



*THE ORGANS
OF
ST. GILES CHURCH,
FARNBOROUGH KENT*

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Introduction

Little about the St. Giles organs seems to have been documented in the past. On occasions when considerable expense has been involved little is recorded concerning how it all happened and there are a couple of occasions when lesser works were carried out but the only thing we have recording it is a brass plate on the wall. As a church organ is usually the most expensive single item in a church building this seemed a bit of a shame so I have tried to bring together everything that we know, adding in a few things that we don't know but can take a fairly good guess at and make it into some sort of a record. There would have been far wider gaps and (even more) inaccuracies had it not been for the help of John Wade, who was assistant organist at St. Giles in the 1960s. Most of the history of the organ up to 1963 is his work and the guesses are mine.

When organists discuss what to do about an organ project the conversation quickly degenerates to jargon. Pneumatics, power motors, sliderless soundboards, 'bad breaks in yer mixture', reversible pistons, Swell engines, ODs, mounted cornets, stop solenoids, mutations, beards, open foot, closed foot, nicking.....the list is endless. The terminology has built up over many years and is very handy if you want to blind people with science. The eyes of the clergy, treasurers, PCC members and congregation glaze over quickly, they give up trying to understand and leave it to the organist to argue the toss with organ builders, Diocesan representatives etc. Of course, organists just might be more keen on satisfying their ego rather than putting the needs of the church first and sometimes get away with having expensive work done that suits them but not necessarily the needs of the Parish. Organists have in the past sometimes been attracted to playing the organ due the amount of noise they can make and the complex mechanisms but things have changed: plenty of other opportunities for playing around with technology have emerged through the years and now organists tend to be much more interested in craftsmanship and artistry and making a musical sound. It is something of a challenge to be involved with a project like the St. Giles organ. There are so many reasons why perfection will not be achieved. But no organ is perfect.

Whilst what follows is primarily for record purposes and, while I have tried to make it readable, some of it will probably seem a bit 'dry' to non-organists. I hope that those who are interested in what has been done through the years will want to read it all. In an attempt to facilitate this, where I have used terms that make no sense to the non-organist and not explained them in the text I have included them in a sort of glossary of jargon at the end in the hope that non-organists can get some idea of what I'm on about. I have tried not to make this too involved so there are generalisations and by no means every term is explained. The terms included in the glossary are shown in the text in *Italics*. I have also included a bit about the role of the organ in the Anglican Church through the years in an attempt to give a background to why things happened when they did and to put things into perspective.

The English organ, the Anglican Church and St. Giles

Whilst the use of pipe organs can be traced back as far as 200BC, the use of organs for the accompaniment of Anglican Church Music is rather more recent. Organs had been present in English cathedrals and collegiate churches before the second half of the 18th Century but there were not many in parish churches. The Oxford Movement was possibly the most important factor in the changing of West Gallery Music (consisting of singers and instrumentalists) into the practice of having a robed choir in the chancel, often with an organ there too. By 1800 it was reckoned that organs could be found 'in around 80% of London churches' and during the next century this spread to most parish churches throughout the country.

Organ building became a major 'industry' in England during this period. Organ builders were among those at the forefront of technology, constantly looking for ways to be better than the competition in their manufacture. Some had their own railway sidings to help with transport. At the Great Exhibition of 1851, a number of organs by prominent builders of the day was installed to entertain visitors while walking round the exhibition, including the largest organ in the World at the time, with 4474 pipes and 77 *stops*, built by 'Father' Henry Willis, who was awarded a gold medal for his efforts.

Pipe organs are probably more subject to changes in fashion and taste than any other musical instrument. The practice of tucking organs into a chamber at the East end of the church, so that often the sound did not travel well down the nave meant that organists constantly demanded larger and larger instruments to help overcome this limitation (also, just possibly, to satisfy an ego!) and technologies were developed to find ways of coping with the resulting heavy key *actions* and difficulty in coping with *registration* (using the stops) on large instruments.

After the end of the 19th Century the pace of building new instruments was much slower. Most churches now had an organ and organ builders' work became more involved with maintenance, repairs, restoration and 'improvements'. In the 1920s and 30s a couple of organ builders turned out a large number of cinema organs, which used advances in technology to make instruments capable of making big impressive sounds but using far fewer pipes, (which are the most expensive and space consuming part) than their church cousins. This '*extension*' technique also started to appear in church organs.

Whilst there is much excellent music for the organ written over hundreds of years, an English church organ is effectively a 'one man band' which has to be used to accompany large and small congregations, choirs singing Anglican chant, service settings and anthems, so playing organ music often has to come second. Until quite recently there was no real alternative to the pipe organ that could do everything required but played by one person. Some would argue that this is still the case.

St. Giles followed the pattern of West Gallery music, then a barrel organ, then the real thing.

At St. Giles alternatives have, rightly, been considered every time money has had to be spent but so far the conclusion has been reached that, for our particular building and its needs, a pipe organ is still the best.

Organs at St. Giles and Fox's Brewery

The history of the Oak Brewery in Green Street Green is well documented elsewhere and had a considerable impact on the locality, including the start of the massive population increase that took place over the next century or so. Green Street Green was within the Parish of Farnborough until 1937.

The St. Giles building was, of course, never intended to have a pipe organ. Prior to 1842 There was a musicians' gallery at the West end and music was probably provided by a band of singers and one or more instrumentalists.

On January 16th 1842 a *barrel organ* belonging to Mr. Fox of Fox's Brewery was loaned to the church, 'and will remain in the church only during his pleasure unless any future arrangement be made between him and the officers of the Parish.' This was probably John Fox, who had founded the Oak Brewery in 1836 or possibly his son, Thomas Samuel Fox, as both were involved in philanthropic activity. In 1844 the upper musicians' gallery was removed and the barrel organ placed in the lower gallery. There are records of monies being paid to have it moved from the back of the church to the front, and then back again, which implies that either it was not really adequate or took up too much room, as lack of space has been an issue over many years. The siting of the barrel organ in the lower gallery had led to the loss of seating and changes had to be made to seating on the South side of the church to make up for it.

The change to a proper pipe organ happened during the 1880s, which was quite late compared to some parishes in or close to London.

Thomas Hamilton Fox, son of Thomas Samuel, was an organist (by 1961 some of his organ music which had been given to the church was still lying around in what was then the organ chamber) and in 1885 he offered to pay for a pipe organ to be installed in St. Giles on condition that the church provided a chamber to house it. Thomas's father died in 1883, leaving the brewery to his sons so when Thomas Hamilton made the offer of a pipe organ one would have thought that he might have felt the burden of the massive debt that his father had run up during the re-building of the brewery.

Some argument ensued over the addition to the building to house the new organ and a drawing of the proposed structure in the archives has scrawled over it 'this must never be built'. Alterations and restorations to ancient buildings usually open up cans of worms and the chancel itself was found to be in such a bad state that it had to be rebuilt in addition to the work on building the new organ chamber on the North side of the chancel. Doubtless some at St. Giles at the time wished that the offer of an organ had never been made.

The National Pipe Organ Register

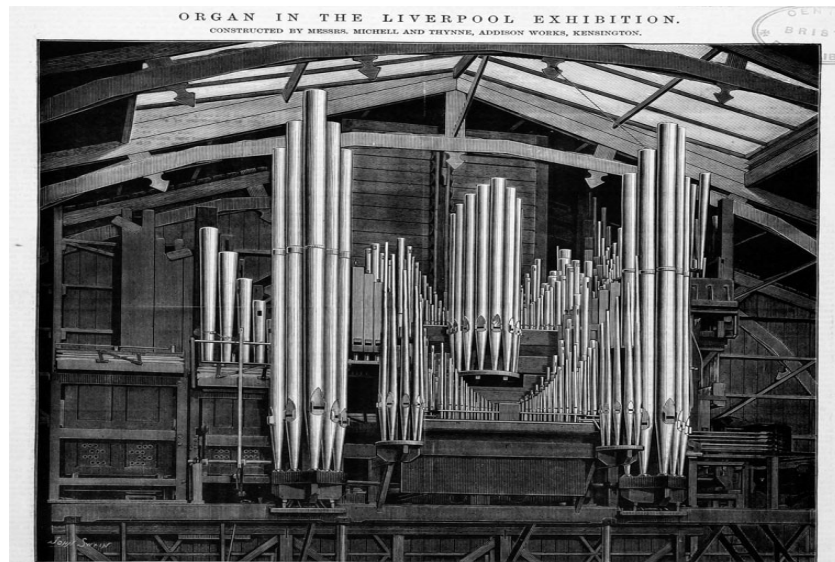
The NPOR is a record of pipe organs and work that has been done to them through the years, in all sorts of locations, including instruments in churches, cemeteries and crematoria, theatres, cinemas, private residences, even restaurants. It has been well maintained since the late 1800s and is invaluable to organists, especially when they are asked to play something on an instrument they do not know – by no means all organ music can be played on every instrument. However, in the case of St. Giles it is lacking somewhat. There is no record prior to 1963, except a reference to the Hull organ builder Forster and Andrews, who possibly carried out the work to the organ in the 1920s.

