GREAT GRANSDEN CHURCH

Cambridgeshire
(formerly in Huntingdonshire)

A report on the bellframe

compiled by

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for the

Historic Bellframes Rescue Recording Project

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The bellframe at Great Gransden church (Diocese of Ely)

A report by Christopher Pickford FSA for the Historic Bellframes Rescue Recording Project - Oct./Nov. 1994.

1 INTRODUCTION

1.1 The six bells at Great Gransden are regularly rung. However, the local ringers are concerned that the bells are becoming increasingly difficult to ring. With the agreement of the PCC schemes for the restoration of the installation are currently being investigated. The ringers are aware of the historical importance of the frame and are anxious to find a way of restoring the bells that will put them into satisfactory ringing order without involving unnecessary damage to the historic fabric.

1.2 At the request of Mr. Phillip George, the tower captain, I visited the church on 6 October 1994 to examine the frame in order to determine its age and assess its importance in connection with proposals for the restoration of the bells.

1.3 The existing frame is dated 1658, and it was installed at the same time as the new ring of six bells provided by Bryan Eldridge of Chertsey in that year. The identity of the maker is not known, but various possibilities are discussed below. The frame is well designed and built, but it has already been substantially repaired and strengthened. It is positioned high in the tower and much of the movement generated by the ringing of the bells is transmitted direct to the structure.

1.4 The accompanying report constitutes a record of the installation as it was at the time of the survey, with a historical interpretation and assessment of its condition and archaeological importance. The figures in this report are not to scale, and they are only intended to illustrate features described in the text.

1.5 This record has been made at the sole cost of the Bellframe Rescue Recording Project which is supported by a grant from the Society of Antiquaries of London.

2 HISTORY OF TOWER AND BELLS

2.1 The church tower at Great Gransden dates from the late fourteenth century. It is in the Perpendicular style. It is in four stages with pairs of louvred two-light bell-openings on each face. It carries a short "spike" or spire. There is a newel staircase in the south west corner. A lead plate on the parapet records repairs to the tower in 1676.

2.2 There is no Edwardian Inventory of 1552 for Great Gransden and so there is no firm evidence of the number of bells prior to 1658. In that year, however, Bryan Eldridge of Chertsey supplied a new ring of six bells - five of which survived until the mid-nineteenth century. Their inscriptions are recorded in a church inventory dated 1841. The bellframe, dated 1658, was installed with the new bells. Graffiti on the walls of the bellchamber includes a mark inscribed "I B 1658".

2.3 The tenor bell became cracked, and the present bell was substituted in 1786-7. The Churchwardens' accounts refer to "taking the old bell to St.Neots" and record a payment of £19 19s. to Robert Taylor, the bellfounder, for "Running the great bell" in 1786-7. Recent research has indicated, however, that Taylor did not recast the old tenor but instead supplied a second-hand bell - cast in 1767 by Islip Edmunds of London for Bletsoe, a Bedfordshire church for which Taylor provided a new ring of bells in 1786.

2.4 In the second half of the nineteenth century three more bells were recast, the second by C. & G. Mears of Whitechapel in 1854, the treble by John Taylor & Co. of Loughborough in 1883, and the fourth by the same firm in 1895. The bells were rehung with new fittings in 1895 by George Day of Eye. Bells 1,2 and 6 rehung on ball bearings by John Taylor & Co. of Loughborough in 1953.

3 THE BELLS

3.1 The diameters, weights (exact where known) and other details of the bells are as follows:

Bell	Founder and date	Diameter (inches)	Weight (Cwts.qrs.lbs.)
1	John Taylor & Co. 1883	28½	4-3-10
2	C. & G. Mears 1854	30½	5-1-0
3	Bryan Eldridge 1658	32½	6½ cwt.
4	John Taylor & Co. 1895	35½	8-2-0
5	Bryan Eldridge 1658	38	10 cwt
6	Islip Edmunds 1767	43½	14-3-10

The canons of the third bell have been removed, but the others retain their canons and are hung from them by traditional supporting ironwork. The canons of the two Taylor bells are of angular type, an unusual feature on a bell cast as late as 1895. Bells 3, 5 and 6 have been quarter turned. The tenor weight has been given as 15 cwt in past editions of Dove's *Bellringer's Guide to the Church Bells of Britain* but the latest version (8th ed., 1994) gives it as 14-3-10 - a weight recorded in an old notebook among the Loughborough foundry archives.

