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Augmentation to twelve bells at St Mary's Episcopal Cathedral, Edinburgh

by **Bill Brotherton, Project Leader and Tower Captain**

After many years of effort, Scotland has at last got its first ring of twelve bells. At the end of November 2008 two new trebles were installed in St. Mary's Episcopal Cathedral, Edinburgh to create a 41cwt twelve and to bring to a close serious fundraising efforts started ten years ago.

When I first came to the Cathedral 36 years ago there was already talk of "doing something with the bells" and the schemes being bandied about ranged from a simple re-hang with possible augmentation, to lightening the ring by removing the tenor bell and augmenting to make a ring of 12 with a tenor of 28cwt. However, the foundries thought that the necessary retuning for the latter scheme was not viable and, further, the Cathedral and congregation felt that whatever we did, we should retain all of the existing bells. Any future plans therefore would embody the retention of the existing bells. However at this time nothing was done and it was another 15 years before any serious thought was given to the issue.

John Taylor & Co. cast the original bells in 1879. All were mounted on wooden headstocks and plain bearings, the front six bells having canons and the four heavy bells having flat crowns. At some time within the next 50 years the ninth headstock broke in two and was replaced with a cast iron headstock and modern bearings. The old headstock, in two pieces, was recently found in a dark corner of the belfry and is now kept on display in the ringing room. In 1935, the bells were refurbished, canons removed, fitted with new cast iron headstocks and bearings and Simpson tuned. Whilst at Loughborough the seventh was found to be cracked and was recast free of charge by Taylors. The front bells have deeper bell-hangs than normal and to compensate have larger wheels; it is not understood why this is so but, the overall effect is to give the bells a "meatier" feel. In 1982 the fourth bell was found to be cracked and was recast by John Taylor & Co. (Bellfounders) Ltd. The removal of the cracked bell and installation of the new bell was carried out by the bell ringers using a gallows jib built of telegraph poles by the Royal Navy. The disused poles now clutter the space to the west of the bell frame. At this time the complete ring represented the second heaviest ring of ten bells in the world and had the deepest toned tenor of all rings of ten bells. The go of the bells was fair and peal times were typical of ten bells with a two-ton tenor.

A 1980s Vision

In the mid-1980s the then Provost of the Cathedral, the Very Revd Philip Crosfield OBE, instigated a programme of "Vision Building" in preparation for the new millennium, this involved the various groups within the Cathedral creating a vision of how they would see themselves in the future and to create a programme aimed at achieving that vision. At this time we had been experiencing a longstanding problem with the bad going of the ninth bell



and the problem had been blamed on the frame, so our vision centred upon the re-hanging of the bells because of the shortcomings of the frame. Our vision was extended to include augmentation and we instigated inspections. Whilst we did get an up-to-date idea of the costs involved in re-hanging and augmenting the bells, all inspections passed the frame as in excellent condition – “good for another 100 years” being a typical comment. Anyone who has seen the timber frame will appreciate why this should be so. The frame is rectangular and of huge proportions, almost completely spanning the 30ft tower in the N-S direction and made of timbers up to 14in square. There is no lateral bracing needed via the tower walls and the whole construction is merely through-bolted to the timber foundation beams – it does of course need regular maintenance to keep the joints tight. Whilst new bearings were fitted the problem with the ninth bell was later shown to be as a result of a misaligned plunger block and this was quickly remedied in a matter of minutes!

Now that the frame was shown to be good the project had lost its *raison d’etre* and there was no further progress.

The Millennium

When the CC Millennium Project was first mooted we were one of the original 97 towers who spent a tremendous amount of effort seeking information and completing the various application forms on which the CC made their application for £3m to the Millennium Commission. We had an ambitious scheme involving a complete re-hang and augmentation to 12 plus semitones. We also included a new ringing floor 15ft higher than at present to obviate the dungeon-like character of the present room and a sound control floor 25ft above the bells. It was here when getting the various estimates that, because of the size of the tower, the cost of the “extras” were going to constitute over half of the total project cost. Lifting beams were coming in at £28,000, completion to a sound control floor, an additional £20,000 and a new ringing floor at £45,000; masonry work alone was £24,000. The cost of this scheme was in the order of £200,000 and we felt that with the right backing and partnership funding that this was achievable and that if there were any funding problems along the way we could phase the scheme and target the re-hang alone.

