

ST LAWRENCE'S CHURCH
YORK

ORGAN
RESTORATION REPORT

NOVEMBER 2020



NICHOLSON & CO. LTD
MALVERN

NICHOLSON & Co.

PIPE ORGAN BUILDERS

EST. 1841



CONTENTS

Foreword	1
History	3
William Denman & Son	7
Condition prior to restoration	9
Description of restoration	9
Soundboards and chests	11
Manual key action.....	15
Pedal key action	17
Drawstop and combination action	22
Wind system	25
Pipework	29
Console	34
Expression box and mechanism.....	39
Casework.....	41
Floor	48
Techniques and reference material.....	49
Appendix A - Specification	51
Appendix B - Advertisement for Grand Bazaar	55

Lower Interfields, Malvern, Worcestershire WR14 1UU
+44 (0)1886 833338



FOREWORD

While on an 'improving' (museums, history, culture) October family holiday to York, aged about 9 or 10, my parents took my siblings and me to the Sunday morning service at St Michael-le-Belfrey Church in York. My childhood memories of being struck by the imposing but silent organ there came flooding back about 25 years later, when in my first few months at Nicholson & Co. a letter arrived from St Lawrence's Church in York, asking whether we might be interested in discussing a possible restoration and relocation of the Belfrey instrument.

We inspected the organ in September 2016, by which time the organ had been completely unplayable for many years. The interior was beyond filthy, and there was much evidence of inappropriate repair and alteration. The easy instinct would have been to walk quietly away, but our consciences and imaginations were struck by too many signs of what had once clearly been a flagship instrument of a provincial organ builder, of whom at that time we knew virtually nothing. The carving on the oak case was of a high standard, as was much of the woodwork inside. The scaling and construction of the surviving pipework gave us much confidence that this had once been a fine instrument tonally. By the time we were on the train back to Worcestershire, we were of one mind: the only right course of action would be to restore the organ back to its original form, as its builder intended. Furthermore, the inherent quality of the instrument merited the very significant work that would be required.

Taking on the complete restoration of a long-silent organ is undoubtedly a risk for both the customer and organ builder, and there were many frank discussions, and much conflicting advice (solicited and otherwise!) as to whether the organ was worth restoring, whether it would be suitable for St Lawrence's, and if so, whether it should be restored back to its original form, restored as found, or significantly rebuilt as the basis of a much larger new instrument. The organ had not been heard at all for nearly 20 years, and had been virtually unplayable for many years before that. Significant tonal alterations had been undertaken in the 1970s. No-one could remember what the organ sounded like in its original form and when in good condition.

Our thanks are due to Tim Hone, the Rev. Dr Nicholas Thistlethwaite and Robert Sharpe for their active support of our conviction that the organ should be restored to its original form, and to all those at St Lawrence's who bravely placed their trust in our judgement. It is of course for others to assess the quality of the instrument and the work we have undertaken, but we have been delighted with the outcome.

Max Elliott was generous in sharing with us his research on the work of William Denman and his son John. We are also grateful to the Church of St John the Baptist, Healaugh; to Sowerby Methodist Church; and to St Saviourgate Masonic Lodge in York for their readiness to allow us to inspect and copy aspects of their Denman instruments, and indeed, to borrow a Denman nameplate to copy.



Rob Hill and Gillian Shepherd at St Michael-le-Belfrey Church have been a consistent pleasure to deal with; many of our team remarked that St Michael-le-Belfrey was one of the most welcoming and friendly places they have worked. Churchwardens Daniel Brookes and Alison Dawson, together with the vicar, the Rev. Matthew Porter, also gave helpful support to the project. We are grateful to Andrew Maries, director of music at St Michael-le-Belfrey in the 1970s and 80s, for his assistance in helping untangle the history of the instrument.

Above all, the project would never have happened without one man – Kevin Atkinson, one of the churchwardens at St Lawrence’s. His ability to conjure up financial support, grant funding and enthusiasm for all manner of ambitious capital projects at St Lawrence’s is remarkable, and he has given a huge amount of his time. He has been ably assisted by the church’s director of music Jonty Ward, fellow churchwarden Jack Ward, and by the Rev. Jane Natrass, who was the parish priest when the project was commissioned. Nick Beilby led the practical preparations at St Lawrence’s, including the construction of a new concrete floor capable of bearing the 9 tonnes that the organ weighs. He also supplied all the biscuits for the installation team!

It has been a rare privilege to bring back to life the flagship instrument of an almost-forgotten York organ builder, ready once more for many decades of music-making in the city of its birth.

Andrew Caskie
Managing Director

Project leader Tim Bennett

Other colleagues who worked on the project James Atherton, Darren Bingham, Danny Brown, Gavin Davidge, Kevin Davies, Csaba Farkas, Luke Gallichan, Wesley Gibbard, Kelvin Kent, Mike Lane, Oliver Leeson, Mike Longstaff, Luke Morton, David Roskelly, Richard Sanders, and Dan Wall.

with gratitude for further assistance from Bob Jones, John Slater and colleagues representing TR Moore Ltd and Mander Organs Ltd.



HISTORY

The present St Michael-le-Belfrey building, sited directly next to York Minster, dates from the early 16th century, and is famous as being where Guy Fawkes was baptised in 1570.



The first record of any organ in the church dates from 1687. George Dallam had built an organ for Durham Cathedral in 1662; in 1685 this was removed, half was scrapped and the remaining half was installed, with some new pipework, in the 'Popish Chapel, York', now part of King's Manor in the University of York. Only two years later, in 1687, this organ was removed to the west gallery of St Michael-le-Belfrey. Until 1791, this was the only pipe organ in York outside the Minster. The Dallam organ was moved from the west gallery to the north aisle in 1882, but then in 1885 was replaced with a brand-new three-manual, 34-stop organ by William Denman & Son of York. This was also placed in the north aisle, within impressive oak casework designed by James Demaine (1842-1911), principal of York architectural firm Brierley Groom.



The Denman organ in St Michael-le-Belfrey Church, c.1910
© City of York Council / Explore York Libraries and Archives Mutual Ltd

The purchase of a new organ had been spearheaded by the Rev. Edmund Carter (1845–1923), who had become vicar of St Michael-le-Belfrey in 1882. The organ cost £950 (a copy of an advertisement for a fundraising bazaar is appended) and was dedicated and first used at the services on Sunday 9 August 1885¹. A celebratory recital was given on Friday 14 August by Dr Alan Gray, then of Wellington College, Berkshire. It seems that the inauguration of the instrument was somewhat premature: in a report of Gray's recital in *The York Herald*², the reviewer noted that '*Unfortunately the organ is still very incomplete³, and, of course, the recital was not so successful as it would otherwise have been. The instrument, however, promises to be an excellent one. The soft stops on the choir and the great organs are exceedingly good, and particularly the dolce stops [sic] on the choir organ. The diapason stops have also a well finished and smooth tone.*'

The Leeds firm of Abbott & Smith undertook some work in 1925, which included fitting harmonic trebles to the Great and Swell Organ 8' chorus reeds, and a lowering of the organ's pitch, achieved principally by adding a new pipe to the bottom of each stop and moving the others up one note.

The organ remained hand-blown for many years – unusual for such a large instrument – until an electric blower was fitted by the Durham firm of Harrison & Harrison in 1949. The Harrison firm also overhauled the instrument in 1951.

¹ *The York Herald*, 11 August 1885, p. 3, col. 3.

² *The York Herald*, 15 August 1885, p. 6, col. 3

³ The 11 August 1885 article cited above noted that the instrument was 'minus reeds and about half the stops'!



More significant alteration took place in 1975, when John Jackson of Leeds undertook work on the instrument. In the fashion of the time, when Victorian tonal colours were often eschewed in favour of brighter sounds associated by the Organ Reform Movement, much Romantic sonority was removed from the organ. The Choir Organ lost a Dolce 8' and Pierced Gamba 8' in favour of a Blockflute 2' and Larigot 1¹/₃'. The Great Organ lost its Small Open Diapason 8' and Gamba 8' in favour of a Sharp Mixture II and Tierce 1³/₅'. Also on the Great Organ, the Mixture III was re-composed from a tierce to a quint (and brighter) composition. The Swell Organ lost its Viola 4' and Flute 4' in favour of a new Octave 4' (formed from the aforementioned ex-Gt Small Open Diapason 8') and Super Octave 2'. All drawstop heads were replaced with new of plastic, and the ivory key facings were replaced with new of plastic.