3.2 The bells are tuned in the key of F natural. The note of the fifth bell has been raised by edging or "skirting" at the lip. The third bell has been "fluted" or "gouge tuned" - almost certainly in 1658 when this method of tuning was commonly used - to lower its note. The tenor is a maiden bell, but it has steam creases and there is a large casting flaw or scab inside the crown.

3.3 All the bells are sound and of fair tone with the exception of the third bell (by Eldridge 1658) which lacks resonance and sounds noticeably weak among the others.

4 THE BELL FITTINGS

4.1 The fittings of the bells date largely from 1895 when the bells were rehung by George Day and Son of Eye, Suffolk. They consist of elm headstocks, plate gudgeons, plain bearings in iron housings (later ball bearings on bells 1, 2 and 6), traditional type wheels, iron wheel stays, and traditional type stays and sliders. Apart from the third bell which has lost its canons and is hung by bolts through the crown, the bells are secured to their headstocks by traditional supporting ironwork. The clapper of the second bell is suspended from the original cast-in crown staple, but the other bells have independent staples.

5 THE CLOCK AND CHIMES

5.1 The clock and chimes are located in the chamber immediately below the bells. There was a clock in the tower by 1667 when a payment for repairs occurs in the Churchwardens' accounts. In 1683 the parish contracted with a Wellingborough clockmaker, Thomas Powers, for the provision of a new clock and chimes. Powers was paid in instalments between 1683 and 1688, the total cost amounting to some £39 19s. 4d. The accounts also record expenditure on maintaining the clock and chimes by (*inter alia*) John Facer of Gamlingay 1732-1756, Joseph Eayre of St.Neots 1757-1771, and Edward Arnold of St.Neots 1771-3. An entry in 1753 records a payment to "the men who got the chimb weight out of the Hole" - suggesting a mishap with the chime weights!

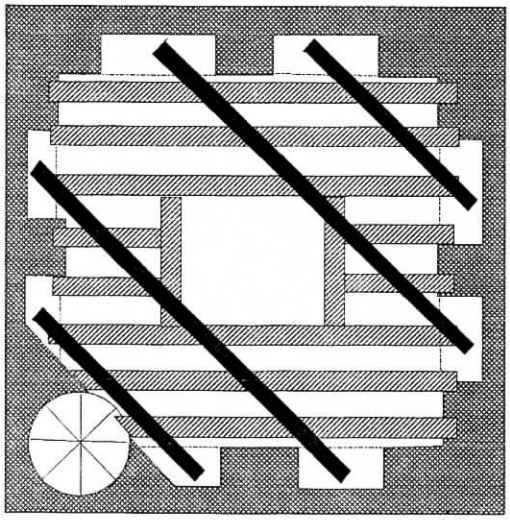
5.2 The clock remains substantially as made by Thomas Powers in 1683. It is a two train movement in a wrought iron birdcage frame with finials. The trains are end-to-end and the clock was originally capstan-wound. It was overhauled and converted to automatic electric winding by Thwaites & Reed in 1973.

5.3 The present mechanism of the chime barrel resembles others (e.g. Kings Norton, Leics., 1764, and Holbeach, Lincs, 1776) made by Joseph Eayre of St.Neots and his successor Edward Arnold. The churchwardens accounts confirm that a major reconstruction took place in 1757 when the clock and chimes were taken to St.Neots for repair. The work was done by John Negus (who perhaps made a new wooden frame for the chimes) and Joseph Eayre (responsible for the technical work), whose respective bills amounted to £22 14s. 5½d. and £29 1s. 7d. Interestingly the names scratched on the walls of the bell chamber include that of "J. Eayre 1757". The chimes were restored and converted to electrical power in 1973 and are in good working order. The musical notation for the tunes "Malbrook", "Nutbells", "Harvest Home", "Nehemiah" and Canaan" are given in Owen's *Church Bells of Huntingdonshire* p.90.

