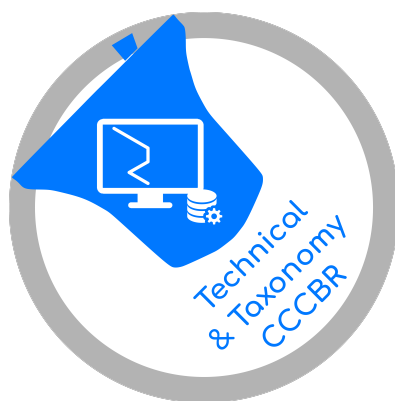




The Central Council of Church Bell Ringers

Framework for Method Ringing — Appendices

Appendices

Edition 2

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Appendix A. Place Notation

A. Adjacent and Identity Changes

1. Place notation is a compact way to describe a Change or a sequence of Changes when the Change(s) comprise Adjacent or Identity Changes.
2. A Change is represented in place notation by listing the Places made, starting from the earliest Place to the latest Place. All remaining pairs of adjacent bells swap.

Example:

With 6 bells, the Change between the Row 214365 and the Row 241356 is written '14'.

Further explanation:

The bells in 1st's Place and 4th's Place in the example above remain in the same Places in both Rows. The pairs of bells in Places 2 & 3 and Places 5 & 6 swap.

3. Places are represented by the same single characters as are used for bells, as described in 3.B.1.
-

Example:

With 12 bells, the Change between the Row 2143658709TE and the Row 123456780T9E is written '9T'.

4. In an even-Stage Change only, all adjacent pairs of bells may swap, such that no Places are made. This is called the cross Change, and it is denoted in place notation with either 'x', 'X' or '-'.
-

Example:

With 8 bells, the Change between the Row 12463857 and the Row 21648375 is the cross Change.

5. When a place notation includes external Place(s) (i.e. 1st's Place and/or the highest-numbered Place of the Change) and internal Place(s), this may be abbreviated to just the internal Place(s) because the external Place(s) can be inferred. When an even-Stage place notation comprises the two external Places only, this may be abbreviated to either just 1st's Place or just the highest-numbered Place of the Change because the other external Place can be inferred.
-

Example:

With 6 bells, the Change 14 can be abbreviated to 4.

With 7 bells, the Change 147 can be abbreviated to 4.

With 8 bells, the Change 1458 can be abbreviated to 45.

With 12 bells, the Change 1T can be abbreviated to 1 or T.

Further explanation:

Note that, by convention, internal Places are never abbreviated, even when it would still be clear what the full Change is.

For example, the 7-bell Change 12347 could be abbreviated to 24, and 3rd's Place, as well as 1st's Place and 7th's Place, could all be inferred. However, by convention, this Change is only abbreviated to 234 – internal Places are always specified.

6. When using place notation to describe a sequence of Changes, a dot is inserted between the place
-

notation for each change. However the dot is omitted on either side of a cross change.

Example:

On 5 bells, an example sequence of 6 changes is 3.1.5.3.1.3.

On 6 bells, an example sequence of 12 changes, including use of the cross change, is 36x36.14x12x36.14x14.36.

In abbreviated form, this latter sequence might be written 3-3.4-2-3.4-4.3.

7. Many methods have a sequence of changes that takes the form A, B, ~A, C, where A is a sequence of changes, ~A is the same sequence of changes as A but in reverse order, and B and C are individual changes. These methods have Palindromic Symmetry (see Section 4.B.1). As an alternative to notating the sequence in full, comma notation can be used to save space, as follows:
- Where two sequences of changes (represented by place notation) are separated by a comma, this indicates that each of these sequences is to be interpreted as a palindrome and expanded as follows: When the last change in the sequence is reached, the changes are then repeated in the reverse order starting with the penultimate change, if any.
 - Where there is only a single change on either side of the comma, there is no penultimate change as described above, and therefore nothing to expand. The single change is therefore incorporated without adjustment.
 - A method with a sequence of changes of the form A, B, ~A, C can therefore be notated: AB,C
-

Example:

Canterbury Little Bob Minor has a full place notation of 34.16x14x16.34.12.

This sequence takes the form A, B, ~A, C where:

A = 34.16x so ~A = x16.34

B = 14

C = 12

Canterbury Little Bob Minor can therefore be notated: 34.16x14,12

Further explanation:

In some methods, the single change is to the left of the comma, and the longer sequence is to the right.

For example, Grandsire Doubles can be notated: 3,1.5.1.5.1

This expands to: 3.1.5.1.5.1.5.1

If the sequences of changes on both sides of the comma are greater than one change in length, then both sides should be expanded.

For example, Carter Singles can be notated: 3.3.1,1.3.3.3

This expands to: 3.3.1.3.3.1.3.3.3.3.1

B. Jump Changes

1. Additional notation is required to describe Jump Changes, as follows.
2. A pair of Places enclosed in round brackets indicates that the bell in the first of these Places jumps to the second of these Places in the next Row. The rest of the bells in the span of Places within the round brackets each move by one Place to accommodate the jump.

Example:

(14) indicates that the bell in 1st's Place jumps to 4th's Place in the next Row. The bells currently in 2nd's, 3rd's and 4th's Places each move down a Place in the next Row.

So, (14) would take Row 1234 to Row 2341.

Similarly, (41) would take Row 2143 to Row 3214.

Further explanation:

The two Places enclosed in round brackets are at least two Places apart.

-
3. A contiguous set of Places enclosed in square brackets indicates how the bells in these Places are transposed from one Row to the next.

Example:

[3412] indicates that the bells in the current Row are "read" in the order 3rd's Place, 4th's Place, 1st's Place, 2nd's Place in order to generate the next Row.

So, [3412] would take Row 2143 to Row 4321.

Similarly, [4321] would take Row 1324 to Row 4231.

Further explanation:

The set of Places enclosed in square brackets comprises at least three Places, and these Places are contiguous – i.e. they comprise a set of Places that form an adjacent set.

-
4. Where the bracketed notations (round or square) don't account for all Places in a Change, standard place notation conventions apply. I.e. remaining pairs of bells cross, and there may be inferred external Place(s).

Example:

The Minor Change (24) specifies what happens to the bells in Places 2, 3 and 4. The remaining Places are therefore 1st's, 5th's and 6th's. Following standard place notation conventions, 1st's place is Made, and the bells in 5th's and 6th's Places cross.

So, Minor Change (24) would take Row 123456 to Row 134265.

Similarly, Caters Change [6543] would take Row 214365978 to Row 125634798.

Further explanation:

If desired, the full Change may be specified in square brackets, even when external Places and/or crosses could be inferred. So, the Caters Change [6543] above could also be specified as [216543879]. However, this is considered less clear to the reader, and is discouraged in Section B.7 below.

-
5. When needed, bracketed notation may be combined with each other and/or with standard place notation to define a Change. Where more than one instance of bracketed and/or standard place notation are used to define a Change, there should be no overlap of Place ranges or individual Places.

Furthermore, and following standard place notation convention, the various Place ranges and individual Places are ordered from lowest Place to highest Place.

Example:

(13)4(75) defines the Triples Change that takes Row 1234567 to Row 2314756. Note that there is no overlap of Places in the three sections of the notation.

(14)(53) should not be used since the range of Places in the second section (3-5) overlaps with the range of Places in the first section (1-4). This Change is more clearly described as [23514].

(24)[765]8 defines the Royal Change that takes Row 1234567890 to Row 1342765809. Again, there is no overlap of Place ranges or individual Places in the notation.

(24)8[765] and [765](24)8 are not correct notations because Place ranges and individual Places are not ordered from lowest Place to highest Place. This Change should be notated (24)[765]8.

6. Dot notation is used to delineate separate Jump Changes in the same way as for standard place notation. Dots are only omitted before and after the cross Change. Also, as with standard place notation, internal Places Made are always specified, even when these could be inferred.
-

Example:

(13)(64) defines a single Change, whereas (13).(64) defines two Changes.

(31)4[765] correctly defines a Triples Change. Convention is to include the 4 since it's an internal Place Made, even though it could be inferred.

7. Where the same Change can be represented in more than one way, it is preferable for the simplest form to be used, as follows, in order to make the Change's operation most apparent to the reader:
 - i) Use standard place notation for all crosses and Places Made where other bell(s) are not jumping over these bells;
 - ii) Use round-bracketed notation in preference to square bracketed notation where possible; and
 - iii) Separate square bracketed notation into the smallest sets of contiguous Places.
-

Example:

Use [432]7 rather than [432657];

Use (25) rather than [3452];

Use [432][765] rather than [432765];

Use (24)5[876] rather than [3425876].

8. Adjacent and Identity Changes are self-inverse, meaning that the same Change applied twice in succession produces the starting Row. However this may not apply to Jump Changes. Therefore, when the comma notation described in Section A.7 above is used and Jump Changes are involved, not only are the Changes in ~A in reverse order, but any Jump Changes in A are inverted in ~A.
-

Example:

Cambridge Treble Jump Minor has notation x3x(24)x2x(35)x4x5,2

Expanding the comma notation gives x3x(24)x2x(35)x4x5x4x(53)x2x(42)x3x2

Note that the Jump Changes are inverted in the second half of the Lead.

9. The comma notation described in Section A.7 above should not be used if the last Change in the
-

sequences on both sides of the comma are not self-inverse Changes. Such a Method would not have Palindromic Symmetry, and use of the comma notation would therefore be misleading. In this case, the sequence of Changes should be written in full, without the use of the comma notation.

Example:

The Minimus Method with notation $x14x(13)x14x12$ appears to have the structure A, B, ~A, C, where A = $x14x$, B = (13) and C = 12.

However, (13) is not a self-inverse Change, and this Method is therefore not palindromic. The Method therefore should not be described using comma notation, and the full notation should be used.

Appendix B. Method Name Syntax

1. The purpose of this section is to define a set of recognised characters for use in Method Names. This is primarily to enable the growing number of software developers who make use of the Method Library to know which characters their applications should support. The character sets below encompass all characters already used in the Method Library, plus many more. The Central Council plans to make available a tool that will let users verify whether the characters they plan to use in a new Method Name are part of the recognised sets. The Central Council will also consider adding additional recognised characters on request. Requests can be emailed to methods@cccbr.org.uk. The Method Name comparison process below ensures Method Names remain clearly unique. For example, as there is already a Method named 'London No.3 Surprise Royal', the process would prevent a new Method being named 'London No 3 Surprise Royal' or 'London No. 3 Surprise Royal'. This is considered beneficial to reduce the likelihood of misidentification of Methods.
2. In the following, 'the Unicode standard' refers to version 10.0.0. See <http://www.unicode.org/versions/Unicode10.0.0/>. Various attributes of individual characters are given the files comprising the Unicode Character Database (UCD, <http://unicode.org/ucd/>), and particularly the file <https://www.unicode.org/Public/UCD/latest/ucd/UnicodeData.txt>, which contains both general category information and case folding information. Unicode blocks are defined in <https://www.unicode.org/Public/UCD/latest/ucd/Blocks.txt>. Normalization is described in https://www.unicode.org/reports/tr15/tr15-45.html#Norm_Forms.
3. Method Names are a sequence of from 1 to 120 characters selected from:
 - All those enumerated in the Unicode standard as being in the Basic Latin and having a category of Lu, Ll, or Nd (upper and lower case letters, and digits;
 - All those enumerated in the Unicode standard as being in the Latin-1 Supplement and having a category of Lu or Ll;
 - All those enumerated in the Unicode standard as being in the Latin Extended-A , except Latin Small Letter N Preceded By Apostrophe;
 - All those enumerated in the Unicode standard as being in the Latin Extended-B ;
 - All those enumerated in the Unicode standard as being in the Latin Extended Additional ;
 - The Unicode characters named: Space, Exclamation Mark, Quotation Mark, Ampersand, Apostrophe, Left Parenthesis, Right Parenthesis, Comma, Hyphen-minus, Full Stop, Solidus, Equal Sign, Percent Sign, Question Mark, Pound Sign, Dollar Sign, Euro Sign and Trade Mark Sign;
 - The Unicode characters named: Superscript Zero, Superscript One, Superscript Two, Superscript Three, Superscript Four, Superscript Five, Superscript Six, Superscript Seven, Superscript Eight, Superscript Nine, Subscript Zero, Subscript One, Subscript Two, Subscript Three, Subscript Four, Subscript Five, Subscript Six, Subscript Seven, Subscript Eight and Subscript Nine;

subject to the further constraints that a Method Name:

1. Must contain at least one character of Unicode general category Lu, Ll, or Nd; and
 2. May neither begin nor end with a Space character, nor may it contain within it two consecutive Space characters.
4. Two Method Names are considered the same if they would be reduced to the same sequence of characters by the following process:
 - The sequence of characters is converted to Unicode Normalization Form KD (NFKD, Normalization Form Compatibility Decomposition);
 - All characters now appearing in the sequence that are not allowed in a Method Name, as per 3 above, are removed;
 - All characters for which the UCD defines a case folding are converted to that folded character (typically lower case);

- The following conversions are made: 'ø' to 'o', 'æ' to the two character sequence 'ae', and 'œ' to the two character sequence 'oe';
- Each character for which the Unicode general category is not Ll or Nd is replaced by the Space character; and
- Any Spaces now at the beginning or end of the sequence are removed, and any internal runs of two or more Space characters are replaced by a single Space character.

5. Notes:

1. The exclusion of Latin Small Letter N Preceded By Apostrophe is because that character is now deprecated in Unicode;
 2. The normalization to NFKD followed by deletion of inappropriate characters eliminates diacritics, brings the superscript and subscript numerals to the baseline, and replaces '™' with the two character sequence 'TM';
 3. Punctuation and symbols are ignored for Method Name comparisons. Thus 'London No.3' is the same as 'London No 3'. Less obviously, 'E=mc²' is the same as 'e & MC₂'. Given how rare, and potentially troublesome, punctuation is in Method Names, this seems a small price to pay, as in practice it just prevents otherwise likely pathological Method Names from being used.
6. Additional background on Method Names and Method Name syntax is available [here](https://framework.cccbr.org.uk/edition2/images/edition2/syntax/method-name-syntax.html)¹ in an article written by Don Morrison.

¹<https://framework.cccbr.org.uk/edition2/images/edition2/syntax/method-name-syntax.html>

Appendix C. Leadhead Codes

A. Leadhead Grouping

- Methods that have a first leadhead that is the same as one of the leadheads found in the Plain Course of Plain Bob or Grandsire have been assigned a code according to the order in which the leadheads occur in its Plain Course. They are a useful shorthand for communicating the Lead order of a Method. Originally lowercase letters were ascribed and these were later extended with numbers to cover higher stages. In the Framework the codes associated with the letters p, q, r and s have been renumbered to include the leadheads previously omitted before the Differential classes were added. Methods with Plain Bob leadheads are split into different leadhead groups according to the place notation (where n is the Stage) immediately before the leadhead as follows:

- Those with Stages and a lead end place notation of have codes a-f
- Those with Stages and a lead end place notation of have codes g-m
- Those with Stages and a lead end place notation of have codes p-q
- Those with Stages and a lead end place notation of have codes r-s

Methods with Grandsire leadheads whose hunt bells have the same path are split into different leadhead groups according to the place notation (where n is the Stage) immediately after the leadhead as follows:

- Those with Stages and a place notation of following the leadhead have codes a-f
- Those with Stages and a place notation of following the leadhead have codes g-m
- Those with Stages and a place notation of following the leadhead have codes p-q
- Those with Stages and a place notation of following the leadhead have codes r-s

Any methods not falling in the above groupings are not given a leadhead code even if they have Plain Bob or Grandsire leadheads.