Forster and Andrews had a distinctive style and examination of the original St. Giles organ pipework, which has an even more distinctive but very different style, shows that they did not build the original organ at St. Giles.

As there is no record of any discussion as to the specification or builder of the new organ it seems likely that Fox himself made most of the decisions. The builder of the new organ seems not to have been recorded anywhere. The initial clue to the original builder is that by the end of the century tuning and maintenance was in the hands of Beale & Thynne, a fairly small company in West London. It is fairly certain that the original pipe organ was built by them or their forerunners, Michell & Thynne.

Michell & Thynne - Organ Builders

Both the above names appear spelt differently in places but these seem to be the most common spellings. In 1869 William Thynne joined the Brixton firm of T.C Lewis as an apprentice *voicer* at the age of 30 with no practical experience of organ building. Lewis and Co was founded in 1860 by Thomas Christopher Lewis and the firm is known for building some fine organs, most notably the organ in Southwark Cathedral. When developing his tonal schemes Lewis was inspired by the organs of Edmund Schultz from Germany and Aristide Cavallé-Coll from France and this broke new and exciting ground when it came to the *voicing* of instruments in the UK. William Thynne was undoubtedly influenced by these methods of *voicing* and went as far as taking them a step further when later *voicing* his own instruments. Thynne left TC Lewis (it is said that actually he was sacked), along with another Lewis employee, Carlton Michell, in 1881 and set up independently. Other Lewis employees seem to have joined them. Their first - and almost only - major project was to build an organ for the 1885 Inventions Exhibition in Kensington. Their aim was to: 'Attempt to place into the hands of the player a grand and complete organ reduced to the smallest possible dimensions as regards the number of *stops*.' In fact it was a large 4 *manual* instrument and when it arrived at the exhibition it was found that, due to a misunderstanding about the space made available for it drastic alterations and reductions in size had to be made, it appeared long after the other exhibits and due to the cost of doing it all company was eventually pushed into bankruptcy. Presumably they felt they needed to make a splash at the exhibition in order to break into the now well established organ building business. The organ looked as if it was half finished, perhaps because that's exactly what it was or possibly this was so that visitors could see the construction. This organ was exhibited again the following year at the Liverpool Exhibition where celebrated city organist W.T. Best pronounced it 'the finest organ of its kind that I have ever played'. It was considered so ground-breaking at the time that for years there were rumours that the established competition had connived to see them off by getting their pitch at the London exhibition reduced in size.



Michell & Thynne Organ at the Liverpool Exhibition

In 1887, the Reverend C.W. Grove purchased the organ and presented it to Tewkesbury Abbey to commemorate the Golden Jubilee of Queen Victoria. It was placed in the North Transept where it has remained ever since in the same format as at the exhibitions so it has an 'unfinished' look, with rather grand pipe towers at the front but little other casework. It is not the main organ in the Abbey and was silent for many years but was restored in the 1980s and is one of the best preserved examples of later Victorian organ building, although it is now again in need of attention. The importance of this instrument is strangely totally out of proportion to the short-lived company that built it.

Michell and Thynne's partnership was therefore a short one. Michell emigrated to America, Thynne continued organ building and it was at this point that Mr Beale came into the business as a business partner rather than an organ builder. The output of the firm consisted mostly of small 2 *manual* organs of the sort of size installed at St. Giles. Whether Michell was still working with Thynne when the St. Giles organ was installed is unclear.

Organists often have a love of all things mechanical such as railway engines, not to mention something of a fondness for the odd glass of beer and Thomas Hamilton Fox seems to have been no exception.. The brewery would have made regular use of the railway because it delivered to Hither Green every Thursday. Fox, who had been known to complain to the parish council about the deplorable state of the road between Green Street Green and Orpington Station (no surprise here, it still floods when it rains hard!), would doubtless have enjoyed a steam train ride into London and it does seem highly likely that he went to the 1885 Inventions Exhibition, was bowled over by the Michell and Thynne organ and decided that his parish church must have one like it. The pipe towers at the front of the original St. Giles organ had a similarity to those on the Exhibition organ. It may also be that he wanted St. Giles to have something rather larger than the instrument it ended up with but his available finances did not allow it as it only took up about half the space in the chamber that was constructed for it.

The 1887 St. Giles Organ

The organ as originally built at the East end did not change substantially until 1963 but there were some minor changes made through the years: the *specification* shown below is

how it was when it was removed in 1963. On photographs, the display pipe towers on the front seem to have been rather overpowering visually while the display pipes facing down the nave, which were 'dummy' pipes, hid the fact that the organ took up less than half of the new chamber and there was space for something considerably larger, all of which suggests that Thomas Hamilton Fox was intending to provide something bigger – perhaps the brewery's debts played a part.

A memorial tablet on the organ case read 'Dedicated to the worship of God by Thomas Hamilton Fox in memory of the members of his family buried in and around the church. 13th June 1887'.

There are two memorials in the church that refer to other work on the organ:

1. *'To the glory of God and in memory of the Revd. Frederick Jessop Kelly MA LLB, fourteen years vicar of this parish who died Sept. 11th 1898. This tablet is erected and the organ rebuilt by many of his parishioners and friends.'*
2. *To the glory of God and in memory of Malvina Margaret Hall. The organ was renovated and the (HOHL) Flute stop and tremulant added by her husband, Edward Hall Sept. 1920'*

One would imagine that the first of these is something of an exaggeration as the organ was only 12 years old. During these times it was common for renovation works to be done to an instrument more frequently than today, probably because the pollution caused by such things as the use of coal for heating necessitated more frequent pipework cleaning, replacement of leather etc. However, the dismantling and reconstruction required for this would not now be considered to be rebuilding. The second memorial demonstrates how fashion changes peoples' minds about the sound that an instrument should make. The replacement 'Hohl flute' *stop* was often found in organs built during the early part of the 20th Century but the sound it made was not so popular by 1986 when it was again replaced. The Tremulant, a device which makes the wind stream fluctuate in intensity producing a tremolo effect, would again have been felt a worthy addition at that time but appeared to have been made very cheaply, possibly out of an old pew and worked over the entire organ, which is not the way most organists would want it to be.

At some stage the Victorian decoration of the display pipes was changed to a much plainer grey with gold and black bands towards the top. The keys were also recovered during the instrument's lifetime.

The instrument was said to be adequate for accompanying the choir but suffered from the difficulty that the organist had to drown them if the organ needed to support congregational singing. The dummy pipes under the archway leading into the Nave gave the impression that some of the organ spoke down the Nave but none of it did.

By the end of the 1950s the organ was in a poor state. The *action* was extremely worn and the *couplers* were temperamental, while the pedal *stop* mechanism had failed entirely and the pedal *stops* were 'on' all the time. Some of the pipework could not be kept in tune. The instrument was quite limited in its scope and would not be improved by making it larger, it would have just drowned the choir. Things such as the hitch-down *Swell pedal* and the straight pedalboard were well out of fashion. However, the pipework (the most expensive part of an organ) was of good quality and most of it could be re-used in a new instrument.



1887 St. Giles East end Organ

Specification when the original organ was dismantled in 1961:

Swell (Left hand jamb)		Great (Right hand jamb)	
Geigen Diapason	8'	Open Diapason	8'
Salicional	8'	Lieblich Gedackt	8'
Hohl Flute	8'	Dulciana	8'
Voix Celeste	8'	Principal	4'
Harmonic Flute	4'	Great to Pedal	
Flautina	2'		
Oboe	8'	Pedal	
Swell to Great		Bourdon	16'
Swell to Pedal		Bass Flute	8'
Tremulant			
Mechanical action, stop knob console. Couplers and Tremulant positioned above the top manual. 'Straight' pedal board. Lever <i>Swell</i> pedal. 4 combination pedals. Discus blower			

The 1963 Organ

Those who lived in the post war years will know that money for projects such as church organs was not at all easy to find. Most of the major organ builders found ways to make their work more affordable. New instruments often used the technique of 'extension' similar to that used in cinema organs, where one rank of pipes is made to sound at several different pitches, thus saving on expensive pipework, while another method of cost saving included the use of pipes and soundboards taken from other redundant or war damaged organs. Both these ideas were incorporated into the St. Giles organ. A couple of builders who had previously been highly regarded started to do work that was quite cheap and nasty and it was rumoured that they toured the London bomb sites to see what they

could find for nothing. Organ builders' staff were extremely poorly paid.