The original lever expression pedal to the Swell Organ was removed and replaced with a balanced pedal. The solid wood horizontal shutters on the expression box were replaced with new vertical shutters of painted chipboard. The shutter counterweight was made of a washing-up liquid bottle filled with concrete.

In separate work undertaken around the same time by members of the congregation, the original dark finish of the oak casework was stripped back, and the stripped oak then heavily limed using a liquid solution. This latter process was abandoned part-way through, and approximately 25% of the casework was left quite bare.

The organ was then used regularly for a time, during an exciting period in the congregation's life when considerable renewal was seen during the ministry of the Rev. David Watson⁴ (1933–1984). However, the steadily deteriorating condition of the instrument and subsequent changes in the musical emphasis of the congregation's services led to the organ gradually falling out of use. By then essentially unplayable, it was last used to struggle through a wedding on 20 May 2000, after which it fell completely silent.

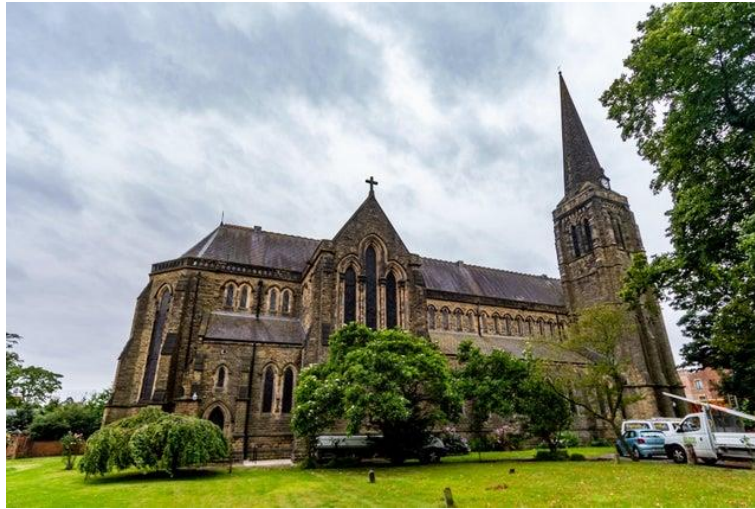
-oOo-

St Lawrence's Church is sited just outside the old city wall, near Walmgate Bar. It was constructed on the grandest of scales (it was and remains the largest church in the city after the Minster). When the church opened, the organ from the previous building on the site was installed. This had been constructed in 1860 by the York organ builder Robert Postill. In 1906, this organ was transferred elsewhere and was replaced by a two-manual, 19-stop Conacher & Co. organ built in 1874 for St Olave's Church in the city. Although small for the vast building, this instrument gave good service for many years. Changing circumstances meant that the future of the St Lawrence's building was at one stage unclear: with the best of intentions to preserve its future, the

⁴ Watson D, *You Are My God*, Hodder, London, 1983



Conacher & Co. organ was removed in the 2000s and can now be heard in St Mary's Church, Lasingham.



The St Lawrence's congregation and building have since seen much fresh rejuvenation, with growing attendance, a revitalised music tradition, and very significant refurbishment of the building. The building has at last an organ worthy of its expansive setting.



WILLIAM DENMAN & SON

There are records of a healthy organ building trade in York as early as the 1600s, but the glory years were undoubtedly the nineteenth century, a period in which approximately 460 new organs were constructed in the city by no fewer than 16 organ-building businesses⁵.

William Denman was born in Gainsborough, Lincolnshire in 1825. His father was a wood-carver, a skill that was clearly passed on to William. In 1844, William became an apprentice to Robert Postill, a York organ builder who had established his own firm in 1835. Denman was later described as:

*A man of very taciturn disposition, he would work most of the day without exchanging a word with his fellow workmen but he was very observant of what was going on about him. Consequently he acquired as much information about the construction of an organ as to enable him to set up business in that line...he was a very hard worker, rising before it was light.*⁶

At the age of 38 in December 1863, he set up his own firm in York, taking advantage of the boom in organ building at the time. Despite stiff local competition from Postill and others, business thrived and he relocated to larger premises within the city in 1872. His son John Dorrell Denman had been born in either 1851 or 1852, and was a chorister and organ pupil under Dr E. G. Monk at York Minster. Much to the disappointment of Monk, who felt that John had a career in music-making ahead of him, John was taken into his father's organ building business which then became known as W. Denman & Son.

Most of the Denman firm's output (believed to have been around 90 new instruments) consisted of small, two-manual organs for churches around Yorkshire, though some work was undertaken in Norfolk and Lincolnshire. John introduced various innovations that became more obvious in instruments of the 1880s, such as that for St Michael-le-Belfrey: an increased use of spotted metal, and the first instances for the firm of stops like Dolce 8' and Viola 4'. In the 1890s, John collaborated with Robert Hope-Jones on some very early examples of electric action in British organ building.

⁵ For further reading, see:

- Edmonds, B, *Yorkshire organ builders of the nineteenth century*, JBIOS Vol. 8, 1984
- Edmonds, B, *Yorkshire organ-builders: the earlier years*, JBIOS Vol. 9, 1985
- Elliott, M, 'Thou shalt buzz no more': *an examination of the organ-building industry in nineteenth-century York; its origins, growth and prominence*, PhD thesis, 2019 (<http://etheses.whiterose.ac.uk/27212/>)
- Elvin, L, *Family Enterprise: the story of some North Country organ builders*, self-published, 1986
- Griffiths, D, 'A musical place of the first quality': *a history of institutional music-making in York, c.1550-1989*, PhD thesis, 1990 (<http://etheses.whiterose.ac.uk/9777/>)

⁶ Knowles, J W, *A list of York musicians from early times to present day...together with a list of organ builders'*. Unpublished manuscript in York Explore Library (KNO/7/1-4)



William retired to Leeds in 1896, aged 71, leaving the firm – by then the dominant firm in York – in the safe hands of his son John. Tragedy struck, however, when John died of diphtheria only two years later at the age of 46 in 1898. In his obituary⁷, it was noted that ‘the best of the organs built by [W. Denman & Son] were under his direction’. The St Michael-le-Belfrey organ thus comes from the finest years of the city’s foremost organ builder, and was one of the largest instruments built in the firm’s existence, and is the largest surviving example of the Denman firm’s work in original condition.

Many provincial organ builders in the Victorian era, whose work was typically smaller instruments, struggled to obtain the few contracts that were available for large instruments, these often going to the more prestigious national firms. In a report of William Denman’s organ of 1873 for St Mary’s Church, Castlegate, York, it was noted that the contract had

*...been a stimulus to him to supply an organ of first class materials and workmanship, and of adequate power and richness of tone, in order to give a decisive and practical answer to some churlish people, who pretend to musical knowledge and taste, and who at every opportunity are asserting that a superior organ cannot be manufactured in York, and that other establishments in the country of acknowledged reputation must be consulted when a really good instrument is desired.*⁸

We hope that our restoration of this Denman masterpiece may do something to help answer such claims.

After John’s death, William sold the family firm to another York organ builder, rivals Thomas Hopkins & Son. The Hopkins firm moved into the Denman workshop and eventually ceased trading in 1921. William died in 1911 aged 86.

⁷ *Yorkshire Gazette*, 19 February 1898

⁸ *Yorkshire Gazette*, 15 February 1873



CONDITION PRIOR TO RESTORATION

By the time the organ was dismantled in 2019, it had become a desperately sad sight internally and externally. The once-magnificent casework was badly split, and damaged by active woodworm. Some sections of decoration were missing. The glass in the console doors was broken. The casework presented a patchwork appearance, on account of the 1975 liming never having been finished: some parts were left stripped and bare, and others had been heavily limed. The façade pipes were dulled and stained by a cocktail of lacquer, wood stripper and liquid lime. The console had plastic drawstops and key coverings. The organ could not be played at all. Inside, all was covered with a thick layer of dust. The 1975 work had been largely a process of 'modernisation' in the fashion of the time, without attention being given to less exciting restoration work, so much of the organ – key actions, leatherwork, etc. was effectively untouched since 1885.



DESCRIPTION OF RESTORATION

The organ was dismantled in August 2019 and was wholly removed to our workshop for restoration. The restoration work began in December 2019 and installation into St Lawrence's Church was completed in November 2020.



