Call Change-Ringing in Cornwall

Max Jardow-Pedersen

In 17th-century England a new musical genre, one using church bells, arose. The music in question was called *change-ringing* and its performance and composition, by methods of mathematical permutation, can be described as unique. To begin with change-ringing was practised in aristocratic and intellectual circles, but later it was adopted by all social classes and spread all over Great Britain. Today it is regularly performed in nearly 6000 British churches (Camp 1974). Change-ringing is almost exclusively confined to the British Isles, though it can be heard outside Britain in English speaking areas where a few churches have bells hung for change-ringing.

As subject of the present study St. Piran's Church, Perranzabuloe, Cornwall, was chosen from among the some 80 Cornish churches in which bells are regularly rung and whose ringers are members of the Truro Diocesan Guild of Ringers. The parish of Perranzabuloe, which is a rural district, faces the north coast of Cornwall and is located about midway between Newquay and Redruth. Notes were taken and tape-recordings made during the period between 20th March and 13th April, 1977. The tape-recordings were thereafter handed over to the Danish Folklore Archives, which had very kindly placed a Nagra tape-recorder and tapes at my disposal.

The following sections describe the functions of the bell mechanism, the ringing technique, "method" ringing, and "call" change-ringing. A comparison of call change-ringing with method ringing has been made as it was found helpful to the study of the former. For this purpose the Grandsire Method has been chosen as it contains many traits characteristic of method ringing in general.

The Bells:

The bells are hung in the upper storey of the church tower in different numbers, varying from five to twelve, – in Cornwall usually six or eight. They are tuned in a major scale so that the no. 1 bell, called Treble, has the highest pitch and the Tenor bell, which is always tonic, has the lowest one.

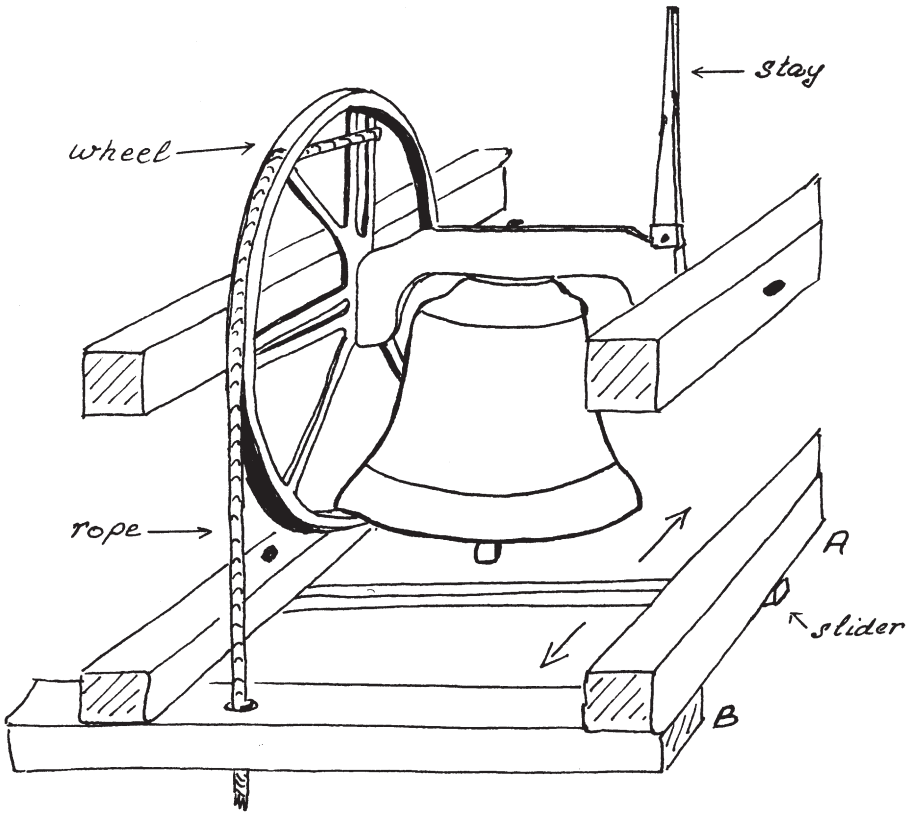


Fig. 1. The bell in downward position. (MJP)

The rise of change-ringing was due to the innovation of attaching the church bell to a wooden wheel which during the ringing is rotated about 360° forwards and backwards by means of a rope running through a hole in the floor down to the belfry. Here the ringers stand behind the ropes approximately in a circle. During the rotations in the two directions, towards the so-called handstroke and backstroke positions (see fig. 2 & 3), the bells swing till they reach the balance point, keeping the mouth upwards, after which they swing back till they reach the upward position again. The speed of the wheel can be retarded or accelerated during these movements and it is this fact which forms the basis for the carrying out of change-ringing. It means that the succession of two bell strokes can be inverted by accelerating or retarding one wheel more than another so that, for example, the se-

quence of strokes "1 2 3 4 5 6" will in the following change be "2 1 3 5 4 6". The possibility of inversion allows, by employing methods of permutation, for new sequences of tones to be attained – with five bells 120 changes (formula: 1 x 2 x 3 x 4 x 5), with six bells 720 changes, with seven bells 5040, etc. Furthermore the numbers of changes applied in a given ringing may be augmented as the mutual order of the changes can be altered according to certain rules.