During the 1930s, people on mainland Europe had started to realise that 'romantic' styles of organ building had become a bit overpowering and that the surviving instruments from Bach's time and before had much to commend them in all sorts of ways. This eventually found its way to the UK but due to financial constraints it was not really practical to build many organs along these classical lines. Until the late 1960s most British organ builders tried to copy some of the ideals without breaking the bank, with varying degrees of success.

Against this background, at the start of the 1960s the decision by the Parish to upgrade to a considerably larger organ located at the West end where the musicians' gallery had been attracted some interest and the project featured in the musical press at the time.

Kingsgate Davidson, the organ builder selected for the project worked on over 150 instruments in London and the South East and had a reputation for giving value for money. Originating in the 1920s known as the Kingsgate Musical Instrument Co. located in London NW1, post war the firm moved to workshops in Brockley in South London. They ceased trading in 1966, only 3 years after doing their work at St. Giles. Their workshop manager, Ralph Arnold, lived in Orpington and set up on his own, finishing one or two incomplete jobs and carrying on building and refurbishing organs in much the same style as Kingsgate Davidson over the next 25 years. Whilst they made use of old soundboards and pipework to keep the costs down, action parts etc. were those used by most organ builders and many of their instruments have carried on satisfactorily well after their sell by date. Opinions as to their *tonal work* varied.

Mr. Davidson, who was himself a Baptist, had a son who was also part of the business. According to legend in the trade, when there was any kind of a problem to solve Mr. Davidson would say 'I shall consult with Mr. Kingsgate on the matter'. This would not have been possible as Mr. Kingsgate did not exist and never had.

A considerable amount of work, including structural, would have been needed in order to put the organ in its new position at the West end. Whilst the scheme came to be criticised in later years, it was very much in line with current thinking, indeed the West gallery positioning was almost ahead of its time. The use of *direct electric* and *electro-pneumatic actions* rather than the *tracker action* used in the old instrument meant that it was possible to site pipes in any position and to keep the console at the East end, with the choir. Whilst more upperwork (higher pitched stops) was included, an attempt was made to ensure that the power of the lower pitches were transmitted from such a height by adding a 16' long Violone pedal stop. As the height of the gallery was not even enough to allow the 8' long pipes from the old organ to be fitted without them being mitred, the largest Violone pipes were sited horizontally at the back of the instrument. How they managed to get them into position is something of a mystery and doubtless one of today's Health and Safety inspectors would have a fit had he been there. They were fitted before the rest of the organ and many were not accessible, a few could not even be tuned properly. In order to remove them at the 2019 rebuild they had to be sawn up. They took up a considerable amount of valuable space. In order to fit everything in, most of the pipes in the organ faced the North wall. One would normally expect that in a West end organ every pipe possible would face East.

The console was initially positioned so that the organist had his back to the congregation, was later turned round so the the organist faced the pillar and later moved again into its

present position.

The organ was first used for services on 19th May 1963, an opening recital was given on 20th June 1963 and the organ was dedicated on 22nd September 1963 by The Rev, G.E. Sage, Warden of the Royal School of Church Music, who commented on the pleasing position of the new organ (he would have been impressed at the forward thinking).

Specification of the organ in 1963:

Swell		Great	
Geigen Diapason	8'	Contra Dulciana ¹	16'
Gedact	8'	Open Diapason	8'
Salicional	8'	Hohl Flute	8'
Voix Celeste (TC)	8'	Dulciana ¹	8'
Octave Geigen	4'	Principal	4'
Fifteenth	2'	Dulcet ¹	4'
Nazard	2 $\frac{2}{3}$ '	Dulcet Twelfth ¹	2 $\frac{2}{3}$ '
Tierce	1 3/5'	Dulcetina ¹	2'
Mixture	2rks	Larigot ¹	1 1/3'
Contra Oboe (TC)	16'	Octavin ¹	1'
Trumpet	8'	Rauschquint	2rks
Tremulant		Swell to Great	
Swell octave		Great to Pedal	
Swell suboctave			
Swell unison off		Pedal	
Swell to Pedal		Resultant ²	32'
Swell octave to pedal		Violone ³	16'
		Bourdon ²	16'
		Cello ³	8'
		Bass flute ²	8'
		Dulciana ¹	8'
Electro pneumatic/Direct Electric action, detached stop key console. Radiating & Concave <i>Pedalboard</i> . 4 Gt/Pedal double touch thumb & toe <i>pistons</i> , 4 Swell/Pedal double touch thumb & toe <i>pistons</i> . Great-Pedal & Swell-Great reversible toe <i>pistons</i> . ¹ Dulciana unit rank ² Bourdon unit rank ³ Violone unit rank			

The electro mechanical switching systems allowed use of the '*unit*' or extension principal. It was common practice (and still is) to apply this to a pedal department, where generally only one pedal is played at a time. So the pedal department was made up of only two ranks of pipes. A *unit* Dulciana rank on the Great did duty for pitches from 16' up to 1'.

Most of the additional pipework used appears to have been second hand, as do the soundboards. All the electrics were new, supplied by Kimber-Allen in Swanley. The architectural work and case was by Miss P. Cunnington A.R.I.B.A.

It seems that in retrospect it was felt that the result could have been a bit better and perhaps the specification had been over-ambitious. The large Pedal Violone stop had taken up much valuable space but spoke rather badly, other stops were a bit harsh and the extended Great Dulciana rank which was supposed to give added flexibility was felt to be a bit of a non-event. However, in a building that does not take to an organ easily the project was certainly a brave one, the sound and flexibility was a great improvement on the ailing instrument that had been there before and organists enjoyed the up to date playing aids. The instrument gave satisfactory service for over 20 years.

In the later 1970s the organ seems to have given some problems. Actually, this was in common with many organs in the UK. The extremely hot Summers of 1976/77 caused no end of trouble to wood and the leather used in actions. However, it seemed to turn minds to the need for work to be done to the instrument. By the 1980s cleaning and overhaul was needed and the scheme from the 1960s seemed rather out of date.

Discussions were had with the Diocesan Organ Adviser and it was agreed that the organ was particularly lacking when it came to supporting the congregational singing. Having all the pipework facing North was not helping. Ideas from the 1960s for making things sound 'bigger' without spending too much money were now out of fashion. Extending manual pipework ranks in all directions from a grunt to a squeak was now frowned upon and taking the Oboe, a rather pleasant stop, from the old organ, having it speak an octave lower while missing the bottom octave of pipes was a bit silly. Kingsgate Davidson were inclined to use second hand pipework that did not always fit in particularly well with the existing and the result could be something of a box of whistles rather than a cohesive organ.

Martin Cross, a small Essex based organ builder with a reputation for doing good sound work, was given the task of improving the instrument, albeit on a fairly limited budget. The Great pipework was re-modelled: the Dulciana unit rank was scrapped save for the original 8' pitch, the Hohlflute (now well out of fashion) was replaced by a Stopped Flute, comprising some new pipework and available at 8' and 4' pitches, a fifteenth stop was added, the Rausquint became a mixture. The mutation stops on the Swell were the wrong scale and were replaced with new wide scale pipes of *spotted metal*. The Swell Contra Oboe 16' had an octave of pipes added in the bass to make it a complete stop and was also included on the pedal. Finally, the side of the Swell box had shutters added so that this department sounded a bit more evenly through the church. New wind chests on direct electric action were made for the new stops on the Great. The electrical parts were again supplied by Kimber-Allen, while the new pipework, all of *spotted metal*, came from Jacques Stinkens in the Netherlands.

Specification of the organ in 1986:

Swell		Great	
Geigen Diapason	8'	Open Diapason	8'
Gedact	8'	Stopped Flute	8'
Salicional	8'	Dulciana ¹	8'
Voix Celeste (TC)	8'	Chimney Flute	4'
Octave Geigen	4'	Principal	4'
Fifteenth	2'	Fifteenth	2'
Nazard	2 2/3'	Mixture	2rks
Tierce	1 3/5'	Swell to Great	
Mixture	2rks	Great to Pedal	
Contra Oboe ¹	16'		
Trumpet	8'		Pedal
Tremulant		Resultant ²	32'
Swell octave		Violone ³	16'
Swell suboctave		Bourdon ²	16'
Swell unison off		Cello ³	8'
Swell to Pedal		Bass flute ²	8'
Swell octave to pedal		Contra Oboe ¹	16'
Electro pneumatic/Direct Electric action, detached stop key console. Radiating & Concave <i>Pedalboard</i> . 4 Gt/Pedal double touch thumb & toe pistons, 4 Swell/Pedal double touch thumb & toe pistons. Great-Pedal & Swell-Great reversible toe pistons. ¹ Contra Oboe rank ² Bourdon unit rank ³ Violone unit rank			

Decisions - The 2019 re-build

Organists who had played the instrument that Kingsgate Davidson had built felt that Martin Cross' work had made a great improvement although it had not been possible to address all the shortcomings. Martin Cross tuned and maintained the organ until his death in 2017. Tuning was continued by his associate, Richard Shepherd, who unfortunately did not have the resource available to carry out the considerable amount of work that needed to be done in 2019.