Dismantling underway



The organ filled two removal lorries



Soundboards and chests

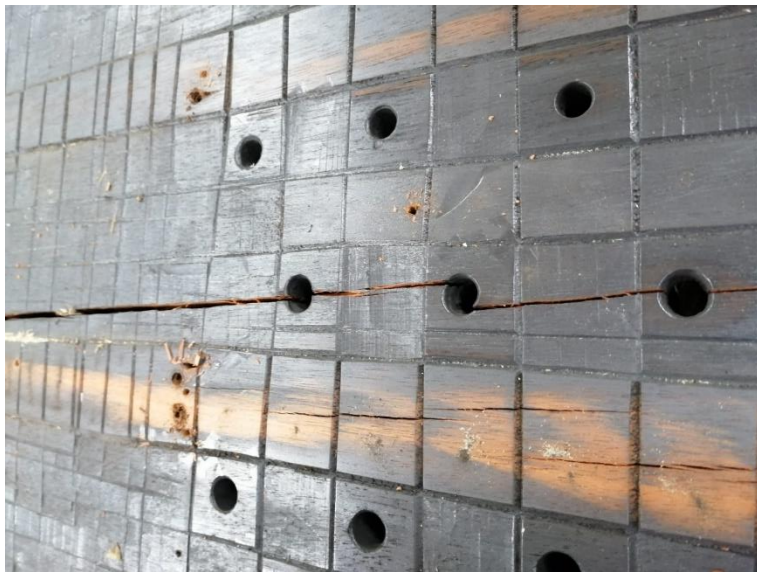
There are five slider soundboards in the organ. Conventionally, each of the manual departments (Choir, Great and Swell) has its own soundboard. The Pedal department (generously formed of six completely independent ranks) is more unusual: the Sub Bass 16' is mounted on its own unit chest, as is the Open Diapason 16'; but the Violoncello 8' and Trombone 16' share a two-stop slider soundboard, as do the Flute 8' and Contra Gamba 16'. Even more unusually, the Violoncello/Trombone slider soundboard and the Open Diapason 16' chest are combined as one large component.

The largest three Violone 16' pipes are mounted inside the organ at floor level on their own relay chest. The largest five Open Diapason 16' pipes are similarly mounted on their own relay chest. In St Michael-le-Belfrey, these five pipes were mounted outside the organ case, running along the wall that formed the rear of the organ. For space reasons, we have moved this chest to the rear of the instrument at St Lawrence's. In St Michael-le-Belfrey, the smallest 13 Open Diapason 16' pipes were conveyed from the Open Diapason 16' chest onto a pipe block mounted on the right-hand side of the case. For space reasons, these pipes also had to be moved to the rear of the instrument at St Lawrence's. The distance from the Open Diapason 16' chest was then too great for conveyancing, so we made a new pneumatic relay chest for these pipes, which is actioned via lead tubing from the main Open Diapason 16' chest.

All five soundboards were in dire condition: we have never seen such badly split tables. These had been made, unusually, of pine, which was perhaps a contributing factor in their deterioration. In all five soundboards the tables were beyond redemption. We routed off the old tables and replaced these with new of poplar, grooved in the traditional manner. The soundboards were flooded with hot animal glue. Sliders and bearers were trued, and the bearers re-papered.



Severe splits in Flute 8' / Contra Gamba 16' soundboard table



Splits in Great Organ soundboard table



New poplar table on Swell Organ soundboard

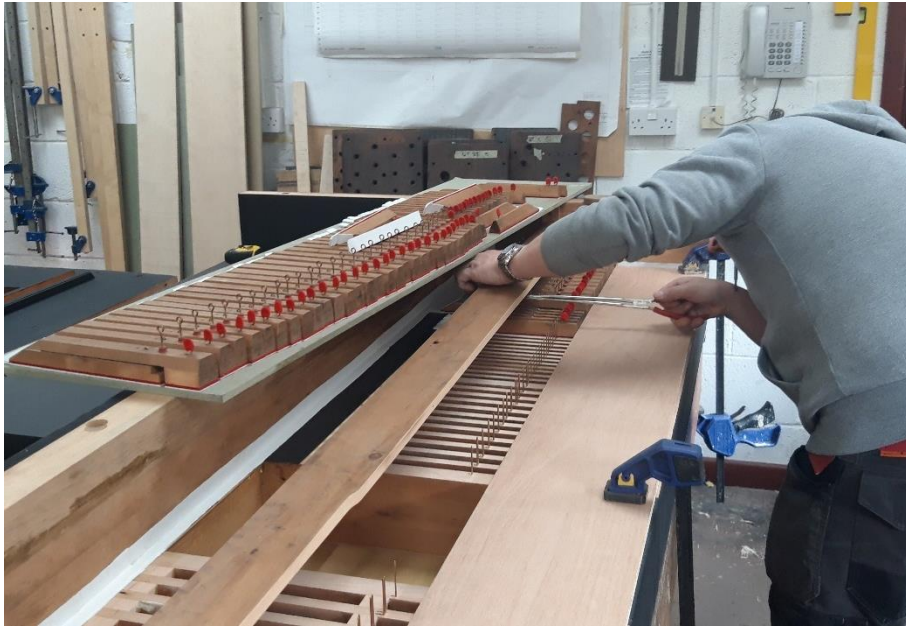
The table, slides and underside of the upperboards were graphited in the usual way. Several upperboards had to be made new in matching style due to the degree of alteration wrought on them in the 1975 work.

Loose infills in the soundboard channels were replaced with new.



New infills in Swell Organ soundboard

All pallets have been trued flat, and re-covered in felt and leather.



Restored and recovered pallets being fitted to the Great Organ soundboard

The original pull-down screw eyes in all the soundboard and chest pallets had been replaced at some stage with new eyes with nylon bushes, screwed into a different position on the pallets and thus creating a misalignment. We have removed these non-original components and fitted new screw eyes (folded through to the top face of the pallets in original style) and pull-down wires of phosphor bronze in all chests and soundboards in the original positions.

The original grid covering on all soundboards had been replaced at some point with rubberised cloth. We investigated the material used by Denman on surviving instruments, which appeared to be a relatively weak composite of small paper pieces glued together.



Grid covering at St John the Baptist Church, Healaugh formed of paper pieces



We were doubtful about the wisdom of recreating such a bucolic finish for an organ that has to give generations of reliable service, and so for the purposes of longevity elected to cover the grids of all five soundboards in new and resilient rubberised cloth.

The key actions (mechanical to manuals and exhaust pneumatic to pedals) are discussed below.

Manual key action

The manual key actions are entirely mechanical, and their restoration was straightforward. The trackers were generally found to be in good condition under the thick dust that covered them. The original steel wires were corroded and worn, and have been replaced throughout with new of phosphor bronze, whipped with red thread in original style. Square beams, backfalls and rollerboards were worn. These have been thoroughly restored and re-bushed using matching material to original, including new leather bushings in all of the roller arms. New cloths and leather buttons have been fitted throughout. Denman minimised the number of rollerboards in the organ by the use of impressively calculated and machined splayed backfalls and square beams.

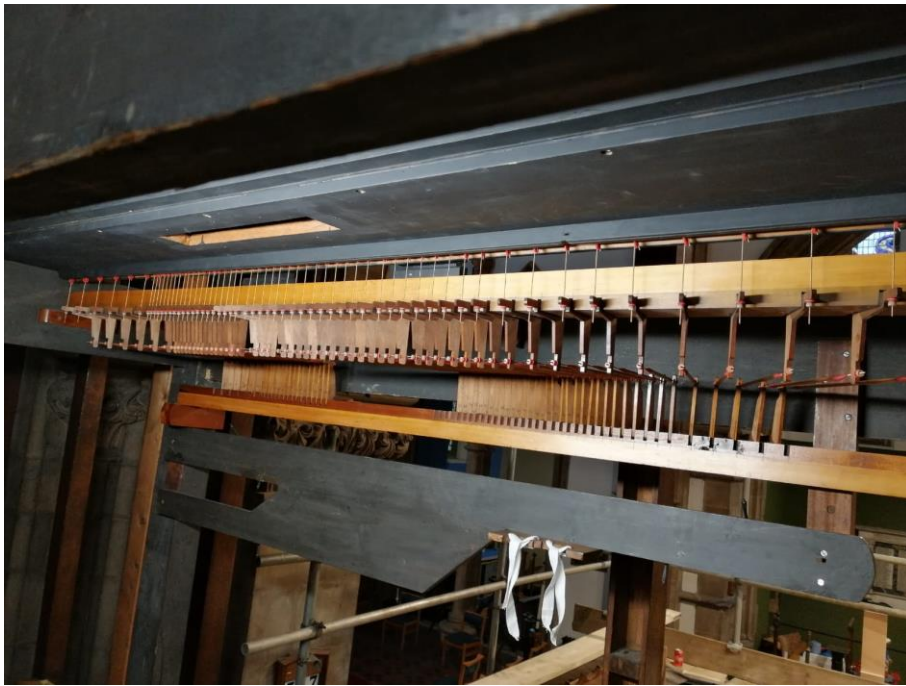


Restoration of coupling chassis

When the original lever expression pedal was replaced with a central balanced pedal, the manual to pedal coupler rollerboard was also replaced (the right thing to do when undertaking such a conversion, leaving aside the merits of making the conversion in the first place!). As the balanced pedal has been retained in this restoration, this rollerboard has been retained and restored.