6 THE BELLFRAME: Position and foundations

6.1 The bellframe is positioned level with the belfry windows. It is set diagonally in the tower, and the corners of the pits go into the window openings. The sills rest on brickwork piers built into the openings. In places the heads are tight against the central mullion between the belfry windows.

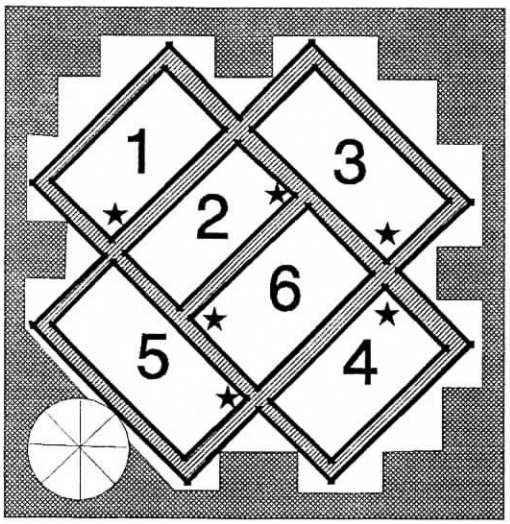
6.2 The four main foundations beams of the frame rest on an older grillage of beams supported on ledges or off-sets on the east and west sides of the tower. The main beams (i.e. the sills of the deep trusses as described in s.8 below) span the tower diagonally from NW to SE and are situated below the corresponding heads of the frame. The arrangement is shown in the following plan.



The main foundations beams (in black) resting diagonally on a grillage of older timbers

7 THE BELLFRAME: Plan

7.1 The frame was built in 1658 to accommodate six bells on one level. The plan has four bells in parallel pits across the centre of the tower, with single bells in pits at right angles to each side. The plan of the frame remains as originally constructed and has not been modified, although the roping positions may have been altered. The date "1658" is carved on the head of the frame at the entrance to the bell chamber from the spiral stairs.

