

# PRINCIPLES OF CHANGE RINGING

## Comparison With Call Changes

When ringing call changes the conductor makes up the calls as he goes along. Calls are always made at handstroke and take effect the next handstroke. The next call is usually called some time after the previous call, by which time it is hoped that the rhythm has recovered. Also, the call tells each person (maybe indirectly) who to follow. Usually, only one pair of bells is swapped at a time. The ringer can often get away with just following the bell that they are told to follow.

Change ringing is developed from call change ringing in the following ways:

- \* The changes are predetermined and must be thoroughly learned by everyone,
- \* Changes are made at each pull of the rope and proceed whether or not the previous change was rung correctly,
- \* It is the ringer's position amongst the other bells that counts, not who they happen to follow,
- \* Several pairs of bells may change places at each change,
- \* The ringer must be self sufficient and not rely on other ringers.

A set of call changes can be written down in a column in which each row is alternately a handstroke and then a backstroke:

123456	H
123456	B
132456	H
132456	B
132456	H
132456	B
132546	H
132546	B
135246	H

It is not usual to include the stroke at which each row is to be rung. In a similar way, a piece of change ringing can also be written in columns. There are many examples later.

## Other Points About Change Ringing

- \* On any number of bells there is a certain number of different orders, or rows, in which they may be rung,
- \* Each number of bells is given a name:

<u>Bells</u>	<u>Number of rows</u>	<u>Name</u>	<u>Time taken at 30 changes per minute</u>
3	6	Singles	12 seconds
4	24	Minimus	48 seconds
5	120	Doubles	4 minutes
6	720	Minor	24 minutes
7	5,040	Triples	2 hours 48 minutes
8	40,320	Major	22 hours 24 minutes
9	362,880	Caters	8 days 9 hours 36 minutes
10	3,628,800	Royal	84 days
11	39,916,800	Cinques	132 weeks (2 years 6 months 2 weeks)
12	479,001,600	Maximus	1584 weeks (30 years 6 months)

Cinques is pronounced 'sinks'.

- \* In any piece of ringing, there should not be any repetition of any order of the bells,
- \* Each piece of ringing starts and ends with Rounds and is constructed in a very regular manner,
- \* To produce a new row from the previous row each bell can do one of three things:
- \* Ring one position later,
- \* Ring one position earlier,
- \* Stay in the same place,
- \* Most pieces of change ringing only include a small number of the available rows,
- \* There are very many different pieces of change ringing, each with its own name, such as Cambridge Surprise Major or Double Norwich Court Bob Caters,
- \* Such pieces of change ringing are known as methods,
- \* Methods are building blocks of the extended pieces of change ringing known as peals and quarter peals,
- \* It is possible, especially when ringing eight or more bells, to select the more musical rows for inclusion in a composition,
- \* A composition without repeated rows is said to be true whereas one with repeated rows is said to be false.

## **The Simplest Method - Plain Hunt**

We will look at Plain Hunt under three headings: 'What Is Plain Hunt?', 'How To Learn Plain Hunt' and 'Ringing Plain Hunt'. You will not have a complete picture until you have grasped each section. In particular, it is important that you don't adopt the attitude that 'you don't want to understand it, you just want to be able to ring it'. After reading and digesting the following information the only way to master Plain Hunt is by practice. In this way you will develop your own picture of how it all fits together. Avoid falling into the trap of believing that the way to learn Plain Hunt is by learning who to follow at each stroke.

## **What Is Plain Hunt?**

Plain Hunt forms the basis of all change ringing and can be rung on any number bells. The idea behind it is that, at handstroke, pairs of bells change places, starting with the bells in 1st's and 2nd's places and working along the row. Then, at backstroke, the bell in 1st's place (leading) stays there and pairs of bells change places starting with those in 2nd's and 3rd's places and working along the row. This alternating pattern is repeated until Rounds reappears and the method is complete.