B. Plain Bob Leadhead Codes for Even Stages

LH Code		Minimus	Minor	Major	Royal	Maximus	Fourteen	Sixteen
PN12	PN1n							
a	g	1342	135264	13527486	1352749608	13527496E8T0	13527496E8A0BT	13527496E8A0CTDB
b	h		156342	15738264	1573920486	157392E4T608	157392E4A6B8T0	157392E4A6C8D0BT
c	j			17856342	1795038264	1795E3T20486	1795E3A2B4T608	1795E3A2C4D6B8T0
c1	j1				1907856342	19E7T5038264	19E7A5B3T20486	19E7A5C3D2B4T608
c2	j2					1ET907856342	1EA9B7T5038264	1EA9C7D5B3T20486
c3	j3						1ABET907856342	1ACED9B7T5038264
c4	j4							1CDABET907856342
d4	k4							1DBCTAOE89674523
d3	k3						1BTAOE89674523	1BTD0C8A6E492735
d2	k2					1TOE89674523	1TOB8A6E492735	1TOB8D6C4A2E3957
d1	k1				1089674523	108T6E492735	108T6B4A2E3957	108T6B4D2C3A5E79
d	k			18674523	1860492735	18604T2E3957	18604T2B3A5E79	18604T2B3D5C7A9E
e	l		164523	16482735	1648203957	1648203T5E79	1648203T5B7A9E	1648203T5B7D9CEA
f	m	1423	142635	14263857	1426385079	142638507T9E	142638507T9BEA	142638507T9BEDAC

C. Plain Bob Leadhead Codes for Odd Stages

LH Code		Doubles	Triples	Caters	Cinques	Sextuples	Septuples	Octuples
PN12n	PN1							
p	r	13524	1352746	135274968	13527496E80	13527496E8A0T	13527496E8A0CTB	13527496E8A0CTFBD

p1	r1	15432	1573624	157392846	157392E4068	157392E4A6T80	157392E4A6C8B0T	157392E4A6C8F0DTB
p2	r2		1765432	179583624	1795E302846	1795E3A2T4068	1795E3A2C4B6T80	1795E3A2C4F6D8B0T
p3	r3		198765432	19E70583624	19E7A5T302846	19E7A5C3B2T4068	19E7A5C3F2D4B6T80	
p4	r4			1E098765432	1EA9T70583624	1EA9C7B5T302846	1EA9C7F5D3B2T4068	
p5	r5				1ATE098765432	1ACEB9T70583624	1ACEF9D7B5T302846	
p6	r6					1CBATE098765432	1CFADEB9T70583624	
p7	r7						1FDCBATE098765432	
q6	s6						1DBFTCOA8E6947253	
q5	s5						1BTCOA8E6947253	1BTD0F8C6A4E29375
q4	s4					1T0A8E6947253	1T0B8C6A4E29375	1T0B8D6F4C2A3E597
q3	s3			108E6947253	108T6A4E29375	108T6B4C2A3E597	108T6B4D2F3C5A7E9	
q2	s2		186947253	18604E29375	18604T2A3E597	18604T2B3C5A7E9	18604T2B3D5F7C9AE	
q1	s1		1647253	164829375	1648203E597	1648203T5A7E9	1648203T5B7C9AE	1648203T5B7D9FECA
q	s	14253	1426375	142638597	142638507E9	142638507T9AE	142638507T9BECA	142638507T9BEDAFC

D. Grandsire Leadhead Codes for Odd Stages

LH Code	Doubles	Triples	Caters	Cinques	Sextuples	Septuples	Octuples	
PN3	PNn							
a	g	12534	1253746	125374968	12537496E80	12537496E8A0T	12537496E8A0CTB	12537496E8A0CTFBD
b	h		1275634	127593846	127593E4068	127593E4A6T80	127593E4A6C8B0T	127593E4A6C8F0DTB
c	j		129785634	1297E503846	1297E5A3T4068	1297E5A3C4B6T80	1297E5A3C4F6D8B0T	
c1	j1			12E90785634	12E9A7T503846	12E9A7C5B3T4068	12E9A7C5F3D4B6T80	
c2	j2				12AET90785634	12AEC9B7T503846	12AEC9F7D5B3T4068	
c3	j3					12CABET90785634	12CAFED9B7T503846	
c4	j4						12FCDABET90785634	
d4	k4						12DFBCTA0E8967453	
d3	k3					12BCTA0E8967453	12BDTFOC8A6E49375	
d2	k2				12TA0E8967453	12TB0C8A6E49375	12TB0D8F6C4A3E597	
d1	k1			120E8967453	120T8A6E49375	120T8B6C4A3E597	120T8B6D4F3C5A7E9	
d	k		128967453	12806E49375	12806T4A3E597	12806T4B3C5A7E9	12806T4B3D5F7C9AE	
e	l		1267453	126849375	1268403E597	1268403T5A7E9	1268403T5B7C9AE	1268403T5B7D9FECA
f	m	12453	1246375	124638597	124638507E9	124638507T9AE	124638507T9BECA	124638507T9BEDAFC

E. Grandsire Leadhead Codes for Even Stages

LH Code	Minimus	Minor	Major	Royal	Maximus	Fourteen	Sixteen
PN3n	PN-						
p	r	125364	12537486	1253749608	12537496E8T0	12537496E8A0BT	12537496E8A0CTDB
p1	r1		12758364	1275930486	127593E4T608	127593E4A6B8T0	127593E4A6C8D0BT
p2	r2			1297058364	1297E5T30486	1297E5A3B4T608	1297E5A3C4D6B8T0
p3	r3				12E9T7058364	12E9A7B5T30486	12E9A7C5D3B4T608
p4	r4					12AEB9T7058364	12AEC9D7B5T30486
p5	r5						12CADEB9T7058364
q6	s6						12DCBATE09876543
q5	s5					12BATE09876543	12BDTC0A8E694735
q4	s4				12TE09876543	12TB0A8E694735	12TB0D8C6A4E3957
q3	s3			1209876543	120T8E694735	120T8B6A4E3957	120T8B6D4C3A5E79
q2	s2		12876543	1280694735	12806T4E3957	12806T4B3A5E79	12806T4B3D5C7A9E
q1	s1	126543	12684735	1268403957	1268403T5E79	1268403T5B7A9E	1268403T5B7D9CEA
q	s	1243	124635	12463857	1246385079	124638507T9E	124638507T9BEDAC

F. Alternative Leadhead Code System

- As an alternative to the letter codes shown above, Methods with Plain Bob Leadheads can be coded according to the number of Plain Leads of Plain Bob that it takes to reach the same Leadhead as it does with one Plain Lead of the Method in question. **Example 1:** The first Leadhead of Cambridge Surprise Major is 15738264. This same Leadhead would be reached by ringing two Plain Leads of Plain Bob Major. Cambridge Surprise Major is therefore referred to as a "+2" Method. **Example 2:** The first Leadhead of London Surprise Minor is 142635. This same Leadhead would be reached by ringing four Plain Leads of Plain Bob Minor. Going forward for four Plain Leads of Plain Bob Minor reaches the same Leadhead as going backwards for one Plain Lead, so London Surprise Minor is referred to as a "-1" method. Pluses are used up to and including the halfway point of a Plain Course of Plain Bob, and minuses are used after the halfway point of the Plain Course. So in Minor, the codes would range from -2 to +2, in Triples the codes would range from -2 to +3, in Major the codes would range from -3 to +3, and so on. For Plain Bob Leadhead Methods where nth's Place rather than 2nd's Place is made at the Leadend Change (where n is the Stage), the letter 'n' is added to the code. **Example 3:** The first Leadhead of Bristol Surprise Major is 14263857 and Bristol S Major is an 8th's Place Leadend Method. Bristol S Major is therefore referred to as a "-1n" Method. Methods that have one Plain Lead in their Plain Course are referred to as "+0" Methods. Note that this alternative Leadhead code system is usually only used for Plain Bob Leadhead Methods with even Stages, and not for Plain Bob Leadhead Methods with odd Stages, nor for Grandsire Leadhead Methods.
- The following tables show the mapping between the codes shown in Appendix C.B above and the alternative Leadhead codes:

Appendix C.B code	Alternative Leadhead code
a	+1
b	+2
c	+3
c1	+4
c2	+5
c3	+6
c4	+7
d4	-7
d3	-6
d2	-5
d1	-4
d	-3
e	-2
f	-1

Appendix C.B code	Alternative Leadhead code
g	+1n
h	+2n
j	+3n
j1	+4n
j2	+5n
j3	+6n
j4	+7n
k4	-7n
k3	-6n
k2	-5n
k1	-4n
k	-3n
l	-2n
m	-1n

Appendix D. Extension Processes

A. Definitions

1. Plain Bob Leadheads

A Method is said to have Plain Bob Leadheads if it can be Rotated (if needed) to start from a Change such that the treble leads at the Leadends and Leadheads, and the Leadends and Leadheads of the Method's Plain Course all occur in a Plain Course of the Method Plain Bob at the same Stage.

Example:

The following table shows the Leadends and Leadheads for Norwich Surprise Minor² and Plain Bob Minor³. It can be seen that the two columns contain the same Rows, albeit in a different order. Norwich Surprise Minor is therefore said to have Plain Bob Leadheads.

2. Coursing

Two Hunt Bells are said to Course if they follow the same Path, and one Hunt Bell rings in the same Places as the other Hunt Bell at an interval of two Rows apart.

Example:

In the Method Grandsire Doubles⁴, the treble and the 2nd Course in the Plain Course (when the initial Row is Rounds). The same is true for Grandsire at all other Stages.

3. Mode

The Mode of an Extension Process specifies which Places remain static, and which Places expand.

Further explanation:

Mode m means that all Places up to and including Place m remain static, and all Places above Place m expand. E.g. an Extension Process might operate by copying 4 Changes and inserting them into a Method's sequence of Changes immediately following these copied 4 Changes.

Assume the 4 Changes to be copied are $x12x36$.

If the Mode used is 1, the resulting sequence is $x12x36x14x58$. I.e. the 1 in 12 remains static, but all Places higher than 1 expand (i.e. increase) by 2 Places in the inserted section.

If the Mode used is 2, the resulting sequence is $x12x36x12x58$. I.e. the 12 remains static, but all Places higher than 2 expand by 2 Places in the inserted section.

If the Mode used is 3, the resulting sequence is $x12x36x12x38$. I.e. the 12 and the 3 in 36 remain static, and all Places higher than 3 expand by 2 Places in the inserted section.

Note that some Extension Processes operate separately on below-the-treble Places and above-the-treble Places. When Mode is used with above-the-treble Places, it may operate with respect to the highest Place (i.e. the Method's Stage) rather than Place 1. Examples of this are included in Extension Process 3 below.

²<https://complib.org/method/14317>

³<https://complib.org/method/11349>

⁴<https://complib.org/method/10587>

B. General

- Below are the Extension Processes that are currently recognised by the Central Council for extending Methods to higher Stages.
- Only one Extension Process may be used to extend any one Method to a given Stage – Extension Processes may not be combined.

Further explanation:

While Extension Processes may not be combined to extend any one Method to a given Stage, different Extension Processes may be used to extend a single Method to different Stages. E.g. St Simon's Bob Doubles is extended to Triples, Caters, Cinques, etc, using Extension Process 3 below. St Simon's Bob Doubles is also extended to St Simon's Bob Minor using Extension Process 2 below (and St Simon's Bob Major is obtained from St Simon's Bob Triples using Extension Process 2, etc).

1. Extension Process 1

Process 1 keeps the Length of the Plain Lead constant. The resulting Extension is two Stages higher than the Parent Method.

- Prerequisites The prerequisites for this Extension Process are as follows:
 - The Parent Method is a Method with no Hunt Bells, or a Hunter (including a Differential Hunter) with a Hunt Bell that has a Little Path.
 - The Parent Method does not use Jump Changes.
- Steps The steps to implement this Extension Process are shown using the following example where Little Bob Minor⁵ is the Parent Method:

Minor			Major			Royal			Maximus		
pn	<=m	>m	pn	<=m	>m	pn	<=m	>m	pn	<=m	>m
x			x			x			x		
16	1	6	18	1	8	10	1	0	1T	1	T
x			x			x			x		
14	14		14	14		14	14		14	14	
x			x			x			x		
16	1	6	18	1	8	10	1	0	1T	1	T
x			x			x			x		
12	12		12	12		12	12		12	12	

- Select a Mode m to be used, where m is greater than or equal to 1, and less than the Stage of the Parent Method. In the example above, the selected Mode is 4.
 - Divide the place notation (shown in column pn) of the Parent Method into Places Made up to and including the Mode, and Places Made above the Mode. These Places are entered in the columns headed $\leq m$ and $> m$ respectively.
 - To obtain the first Extension (which is two Stages higher = Major), leave the Places in column $\leq m$ unchanged, and increase the Places in column $> m$ by 2. See the box for Major above.
 - Then recombine the Places in column $\leq m$ and column $> m$ to obtain the place notation for the Extension to Major.
 - The above can be repeated to obtain additional Extensions in steps of 2 Stages, as shown above for Royal and Maximus.
- Requirements An Extension produced using Extension Process 1 is only valid if:
 - The Extension has the same Symmetry (see Section 4.B) as the Parent Method.

⁵<https://complib.org/method/11932>

2. The Extension has the same number of Hunt Bells as the Parent Method, unless the Parent Method only has Hunt Bells and has no Working Bells, in which case the Extension also only has Hunt Bells.
 3. The Extension has the same number of Cycles of Working Bells as the Parent Method.
 4. If the Parent Method comprises two or more Cycles of Working Bells of equal size, the Extension has this same feature.
 5. If the Parent Method has Plain Bob Leadheads, the Extension also has Plain Bob Leadheads. If the Parent Method does not have Plain Bob Leadheads, the Extension also does not have Plain Bob Leadheads.
 6. The Extension Construction used, when applied to the Parent Method in question, creates an Extension Path containing a minimum of 3 Methods (including the Parent Method) with Stages that are less than or equal to Stage 24.
4. Extension Construction
1. The Extension Construction for referring to this Extension Process is 'EP1-m', where EP1 refers to Extension Process 1, and m is the Mode. So Little Bob Minor is extended using Extension Construction EP1-4.
 2. When two or more Modes produce the same Extension, the lowest Mode is designated as the Mode used. For example, Extension Constructions EP1-4 and EP1-5 both give the same Extensions for Little Bob Minor. EP1-4 is therefore designated as the Extension Construction used.

2. Extension Process 2

Extension Process 2 extends a Parent Method that has one Hunt Bell by adding a second Hunt Bell. Both Hunt Bells in the Extension hunt one Place further from the lead than the Hunt Bell does in the Parent Method, and the Hunt Bells Course in the Extension. The resulting Extension is one Stage higher than the Parent Method, and the Length of the Plain Lead is increased by 2 Changes.

1. Prerequisites The prerequisites for this Extension Process are as follows:
 1. The Parent Method is a Hunter with a single Hunt Bell. The Hunt Bell follows a plain hunting Path (i.e. the Path consists of Hunting up to nth's Place, Making nth's, Hunting down to mth's Place, Making mth's). The plain hunting Path may be a Little Path or a non-Little Path.
 2. No Places are Made above the Hunt Bell Place that transitions the Hunt Bell from Hunting up to Hunting down.
 3. No places are Made below the Hunt Bell Place that transitions the Hunt Bell from Hunting down to Hunting up.
 4. The Parent Method does not use Jump Changes.
2. Steps The steps to implement this Extension Process are shown using the following example where St Simon's Bob Doubles⁶ is the Parent Method:

⁶<https://complib.org/method/10560>

Doubles			
pn	B	H	A
5			5
1	1		
5			5
3	3		
5		5	
3	3		
5			5
1	1		
5			5
125		1	25

Minor			
pn	B	H	A
16		1	6
x			
16	1		6
x			
36	3	6	
x			
36	3	6	
x			
16	1		6
x			
16		1	6
36			36

1. Rotate the Parent Method (if necessary) so that the lower Place of the Hunt Bell is the Lead End Change.
 2. Divide the place notation (shown in column pn) of the Parent Method into Places Made below the Hunt Bell, Places Made by the Hunt Bell, and Places Made above the Hunt Bell. These Places are entered in the columns headed B, H and A respectively.
 3. Start by copying all the Places Made in the Parent Method (split into columns B, H and A) to the same Changes in the Extension.
 4. Place Made below the Hunt Bell are left unchanged in the Extension. See the four Places in column B in the example above (highlighted in green).
 5. Insert a new Change at the start of the Plain Lead and another new Change at the end of the Plain Lead.
 6. Move the upper Place for the Hunt Bell one Place higher, and also move it one Change earlier in the Plain Lead. So 5 in the Parent Method in column H becomes 6 in the Extension one Change earlier (highlighted in lighter blue).
 7. Add Places for the additional Hunt Bell two changes after the Places for the original Hunt Bell. See the added 1 and 6 in column H in the example above (highlighted in darker blue), noting that the additional 1 has wrapped around to be the first Change of the Plain Lead.
 8. Move the Places above the Hunt Bells that are Made before the Hunt Bells reach their higher Places one Place higher, and also move them one Change earlier in the Plain Lead. So 5 and 5 in the Parent Method in column A become 6 and 6 in the Extension one Change earlier (highlighted in lighter pink).
 9. Move the Places above the Hunt Bells that are Made after the Hunt Bells reach their higher Places one Place higher, and also move them one Change later in the Plain Lead. So 5, 5 and 25 in the Parent Method in column A become 6, 6 and 36 in the Extension one Change later (highlighted in darker pink).
 10. Then recombine the Places in columns B, H and A to obtain the place notation for the Extension to Minor.
 11. Rotate the new Method if required to give the desired Extension.
3. Extension Construction
1. The Extension Construction for referring to this Extension Process is 'EP2', where EP2 refers to Extension Process 2. So St Simon's Bob Doubles is extended using Extension Construction EP2. This Extension Process does not use any parameters.

