



## A Short History of Preston Church Bells, Rutland

## Acknowledgements

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*Photographs by David Audcent, Raja Bose, Bryan Howard and Patrick Nicholls.*

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## The Church of St Peter and St. Paul Preston, Rutland

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*Sanctus stamps, c1400*

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## 1. Introduction

The lovely Church of St Peter and St Paul, Preston dates back to the 12th Century. It has many interesting features, including a ring of six bells - in Rutland, only Oakham and Uppingham have more. The sanctus bell is the only surviving example in Rutland and probably has not been rung since the Reformation. Centuries later, it can now be heard once more.

The sanctus and Gabriel bells date back to about 1400 - the time of the Plantagenets. The Tenor bell, inscribed "God Save Our Queen Elizabeth", is dated c1598; the 4th bell dates from 1717 and the remaining three are 20th century. This is truly a remarkable collection and a great responsibility for our small village Church.

The bells were in urgent need of repair and restoration, and thanks to the generosity of many individuals and Trusts, we have been able to have them fully restored by John Taylor & Co, Loughborough, who had themselves installed three of the bells and the current frames.

This *Short History of the Bells* has been written by members of Preston History Group and introduces not only the bells, their founders and the restoration work carried out, but also the church itself, the importance of church bells, their characteristic sound and the art of ringing.

## 2. The History of Preston's church

The period following the Norman conquest was marked by a great flurry of ecclesiastical building and the Church of St. Peter and St. Paul at Preston was constructed during this time - in about 1150. Henry de Beaumont, 1st Earl of Warwick was a favourite of William the Conqueror and following the death of William, became a companion and friend of his successor, Henry I. He was given much land during his lifetime, including the manors of Preston and Uppingham, rights to which he transferred to Hugh de Montfort. Preston subsequently passed in 1130 to Robert de Montfort, who died about 1165; presumably, the church was founded during his tenure. Initially, it comprised just a simple nave and still retains the characteristic carved, rounded arches and massive pillars typical of the period. The walls are of coursed, dressed, local ironstone with a rubble infill. Subsequent additions included the North and South aisles, chancel, tower and spire - all built in styles prevailing at the time they were added. Later, during the 14th Century, much of the church was remodelled and the porch was added.

There is no evidence of an earlier bell tower; indeed, these were comparatively rare before the 14th

Century, although in Rutland, bell-turrets were often constructed at the west end of churches during post-Norman and Early English times. At Preston, the tower has a battlemented parapet, which accommodates the bell chamber at its summit and is surmounted by a tall spire.

During its 900-year history, the church has witnessed major economic, social and political changes, but its fabric has withstood the ravages of time and stands as testimony to the skill and dedication of those who constructed it. A number of significant artefacts were donated during the last century, including chancel lamps and pieces of mosaic pavement from the Middle East, while the graveyard incorporates cypress trees grown from seed gathered from the Garden of Gethsemane.

The voice of the church is its bells, which speak to us now in ways that have changed little over the years, bringing messages of hope and peace. Two of these are amongst the earliest in Rutland, dating from c 1400: a sanctus bell (the only example surviving in Rutland) and the Gabriel Bell. Three additional bells were added during the last century, making a ring of six.

### 3. Origin of church bells in the UK

The use of bells as an adjunct to Christian worship dates back to its early days, but was first officially sanctioned by Pope Sabinian in 604. He is said to have introduced the ringing of a bell during the celebration and at the times of daily prayer. In this country, the use of bells to announce Tierce, Mass, and Processions is recorded in the Ordo Romanus. The Rev. Bede refers to the ringing of a bell at Whitby in 608 to summon the nuns to prayer. By the early Middle Ages, the use of bells in England was widespread and the presence of Saxon, Norman and medieval bell towers attests to the substantial size of many of these.

During this period, worship was in accordance with Catholic traditions, but in 1538, Henry VIII issued an injunction banning the tolling of bells at the "Aves after service and certain other times" to emphasise his break with Rome.