Generally, organs of the St. Giles type need cleaning and at least some repair work carried out at 25 year intervals. By 2017 the organ, which sees more use than many parish churches, had done considerably more than 25 years and some of the work carried out in 1963 had seen little attention for well over 50 years. Clearly a large amount of work would have to be done to put the organ into an acceptable condition. Fashions had again changed. The sort of work done by the likes of Kingsgate Davidson in the 1960s was now sneered at by some. One organ builder contacted described their *tonal* work as 'varying between dire and appalling'. It was right to consider whether this would be the right time to go for purchasing a digital organ.

Digital organ trials

The idea of an electronic organ had been considered in 1963 and in 1986. However, in those times electronic organs had been a very poor imitation of the real thing. The technique of digital sampling, which (putting it somewhat crudely) involves recording and processing recorded sounds from really good pipe organs, had changed this so that many people would not be able to tell the difference. On the other hand, the sound produced comes out of a few loud speakers, as opposed to well over a thousand organ pipes and the DOA warned that a digital organ would not sound good in St. Giles. He also came up with what is a good rule of thumb: if you buy a digital organ you can have one as large as you like but were it to be a pipe organ instead, if you could not fit the pipes into the church then it would not sound right.

We had 3 digital organs installed on trial. They were all around the same size, larger in specification than our pipe organ and none would have fitted into the organ gallery had they been pipe organs. Actually, having instruments that were 'larger than they should be' helped those of us who were viewing objectively to pinpoint inadequacies. They were all 3 *manual* instruments as opposed to our own 2 *manual*. On a pipe organ, each *manual* or 'department' has its own distinctive characteristics and on the trial instruments tried the third *manual* sounded so like the other two that it was a bit pointless. Much music in church is easier to play with 3 or more keyboards, however many organists prefer to play a smaller instrument that is good rather than a larger one that is not. Modern playing aids make handling only 2 *manuals* much easier and more flexible.

All the trial instruments were demonstrated to us and then left with us for several weeks. Those demonstrating were, as one would expect, good at showing off their offerings in the best light, sometimes playing quite impressive organ music but when asked to show what the organ would sound like when used for such things as playing for a small congregation, a small choir, a large congregation, a large choir and everything in between that is expected of the St. Giles organ they did not come over so well. We were unable to judge how they would sound on the 12 or so occasions each year when the church has standing room only but certainly at well attended services the quality of the sound was quite poor.

It was not easy to make comparisons between the three instruments: the first was sent with a large number of speakers but, partly as their managing director was against the idea of 'de-tuning' (a subject for a thesis in itself) it actually sounded rather dull and was quite highly priced; the second company paid more attention to positioning of speakers, putting some inside the existing organ and those for the 3rd manual at high level in the chancel - this was supposed to make it sound different and distinct from the rest of the instrument - but it didn't; the third company, which was the one initially preferred by some, sent an instrument that seemed to have been fiddled about with tonally in previous locations. The demonstrator tried to make improvements to the *voicing* but failed, leading to some listeners actively disliking the sound. When the trial instruments were directly compared to the pipe organ the sound of the latter was much better, even though some of it had not seen much attention for over 50 years.

The main advantage of purchasing a digital organ would be the initial outlay which would be far lower, as are the maintenance costs because a digital organ does not need a regular tuning visit. Disadvantages are more difficult to quantify without the help of a crystal ball. The instruments usually need totally replacing after around 20 years (and one of the demonstrators was full of exciting developments in the pipeline for which an upgrade

would be available, doubtless at some cost, leading to a feeling that obsolescence was nigh). The standard of the consoles tends to be not as good, gismos abound but quality of workmanship is lower. However, an overwhelming disadvantage for the musical life of a parish is that many musicians, whilst they might have a home digital organ for practice (a great asset in the Winter when churches are freezing cold), do not want to play a musical instrument that is not real in church. Many good organists will not consider applying for a position in a church without a pipe organ which means that often when a parish has gone down the digital route the musical life has been adversely affected. It was decided to stay with a pipe organ.

The 2019 re-building

It was decided not to use an organ consultant but to seek proposals for suitable work from 3 organ builders. Having made the decision to continue use of the pipe organ, we started to go down the fairly long route towards having the necessary works carried out.

Organists all have their likes and dislikes, ideas and fashions change amazingly quickly. If a totally new instrument were made for St. Giles today it would be quite different from what has gone before but some of the ideals from the past would reappear: the size would be closer to the 1885 organ, the *action* would be mechanical as in 1885, the positioning would be West end as in 1963 and the console *registration* aids would probably look like something that the 2019 rebuild has. A totally new instrument would be extremely costly. Due to the limitations of the building, discussions on *specification* and siting, not to mention the casework, would possibly go on for years and the organ could not wait that long (indeed, had it not been re-built by 2020 when due to the situation caused by the Corona virus it was not in use for some time it would have deteriorated from lack of use and quite possibly have become unplayable). The most important thing about making the project a success was to make the instrument right for its purpose and as musical a sound as possible. The existing instrument was on borrowed time.

Proposals

A number of organ builders was approached for proposals. Several showed little interest in quoting, which may seem strange but all today's organ builders are relatively small, many only have a couple of employees and others specialise in work such as historic restorations and/or new organs, which was not what we needed.

Martin Cross had submitted a proposal before his death. He had known the instrument for over 30 years, which can be a big advantage in organ building, particularly with our sort of instrument which tends to be something of a curate's egg. Due to his death we could not progress his proposals but due to his in depth knowledge of the instrument some things that he had proposed were insisted upon when considering proposals from others. For example, the wiring system was all working and looked as if it could go on for a while, the keyboards looked as if they could go on with a bit of attention but Martin Cross knew how bad the state of these really was.

Bishop and Son, arguably the oldest established organ builder in the country, were approached and came up with interesting proposals. Generally, they were for keeping but carefully restoring everything that was there. Some things that us organists felt were fairly useless, such as the huge, inaccessible and untuneable Violone rank, could be greatly improved, they believed. (Martin Cross had tried in 1986 but had not been at all happy

with the result). They seemed to be against making use of developments that had taken place in the last 30 years, such as the use of *slider seals*, which are a cost-effective way of improving the way an old soundboard performs particularly with regard to tuning, and replacement of the pneumatic Swell Engine (very expensive to restore) with up to date kit. This approach would certainly be important if the instrument had some historic 'integrity' but ours does not.

FH Browne & Sons, also another long-established builder, seemed more inclined to offer the sort of work that we felt would be right for St. Giles and also offered state of the art replacement of *actions, transmission system* etc. rather than restoring or revamping the old. In consultation with the *DOA* we drew up specifications which they re-quoted to. Particularly attractive to us was their commitment to turn the instrument through 90 degrees so that it spoke in the right direction – layout was not considered to be that important in the 1960s but today it is considered to be key in producing a properly cohesive sound. A visit to a recently completed project showed generally good workmanship and in particular the wood work was of a very high standard. We visited their workshop which was well equipped and they were finishing a new mechanical *action* organ, which many of us consider to be 'real' organ building. Their price for what had now become a re-build was around 10% less than the competitor's and included for much more, particularly as they had included for re-orientation which effectively meant re-construction.