3. Extension Process 3

Extension Process 3 extends a Parent Method by copying and possibly expanding some of its Changes. This Extension Process is designed to extend Parent Methods that are Hunters with a Hunt Bell that has a non-Little Path. The resulting Extension is an even number of Stages higher than the Parent Method.

Extension Process 3 is undoubtedly complex, requiring many steps to implement. However it is the Extension Process that has been used to name the greatest number of Extensions in the Methods Library, and it gives results that often correspond to how a ringer might expect a Method to extend by visual inspection of the Method's blue line.

1. Prerequisites The prerequisites for this Extension Process are as follows:

1. The Parent Method is a non-Little Plain or Treble Dodging Method, or a non-Little Alliance Method with a Hunt Bell Path formed from these two. This Extension Process may also be applied to some other forms of Hunter with a Hunt Bell that has a non-Little Path.
2. The Parent Method does not use Jump Changes.

2. Steps The steps to implement this Extension Process are shown using the following example where **Milton Surprise Minor**⁷ is the Parent Method:

Minor									
pn	Sect	B		H	Inv A		Sect		
	below	<=m	>m		>m	<=m	above		
12	A			1	5		A		
x									
56	B						B		
x									
14	C	1			3		C		
x									
56	D						D		
x									
12	E	12	3		1		E		
x									
36	F	12					F		
x									
12	G		5	6			G		
x									
56									

Major									
pn	Sect	B		H	Inv A		Sect		
	below	<=m	>m		>m	<=m	above		
12	A			1	7		A2		
x									
78	B						B2		
x									
14	C	1			5		C2		
x									
78	D						D2		
x									
12	E	12	3		3		C		
x									
36	D2						D		
x									
12	E2	12	5		1		E		
x									
78	F2	12					F		
x									
12	G2		7	8			G		
x									
78									

Royal									
pn	Sect	B		H	Inv A		Sect		
	below	<=m	>m		>m	<=m	above		
12	A			1	9		A4		
x									
90	B						B4		
x									
14	C	1			7		C4		
x									
90	D						D4		
x									
12	E	12	3		5		C2		
x									
36	D2						D2		
x									
12	E2	12	5		3		C		
x									
78	F4	12					D		
x									
12	G4		9	0			E		
x									
90									

Maximus									
pn	Sect	B		H	Inv A		Sect		
	below	<=m	>m		>m	<=m	above		
12	A			1	9		A6		
x									
ET	B						B6		
x									
14	C	1			9		C6		
x									
ET	D						D6		
x									
12	E	12	3		7		C4		
x									
36	D2						D4		
x									
12	E2	12	5		5		C2		
x									
58	F2	12					D2		
x									
12	G2		7	3			C		
x									
70	E4	12					D		
x									
12	F6	12					F		
x									
ET	G6		9	T			G		
x									
9T									

1. Rotate the Parent Method (if necessary) so that the bell in 1st's Place at the initial Row (referred to as the treble for the rest of this section) is a Hunt Bell that has a non-Little Path.
2. Group the place notation (shown in column pn) into sections depending on the Place of the treble, as follows:
 - A – treble leading
 - B – treble in 1-2
 - C – treble in 2-3
 - D – treble in 3-4 or lying in Singles
 - E – treble in 4-5 or lying in Minimus
 - F – treble in 5-6 or lying in Doubles
 - G – treble in 6-7 or lying in Minor
 - H – treble in 7-8 or lying in Triples
 - I – treble in 8-9 or lying in Major
 - etc.

The section letters are shown in the example above under the 'Sect below' and 'Sect above'

⁷<https://complib.org/method/14931>

headings. Note that in the Parent Method these two columns each contain the same section letters – this changes in the Extensions.

3. Select a Mode m to be used above the treble and below the treble. Mode is greater than or equal to 1, and less than the Stage of the Parent Method. In the example above, Mode 2 has been selected for both above and below the treble. However, the Modes can be different above and below.
4. Divide the place notation (shown in column pn) of the Parent Method into Places Made below the treble ('B'), Places Made by the treble ('H' for Hunt Bel), and Places Made above the treble ('A').
5. The Places Made above the treble are then inverted – i.e. they are counted from the back of the Row instead of from the front. For example, 5th's Place in Minor becomes 2nd's Place when counted from the back.
6. Then sub-divide the Places above the treble and below the treble into those that are less than or equal to the Mode, and those greater than the Mode. In the example above, since the Mode selected is 2, Places in 1st's or 2nd's are in one sub-division, and the other Places are in the other sub-division.
7. The resulting Places are then entered into their respective 5 columns as shown above: B ($\leq m$), B ($> m$), H, Inv A ($> m$), and Inv A ($\leq m$), where m is the Mode.
8. Select a set of adjacent sections below the treble to copy. There must be an even number of adjacent sections in the set. In the example above, sections D and E have been chosen for copying (shaded in lighter green).
9. Determine the step size. The step size is equal to the number of sections in the set selected for copying. In the example above, since two sections have been selected (D and E), the step size is 2. The step size also determines the number of Stages higher the Extension will be. In the example above with a step size of 2, Minor will be extended to Major.
10. The Places in the selected sections are copied and inserted into the sequence immediately following the selected sections. For Places that are less than or equal to the Mode, no changes are made to these Places during the copying. For Places that are greater than the Mode, these are increased by the step size when copied. In the example above, the inserted sections are shown in darker green. It can be seen that Places 12 remain as 12 in the inserted sections, whereas 3 becomes 5 in the inserted sections.
11. The inserted sections are given the same lettering as the sections they were copied from, but modified to reflect the increase of the Places. So in the Extension to Major, D and E are copied to new sections that are labelled D2 and E2 respectively, where 2 is the step size.
12. Places in the sections following the sections that have been inserted are also increased by the step size if they are greater than the Mode m . In the example above, the sections following the inserted sections are shaded in orange. It can be seen that Places 12 remain 12, whereas 5 becomes 7 in the Extension.
13. The lettering of the sections following the inserted sections is modified to reflect the increase of the Places. In the example above, F and G in the Parent Method become F2 and G2 in the Extension to Major.
14. The process for extending the Places above the treble is the same as below the treble, except that the copying and expanding occurs in the reverse direction (i.e. starting from the half lead and working back towards the start of the lead), and the Mode is counted from the back of the Row instead of from the front. In the example above, sections C and D are selected for copying above the treble. These are inserted earlier in the lead as C2 and D2 respectively. The sections before the inserted sections (A and B) become A2 and B2 respectively in the Extension to Major.
15. Increase the upper Place of the treble by the step size and move it to the new Halflead Change. So 6 in Minor becomes 8 in Major in the example above.
16. Then reinvert the Places in the two Inv A columns, and recombine the Places in all 5 columns to

obtain the place notation for the Extension.

17. Rotate the new Method if required to give the desired Extension.
 18. To obtain further Extensions at higher Stages, each higher by the step size, the sections selected for copying can be inserted repeatedly, increasing the Places that are greater than the Mode by the step size for each insertion. In the example above, Royal is obtained by inserting the D, E sections below the treble twice, once as D2, E2, and again as D4, E4. To obtain Maximus, the C, D sections above the treble have been inserted three times, once as C2, D2, once as C4, D4, and again as C6, D6.
3. Requirements An Extension produced using Extension Process 3 is only valid if:
1. The Extension has the same Symmetry (see Section 4.B) as the Parent Method.
 2. The Extension has the same number of Hunt Bells as the Parent Method, unless the Parent Method only has Hunt Bells and has no Working Bells, in which case the Extension also only has Hunt Bells.
 3. The Extension has the same number of Cycles of Working Bells as the Parent Method.
 4. If the Parent Method comprises two or more Cycles of Working Bells of equal size, the Extension has this same feature.
 5. If the Parent Method has Plain Bob Leadheads, the Extension also has Plain Bob Leadheads. If the Parent Method does not have Plain Bob Leadheads, the Extension also does not have Plain Bob Leadheads.
 6. The Extension Construction used, when applied to the Parent Method in question, creates an Extension Path containing a minimum of 3 Methods (including the Parent Method) with Stages that are less than or equal to Stage 24.
4. Extension Construction
1. The Extension Construction for referring to this Extension Process is 'EP3-[Mode above the treble][sections copied above the treble]/[Mode below the treble][sections copied below the treble]'.
 2. EP3 refers to Extension Process 3. In the example above, the Mode was 2 both above and below the treble. Sections C and D were copied above the treble, and sections D and E were copied below the treble. The Extension Construction used in the example is therefore EP3-2CD/2DE.
5. Other considerations
1. The example above uses a set of two adjacent sections to be copied and inserted, giving an Extension that is two Stages higher. Larger sets of sections can be copied and inserted, provided the number of sections is even. For example, sections D, E, F and G could be selected for copying and inserting. Since four sections are involved, the step size is 4, and so the first Extension would be four Stages higher than the Parent Method. D4, E4, F4 and G4 sections would be inserted in the first Extension. In the next Extension (which would be eight Stages higher than the Parent Method), D8, E8, F8 and G8 sections would also be inserted, and so on. Superlative Surprise Major is an example of a Method that extends in steps of 4 Stages. The Extension Construction for Superlative's Extension Process is EP3-3ABCD/3FGHI.
 2. Different size sets of sections may be copied and inserted above and below the treble. For example, sections D, E, F and G could be selected below the treble, and sections A and B could be selected above the treble. In order to extend the Length of the Plain Lead by the same number of Changes above and below the treble, the sections above the treble would need to be copied and inserted twice for every one time the sections below the treble are copied and inserted. The resulting Extension in this example is four Stages higher than the Parent Method. So D4, E4, F4 and G4 sections would be inserted below the treble in the first Extension, and A4, B4, A2 and B2 sections would be inserted above the treble in the first Extension. For example, there is an Extension Process for Cambridge Surprise Major that uses steps of 2 above the treble and steps of 4 below the treble. The Extension Construction for this Extension Process is EP3-1AB/4CDEF.

3. When the same results are obtained by copying different sections, designate the sections closest to the start of the lead as the ones that were copied. This ensures that whatever Stage Method is taken as the Parent Method in a set of Methods that are on the same Extension Path, the same Extension Construction will result. E.g. in the Milton Surprise Minor example above, it can be seen that if sections A and B were copied above the treble instead of sections C and D (while keeping the Mode as 2) the same results would be obtained. Therefore the Extension Construction for Milton Surprise Minor above should be described as EP3-2AB/2DE, rather than EP3-2CD/2DE. (The CD sections above the treble were used in the example above to show what happens to the AB sections above the treble in the Extension.)
4. When two or more different Modes give the same results, designate the Mode used as the lowest one.
5. Finally, the example and descriptions above assume the Parent Method has Palindromic Symmetry about the Leadend Change and the Halflead Change. For non-Palindromic Methods, Extension Process 3 may be applied separately in both halves of the Plain Lead, subject to the following:
 6. If the Places Made below the treble are Palindromic, or the Places Made above the treble are Palindromic, then an Extension Construction is selected that retains that symmetry in the Extension.
 7. If the Places Made above the treble in the first half of the Plain Lead have Rotational Symmetry with the Places Made below the treble in the second half of the Plain Lead, or the Places Made below the treble in the first half of the Plain Lead have Rotational Symmetry with the Places Made above the treble in the second half of the Plain Lead, then an Extension Construction is selected that retains that symmetry in the Extension.
8. An example of an Extension Construction for a non-Palindromic Method is EP3-1AB/2DE/3JK/2OP. The four copied sections are respectively:
 - Above the treble before the Halflead Change;
 - Below the treble before the Halflead Change;
 - Below the treble after the Halflead Change; and
 - Above the treble after the Halflead Change.

Extension Processes 2

4 a) Extension Process 4 - Introduction

EP4 replaces the former EP1 and EP3 extension processes, and also enables a greater range of extensions beyond those provided by EP1 and EP3. It produces extensions that can both keep the lead length fixed (replacing EP1), and expand the lead length (replacing EP3). EP4 can also contract a parent method to lower stages. In addition, EP4 can produce extensions that are a single stage higher, as well as the more common scenario of producing extensions that are an even number of stages (usually two) higher.

There are three variants of EP4: single mode, double mode, and triple mode. These are described below, and examples are provided further below for each one.

1. In a single mode extension, a method's places are extended together, without any further separation, in a single process.
2. In a double mode extension, a method's places are separated into below-the-hunt places and above-the-hunt places, with each subset extended separately. Double mode extension relies on the hunt bell having a path that can only extend in one way, such as with Plain and Treble Dodging methods.
3. In a triple mode extension, a method's places are separated into hunt bell places, below-the-hunt places, and above-the hunt places, with each subset extended separately. Triple mode extension is used when it is necessary to specify how hunt bell places extend, such as with certain Alliance and Treble Place methods.

The ability to use different modes simplifies the extension process for some methods, and supports a wider range of extensions in other cases. The above variants of EP4 are all described below. It will be seen that EP4 in all variants uses the same core process to generate extensions.

In addition to mode, there are two other key parameters to specify when using EP4:

1. Stage increment: This specifies the increase in the stage of the extension versus the parent, and is a positive integer, except that in contraction it is a negative integer.
2. Overlap length: This specifies how the half lead length changes in the extension versus the parent. It can be zero (giving an extension where the lead length doesn't), or a positive integer. If the overlap length is a positive integer and the stage increment is positive, then the half lead length of the extension (versus the parent) increases by the overlap length. If the overlap length is a positive integer and the stage increment is negative, then contraction is being performed, and the half lead length decreases by the overlap length.

4 b) Extension Process 4 - Single Mode, Fixed Lead Length

The diagram below shows EP4 used in single mode with an overlap length of zero to extend Stedman Doubles⁸.

EP4: Stedman

Variant: Single mode

Stage increment: 2

Overlap length: 0

Change	0	1	2	3	4	5	6
1 Place notation for Doubles	1	3	1	5	3	1	3
Extend all places							
Mode: 3							
2 Extend places above the mode by the stage increment	1	3	1	7	3	1	3
3 Place notation for Triples (2)	1	3	1	7	3	1	3

⁸<https://complib.org/method/27834>

The places in line 1 above either remain unchanged in line 2 if they are less than or equal to the mode, or they increase by the stage increment if they are greater than the mode. Since the mode in this example is 3, the places in line 2 are the same as line 1, except that 5th's place in line 1 becomes 7th's place in line 2.

EP4 in single mode with a fixed lead length can be used to extend Principles and Little methods. It can't be used for Hunters with non-Little paths. But note that Principles and Little methods can also be extended on an expanding lead length basis.

4 c) Extension Process 4 - Single Mode, Expanding Lead Length

The diagram below shows EP4 used in single mode with an expanding lead length to extend St Clement's College Bob Minor⁹.

EP4: St Clement's College Bob

Variant: Single mode

Stage increment: 2

Overlap length: 2

Change	0	1	2	3	4	5	6	7	8
1 Place notation for Minor	12	-	16	-	36	-	36		
Extend all places									
Overlap start: 3 Mode: 3									
2 Segment 1	12		16		36				
3 Segment 2					36		36		
4 Connect the two segments	12		16		36		36		36
5 Extend places above the mode by the stage increment	12		18		38		38		38
6 Place notation for Major (5)	12	-	18	-	38	-	38	-	38

This example shows how overlapping segments are used to generate extensions. The first step is to list the place notation for a half lead of the method (line 1). By convention, the lead end change is shown first, and is labelled as change 0. The subsequent changes for a half-lead are then shown and are labelled as changes 1 to n, where n is half the lead length.

The next step is to separate the place notation into two overlapping segments, as specified by the Overlap start and Overlap length parameters. This gives segments 1 and 2, as shown in lines 2 and 3 above. These two segments are then connected as shown in line 4. Different extensions can be produced by selecting different overlap start and mode parameters.