To illustrate, a course of Plain Hunt on different numbers of bells is given below:

<b><u>Two Bells</u></b>	<b><u>Singles</u></b>	<b><u>Minimus</u></b>	<b><u>Doubles</u></b>	<b><u>Minor</u></b>
12	123	1234	12345	123456
21	213	2143	21435	214365
21	231	2413	24153	241635
12	321	4321	42513	426153
12	312	4321	45231	462513
	132	3412	54321	645231
	123	3142	53412	654321
		1324	35142	563412
		1234	31524	536142
			13254	351624
			12345	315264
				132546
				123456

Things to note:

- \* In each case, each bell moves either one position earlier, one position later or remains in the same place,
- \* The even numbered bells start by ringing one position earlier each time until they get to 1st's place where they stay for two rows,
- \* The odd numbered bells start by ringing one position later each time until they get to last place where they stay for two rows,
- \* When a bell gets to one end or other of the row it turns round and goes back,
- \* In each row, each bell is rung once,
- \* At the end Rounds reappears and apart from Plain Hunt on two bells, there are no other repeated rows,
- \* The row before the final Rounds is underlined to mark the end of the course,
- \* The final Rounds can be seen as the initial rounds of a further set of rows which seamlessly join onto the previous set,
- \* Each bell performs the same sequence changes of position but each starts at a different point in that sequence.

It is important that you can quickly, accurately and without cheating, write out Plain Hunt on any number of bells. You should try this until you can do it. As an exercise, start with a row other than Rounds, say:

1y8qb+  
y1q8+b  
yq1+8b  
qy+1b8  
q+yb18  
+qby81  
+bq8y1  
b+8q1y  
b8+1qy  
8b1+yq  
81by+q  
18y bq+  
1y8qb+

The symbols used are irrelevant, it is the pattern that makes it Plain Hunt. If you follow the path of the letter q through this it is the same as bell number 4 in the Plain Hunt Minor. The term hunting is used in methods other than Plain Hunt to describe sections in which a bell moves in a similar fashion for several rows.

## **Learning Plain Hunt**

The table above contains lots of rows of numbers. These are of little use in actually ringing Plain Hunt since there are too many of them. We have already suggested the idea that each bell moves by one position earlier or later until they reach the end or then row and then they turn round and go the other way. This means that it is only necessary to remember this principle. To help us we can draw a line through one of the bells (known as the blue line because they were first printed in blue). Note that it doesn't matter which one we choose because all the bells do the same thing but start at different points. The table below shows the blue line added to the path of the Treble:

**Two Bells**

12  
21  
21  
12  
12

**Singles**

123  
213  
231  
321  
312  
132  
123

**Minimus**

1234  
2143  
2413  
4321  
4321  
3412  
3142  
1324  
1234

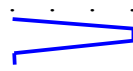
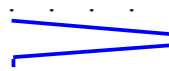
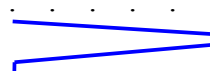
**Doubles**

12345  
21435  
24153  
42513  
45231  
54321  
53412  
35142  
31524  
13254  
12345

**Minor**

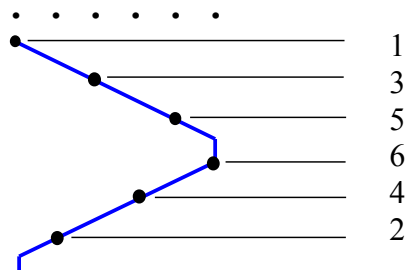
123456  
214365  
241635  
426153  
462513  
645231  
654321  
563412  
536142  
351624  
315264  
132546  
123456

We can take this a stage further by erasing all the numbers and squashing up the diagrams a bit to get the final form that advanced ringers use. In the diagrams below the rows of dots show the positions that the bells can occupy:

**Two Bells****Singles****Minimus****Doubles****Minor**

See how these lines relate to the Treble in the previous table. It is important that these lines can be quickly drawn without having to stop and think.

We have already mentioned that each bell does the same work but starts at a different point. It follows that we can draw a diagram that will do for every bell. This is it for Plain Hunt Minor:



You must be able to learn a diagram such as this and be able to draw the line for any bell. The crib sheet at the back gives the blue lines of each bell for Plain Hunt Doubles. These should be studied and compared to see that each bell follows the same pattern of moving all the way to one end of the row then turning round and going all the way to the other end, although each starts at a different point.

