dodge with 2nd place bell. That takes it to the half lead, where it leads, and so its path must be symmetrical (the pivot bell).
- 5th place bell and 6th place bell must dodge together (because of the place made under them). The first one down is 6th place bell (because it is dodging down) so it hits the Treble lower (in 4-5) and so isn't making places. After the dodge, 5th place bell is left on the back, and when turned from the back by the Treble, it must make places down.

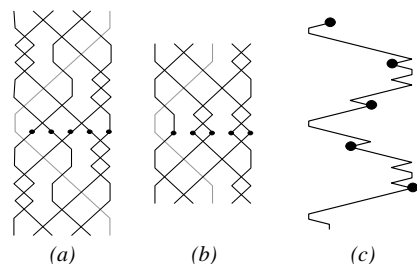


Figure 2: (a) Structure of Double Court Bob, (b) Structure of Little Bob, (c) Little Bob line

## Other methods

Is Double Court the only 'awkward' method, or are there more? There is no guaranteed neat relationship between 'natural' subdivisions of the blue line, and where the place bells start. In some methods there is a relationship, but that is more of a coincidence than a universal rule. Such methods may be in the minority.

Plain Bob has a tidy relationship; place bell starts coincide with the five pieces of work. But Plain Bob is a rather unusual method with only tiny bits of non-hunting work at the lead ends. A method with work spread throughout the lead may have other groupings based on symmetry, on proximity of similar features, or on separation by occasional bits of hunting.

Unless something particularly distinctive happens at the lead ends, any groupings that your brain uses to subdivide the line visually are likely to spread across them.

If what happens at the lead ends is significantly different from what happens anywhere else, then the line is more likely to divide 'naturally' at the lead ends. Plain Bob is the most extreme example, but there are others. For example, in St Clements, the lead end work is like Plain Bob, and there is nothing similar anywhere else in the lead (no single dodges or making seconds). Furthermore, what goes between the dodges is more or less uniform throughout the lead (hunting above thirds place, and multiple dodging on the front), which doesn't mask the single dodge landmarks.

Many methods have 2nds place leads, with dodging above, but if similar things happen elsewhere, then you need some other way to know which dodges occur at the lead ends, and which don't. The line alone is unlikely to give enough cues, but structure can usually help.

For example, Little Bob has dodging above the Treble at the half lead as well as at the lead end. How do you know which 5-6 dodges are lead end dodges? Look at Figure 2(b). 6th place bell goes straight down underneath the Treble, and 5th place bell has similarly just come up from under the Treble before the 5-6 dodge. In both cases, this means no 3-4 dodge. Using this knowledge in Figure 2(c), you can now identify which of the 5-6 dodges are at the lead ends. Many people use the rule 'dodge everywhere unless the Treble is in the way'. It doesn't tell you where to start, but it exploits the (relatively unusual) uniformity of the line to let you ring without knowing where you are on it. When you arrive near the Treble and observe your position relative to it, you are in fact exploiting the nature of the method structure.

## Symmetry

Division based on symmetry will always be in two (or four for double methods) however many bells there are, and so can't fit the number of leads in most cases. Most methods have a symmetry point at a lead end, which coincides with one place bell start (the same place bell as the place made at the lead). In single-hunt odd-bell methods, the other symmetry point is also at a lead end, but for most methods it comes mid lead. The two extra symmetry points in double methods are always away from the lead end.

So although people find symmetry very helpful when learning the line, it is of very little help for learning where the place bells start.

*Tail End*