

was being “grilled” by Oatley on his prices, and the latter expressed himself still “in the dark” over the cost of the finished work. Wisely, they declined to commit themselves, pressed on with the argument about laying up metal in Loughborough and alluded to a further prestigious order just in: a chime of ten bells, the largest in the world, the biggest to weigh over 6-tons. All to no avail:

We regret to say (said Oatley) that our Clients resolved to defer indefinitely any further consideration of the matter. The cost of building having increased so enormously, it is necessary to think of essentials first, and it is doubtful whether in the circumstances it will ever be possible to have the Bell.

And there the matter might have ended had it not been for what appears to have been George Oatley's personal determination and interest, which all through can be read between the lines. Meanwhile, Sir George Wills, the Chairman of the Committee, died with the great building incomplete. The next move was to be Oatley's.

Real Possibilities

In August, 1922, there arrived in Loughborough a letter which must have been music, so to speak, to Taylors' ears. It reiterated the salient facts of the correspondence to date, sent three drawings of the tower and bellframe (the latest dated 16th August 1922), enlarged upon the arrangements for ringing (not from “either Room 37 or Room 38, both of which Rooms are immediately beneath it, because Students might have access and be ringing the bell at unauthorised times!”) and stating that 8'0" diameter (eight tons weight) might be regarded as the maximum. The stage had now been reached where:

We must now prepare the Belfry to receive the bell, whether it be installed soon, or at a future date.

We are, therefore, asking you whether you are willing to look into the matter of the preparation for the hanging of the bell and to advise us thereon."

The reply from Loughborough being not surprisingly affirmative and the general design to be satisfactory, such details as the provision for the bearing plates and the relative position of reinforcing rods together with the vexed question of the “ringing machine” were gradually ironed out. In October, the first mention of a balanced stock occurs “to reduce any tendency of a lateral movement to a minimum.” 22nd January a revised estimate, substantially as before but for a bell of eight tons hung for ringing, transported and fixed in place was submitted in the sum of £2190 – a thousand pounds more than eight years previously.

Oatley's immediate reaction was to write again to Warner's, who, in thanking him for past favours observed:

We wish to state that owing to the removal of our Foundry into the country, we have made arrangements with Messrs Gillett & Johnston, Bell Founders to the King, Croydon, Surrey, to carry out our work for us. We have no hesitation in saying that they will give you the very best workmanship especially with the important question of tuning . . . no doubt you will be hearing from them.

A letter to Mears & Stainbank indicated that they too were not conversant with the proposals for a bell frame (for which they quoted

approximately £250 if the foundation was already in place). A bell of 8-tons would be charged at £193 13s 4d per ton (Taylor's estimate was at £220) would cost £1549 6s 8d (JT £1760); the fittings (JT £430), to include a built-up steel stock and balanced clapper would be £104. Mears' total was therefore £1653, over £500 cheaper than Taylor's. Meanwhile Gillett & Johnston had offered to come down. at the same time Taylor's were warned that:

Your price is still so very high that we question if the builders will be able to place an order with you. Of course, it might be reduced by lessening the weight of the Bell, but can you not make any better terms?

27th January brought an offer from Taylor's to reduce the bell to £1600 and the fittings to £400, a total of £2,000. Guaranteeing the finest of bells they pleaded that:

This is a very considerable reduction but we are most anxious to help you as far as possible and have therefore decided to cut down the figure, although we are afraid we shall be out of pocket.

Three days later, Mears were thanked for their estimate; Gillett & Johnston were told not to trouble themselves coming. Rather a different letter went to Loughborough:

The Builders, Messrs H. Willcox & Co., of Darlington Street, Wolverhampton, have instructions to accept your revised tender. . . .

It is necessary that the Bell should be in position complete ready for ringing within twelve months from this date provided that the tower is ready for it.

Pryce Taylor, who supervised much of the work on the Bell, replied by return acknowledging the definite order – “You may rely upon the work having our most careful personal attention.” – and significantly noting Oatley's emphasis that the bell hole was 8' 6" in diameter. “There is ample room” he observed “for a bell up to even, say, 8' 5" to pass.”

Make us mightier yet

The order having been placed, Edmund Denison Taylor visited the new buildings to meet Mr Oatley and to sort out details including such details as to the phrasing of the inscription and the lettering to be used. A private conversation was put into unmistakable and daring suggestion when he returned:

Relative to the point which occurred to me and which I mentioned to you, viz to increase the size of the bell so that it may be the deepest-toned bell in the whole of England. I have given the matter further very careful consideration and feel that it would be the right and proper course.