When the bell is rotated to the upward position the stay will be stopped by the slider, which can move between *A* and *B*. During the ringing the stay just touches the slider; but in the event the bell is "set at handstroke", e.g., she has just passed her balance point and the stay will lean on the slider, thereby preventing the wheel from turning further round. If the speed of the wheel gets too high the stay will break, and it thereby functions as a "safety valve", preventing further damage from being done to the bell mechanism.

The direction towards handstroke:

The stay has pushed the slider towards *A*.

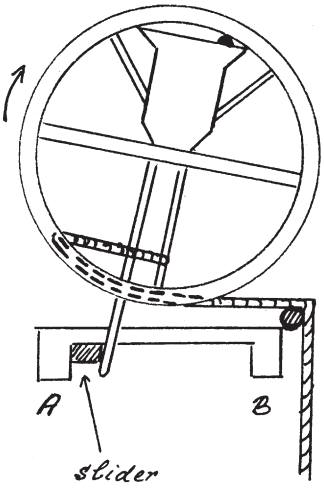


Fig. 2. The bell, set at handstroke.

The direction towards backstroke:

The stay has pushed the slider towards *B*.

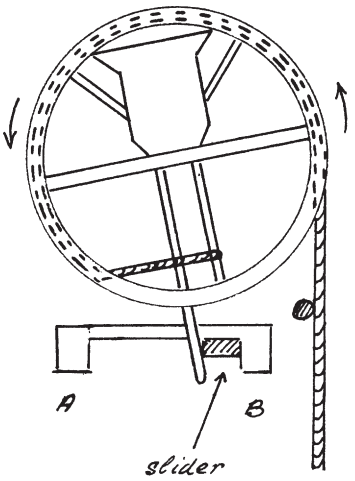


Fig. 3. The bell, set at backstroke.

The bells are hung in a solid framework and they are arranged in such a way that the stresses caused by their motions are opposed. The bell distribution can be made in different ways, but in St. Piran's Church it was done as shown schematically below.

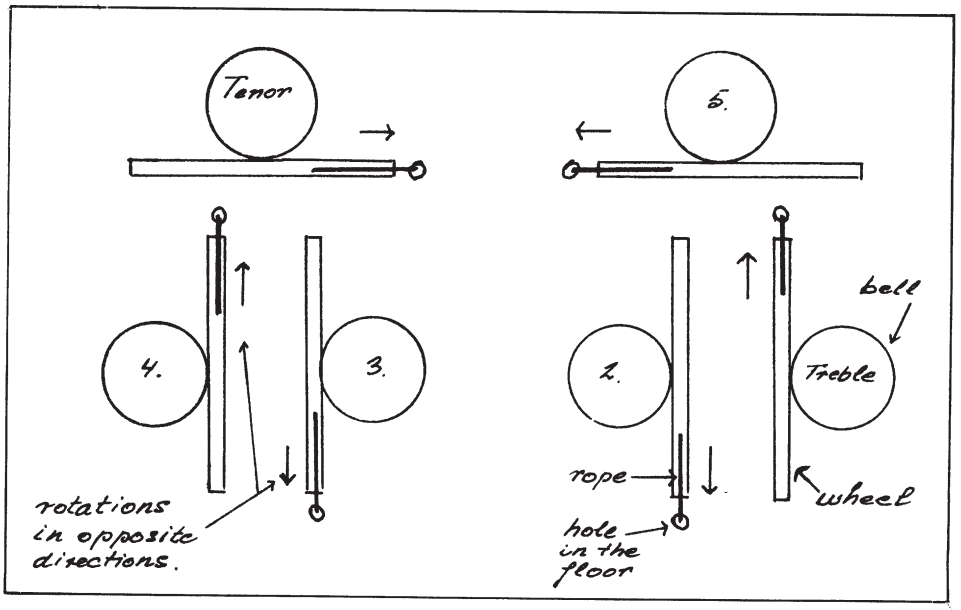


Fig. 4. The distribution of the bells in St. Piran's Church (seen downwards).

The six bells of St. Piran's Church were hung in 1928. Three of these bells were new, donated by parishioners who also contributed to the recasting of the three bells which had been in the bell tower since 1747. Gillett & Johnston, Bellfounders & Clockmakers, Croydon, cast the bells, whose size, weight and tuning are as follows:

No.	pitch	diameter	weight (ctws. qrs. lbs.)
Treble	f #"	25 ½ inches	3 3 13
2	e"	27 –	4 1 1
3	d"	29 –	4 3 19
4	c #"	30 ¼ –	5 2 12
5	b'	33 ½ –	7 0 19
Tenor	a'	37 –	9 2 12

The bells are inspected monthly and are kept in repair by the captain of the bellringers. Fittings have to be tightened and greased, and each month the bell ropes are moved a little to reduce the wear.