Finally, the relevant places are extended. Since the mode is 3, the places in line 5 are the same as line 4 if they are 3rd's place or lower, otherwise they are 2 places higher.

4 d) Extension Process 4 - Double Mode

The diagram below shows EP4 used in double mode to extend Cambridge Surprise Minor¹⁰.

⁹<https://complib.org/method/11369>

¹⁰<https://complib.org/method/14568>

EP4: Cambridge Surprise
Variant: Double mode
Stage increment: 2
Overlap length: 4

Change	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1 Place notation for Minor	12	-	36	-	14	-	12	-	36	-	14	-	56				
Extend the places below the hunt bell																	
Overlap start: 5 Mode: 1																	
2 Places below the hunt bell					1		12		3		14		5				
3 Segment 1					1		12		3								
4 Segment 2							12		3		14		5				
5 Extend places above the mode in segment 2 by the stage increment							14		5		16		7				
6 Connect the two segments					1		12		3		14		5		16		7
Extend the places above the hunt bell																	
Overlap start: 7 Mode: 1																	
7 Places above the hunt bell	2		36		4				6								
8 Reverse and invert the above					1				3		14		5				
9 Segment 1					1				3		14						
10 Segment 2									3		14		5				
11 Extend places above the mode in segment 2 by the stage increment									5		16		7				
12 Connect the two segments					1				3		14		5		16		7
13 Reverse and invert the above	2		38		4		58		6				8				
14 Place notation for Major (8 + 13 + hunt bell places)	12	-	38	-	14	-	1258	-	36	-	14	-	58	-	16	-	78

In a double mode extension, the place notation is separated into places below the hunt bell and places above the hunt bell. Each of these subsets is then processed in a similar manner to the previous example, but with two differences:

1. In a single mode extension, the place notation is extended after the two segments are connected. But in a double mode extension (and also triple mode), only the places in segment 2 are extended. The extension of the places therefore occurs before the two segments are connected, as can be seen in lines 4, 5 and 6 above.
2. When extending the places above the hunt bell, the first step is to reverse and invert the places (see line 8 above). This restates the places on a basis that is equivalent to places below the hunt bell, such that the same process used to extend below-the-hunt places can be used for above-the-hunt places. A final step is then added to reverse and invert the resulting extended places, to convert them back to above-the-hunt places (see line 13).

Double mode is used to extend Hunters where the hunt bell path can only extend in one way, such as with Plain and Treble Dodging methods. This can include Little Plain and Little Treble Dodging methods (the extension will be 'less Little', but will still be Little).

4 e) Extension Process 4 - Triple Mode

The diagram below shows EP4 used in triple mode to extend [Nightingale Treble Place Minor](https://complib.org/method/29353)¹¹.

¹¹<https://complib.org/method/29353>

EP4: Nightingale Treble Place

Variant: Triple mode

Stage increment: 2

Overlap length: 4

Change	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1 Place notation for Minor	12	34	-	34	16	34	-	34	16	34	-	34	16				
Extend the places of the hunt bell																	
Overlap start: 4 Mode: 1																	
2 Places of the hunt bell	1					3		4					6				
3 Segment 1	1					3		4									
4 Segment 2						3		4					6				
5 Extend places above the mode in segment 2 by the stage increment						5		6					8				
6 Connect the two segments	1					3		4		5		6					8
Extend the places below the hunt bell																	
Overlap start: 8 Mode: 1																	
7 Places below the hunt bell					1			3		1	34		34		1		
8 Segment 1					1			3		1	34		34				
9 Segment 2										1	34		34		1		
10 Extend places above the mode in segment 2 by the stage increment										1	56		56		1		
11 Connect the two segments					1			3		1	34		34		1	56	56 1
Extend the places above the hunt bell																	
Overlap start: 8 Mode: 1																	
12 Places above the hunt bell	2	34		34	6	4			6								
13 Reverse and invert the above				1				3	1	34		34		5			
14 Segment 1				1				3	1	34		34					
15 Segment 2										1	34		34		5		
16 Extend places above the mode in segment 2 by the stage increment										1	56		56		7		
17 Connect the two segments					1			3	1	34		34		1	56		56 7
18 Reverse and invert the above	2	34		34	8	56		56	8	6			8				
19 Place notation for Major (6 + 11 + 18)	12	34	-	34	18	3456	-	3456	18	3456	-	3456	18	56	-	56	18

In a triple mode extension, the place notation is separated into places of the hunt bell, places below the hunt bell, and places above the hunt bell. Each of these subsets is then processed in a similar manner to the previous example.

Triple mode is used to extend Hunters where it is necessary to specify how hunt bell places extend, such as with certain Alliance and Treble Place methods. This can include Little methods where the hunt bell path could be extended in more than one way.

4 f) Extension Process 4 - Contraction

The diagram below shows EP4 used in double mode to contract Kent Treble Bob Minor¹².

EP4: Kent Treble Bob

Variant: Double mode

Stage increment: -2

Overlap length: 4

Change	0	1	2	3	4	5	6	7	8	9	10	11	12
1 Place notation for Minor	16	34	-	34	16	-	12	-	16	-	12	-	16
Contract the places below the hunt bell													
Overlap start: 3 Mode: 2													
2 Places below the hunt bell						1		12		1		12	1
3 Segment 1						1		12					
4 Segment 2									1		12		1
5 Contract places above the mode in segment 2 by the stage increment									1		12		1
6 Overlap the two segments, merging the common changes						1		12	1				
Contract the places above the hunt bell													
Overlap start: 1 Mode: 1													
7 Places above the hunt bell	6	34		34	6				6				
8 Reverse and invert the above				1					1	34		34	1
9 Segment 1				1									
10 Segment 2									1	34		34	1
11 Contract places above the mode in segment 2 by the stage increment									1	12		12	1
12 Overlap the two segments, merging the common changes						1		12	12	1			
13 Reverse and invert the above	4	34		34	4								
14 Place notation for Minimus (6 + 13 + hunt bell places)	14	34	-	34	14	-	12	-	14				

In most cases, extension works in both directions. E.g. Kent Treble Bob Minor can be extended to Kent Treble Bob Major, and Kent Treble Bob Major can be contracted with the inverse process to obtain Kent Treble Bob Minor. The parent method is usually designated as the version of a method family that has the lowest stage, and then only extensions above that stage need to be considered.

However, in some cases a method can be contracted to give a recognizable version of the method at a lower

¹²<https://complib.org/method/26082>

stage, but it can't then be extended back to the original stage. The reason for this is that places can 'cross the mode'. Kent Treble Bob Minimus provides a good example of this. Kent is usually extended above the treble using a mode of 1, as this causes the 3-4 Kent places to remain in 3-4 as the method is extended.

However, when Kent is contracted from Minor to Minimus, places made in 6th's become places made in 4th's. But when attempting to re-extend Minimus back to Minor, it isn't possible under EP4 to specify that the 4th's places that are part of the Kent 3-4 places should remain in 4th's, but the other places in 4th's should extend to 6th's. Contraction therefore enables designation of Kent TB Minor as the parent stage, with higher stages obtained by extension, and one lower stage (Minimus) obtained by contraction.

It will be seen from the diagram above that the contraction process is the inverse of the extension process. Crucially, contraction only works if the places that become overlapped are the same in both segments.

4 g) Extension Process 4 - Single Stage

The diagram below shows EP4 used with a single stage increment to extend Brampford Speke Bob Minor¹³.

EP4: Brampford Speke

Variant: Triple mode

Stage increment: 1

Overlap length: 1

Change	0	1	2	3	4	5	6	7
1 Place notation for Minor	12	56	16	-	16	-	36	
Extend hunt bell and adjacent places								
Overlap start: 1 Mode: 1								
2 Internal hunt bell places and adjacent working bell places	2							
3 Segment 1	2							
4 Segment 2								
5 Extend places above the mode in segment 2 by the stage increment								
6 Connect the two segments	2							
Extend the places below the hunt bell								
Overlap start: 0 Overlap length: 2 Mode: 3								
7 Internal places below the hunt bell (excluding any in 2 above)							3	
8 Segment 1							3	
9 Segment 2							3	
10 Extend places above the mode in segment 2 by the stage increment							3	
11 Connect the two segments, discarding any places that overflow the half-lead							3	3
Extend the places above the hunt bell								
Overlap start: 0 Mode: 1								
12 Internal places above the hunt bell (excluding any in 2 above)		5						
13 Reverse and invert the above						2		
14 Segment 1								
15 Segment 2						2		
16 Extend places above the mode in segment 2 by the stage increment						3		
17 Connect the two segments							3	
18 Reverse and invert the above		5						
19 Place notation for Triples (6 + 11 + 18 + external places required for hunt bell)	127	5	1	7	1	7	1	7

[Notes: this process requires a different overlap length for the places below the hunt bell, compared with the overlap length for the places of the hunt bell and the places above the hunt bell. It is also necessary to discard a place that overflows the half-lead. An alternative process that addresses these issues is shown below, but it requires other modifications to the general process. At the moment, the process above also includes places made adjacent to a hunt bell place as part of the process to extend the hunt bell. All to be discussed.]

¹³<https://complib.org/method/11901>

4 h) Extension Process 4 - Single Stage - Alternative Process

The diagram below shows EP4 used with a single stage increment to extend Brampford Speke Bob Minor¹⁴.

EP4: Brampford Speke (Alternative Process)

Variant: Triple mode

Stage increment: 1

Overlap length: 1

Change	0	1	2	3	4	5	6	7
1 Place notation for Minor	12	56	16	-	16	-	36	
Extend the hunt bell								
Mode: 1								
2 Hunt bell places and movements	1	1→2	2→3	3→4	4→5	5→6	6	
3 Segment 1 Start: 0 End: 1	1	1→2						
4 Segment 2 Start: 1 End: 6		1→2	2→3	3→4	4→5	5→6	6	
5 Extend movements, and places above the mode in segment 2 by the stage increment		2→3	3→4	4→5	5→6	6→7	7	
6 Connect the two segments	1	1→2	2→3	3→4	4→5	5→6	6→7	7
Extend internal places below the hunt bell								
Mode: 3								
7 Internal places below the hunt bell							3	
8 Segment 1 Start: 0 End: 6							3	
9 Segment 2 Start: 5 End: 5								
10 Extend places above the mode in segment 2 by the stage increment								
11 Connect the two segments							3	
Extend internal places above the hunt bell								
Mode: 1								
12 Internal places above the hunt bell	2	5						
13 Reverse and invert the above						2	5	
14 Segment 1 Start: 0 End: 0								
15 Segment 2 Start: 0 End: 6						2	5	
16 Extend places above the mode in segment 2 by the stage increment						3	6	
17 Connect the two segments							3	6
18 Reverse and invert the above	2	5						
19 Place notation for Triples (6 + 11 + 18)	127	5	1	7	1	7	3	7

Single stage extension requires two modifications to the processes seen previously:

1. Single stage extension is used primarily with Plain methods. In such methods, the presence or absence of external places (in changes where there isn't an internal place) is the result of needing to keep the hunt bell plain hunting. For example, 7th's place at change 1 in Plain Bob Triples is not derived from 6th's place at change 1 in Minor—change 1 in Minor has the cross change. Single stage extension therefore can't be derived solely from operations on the place notation—it is also necessary to extend the movements of the hunt bell. The movement notation $a \rightarrow b$ is used to mean 'In this change, the hunt bell moves from place a to place b', where a and b are adjacent places. E.g. $1 \rightarrow 2$ and $5 \rightarrow 4$. Following on from this, only internal places need to be part of the extension process, as any additional external places needed result from the hunt bell movements.
2. In single stage extension, segment 2 may not continue all the way to the half lead change, and segment 1 may continue past the end of segment 2. Start and end changes for segments 1 and 2 are therefore specified individually, instead of specifying an overlap start. The values chosen for the segment starts and ends must be consistent with the Overlap length parameter.

Using these two modifications, the diagram above shows how hunt bell places and movements, internal places below the hunt bell, and internal places above the hunt bell are each extended.

4 i) Extension Process 4 - Additional Considerations

Multiple hunt bells: The examples above are limited to methods with no more than one hunt bell. Methods with multiple coursing hunt bells can be extended in the same way. [Add examples of Grandsire extended in

¹⁴<https://complib.org/method/11901>

steps of two stages using double mode, and also in steps of one stage using triple mode.]

Non palindromic methods: The examples above use palindromic methods. Non-palindromic methods can be extended by applying the processes above separately to each half of the method. The changes of the second half of the method are reversed prior to applying the extension operations, and the resulting extended changes are then re-reversed as the final step. [Add an example of a non-palindromic extension.]

Jump changes and dynamic methods: EP4 is not designed to be used with methods containing jump changes, or dynamic methods.

1. Requirements for extensions to be valid

1. The Extension has the same Symmetry (see Section 4.B) as the Parent Method.
2. The Extension has the same number of Hunt Bells as the Parent Method, unless the Parent Method only has Hunt Bells and has no Working Bells, in which case the Extension also only has Hunt Bells.
3. The Extension has the same number of Cycles of Working Bells as the Parent Method.
4. If the Parent Method comprises two or more Cycles of Working Bells of equal size, the Extension has this same feature.
5. If the Parent Method has Plain Bob Leadheads, the Extension also has Plain Bob Leadheads. If the Parent Method does not have Plain Bob Leadheads, the Extension also does not have Plain Bob Leadheads.
6. The Extension Construction used, when applied to the Parent Method in question, creates an Extension Path containing a minimum of 3 Methods (including the Parent Method) with Stages that are less than or equal to Stage 24.

Standard parameters: When the same results are obtained by using different overlap starts, use the overlap start that is closest to the start of the lead. When the same results are obtained by using different modes, use the lowest mode. EP4 extension construction notation: [To be discussd.]

Appendix E. False Courseheads

- This appendix shows groupings of false courseheads. It is possible for one course of a method to contain one or more rows that also appear in another course of the same method. For example, the course of Cambridge Surprise Major that starts with 13245678 (which is referred to as this course's coursehead) contains the row 12345678 after the 2nd change of the 5th lead. The course with coursehead 13245678 is therefore false against the plain course. Furthermore, it can be shown that courses that are false against a reference course (which is usually taken to be the plain course) occur in groups that are consistent across methods of the same type, such as methods with Plain Bob leadheads and one hunt bell, where the hunt bells have the same path. The table below shows the falseness groupings of the 120 courses that comprise all the possible orderings of bells 2 to 6. These groupings apply to palindromic methods with an even stage of 8 or higher, with Plain Bob leadheads, and with a single hunt bell that follows a Treble Dodging path. As the table only considers the possible orderings of bells 2 - 6 (the working bells), the remaining bells (the fixed bells) are removed from the table for conciseness. The treble (i.e. the hunt bell) is also removed. For example, coursehead 34265 is referring to 13426578 when considering Major, 1342657890 when considering Royal, and so on. The table below is divided into courseheads that are "in-course" and courseheads that are "out-of-course". In-course courses are those that can be reached with bobs only (place notation 14 or 1[n-2]) when starting from rounds. Out-of-course courses are those that can only be reached with bobs plus an odd number of singles (1234 or 1[n-2][n-1][n]) when starting from rounds. False coursehead groups that are designated below by uppercase letters A to U contain in-course false courseheads, and may also contain out-of-course false courseheads. Groups designated by lowercase letters a to f contain only out-of-course false courseheads. Groups A to U and a to f also include tenors-split members that are not shown in these tables. There are 3 additional groups, X, Y and Z, that only have tenors-split members and do not have any tenors-together members. As these tables only show tenors-together members, groups X, Y and Z show below as not having any members.

2.

