

# Determining Method Types Demystified

Bell ringing methods are categorised by type, e.g. Plain methods denoted by ‘Bob’ in the title. The least obvious method distinction is between the various treble dodging methods, e.g. Treble Bob, Surprise and Delight, which all have the same treble path. This paper tries to demystify the distinctions through simple worked examples. The precise definitions are available at <http://www.methods.org.uk/ccdecs.htm#decE>, and are occasionally updated in light of new Central Council Decisions.

Note: A ‘fixed bell’ is a bell that completes a lead in the same place that it started.

## Principle

This category requires there to be no fixed bells, in other words all bells are ‘working bells’. E.g. Stedman, Erin and Original. As soon as there is a fixed bell the method is in the category of ‘Hunters’.

## Plain

This category requires the treble to be a ‘fixed bell’, repeating the same path every lead. The path must be symmetrical and pure hunting. E.g. Plain Bob Doubles and Minor, and Grandsire Doubles. Plain methods are further sub-divided into ‘Bob’, ‘Place’ and ‘Slow Course’. In ‘Place’ methods the working bells make places instead of dodging. In ‘Slow Course’ methods a second hunt bell with a symmetrical path makes 2<sup>nds</sup> over the treble at the lead end. Everything else is a ‘Bob’ method. There are additional tags that are frequently seen in plain methods, see below.

Cornwall Slow Course Doubles	
1	2345
2	1435
2	4135
4	2315
4	3251
3	4251
3	2415
2	3145
2	1345
1	2435
1	2453

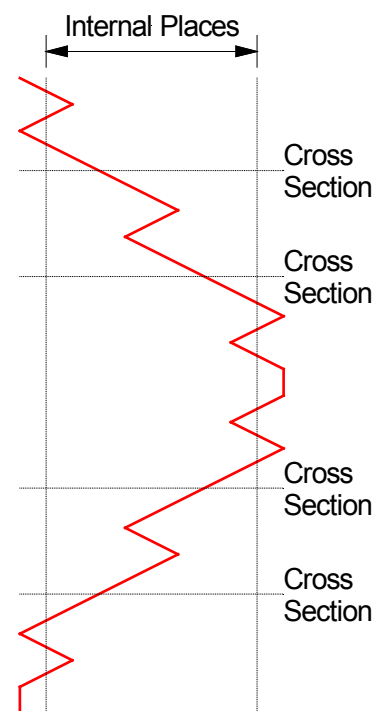
## Treble Dodging

This category is sub-divided into three. In each case, the treble is the fixed bell and the path is symmetric, with the treble right dodging. The treble must dodge at least once in each position, and the same number of times in every position. In other words, Surprise methods are not limited to the treble single dodging in each position, it can double or even triple dodge too!

The following table describes the differences between the three method sub-types, but on its own it does require some further explanation.

<b>Treble Bob</b>	No internal places made at any cross sections.
<b>Surprise</b>	At least one internal place is made at every cross section.
<b>Delight</b>	At least one internal place is made at some cross sections.

‘Cross sections’ are where the treble moves from one dodging position, e.g. 3-4, to another, e.g. 5-6. An ‘internal place’ is a place not at lead or lie, and it is these that are counted when



determining the category. In the worked examples given, the areas highlighted in grey are the locations to look for places to be made. These are the *internal places* at *cross sections* where the **treble** moves from 1-2 to 3-4 and from 3-4 to 5-6, and the same in reverse for the second half of the lead. This excludes the transitions between 5-6 up and 5-6 down dodges, and the pair of 1-2 dodges, as the treble is not considered to be moving between dodging positions, but staying in the same position over a lead or lie. Hence there is no cross section at the half and full leads. The bells making the places that differentiate between the method types are in **bold** to make them stand out.