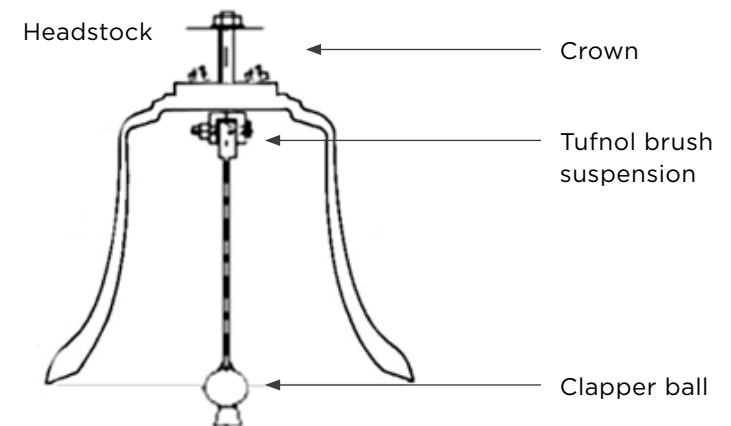
It is interesting to note that currently, Canon Law (Canon F8) instructs that every church and chapel shall be provided with at least one bell "to ring the people to divine service"; the Minister has responsibility for determining when bells are to be rung. Whilst not requiring that the bells are actually rung, there is an expectation that they will be if possible.

The use of smaller bells, which featured in early Catholic worship, has declined over the years, although examples survive, including Sanctus bells, priest's bells (or ting-tangs) and Sacring bells (small hand-bells used during mass to mark the elevation). Change ringing - using larger bells - has become a feature of British life. In the 16th Century, the development of full circle bell ringing in Britain altered the way that bells were hung and required rings to be tuned to a common scale.

### 4. Anatomy of the bell chamber



*Fig 1. Parts of a bell*



*Fig 2. Cross section*



## 5. The history of Preston's bells

The tower houses a ring of six bells, details of which are as follows:

Bell	Known as	Wt. Kg	Note	Dia. cm	Date	Founder
1st	Treble	183	E#	64	1964	John Taylor & Co
2nd		229	D#	71	1908	
3rd		270	C#	76	1908	
4th		293	B#	82	1717	Henry Penn
5th	*Gabriel	398	A#	90	C. 1400	(unknown)
6th	*Tenor	518	G#	99	C. 1598	Newcombe & Watts
	*Sanctus			39.4	C. 1400	John Barber

*\* These bells are listed for preservation by the Church Buildings Council (Church Care).*