I would propose to make the bell 8'-4" diameter. Its weight would be about 9½ tons, and I can assure you that the depth and purity of its tone would be glorious and inspiring to a degree.

The extra cost was to be £500; it says something for the confidence of this amazing bellfounder that he was able to make this seemingly outrageous suggestion to a client who was teetering on the brink of going to Mears because Taylors was too expensive! Oatley was cautious in his reply saying:

You now propose to increase the bell to 9½ tons. This means £1900 for the bell and £600 for accessories. That is to say you are charging half as much again for the latter part of the work. We should have thought that the proportional increase on this part of the work would be very much less.

He was cautious too about one man being able to handle the bell. Taylor's reply is factual and interesting:

We beg to point out however that whereas we now have a moulding-case which is just sufficiently large enough to take an eight-ton bell, we shall have to make a new cast-iron moulding case in which to mould the larger bell and this will involve a capital outlay on our part of £500. Then there will be other various temporary additions to our cranes and lifting tackle &c which will be necessary solely on behalf of this big bell and which will all be dismantled again to be used on our ordinary work.

Oatley was unconvinced:

We would not have supposed that . . . the University would be involved in any portion of the capital outlay of a large-cast-iron moulding case. We would have thought such cases would come in for other bells and it would be part of your stock-in-trade. In the circumstances we fear it will be impossible to consider the heavier bell.

Not averse to compromise, Taylor (“very wishful that this bell should be the deepest note of all bells in the country”):

Although such a large case would form of course a part of our stock-in-trade, it might be twenty, thirty, fifty or even more years before we are called upon to use it again. For instance the case in which “Great Paul” was cast, over forty years ago, has never been since used. In these circumstances we thought it only reasonable . . . and we fixed upon £125 as being the least we could add . . . we will agree to reduce this by £50 making the total addition £450.

The architect fully appreciating the reduction advised the builders accordingly; by 1st March, the historic estimate had been submitted to them. It was ten years since they had asked for something like a 5 or 6 ton bell; they had passed through seven tons (“Great John” style) and eight tons (as at Birmingham University) to something quite new in harmonically tuned bells. Still the bell was to be hung for ringing full circle, and certainly it was guaranteed to be the finest in the whole country with Oatley & Lawrence as referees to “the whole work and its result”; questions as to tone would “be referred to the opinion of a such musical expert as they may approve, provided that such expert shall not be any person to whom we may have reasonable grounds for objection”. Taylor's were surely not expecting to have Cyril Johnston turning up at the Works?

Long Labour Pains

Although Taylor's had wanted 12 to 14 months to complete the bell, the architects had problems of their own. The tower was nowhere near ready for it, nor up to its intended height. The correspondence reveals such decisions as whether or not to have a tolling hammer; the electric motor reappeared and disappeared (for good) – and in the latter part of 1923 the headstock came under review. “Great Paul” and “Great John” both had the huge horseshoe-shaped stocks of cast iron which they still possess; anxious to experiment with steel, Taylors designed a cantilevered stock formed up of rivetted steel plates. In uncounter-balanced form this had been used on the Great Bell of Rugby School and for the (then) swinging Bass Bell of the Cobh Carillon, both bells of 3¼-tons, cast in 1916. Both were intended for full circle ringing and have since been replaced; Rugby for “slow swinging” and Cobh hung fixed. Balanced prototypes were made – there is one on a 9½-cwt bell at St Mary's, Bellevue Crescent, Edinburgh, another on a contemporary of Great George in Ireland, a 14-cwt bell at Pomeroy, Co. Tyrone. Having fixed on this design, a further complication was the need to provide a clock hammer for the unique striking mechanism which was designed “in house” by Professor David Robertson, Head of the Faculty of Engineering at the University. Prof. Robertson had taken a great interest in the Bell and had determined it should be put to good use. He would have no conventional clock; the mechanism of the “Robertson Clock” is still to be seen in its place on the ground floor adjacent to the Tower, retired in 1948. So far as the bell was concerned, there was involved a conventional clock hammer (at the bell end) with a very unconventional “striking machine” at the other. Operated by a snail cam, one feature of it was a “locking mechanism” operated by a