The decision was taken to progress the project with FH Browne & Sons

F H Browne was established in Deal, Kent, in 1871, by Frederick Henry Browne, an apprentice of William Hobday, a Canterbury organ builder. The business expanded rapidly in the UK, and as far afield as Egypt and Canada. Several of Browne's sons joined the business, which also included the manufacture of pianos and a music shop selling sheet music, pianos and other instruments. The firm relocated to Canterbury in 1906, under the directorship of William, Frederick Browne's eldest son. Various members of the Browne family assisted the running of the company after the death of William less than a year after the move to Canterbury; it was Alfred Willey, an apprentice from before the First World War, who kept the company running right through until the end of the Second World War. The company was then re-formed as F H Browne & Sons (Organ Builders) Ltd, with Alfred Willey (as Managing Director) and Harry Fagg steadily expanding the company until 1982 when they both died. A new partnership of Roger Greensted (an apprentice since 1963), Reginald Cobb (another employee) and Gordon Chapman (a local organist) was formed, presiding over the move to the Old Cartwright School in Ash (near Canterbury) in 1983, which was the location of the company office and workshops at the time of the St. Giles re-build. Stephen Bayley, the current Managing Director, became an apprentice of F H Browne in 1994. In order to broaden his experience, Stephen joined N P Mander (Organ Builders) in 1998, working on a number of prestigious projects, including the Royal Albert Hall organ. In 2010, Stephen returned to F H Browne and in 2013 became Managing Director. The company is now run by Stephen Bayley, Yvette Bayley and Michael Keays, who is also organist at Aylesford Parish Church. At the start of 2020 the company re-located to a new purpose-built premises in Stourmouth near Canterbury. Brownes have more than 600 organs in their care for tuning and maintenance. In August 2020 Brownes purchased the trading name and intellectual property rights of N.P. Mander, who had gone into receivership and had been responsible for re-building the largest organs in the country, such as the Royal Albert Hall and St. Paul's Cathedral, along with numerous new instruments and restorations of historic organs. From October 2020 FH Browne traded as Mander Organs and have several ex Mander employees among their staff.

Faculty

A faculty has to be applied for from the Diocese in order for work of this nature to be carried out. Whilst one would hope that the Diocese would be nothing less than enthusiastic about a project such as this one, it has to be remembered that for a parish this kind of thing happens once in a generation so often no one in the parish, including the organist, has any experiences to draw upon. The cost is high, it is important to ensure value for money and usually all sorts of ideas for doing things more cheaply float about. The organist may want to have improvements made that might be great fun for the organist but not for the Parish. The instrument might be an example of an organ builder's work that needs to be kept exactly as it is and correctly restored and some are listed. Cue the Diocesan Organ Adviser, who has to act as an (unpaid) referee and ensure that what is proposed is sensible. The DOA is almost invariably an organist within the Diocese, sometimes the Cathedral organist and if the work proposed is involved with retaining the pipe organ he will be there as a friend, keen to see that things are done as well as possible. If, as in St. Giles' case, there is no architectural or structural implications then it is effectively the DOA's approval and recommendation to the Diocesan Advisory Committee that leads to the faculty being granted.

When a parish wants to retain and improve a pipe organ rather than remove and/or replace with something other than a pipe organ the DOA is likely to walk up the aisle with a smile on his face. Paul Isom, the Rochester DOA, knew the St. Giles organ well and had played it for services with both its 1963 Kingsgate Davidson and its 1986 Martin Cross specifications. As the updating of the *actions*, proposed re-orientation of the pipework and console refurbishment gave possibilities for making improvements to the sound and flexibility of the instrument without large additional cost a meeting was held with FH Browne and we agreed changes in specification to suit the present use of the organ as far as is practical.

St. Giles accommodates around 220 people. Regular Sunday services include both modern language Common Worship services, Mattins, Choral Evensong and Communion from the 1662 Book of Common Prayer with congregations often numbering more than 100 and sometimes less than 15. On at least 12 occasions a year there are people standing, occasionally even in the bell tower, Narthex and outside onto the path. So the organ has to be capable of making a big sound to support congregational singing but also very subtle sounds for accompanying the choir alone. This is asking quite a lot, many cathedral organs don't achieve it – often they are biased towards accompanying choir services.

Summary of work carried out

- Cleaning: Entire organ to be cleaned. Whilst there was a high build-up of general dirt to be cleaned out, the time-consuming part is cleaning and repair of pipework, which is delicate due to the nature of the metals used and is very easily damaged.

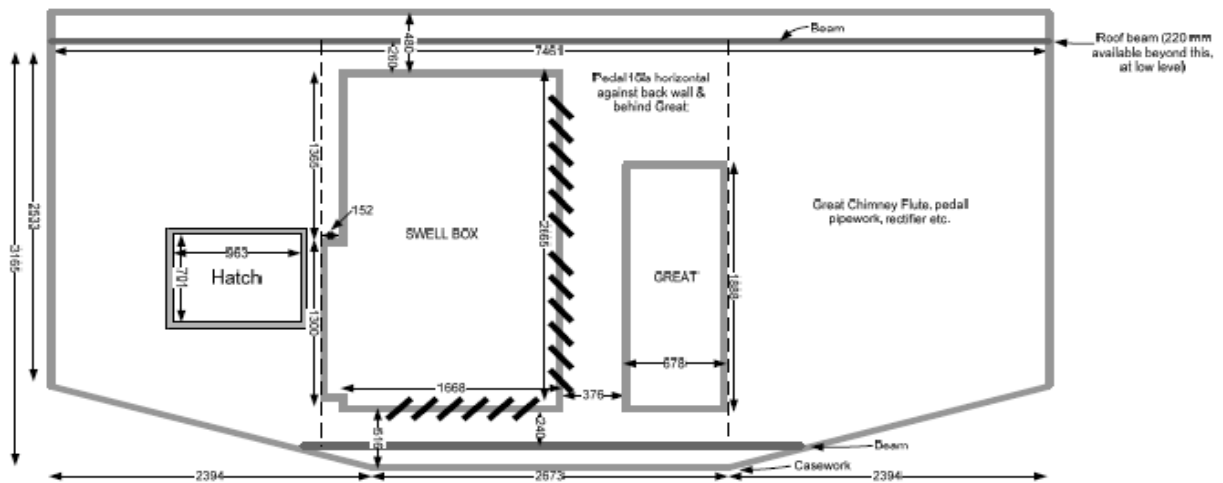


Dust & dirt build-up to Great pipework

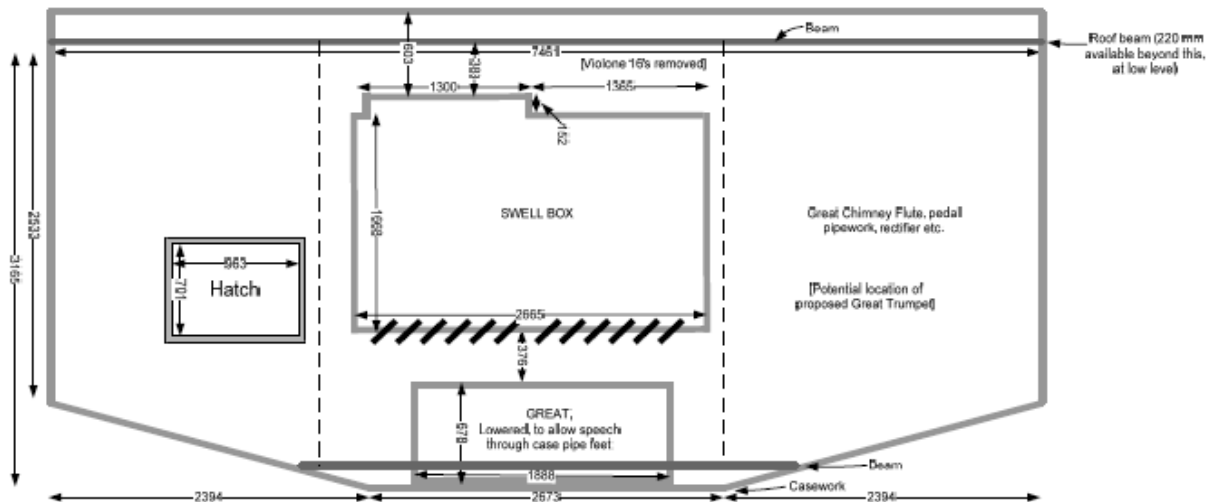


Great pipework cleaned, speech reset and re-located

- Rotation of the organ through 90°: This was quite a complex process and also involved removal of the big and rather poor horizontal Violone pipes. Due to the apex roof and beams numerous pipes had to be mitred to fit in their new positions, a few had to be mounted horizontally, some soundboards had to be lowered, the *Swell box* had to be altered substantially. (The visible front 'display' pipes which are in their original position hide the fact that behind the facade every pipe is now in a different position from before.)



