

& 19 Questions & 18 Answers

about

Church Bells and Change Ringing

I heard the bells on Christmas Day

Their old familiar carols play,

And wild and sweet

The words repeat

Of peace on earth, good-will to men!

-Longfellow

*Dodge 3-4 down; 4 blows behind
Dodge 3-4 up; make 2nds place and lead again.*

*Work of the 2nd bell in
Plain Bob Doubles*

1. Q: Why are Church Bells rung?

A: They are the loud voice of the Church, ringing out to the local community. They proclaim worship to God. They speak of Jesus' love and hope to all who hear them. In times of national and local celebration, the peal joyfully. In times of grief or disaster, they are half muffled and sombre.

2. Q: How many ways are church bells rung?

A: Bells possibly originated in China; the modern bell as we know it originated in Italy where a few bells are swung randomly. In the 1100s bells began to spread across Europe. In the Lowlands of Holland and Belgium, the Carillon was developed; in France and Germany, bells were tuned to the Pentatonic Scale and swung in small arcs.

In England, they swung them higher and higher until they reached full circle. In the early 1600s Fabian Stedman invented a style of ringing these bells called CHANGE RINGING.

3. Q: How many churches have bells hung for this English-style of CHANGE RINGING?

A: There are over 5,000 churches in Britain with change ringing bells; most are Church of England, with a few Roman Catholic, non-conformist and secular towers. There are more than 40 churches in North America (7 of them in Canada) and another 60 spread between Australia, New Zealand and Africa. There is just a handful of change ringing bells in Holland and northern Italy.

4. Q: How many bells are there in each tower?

A: That depends! Most have 6 bells (approximately 2,700 churches); about 1,700 have a full octave of 8 bells and nearly 800 have 5 bells. About 200 have 10 bells and only 90 (mostly cathedrals and large city churches) have 12 or more.

There are 4 rings of 10 in North America at Washington and Victoria Cathedrals and Groton School (Mass) and Perkin's Institute for the Blind (Boston) chapels. St. James' Cathedral, Toronto was the very first ring of 12 bells in North America. A second North American new peal of 12 was installed at Trinity Church, New York City in 2006.

5. Q: Are the bells run mechanically?

A: No way! It is the continuation of an old art to ring the bells by real people. Each bell is rung by a single person. (Much has been done though with computers to help simulate change ringing and help with practice). *There is a second set of bells at St. James' which is rung mechanically. These are the quarterly chimes which are heard.*

6. Q: How do you actually ring a bell?

Bells are left mouth downward for safety. First they must be "rung up" by swinging the bell in increasing arcs until it is travelling through a full 360 degrees from mouth upwards to mouth upwards. At this point the bell can be held for a few moments at its balance point to increase the time between its strikes; or "checked" below its balance point to decrease the time between strikes. The bell can also be allowed to go "over the balance" by a few degrees to permit it to rest against the stay. This is made of ash wood which is strong enough to rest the bell while it is not being rung, but weak enough to break if the bell is overpulled and the bell hits against it. The ringer holds and pulls the "sally" (coloured woolen tufts) to create the "handstroke." The sally initially "bobs" down to the floor and then rises to the ceiling as the bell turns and the rope wraps around the wheel. The bell strikes at the end of its revolution. The rope tail is then pulled to create the "backstroke" and the bell rotates in the opposite direction. As the sally bobs once more, it is caught and the whole cycle repeated.

7. Q: So do ringers need to be immensely fit and strong?

A: It helps, but it is mainly technique. The Cathedral bells rotate on modern bearings. All you have to overcome is their small amount of friction (and air resistance if you want to be really technical). If you

overpull, then you need quite a bit of "heave" to get the bell back to the balance—but you spend months learning not to do this! Some quite small children and elderly people ring perfectly well with no strain or discomfort. It is an old art which looks easy when done well, but takes a while to perfect.

8. Q: Just how big are the Cathedral bells?

A: The largest bell is called "The Tenor" and is the lowest note. It is 21 hundredweight, 2 quarters and 10 pounds. This is an old English way of weighing things and equals 2,418 lbs (1089 kg). The lightest bell is the highest note and is known as "The Treble." It weighs only about 600 lbs (270 kg). The heaviest ring of change ringing bells is at Liverpool Cathedral in England. The tenor weights 82 hundredweight and it can still be rung by one person.

9. Q: What exactly is this "changing ringing" thing?

Because you can't ring "tunes" on these swinging bells, a system of complex patterns was developed with a few rules which are still the same today. The bells begin by ringing DOWN the scale. This is called "rounds" (ringing "up" the scale has been a traditional warning of danger, disaster or invasion). Try this:

123456
214365
241645
426153
462513
645231
654321
563_1_
5361__
3_1__
31____
13____
123456

This is a pattern for Plain Hunt Minor. It is the basis of all change ringing. It is shown here on 6 bells, but can be extended to any number of bells.

Can you fill in the rest of the grid?

A few clues: Each bell may move only one "place" at a time. Preferably it may not remain in one place for more than two blows. Under some circumstances, it may remain in one place for up to four blows. The pattern begins and ends with rounds. In between, no change may be repeated.



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10. Q: How long would it take to ring all the changes?

A: The more bells, the longer it takes. On 5 bells we call the methods “doubles” and the number of changes possible is $1 \times 2 \times 3 \times 4 \times 5 = 120$. This takes about 4 minutes to ring.