## Treble Bob

Kent Treble Bob Minor	Pangalactic Gargle Blaster Treble Bob Minor
<u>1</u> 23456	<u>1</u> 23456
2 <u>1</u> 3465	2 <u>1</u> 3546
<b>1</b> 24356	<b>1</b> 25364
2 <u><b>1</b></u> 4365	2 <u><b>1</b></u> 5346
24 <u><b>1</b></u> 635	25 <u><b>1</b></u> 436
426 <u><b>1</b></u> 53	524 <u><b>1</b></u> 63
42 <u><b>1</b></u> 635	25 <u><b>1</b></u> 463
246 <u><b>1</b></u> 53	524 <u><b>1</b></u> 36
2 <u><b>6</b></u> 45 <u><b>1</b></u> 3	5 <u><b>4</b></u> 2 <u><b>3</b></u> <u><b>1</b></u> 6
62543 <u><b>1</b></u>	45236 <u><b>1</b></u>
6245 <u><b>1</b></u> 3	5432 <u><b>1</b></u> 6
26543 <u><b>1</b></u>	54236 <u><b>1</b></u>
25634 <u><b>1</b></u>	45326 <u><b>1</b></u>
5236 <u><b>1</b></u> 4	4523 <u><b>1</b></u> 6
52634 <u><b>1</b></u>	54326 <u><b>1</b></u>
2 <u><b>5</b></u> 36 <u><b>1</b></u> 4	4 <u><b>5</b></u> 32 <u><b>1</b></u> 6
2 <u><b>3</b></u> 5 <u><b>1</b></u> 64	4 <u><b>3</b></u> 5 <u><b>1</b></u> 26
32 <u><b>1</b></u> 546	34 <u><b>1</b></u> 562
325 <u><b>1</b></u> 64	435 <u><b>1</b></u> 62
2 <u><b>3</b></u> <u><b>1</b></u> 546	3 <u><b>4</b></u> <u><b>1</b></u> 526
2 <u><b>1</b></u> 3456	3 <u><b>1</b></u> 4256
<b>1</b> 23465	<b>1</b> 34265
<b>2</b> 14356	<b>3</b> 12456
<b>1</b> 24365	<b>1</b> 32546
<b>1</b> 42635	<b>1</b> 35264

The definition is “an *internal place* is **never** made by a working bell at a *cross section*.” In Kent, the places are made when the treble is dodging in 1-2 away from the internal cross sections. The second example is included to show that the constraint on not making places at the internal cross sections does not mean Treble Bob methods necessarily have more hunting, which might have indicated they tend to be easier than Surprise or Delight methods.

## Surprise

Cambridge Surprise Minor	London Surprise Minor
<u>1</u> 23456	<u>1</u> 23456
2 <u>1</u> 4365	2 <u>1</u> 3546
124635	125364
2 <u>1</u> 6 <u>4</u> 53	2 <u>1</u> 5 <u>6</u> 34
26 <u>1</u> 435	25 <u>1</u> 643
624153	526134
62 <u>1</u> 435	521643
26 <u>4</u> 153	25 <u>6</u> 134
62 <u>4</u> 513	52 <u>6</u> 314
265431	562341
256413	653214
524631	635241
256431	365421
524613	356412
542631	534621
45 <u>6</u> 213	54 <u>3</u> 612
54 <u>6</u> 123	45 <u>3</u> 162
451632	541326
456123	543162
54 <u>1</u> 632	45 <u>1</u> 326
514 <u>6</u> 23	4 <u>1</u> 5362
156432	145632
516342	416523
153624	146253
156342	142635

The definition is “*at least one internal place is **always** made by a working bell at a cross section.*” Although the Cambridge Surprise Minor example does include places in the external cross sections these are irrelevant. The London Surprise Minor example does illustrate these places are not required to meet the definition.

## Delight

With apologies to those of that most noble profession!

Ringling Without An Accountant Is A Delight Minor	Zinc Delight Minor
<u>1</u> 23456	<u>1</u> 23456
2 <u>1</u> 4365	2 <u>1</u> 4365
124356	123465
<u>2</u> 1 <u>3</u> 465	<u>2</u> 1 <u>4</u> 356
23 <u>1</u> 465	24 <u>1</u> 536
324 <u>1</u> 56	425 <u>1</u> 63
32 <u>1</u> 465	24 <u>1</u> 563
<u>2</u> 34 <u>1</u> 56	<u>4</u> 2 <u>5</u> 136
2435 <u>1</u> 6	24 <u>5</u> 316
42536 <u>1</u>	24356 <u>1</u>
4235 <u>1</u> 6	4253 <u>1</u> 6
24536 <u>1</u>	45236 <u>1</u>
42563 <u>1</u>	54326 <u>1</u>
2465 <u>1</u> 3	5342 <u>1</u> 6
24563 <u>1</u>	35246 <u>1</u>
<u>4</u> 2 <u>6</u> 5 <u>1</u> 3	<u>3</u> 5 <u>4</u> 2 <u>1</u> 6
462 <u>1</u> 53	53 <u>4</u> 126
64 <u>1</u> 235	35 <u>1</u> 462
642 <u>1</u> 53	534 <u>1</u> 62
<u>4</u> 6 <u>1</u> 2 <u>3</u> 5	<u>3</u> 5 <u>1</u> 426
4 <u>1</u> 6235	3 <u>1</u> 5246
142653	132564
412635	315264
146253	132546
164523	135264

The definition is “*at least one internal place is made by a working bell at **some** cross sections.*” In the first example, only 4<sup>th</sup> is made, and only in two of the four possible opportunities. In the second example, only 3<sup>rd</sup>s is made in two of the four possible opportunities. Hence neither method meets the constraints required for Treble Bob or Surprise.