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further cam set on the end of a gudgeon. When it was in use, it was so designed that the bell "must be hanging vertical and to have been there for at least half a minute." Some "pulling-off device"! There is a five-second delay between each blow of the hammer, thus giving good effect to the action. In March, the architects:

"under the impression that you would be able to complete the moulding of the bell before it was necessary for you to receive particulars"

were able to furnish the necessary inscription details "Benedictio, et claritas, et sapientia et gratiarum actio, honor, et virtus et fortitudo Deo nostro in saecula saeculorum." The quotation is from Revelation 7 verse 12, but as transmitted contained an incorrect genitive plural as Classicists will notice. Much was made of the style of this lettering, the architects requesting Classic letters with Gothic ornament, the founder observing:

We always endeavour to avoid clashing of character and ornamentation, i.e. with classic letters it is usual to work to a classic design. We must however work to your instructions in the latter, and if it is that you wish for a Gothic ornament to appear in spite of the fact that the lettering is of a Roman type, we shall be pleased to arrange this.

We have no Gothic ornament of the correct scale for such a great bell, but could place the oak leaf or any other ornament that you wish upon the bell, charging you of course with the cost of the requisite new "dies".

The threat of extra expense no doubt played its part, the architect conceding the founders' point as "cogent". The mould was in an advanced stage of preparation when in April the suggestion was made (perhaps to see how Taylor's were getting on) that the inscription be altered. It was not too late, but a definite decision was required by the end of the following week. Satisfied, the Bristolians let things stand. On 21st July, 1924 came the news for which they were waiting, perhaps somewhat impatiently, as Foundry practice was to admit no visitors to a cast of any bell over 4-tons:

The bell is successfully cast and is a very fine casting indeed.

Pryce Taylor had been in Bristol in the days following and observed an "enormous amount of scaffolding round the tower," which he presumed would be taken away before the bell was taken up inside. He then explained:

Some three months will have elapsed before the tuning processes upon which we are now engaged will be completed. Great care will have to be exercised in carrying out these operations in order to obtain the very finest results. The diameter of the bell is exactly 8'-4", so there will be ample clearance. . . .

As far as we can see at present it will be at least four months before the bell is ready for delivery.

The architects had asked for the weight and note (which they had not received) and instead heard of a delay which would see them into November. This they "regretted" adding:

No, we think the scaffolding around the Tower will not be cleared away before the Bell is taken up inside, and we do not for the moment see the point of your suggestions.

The founders obliged with the note, E-flat and the approximate weight, 10 tons. As cast it weighed a staggering 11 1/2-tons; being cast to a diameter dictated entirely by the bell hole it was necessarily on the thick side, and tuning in excess of 2-tons were removed from it. Enquiries at the end of October elicited the response that it would now be January before the bell was ready. However:

We are pleased to say that we have just completed the tuning operation upon the bell. It has turned out particularly successful and we can undoubtedly say that it is one of the finest examples of large bells ever cast by us. We should feel honoured to be visited by any of those interested. . . . We are now proceeding with the fittings and under ordinary circumstances the bell should be ready complete at our Works about the middle of January.



April 2nd 1924. Great George leaves the Foundry on the last word in HGVs.

"This strikes us", replied the architect in acknowledging the invitation "as a very serious delay . . . we do not see how payment on account can be arranged until it is delivered". The Christmas spirit clearly prevailed and "a substantial payment" was made. Into the new year, and William Wooding Starmer, the Lecturer in Campanology at Birmingham University was able to travel home from Harrogate via Loughborough to see the Bell, reporting that:

It will I am sure be a treasured possession of your University as it is an outstanding example of the splendid work of this famous Foundry.

I have examined and tested it in every way and certify that:

The casting is perfect with a very fine surface the dimensions being 8ft 4in in diameter and 6ft 9/4in in height.

The metal is pure and homogeneous and of the best alloy viz., copper and tin in the proportion of 13 to 4 respectively.

The inscription - in letters of the Roman type - is clear and exceptionally well produced.

The fundamental partial tones are in perfect tune and absolutely accurate.

As to pitch.

The tone is resonant, pure and of a rich musical quality.

Further I have no hesitation whatever in stating that from the musical point of view it is the finest Eb bell in Europe.

(signed) WILLIAM WOODING STARMER

(Fellow of the Royal Academy of Music.