1986 Layout



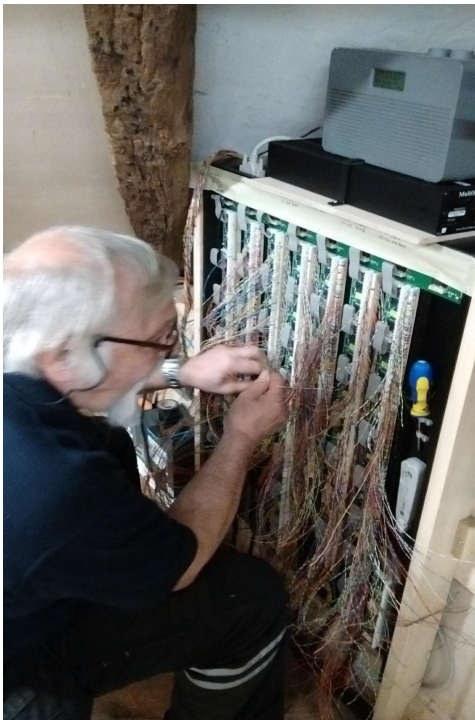
Proposed 2019 Layout

The 'proposed' drawing is really conceptual as during the works various layout changes had to be made in order to allow satisfactory access for tuning and maintenance. The *Swell box* was extended to the rear and the back of it is now formed by existing wooden panelling on the West wall. The Great flute rank is positioned to the left of the rest of the Great pipework. Larger pedal pipes are distributed around the gallery, several are horizontal and the largest two are mounted on top of the *Swell box*.

- Re-electricification: This was a major part of the works. All the low voltage wiring system was replaced with the same state of the art kit that is found in cathedrals and large churches up and down the country. The armoured cable between console and organ, which had hundreds of wires and ran under the floor, was replaced by a single Cat 5 cable run at high level. Whilst most of the wiring in the console was done in the works, most people would not have realised when walking into church that for almost 6 weeks Andrew, the wiring man, was up there soldering thousands of joints. The new system included up to date playing aids – adjustable *pistons* with 100 levels - and also allowed some of the tonal changes made to be done at negligible cost.

Processor



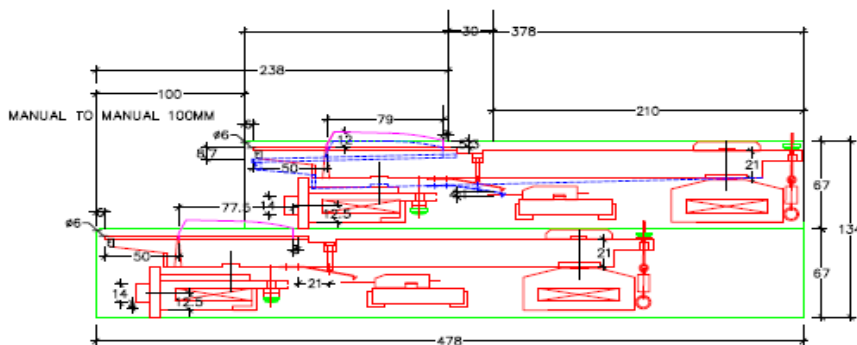


SSO Multisystem II in the organ gallery – wiring in progress



Lockable piston control panel on console

- **Key & pedal refurbishment and action:** The old keyboards, which were not of the best quality, were in a very poor state and needed replacement. The 61 note compass was pointless, since the compass of the soundboards was only 56 notes, so the top 5 keys did nothing. New 56 note keyboards were manufactured by a specialist keyboard maker. Due to the shallow depth of the console the keyboard mechanisms could not be made to the standard pattern so were specially made. The pedal board was refurbished in the workshop and all the electrical contacts replaced.



DETAILS

2 MANUAL 56 NOTES
 EURO OAK CHEEKS AND SLIPS
 CHEEK HEIGHT 67
 BIRD'S BEAK PROFILE (MOULDED)
 IVORY RESIN COVERINGS
 IVORY RESIN KEY FRONTS
 ROUND BACK EBONY SHARPS AS DRAWN
 MANUAL TO MANUAL 100MM
 4 WIRE KA SILVER CONTACTS FITTED
 CABLE EXIT END FOR CONTACTS STD P+S TREB END
 CABLE EXIT END FOR PISTONS STD P+S BASS END
 14MM IVORY RESIN PISTONS SKINNER

PISTON ENGRAVING STYLE—Sans Serif; numbers to fill half of piston height, centred. Gens & Divs — Black, else Red.
 Bushing —Dull green
 Piston Layout as per P+S drawing

Key cheeks width 42 NOTE DIM BETWEEN CHEEKS WILL BE 780MM
 Cable lengths key contacts to REGISTERS 2.5M FROM END OF KEYS
 Cable lengths key pistons to REGISTERS 2.5M FROM END OF KEYS

To follow:

Colour sample IN POST FROM CUSTOMER

REVISION C
 FOR APPROVAL

JOB — M Brown & Sons
FILE — New Keyboards, C102 For approval
DRAWN — TT DATE 1-11/2018
SCALE — 1:1
APP. — [Signature] DATE 1-11/2018 rev 0
REV. NO. — 1
REV. — A
P&S P&S ORGAN SUPPLY CO. LTD. Ltd. Specialists in Pipe, Stacks, Organs, Accessories and more. 100, High Street, Belper, Derby, DE9 1AG

Manufacturing drawing for keys and pistons



New specially manufactured keyboards



Pedals removed for refurbishment



New pedalboard electrical contacts fitted

- Stop actions: These were replaced with new slider solenoids.



New Swell slider motors

- New underactions: magnets etc. replaced as appropriate



New direct electric action magnets set up for fitting to Swell Soundboard

- *Swell shutter* electrification: The bulky and complex pneumatic *Swell Engine* was replaced with a state of the art 16 position *Swell Engine* which allowed space for the re-orientation and was far more effective.



Swell engine components

- Pipework: Re-work of existing pipework (variously through discarding, re-scaling and enhancements) in all divisions, which included
Great Mixture II reworking (to add breaks)
Swell Trumpet 8' revoicing
Repair of Great Chimney Flute rank the chimneys of which which had been gnawed by rodents(!)
Additional pipework for newly extended stops - Swell Oboe, Great Dulciana, Pedal Major Bass and Bourdon. Most of this came from pre-used pipework that Brownes had in stock, with the exception of the Great Mixture where some new pipework was used.



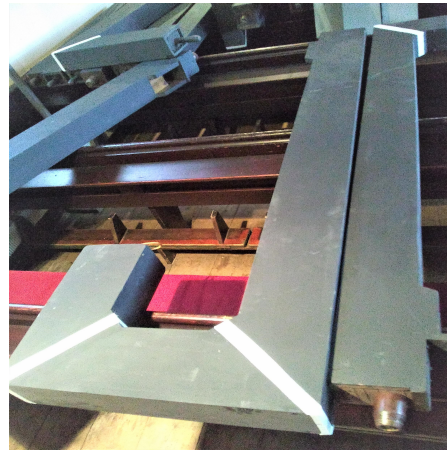
Damaged Chimney Flute Pipes



Chimney Flute Repaired and Re-located



New Pipework for top of Great Mixture



Mitred wooden pipework awaiting installation

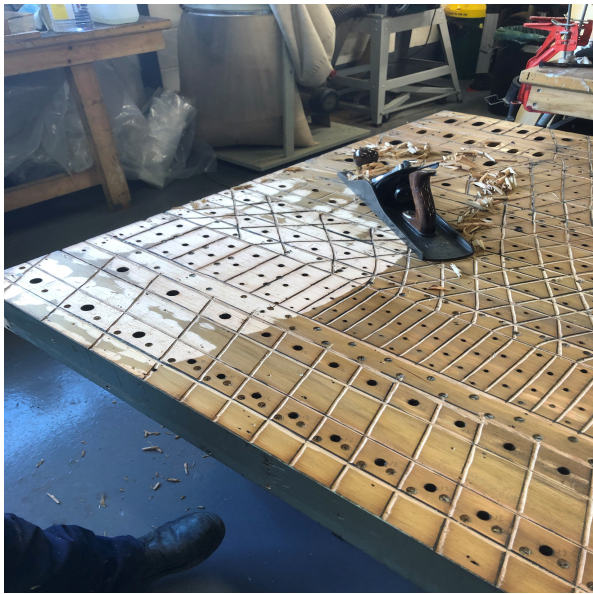
- Re-voicing: Post-works assessment of the need for further re-voicing following the reorientation of the organ, particularly the upper work on both Swell and Great
- *Swell soundboard*: Restoration to modern more tolerant standards. The soundboard was found to be in an extremely poor state when dismantled and in addition to the expected repairs to cracks in the wood etc., all the sliders had to be replaced and slider seals were fitted. Power motors and pallets were repaired and re-leathered.



Worn out synthetic leather



Cracks in Swell soundboard



Workshop repair of soundboard



Workshop Repair of Swell underactions

After the works were completed it was found that the Swell action did not function acceptably – some notes were extremely slow. New underaction magnets were fitted, effectively changing the action to direct electric.