This was a huge project and we felt that when we made our formal application for partnership funding it would be later rather than sooner. We were also concerned about an appropriate portion of the £3m grant coming back to Scotland. More than once we expressed these concerns to the Administrators who assured us not to worry and that all would be OK! However, when we made our partnership application for a phased scheme, part one costing ~£100k as described, there was no money left! And ultimately less than 1% of the Millennium Funding found its way back to Scotland. So we were left with a project in disarray and an augmentation fund for a scheme that without partnership funding was unachievable.

When, three years later, the CC tried to resurrect the scheme with unused Millennium Fund money we were able to respond within two weeks for a re-hang and augmentation with all monies in place. However the CC were awarded no further funding and the rest is history.

So, back to square one. We had a (limited) bell-fund, with not enough for a re-hang and the main fund-raising impetus lost and in order to utilise the money (most of the fund had



been gift-aided and it is not allowed for such a fund to stagnate), various minor schemes were considered. These included a sound control system and another, a bizarre scheme to build a new ringing floor with materials brought in by helicopter!

A New Start

Soon after the collapse of the second CC Millennium funding scheme came the project to re-hang the derelict bells at St Andrew's & St George's. I had been involved here twenty years earlier when a group of us tried to determine the requirements and problems in the way of re-hanging the bells and re-establishing ringing here. After some little effort the church and incumbent became involved and were interested but no money was available and after the uninvited intervention of others they became disaffected and no progress was made. The new project was to refurbish and re-hang the existing bells in a new frame lower in the tower and it was whilst I was helping with the removal of the bells and later re-installation that new possibilities for augmentation at St Mary's became apparent to me.

Lifting gear, for example might be anchored to a scaffold built over the bells and there might just be space to the north side of the timber frame to take the two new trebles, in a cast iron frame of minimum dimensions to make the ring a twelve. And so began a series of technical discussions via letter and email with Jed Flatters of Taylors. In a nutshell, yes, we could use a suitably designed scaffold as a lifting anchor but there was not enough space to the side of the frame for the two new bells. However, by removing the louvre shutter and by cutting the louvre back by six inches a suitable frame could be installed there to house the two new bells. So the project to augment to twelve was on! There was space of about eight feet between the tenor and treble ropes so two extra ropes could easily be accommodated. An early layout had the new bell ropes falling well outside the existing rope circle and needing to be drawn sideways by 12° to bring them in. This would have required flap-boards, ceiling and guide pulleys resulting in a high degree of drag and would not have been a very satisfactory design. So, if the new ropes cannot be made to satisfactorily fit the circle, could the circle be made to fit the new ropes? Yes, this was possible. The old treble would need to be roped on the present stay side of the bell and other ropes re-drawn to create a smooth circle, and this scheme was adopted.

Obstacles to Overcome

So, we had a viable and affordable scheme. However, things were not going to be plain sailing. The existing bells were in a security cage that would need to be removed; access platforms to the north of the frame were in the way and the staircase giving access to the spire terminated in the new second bell pit, so this would have to be removed and refashioned once the installation was finished. Costing was straightforward as was permission to proceed by Historic Scotland and the Diocesan Office (no Faculty Jurisdiction in Scotland). The project cost was around £50,000 and much of this money was in place. In March 2008, the Scottish Association was approached for funding and this was granted the following month. With promised funding from the Cathedral, we were able to place the order with Taylor's in May. The target date for installation gave us six months for preparation. During this time, St Mary's ringers spent a combined 120 hours' effort in clearing the area and making ready and clearing access to the trapdoor beneath the tenor. Details of inscriptions were finalised and a program to coordinate the efforts of the scaffolders, stone-masons and joiners devised to fit in with Taylor's plans.