Group code	A	B	C	D	E	F	G	H	I	K	L
In-course	23456	24365	25634	46253	43265	32654	63542	63425	65324	53624	26543) L1
											42563) L2
											36245)
											46352) K1
Out-of-course	[None]	43256	34265	24356	24635	24563	[None]	36542	[None]	54362)	52346)
											64253)
											34526)
											64325) K2
											[None]
											[None]
											[None]
											[None]

Group code	M	N	O	P	R	S	T	U
In-course	23564 23645 25463 26435	34562 62345 46325 54263	52643 36524 65243 46532	54326) P1 64352) 56342) P2 64523)	45623 56234 35642 62534	52364 34625 64235 45362	62453 26354 53246 24653	34256) U1
								42356)
								43652)
								63254)
								52436)
								35426)
								35264) U2
								42635)
								62435) N1
								53264)
Out-of-course	[None]	35624)	65423	[None]	[None]	[None]	45263	43625)
								35462)
								65234) N2
								45632)
								32564
								32645

Group code	a	b	c	d	e	f
In-course	[None]	[None]	[None]	[None]	[None]	[None]
	23465) a1		35246	34652	36425	54623
	23546) a2	26534	42536	45326	52463	56324
Out-of-course	26453)	25643	42653	62354	43562	65342
			36254	54236	63245	64532

Group code	X	Y	Z
In-course	[None]	[None]	[None]
Out-of-course	[None]	[None]	[None]

- In Major, groups that include both in-course and out-of-course false courseheads always occur as complete groups. However, in Royal and above, in-course and out-of-course components of a group may occur independently. Therefore in the Methods Library, in-course and out-of-course groups are shown separated by a "/" for Royal and higher. For example, E/Bc indicates that the in-course false courseheads of group E, and the out-of-course false courseheads of groups B and c apply to the method (Royal or higher) in question. A further consideration in Royal and higher is that certain of the groups defined above, K, L, N, P, U and a, can subdivide. The subdivisions, indicated by K1, K2, L1, L2, N1, N2, P1, P2, U1, U2, and a1, a2 are also shown in the table above. A Royal or higher method might therefore include U1 rather than U before the "/", or N2 rather than N after the "/".
- Example:** Ibstock Surprise Royal has the following in the Methods Library:

FCHs

Ibstock L1/BDK1c

The false courseheads associated with Ibstock are accordingly: In-course: 26543 Out-of-course: 25436, 32456, 23654, 43256, 53426, 63452, 24356, 46352, 52346, 64253, 34526, 35246, 42536, 42653, 36254

- Example:** A composition might be advertised as being 'true to BDEKacdefYZ'. A band is considering using this composition to ring Othorpe Surprise Major. The CC Methods Library shows that the false coursehead groups for Othorpe are BDXY. Because Othorpe has group X falseness but the composition does not include X in the list of groups that it is true to, this composition will be false if used with Othorpe.
- Methods without any in-course false courseheads are referred to as "cps", or clear proof scale. However, these methods will usually have out-of-course false courseheads. Bristol Surprise Major is an example of a cps method.
- A method that is false in the plain course will have false coursehead group A, usually in addition to other groups.

Appendix F. Framework Principles

The Framework has been designed and developed in accordance with the following principles:

1. Scope

The scope of the Framework is method ringing (also called scientific ringing). It does not cover call (or called) changes, nor tune ringing. Cylindrical ringing, where a bell can ring twice in some Rows, and not at all in others, is similarly out of scope.

2. Description not Prescription

Avoid arbitrary rules and value judgements. Seek to find the logical boundaries that define the limits of method ringing, and ensure the Framework supports everything within these boundaries.

3. Simple, Generic, Consistent

The more straightforward the Framework is, the more widely it will be understood across the ringing community and the more accessible it will be to new ringers joining the Exercise. Standardise terms and requirements where this increases simplicity while retaining historical meaning. However, it is also recognised that method ringing has inherent complexity resulting from both its mathematical foundation and its rich history, such that not all complexity can be eliminated.

4. Define and Explain

Terms used in the Framework should be clearly defined. Include examples and explanations to assist in the understanding of the Framework. For ease of reference, capitalise terms that are defined in the Framework whenever they are used elsewhere in the Framework.

5. Continuity

Most standard Methods and Performances should continue to be described as they have been historically, or with limited alterations where there are clear standardisation or simplification benefits.

6. Rows

In method ringing, the same set of bells rings in every Row, with each bell ringing exactly once in every Row.

Not method ringing:

1	2	3	4	5	6
2	1	3	5	4	6
2	3	1	5	6	
3	2	1	6	5	
3	1	2	6	4	5
1	3	2	4	6	5
1	2	3	4	5	6

Not method ringing:

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

Not method ringing:

1	2	3	4	5	6
2	1	3	5	4	2
6	1	5	3	2	4
1	6	5	2	3	1
4	6	2	5	1	3
6	4	2	1	5	6
3	4	1	2	6	5
4	3	1	6	2	4
5	3	6	1	4	2
3	5	6	4	1	3
2	5	4	6	3	1
5	2	4	3	6	5
1	2	3	4	5	6

7. Places

In method ringing, each bell rings in a different Place in the Row to every other bell.

Not method ringing:

1	2	3	4	5	6
2	1	3	5	4	6
1	2		3/5		4/6
1/3/5			2/4/6		

where ' / ' indicates bells striking at the same time (i.e. a chord)

8. Changes

A Change may be any transformation of one Row to the next. This results in the definition of Jump Changes and Identity Changes in the Framework. The term 'Adjacent Change' has also been introduced to make clear when a Change is not a Jump Change or an Identity Change.

9. Methods

In general, Methods are sequences of Changes that have been given names and which are recorded in the Central Council's Methods Library. Any sequence of Changes should be able to be named as a Method.

10. Truth

A Block of Rows is True if it comprises 0 to n Extents, plus 1 optional partial Extent. In other words, a Block of Rows is True if either (a) all of its Rows are distinct (only occur once) or (b) when the Block is longer than an Extent, any Rows that remain after removing all Extents are distinct. The location of individual Rows within a Block of Rows does not have any bearing on truth.

Note that the above is subject to (a) treatment of any Cover Bells in the Row (see 11. below), and (b) the related concept of 'Accepted Truth' as defined in the Framework.

11. Cover Bells

A Row may include one or more Cover Bells. A Place that is occupied by the same Cover Bell in every Row of a Block (such a Place is referred to in the Framework as a Fixed Place) is excluded when determining truth. Similarly, if Method(s), and/or Method(s) and Call(s), cause a bell to remain in the same Place in every Row of a Block, then this Place is also a Fixed Place and is excluded when determining truth.

12. Length and Stage

Ringing of all Lengths on all Stages should be treated alike for simplicity, consistency and permissiveness. Framework definitions should be relevant and applicable to all ringing, not just Peals. For example, the definition of True applies equally to Short Touches, Quarter Peals and Peals, and if 5000 changes is a Peal of Major, then it is also sufficient for a Peal of Minor.

13. Performance reporting

Under this permissive Framework, bands decide what they wish to ring, and the onus is on them to determine if a Performance merits publication. The Performance Reporting requirements include disclosures for when the ringing is not covered by the Framework, or when it is covered by the Framework but includes characteristics that differ from established norms (for example, not starting and ending in Rounds). These disclosures can then be used in subsequent analyses of ringing Performances.

Appendix G. Version 2 Development

A. Team

Version 2 was developed by the CC Framework Team, which is part of the Technical and Taxonomy CC Workgroup.

The CC Framework team comprises Tim Barnes (team leader), Mark Davies, John Harrison, Graham John, Don Morrison and Philip Saddleton.

B. Objectives

Version 2 was developed to address:

(a) Suggestions received from members of the ringing community subsequent to the implementation of version 1; and

(b) Improvements identified by the Framework team.

C. Articles

1. Click [here](https://framework.cccbr.org.uk/edition2/images/edition2/development/v2-first-rw-article.pdf)¹⁵ for the first RW article on version 2 by the Framework team.
2. Click [here](https://framework.cccbr.org.uk/edition2/images/edition2/development/v2-second-rw-article.pdf)¹⁶ for the second RW article on version 2 by the Framework team.

D. Changes

1. Click [here](https://framework.cccbr.org.uk/edition2/images/edition2/development/v1-v2-diff.pdf)¹⁷ for a document describing the changes made in version 2.

¹⁵ <https://framework.cccbr.org.uk/edition2/images/edition2/development/v2-first-rw-article.pdf>

¹⁶ <https://framework.cccbr.org.uk/edition2/images/edition2/development/v2-second-rw-article.pdf>

¹⁷ <https://framework.cccbr.org.uk/edition2/images/edition2/development/v1-v2-diff.pdf>

Appendix H. Version 2 Consultation

A. Description

1. The ringing community consultation on version 2 opened on Fri Jun 4, 2021 and ran until Fri Jul 16, 2021. 9 people submitted feedback for the consultation. These submissions are shown below (*in italics*), numbered by submitter, together with the responses of the Framework team (in normal font on a shaded background). Where necessary, the submissions have been minimally edited for clarity in a standalone format, and/or to preserve the anonymity of the submitter. Submitter #9 sent in 16 separate submissions to the consultation, with a total word count approaching three times that of all other submitters combined. In the interests of transparency, we have included all 16 submissions in full below, and have answered what we think are the pertinent points.

B. Submissions and Responses

1. Submitter #1

This is excellent work, thank you. I have some comments on Appendix C. Leadhead Codes. Section F describes "Alternative Leadhead Code System" relating to "the number of Plain Leads of Plain Bob that it takes to reach the same Leadhead as it does with one Plain Lead of the Method in question". The description is clear but the examples relate to even stages only, as does the mapping between the existing letter codes and the alternative number codes. The present letter codes are also defined for Plain Bob leadheads for odd stages, and for Grandsire leadheads for both odd and even stages. So could the description of the alternative leadhead code system, and the mapping tables, be extended to include Plain Bob leadheads for odd stages, and Grandsire leadheads for both odd and even stages please?

Thank you for your comments. We did consider expanding the alternative leadhead codes to cover Plain Bob and Grandsire at both even and odd stages. However, the team thought that the traditional codes are rarely used other than for Plain Bob leadhead methods at even stages. We were therefore reluctant to add new material to the Framework covering alternative codes for the other scenarios that we think is unlikely to be used.

There's also a practical consideration in that we've adopted (e.g.) +1n for methods with a '1n' leadend change, where n is the stage of the method. However, for Plain Bob at odd stages the leadend change is just '1', and for Grandsire at even stages it is 'x', neither of which is easily derived from '+1n'.

Thank you also for adding Appendix J. False Courseheads. As far as I know the only place this has been available online until now has been <http://www.methods.org.uk/online/notes.htm> Apart from the formatting, Appendix J seems to be pretty much a cut and paste of the methods.org.uk page except that it omits the content at the bottom of the page relating to the 3 additional groups of false course-heads with no tenors together, and the credits to Edmund Shuttleworth and John Leary. Is this an oversight?

We took the false coursehead tables from the CC Collections of Rung Surprise, Delight, Treble Bob and Alliance Methods to the end of 1987.

We didn't previously include the X, Y and Z groups as it seemed anomalous to include groups with only tenors-split members when the tenors-split members aren't provided for any of the other groups shown.

However, in light of your comment, we have now updated the fch appendix (which has now been reordered as Appendix E) to include the existence of the X, Y and Z groups, along with an example of how this information could be used.

We will consider whether it would be worth expanding Appendix E in a future version of the Framework to include the tenors-split members (i.e. the 720 courses with all permutations of bells 2 to 7) for all fch groups. However there is a question of usefulness to consider here – with modern composing software, the fch groups are used less than in previous eras.

I note from the Ringing World article that there are plans rework the Framework website so that it is easier to use on small-screen devices such as smartphones. Personally, I think there are limits to how much you can reasonably be expected to bend over backwards on this particularly when only a small number of people might be interested in the content. Thanks again to the Framework team for all its vital work.

Yes, we will only do what can be achieved in a reasonable amount of work and time. The aim is for the main text of the Framework to be easily readable on a phone, for example, to answer any post-ringing pub questions that might arise on Framework definitions or requirements.

2. Submitter #2

It appears the Framework team are proposing to undo all the good they have done by reverting to having to ring at least a quarter peal to name a method. Doubles bands like our own have used the facility to name doubles variations by ringing an extent on many occasions. This is generally done prior to a quarter peal being rung to avoid either using a duplicate name or ringing something that has previously been rung to another name. As the article states: "Naming a new method is a privilege in ringing circles" but why does this privilege have to be confined to peal and quarter peal ringers? Why rule out a Sunday service band that wishes to ring something short for a special event? In the Ringing World of 4 June 2021 there is also some debate about eighth peals so presumably naming new methods in these is ruled out too.

It took years to get to the point where we are today where every ringer can have the right to name a new method by ringing an extent or round block so why undo it again now? Please don't go back to the outdated, elitist practice of having to ring a quarter peal or peal to name a method.

Thank you for your comments. Following feedback from this consultation, we're not moving forward with the proposed change to require a quarter peal or longer to name a new method, and version 2 has now been reverted to enable a new method to also be named by ringing an extent.

The Framework team's thinking on this point had been as follows:

- Standardising on a quarter peal as the minimum length to name a new method sets the bar at the same level for all stages;
- Standardising on a QP+ gives a slight simplification of Framework requirements;
- Nearly all new methods named in the past year, which included many Minimus methods, were named in QPs or longer, rather than in extents, suggesting that ringers generally view a QP as a reasonable minimum length for naming a new method.

However, as 5 people have spoken against this change in the consultation, and none spoke in favour of it, we are not moving forward with this change. We recognise that being able to name a new method by ringing an extent of it has been the practice for many decades, and we shouldn't change this unless there's a strong consensus to do so, which there doesn't appear to be.

During the pandemic I have developed a system of ringing two real handbells with Abel using recordings of our other handbells. This is like "music minus one". I ring two real handbells in proper handbell fashion, never looking at a computer screen, so effectively I am really handbell ringing. Where does this stand within new forms of method ringing?

This would be Simulator Ringing as defined in section 6.A.6 because the ringing involves the use of a simulator (in your case Abel). It would also be Automated Ringing as defined in section 6.A.8 because Abel is generating the sounds of the bells that you're not ringing.

3. Submitter #3

Following the article in the RW and on reviewing the Rev2 of the Framework, I have the following comments. I am approaching this as a Guild "Performance Secretary".

We record all RW/BB published performances. We have Peals (as defined by the CCCBR), QPs (no real rules) and 'call changes and other performances' which can include anything from 120 call changes to a lost peal that someone wants to record because it was rung for an occasion. Norms. To quote the RW "If a norm was not followed, that does not mean, in the eyes of the CC, that a Peal (or other length) was not rung".

I understand the mandate of this work is to not be restrictive on what people can and can't ring but as the Peal is the gold standard performance it should still be rung with restrictions and standards. That of course does not mean the performance should not be recorded or published (see above), but as a miscellaneous performance. Even with the added Adelaide amendment, most would still say that was a lost peal and should not have been reported as a peal of 5040 changes, even with "does not comply with all CC norms" attached. Does that 5040 count as a peal or not? Are we leaving it up to the reader to decide if the band rang a Peal? I concur with every single one of the norms, I don't agree with the view that if one (or more) were not followed then a peal can be counted by the CC as suggested in the RW.

Thank you for your comments. As part of the major reforms in 2018, the Central Council voted overwhelmingly to move to a permissive, descriptive framework for method ringing. This followed decades of controversy over what should constitute a peal. The CC therefore no longer determines what is a peal beyond defining its length (a touch that is at least 5000 changes). However, the CC does ask for disclosure in performance reports of anything material about performances that would not reasonably be assumed if not stated.

Note that this is not a version 2 change – this new approach was put in place with version 1 of the Framework.

However, affiliated societies of the CC are free to set more restrictive rules on what they will include in their performance records if they wish. For example, a society might decide to treat performances that didn't follow all the performance norms on a case-by-case basis, and vote at the society's annual meeting on whether to include them in the society's performance records.

4. Submitter #4

Thanks as ever for your work and transparency around developing the Framework. There is one particular new proposal that concerns me - "We're therefore proposing in v2 that the minimum length to be rung in order to name a new method is a quarter peal". This seems seriously misguided and retrograde to me. I've rung various notable new methods by e.g. ringing an extent (120) of doubles. This was freely permissible not just in the 'recent dark ages', but also there are historic precedents going back to the dawn of ringing in the 17th century. It seems very wrong to now try to restrict this. The given rationale in the RW article doesn't seem to make any sense - there isn't a problem of Minimus ringers causing havoc by naming extents. I'm fine with the suggestion that new methods can only be rung with all-human bands. But please don't go down this reactionary rabbit hole of mandating QP lengths to name new methods - it runs contrary to everything the Framework is about.

Thank you for your comments. Following feedback from this consultation, we're not moving forward with the proposed change to require a quarter peal or longer to name a new method. Please see the response to submitter #2 above for a fuller explanation.