New phosphor bronze wires whipped in original style



Splayed square beam

Split pallets are provided in the bottom octave of each manual soundboard to lighten the key touch.



Regulating restored mechanical action using laser sights

Pedal key action

The mixing of mechanical manual key action and pneumatic pedal key action was fairly common among Victorian organ builders. Use of pneumatic action for the pedals freed an organ builder from the considerable spatial restraints imposed by the use of mechanical action. What is extremely unusual in this instrument, however, is that the pedal pneumatic action is of exhaust rather than charge form, something we have never encountered in any mixed mechanical/pneumatic Victorian instrument. The pallets in the pedal soundboards and chests are all pulled open by normally inflated pneumatic power motors (within the wind) that collapse when a note is played. These power motors are exhausted by the movement of a small valve that is actuated by the **collapsing** of a normally inflated pneumatic primary motor, also in the wind (in more common charge actions, this primary motor would normally be deflated and outside the wind). The primary motors are kept inflated by a continuous charge of wind being fed from the touchbox at the rear of the pedalboard; when a pedal is depressed, the relevant lead tube is exhausted to atmosphere and the primary motor collapses.

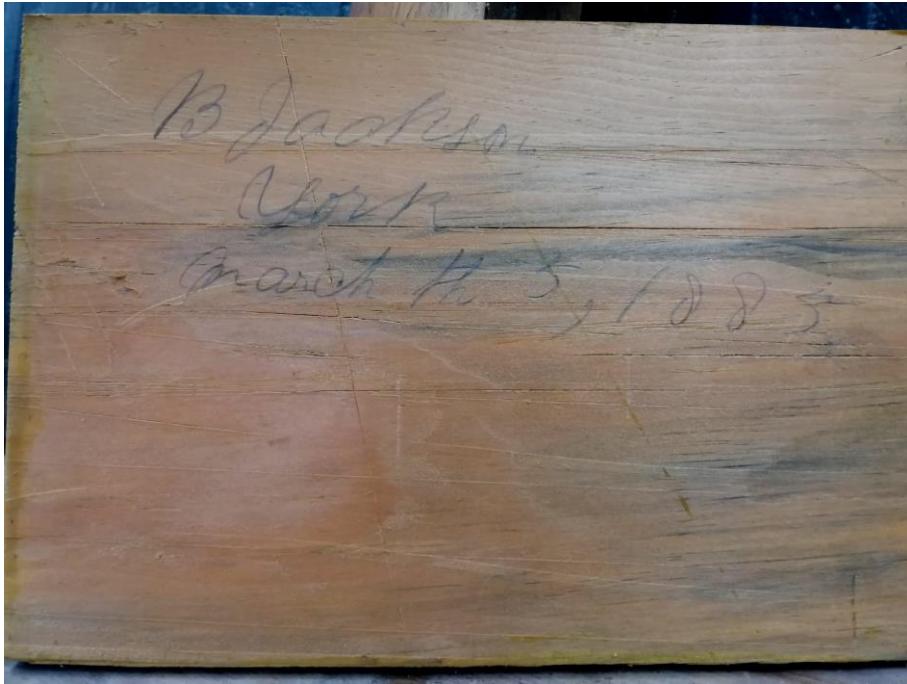
All pneumatic leather has been renewed, and all valves recovered with new felt and leather. The touchbox has been restored. Woodworm-damaged components have been renewed. The lead tubing was all in poor condition: many tubes were crushed, while many others were formed of multiple sections joined with rubber clips. We have replaced all of the lead tubing with new, made specially to match the external diameter and internal bore of the original. We have introduced connection blocks just next to each pedal soundboard/chest and the touchbox, to allow future removal of these components for overhaul without the need to cut the lead tubing.



New valve coverings



New connection blocks



Inscription inside touchbox: 'B Jackson, York, March th 5, 1885'



Restored pneumatic action inside Sub Bass chest



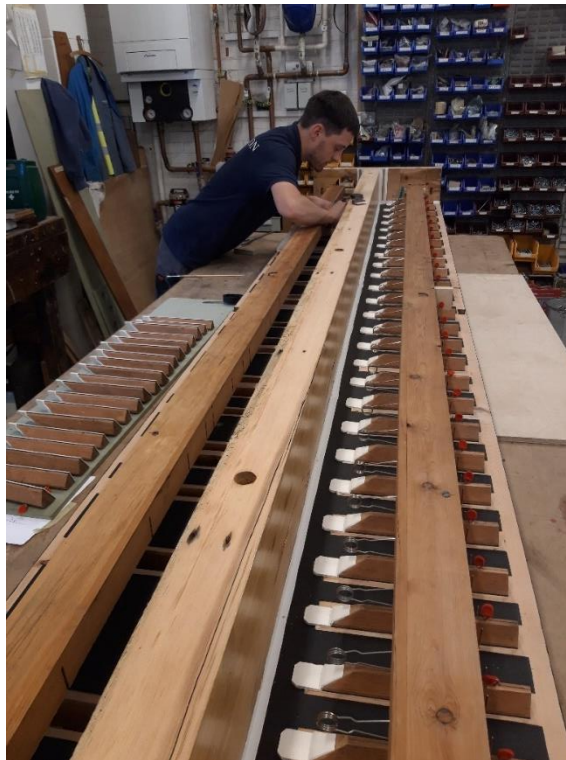
Re-leathering pneumatic motors



Condition of actions before restoration: filthy and perished



Severe woodworm in part of action



Restoration of combined Open Diapason 16' chest and Violoncello 8' / Trombone 16' soundboard



Running new lead tubing

Drawstop and combination action

The drawstop and combination actions are entirely mechanical. We have rarely seen such robust metalwork, which gives every impression of having been fabricated in one of York's railway workshops when a foreman's eyes were turned. Paintwork on the metal components was in poor condition and has been repainted to match the original colour.



State of metalwork before restoration



After restoration



Drawstop squares, including one we had to make new due to the original being missing

The combination action settings had been altered, and have been returned to appropriate registrations.

Considerable work was required to the drawstop action to ensure that sliders were being pulled on fully.



New centres in drawstop actions

Two drawstop action registers were beyond repair due to woodworm, and were replaced with new replicas.