The Ringing Technique:

The following passage is a description of bell ringing as it is practised in Perranzabuloe. However, the ringing technique described can be regarded as current in general for bell ringing anywhere in Great Britain.

Before the ringing starts the Treble ringer says: "she/Treble is gone!", and immediately thereafter he pulls his rope. The other bells follow in the succession "2 3 4 5 6", which is called *rounds*. When *ringing up* the bells, the ropes are first pulled in short jerks, then longer, and consequently the bells swing in increasing curves until the handstroke and backstroke are reached, and the time intervals, which at the beginning were very short, grow longer. – When the bells have been rung up, the ringers may make a break after the conductor, *the captain*, who is also ringing a bell, has ordered: "set next ring!", and the bells will all be set at handstroke.

When moving the bell from handstroke the rope is pulled some three feet downwards. Both hands, right hand uppermost, grasp the red-white-blue striped *sally*, a section of coloured material inserted into the bell rope. The bell is then on her way to backstroke and when the rope has been pulled all the way down the right hand will let it go. When the rope has moved some two feet upwards, the right hand grasps the sally again and the bell is slightly retarded in order to slow down the speed so as not to break the stay. The rope continues six-seven feet upwards, as it is being wound round the wheel. – During the rotations the length of the rope is considerably increased and shortened in the belfry and the ringers must pay attention not to get the ropes twisted around their arms or legs, which might result in an accident.

The sally, mentioned above, is a visual aid in *ropesight*, which means that each ringer keeps an eye on the two ropes pulled before his. The ringer is then able, when the inversion has been done, at once to adjust his pull to the rope pulled before his. (Inversion is only possible between two successive bells.)

The skill of the ringer is proved by his ability to keep the bell rotating without stopping her at hand- and backstroke. And if the delay or acceleration

of the bell is not done properly the stroke intervals will become uneven, which, according to the rules, is not acceptable. The ideal is that the bell strokes sound in a regular rhythm consisting of even time intervals.

A ringing is completed when rounds (i.e., the original succession of tones) after a given number of changes are obtained again. When rounds have been rung some times the captain might order: "set next ring!", and the bells will all be set at handstroke. Or he may order: "downwards", whereafter the bells are gradually brought to the downward position. As the rotations of the wheel during this process are gradually being reduced, the intervals between the strokes are growing shorter, until at last the bells sound almost as if they are being struck simultaneously. The length of the rope during the *ringing down* is shortened by 1 to 1½ inches per round by being wound up in the left hand in order to obtain a better grip during the stopping of the wheel. Finally the ringing is concluded by *one-strike chiming*, done by light pulls of the rope so that the clapper touches just one side of the bell.

Fig. 5

Handstroke
(Ashley Jose)

Fig. 6

Backstroke
(Mrs. L. Butler)

Fig. 7

Left: Retarding the bell towards backstroke (Ashley Jose). Right: A bell being further ahead towards backstroke (Michael Jose).

A Method Ringing:

Method ringing, though not practised in Perranzabuloe, is the most widespread way of ringing in Great Britain. It is the performance of changes with a given number of bells in a particular order and using particular "methods" so as to avoid repetition of the same change from the time the bells leave rounds. 5040 changes, taking about three hours to ring, are called a *peal*, and any number above 5040 is called a peal as well. Fewer than 5040 changes are called a *touch*, but an exception is a *quarterpeal*, consisting of 1260 changes.

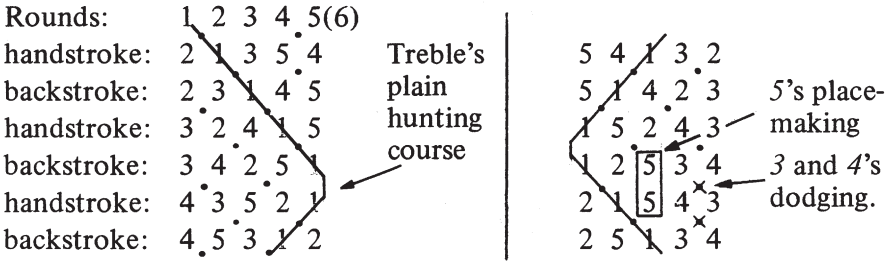
The ringing team, learning the methods by heart, interchanges the bells without any conducting, but when certain changes are reached in a given ringing the conductor will give an order: "Bob" or "Single", to introduce certain changes which ensure that rounds will not be achieved before the highest possible number of permutations has been rung.

One of the oldest ringing methods is the Grandsire Method, introduced in 1668 by Mr. Fabian Stedman, a member of the distinguished, still-active association of the best ringers in Great Britain, "The Ancient Society of College Youth", in the first treatise on change-ringing, "Tintinnalogia or The Art of Ringing".

The following diagram shows the courses of the bells through the pattern formed by the first 12 changes of the *Grandsire Doubles*. (Ringing with re-

spectively 5, 6, 7, 8, 9, 10, 11, and 12 bells are called, in the same succession, Doubles, Minor, Triples, Major, Caters (Quaters), Royal, Cinques, and Maximus.)