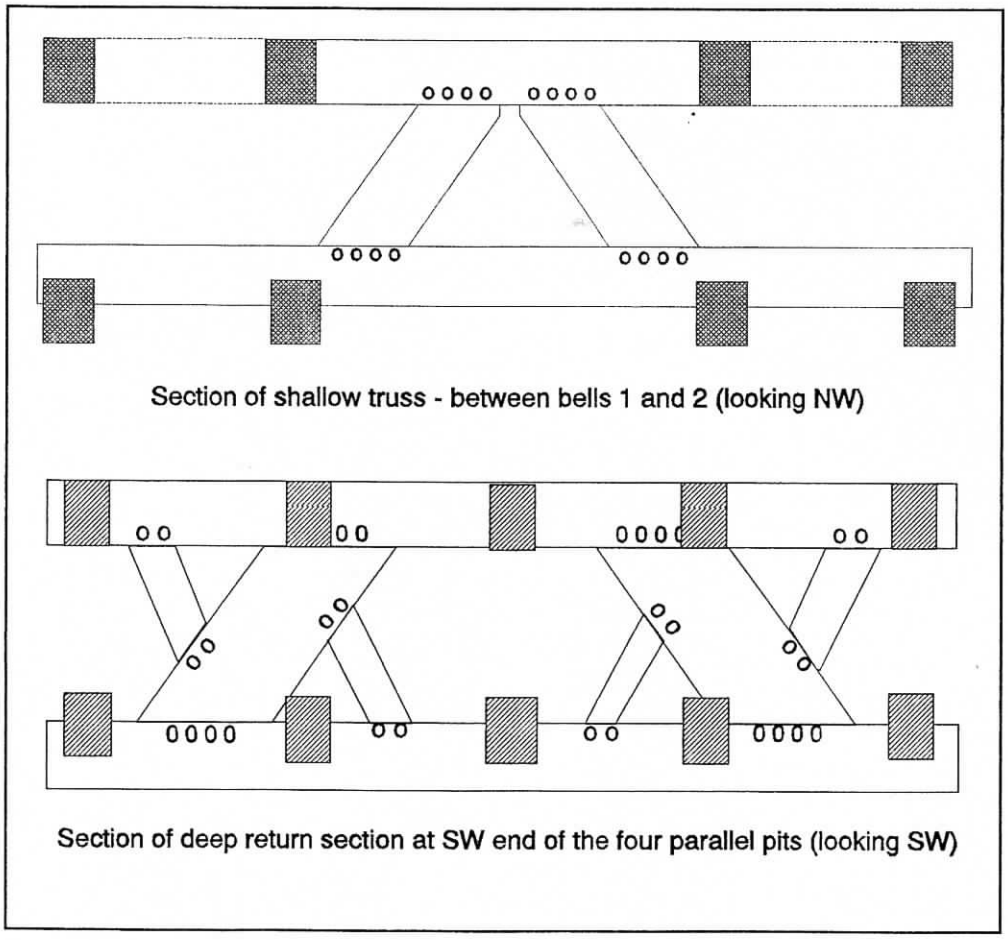


Plan of the frame (with roping positions)

8 THE BELLFRAME: Truss types

8.1 The frame is well designed and massively built. In essence it is a simple construction of deep trusses built up from the four main beams or sills placed NW-SE across the tower. In turn these support five shallow trusses (two long ones and three short ones) running at right angles to the main foundations. Each truss consists of sill, main braces and long frame head, with additional members in certain trusses. The two main trusses - forming the deep return sections of the four parallel pits - are double jack braced. The main braces are some way apart, and the central truss (between bells 2 and 6) joins at right-angles in the middle. The latter truss is jack-braced - an original feature - but there are no jack braces in the other short trusses.

8.2 The arrangement of the sills on two levels provides two pits (bells 3 and 5) with deep trusses and four (the parallel pits) with shallow trusses. The construction and depths of the main trusses are shown in the following diagram:



8.3 The ends of two flanking pits (bells 3 and 5) have sills with single braces (all pointing outwards from the centre of the frame) and wholly independent short heads between the truss heads. To give extra length to the pits, the heads in the pit-ends are set further out than the sills beneath them. In each case the beams supporting the shallow trusses of the parallel sections are extended to the walls of the tower to form sills for the return sections of the flanking pits.

8.4 There is supplementary wooden bracing in the pit of the 4th (SE corner of the tower), and in the pits of bells 3 and 5. The pit of the 4th also has additional timber fixed to the head at the NE end. Iron plates have been fixed to the heads in various parts of the frame. These appear to date from 1850 or earlier, and there are no angle-plates or tie-rods of modern type.

9 THE BELLFRAME: Other features, comparisons etc.

9.1 The frame is constructed of oak, apparently dating mainly from 1658 and containing little or no reused timber. The members are square-cut and generally of consistent dimensions throughout. The braces are pegged to the sills and heads and the upper sills are halved over the lower ones. The pegging consistent throughout, and there are generally four pegs between brace/head and between brace/sill, two between brace/jack-brace, and two to jack-brace/head. Some of the pegging is concealed by later repairs. In the four parallel pits the heads are jointed into the return sections with dowels from the top.

9.2 In the SE corner the outer head of the treble pit sits outside the end of the return trusses. It may have been replaced at some time since 1658.

9.3 Although the frame is dated, the name of the maker is not known. In Warwickshire, where he was active in the years 1656-8, Bryan Eldridge worked in association with a Coventry carpenter and bellhanger named William Ragg. However, no complete examples of his work survive and there is nothing to indicate that Ragg made the frame at Great Gransden.