It is worth noting that these methods’ plain courses are symmetrical<sup>1</sup> (i.e. the place notation is palindromic), hence omitting a place in the first half of the lead is necessarily mirrored by an omission in the second half. This gives rise to a peculiarity of Delight Minor methods, which can be further sub-divided into 3<sup>rd</sup>s place and 4<sup>th</sup> place varieties. Similar sub-divisions are also possible on higher stages (Major and above), but the sheer volume of the possible varieties makes the distinction less noteworthy.

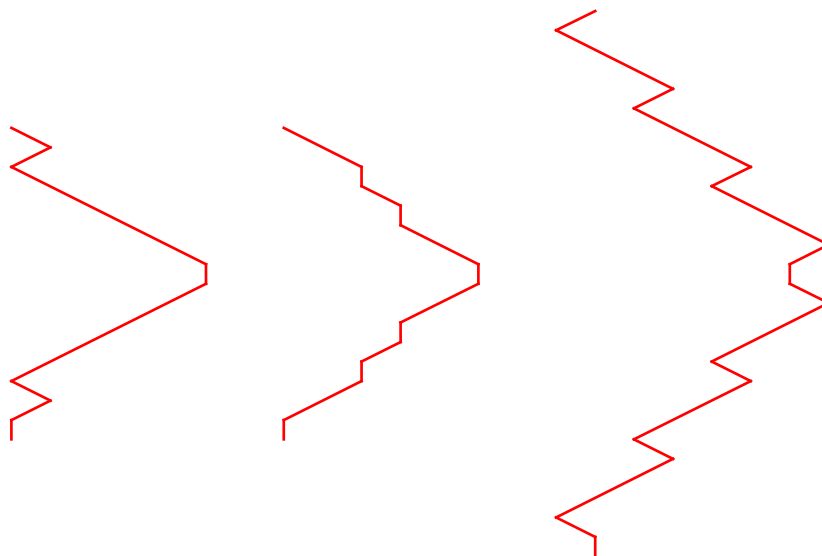
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<sup>1</sup> Note that the definition of a ‘method’ does not require symmetry; there are plenty of asymmetrical examples.

## Treble Place

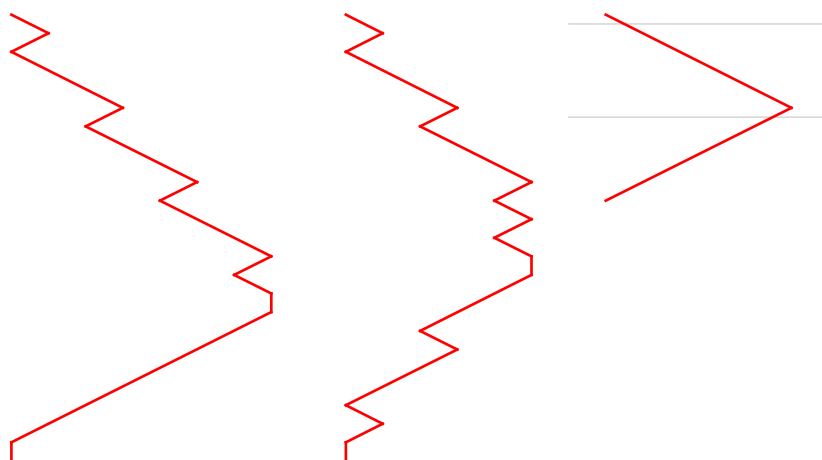
It is worth noting the separate “*Treble Place*” category where, in common with treble dodging methods, the treble lines are symmetrical and have the same number of blows in each position of the path. As the name implies, some dodges are replaced with places. However, in this category there are no *cross sections*, since the treble does not need to do dodges, so consequently there are no further sub-divisions like with treble dodging methods.

## Alliance



This category requires a fixed bell with a symmetric path, and the bell does not have the same number of blows in each position. If methods do not meet the tighter constraints for Treble Dodging and Treble Place methods then they fall in this category. In other words, it's the ‘*everything else*’ category for symmetrical hunt bell methods. Consequently this category has a wide variety of options for the treble path. A couple of examples are provided below to illustrate the variety.

## Hybrid



This category requires a fixed bell and that its path is asymmetric. E.g. Briswich Hybrid Major, which is Bristol Surprise for the first half of the lead, and Norwich

Court Bob for the second (first example). The third example is deceptive, since it appears to have symmetry. But when you consider the constraints on where the lines of symmetry may be drawn, the first half of the lead has the treble hunting from 2 up to 6, and the second half has the treble hunting from 5 down to 1, hence it is considered asymmetrical, and a Hybrid not a Plain method.