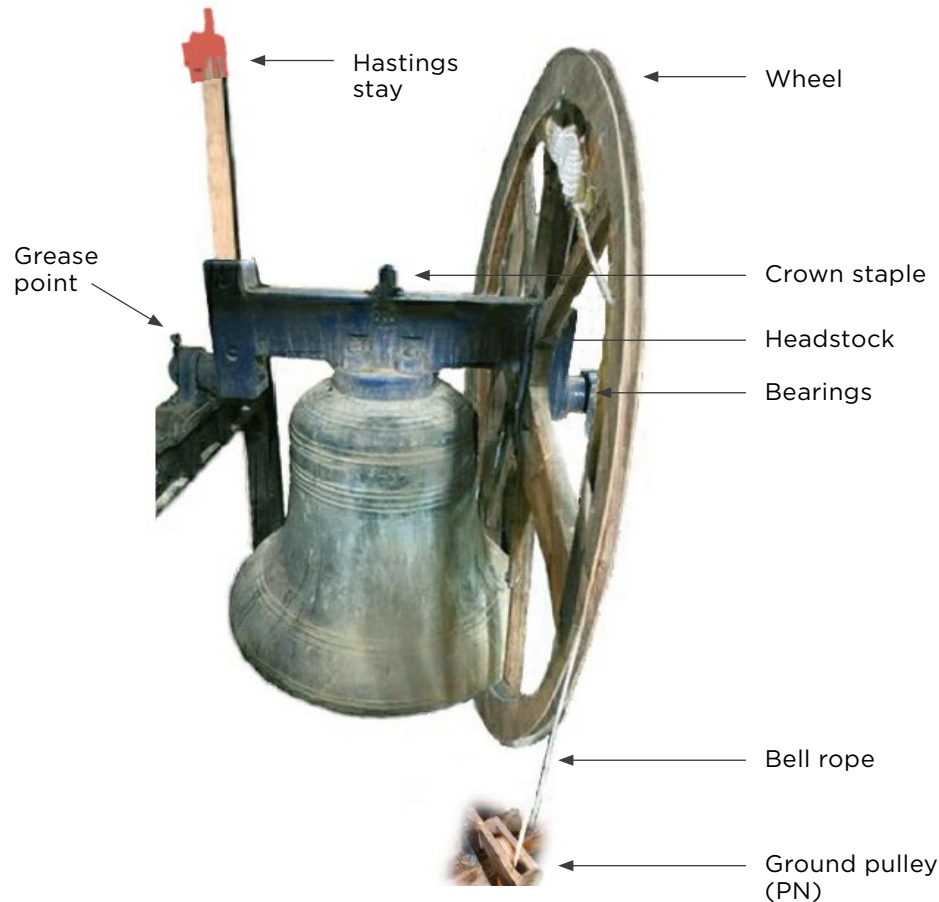


Fig 3. Headstock and wheel

In the absence of written records or occasionally, inclusion of the date in the inscription (as, for example, the 4th bell bearing the inscription, "1717"), the dating of church bells is largely based on circumstantial evidence, including their shape, dedications, motifs cast into the metal and the design of lettering.

Three of Preston's bells were installed in the 20th century: two in 1908, of which one was donated by the village and the second by Major-General Alfred Codrington, and the third by the family in 1964 in commemoration of the life of William, his son.

Although the sanctus bell is generally considered to date from around 1400, this is somewhat

conjectural. Most other bells known to be manufactured by John Barber are found in the South of England.

The method of fabricating church bells has changed little since the medieval period, although more sophisticated methods for tuning have been introduced. Bells are cast from bell metal - an alloy of copper and tin which has a relatively low melting point. After the bell has been designed the next stage is to prepare moulds - the inner (or core) which is the shape and size of the internal dimension of the bell and the (cope) which moulds the outer surface. Moulds are made from fire-resistant materials such as brick, clay or loam and allowed to harden. The cope usually incorporates embossed or incised lettering and often other

artwork such as religious symbols, coats of arms etc. which will adorn the finished bell. The stamps and dies used for this were the property of the founder and were sometimes very ornate; they help to identify the source of the bell. Although caution is needed because they sometimes changed hands on the death of the founder.

The cope is then aligned concentrically over the core and molten bell metal (at about 1,100°C) is poured through an aperture at

its top (the sprue hole) to fill the space between the two. The metal is allowed to cool for several days - longer in the case of large bells - before being released from the moulds. Finally, the bell is tuned by removing metal from the inner face, thus lowering the note. Traditionally this was done by chipping metal from the inside of the bell or the edge of the lip with a hammer and chisel. Nowadays the bell is rotated on a large lathe and metal shaved more precisely from the inside to balance the principal harmonics.



*Fig 4. Bell chamber - the tenor bell is in the centre foreground.*

The belfry measures only about 2.5m square and the bells are arranged in two tiers on iron frames. The Sanctus bell is suspended above them.

## 6. Founders of the Preston bells

### **John Barber (Sanctus bell)**

A bronze foundry between Milford Street and Guildler Lane in Salisbury has been excavated and revealed a bellfounding pit and some fragments of cope bearing impressions of bell surfaces as well as fragments of moulds for production of domestic items. It was identified as the workshop of John Barber, brazier, who died in 1404. Little else is known of him, although some of his stamps were subsequently used by Bristol founders.

### **Newcombe & Watts (Tenor)**

Both of the Leicester families Watts and Newcombe were important bell founders in the 16th and 17th Centuries; members of each were elected mayor of Leicester during this period. The tenor bell was probably cast jointly by Robert Newcombe (based in "All Saints" parish) and Francis Watts who apparently had his foundry at the "Galtrye Gate" in Leicester and is believed to have been married to Newcombe's daughter, Helen. The two men often worked together. Watts' son, Hugh would have been about 16 years old when the tenor was cast and may have assisted. In fact, members of both families often participated in the casting of bells.

### **Henry Penn (4th)**

Henry Penn was born in 1695. His mother Sarah was the sister of Henry Bagley, a master bellfounder; Penn was apprenticed to him, working from the village of Ecton before taking over this foundry at the age of 18. He moved to Peterborough around 1708-1709 and established workshops adjacent to a canal known as Bell Dyke which was wide enough for barges carrying heavy bells to reach the river Nene. His greatest achievement was the casting of a ring of ten bells for Peterborough Cathedral.