Ex. 1. Plain hunting course, place making, and dodging in Grandsire Doubles.

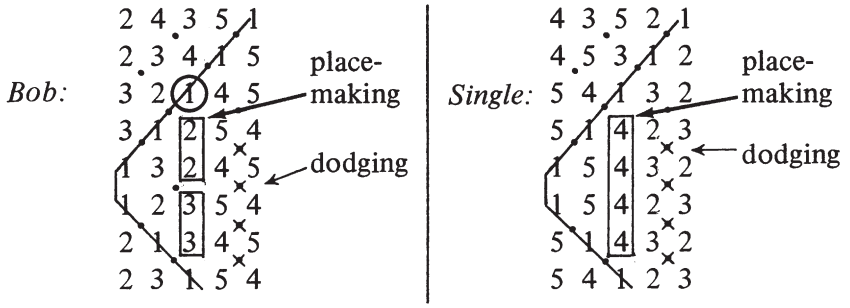


(Tenor strikes in *behind* throughout the ringing)

All the bells have a *plain hunting course* until the Treble leaves the *lead*. The bell she took from lead *makes 3rd's place* and returns to lead again. Meanwhile the bells in 4th and 5th places *dodge*.

To produce all possible 120 changes certain changes, called *Bob* or *Single*, must be introduced. One way of obtaining the 120 changes with five bells is to call Bob when the Treble, going down to lead for the second and third time, is in 3rd's place, and to call Single when she reaches 3rd's place for the sixth time on her way to lead. (The dodging and the place-making are indicated in the diagram below.) These three calls are repeated in the second part of the ringing.

Ex. 2. Bob and Single



Among well known ringing methods Stedman's Principle, composed about 1675 by Fabian Stedman, can be mentioned; Treble Bob, Plain Bob, and Surprise are examples of other methods. Still many others exist and new compositions are made from time to time. In addition several methods can be combined in a *spliced peal*. – Method ringing with *handbells* is practised by many people as enthusiastically as the church-bell ringing. The same ringing methods are employed, but usually each ringer operates two bells, one in each hand.

The Call Change-Ringers:

Call change-ringing is a different way of performing change-ringing. It is practised in the West Country and particularly in Cornwall, though here too the influence of method ringing seems to be increasing. Approximately 50 method peals of 5040 changes are rung yearly in Cornwall by some 50 ringers, whereas 8-900 ringers perform call change-ringing. Merely by listening to call change-ringing one is soon convinced of a distinct difference. The musical impression is more simple as only one pair of bells is inverted in each change, and as every new tone row is repeated several times before the next change occurs.

The operation of the bell rope is the same as in method ringing, but each change is carried out according to an order, a *call*, from the conductor, the captain. A so-called *call change peal* contains a much smaller number of changes than those heard in a method ringing, and the patterns are more simple. Nevertheless, the designation *peal* is used for any number of changes employed in a call change-ringing.

Mr. J.W. Snowdon's opinion is perhaps characteristic of the common conception of call change-ringing among method ringers. On page 14 of his book on bell ringing, "Ropesight", Mr. Snowdon says: "There is one way of ringing changes, however, which is only one step removed from the dull work of round ringing; change ringing in this way is known as 'call changes'." Also the sparse references in the literature on campanology may indicate that this way of ringing is not particularly distinguished. However, call change-ringing has at least one aspect not found in method ringing, namely musical *improvisation*. Though a call change peal can very well be carried out from a pre-composed pattern, it is most often improvised by the captain, who forms the courses of the bells, and accordingly the tone rows or melodies, which he may consider of musical value.

In St. Piran's Church 13 ringers, 3 women and 10 men, take care of the bell ringing. At least six ringers, the captain included, will be present at each ringing. Several of the ringers have many years of experience, such as Mr. Jack Payne, who two years ago celebrated his jubilee of 50 years ringing. Mr. Ashley Jose has been ringing for 35 years, being a captain of the bell-ringers for 21 years, and his brother, Mr. Michael Jose, has been a bell-ringer for 25 years. Learners are continuously being taught the difficult art of handling a bell, as quite a few ringers have left Perranzabuloe these last years due to the better possibilities of employment outside Cornwall, which is a rural district without much industry, since the cobber- and tin-mining ceased at the end of the 19th century. The learners are often youngsters, such as 15-year old R. Blackman, who last year began to learn ringing together with his father, Mr. D. Blackman. In the neighbouring village, St. Agnes, five brothers and sisters ranging in age from 13 to about 20 participate in the change-ringing.

The replacement of ringers in Perranzabuloe has influenced the quality of the ringing to a certain extent, but until the late sixties the Perranzabuloe Ringers were among the best ringing teams in Cornwall. In October 1961 they won the bi-annual ringing competition arranged by the Truro Diocesan Guild of Ringers, and they have won second and third class certificates 14 times.