- Console refurbishment: Some of the console was not built to what are now 'standard' dimensions, making playing unpleasant, even difficult. (One could argue that Mr. Davidson should have been made to consult the non-existent Mr. Kingsgate about this shortcoming but as the standards that UK organists expect was not properly documented until the late 1960s this would not have helped.) In particular, the pedalboard was not in the correct position, the keyboard height above the pedal board was too great and the keyboard overhangs were slightly wrong. All these were corrected. The music desk had also done duty as a lockable console lid but was repositioned slightly lower and fixed in order to improve the player's vision of conductor and choir. Security was provided by having the transmission system and blower operated with a key. Alterations were made to accommodate the new transmission system and keyboards. All stop keys were replaced so that they matched up. New playing aids included 6 thumb and toe *pistons* to each manual and 6 General *pistons*, all of which are adjustable. The original specification of the adjustable *piston* system included a rotary switch which allowed settings to be memorised on 12 levels. When the system went to manufacture we were offered a digital display with 100 levels at no extra cost, which was marvellous news. Settings for music that needs complex registration can be set up, stored and easily altered. This feature had been omitted as it was going to cost an extra £1K. If we had known that it was to be included we would have included stepper pistons, however they are more useful for performance of organ music rather than service playing.



1963 console with 1986 alterations



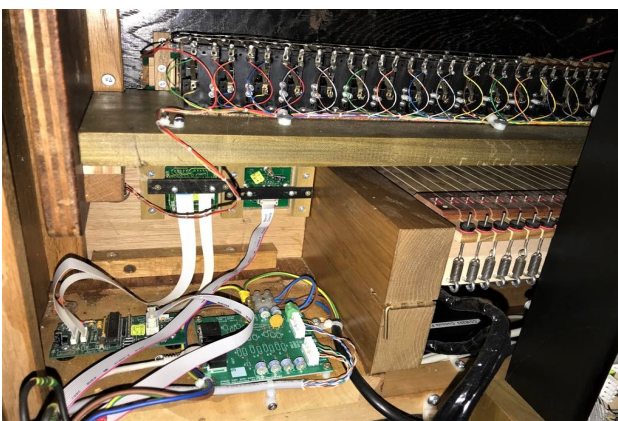
Inside 1963 console showing electro mechanical switching and piston wiring loom



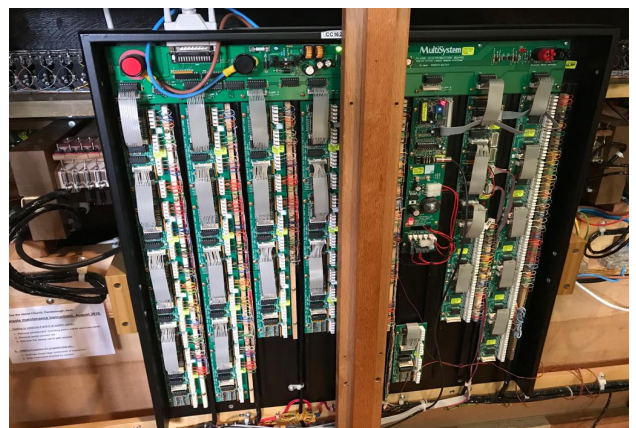
Workshop refurbishment - new keyboards and pistons fitted



Complete refurbished console



Inside refurbished console - Stop tabs and keyboards



Inside refurbished console - Transmission system

2019 Specification

Swell		Great	
Geigen Diapason	8'	Bourdon ²	16'
Gedact	8'	Open Diapason	8'
Salicional	8'	Stopped Flute ²	8'
Voix Celeste (TC)	8'	Dulciana ¹	8'
Octave Geigen	4'	Principal	4'
Fifteenth	2'	Dulcet ¹	4'
Nazard	2 $\frac{2}{3}$ '	Chimney Flute ²	4'
Tierce	1 3/5'	Octave Quint ¹	2 $\frac{2}{3}$ '
Mixture	2rks	Fifteenth	2'
Contra Oboe ⁴	16'	Mixture***	2rks
Oboe ⁴	8'	Oboe ⁴	8'
Cornopean ^{**}	8'	Trumpet	8'
Tremulant		Swell to Great	
Solo Trumpet * (from Great)	8'	Swell Octave to Great	
Swell octave		Great to Pedal	
Swell suboctave			
Swell unison off		Pedal	
Swell to Pedal		Major Bass ³	16'
Swell octave to pedal		Bourdon ²	16'
		Quint Aedigius ³	10 $\frac{2}{3}$ '
		Principal	8
Great & Pedal Combs Coupled		Bass Flute ³	8'
General Pistons on Swell Toe Pistons		Fifteenth	4'
		Flute ³	4'
		Contra Oboe ⁴	16'
Direct electric actions. Detached stop key console. 6 Gt/Pedal thumb & toe pistons, 6 Swell thumb & toe pistons. 6 General pistons. Great-Pedal, Swell-Great & Swell-Great reversible thumb pistons. Great-Pedal reversible toe piston. Setter Piston, General Cancel Piston. ¹ Dulciana <i>unit rank</i> ² Flute <i>unit rank</i> ³ Major Bass <i>unit rank</i> ⁴ Oboe <i>unit rank</i> * Swell Solo Trumpet silences all other stops on the Swell manual but they still couple to Great. **Old Swell Trumpet re-voiced. ***Great Mixture re-cast with new pipework.			

The new digital transmission system means that some things that were expensive to achieve in the past can now be done at negligible cost. We have made as much use of this facet in the tonal improvements as practical without 'extending' stops as far as in 1963.

1. The Dulciana *rank* was extended somewhat wildly in all directions in the 1963

instrument but cut back to the basic 8' pitch in 1986. However, the Chimney Flute rank added at that time was quite a big sound so left nothing much that was soft on the Great, therefore the Dulciana has re-emerged as a more modestly extended rank.

2. The Chimney flute *rank* on the Great has been extended down to 16' pitch to form a Pedal Bourdon. It seemed sensible to have it available at this pitch on the Great as well. It has also been used on the pedal as a Quint 102/3'. There was a bit of argument over this. Previously the old Bourdon rank has been used to form a 'Resultant', a stop that is supposed to simulate 32' pitch but it needed a vivid imagination to believe in it. Frankly, a Pedal Quint extended from another stop does not do much better and if there had been any cost implication we would have scrapped the idea altogether. To compromise we made the stop 102/3' pitch for the bottom octave and then revert to 32' pitch for the rest of the pedal compass. As it is therefore not quite the Quint stop that a player would expect it has been given the special name 'Quint Aedigius'. Aedigius is Latin for St. Giles. So we can be proud that we have added yet another word to the almost endless list of organ jargon.
3. To compensate for the loss of the big but almost useless Violone rank, the original Pedal Bourdon rank has been 'beefed up' into a Major Bass by moving all the pipework up a tone, adding 2 large pipes at the bottom and another 10 at the top to allow for extension to 4' pitch.
4. The Swell/Pedal Contra Oboe was an 8' stop in the original Michell & Thynne organ and is now again available at 8' as well as 16'. For the cost of a stop key it was also possible to have it available at 8' on the Great manual which adds flexibility.
5. The only *stop* that is entirely 'new' is the Trumpet. This was quoted as an option but was not economically viable at its extra £10K cost so was to be 'prepared for' in that the stop keys and wiring would be fitted for the rest to be added at a later date.. However, the DAC strongly recommended that we found a way to go ahead with it – it has to be said that very often 'prepared for' stops are never added which means that the project is never actually completed. A second hand *rank* of pipes was sourced and Brownes made a new *chest* in their works, offering it all for a total of £2K, so we went ahead. We have made the most of it by having it available on both manuals, as a chorus reed on the Great and as a 'solo' stop on the Swell.



Great Trumpet stop on new wind chest

Wind pressures, which were rather high, at around 4 1/2" to compensate for the previous pipework positioning have been lowered as far as practical, to around 3 3/4".

Specialist items and/or work were sourced from as near as Swanley and as far as the USA and came from the following:

Action parts & Stop Keys	Kimber-Allen
Underactions (Swell)	Otto Heuss Orgelteile GmbH
<i>Swell Engine</i> :	Peterson Electro-Musical Products Inc.
Keyboards:	P&S Organ Supply Co. (UK) Ltd.
Transmission/Capture Systems:	Solid State Organ Systems
<i>Voicing</i> :	David Frostick
New pipework for Great Mixture:	Kevin Rutherford

Several ancillary items had not been included in the organ builder's remit but, for a number of good reasons, the orders were placed through them. These were: erection of scaffold, alterations to mains electrical supply and provision of new task lighting in the organ gallery, provision of temporary toilet facilities and the gilding of the casework display pipes.

Scaffold and Mains Electrical

The scaffold was an important part of the project as it had to include platforms for working and storage due to lack of space in the church and also had to allow for large parts of the instrument to be lifted down to floor level for removal to the works - but it also had to leave room for a coffin to be carried up the aisle at a funeral! It became part of our lives for 9 months.