### **John Taylor & Co (1st, 2nd and 3rd)**

This company cast three of the current ring of 6 bells. Taylors also installed cast iron frames for all the bells in 1908-9. William Taylor (b. 1795) was the son of Robert Taylor, also a bell-founder; he opened a foundry at Oxford in 1821. John Taylor, his younger brother, moved the foundry to its present site in Loughborough in 1859 and it grew to become the largest bell foundry in the world. Taylors still use traditional techniques for making moulds and casting bells but in 1896 became the first bellfounder to adopt the five-tone principle of bell tuning.

In this, the bell tuner addresses five principal harmonics known as the hum, fundamental, tierce, quint and nominal; this is done by ear rather than using computerised sensing and machining equipment. When the correct frequency for each harmonic has been achieved, the bell is in tune with itself.

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## 7. Uses of church bells at Preston

During the medieval period Christian people were expected to say their Ave Maria at the end of each day and a church bell (known as the Angelus or Gabriel bell) was rung to remind them of this requirement. The archangel Gabriel had been sent by God to Mary to tell her of the impending birth of Jesus. Archbishop Arundel decreed in 1399 that the same practice should apply at early dawn. At Preston the fifth bell, cast about 1400 and inscribed “Gabriel” was almost certainly used for this purpose.

After the Norman conquest, a general curfew (old French *carre-feu*) was imposed at the end of day and in many villages, probably including Preston, the Gabriel bell was used in accordance with this to prompt the covering of domestic fires.

There must have been at least one other early bell (details unknown) because in his will of 1545 William Sheild instructed that he “be buried in the churchyard of St Peter in Preston... to the bells of Preston”; it is unlikely that the Sanctus bell would have been so used.

In the late 19th Century, North (1880) reported that at Preston on Sunday mornings the tenor bell was rung at 8 a.m. when there was to be Divine Service and a Sermon preached; if there was not to be a Sermon this bell was tolled instead at 8.30 a.m. The tenor bell was again rung after Morning Service if there was to be Evening Prayer. Ovens & Sleath (2002) reported that bells were rung for ten minutes before the 11am and 6.30pm Sunday services.

Over time, secular uses gradually supplemented calls to religious services and bells were often used as a call to work. This custom gradually declined, although apparently at Preston the treble bell continued to be rung at 5am as late as the twentieth century.

Until very recently the Preston bells were not rung regularly pending completion of the repair work.

The other principal occasions on which church bells are tolled are to mark births, and more particularly marriages and deaths, again because of the belief that church bells had the power to ward off evil spirits and to grant wishes. Their use during weddings is apparently of Celtic origin and of limited Christian influence.

In medieval times the passing bell was rung to summon the priest to the bedside of a dying person and to call on those who heard it to ease the departing soul with their prayers. As early as the year 680 the Rev. Bede

commented that a sister of a nearby abbey had been called to prayer by the sound of such a bell. North (1880) observed the widespread practice in Rutland (as indeed in much of England) of tolling bells (the death knell) at burial in such a way as to indicate the sex of the deceased (three strokes for a male and two for a female).

Finally, church warden’s accounts reveal that a clock had been installed in the church in 1656-57, but no sign remains of it. It seems to have been removed in the middle of the 19th Century. Presumably it utilised the tenor bell, the sound bow of which carries indentations apparently caused by impact of a clock hammer.

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## 8. The sound of bells and the art of ringing

Church bells are percussion instruments - when struck by the metal clapper there is an initial sharp sound of metal on metal followed immediately by a large number of different notes (known as partials). These arise from different regions in the bell’s profile and are related to its geometry (Fig 1). The perceived “strike note” is a melee of partials rather than a single note that can be objectively measured. Although

a well-tuned bell affords a clear sense of a definite pitch when it is rung, this is because the founder has tuned the principal lower-pitched natural frequencies so that they conform to a harmonically related ratio.

Five partials appear to have the greatest impact on the pitch perceived. Of these the nominal is very intense but audible only

for fractions of a second; despite this, for most people it determines the apparent strike note. The fundamental (or prime) and the more slowly decaying hum are adjusted by bell tuners to relate to the nominal in octaves; of the two other principal partials the tierce is usually a minor third and the quint about a fifth above the fundamental. If the peal is to sound harmonious, additional factors including the compatibility of individual bells must be taken into account; emphasis is placed on the frequencies, intensity and duration of the various partials. The sound of the peal is also strongly influenced by other factors including the brief interval between individual chimes which tends to emphasise the relatively transient, high-intensity partials which decay rapidly. The characteristics of the peal are also influenced by the design and construction of the bell tower. Finally, it is important that ringers are able to accurately control the swing and hence timing of the bells.