Drawstop action register destroyed by woodworm

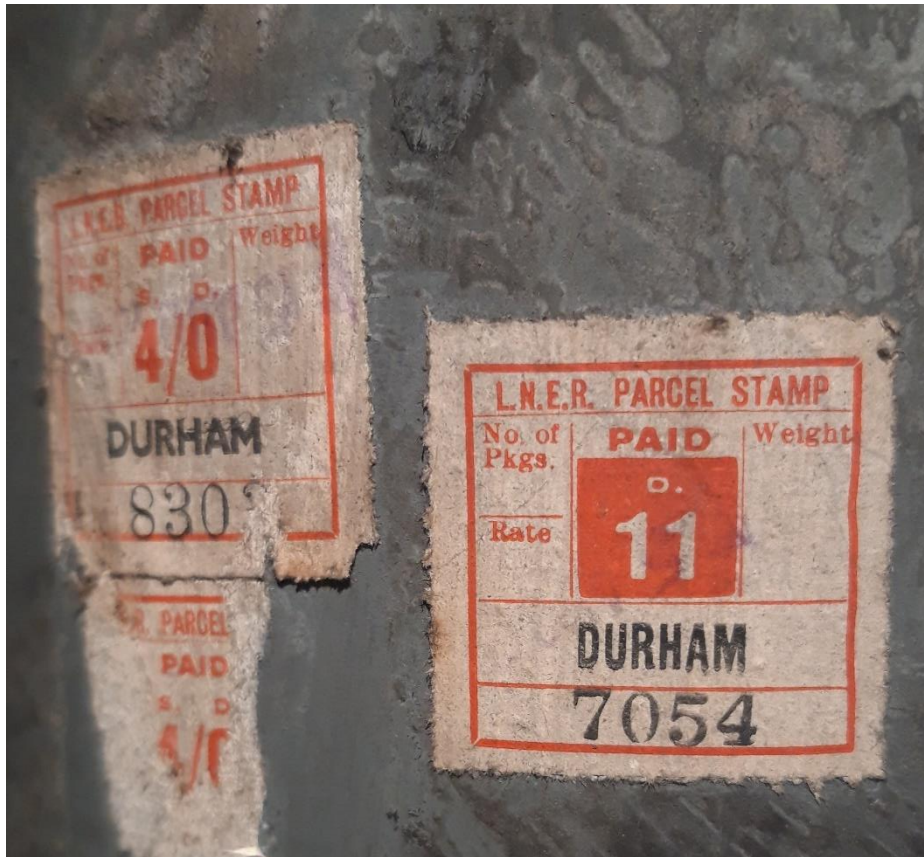


Brand-new drawstop action register

Wind system

The organ has two substantial double-rise reservoirs. The largest of these occupies most of the footprint of the organ just above floor level, and feeds all three manuals along with the Sub Bass chest. The other is above the Swell Organ expression box and feeds the pneumatic action and the remainder of the Pedal Organ. Both reservoirs were originally fitted with feeders, connected to a manual pumping lever at the side of the instrument. An electric blower was fitted in 1949, at which time the hand pumping mechanism was removed (except for the feeders) and new wind trunks and wind controls were added to supply both reservoirs. These metal trunks and wind controls were supplied and fitted by the Durham firm of Harrison & Harrison and in 2019 still retained their London & North Eastern Railway⁹ parcel labels!

⁹ The LNER was actually dissolved when the four UK railway companies were nationalised on 1 January 1948, but there must have been a stock of old labels to use up...

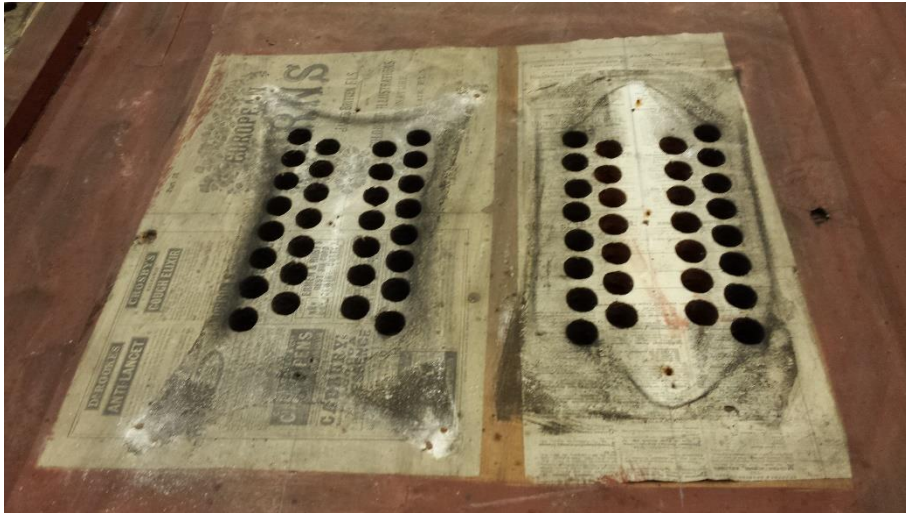


1949 parcel labels on zinc trunks from old blower to reservoirs

Both reservoirs have been re-leathered and restored. The feeders have been left in situ as unrestored artefacts and their reservoir inlets sealed off in a reversible manner. The larger of the two reservoirs was found to weigh an immense 462kg.



Larger reservoir being re-leathered



Reservoir feeder inlets lined with newspaper from 1885

We have provided a powerful new blower, mounted on a platform above head height behind the organ. New metal and wooden trunking has been provided to link this to the two reservoirs.

Wind trunking throughout the organ is of timber, lined with ingres paper. Much of the trunking was in very poor condition with numerous splits. All trunking has been restored to windtight condition, and relined in original style with new ingres paper. The Swell Organ soundboard is fed by concertina trunks, a continental feature only rarely found in British organs. These have also been restored with new leather.



Restored concertina trunk

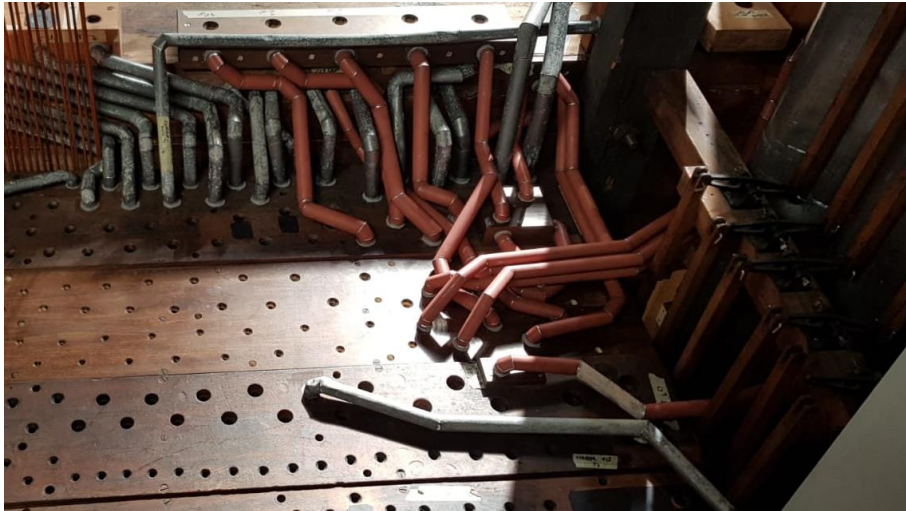


Wind trunk re-leathered



Restored wind trunks relined with ingres paper

Much of the metal conveyancing to the façade pipes was removed in 1975, and either replaced with flexible cardboard hose, or omitted altogether for those façade pipes that were rendered silent during that phase of work. The surviving conveyances have been restored, and new metal conveyancing in matching style has been made for all façade pipes.



Restored and new conveyancing

Pipework

The pipework was in sorry condition. All was covered in a thick layer of dust, which was easily enough removed. Wooden pipes were badly split, affecting their speech, and much pinning and repair was required. Many of the larger metal pipes were suffering from collapsed tips, which have been replaced. All tuning slides and springs have been replaced with new.

There are a number of unusual features in the pipework. The reeds have continental reed blocks, albeit with English shallots. Denman was reported to have made all of his pipework himself, but these continental blocks, together with the knowledge that the reeds were not ready when the organ was inaugurated, suggests that Denman made an exception in this instrument and bought the reeds in from a foreign trade supplier. This may have been because the instrument was so much larger than the firm's normal work.

The Trombone 16' has a half-length (because of the limited height in St Michael-le-Belfrey) bottom octave of remarkable potency.

In 1925, the pitch of the organ was lowered to modern standard. For most stops this was achieved by adding a new bottom note and moving all the others up one position. This has been retained in the present restoration. The only associated change we have made has been to make a new full-length resonator for C13 of the Trombone 16' to better mask the transition from half-length to full-length resonators on this stop.

The 1925 work included provision of harmonic trebles to the 8' chorus reeds on the Great and Swell Organs. These have now been removed and new non-harmonic resonators fitted.