The ringers in Cornwall are united in the above-mentioned Guild, founded in 1897. From its statement of purpose it can be learned that "its aim shall be to be of service to the Church in the Diocese of Truro by: ringing for Divine Service; recruiting and training ringers; encouraging the art of change ringing; encouraging the ringers to take part in the worshipping life of the Church; care and restoration of bells and their fittings". – An annual report is edited by the Guild. Here the method peals, rung during the year, are published, as well as a list of the names of the ringers, the hours of ringing, and the number of bells of each church belonging to the Diocese. Cornwall is divided by the Guild into Branches: Penzance, Truro, Mid-Cornwall, South-East, Launceston, and Stratton. Perranzabuloe belongs to the Mid-Cornwall Branch.

Twice a year the Guild arranges competition ringings, in which 12-14 ringging teams participate in ringing a call change peal, composed by the Guild. The competition is held in a church selected for the occasion and it is part of a spring or autumn festival, in springtime in connection with the annual general meeting. Two judges make the award, one controls the regularity of

the time intervals between the bell strokes and the other counts the number of tone rows rung per minute. 34 rounds (i.e., 34 rounds or changes repeated) with six bells are recommended, but dependent on the weight of the bells in question. The three best teams are awarded respectively 1st, 2nd and 3rd class certificates. In the very northern part of Cornwall and in Devon winnings are paid in cash, according to Jack Payne, Perranzabuloe, but the Truro Diocesan Guild is against this principle and maintains that the church bells are installed with a religious purpose and therefore money should not be the motivation for winning the competition.

Bell ringing can be heard in Perranzabuloe each Sunday before Mattins at 11 a.m. and before Evensong at 6.30 p.m. In addition bells are rung after weddings at a token payment. At funerals changes are not rung, but one bell stroke is rung for each year the deceased lived. During Holy Week until Easter Day the bells are silent, but on Easter Morning the bells sound again. On Easter Monday the ringers go on an outing with their families and

Fig. 8. Perranzabuloe Ringers

From left to right:
D. Hoskins, H. Wings, M. Jose, (÷ no. 4), J. Payne, mrs. D. Payne, mrs. L. Butler, mrs. E. Bean, A. Jose (captain), D. Bean.

friends, visiting six churches to ring the bells for about a half-hour in each bell tower. This is common practice among many of the Cornish ringing teams, which thereby get the opportunity of ringing bells of different weights and different sounds.
Each Wednesday night practice ringing is arranged, learners are trained, and the experienced ringers try to improve their skill. On these nights the atmosphere is more relaxed than at the compulsory service ringings, and accordingly there is a far better opportunity and better time to discuss technique, mistakes, etc.

Call Change-Ringing:
A call change-ringing starts, like method ringing, with a certain number of rounds while the bells are being rung up and while the stroke intervals are corrected till they become even. The permutation begins when the captain at handstroke calls, e.g., "two to three!". At the next handstroke these two bells are inverted by pulling bell no. 2 faster from backstroke than bell no. 3, which is pulled slower. The first change will consequently be "1 3 2 4 5 6". A given bell can only be called towards *behind*, and it would not have been possible for the above-mentioned change to call "three to two!". If the captain decides on bell no. 3 to be the next one to lead, then he will call "one to three *lead*!", so that the ringers are always aware of which bell is going to open the next change in question.
Each change is to be repeated six times (3 x hand- + backstroke). Deviations from this number are heard from time to time, however, in the event the stroke intervals become uneven. The inequality will be corrected by an order, given by the captain, and the change in question is repeated until the intervals are even.
About 50% of the call change peals (recorded), improvised on six bells by Ashley Jose, consist of 20 changes (the rest contain some 20 changes). With six repetitions of each change a total number of 120 tone rows is obtained, plus the number of rounds which are rung before and after the changes. The duration of each change is approximately two seconds, hence 20 changes can be rung in about four minutes, plus the time it takes to ring the rounds. In practice the total time of ringing a peal of 20 call changes will usually be 8 – 9 minutes. As in method ringing an attempt is made to avoid a repetition of any change of the peal, according to Ashley Jose, and as a matter of fact it did not happen to him in any of the 25 call change peals recorded.

Six composed call change peals are kept in the belfry of St. Piran's Church; most of these are composed by the Ringer's Guild in Truro. The compositions, which are longer than the improvisations (36 – 48 changes), are performed from time to time, but usually improvisation is preferred. Ashley Jose prefers to improvise his ringing for the sake of musical variation, and because the attention of the team is better drawn when the ringers do not know in advance which bells are going to be interchanged in the following changes.

The patterns of the pre-composed call change peals are usually very regular. In most cases the course of a given bell can be followed from lead to behind and vice versa throughout the entire pattern. Another way of composing a peal is to bring each bell successively from lead to behind, a pattern which in a single case was used by Ashley Jose as well, but numerous other patterns can be formed depending on the imagination and the musicality of the composer. According to Ashley Jose, the call change peals are musically judged. A concrete judgment as to the quality of the music arising from the tone rows produced by the bells may be as difficult to make here as with any other kind of music, but Ashley Jose remarked: "some of the peals do sound very hard".

Ex. 3. Composed call change peal

	1 2 3 4 5(6)
3→4	1 2 4 3 5
2–4	1 4 2 3 5
1–4	4 1 2 3 5
1–2	4 2 1 3 5
4–2	2 4 1 3 5
4–1	2 1 4 3 5
4–3	2 1 3 4 5 etc.