The bells at Preston, as in most English churches, are hung to allow change-ringing which involves the ringing of complex sequences of notes (methods) as the bells swing full circle and sound at a precise point. The art of full circle bell ringing has been practised in England for over 400 years and requires months

or years of practice. Bells can weigh up to a tonne or more, but the largest at Preston - the tenor - weighs only about 500 Kg!

Each bell is mounted on a pivot that enables it to swivel freely; a wheel attached to the bell (see fig 2) rotates when a rope passed around it is pulled. Starting from an inverted position the bell rotates through about 360° and again comes to rest, inverted. When the ringer pulls the rope again it rotates in the opposite direction. At a certain point during each swing the clapper strikes the interior of the bell - not with a single, clean impact but a series of diminishing multiple impacts which the ear does not generally distinguish. By the time the swing is completed the clapper has again come to rest against the side of the bell.

Each cycle of swinging the bells through a complete circle (360°), then reversing the direction, imposes extremely strong forces on the bell mounts and the bell tower. The horizontal force produced can be more than twice the bell's weight and the vertical force over 4 times. The axial stiffness of the tower is much greater than its lateral stability, so it is the horizontal forces that are more likely to present problems. The total force transmitted to the bell supports in a given direction is

the sum of horizontal forces of all the bells turning in that direction at any instant, and so the bells within the belfry are carefully aligned to minimise this.

The bell chamber itself should ideally resemble a very rigid box. In our case the tower walls consist

of exterior layers of ashlar with filler materials between them, so they lack stiffness and the tower sways as a result of the horizontal forces. It is stiffened by buttresses at the corners and its East face is supported by the nave of the church. There is no evidence of failure of the masonry.



*Fig 5. The ringing chamber*



## 9. Remedial work carried out

Taylor and Co. undertook the following comprehensive works:

- Removed the various clapper/staple assemblies, wheels and rope pulley units for repair at their Works.
- Renewed the bearings on the 4th and tenor clappers and ground all the clapper balls to restore their profile.
- Provided a new bell wheel on the 2nd and a new stay for the Tenor.
- Re-rimmed the remaining five wheels, re-bushed the 4th and Tenor clappers, rebuilt the Treble and 4th roller.
- Refitted new and refurbished wheel braces to all six wheels.
- Quarter-turned the Tenor.
- Cleaned down and repainted the bellframe.
- Supplied new hardwood pulley units incorporating “sealed for life” ball races in the existing refurbished brackets.
- Carried out maintenance of the main bearings.
- Replaced three corroded floor bosses.
- Checked and tightened all fittings, set the bells up for even clapping and left them in good order for full-circle ringing.
- Restored and re-hung the Sanctus bell, supplying and fitting it with an electromagnetic hammer and control system.
- Treated the badly corroded end of the RSJ on the lower bellframe and re-concreted it to the wall.
- Supplied and fitted longer steel beams to support the upper bellframe.
- Supplied and fitted boxed-in rope chutes in the intermediate chamber.