5. Submitter #5

I would like to comment on the following section of Version 2 of the Framework: “5E. Right to Name An unnamed Method or Variation may be named by the Band that first rang it in a Performance that is reported by the Ringing World, providing: a) The Performance was at least a Quarter Peal in Length;”

I request you to change this back to the previous version of condition a): “a) The Performance is either at least a Quarter Peal or contains an Extent of the Method;” Here’s why:

Your argument for the change is: “Naming a new method is a privilege in ringing circles. The new method is permanently added to the Central Council’s Methods Library and will always been known by the name given to it. This privilege is traditionally ‘earned’ by ringing a sufficient amount of the new method to justify its recording in the Library, and many would consider ringing 6 changes, or 24 or 120, to be insufficient.”

I think that the attitude expressed here is incorrect and unfair, and will now endeavour to explain why:

I was part of the band that rang an extent of a new Minimus method, as a result of which we exercised our right to name the method after the tower where it was rung (the home tower for three of us). I assure you that the band were well aware of the privilege of being able to name a method. As you know, ringing on 4 bells is not as easy as it sounds, and the new method is not an easy method. We all did our homework, concentrated hard and rang with good striking. Actually, we rang it several times in order to get it sounding really nice. Anyone who thinks that our effort was insufficient is welcome to come and ring it with us!

In addition, the method was rung as part of our service ringing, and in memory of a much-respected member of the church community. This shows that the band care about their church, and I can tell you that it meant a lot to us to have our “own” method. The ringers of 2, 3 and 4, who are members of the local band, have all loyally carried on ringing at the tower every week, when we could have abandoned it and been welcomed at more impressive towers. So I suggest that we have most certainly “earned” the right to name a method after the tower to which we have dedicated a generous proportion of our lives, both by ringing and by supporting the church in other ways.

Perhaps you fear that a band will abuse the right to name a method after ringing only an extent by ringing hundreds of such methods in a day and naming them all? Possibly, but from what you write in your RW article about Version 2 that does not seem to be occurring. In any case, Version 2 would still allow a band to do that, by ringing the methods consecutively in a quarter peal. They would still only have rung one extent of each method, so what is the difference?

It seems to me that you have changed your normative approach from a legislative one to a permissive one – with the one exception of us ringers at 3 and 4 bell towers, who apparently “aren’t to be allowed to get away with it”! What have we done that makes you think the foundations of ringing are threatened if we are allowed to have the pleasure of naming a method after a place that we care about?

Thank you for your comments. Following feedback from this consultation, we’re not moving forward with the proposed change to require a quarter peal or longer to name a new method. Please see the response to submitter #2 above for a fuller explanation.

6. Submitter #6

Thank you for all the hard work that you have put into this on a voluntary basis. It looks very good. My main feedback concerns the proposal that methods can no longer be named in extents that happen to be shorter than 1250 changes. I do not support this proposal, the reasoning for my objection being as follows:

- 1.) In contrast to the spirit of the post-2016 Framework being descriptive rather than prescriptive, the new proposal is prescriptive and dictatorial as to how ringers can perform a new method. I do understand and appreciate that the naming of methods and the regulating of an official methods library is one area where enforcement has to come into it. But I still think that this is an unjustified proposal.
- 2.) If the plain course or a touch of method *m* can produce the extent on *n* number of bells, then method *m* has done all that has been required of it: there are no further rows that can be rung. To me this seems a solid mathematical basis for naming a new method. The reason we would usually repeat some of those extents/rows on fewer than 7 bells is to make the performance a quarter peal+ length. But this is an arbitrary convention. The reason that quarter peals are around 1250 rows is because peals are around 5000 rows, and the reason that peals are around 5000 rows is because the 1715 peal at Norwich was a performance of the extent of Triples. So, arguably the reason that performances of 1250 rows are popular has its roots in the extent of Triples. But the new proposal turns this on its head and now makes the arbitrary 1250 the factor in naming methods rather than the extent, and to me this seems the wrong way round.
- 3.) The RW passage states that new methods can still be named in multi-method performances. Does this mean that you could ring 60 rows of a new Doubles method and 1200 rows of Stedman Doubles for the rest of the quarter peal? This surely entails that you have rung less than an extent of the new method, yet you still wouldn't be permitted to name the new method in a solitary extent on its own.
- 4.) This is about the ease in which new methods can be named in extents on lower stages. I realize that some people probably abuse the privilege of naming methods by naming several new Minimus methods to extents in one practice night. A 120 in a new Doubles method might be slightly harder to learn and execute, in terms of complexity, time taken to ring, and the number of ringers required. Similarly a 720 in a new Minor method is harder still. On this basis, if you really do feel that you have to enforce a length policy, why not propose that performances of new methods on four bells or fewer must be at least 120 rows? I don't like this much either, but I would still rather have this option than not be able to name Doubles and Minor methods in 120s and 720s respectively.
- 5.) Which leads me to my next point. There are some very elegant and intriguing extents of Doubles and Minor out there, particularly extents of new principles. It is fascinating how and why some of these work. In ringing these extents and naming the new methods, it seems right to only ring the extent itself, the extent which the composer has crafted. To ring a longer length just for the sake of ringing a quarter peal rather than a 120 or 720 seems a great shame and to diminish the focus of the single extent. Why must you have to ring that extent again? As I said in (2.), the extent has achieved all that is possible to achieve in the method. I do realize that you might have difficulty finding a band to join you for a 720 of Minor rather than a quarter peal, and that your research has shown that people usually do ring a quarter peal+ length in a new method. But why stop those of us who wish to name the solitary extent? This ties in with the recent suggestion in the RW that 'eighth peals' could become a benchmark performance length, which I responded to in support.
- 6.) In (4.) I mentioned naming methods at a practice night. Though some may abuse this possibility, a practice night might still be a good occasion to name a method for some notable event/commemoration/dedication in a parish. The vicar and local people can join the ringers at the practice night to watch the naming of the new method, and crack open the champagne afterwards. The young learner ringers can also watch and share in the historic moment. This wouldn't be so practical in a quarter peal.

This feedback is not meant to be a criticism, but a plea. Please, please reconsider this proposal which could cause some unnecessary distress if implemented.

Thank you for your comments. Following feedback from this consultation, we're not moving forward with the proposed change to require a quarter peal or longer to name a new method. Please see the response to submitter #2 above for a fuller explanation.

7. Submitter #7

Section 3.B.1 - numbering of the rows. There is no indication of which way the numbers run. Conventionally UK ringers number from the treble (1) down the scale. I note that continental ringers number in the reverse order with their tenor being no.1. (See Facebook pages 'Post your own bell pictures' and 'Glockenfreunde'.) With the recent development of change-ringing on mainland Europe and to ensure the universal comprehension of the numbering system, I suggest that this point be expanded and clarified by stating that bell no.1 is the smallest or highest pitched bell.

We had much debate on the definition of Row during development of the Framework, including whether numbering by descending order of pitch ought to be built into the top-level definition. The essential point here is that nothing breaks in method ringing theory if bells are numbered other than by descending order of pitch. For this reason, we thought it was better and more flexible not to build descending order into the top-level definition. Instead, we stated in the Further Explanation section for Row that bells are usually numbered in descending order of pitch.

8. Submitter #8

Having fun playing with the Jump notation and the example methods here https://cccbr.github.io/methods-library/xml/CCCB_R_Jump.xml.zip I assume the intention is not to have most of the Jump methods being classified as "Little"? But what am I missing which means that isn't the case? The examples are Static Methods. Most of them have Hunt bells, and often those bells don't occupy every place in a lead. Some because they are skipping over some places, but "Cambridge Minor Pair Jump Maximus" in a more genuine (ish...) way.

That's correct that Little isn't used in the method title for methods with jump changes. This is driven by section 5.B of the Framework. Note that the Little class still applies if the hunt bell doesn't ring in all the places of the stage – it just isn't included in the title for a Jump method. This is the same approach as for Hybrid methods.

9. Submitter #9

(1) "Call Changes It's been suggested that the Framework should be expanded to incorporate call change ringing."

(2) This misunderstands the problem. No expansion of the Framework (v1) is needed to incorporate call-changes. The Framework (v1) already defines some call-change ringing as method ringing. ...

(3) ... because call-change ringing is an inevitable consequence of including within the Framework (v1) "3.C.2. Identity Change. A Change that transposes each bell to the same Place in a new Row." while Appendix E D (Boundaries) 1. (Scope) opines "The scope of the framework is method ringing . It does not cover call (or called) changes" The inconsistency should therefore be resolved by version 2.

(4) The constraints which the Framework (v1) imposes to take call-change ringing, however inadvertently, within its scope (to be precise: within Framework norms 6.C) are that - an extent is rung (ie every possible row is rung, maybe with a tenor behind) - each distinct row in the Performance is rung exactly the same number of times, before moving on to the next row. (Or to be precise: some rows might be rung exactly once less than the remainder)

(5) Also, the Framework's stated principles are not followed in this current approach to call-change ringing: Appendix E C (Boundaries) 1. (Scope) "Avoid arbitrary rules and value judgements. Seek to find the logical boundaries that define the limits of method ringing, and ensure the framework supports everything within these boundaries."

(6) A clean solution is to redefine the Framework as real ringers actually describe Change Ringing to their new recruits and to the public: that the fundamental purpose of Method Ringing is to ring changes, which have each row different to its predecessor. (Even if the quoted enthusiasm from Plain Bob Doubles ringers for a

12345-single were a reality). Therefore remove 3.C.2 and make necessary consequential alterations.

(7) Alternatively find the aforementioned logical boundaries of method-ringing which includes call-changes, and define the length of a Touch in 3.I.2 to exclude Identity Changes, and have another category of Accepted Truth 3.J.6 that excludes the repeated changes generated from the Identity Change from the truth calculations.

(8) In the same way that Framework (v1) introduced to ringers the new concept of the Jump-Change-to-Rounds to immediately conclude a wobbly Performance, Framework (v2) would facilitate a "Freeze" call to cause the current row to be repeated while the conductor thinks out the best way to carry on. This would be fun. :-)

(9) "We've discussed this among the Framework team and with CC Executive members and have concluded that there isn't a need for this at the moment."

(10) The document ought to tell us about these discussions, and what were the criteria used to come to the conclusion, and when the undefined Important People thought such criteria might be met in future. Similarly there is no mention of any such discussion at Council Executive meetings, so whether Executive members have or have not had informal discussions does not seem to help us.

(11) While call change ringing is a well-established and important branch of change ringing, there is much less of a tradition of publishing call change performances, ... Many more of these have been published since the suspension of ringing. It would help ringers' development to have a structure around these Performances, and more widespread recognition of them by publication.

(12) "... there isn't a central library with named call change callings nor a classification system for call changes, there aren't record lengths rung of call changes, and so on, these being the main areas addressed by the Framework. " This is a circular argument. If there is no recognition within the rules (indeed their intended specific exclusion) of the value of call change ringing, then there is no incentive to develop the structures that allow ringers to exchange and compare their Performances. The better question is "What harm would it do to include them?" There is certainly more enthusiasm for these Performances than there is for Jump Changes.

(13) "And there are other ringing publications available that explain the mechanics of ringing call changes." I don't see why this is a relevant consideration. For example, BellBoard initially diverted simulator-assisted Performances to a Facebook group, but later relented and made amendments to encourage their notification. It would also be useful to link to such publications (of which I have been blissfully unaware all these years) for evaluation purposes.

The difference between method ringing and call change ringing is not a function of the rows that are rung, but the manner in which they are rung.

In method ringing, the band executes continual changes according to the method, having memorized in advance the information needed to generate them.

In call change ringing, the band executes each individual change on the conductor's command, and then rings the resulting row until the next change is called.

Typo: Both v1/v2: Appendix E section C para 1 last sentence: "Section B below" should be "Section D below"

Thanks – this has been corrected in version 1, and is no longer applicable to version 2 following reorganization of the appendices.

(1) "With the increase in 3- and 4-bell ringing, this means new methods can be named by ringing as few as 6 changes." The following is both a pedantic point, and an illustration of one piece of woolly thinking in the paper.

(2) The number of changes needed to define and name a Method is wholly defined by the provisions of the Framework (v1) ...

(3) ... and is independent of the popularity or otherwise of 3- and 4- bell ringing. The implication words "this means" are therefore both inaccurate and irrelevant

(4) The prominence of 3- and 4- bell ringing has increased, most likely because of the Accursed Virus, its lockdowns and suspensions of towerbell ringing ...

(5) ... and such increased prominence is likely to be temporary ...

(6) ... and making long-term Framework changes based on this temporary blip is likely to be poor and ill-considered legislation ...

(7) ... particularly so if it is based on the rhetorical flourish claiming, or appearing to claim, that ringers have named method(s) based on Performances of six changes.

(7) I challenge the technical accuracy of the statement, derived from (1) above (with irrelevant words removed):

"new 3-bell methods can be named by ringing as few as six changes"

Framework (v1) 5.E.1(a) "An unnamed Method may be named ... providing: The Performance ... contains an Extent of the Method."

Framework (v1) 3.J.1: "Extent [on 3 bells] The complete set of distinct Rows possible [on 3] bells."

Framework (v1) 3.J.1 Further explanation: "[an Extent of a] Method ... generally refers to an ordered Extent generated using the Changes of [the Method] ... (and any necessary Calls). "

(8) Firstly, then, no band has, under the Framework, actually named a 3-bell method with a Performance of six changes. ...

(9) ... primarily because it is really, really hard so-to-do. ...

(10) A method with a place notation with three or more changes will repeat a Row in its Plain Course, and therefore need a multi-Extent (of a multiple of six changes) to be True.

(11) The one obvious two-change three-bell Method had already been named (insofar as any Method could claim to have been named under the Decisions) when the Framework was adopted, in both of its rotations: Original Singles, with a Peel recorded on Sat 15 Oct 1949 <https://complib.org/method/34022> Reverse Original Singles with an Extent recorded on Fri 28 Jun 1963 <https://complib.org/method/35988>

(12) Beyond that, we are into complicated and pointless quibbling on what may and may not be named. Maybe the method with the one change "3" and another Method with the one change "1" could be named. Splicing them in an extent of six changes would be True, and the quibble is whether we have rung an Extent of either of them in the terms of 5.E.1(a) and the Framework (v1) 3.J.1's further explanation as at (7) above. And the Framework definitions may quibble that these Methods have a Stage of Two rather than a Stage of Singles.

(13) As a riposte, maybe we can add an arbitrary number of Identity Changes (Framework 3.C.2) to Original Singles to make a new Method, then omit them with a Call (Framework 3.F.1) and ring an Extent with just the six changes.

(14) Or just ring 3.1.3.1.3.1 but note that under Framework 5.C.6. this Method "is not normally separately recorded in the Methods Library [as] its sequence of Changes is a multiple of another Method's sequence of Changes "

Following feedback from this consultation, we're not moving forward with the proposed change to require a quarter peal or longer to name a new method. Please see the response to submitter #2 above for a fuller explanation.

"Appendix E. Framework Development" applies to Version 1 and could usefully be expanded to explain how version 2 was developed. Or made explicitly to say that this applies only to version 1. I would find it of value to know the team involved in version 2 development (Appendix E.B), and how different from Version 1; the Goals or amended Goals (Appendix E. C); the Boundaries (Appendix E D) including the thinking on remote/online ringing.

Thank you for these suggestions. We've now reorganized the appendices such that Appendix F contains the design principles behind the Framework (unchanged from version 1), and appendices G and H have information on version 2 development.