Bell no. 4 goes to lead three times in this peal of 36 changes. (Tenor strikes in behind throughout.)

Ex. 4. Composed call change peal

	1 2 3 4 5(6)
2→3	1 3 2 4 5
4–5	1 3 2 5 4
2–5	1 3 5 2 4
1–3	3 1 5 2 4
1–5	3 5 1 2 4
1–2	3 5 2 1 4
1–4	3 5 2 4 1
3–5	5 3 2 4 1
3–2	5 2 3 4 1 etc.

The bells, in the succession no. 1, 3, 5, 2, 4, go from lead to behind.

When a composed call change peal is written down only the *calls*, as seen to the left of the above patterns, are written.

The following diagrams show two call change peals improvised by Ashley Jose in St. Piran's Church before Evensong on 3rd April and before Mattins on 11th April 1977, respectively:

Ex. 5. Improvised call change peal

	1 2 3 4 5(6)
2→3	1 3 2 4 5
4–5	1 3 2 5 4
1–3L	3 1 2 5 4
2–5	3 1 5 2 4
1–5	3 5 1 2 4
2–4	3 5 1 4 2
3–5L	5 3 1 4 2
1–4	5 3 4 1 2
1–2	5 3 4 2 1
3–4	5 4 3 2 1
5–4L	4 5 3 2 1
3–2	4 5 2 3 1
3–1	4 5 2 1 3
5–2	4 2 5 1 3
5–1	4 2 1 5 3
4–2L	2 4 1 5 3
5–3	2 4 1 3 5
4–1	2 1 4 3 5
4–3	2 1 3 4 5
2–1L	1 2 3 4 5

= 20 changes

("L" = Lead)

Ex. 6. Improvised call change peal

	1 2 3 4 5(6)
1→2L	2 1 3 4 5
4–5	2 1 3 5 4
1–3	2 3 1 5 4
1–5	2 3 5 1 4
1–4	2 3 5 4 1
2–3L	3 2 5 4 1
5–4	3 2 4 5 1
5–1	3 2 4 1 5
4–1	3 2 1 4 5
2–1	3 1 2 4 5
3–1L	1 3 2 4 5
2–4	1 3 4 2 5
2–5	1 3 4 5 2
1–3L	3 1 4 5 2
1–4	3 4 1 5 2
1–5	3 4 5 1 2
3–4L	4 3 5 1 2
3–5	4 5 3 1 2
3–1	4 5 1 3 2
3–2	4 5 1 2 3
4–5L	5 4 1 2 3
4–1	5 1 4 2 3
4–2	5 1 2 4 3
5–1L	1 5 2 4 3
5–2	1 2 5 4 3
4–3	1 2 5 3 4
5–3	1 2 3 5 4
5–4	1 2 3 4 5

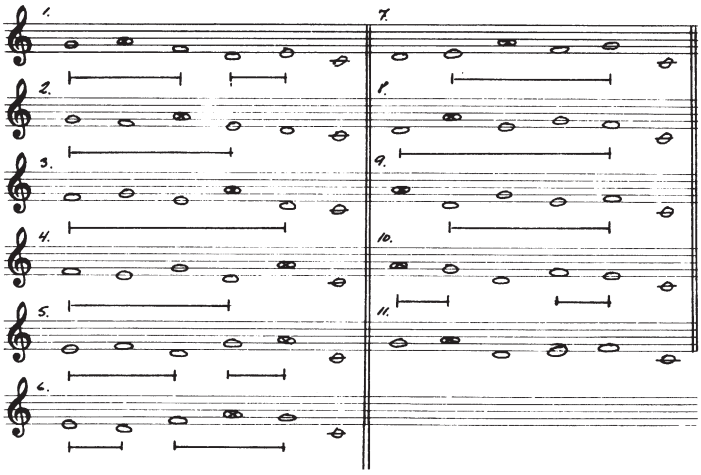
= 28 changes

Ex. 5: All the bells are in lead in the succession *1, 3, 5, 4, 2.* The first inversions are made between *2–3* and *4–5*. Then *3* strikes in lead while *5* goes from 4th place down to lead. – Treble goes from 3rd's place up to behind, *5* and *4* are inverted, whereafter *4* is in lead. – *3* and then *5* go up to behind. (It is likely that the captain decided to bring the bells to rounds at this time.) When *4* goes up to 4th place, *2* strikes in lead until finally she is interchanged with Treble and rounds are then attained again.
Ex. 6: The bells strike in lead in the succession *2, 3, 1, 3, 4, 5, 1.* – Treble has a fairly regular course to behind, then back to lead and up to 4th place. – *3* goes up to behind and then *4* goes to 4th place. (The closing might start from change "5 1 2 4 3".) – *5* goes to 3rd's place, whereafter *3* goes to 3rd's place and finally *5* goes up to behind.

At weddings a special type of call change peal is rung which might be described as a "spliced peal". It consists of three improvised peals connected, e.g., in the following way:

rounds
20 call changes
rounds
12 call changes
rounds
20 call changes
rounds.