## Differential

All of the above categories of methods have a single set of bells rotating place bells at each lead end, so that the number of leads in the method is equal to the number of working bells. Differential methods split the working bells into two or more sets. Bells only rotate place bells within their sets. For example, instead of having a triples principle with 7 working bells rotating each lead end, you might have separate sets of 3 and 4 bells rotating. You will notice that the method will come round at neither the 3<sup>rd</sup> nor 4<sup>th</sup> lead ends, instead it will take  $3 \times 4 = 12$  leads to complete.

You might expect the number of bells in each set to be ‘co-prime<sup>2</sup>’ to the sizes of every other set, otherwise the method would not be noteworthy nor interesting. E.g. a Minor Differential method with a set of 2 and a set of 4 working bells would come round in 4 leads, which is fewer than a single set of 6 working bells.

### Upham Differential Triples, 12 lead heads

```

1234567
2315746
3127654
1236475
2314567
3125746
1237654
2316475
3124567
1235746
2317654
3126475
1234567

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## Additional Tags

The additional name ‘*Little*’ in the method name means that the hunt bell does not ring in every available place. Usually this means the treble does not make it to the back of the change, and these are the most common ‘little’ methods, perhaps explaining the origin of the tag’s name.

The word ‘*Differential*’ may also appear as a tag, e.g. Old Court Differential Bob Minor. In this example the method is both ‘plain’ and ‘differential’ because there is a hunt bell (the treble), as well as two sets of rotating bells, hence it’s also differential. The distinction here over the previous ‘differential’ category is the existence of the hunt bell. Hence these methods are termed ‘*Differential Hunters*’ by the Central Council.

### Little Bob Minor

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123456
214365
241635
426153
462135
641253
614523
165432
164523

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The tag ‘*Reverse*’ prefixes the method name when there exists another method when each change is reversed. This is the reverse of each permutation, not the order of the changes through the course. Perhaps the best-known example pair is ‘Plain Bob’ and ‘Reverse Bob’. The former has a dodge when the treble leads, the latter when the treble lies.

<sup>2</sup> Share no common factors other than 1.

The tags ‘Single’ and ‘Double’ are necessarily paired. The Central Council have ruled that:

*“If a non-Little Plain method with double symmetry<sup>3</sup> and either one plain hunting hunt bell or two or more principal hunts, all of which are coursing, has the same number of leads in the plain course as the corresponding method with no internal places below the hunt bell or principal hunts, they shall have the same name but with the prefixes ‘Double’ and ‘Single’ respectively.”*

The example below takes a pair of well-known plain methods, and shows the *internal* places in bold. It is assumed that the reader has access to the lines for the full courses to confirm the double version has both palindromic and rotational symmetries; space does not permit the lines to be printed here. You will note from the figures below that the double version includes 3<sup>rd</sup>s under the treble where the single version only has 4<sup>th</sup>s above it. Also the 2<sup>nd</sup>s at the lead end is matched by a 5<sup>th</sup>s at the half lead in the double version. Hence there exist two proper methods one with double symmetry and the other without the places below the treble. Hence the pair of methods adopt the additional tags.

Single Oxford Bob Minor	Double Oxford Bob Minor
<u>1</u> 23456	<u>1</u> 23456
2 <b>1</b> 4 <b>3</b> 65	2 <b>1</b> 4 <b>3</b> 65
24 <b>1</b> <b>3</b> 56	24 <b>1</b> <b>3</b> 56
423 <b>1</b> 65	42 <b>3</b> <b>1</b> 65
4326 <b>1</b> 5	24 <b>3</b> 6 <b>1</b> 5
34625 <b>1</b>	4263 <b>5</b> <b>1</b>
36452 <b>1</b>	2436 <b>5</b> <b>1</b>
6354 <b>1</b> 2	42 <b>6</b> <b>3</b> <b>1</b> 5
653 <b>1</b> 42	24 <b>6</b> <b>1</b> 35
56 <b>1</b> <b>3</b> 24	42 <b>1</b> <b>6</b> 53
5 <b>1</b> 6 <b>3</b> 42	4 <b>1</b> 2 <b>6</b> 35
<b>1</b> <b>5</b> 3624	<b>1</b> <b>4</b> 6253
<b>1</b> <b>5</b> 6342	<b>1</b> <b>4</b> 2635

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Checked MBD

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<sup>3</sup> Both palindromic symmetry (mirror image from first to last change) and rotational symmetry, looks the same rotated about 180°.