The learning of Plain Hunt therefore involves learning the shapes of these lines. It doesn't involve the learning of a separate line for each bell. The general idea is that each bell moves from one end of the row to the other, one position at a time (the sloping parts of the line) and staying at the end for two rows (the vertical parts of the line) before turning back the other way. The lines for each bell are effectively the same but each bell starts at a different point on that line and when it gets to the end it goes back to the beginning. Given this, and the observation that the even numbered bells start by ringing earlier and the odd numbered bells start by ringing later it is possible to work out where to start on any bell.

## Some More Terminology

The crib sheet at the back defines the additional terms: Front, Middle, Back, Leading Full, Lying Behind, Hunting Up/Out, Hunting Down/In. You should look at that sheet now because you won't have a clue otherwise.

## Ringling Plain Hunt

### Changing Speed

Learning to ring Plain Hunt properly is probably the hardest part of learning change ringing because not only are you learning a new method but you are also learning how to interpret the diagrams. You are also learning a skill called ropesight by which you can see your position amongst the other bells, and you have to learn how to move your bell to change places smoothly.

When ringing Plain Hunt you may do one of:

- \* Ring one position later (hunt up),
- \* Ring one position earlier (hunt down),
- \* Stay in the same place.

Look at the Treble in the following diagram:

#### **Plain Hunt Minor** (including handstroke gaps shown as \*)

123456	1
*214365	2
241635	3
*426153	4
462513	5
*645231	6
654321	7
*563412	8
536142	9
*351624	10
315264	11
* <u>132546</u>	12
123456	13
*123456	14

.....

Look at rows 12 and 13 where the Treble stays in the same place and is effectively ringing Rounds. If you count the number of bells that strike between these two blows of the Treble you can see that there are 5 bells which strike (3, 2, 5, 4 and 6). Thus, when ringing Rounds, 5 bells will strike between a handstroke and the next backstroke. This corresponds to 6 intervals between one bell striking and its next strike. We shall use the term "bell interval" to refer to the time between successive dongs (or dings). Thus the time between bells 1 and 2 striking in Rounds is 1 bell interval.

Between rows 13 and 14, because of the handstroke gap there are, in effect, 6 bells striking between these two blows of the Treble, corresponding to 7 bell intervals between one bell striking and its next strike. For this reason every bell should be held up at handstroke to create the correct handstroke gap.

Look at rows 1 and 2 where the Treble is hunting out at handstroke. Between the two blows of the Treble there are 6 other bells striking (2, 3, 4, 5, 6 and 2) plus a handstroke gap (\*), making 7 bells, 8 bell intervals, in all. This is one more bell interval than in Rounds and so the Treble must slow down to make room for the extra bell. This corresponds to The same applies to the pairs of rows 3 and 4, 5 and 6. In other words, to move at

handstroke to 2nd's place from lead the ringer must leave room for 8 bell intervals instead of the usual 7 as in Rounds. Such a handstroke is therefore about 14.3% slower than one in Rounds.

A similar thing applies between rows 2 and 3, 4 and 5 except that since rows 3 and 5 are backstrokes there is no additional handstroke gap. Since the time interval between successive blows of the Treble is now 7 bell intervals (6 bells) instead of 6 bell intervals (5 bells) in Rounds this corresponds to a slow down of 16.7%. Many learners don't slow down enough, especially at backstroke.

To slow down your bell you let it balance for a moment, having pulled it hard enough at the previous stroke and possibly letting an inch or two of tail end out. Remember that you pull later and harder (slightly) to slow down a bell. Thus, when hunting up, you will be pulling slightly harder than in Rounds. It is particularly important to let the backstrokes rise.