The Trebles are Cast

On October 9th a party of 14 ringers, family and friends travelled to Loughborough to witness the casting of the two new trebles at Taylor's Bell-foundry. The new treble, JUSTITIA was cast at 12.30pm and bore an inscription remembering Kate Branson, a loyal and active member of the Cathedral and the Bell Ringers from the 1950s until the end of the millennium. After lunch, provided by Neil at his parents' home, and a tour of Taylor's workshops, we witnessed the casting of the new second, FORTITUDO at 2.30pm. The day finished at a local hostelry after a ring on the foundry bells.

Returning home we made final preparations for the installation of the new bells. The frame area was cleared of all attachments and the huge trap door beneath the tenor made up of two layers of 3in timber took most of a single day to open. The final quarter peal before augmentation was rung on October 25th.

Installation Commences

So came a particularly wet and miserable Monday in the middle of November when, at 9am, the new bells and most of the frame and fittings arrived at the Cathedral. The lorry was hurriedly unloaded across the pavement by Neil and me and with some help from the Cathedral Workshop staff we hauled the two new bells into the Cathedral and along to the Resurrection Chapel. After a short break in Starbucks, where we found Chris Frye having his first shot of espresso, the three of us returned to clear the pavement and store all the equipment in the church. Later, after Steve Westerman of Taylor's arrived, we unloaded his van and made the site ready for the start in earnest the next day. The next few days were spent hauling the bells and equipment 75ft up to the ringing room and thence the further 40ft into the belfry. A day was spent assembling the grillage, most of the time being spent on cutting back the foundation-beam anchor plates because of the tight fit and modifying the masonry pockets to take the wall anchors. After this the frame-sides and new bells were quickly installed and all was in place by the end of the week. The second week was spent adjusting the installation and realigning the rope falls of a total of eight bells – the job being completed by Thursday, November 28th. Help with the installation by 18 Cathedral, Edinburgh and SACR members was much appreciated.

Then masonry foundation pockets were backfilled within a week and the bells tested after curing.

Up and Ringing

The bells were rung for the first time as a twelve and to everybody's satisfaction on 6th December and then at Christmas.

Since then things have moved a lot slower. There is still much work to be completed in the tower – mostly by the ringers themselves. Whilst the bells are still loud in the ringing room there has been a big improvement in acoustics, with more of the higher frequencies discernible – this work is ongoing. The ringing room is being refurbished; new carpeting has been fitted and furniture ordered. The lighting is to be improved. All this work should be completed within the next few months.



The first peal was rung in October 2009 by a representative Scottish band as shown below. The new bells were dedicated on November 12th using the service format of the original dedication service of October 29th 1879, 130 years ago.

Peal Attempts and Visitors

Because of the proximity of housing and businesses we need strict control of peal ringing. Normally we allow four per year (Saturdays only) but this may be extended to five for the time being but with a strict minimum of two months between consecutive peals. Peal ringing will be available to visitors from June 2010. Many requests for peals have already been made and these will be considered in chronological order – for the others, first come, and first served.

Do come and visit us, the most northerly 12 in the world.

Bill Brotherton

Project Leader and Tower Captain,

St Mary's Cathedral Society Of Change Ringers, Edinburgh

The first peal on the 12 bells:

SCOTTISH ASSOCIATION

EDINBURGH, Lothian, St Mary's Cathedral

Sat Oct 17 2009 3h34 (41)

5016 Plain Bob Maximus

Comp. John Reeves

- 1 Tina Stoecklin
- 2 Christopher J Frye
- 3 Helen M Brotherton
- 4 Jennifer Tomkinson
- 5 Robin R Churchill
- 6 Stephen A Elwell-Sutton
- 7 Robert J Hancock
- 8 William A Brotherton (C)
- 9 Philip G Ladd
- 10 Jonathan S Frye
- 11 Clyde W Wallbanks
- 12 Michael J Clay

A wedding compliment to James Brotherton & Gayle Bleakley, married on 12th September 2009.

First peal on the augmented bells.

First peal on 12 bells in Scotland.

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