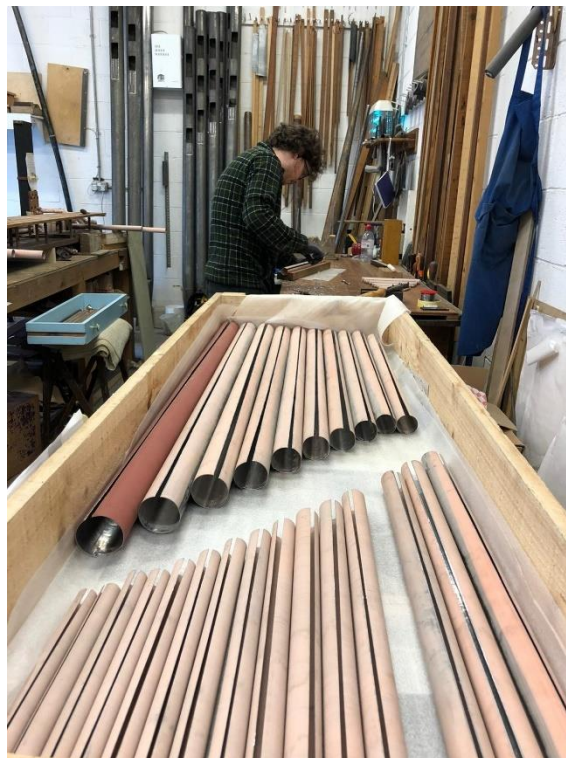
New non-harmonic trebles on Great Trumpet 8'

The 1975 work included numerous tonal changes, all of which have now been reversed. The Choir Organ lost a Dolce 8' and Pierced Gamba 8' in favour of a Blockflute 2' and Larigot 1¹/₃'. We have made and voiced a new Dolce 8' as a copy of the same stop in the Denman organ of St Saviourgate Masonic Lodge, York. We have made and voiced a new Pierced Gamba 8' as a copy of the Gamba 8' in the Denman organ of St John the Baptist Church, Healaugh. The Choir division is situated, unusually, at the front and top of the organ, above the Great division, and thus speaks with compelling directness. Its reinstated variety of 8' tone now returns it to being a choral accompaniment division, perfect for filling out the Swell.

Also in 1975, the Great Organ lost its Small Open Diapason 8' and Gamba 8' in favour of a Sharp Mixture II and Tierce 1³/₅'. Also on the Great Organ, the Mixture III was re-composed from a tierce to a brighter quint composition. We found that the Small Open Diapason 8' had in fact been reconstituted as a new Octave 4' on the Swell Organ; it was thus straightforward to return this to its original home and pitch. The bottom octave of this stop and the Gamba 8' had remained in the façade, silent since 1975, and were restored to speech. We interpolated the scale and construction of these Gamba pipes to recreate the rest of this stop.



Cutting out the new Gamba 8'



New Dolce 8'

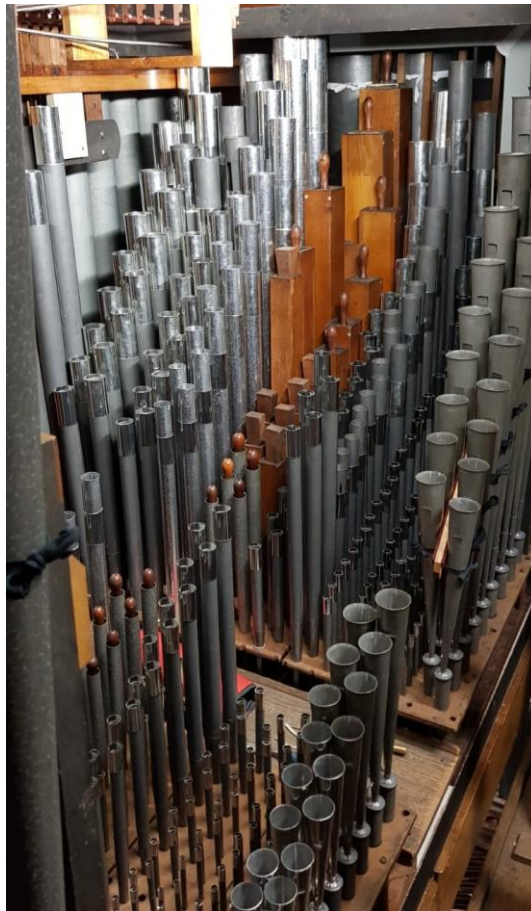
The original composition of the Mixture III was discernible from the upperboard and pipework, and has been restored. The tierce (carried right through to A46) adds a fine character to the bold and warm principal chorus.



The Swell Organ lost its Viola 4' and Flute 4' in favour of a new Octave 4' (formed from the aforementioned ex-Gt Small Open Diapason 8') and Super Octave 2'. We have made and voiced a new Viola 4' as a copy of the same stop in the Denman organ of Sowerby Methodist Church, and a new Flute 4' as a copy of the same stop in the Denman organ of St John the Baptist Church, Healaugh.

Given that there is no Fifteenth in the Swell, it is unusual that the Swell Mixture has a (original) starting composition of 19.22.26, leaving a gap above the Viola 4'. However, the Viola 4' is voiced with considerable liveliness and harmonic overtones, as per its original on which it is based, and thus the gap (which disappears by C13) is not noticeable.

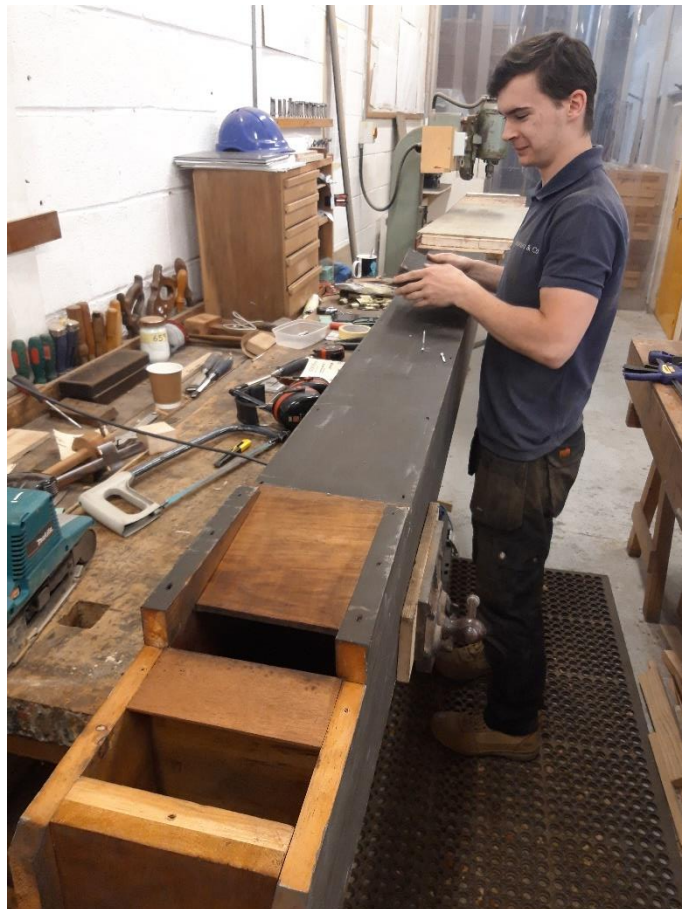
There has been a long-standing rumour that some of the wooden pipework in the organ was formed from the ex-Durham Cathedral Dallam organ that preceded the Denman instrument in St Michael-le-Belfrey. Sadly, all of the wooden pipework appears to be of 1885 construction!



Restored Great Organ pipework



Restored Swell Organ pipework



Repairing wooden pipework



The spotted metal façade pipes presented a real battle to restore to optimal appearance. Over their long life, they had been lacquered without cleaning (trapping dirt below the lacquer), then chemically etched by splashes of the product used to strip the dark casework stain in 1975, and then stained by splashes of the liquid lime solution used to lime the casework in 1975. Three different chemicals had thus left their mark on most of the pipes. These took many, many hours with careful use of appropriate polishing compounds to restore to their original lustre.



Façade pipes as removed, with one (second from right) restored to original condition

All Denman pipes were thoroughly cleaned, repaired as necessary, and had their speech regulated. Only the minimum of regulation necessary has been undertaken to return consistent and correct speech, and restore balances consistent with surviving examples of the builder's work and the organ's new home.

The organ now has again a wealth of 8' tone, and speaks with considerable character and warmth into its new home¹⁰.

Console

The console design is unusual. Denman grouped the drawstops in three columns on each jamb, which is rare on British instruments. The simple jambs are set back in a wide angle from the keyboards. All bushings around the drawstop shanks have been renewed.

The original drawstop heads were discarded in 1975 and replaced with new of plastic. These have in turn been discarded and have been replaced with brand-new wooden drawstop heads machined as exact copies of the surviving Denman drawstop heads at St John the Baptist Church, Healaugh. The Healaugh engraving has also been copied.

¹⁰ A video demonstration of the organ can be seen at https://www.youtube.com/watch?v=1_IwI8tq34



2020 (left) and 1975 (right) drawstop heads

The music desk immediately catches the eye, with a prominent step approximately 200mm from its lower edge. One would be forgiven for thinking this slightly inelegant detail was the result of a repair, but it is consistent with other surviving Denman consoles.