6 bells	Minor	720 changes	25 mins
7 bells	Triples	5,040	3 hrs (a standard “peal”)
8 bells	Major	40,320	24 hrs (done once in 1963)
9 bells	Caters	362,880	9 days (never all rung)
10 bells	Royal	3,628,800	90 days
11 bells	Cinques	39,916,800	2.75 years
12 bells	Maximus	479,001,600	35 years

11. Q: It sounds really complicated. Do ringers have to be musical or good at math?

A: Although you’ll find lots of musicians and math oriented people among ringers, you don’t need to be either; just a good sense of rhythm is really helpful.

12. Q: What is Grandsire Triples and all this stuff about?

A: We have already met “Triples.” It tells us it is something rung on 7 bells. Every method has a “last name” which tells you how many bells are changing. The first name (like “Grandsire”) tells you the shape of the pattern. Some patterns are suitable for ringing on any odd number of bells and some extend to any even number of bells. Just a very few can be on either odd or even numbers of bells. Some methods have middle names which tell you which family of patterns they are in. Examples of these are: Surprise, Treble Bob, Delight, Alliance. What do you make of Reverse Canterbury Pleasure Bob Doubles?

13. Q: What is a peal?

A: For really special occasions, ringers will ring a “Peal.” This is defined as 5,000 or more different changes without making mistakes and without stopping. It starts and finishes with rounds. If rung with 7 bells changing, it will be the complete extent of 5,040 changes. On 8 bells or more, a “composition” of the method will be arranged to include the more musical sequences of changes. With 6 bells, it will be 7 complete extents in sequence and with 5 bells, 42 extents. A peal on St. James’ Cathedral bells takes about 3 hours 15 minutes to ring. On lesser, but still significant occasions, quarter-peals taking about 45 minutes with be rung.

14. Q: Is it dangerous; can you get pulled up by a rope?

A: Like anything which is capable of not being used properly, it has the potential to be dangerous. However, when properly taught and with a good understanding by the pupil, it is reasonably safe. In fact, the major danger is from addiction; the new ringer will become so addicted that it becomes a life-long hobby providing physical exercise, true teamwork, mental challenge, music, history, holidays and friends wherever you meet other ringers anywhere in the world.

15. Q: Just who are the bell ringers?

A: Some are people who learnt to ring at one time or another in England. Most will be local people to any North American tower who heard about it, got curious, showed up, tried it and got hooked. They may or may not be members of the congregation. They are not paid, except for weddings, and that barely covers the cost of travelling.

16. Q: Who organizes and teaches them?

A: The Dean (or other chief priest of a church) either appoints or approves an election of the Tower Captain, who is in charge of all matters relating to the tower and the ringing. The Ringing Master has responsibility for the standards of ringing, the teaching of new methods and the training of recruits. This post also involves organisation of practice evenings. There will be a practice night one evening each week for members of the band, currently Monday. Typically, the early part of the evening is spent on the teaching of bell handling—often one on one. The latter part of the evening sees more advanced ringing with all the bells in action and the learning of methods. There are also some Wednesday evening practices devoted to novices learning handling and bell control. For practice evenings the acoustic doors in the Cathedral tower will be closed and the bells will only be heard in the Cathedral precinct. The ringers may also be members of The North American Guild of Change Ringers. The Guild runs an annual ringing course at different levels and has a significant selection of books for sale. The Guild also facilitates experienced teachers coming to the tower.

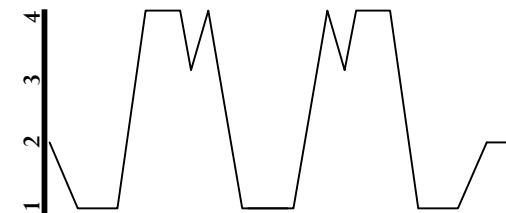
17. Q: What does being a ringer at the Cathedral involve?

A: The main purpose is to ring for Sunday services. All ringers are expected to be regular in their commitment to this for about 45-60 minutes between the two main services. There will also be other requests to ring before major Cathedral services such as diocesan or civic functions. For this ringing the acoustic louvres would be open and all ringing would be the best possible. There is also a commitment to be at practice evenings, either to teach or to improve in some area. Change-Ringing is a lifetime occupation, always with something new or more complex to learn and perfect (and always with lots of friends).

18. Q: Would I be any good as a ringer?

A: Most probably. Here is a little test covering several aspects of ringing bells.

1. PHYSICAL STRENGTH: Could you push a child on a swing?
2. COORDINATION: Can you swim, ride a bicycle or drive a car?
3. RHYTHM: tapping steadily, count from 1 to 8 then 8 to 1; 3 times without a mistake or hesitation.
4. NUMERICAL MEMORY: Memorize and repeat this number: 13572468 (it is called Queens)
5. PATTERN MEMORY: Memorize and draw this pattern (it is called Plain Bob Minimus)



6. TIME: Could you commit to 1 hour on Sunday and 2 hours for a practice evening each week?

19. Q: Could I become a ringer?

A: Only you can supply the answer to this question. The installation of the Bells of Old York at the Cathedral took place in 1997 and since then the number of ringers and recruits has risen to 26. We would certainly welcome new recruits so if you are interested please contact the Tower Captain through the Parish House office (416-364-7865).

To contact the Tower Captain, please call the parish house office: 416-364-7865