Musical Analysis (Grandsire Doubles):
From the patterns which result from the changes being arranged successively under each other, the hunting course of the bells can be read as well as the alterations of the changes in regard to the successions of the bells. However, due to the permutations there is a certain relationship between the melodies of two given successive changes, and these relations may be more easily examined in a note transcription of the changes. The following example is a transcription of the first 11 changes of Grandsire Doubles (see p. 91 f.). Treble is marked with an *x*. Tones the intervals of which are related from one change to another are marked with a line (⟷).



Ex. 7. Grandsire Doubles

Ex. 7: Each bell, i.e., each tone, goes step by step through the tone rows according to the plain hunting course until particular permutations such as place making and dodging, Single and Bob, are introduced (see p. 92). The tone progressions might be called a "wave motion".

From one change to another one, melodic inversions occur, in some cases involving the whole tone row (except of course the Tenor bell), in other cases only part of it. The inversions from change no. 1 to 11 involve the following numbers of tones in each change:

change no.	number of tones	change no.	number of tones
1 – 2	3 + 2	6 – 7	2 + 3
2 – 3	4	7 – 8	4
3 – 4	5	8 – 9	5
4 – 5	4	9 – 10	4
5 – 6	3 + 2	10 – 11	2 + 2

In some changes, e.g., from change no. 3 to no. 4, melodic inversions will start from the same tone pitch, in other ones transposed inversions are seen, e.g., from change no. 8 to 9. The melodic inversions are divided into 2 + 2/ 3 + 2 tones, or they consist undivided of 4 or 5 tones.

The music produced by the Grandsire Doubles may be experienced as the melody of a given change, in the movement of each tone or in the "wave motion", and from the relationship between two successive changes arising from the melodic inversions.

Musical Analysis (Call changes):
In a call change peal the tones behave in another way than in the Grandsire Method because only two tones are inverted in each change. The following example is a transcription of changes nos. 16 – 20 of the call change peal set out in ex. 6. Inversion of the two tones in two successive changes are indicated with a double line and neighbouring intervals of the pair inverted are indicated with a single line.

Ex. 8. Call changes

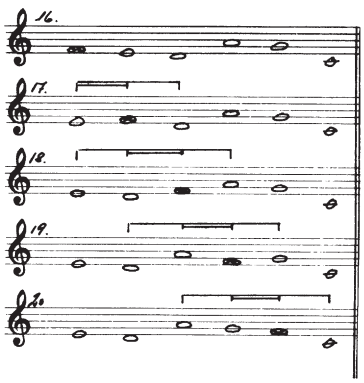
1 – 5: 3 4 5 1 2(6)

3 – 4L: 4 3 5 1 2

3 – 5: 4 5 3 1 2

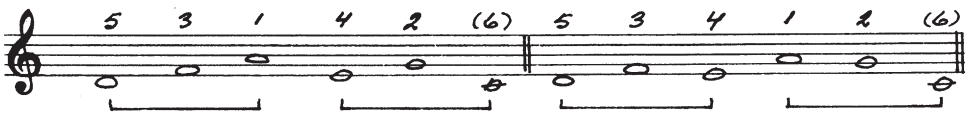
3 – 1: 4 5 1 3 2

3 – 2: 4 5 1 2 3



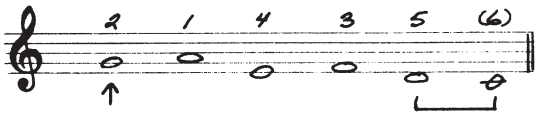
Ex. 8: One given bell, i.e., one given tone, moves step by step through the series of tone rows, or through part of it, according to the way in which the permutation pattern is composed or improvised. At each step another tone is pushed against lead. Here as in the Grandsire Method the tone progressions can be described as a "wave-motion", yet it is of a more simple character due to having just one inversion in each change.
The melodic inversion includes two tones as two bells only are interchanged in each change. Only if a neighbouring tone pitch is placed between two such tones can the melodic inversion be said to consist of three tones, as seen in the inversion from change no. 17 to 18. When two tones in a given change are inverted the intervals to the neighbouring tones will be altered

accordingly so that in reality four tones are affected by the inversion (unless the tones inverted are the first two in a change, in which case, of course, only three tones will be affected).
The interval relations are different in call changes from those of Grandsire Doubles, since four tones in a given change are repeated in the same order as in the previous change. However, as the tone intervals to two (or one) of these four tones will be altered, two successive changes may be quite varied melodically if the melody is considered as bi-partite (see below).



Ex. 9. Alteration of the melody from one call change to another.

Each change is furthermore characterized by its first tone and by its final interval (see below).



Ex. 10. Change no. 18 of call change peal ex. 5 (2 1 4 3 5).

As the tones in lead and behind of a call change peal are repeated in several successive changes far more times than, e.g., in Grandsire, the first tone and the final interval especially of a given change are established in the consciousness of the listener in a different way, and the effect is naturally fortified by the repetitions of each change. Endings from VI to I and from IV to I of the major scale in particular give the melody a very special character in contrast to endings from V or II to I.