The key cheeks are of typical Denman design with a pointed profile on the lower two manuals. These were badly damaged by screwdrivers used by previous tuners to lift the manuals for maintenance; the front pieces have been renewed in matching timber.

The keyboards themselves are intriguing. Every other Denman instrument we have seen has Collard pattern (rounded front) sharps, but this organ does not. We were thus suspicious that the keyboards may not be original, but their date was confirmed by a manufacturing stamp of S.W. Browne, a trade keyboard supplier operating in London between 1851 and 1890. It is perhaps yet another clue that the Denman firm was hard pressed to complete this instrument which was so much larger than most of their work. The original ivory key facings were replaced with plastic in 1975. In our restoration the plastic has been stripped off and replaced with new coverings of cow bone. The keys themselves have been cleaned and re-bushed.



Keyboards under restoration

The pedalboard has been fully restored and re-pieced in matching timber.



Restored pedalboard

The console woodwork has been fully stripped and re-stained to match its original colour, remnants of which we found.



Stripped console during restoration

A new height-adjustable bench has been provided.



New bench in manufacture

New lighting and lighting / blower controls have been provided. The glazing in the console doors was broken and has been replaced with new glass made in historical style by the Barley Studio, York.



Restored console

The original nameplate was missing, and has been reproduced by copying that of the Denman organ at St John the Baptist Church, Healaugh.



A new console platform has been made to suit the new floor configuration at St Lawrence's.



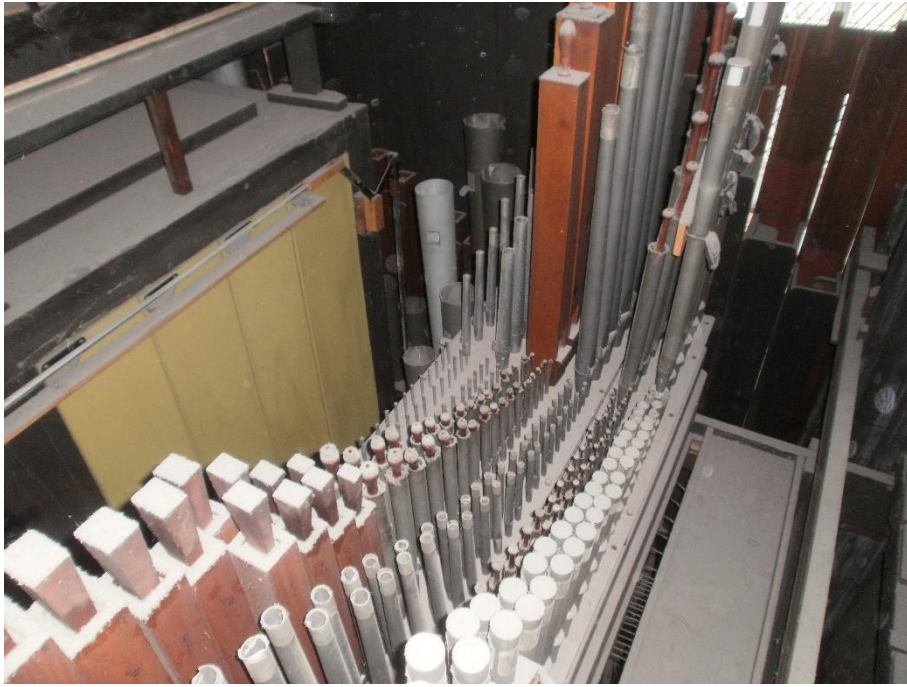
New console platform

Expression box and mechanism

The Swell Organ expression box originally had horizontal wooden shutters controlled via a lever pedal at the console. In the 1975 work, the lever pedal was replaced with a balanced pedal. For reasons unknown (it was not necessary), the horizontal shutters of solid timber were simultaneously replaced with new vertical shutters of chipboard, painted green. The wooden trace rods were replaced with metal bar, and a counterbalance was made of a washing-up liquid bottle filled with concrete. The shutter front had also been extended forwards slightly in 1925 to accommodate the harmonic reed trebles fitted at that time. The original paper lining of the box had been covered with several coats of gloss white paint.

We have made an entirely new front for the box, returned to its original position, with horizontal shutters and cock rod made as exact replicas of the shutters and mechanism in the Denman organ at St John the Baptist Church, Healaugh. The paint has been stripped from inside the box and the box interior papered to match surviving boxes elsewhere.

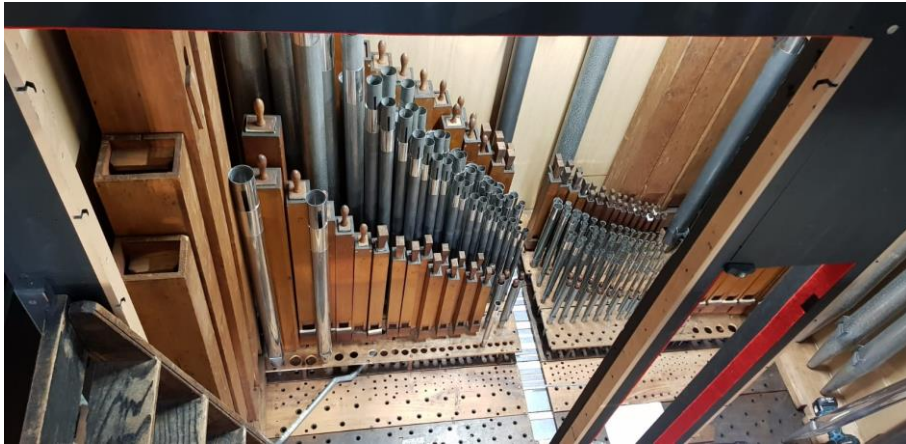
New trace rods of timber, and metal counterbalances and arms, have been made, connected to the balanced pedal that has been retained as a concession to modern usage. The original lever pedal was found inside the organ during dismantling and has been stored inside the instrument.



1975 shutters before dismantling



Re-lined box interior



New box front (shutters not in position)

Casework

Restoration of the magnificent casework was one of the most significant parts of the project. We had to: i) repair a myriad of splits and broken/missing decoration; ii) treat and repair sections damaged by woodworm; iii) strip the 1975 liming off; iv) re-stain and polish the timber to its original darker finish, of which we found fragments; v) re-make the casework at the right-hand side (much had never existed due to the position of the floor and Open Diapason 16' pipes in St Michael-le-Belfrey); and vi) provide new casework to the rear of the instrument (the instrument had previously been against a wall).



Condition of casework before restoration – part stripped, and part stripped and then heavily limed

This was a major undertaking which has transformed the appearance of the instrument.



Cleaning off the liming with a stiff brush and warm water



After and before...



Stripped casework panels, lightly sanded ready for re-finishing



Repairing splits by piecing in new timber: there were countless such repairs to be made



Staining in progress



Timber fan vaulting before restoration



Timber fan vaulting after stripping, repair, staining and polishing



The new casework on the right-hand side of the instrument, before staining and polishing



New casework panelling at rear of instrument, and relocated Open Diapason 16' pipes that had previously been attached to the right-hand elevation of the case as per below



*Open Diapason 16' pipes at side of instrument in St Michael-le-Belfrey,
now at rear of instrument in St Lawrence's*



Casework installation



Floor

The floor in the north transept of St Lawrence's Church was of suspended timber, over earth. It had to be replaced entirely in order to bear the considerable (c.9,000kg) weight of the organ, and to provide damp-proofing. A new concrete floor was laid and tiled.





Techniques and reference material

Hot animal glue has been used for all gluing activities in the restoration. All new materials have been selected to match what survived prior to the restoration.