*Fig 6a. Bells before repair, 2019*

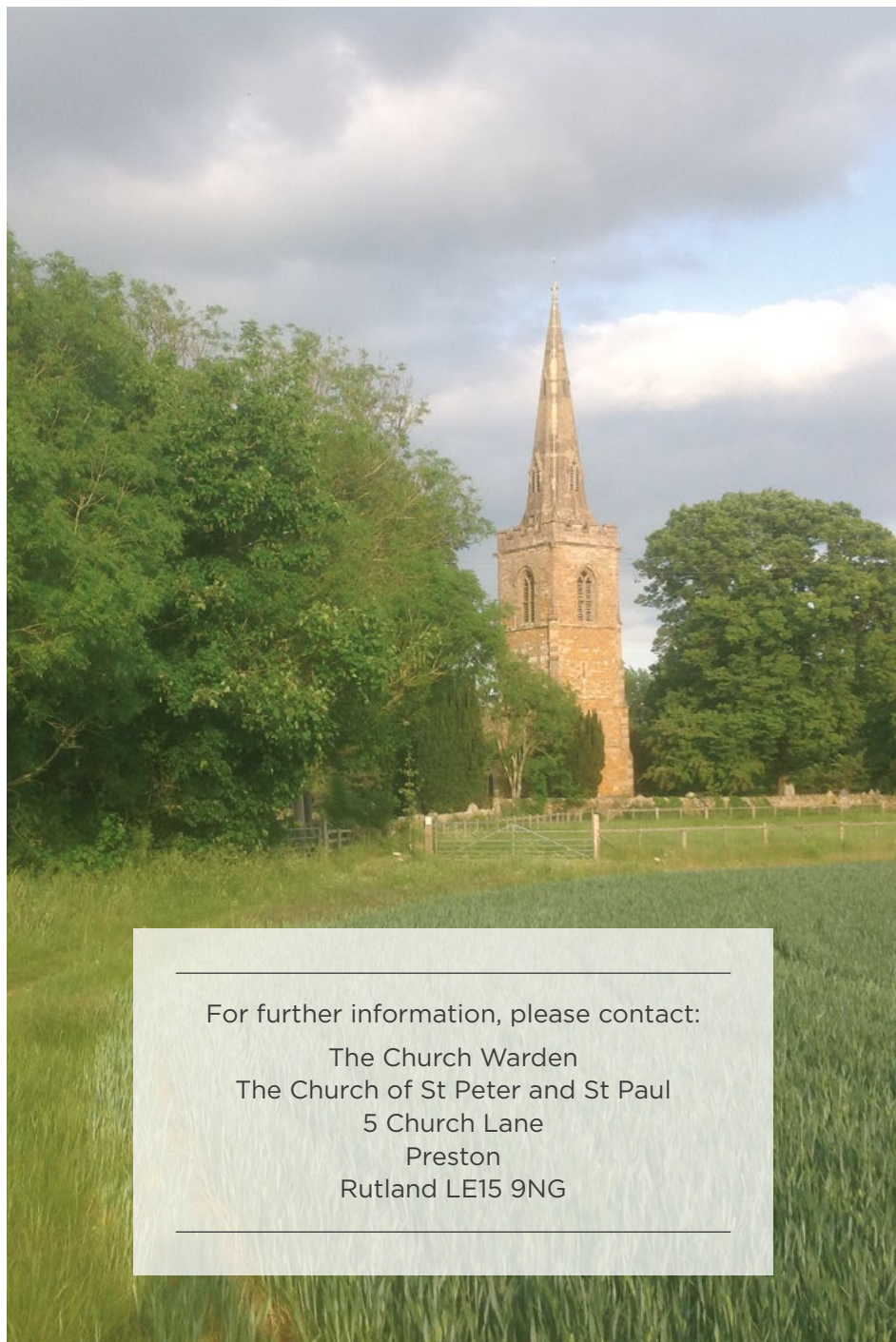


Fig 6b. Bells during and after repair, 2020

## 10. Further Reading

1. North T. (1880).  
The church bells of Rutland: their inscriptions, traditions, and peculiar uses. Samuel Clark, Leicester.
2. Ovens R. & Sleath S. (2002).  
Time in Rutland: A History and Gazetteer of the Bells, Scratch Dials, Sundials, and Clocks of Rutland. Rutland Record Series No 4. Rutland Local History and Record Society.
3. Walters H. B. (1912).  
Church Bells of England. Oxford University Press.  
Available at <http://www.archive.org/details/cu31924017579099>  
(Accessed 23 May 2020).
4. Lloyd, LI. S. (1954).  
The Strike-Notes of Church Bells. Music & Letters, 35, 227-232.
5. Church of St Peter & St Paul: A Brief Guide for Visitors.  
Available in the Church
6. Legal Advisory Commission of the General Synod (2017).  
Church Buildings: Bells.  
<https://www.churchofengland.org/sites/default/files/2017-12/bells.pdf>  
(Accessed 30 May 2020).
7. Traylen A.R. (2005).  
Ancestral Houses of Rutland. Spiegl Press.
8. Association of Ringing Teachers. History of Bell Ringing.  
<https://www.bellringing.org/history/>  
(Accessed 22 May 2020).
9. The Central Council of Church Bell Ringers.  
<https://cccbr.org.uk/>  
(Accessed 30 May 2020).





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