Lecturer in Campanology, Birmingham University)

"We had no doubt", said Oatley in forwarding gratefully Starmer's five-guinea fee, "that the bell produced by Messrs Taylor would be perfect of its kind". But his wrath was to be kindled two days later by Pryce Taylor giving the Press an interview which was regarded as previous and extremely unfortunate. Moreover:

Amongst other statements is one that "it is hoped it will still be possible to convey the Bell to Bristol in March". From our point of view the Bell ought to be delivered well before then. The building has to be ready for opening by 31st March and it would be most unfortunate if the Bell is not in place by the Opening.

The University authorities had in fact been notified that King George V and Queen Mary would perform the opening of the Wills Memorial Buildings on 9th June.

From Loughborough came news of the progress of the Bell, and a defence of the unwelcome publicity. Local journals had followed its passage; further it would not be ready before March. From Orchard Street came this broadside:

It seems to us that you do not take the matter with sufficient seriousness. You dismiss it with the bare and casual statement . . . we need to know absolutely and definitely all the facts in connection with the matter and the why and the wherefore of each in detail . . . a great deal hangs on this.

Rather naively, Taylor replied that it was over 40 years since such a large bell was cast in this country, and that it would now be the beginning of April before everything was completed.

We are unaware of the circumstances of the inauguration of this bell but a great many people prefer the ceremony to take place at the foot of the tower as then everyone is enabled to obtain a view of the bell. Very few people have seen a really large bell.

We have recently sent a large bell to Zutphen, Holland, and the Queen of Holland performed the inaugural ceremony with the bell set upon a platform at ground level.

Not yet was Taylor to learn of the "circumstances"; merely the reply was that the bell was to be there by 31st March, and that the public could then view it from the gallery built around inside the belfry. Came February and telegrams were flying. The architects were at the arm-twisting stage, begging that at least it might be hoisted off the floor before the end of March. Taylors gave a provisional date of early March, but on 27th February were obliged to state:

We very much regret to say that we have been delayed with the big Bell and it will not be possible to despatch same next week as we had expected. The operations in dealing with the fittings of a Bell of such unusual weight has taken us longer than we anticipated, and in this instance everything has to be personally inspected by Mr Taylor. We add that so far as we have gone everything appears to be extremely satisfactory, and the tone of the Bell in full swing exceeds our expectations.

The actual nett weight of the Bell without any fittings whatsoever is 9-tons 11-cwt 2-qrs. We will write to you again as soon as we know definitely when we shall be sending this Bell, and greatly regret the inconvenience caused you.

Their great friend and patron, Canon Nolloth, wrote at the same time to Oatley extolling the bell particularly when compared with the old one, adding:

This bell is a somewhat deeper Eb than "Great Paul" (bell-notes are estimated with the greatest accuracy to a vibration); it will therefore be the deepest-toned in this country: the bottom-octave of the chord (or hum-note) is wonderful. It gives forth a most impressive "Boom": yet withal, so round and musical, that you can stand close by, and hear it with pleasure.

I should add that the finely calculated amount of counterpoise, and the excellent roller bearings, enable the bell to be rung with surprising ease, like the 7-ton Bell which I gave to Beverley Minster; and the lateral thrust is rendered to a negligible minimum: in fact the strain upon the tower will be little more than if caused by dead weight.

I remain, Gentlemen,
Yours faithfully
HEN NOLLOTH
(Canon of York)

This was neither the first nor the last time that Henry Nolloth was to help Taylor's with large bells. Oatley wrote in honeyed tones his appreciation of this spontaneous eulogy, enclosing a copy of Starmer's report and inviting Nolloth to see his great new buildings. Taylor, meanwhile was "urging on the work as much as possible" and hoping to have the bell ready for despatch during the week ending 28th March. Their Foreman Bellhanger Mr. R. Lane, was coming to make his observations, meeting Oatley on 4th; but a further wire on 10th appraised them "Regret quite impossible to despatch bell ten days". Oatley could only play the trump card:

The delay in the delivery of this Bell is so serious that the question has been discussed this morning as to whether it will not be better to abandon its erection until after 9th June, the Opening of the Building by the King. It will be a great pity for the Bell not to be heard by the King.