Look at rows 7 and 8 where the Treble is hunting in. Between the two blows of the Treble there are 4 other bells striking (5, 6, 3 and 4) plus a handstroke gap (\*), making 5 bell spaces (6 bell intervals) in all. This is one fewer bell than for a handstroke in Rounds and so the Treble must speed up to take the place of the 'missing' bell interval. The same applies between rows 9 and 10, 11 and 12. Since the time interval between successive blows of the Treble is now 6 bell intervals instead of 7 in Rounds this corresponds to a speed up of 14.3%.

A similar thing applies between rows 8 and 9, 10 and 11 except that since rows 9 and 11 are backstrokes there is no additional handstroke gap. Since the time interval between successive blows of the Treble is now 5 bell intervals (4 bells) instead of 6 bell intervals (5 bells) in Rounds this corresponds to a speed up of 16.7%. Many learners don't speed up enough at backstroke and get left behind, resulting in a scramble to lead correctly.

To speed up your bell you pull it a bit sooner, having pulled the previous stroke slightly less hard and possibly taking in an inch or two of tail end. Remember that you pull sooner and less hard (slightly) to speed up a bell. Thus, when hunting down, you will be pulling slightly less hard than in Rounds.

## Summary Of Timings Compared To Rounds And Compared to Moving Up And Down

Shown as "bell intervals" between strikes:

	<u>Compared to Rounds:</u>		<u>Compared to Moving The Other Way:</u>	
	Handstroke	Backstroke	Handstroke	Backstroke
<b>Moving Up</b>	8/7	7/6	8/6	7/5
<b>Moving Down</b>	6/7	5/6	6/8	5/7

Shown as percentages:

	<u>Compared to Rounds:</u>		<u>Compared to Moving The Other Way:</u>	
	Handstroke	Backstroke	Handstroke	Backstroke
<b>Moving Up</b>	14.3% slower than Rounds	16.7% slower than Rounds	33.3% slower than when moving down	40% slower than when moving down
<b>Moving Down</b>	14.3% quicker than Rounds	16.7% quicker than Rounds	25% quicker than when moving up	28.3% quicker than when moving up

## Interpreting The Blue Line

The diagram above also shows that when the blue line moves to the left you ring quicker to hunt in and when it moves to the right you ring slower to hunt out.

It is useful to think of hunting out as climbing a staircase because you are climbing over the bells one at a time. This is harder work than going down stairs and so you must slow down and work a bit harder. Hunting in is like going down stairs, which is quicker and easier.

In addition, you must keep track of which position you are in by counting. Suppose you have just led and are therefore in 1st's place, the blue line then moves to the right, taking you to 6th's place. Because the blue line is straight it means that you must ring exactly 1 blow in each position between 1st's and 6th's. So, each time you pull the rope you should say to yourself '1st's, 2nd's, 3rd's, 4th's, 5th's, 6th's'. When you arrive at the back you remember that there is a short vertical piece on the blue line. Such a vertical piece means that you ring two blows in that position. Then you set off back to the front and are now counting down: '6th's, 5th's, 4th's, 3rd's, 2nd's, 1st's (lead)'. The blue line has another vertical bit in 1st's place which means two blows in 1st's place, or lead full.

You can now interpret the blue line in terms of which position to move to by following it from your starting place, watching where it moves to the right, to the left or stays still and say to yourself what position you must move to. As long as you remember that when you count up you ring a bit slower, when you count down you ring a bit quicker and when you stay in the same place you ring at Rounds speed you will keep your bell in the correct place.

## **Procedure In The Tower**

When ringing any method the bells are set off in the normal way and when the conductor is ready he will shout "Go Plain Hunt". This call will be at handstroke. The next backstroke is the final Round and at the next handstroke the bells will start to change places. This gives you time to prepare for either slowing down or speeding up. Don't alter your speed until the handstroke after the call otherwise the final Round will be spoilt.

The ringing will proceed until the conductor is fed up with it. He will then call "That's All" at the start of the final Rounds. This call is the only one in ringing which takes immediate effect; all others are called two blows before they take effect. During the ringing the conductor might attempt to correct you if he thinks you are wrong. You must believe him and react quickly because at your stage he is much more likely to be correct than are you!