Characteristic differences between Grandsire Doubles and Call Change-Ringing

	Grandsire Doubles	*Call Change-Ringing*
Course of melody:	The "wave motion" includes four tones.	The "wave motion" includes two tones.
Intervals:	Melodic inversion includes five/four tones, transposed or untransposed.	Inversion includes two tones, transposed. (Causes another type of melodic alteration.)
Melodic characteristics:	Two successive changes do not have repeated tones in both lead and behind.	Several successive changes often have repeated tones in both lead and behind.
Repetitions:	Each change is rung once.	Each change is repeated six times.
Plain hunting course:	All bells have a plain hunting course; at deviations herefrom certain rules are implied.	Only one bell at a time may make a plain hunting course.
Inversions:	Done at both hand- and backstroke.	Done only at handstroke.
Number of bells inverted:	Two pairs of bells are inverted in each change.	One pair of bells is inverted in each change.
More than five bells in a change:	Implies an increasing number of bells in inversion.	Still only one pair of bells is inverted.
Performance:	The entire composition is rung without any conducting (except for "Bob" & "Single").	Each change is conducted by the captain.
Composition:	The patterns (methods) are precomposed.	The patterns are usually improvised by the captain.
The audience:	It may be difficult for the listener to follow any one bell since four out of five tones shift in each change.	It is easier for the listener to follow the course of a given bell as only two out of five tones shift in each change – which, moreover, is repeated.

It has not been intended in the present examination of change-ringing to judge the relative merits of the two systems or to stress one way of ringing at the expense of the other. But among other things I have wished to show that call change-ringing as carried out in Cornwall is perhaps more than "one step removed from the dull round ringing" (see p. 93), and that it may not be as "monotonous" as Ernest Morris has claimed in *The Art and History of Change Ringing,* p. 613. – In call change-ringing as well as in method ringing the unusual musical instrument required for performance is a "ring of bells" – an instrument which demands a high degree of technical ability of the performer. The music produced on the bells is unique in that it is the result of the systematic permutation of a descending major scale, but in spite of the mathematical calculations involved in the creative process it is a music which can be judged in regard to its musical quality. And finally, the kind of music dealt with makes most particular demands to the individual musician as well as to the ringing team as a whole.

It should be stressed that in Cornish call change-ringing a *musical improvisation* is cultivated. The art of thinking and performing music simultaneously is a phenomenon which is met with only rarely in the Occident today, apart from some more recent musical forms, and perhaps this aspect in particular deserves further investigation in prospective studies of change-ringing.

Call change-ringing, like method ringing, is a musical art which gathers people from all social classes and may, therefore, probably be characterized as a democratic institution of significant social importance. In the belfry the individual ringer is appreciated for his technical skill at the bell rope and for the interest he displays by appearing one or more times weekly all through his life to participate in the bell ringing – an interest as passionate in the call change-ringer as in the method ringer.

The ringers carry out a centuries-old tradition which, as mentioned above, cuts across all social barriers and has for an audience not only the churchgoers but also all other people within ear-shot of the bell sound. Thus change ringing is by its general distribution an integral part of life in Great Britain.

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Resumé

Artiklen beskriver en form for klokkeringning som er speciel for England og engelsktalende områder – den såkaldte *vekselringning* ("change-ringing"). Denne måde at ringe med kirkeklokker på opstod i det 17. århundrede og lever endnu i dag, hvor der udføres vekselringning i næsten 6000 engelske kirker.
Objekt for den foreliggende undersøgelse er St. Piran's Church, Perranzabuloe, Cornwall. Forfatteren besøgte stedet i marts-april 1977; materialet fra dette besøg – det klingende som det nedskrevne – er deponeret på Dansk Folkemindesamling.
Efter en beskrivelse af de 6 klokkers ophængning og indretning (antallet kan variere fra 5 - 12, i Cornwall oftest mellem 6 og 8) følger et afsnit om selve teknikken ved ringningen.
System-ringning ("method ringing") er den hyppigst anvendte ringemåde i England i dag; den udføres imidlertid ikke i Perranzabuloe. System-ringning vil sige, at der med et givet antal klokker ringes et bestemt antal variationer efter et bestemt system, således at en én gang anvendt kombination ikke gentages.
Vekselringning adskiller sig fra system-ringning ved, at forløbet af ringningen ikke er bestemt på forhånd, men *improviseres* efter såkaldte "calls" af ringerholdets leder ("captain"). Et sæt klokker til vekselringning er stemt i en diatonisk skala; når der ringes fra *diskantklokken* (den højeste) til *tenorklokken* (den dybeste) er klokkerne *på plads til en almindelig runde*. Variationerne sker efter bestemte regler, således at ingen klokke må flytte sig mere end én plads frem eller tilbage i forhold til sin plads i den foregående variation og således, at ingen variation må gentages i samme ringning.
Vekselringning, som den foregår i England, er en spændende form for musikalsk improvisation; ydermere samler den folk fra forskellige sociale lag i et fællesskab, hvor den enkelte ringer værdsættes for sin tekniske dygtighed ved klokkerebet.