Taylor's must have seen a determined architect cross their path and the subsequent exchange of letters ended up with Oatley getting his way. On Monday 30th March the tackle and bellfittings were despatched from Loughborough; at 2.00 p.m. on Thursday, the Great Bell itself followed attracting much attention on

(continued overleaf)

the way with overnight stops at Bromsgrove and Patchway, going via Tamworth, Birmingham, Droitwich, Worcester, Tewkesbury, Gloucester (where it stopped for lunch to cock a silent snoot at "Great Peter"), Stone and Thornbury. On Saturday, 4th April, before the sun was up, it left Patchway arriving at 6.30 a.m. at the University. Almost at once, hoisting began. Hardly was the work started when the tackle broke down. In desperation, the founders and the architect turned to Joseph Lysaght of St Philip's Marsh, Bristol, who were respected local engineers, probably the only ones capable of saving both the bellhanger's and the contractors' faces. The bell seems to have been hung without difficulty and an unusual job for Mr Lane was to cut out the offending 'I' from the word which Oatley's office had mis-spelt. The writer has seen the original letter and the mistake was theirs. The "shadow" can just be seen – if you know where to look! The only problem was that two men were required to swing it with good effect and that water collected in the base of the wheel. A small hole solved the latter, but with the rope carried horizontally for 20 feet across the tower then to pass at right angles over a roller into one of the corner turrets was:

the cause of a great amount of friction which, undoubtedly, militates against the easy ringing of the Bell, and it is a pity that it could not be arranged for the ringer to stand in the room below the Bell.

Ringers today still stand "in the cupboard".

Great George

On 9th June, 1925, King George V, accompanied by Queen Mary, were leaving the Great Hall of the University, having given the Royal seal of approval to all that had been undertaken, and in the process indicated the intention of conferring on George Oatley a knighthood. It was arranged that the magnificent organ should bring the trumpeters from the National Anthem into a final fanfare ending on the chord of E-flat. The names of two ringers high up in the north-west turret are (as far as one knows) unrecorded, but their efforts were not to go unnoticed. As the final strain died away a pure, deep harmony filled the whole building and the city below it. It had been agreed to ask His Majesty to name the Bell; the Committee knew that were it not for George Wills, they might not be there; what the architect did not know was that his own Christian name was tied up with the request. The King knew neither as in honour of both He was asked to name the bell; with characteristic blunt humour, He expressed Himself well satisfied with the honour thus paid to Him, and declared that it gave Himself and Her Majesty such pleasure to open these buildings and to name their Bell "GREAT GEORGE".

Great George has served Bristol well; it is not swung often and then only at the request of the University authorities. It has been heard 12 miles away; certainly when the writer was Vicar of Eastville, the surging boom of the clock was often audible even in the house. In 1985, Taylors were called in to do certain holding repairs to the clapper, to re-trim the wheel and to provide new bell bolts. It was clear that the bell was hanging out of level and a much more detailed specification, including replacement of the steel headstock with a conventional (if in cases like this anything is conventional) cast iron one of Taylors' proven design, together with new gudgeons and bearings, was approved in 1992. The existing clapper was to be retained and the clock hammer "half-turned" to offer a new contact surface to the bell, whose sounds profile it was rapidly acquiring in negative! The fine

oak wheel was replaced with a soulless but efficient one of steel. A press release of 7th October 1992 describes the work:

Taylors' engineers face a problem. The Tower is 215 feet high and all the new equipment and the old redundant headstock will have to be lifted in and out through the roof of the tower. But working with the University maintenance team they also have the solution. A very large mobile crane will move into position about midnight, Saturday 10th October. By about 8.00a.m. on Sunday 11th it will be ready for its first load, two long RSJ's.

The RSJ's will be positioned below the bell to support it when it is released from its old headstock. The second major lift will see the old headstock removed from the building. The third important lift will introduce the new headstock.

Interspersed with these main lifts will be a number of minor lifts. The crane will hoist the old and new wheels, remove the spoil created by making a hole in the tower roof, and exchange old and new water tank sections.

The lifting work should be finished by about 6.00p.m. Dismantling and removing the crane should take a further six hours. Traffic should be flowing again only 24 hours after the start.

In the week following the hoisting work, Great George will be rehung on the new headstock, and the existing clapper and crown staple will be replaced.

Great George expects to be back telling the time for Bristol in his great E-flat voice by the beginning of November.