9.4 The initials "I B 1658" scratched on the masonry (with other graffiti) may be significant. A bellhanger named John Baxter from Laxton, Northants., worked at Buckden in 1660 and later made bellframes for All Saints Derby (1687) and Lichfield Cathedral (1688). The latter survives.

9.5 Moreover, diagonal frames are relatively uncommon and this is a pointer for further research. Diagonal frames (both destroyed) at Lyddington (1677) and North Luffenham (1701) were made by John Browne - another possible "I B".

9.6 Several other diagonal frames in south Lincolnshire (e.g. Holbeach and Gedney) were attributed by J.R. Jerram to the Williams brothers of Kings Sutton. Although John and Richard Williams did make a large number of diagonal frames for churches in various parts of the country (e.g. Chicheley, Bucks., 1718) their association with Holbeach and Gedney seems tenuous and these frames (since replaced) may merit further investigation if the relevant parish records survive.

9.7 In this case, comparisons will be difficult until survey work has been undertaken in the East Midlands and West Anglia areas to record and identify further frames of similar type. Similarly, documentary research would help to establish the names of the makers of frames (even if the actual frames no longer survive) who were working in the area in the seventeenth century.

10 THE BELLFRAME: Assessment

10.1 In my opinion the frame at Great Gransden is of interest and importance as a dated example of a C17th bellframe which was installed at the same time as a new ring of bells. This in itself is surprisingly unusual, as in the seventeenth century it is common to find evidence of bells and frames being installed at different dates - for instance an old frame being first modified to accommodate additional bells and then later replaced. Certainly it should never be assumed - unless there is good evidence as in this case - that bells are frame are coeval.

10.2 Using the evaluation criteria as set out in *Bellframes* (1993), I would class it at level 2 (out of 5), i.e. **Important frame:** should be preserved, but may be adapted and strengthened for continued use.

10.3 However, in considering a conservative scheme for improving the "go" of the bells the parish will need to consider a number of factors:

- The effect of movement in the bellframe - which is positioned very high up in the tower - on the structure of the fabric
- The effectiveness and durability of any repairs, and whether it is realistic to defer replacement of the frame if a renewal may become necessary within (say) 25-50 years
- The need to safeguard the clock and chimes - themselves artifacts of considerable historical significance

The replacement of the existing ringing fittings is generally agreed to be desirable whether the existing frame is retained or not.

10.4 The alternative to retention in use would be to keep the frame *in situ*, to install a new frame lower in the tower, relocate the clock and chimes, and create a new ringing gallery. This solution would reduce the strain on the tower, provide a modern installation best suited to the needs of the ringers, and allow the old frame to be kept without repair or modification (thus preserving more of the historic fabric than if it were to undergo extensive conservation). If a new bell were to be provided to replace the poor-toned third bell were to be replaced, the present one could be left *in situ* in the existing frame for use as a service bell.

10.5 Whilst this report presents a detailed record of the existing frame and summarises the key points of interest, it is not wholly adequate as a permanent record. Detailed drawings should be made before the frame is altered or strengthened in any way, and the opportunity should be taken to photograph the structure when the bells (which make photography difficult) are removed from the tower for rehanging.

SOURCES AND ACKNOWLEDGEMENTS

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"St.Bartholomew, Great Gransden, Cambridgeshire" in *Ringing World* 28 July 1978 pp.625-6

"Chimes & Things" by Ray Ayres in *Ringing World* 18 August 1978 p.690 [In the opinion of the present writer this article contains a number of misleading statements - especially regarding the chimes - and should be ignored]

"The Bletsoe Case or the Tale of Great Gransden Tenor" by Chris Pickford in *Ringing World* 26 April 1985 pp.365-7

Manuscript sources

Churchwardens account books (3 vols) 1664-1868 (Cambs. R.O. Huntingdon ref: 1876/4/6-9)

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Glebe terrier 1841.

Acknowledgments

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