- (1) *"proposing in v2 that the minimum length to be rung in order to name a new method is a quarter peal."*
- (2) *The consultation excludes any consideration of the traditions around Minor ringing. The fact of the tradition of naming a new Minor method by ringing an Extent of it is not even mentioned.*
- (3) *There is (considered separately) an unsupported and non-evidenced assertion that 120 changes is insufficient to name a new Method. Even if that had any support as an argument, there is nothing to say why ringing a Minor Extent is no longer acceptable ...*
- (4) *... or what has changed to alter the long traditions within Minor ringing.*
- (5) *Consider the proposed new ruling from the perspective of, say, a closed-handstroke Minor-ringing band that has been contributing new Minor methods for two hundred years.*
- (6) *The Council took a view from its Legitimate Methods initiative at the beginning of the twentieth century that some Minor methods were no longer 'legitimate', but even then, it continued to accept the right of bands introducing new Minor Methods to give them names ...*
- (7) *... and in 1926 it considered a report from its Nomenclature Committee which was particularly fussed about Methods named after flowers, but in the end nothing was done about them.*
- (8) *In 1976 the Council (responding to a spat about that well-known Scottish hamlet) voted itself able to change Method names given by bands, and in 1986 it added the option to leave new Methods unnamed. A few small wording changes in the 2000s had no fundamental affect on naming Minor methods. In 2013 round blocks of more than one extent could be used to name new Methods and there was the significant alteration in 2016 to allow Triples/Major/etc Methods to be named with a Quarter Peal rather than a Peal: this did not affect Minor ringing, which had always been able to name a new Method with an Extent, ...*
- (9) *...but it did admit of the possibility of naming Minimus methods with an Extent thereof, which had not been mentioned before.. However these were all with the Decisions' definition of a Method which required it to be True in its Plain Course and divisible into leads.*
- (10) *It was the Framework which removed all constraints on a Method, which became defined in 3.E.1 ,as well as inventing the Identity Change 3.C.2 , and encompassing Methods on three two and one bell(s). 3.A.2., thus creating an infinite number of possible new Methods at every Stage ...*
- (11) *... and having created this infinite number of Singles (and Two) Methods, and despite there being no great enthusiasm from the ringing community to define them, the version 2 team proposes (separate comment on this) with no evidence that "many would consider ringing 6 changes, or 24 or 120, to be insufficient". Whether or not that unsubstantiated comment is true, or whether these "many" are Important People To Be Listened To, the proposal does not even admit of the many Methods defined by ringing Minor Extents, and just arrogantly sweeps by, onwards and upwards, towards its assertion that a Quarter Peal is necessary.*
- (12) *Also passing-by the mathematical elegance of an Extent, which in Minor is a significant and worthwhile Performance as well as being technically more constrained than a Minor Quarter Peal.*

Following feedback from this consultation, we're not moving forward with the proposed change to require a quarter peal or longer to name a new method. Please see the response to submitter #2 above for a fuller explanation.

Adelaide amendment

- (1) *The actual peal in Adelaide included all the information that would now be required by Framework v2. ...*
- (2) *... and the Framework Team ought to tell us why they considered any changes to be necessary: or to put it another way, what was wrong with a "do nothing" approach ...*

(3) ... and how big is the perceived problem? How many Performances, currently un-noted, would need a note relating to the newly-proposed norm?

(4) ... and if we don't know that, and haven't commissioned any research to find out, how can we say with assurance, as Framework v2 claims in the Further explanation of 6.C.n. "an attempt to ring 7 Extents of Minor was lost in the 5th extent, the first 4 Extents are not normally considered to constitute a successful Performance". ??

(5) To know the prevalent view of the Ringing Community on the issue, we would need to know how many Minor Peal-attempts (of the seven-separate-extents variety) which came to grief in the third-or-later extents were considered as successful quarters but (sadly) didn't reach the Peal length? How many within that Ringing Community would consider it in some way *unreasonable* (or immoral) to say they had a completed Quarter Peal in these circumstances? As opposed to those who have no particular view, or just habitually don't write these in their Ringers' Diary?

(6) And these words of 6.C.n. Further Explanation "an attempt ... was lost in the 5th extent, the first 4 Extents are not normally considered to constitute a successful Performance". is itself a Value Judgement, which Appendix E. Framework Development, C. Goals 1 deprecates: "Avoid arbitrary rules and value judgements" For example 6. C. 2. a) seeks that "The Performance was ... started and ended in Rounds" and we could, but don't, expand this with the judgemental advice "starting from other-than-Rounds is not normally considered to constitute a Performance". Let's continue to seek out information on what was rung, rather than lecturing our readers within the Framework on whether or not it is acceptable; or even "considered to constitute" success.

(7) There is another clear flaw in the words proposed: 6.C.n "The Performance was not part of a failed longer attempt". Consider the 5040 Stedman Triples which continued with another Plain Course of 84 changes to fill time before the service. To the listener outside, they could reasonably expect to see a Performance Report of 5124 Stedman Triples. If submitted as 5040, there is no norm to require notification of what was actually rung. The band would seem to be able to choose to submit Performances of 5040, or 84, or 5124, or (with a bit of arm-waving about the definition of a Block) both 5040 and 84 ...

(8) ... but as there is no definition of "failed", nor of "intended Performance"; we don't know if a Jump-Change-to-Rounds after 72 changes counts as a failure; nor whether that Jump Change in some way compromises the 5040 Performance ...

(9) ... or whether it has something to do with the thought processes of some or all members of the band in the context of "anything rung ... after the intended Performance " (6.C.n. Further Explanation) making no difference to the 5040....

(10) ... and if so we are within the arena of Winston Smith's (who rang the fourth) thoughtcrimes: he would have preferred an extra 1900 changes before the service <https://en.wikipedia.org/wiki/Thoughtcrime>

(11) The RW article opines the above as "norm that was missing in Framework v1". Well, it was that, but it doesn't mean that it was an error so to do; or that had it been discussed it would have been included.

(12) More worthy would be a norm to declare that an Identity Change was used in the reported Performance. This would be contrary to ringing in the traditions understood by those whom we teach about ringing, and would be a useful addition for record-compliers, who may well wish to classify such Performances separately.

In the case of a plain course of Stedman Triples rung after a 5040 in order to fill time before the service, this could indeed be reported either as a 5040 or a 5124. We assume most bands would choose to report a 5040.

(1) "proposing in v2 that the minimum length to be rung in order to name a new method is a quarter peal."

ADDITIONAL POINT for earlier comment

(13) I agree with Simon Linford's blog #36 which said "some people are ringing 720s, ... because like me they have come to the conclusion that adding a block of changes that is less than an extent onto an extent to make it quarter of a length that only really means anything for triples, is actually quite odd. 720 is a good length for a performance."

Following feedback from this consultation, we're not moving forward with the proposed change to require a quarter peal or longer to name a new method. Please see the response to submitter #2 above for a fuller explanation.

Value Judgements

(1) Appendix E. Framework Development, C. Goals 1 says ...*"Avoid arbitrary rules and value judgements. "* and this was emphasised throughout the version 1 development as an important part of the CRAG proposals and a vital distinction from the traditional approach of the Decisions. (*"Follow these rules or your Peal is disallowed. YahBoo"*) . It is re-stated in the RW article: *" the approach of the CC under the Framework is not to ... pass judgement ... but to ensure that readers of performance reports are clear about what was rung, and how, so they may form their own opinions. "*

(2) There are a disappointingly large number of these Value Judgements within the v2 proposals, all competing with the Decisions' patronising style. This set of comments brings them together in one place to help the better wielding of the red pencil.

(3) The words of 6.C.n. Further Explanation *"an attempt to ring 7 Extents of Minor was lost in the 5th extent, the first 4 Extents are not normally considered to constitute a successful Performance"*. By Whom is it so considered? Just tell us what was rung, and the reader can decide whether they think the Performance is a successful one.

(4) *"Naming a new method is a privilege in ringing circles. ... This privilege is traditionally 'earned' by ringing a sufficient amount of the new method to justify its recording in the [Central Council's Methods] Library,*

(5) *"many would consider ringing 6 changes, or 24 or 120, to be insufficient [amount of a new method to justify its recording in the Central Council's Methods Library]" How many ? Who has been asked? Is there a survey?*

(6) *"we've added recent new methods named in performances with automated ringing to the Methods Library, and this seemed appropriate during the pandemic restrictions. But we believe most ringers would think that a new method should be named by an all-human band"* How do we know most ringers think this? Who has been asked? Is there a survey?

(7) *"21 of these 29 new methods were subsequently rung to a QP shortly afterwards, leaving only 8 (1%) that have *only* been rung to an extent."* (My *emphasis* on the underlying superiority of Quarter Peals over extents)

(8) *"It's been suggested that the Framework should be expanded to incorporate call change ringing. We've discussed this among the Framework team and with CC Executive members and have concluded that there isn't a need for this at the moment. ". Maybe these are the "many" and the "most ringers" referred to above?*

Re: *"Just tell us what was rung, and the reader can decide whether they think the Performance is a successful one"* – that is the purpose of new disclosure requirement 6.C.2 n).

See earlier response on naming new methods.

On automated ringing, this consultation is the survey. No one has objected to the all-human-band requirement for naming new methods.

(1) Naming new methods. This section of the paper has woolly thinking; it needs expansion of its overall reasoning, evidence and documentation of its assertions about the views of ringers and a better understanding of the historical perspective of ringing traditions.

(2) The particular effect on Minor ringing, completely ignored in the RW article, the provenance of the lambasted and inaccurately hypothesised 6-change naming Performances, and the prevalence of value judgements hereabouts, are all covered in separate comments on these topics. The last of these addresses the unsupported assertions about what proportion of ringers would think that the proposals need to be implemented. *"most ringers would think ...", "many would consider ..."*

(3) The Framework does not state explicitly **why** Methods have names, nor the **primary** purpose of these names and the additional data collected in the Method Library. Like all names, a Method Name (Method Title) is a shorthand for that fuller Method Library detail, which is sufficient (for example) for a ringer to participate in a Plain Course of the method (remembering whether there is a Rotation and to agree this beforehand).

(4) It allows ringers to **communicate** unambiguously about a method to be rung or discussed and this primary purpose could usefully be added as Further Explanation in section 5.A.2 ...

(5) ...Information about when and by whom the Method was first rung is therefore of secondary importance, compared with the benefit of unambiguous and efficient communication between ringers.

(6) “a new method should be named by all-human band”. This is one of the “most ringers would think” assertions that has no supporting evidence. The proposal thereby misses the point about how methods come about ...

(7) The Composer identifies a sequence of changes as worthy of communication to the ringing community; and, as an aside, there would be merit in acknowledging within the Method Library the intellectual property and contribution of Composers in the creation of their new methods...

(8) ... and the current route for the Composer’s communication of a new method idea is to be part of a band completing a Performance of the Method and then sending-in the Performance and having a Method name added to the Method Library. Alternatively it is possible to persuade a different band and Conductor to ring the Performance, and use as the new Method Name, the Composer’s preferred name.

(9) In either case, this is in contrast to a new Composition in a previously-named Method, when the results of the Composer’s deliberations may be straightforwardly published, on Complib or elsewhere, and the Composer’s contribution will be acknowledged whenever their work has been performed. Where useful, compositions can have composition names.

(10) To benefit the ringing community from new work, ideas, and thoughts about ringing, we need to aid communication by having agreed names for the entities we are discussing. Appendix E A seeks a simple and permissive descriptive Framework, and this needs to apply to Method naming as well as Performance ringing. It all argues for fewer, rather than more, restrictions on creating Method names ...

(11) ... and as progress towards this aim, it would be advantageous for Framework v2 to encourage the recording of names for new methods whenever they are first performed, however long the Performance is. Indeed it should make a benefit of its perceived weakness (introduced in Framework v1), by naming a new Method by ringing a lead of it (whether by humans or otherwise), which may indeed only be six (or fewer) Changes.

(12) If this human-machine debate is of concern to “most ringers”, v2 documentation should emphasise both the contribution of the Composer and the Conductor to any Performance, as well as any ringers (whether human or not).

(13) As to those whose use of Method Names is to commemorate a special event (rather than communicate new compositions or ideas), we should emphasise that there is no shortage of new Methods to use, particularly now that the Framework allows any sequence of Changes to be a Method. For example they may take the Changes between the (say) fourteenth and thirty-third Rows of their chosen Performance, and give them a Method Name if one has not previously been defined.

We disagree with overturning the longstanding method ringing tradition that certain lengths are required to be rung in order to name new methods.

Will there be a Version 3?

(1) Version 2 article, on the future of the Framework: “Framework team have two goals ... undertake a review of all the method extension processes (Appendix D). ... rework the Framework website so ... easier to use on small-screen devices such as smartphones” ...

(2) ... which is a limited ambition for and version 3 compared with the developments mentioned in Appendix

I of version 1. It would be better to know the status and progress of work on *all* those items already mentioned on the Framework website.

(3) Appendix I C 10 A has the team “open to any suggestions on how the framework could be simplified.” and that “there will be subsequent versions of the framework, which will give the opportunity for new ideas to be considered” while Appendix I G 4 A “welcome[s] any suggestions on an ongoing basis on how the framework might be made clearer and Appendix I G 2 A “envisage[s] a process of continuous improvement to the framework over time as issues and inconsistencies are discovered, and as method ringing continues to evolve. “ ...

(4) ... and the invitation for contributions, timetable and consultation mechanisms on such developments have not been advertised.

(5) Version 1 already identified in Appendix I B 5 A the need for “improving the appearance of the framework website” while Appendix I M 2a) A said “the framework isn’t easy to read on a mobile device.”, Appendix I M 9m) A mentioned that “framework hyperlinks green. ... To be revisited” and Appendix I M 9p) A sought “ideally finding a way to automate the management of cross reference hyperlinks.” ...

(6) ... and version 2 has no progress on these items beyond a priority for smaller-screen use in version 3

(7) Appendix I A 2 A commits to “update [this section, when ready] ... with a link to the classification comparison table [between] the classifications used in the Decisions, Alt A, Alt B, and the final [Framework] classification system” but there seems to be no progress on this.

(8) Appendix I B 10 A seeks “a new section ... of the framework that describes method ringing in mathematical terms” but there is nothing on this in Version 2

(9) Appendix I G 5 A expects “handstroke gaps / cartwheeling, bell spacing and similar topics” to be added, but there is nothing on this in Version 2

(10) Both Appendix I M 2e) A and Appendix I M 9t) A mentions “The possibility of expanding the Variations library to record Variations at other stages [above Doubles]” but there is no mention of when this might be done.

(11) Appendix I M 9x) A opines “There may be a case for a separate category of records for relay performances,” and qualified this by “if such a performance is rung”, although the Extent of Major in Leeds Kent on 7-8 April 1761 seems not to have triggered this further consideration, despite other previously unrecognised Peals having been provided for.

(12) On the subject of Dynamic Methods, a concept introduced by Version 1, Appendix I B 29 A opines “dynamic calls as a separate type of call as their use seems unlikely. They could be added to a future version of the framework if compositions emerge that use them, and if having a central definition of dynamic calls is thought to aid ringers in communicating about method ringing.” and similarly Appendix I L 2 A has it that “Dynamic Methods are in their infancy, and more precise definitions in this area may be developed for future versions of the framework if there is sufficient interest by the ringing community” and Appendix I L 4h) A says the team “haven’t tried to determine what restrictions (if any) should be applied to the processes underlying dynamic methods, nor specify how dynamic methods should be recorded in the methods library.” and suggests “consider[ation] in future versions of the framework“ ...

(13) ... while Appendix I C 10 A says “To be effective, the framework needs to be able to describe all reasonably foreseeable forms of method ringing, not just ‘everyday’ ringing. Otherwise it’s not a framework – it’s a limited description of some common forms of method ringing.” Quite So. ...

(14) ... and Appendix I D 1 A says “there may be a case for adding [call change ringing] in a subsequent version of the framework if the ringing community thinks this would be useful. Alternatively, a separate framework for call change ringing could be developed “ My separate comment expands on this.

(15) Even on Jump Changes Appendix I C 12 A has it that “jump-n notation is a good suggestion ...[but] jump changes are rarely rung,” and Appendix I M 9l) A says “there may be a case for enabling hunters with jump changes be part of other hunter sub-classes (e.g. X Jump Surprise Major, Y Jump Little Treble Bob Royal), as

well as possibly adding a sub-class where the hunt bell jumps (e.g. Cambridge Treble Jump Minor).” there is nothing in version 2

Hyperlinks are underlined in v2 to make them easier to see.

Maintaining cross-references continues to be manual. We will look at options for improving this as part of considering what could be done to make the Framework easier to read on a smartphone.

On the comparison of v1 classification options and classification in the Decisions, we didn't include this in the Framework itself as this would be backward-looking. We summarized the outcome of the v1 classification discussion in the 4th Ringing World article on Framework v1 (see v1 Appendix G.7).

On a mathematical treatment of method ringing, we will include this in a future version of the Framework if there are ringing mathematicians available and willing to write it.

On handstroke gaps / cartwheeling, bell spacing, etc, we don't now think it necessary to include these in the Framework as nothing has arisen to suggest there would be benefits from adding them.

The variations and calls libraries are still on the list of projects to tackle.

Adding rung dynamic methods to the Methods Library also remains on the project list.

We continue to think call change ringing should be documented separately from the Framework for Method Ringing, if the ringing community believes there is a need for such a document.

We do not think jump methods require sub-classification at this point in time.