Never can more people have watched a bell operation since Big Ben was "dragged over Westminster Bridge witnessed by such a crowd as turned out only for a public execution". It is estimated that about a thousand sightseers turned up. The hoists were away on time, and must have left the shades of the Taylor family and of Sir George Oatley green with envy. It was a very slick operation.

Great George is no easier to ring than before – the new headstock is some 12-cwt lighter than its predecessor. No longer is it "odd-struck" but getting it up frame-high is about all that can be achieved, thanks to the awkward pulley system and a rope which looks as though it came from the "Queen Mary" (appropriately). The old rope was stolen during the rehanging, and the University people fitted the present one. Yet to hear it, and to swing it, is worth climbing to that cubby-hole and straining away for. To listen to the clock strike as daylight darkens on 'one of those days' can be an inspiring and encouraging experience. However you hear it, you will never forget.

The Bell

Cast in July 1924 by John Taylor & Co of Loughborough. Cast weight 11½ tons. Tuned weight of the bell 9tons 11 cwt 1qr 17lb. Diameter 8' 4". Note Eb (321 Hz).

Inscription (corrected)

Mulley Grove – Classic Ornament all around the bell.
 Waist BENEDICTIO ET CLARITAS ET SAPIENTIA ET GRATIARUM ACTIO, HONOR ET VIRTUS ET FORTITUDO, DEO NOSTRO IN SAECULA SAECULORUM
 Opposite 19 (Taylor Classic Badge) 24
 Weight of Headstock (old) 2 tons 9cwt 2qr 21lb. (new) 1ton 17cwt 2qr 24lb
 Clapper 5cwt 1qr 14lb
 Balance 11cwt 1qr 0lb
 Crownstaple 4cwt 2qr 0lb
 Total weight of clapper assembly – 21cwt 0qr 14lb

No more 8' 4" bells were to be cast at Taylors; the "great" E-flat bells are as follows:

8' 6" diameter
 1927 Mountain Lake, Carillon 10-7-2-6
 1928 Nottingham, Little John 10-7-0-27



New stocks for old – Taylor's staff supervise the exchange on 7th October 1992.

8' 8" diameter

1927 York, Great Peter 10-16-2-22
 1935 Ann Arbor, USA, Carillon 10-10-2-3
 1962 Washington, DC, Carillon 10-11-1-0
 1992 Malta, Siege Bell 10-14-2-3

Taylors were right in speaking of the infrequent use of some "Stock in trade", though their 9' 6" case was again used in 1940 for Liverpool's "Great George".

Sir George Oatley outlived them all: all that generation of the Wills Family, Pryce Taylor, and 20 years later E. Denison Taylor himself. After the war, he removed his offices with his new partner, Ralph Brentnall, appropriately up the hill into Great George Street. Although he died in 1950, the firm continued, and the name still lives on incorporated in a larger architectural Practice.

Oatley was reported to be merciless to client and to contractor alike whilst work was in progress: certainly he never spared himself in his endeavour to obtain the best. When all was done, he was one of the kindest men of his profession as he was to prove with Taylor's when settling the accounts for the Buildings. Just as he had sought on two occasions allowances on their estimates, so on completion of the work he saw to it that the allowances were repaid in full. Being so close to the Tower, he perhaps recalled the words he wrote to Taylor:

As far as Great George is concerned we think that it leaves nothing to be desired and should awaken a desire to have more Bells like it throughout the country.

Meanwhile, refurbished and rehung by its Founders, Great George continues to give excellent testimony to Denison Taylor's bold prophecy:

Bristol University would possess then the deepest-toned Bell in England, and it would be moreover the purest and most musical of all the large bells in the world. I do hope that you will see your way to have this Large Bell as I am sure you will never regret it.

There are now in England three other Great E-flat bells, and deeper-toned than all, the other Great George at Liverpool; alas at 14¾ tons in D-flat, hung dead. Bristol's bell paved their way, and holds its own among them. It is more than 'a very large bell with a full deep tone' – rather, it is the very voice of the City which it adorns.

Grateful acknowledgement to Messrs. John Taylor Bellfounders Ltd., Loughborough, for permission to quote from selected papers in their closed archive; to the University of Bristol Special Studies Library for access to the Oatley papers in their keeping, and to both for the use of photographs. Also to the several University authorities who encouraged this article and undertook the delicate and costly task of rehanging Great George in 1992; and to several Bristol ringers, especially Richard and Nick Bowden, for their friendship and practical help.