APPENDIX A - SPECIFICATION

ST LAWRENCE'S CHURCH, YORK

W. Denman & Son, York, 1885

for St Michael-le-Belfrey Church, York

Alterations to reeds and re-pitching, Abbott & Smith, Leeds, 1925

Subsequent mechanical and tonal alterations, J. Jackson, Leeds, c.1975

restored to original condition and relocated to St Lawrence's Church

Nicholson & Co., Malvern, 2020

PEDAL ORGAN (C to f ¹)		Feet	Pipes	Remarks
1.	Open Diapason	16	30	Denman, 1885
2.	Sub Bass	16	30	Denman, 1885
3.	Contra Gamba	16	30	Denman, 1885
4.	Flute	8	30	Denman, 1885
5.	Violoncello	8	30	Denman, 1885
6.	Trombone	16	30	Denman, 1885

Choir to Pedal Great to Pedal Swell to Pedal

CHOIR ORGAN (C to a ³)		Feet	Pipes	Remarks
7.	Lieblich Gedact	8	58	Denman, 1885, returned to original nomenclature [had been Lieblich Gedackt since 1975]
8.	Dolce	8	58	new, copy of surviving example in St Saviourgate Masonic Lodge, York (Denman, 1896) [original stop of this name was replaced by Blockflute 2' in 1975];
9.	Pierced Gamba	8	46	C1-B12 from 8; new, copy of Gamba in St John the Baptist Church, Healaugh (Denman, 1890) [original stop of this name was replaced by Larigot 1 ¹ / ₃ ' in 1975]
10.	Gemshorn	4	58	Denman, 1885
11.	Flute	4	58	Denman, 1885
12.	Clarionet	8	58	Denman, 1885

Swell to Choir



GREAT ORGAN (C to a ³)		Feet	Pipes	Remarks
13.	Double Dulciana	16	58	Denman, 1885, returned to original nomenclature [had been Contra Dulciana since 1975]
14.	Large Open Diapason	8	53	C1-E5 from 15; Denman, 1885, returned to original nomenclature [had been Open Diapason since 1975]
15.	Small Open Diapason	8	58	Denman, 1885, returned to original division, pitch and nomenclature [was removed to Swell and transposed as Octave 4' in 1975; vacated slide filled by Tierce 1 ³ / ₅ '];
16.	Stopped Diapason	8	58	Denman, 1885
17.	Gamba	8	58	new, scale and construction interpolated from basses that remained in façade [original stop of this name was replaced by Sharp Mixture II in 1975]
18.	Principal	4	58	Denman, 1885
19.	Flute Harmonique	4	58	Denman, 1885, returned to original nomenclature [had been Harmonic Flute since 1975]
20.	Twelfth	2 ² / ₃	58	Denman, 1885
21.	Fifteenth	2	58	Denman, 1885
22.	Mixture 17.19.22	III	174	Denman, 1885, returned to original composition (see below)
23.	Trumpet	8	58	Denman, 1885; 1925 Abbott & Smith harmonic trebles removed and replaced with new non-harmonic trebles

Swell to Great



SWELL ORGAN (C to a ³)	Feet	Pipes	Remarks
24. Lieblich Bourdon	16	58	Denman, 1885
25. Open Diapason	8	58	Denman, 1885
26. Stopped Diapason	8	58	Denman, 1885
27. Salicional	8	58	Denman, 1885
28. Vox Angelica	8	46	from C13; Denman, 1885
29. Viola	4	58	new, copy of surviving example in Sowerby Methodist Church (Denman, 1890) [original stop of this name was replaced in 1975 by Octave 4': see Gt Small OD]
30. Flute	4	58	new, copy of surviving example in St John the Baptist Church, Healaugh (Denman, 1890) [original stop of this name was replaced in 1975 by Super Octave 2']
31. Mixture 19.22.26	III	174	Denman, 1885, see below for composition
32. Horn	8	58	Denman, 1885; 1925 Abott & Smith harmonic trebles removed and replaced with new non-harmonic trebles
33. Oboe	8	58	Denman, 1885
34. Clarion	4	58	Denman, 1885

Actions

Manuals: mechanical (balanced)

Couplers: mechanical

Pedals: exhaust pneumatic

Sliders: mechanical

Accessories

Balanced expression pedal to Swell Organ

3 combination pedals to Pedal and Great Organs

3 combination pedals to Swell Organ

Wind pressures

Choir, Great, Swell and Sub Bass: 89mm (3.5") wg

Pedal (except Sub Bass): 101mm (4") wg



Pitch

A=440Hz

Mixture compositions (original)

Great

C1 17.19.22

F#19 15.17.19

C25 12.15.17

A#47 8.12.15

Swell

C1 19.22.26

C13 15.19.22

C25 12.15.19

C37 8.12.15



APPENDIX B - ADVERTISEMENT FOR GRAND BAZAAR
HELD IN APRIL 1885
'IN ORDER TO RAISE FUNDS FOR
A NEW ORGAN FOR THE CHURCH'

ST. MICHAEL-LE-BELFREY, YORK

A

⇒ GRAND † BAZAAR ⇐

In order to raise funds for a New Organ for the Church

WILL BE HELD IN

THE FINE ART EXHIBITION

ON

Wednesday, Thursday, Friday, and Saturday

IN EASTER WEEK,

APRIL the 8th, 9th, 10th, and 11th, 1885,

Under the distinguished Patronage of—

THE LORD MAYOR OF YORK AND THE LADY MAYORESS.
THE ARCHBISHOP OF YORK AND MRS. THOMSON.
THE DEAN OF YORK AND LADY EMMA PUREY-CUST.
THE ARCHDEACON OF YORK AND MRS. CROSTHWAITE.
THE VEN. ARCHDEACON BLUNT AND MRS. BLUNT.
THE HON. AND REV. CANON BAILLIE AND MRS. BAILLIE.
THE HON. AND REV. CANON FORESTER AND MRS. FORESTER.
THE REV. CANON FLEMING AND MRS. FLEMING.
THE EARL AND COUNTESS OF HAREWOOD.
LORD AND LADY WENLOCK.
LORD AND LADY LONDESBOROUGH.
LORD AND LADY HAWKE.
THE HON. REGINALD PARKER AND MRS. PARKER.
THE HON. G. E. LASCELLES AND LADY LOUISA LASCELLES.
SIR GEORGE AND LADY CAYLEY.
SIR WILLIAM AND LADY WORSLEY.
SIR CHARLES AND LADY LEGARD.
SIR FREDERICK AND LADY MILNER.
GENERAL WILLIS AND MRS. WILLIS.
R. H. BOWER, ESQ., AND MRS. BOWER.
R. C. VYNER, ESQ., AND MRS. VYNER.
MISS MILNER.
TREVOR RUDSTON READ, ESQ., AND MRS. READ.

THE BAZAAR WILL BE OPENED ON WEDNESDAY, APRIL 8TH,
AT TWO O'CLOCK, by

His Grace the Archbishop of York.

Admission—on Wednesday, 2s.; after 6 o'clock, 6d.
,, Thursday and Friday, 1s.; after 6
o'clock, 6d.
,, Saturday, 6d.
Admission for the 4 days, 3s.



The following Ladies will preside at the Stalls:

THE HON. MRS. BAILLIE and MRS. E. S. CARTER.
MRS. BARRY and MRS. E. GRAY.
MRS. MILLS and MISS MILLS.

Parishioners' Stall.

MRS. BURNETT, MISS ANDERSON, MISS BUCKLE, and
MISSES COLEMAN.

Churchwardens' Stall.

MRS. DRAPER, MISS COWLING, MISS SCOTT, and MISS SHANN,

Flower Stall.

MRS. BOWER and MISSES BOWER.

Refreshment Stall.

MRS. CARR and MRS. ROSE.

Fish Pond.

MRS. T. G. HODGSON, MRS. LAMBERT, and MISS HODGSON.

~~~~~  
*AFTERNOON TEA* each day from 4 to 6 o'clock,  
with **Chinamen** in attendance.

**MILITARY AND OTHER BANDS**

INCLUDING THOSE OF THE

**3rd Hussars** (by kind permission of COL. WALKER  
and the OFFICERS), and the

**Gloucester Regiment** (by kind permission of COL.  
BRODIGAN and the OFFICERS),

will play each **Afternoon** between 3 and 5, and each **Evening**  
between 7 and 9.



EACH AFTERNOON AND EVENING THERE WILL BE

*VARIOUS*

# ENTERTAINMENTS

INCLUDING

TABLEAUX VIVANTS.

THOUGHT READING, by MR. WALTER BAILEY.

FORTUNE TELLING, in a Gipsy's Tent.

ALSO

EACH EVENING AT 8.30

*Amusing Entertainments and Characteristic Songs*

WILL BE GIVEN BY THE CELEBRATED NIGGER TROUPE OF

**YORK GAIETY MINSTRELS.**

---

THE BAZAAR WILL BE OPEN EACH DAY FROM  
2 TO 10 O'CLOCK.

---

Should any surplus remain above the sum required for the Organ, it will form the commencement of a fund for providing a SUNDAY SCHOOL and PARISH ROOM, which are much needed.

W. SOTHERAN AND CO., PRINTERS, PETERGATE, YORK.