Ringing Styles: New forms of method ringing

(1) *“We envisage [Ringing Style] being expanded to also include the categories ‘Keyboard’ (such as with Ringing Room, but would also apply to a method ringing performance on a carillon); ‘Other’ (rare cases such as ringing from the frame (East Bergholt) or tapping handbells with mallets) “*

(2) *To be consistent with other parts off the Framework, rarity is not a relevant criterion. The obvious example is the effort put into worrying about Jump changes: comparisons with hens' teeth come to mind.*

(3) *There is a significant departure from the Framework version 1 view-of-ringing here: we have not previously contemplated ringing that looks the same at both handstroke and backstroke, and it was this previously essential distinction that prevented worthy bellringing performances being in ringing records ...*

(4) **Tapping style* ... for example Elijah Roberts, “who distinguished himself by tapping some extraordinary peals on handbells, 7,536 Kent Treble Bob Maximus [9 April 1830] ; 5,016 Stedman Cinques [on 30 June 1833], and 19,440 Treble Twelve. Most of his peals were rung in the presence of competent witnesses.” This was reported in RW on 21 Jan 1941 p42, which also notes that Elijah committed suicide at Liverpool on January 26th, 1865. A biography in RW on 30 May 1941 p262 listed more peals, and concluded that drinking was a greater contributor to his death than was tapping handbells. Also mentioned in RW 15 October 1943 p451.*

(5) *Of Sam Thurston's historic performances approx 1820 (RW 10 Jan 1941 p15) “ ... tapping three courses of Bob Major on handbells was described in most of the Norwich papers as ‘most nobly brought round in 14 minutes, being the greatest performance in the art in the British Dominions.’”*

(6) *“Giants of the Exercise” by Dr. John C. Eisel mentions a number of notable tapping performers.*

(7) *... and as an honourable tradition in ringing, tapping deserves its name and section in the Ringing Styles list.*

(8) *A more modern instrument for tapping style are *Tabletop bells*. These are manufactured primarily for the toy market, not of bell metal but having distinctive (tinkly) notes: they may be sounded in a traditional handbell fashion with up and down strokes retained in hand (style already covered in the Framework), and also by pressing a plunger at the top of the bell. Pressing the tabletop plunger and leaving the bells in the same physical position, is similar to striking fixed bells with a mallet, in traditional tapping style. ...*

(9) *... They may be rung in the traditional two-bells-each style as handbells often are, with one ringer*

controlling a pair (or maybe more) bells, ...

(10) ... or may be mouth-down on a table, and if a smooth table, moved around by the operating ringer(s). Or one ringer may be moving bells and another ringer sounding them. The sets may overlap: maybe six ringers could be moving twelve bells and another three or four ringers sounding them.

(11) Tabletop bell can also work remotely over the Internet, and entertainingly well on twelve bells, maybe with two six-bell compositions alongside one another.

(12) *Lapping style* Also deserving of its own name in the Ringing styles list, and also with an honourable history of ringing is lapping. This is well covered on the CC website, so needs no further explanation than the video: <https://youtu.be/CoVZ4iYdTEO>

(13) ... and of course Tabletop bells do this well on their smooth table as mentioned above.

While there have been notable tapping performances historically, this style of method ringing has not been used much in recent times. As the categories defined in 6.A.4 will be used primarily in producing analyses of method ringing performances, we think it is reasonable for styles with low current usage to be grouped into 'Other'. This can be changed in future if warranted.

Ringing Styles: New forms of method ringing

Some further thoughts on how to include bells and other real noise-making instruments in the Framework text.

(14) From the RW article: "We envisage [Ringing Style] being expanded to also include the categories 'Keyboard' (such as with Ringing Room, but would also apply to a method ringing performance on a carillon); 'Other' (rare cases such as ringing from the frame (East Bergholt) or tapping handbells with mallets) "

and from the Framework v2 draft: "Ringing Style One of the following styles in which method ringing can be performed: a) Towerbell Style: Full-circle ringing with rope and wheel, using handstroke and backstroke actions; b) Handbell Style: Alternating upstrokes and downstrokes – usually upstrokes for handstrokes and downstrokes for backstrokes; c) Keyboard Style: Bells sound via presses on a keyboard, such as with Online Ringing (see Section 6.A.7) or a carillon; d) Other Style: To be specified in Performance Reports, such as ringing on the frame or tapping bells; e) Mixed Style: More than one of the above styles were used in a Performance "

(15) The Framework wording hints at being prescriptive rather than permissive and comprehensive; "can" has a "cannot" behind it. "One of the following styles of method ringing" would be less judgemental. As at my (3) earlier, the expansion of ringing to include the mingling of handstroke and backstroke admits of many extra styles on other musical / percussion instruments, and maybe even mixtures of them in the same Performance, as at e), maybe where only one ringer has a handstroke/backstroke style.

(16) Between a) and b) it would be more logical to include other ways of ringing big bells, such as East Bergholt, Ellacombe chimes and the carillon. As an aside, Wikipedia says "The Ellacombe apparatus is a mechanism devised for performing change ringing on church bells" https://en.wikipedia.org/wiki/Ellacombe_apparatus

(17) ... and other forms of chiming, including holding a full-circle-ringing-bell's rope and releasing it, half-wheels, https://dc597.4shared.com/img/PJniPWTCiq/s24/17aabd14300/L0863e_20010330_0011 and chiming the (historic, unique) Naylor steel bells at Millennium Gallery Sheffield.

(18) As earlier comments, between b) and c) we should have styles relating to traditional handbells: Tune ringing (no-handstroke-backstroke), Lapping, and Tapping.

(19) The Keyboard style ought to link to the simulated sound of a computer: Also between b) and c) we should include xylophone, pressing piano or harpsichord or clavichord keys, and any other keyboard instruments. Other pluckable stringed instruments deserve a mention: and then Bassoons, trumpets and trombones do have keys and Piccolos and Recorders do have holes to cover, and tubular bells ought to be covered somewhere under tapping ...

In line with your suggestion to avoid 'can', we have reworded 6.A.4 as 'One of the following styles in which method ringing is performed'.

The link of Keyboard style to the simulated sound of a computer is achieved via 6.B.1 d). E.g. 'Ringing Room' would be named as the simulator for a keyboard performance on Ringing Room, and norm 6.C.2 h) states that simulated sound for such a performance is assumed if not stated otherwise.

Ringing Styles: New forms of method ringing

Some additional thoughts on fully embracing method ringing on media different from bells.

(20) **Scouting style** Each participant has one bell and everyone stands in a row: the bells may be ordinary handbells, but tabletop bells in plunger-style also work well. They may pass the bells between them, and this is covered above by the lapping style. Distinctive to this Scouting Style is that participants take the bells with them and change places with one another. The basic system is that all participants face the same way, and those moving up the Row pass behind those moving down the Row, the Row always being rung left to right from the view of the Conductor. ...

(21) The more advanced system has participants facing their direction of travel (which is well-defined for right-placed methods). Those moving up at handstroke make one diagonal step with their left foot, and return to the line with another diagonal step with their right foot, thus passing those moving down doing the same thing in the opposite direction: if making a place, they turn around on the spot, and when dodging they continue with their expected next foot but do the movement backwards. For example to dodge up, take one diagonal right-foot-backwards step followed by a backwards diagonal left footstep, in a do-si-do fashion with the other dodging participant. Three-leads of Norwich SM is particularly entertaining.

(22) Appendix E D 1 as modified by 6.C.2. o), Cylindrical ringing, is easily facilitated by adapting this style to a circle and allowing ringers to continue going up, around the circle, swapping with those continually going down. It works best with an odd number of participants.

(23) **Tin Tan style** This style is valuable in the absence of any handbells, with provenance from *The Nine Tailors* by Dorothy L Sayers." 'Go [Kent]' The bells gave tongue: Gaude, Sabaoth, John, Jericho, Jubilee, Dimity, Batty Thomas and Tailor Paul, ... huge wheels turning to the dance of the leaping ropes. tin tan din dan bim bam bom bo - (gap) tan tin din dan bam bim bo bom - tin tan dan din bim bam bom bo - (gap) tan tin dan din bam bim bo bom - tan dan tin bam din bo bim bom - every bell in her place striking tuneably ..." The ringers say (or if musical, sing) their bell name in the same place that their bell would have sounded if they had had one. ...

(24) ... and if sufficiently athletic, they stand-up for the handstroke and sit-down for the backstroke. Choosing a suitable location is important, as this can empty a pub, or get the band thrown out. Augmenting to twelve requires additional notes, maybe pin pan win wam ... and the adventurous may require a flat sixth. And remember that tin tan din dan is a major scale whereas other combinations don't follow tone-tone-semitone.

(25) **Progression style** This is particularly useful for a wide grassed area. Participants walk in parallel and progress four paces forward for each Row, swapping as necessary such that the row is always rung from left to right. ...

(26) ... a bicycled version requires an even bigger area, significant bicycling skills and bicycle bells that are in tune.

(27) Progressing northwards along the four lanes of the M1 on a quiet night needs specific agreement that bells (cars) going up drop back before changing lane and everyone waits for the line to re-form before the next hoot. Sadly too ambitious a Performance will see the inside driver heading off to Milton Keynes at J13 ...

We leave it with the submitter to popularize these styles of method ringing.

Development of the Framework

(1) An area of focus for version 2 was the new forms of ringing that took off during the pandemic. As noted above, the approach of the CC under the Framework is not to rule in, rule out, or otherwise pass judgement on different types of method ringing, but to ensure that readers of performance reports are clear about what was rung, and how, so they may form their own opinions"

(2) There is an irony here for how the Framework responds to innovations in Ringing. The Decisions discouraged innovation by disallowing the results of any innovation until it had been rung at least once, then disallowed, probably debated-at-length (by the Council which mostly didn't understand the issues it was debating) and perhaps rule-changed: and even then that-which-had-been-disallowed continued to be disallowed.

(3) CRAG reforms, thence the Framework, took a completely different approach by making the scope of Method Ringing as wide as it could possibly be, *and* as a backstop, required disclosure of anything not previously contemplated, and allowing ringers to make their own assessment of which Performances they were interested in. This is in addition to the disclosure requirements already necessary for non-traditional ringing.

(4) Within the development of Version 1 it seemed worthwhile to include a scoping description, along the lines that there has to be a boundary somewhere, and that ended up as Appendix E D. This eschewed, for example, ringing when two or more bells deliberately strike at the same time, such as firing or partial firing. Later, a catch-all reporting requirement was included at 6.C.2.o), encompassing everything that was been out of scope, as a Performance that *can* be reported with a note about the norms not followed.

(5) The "Permissive" requirement of CRAG doesn't require popularity-in-ringing, or indeed the fact of any actual Performances, before descriptive terms are included to allow accurate description of any Performances that may happen in the future. Similarly the Framework eschews value judgements: it is for the readers to decide if they find Performances to be not-ringing, to be silly, or to be unworthy for any other reason. The Framework does not rank ringing in any order-of-worth, or find anything so distantly outside the boundary of ringing that it should not be contemplated, or published if reported.

(6) Appendix I M 3 d) A states "The framework therefore *doesn't cover* ringing by pressing a key on a keyboard, and/or having a computer ring some of the bells." and then goes on to say "performances ...in these cases 6.C.2 o) applies" The term *doesn't cover* doesn't, therefore, have its natural meaning. It follows that there is no effective boundary around what the Framework *does cover*

(7) And there is the irony. It is precisely this grey area of pressing a key on a keyboard, and using computery to connect ringers together, that has become popular because of the Accursed Virus. And despite there already being a catch-all to have these Performances reported accurately, it is this form of ringing that has set off version 2. Separate comments highlight the ambitions mentioned in Version 1 for Version 2 work, almost all of which hasn't been accomplished....

(8) The Ringing Styles amendment is an elegant way to describe Accursed-Virus ringing. And having done it that way, we ought to be including in the list all the conceivable Ringing Styles, in much the same way that there was no particular interest in Jump Change ringing, but there was specific provision for it. Separate comments expand on these.

(9) Somewhere along these Ringing Styles, the consensus of Ringers will be that they should not be included as too far from mainstream ringing. But that's not how the Framework is supposed to be developed: it doesn't limit itself to current ringers' opinions, despite the arguments in the paper (separate comments) telling us the opinions of ringers on how much to ring to name a method.

(10) The CC not only publishes the Framework, but also its own analyses of Peals and Quarter Peals. In the role of leadership of Ringers (so ably exercised during the Accursed Virus), it shouldn't be seen as speaking with forked tongue. If there is a boundary for one function, it should be consistent for the other, and in any case the Council would not wish to find itself debating the inclusion or not of particular Performances.

(11) A change-of-course would be an improvement. The boundary could be closed-down to a view closer to the historic boundaries of ringing, with a commitment to expand it if there is sufficient actual performances to justify the consideration, and hence taking account of the views of the ringing community as a body. For example fifty thousand rows of the innovation, including (say) fifty different ringers involved would trigger consideration of expansion. Just a thought.

Keyboard style suddenly became popular as a result of pandemic restrictions and the availability of platforms such as Ringing Room. Giving this style its own category, alongside towerbell style and handbell style, facilitates analysis of method ringing performances as these three styles cover virtually all performances that are currently being rung. The extent to which keyboard ringing continues to be performed after the pandemic passes remains, of course, to be seen, and it's possible that other styles of method ringing may become popular in the future. We can amend the style categories in the future as the need arises.

Jump Change Notation

- (1) "Version 1 of the Framework recognised jump changes as an alternative way of traversing between rows, but it didn't provide any standards for notating jump changes. Appendix A (Place Notation) has now been extended with our proposed standard for notating jump changes. "*
- (2) Compared with the rest of the Framework this proposed addition uses as many words and as much brainpower as the whole of the Fundamentals of Method Ringing ...*
- (3) ... and is wholly unnecessary, given that we have a readily available notation immediately to hand, already used and understood by mathematicians ...*
- (4) ... which is to use the notation for a Row (maybe 32165478) and use it as a *transposition* to define the (Jump) Change.*
- (5) It would be useful to compare the proposed notation for all the defined Jump methods*

Appendix A.B allows for this – the full row transposition would be included in square brackets, e.g. [32165478]. But note that Appendix A.B.7 encourages this, for clarity, to be written [321][654]78 since 78 is standard place notation, and there are two separate jumping groups.

However, the above notation is verbose for many jumps that have been used in methods to date, so Appendix A.B also provides a more compact form. E.g. (24) – meaning the bell in 2nd's place jumps to 4th's place, and the bells in 3rd's and 4th's places both move down a place – is more compact than specifying [134265].

Odds and Ends

- (1) The Framework should be the guidance for everything that is submitted as a Performance to BellBoard: if not, then from where do we have the information to assess what was rung ...*
- (2) ... any why would we say that the ringers involved in the Performances are unworthy of having the attention of the Framework for their efforts ...*
- (3) ...and that would need to encompass Tolling performances and (see other separate comments about) Call Changes.*
- (4) The RW article about not covering Call Changes argues about Call Changes in the Cornish tradition as a separate ringing tradition. That may be right (or not), but the question here is the Performances rung primarily in the rest of the country by ordinary ringers who need to be encouraged into seeing that the Ringing theory inside the Framework is relevant to them.*
- (5) We need to further explore the boundaries to understand how the rules for the Framework development actually work ...*
- (6) If there is some human intellectual effort in a performance, then if that justifies the reporting of the Performance in the mind of the performers, then we should accept it for what it is: a Performance that is understandable under the terms of the Framework, and is therefore published at least on BellBoard ...*
- (7) ... so that would include the phantom (computer) ringers, and hence the conductor only if that was the only human input (calling the bobs for the phantoms) ...*
- (8) ... and if only the composer, maybe just then the Go to start them off ...*

(9) ...and still naming the new methods in the Performance.

(10) We include in the Framework provisions for simulated sound: that's just internal beeps inside a computer analysable as a waveform, so maybe the waveform in itself is sufficient ... and if that why not other output to show the different bells weaving their way around ...

(11) ... hence the colours of Braiding Rainbows, which is a system of defining the paths of, say 800 bells ringing Cambridge or Plain Bob, or any other Method. All the regular methods with bells hunting up and down look much the same on 1280 bells: here is Cambridge: <https://dc597.4shared.com/img/OhVfifAKea/s24/17ab14b4128/Cambrid> and a fractal feel to (a reasonable extension of) Brampton <https://dc597.4shared.com/img/mUMzehFdiq/s24/17ab14b069>

We don't view the Framework as needing to support all performances posted on BellBoard. We continue to think that if the ringing community believes there is a need for something similar for call change ringing (and tolling, and firing, and ringing up & down), it should be documented separately from the Framework for Method Ringing.