Scaffold at West end

Alterations to mains electrics took place at both ends of the church. This involved supplies to current standards for the new actions in both console and gallery. The lighting in the organ gallery had been almost non-existent and dangerous: groping and crawling one's way around the filthy and cramped organ was not for the faint hearted. Organ builders have traditionally not liked to have too much lighting because the temperature of the bulbs affected tuning but use of LED tube lighting has solved that problem and along with the internal layout changes the instrument is now totally safe to work in.

Organ Case Pipe Gilding

The scheme did not include for any alterations to the organ case, which meant that, apart from the refurbished console, when the works were finished there would be no visual evidence of what had been done in spite of the fact that behind the front pipes everything looks totally different. The pipes in the case are from the front of the original organ and had been decorated three times in their lives, most recently painted gold.

During the works it was decided that the display pipes should be gilded. We soon realised that gilding organ pipes is not quite as simple as it sounds as they are quite difficult to handle. Fortunately, there is a gilder who specialises in this work and is a member of the Institute of British Organ Builders.

Robert Woodland & Son (Bob the Gilder)

All work on the organ itself had to stop while the gilding of the display pipes took place as it is only practical to do it on site. Robert, well known in the organ building trade as Bob the Gilder, arrived, with his extremely able associate Debra, along with one of the organ builders who made two wooden frames to hold the pipes while they were being gilded in the West gallery. The St. Giles display pipes were particularly difficult to work on. Some of them 'speak' while others are dummies and make no sound at all. The largest are mitred - bent over at right angles, some of them twice, about 2/3 of the way up - to fit under the roof of the gallery. What they all have in common is that they have been decorated three times before, so much careful preparation had to be done before gilding.

'Unsocial hours, this gilding business' muttered Bob as he arrived in the morning to start gilding the first pipes. He and Debra had left St. Giles at 8pm the night before, having sized the pipes due for gilding the next day. The gold leaf has to be applied at the right time, 15 hours after sizing and then brushed to make a smooth finish. The pipes had to be left in their temporary framework for at least 3 weeks for the gilding to harden enough for the pipes to be moved from their temporary framework and even then the handlers need to wear white cotton gloves and handle them very carefully. While they were waiting for the gilding to harden, Bob and Debra went up to York Minster to gild pipes there. The pipes were then moved to the scaffold, decorated in a style that reflects the original decoration from Victorian times and replaced in the case.

The gold becomes darker over a couple of months but it will always be a delicate finish. This causes problems for the organ builders, who would normally want to move these pipes in and out of position whilst regulating them and others behind them. Because every organ is different and therefore has different issues to be addressed organ builders are used to thinking outside the box and the organ builder involved with this part of the work came up with ideas to minimise the handling required. Once the scaffold was removed it would not be possible to regulate the front pipes and as their speech needed attention much care was taken to see that they were right before it was too late.

'You'll find these pipes sound much better now they're gilded and decorated' said Bob. It seems he was right. They were among the worst sounding pipes in the organ. They were made using Zinc, which has the advantage of the pipes not 'collapsing' over time due to their weight, as large pipes made from lead alloys can, but the disadvantage of making a sound that booms and rattles. An afternoon of carefully blowing out excess gold and silver, followed by careful *regulation*, made them sound better than they had ever sounded, possibly even in the original 1885 organ.



Applying gold leaf to sized pipes



Brushing gold leaf



Rector organ builder and organist all lend a hand passing up pipes through the scaffold!



Transferring a large mitred pipe from West gallery to organ case



Decorating pipework



Victorian pipe decoration revealed



Close-up of decorated pipework



Finished case

The organ was rededicated by Bishop Holland on Sunday 13th October 2019. The Senior and Junior Choirs and the Let's Sing Together Group joined together to form a choir of around 45 voices (which is not an easy number to manage in the St. Giles chancel). Choral works sung at the service: The Heavens are telling (Haydn), O thou the central orb (Charles Wood), Like as the Hart (Herbert Howells), Holy Holy Holy (Schubert) and I was glad (Hubert Parry). Organ music: Chelsea Fayre (Reginald Goss-Custard), Aria (Noel Rawsthorne), Festive trumpet tune (David German) and Sinfonia to Cantata 29 (JS Bach arr). Unfortunately the opening recital by Daniel Moulton, scheduled for 9th May 2020 after the final review and fine tuning was to have taken place had to be cancelled due to the Corona Virus lock-down. The final regulation and tuning was done in September 2020.

'Opening' Recital - Daniel Moulton

Due to the Corona Virus Pandemic this took place more than a year later than originally planned, on Saturday 25th September 2021

PROGRAMME

War March of the Priests	F Mendelssohn (1809-1847) arr W.T.Best (1826-1897)
Study No.4	R Schumann (1810-1856)
Toccat, Adagio & Fugue in C (BWV 564)	JS Bach (1685-1750)
Study No.3	R Schumann (1810-1856)
Fantasia in F minor for a mechanical organ (K608)	WA Mozart (1756-1791)

INTERVAL

Extracts from The Royal Fireworks Musik La Réjouissance & Minuets	GF Handel (1685-1759)
Elegy	George Thalben-Ball (1896-1987)
Variations for Pedals on a theme by Paganini	George Thalben-Ball (1896-1987)
Variations on 'I got rhythm'	Harold Britton (b1923)

2022 Tonal Revision - Swell *Corno*ean

The result of an organ re-build project such as this one can never be perfection, there are too many factors in the way to achieve that. However, we made one mistake that really detracted from an otherwise very successful project. This was the re-voicing of the Swell Trumpet stop in an attempt to make it a *Corno*ean, which has a more 'rounded' sound. The pipework had not been well made in the first place, some of it was made up of oddments and it had always not only been the worst stop on the organ, it tended to go out of tune within a week of a tuning visit, making it almost useless. The result of the re-voicing was hardly any better. We should have known that you can't make a silk purse

out of a sow's ear - especially when the sow's ear is not the right size and shape!

In early 2022, a suitable rank of pipes became available from a United Reformed church in Epsom that was due for demolishing. They were purchased for the scrap value and put into storage for possible future use.



JW Walker Reed Pipe

This pipework was in extremely good condition, very soundly made using spotted (organ builders') metal that was almost the quality of pewter. The unusual design (closed 'pepper pot' at the top) meant that we knew that it had been made by JW Walker Organs during the early years of the 20th Century, when their work had a reputation of being really sound – more importantly that the pipes were likely to be suitable. We experimented with replacing a few of the existing pipes and it seemed that we were right. Changes would be needed to upperboard and rackboard and the bottom octave would not be suitable – due to the sizes the pipes would not fit. However, the bottom octave of the existing pipework was nowhere near as bad as the rest and could be modified to suit.

We asked the organ builders to give us a quotation for the required alterations, cleaning of pipework, voicing etc. and the cost, at £2500.00 + VAT, was far more than had been expected. However, it was decided to go ahead with the work.

The organ builders had by this time become known as Mander Organs and had employed some staff from the company of the same name, which had recently gone into liquidation but was known for building high quality new organs, also for re-building prestigious instruments such as The Albert Hall and St. Paul's Cathedral. Mander Organs had moved into a brand new purpose built works near Canterbury. The pipework was taken there for the pre-installation work to be done.

The new pipework was installed and voiced in the church in early August 2022, left to settle down and finally tuned and regulated at the end of September. It is a great improvement to what was there before and gives some of us the satisfaction of knowing that everything is now about as good as it can be.

Conclusion

Whilst organ tuners get to know a church's organ and its foibles through the years it is not possible fully to see the condition until everything is taken apart. When the organ had been dismantled it was difficult to see how it had continued to be useable for so long. Apart from the wear and tear that was evident, there were numerous cracks in the wooden soundboards, the leather used for the actions in the 1963 build was synthetic and had become totally brittle, some leather used in the pipework was in a similar state. Much of the wiring and electrical contacts in the console and in the organ itself was in a really bad way. The internal layout was such that the instrument was difficult for a tuner to work in safely and the poor state of the lighting in the organ gallery made it almost dangerous. The option that we took of doing a comprehensive refurbishment and upgrade, effectively a rebuild, rather than leaving some things for a few more years proved to have been a very good decision both musically and financially and we should now have a reliable instrument for many years to come.

We have gone further than just restoring and re-positioning what was there before, with a view to making the organ more suitable for the rather varied requirements that we have of it. When looking at the console 'before' and 'after' the instrument appears more comprehensive than it was, and also around 30% larger. Actually, the overall number of pipes has increased by only 48, from 1152 to 1200. The largest pipes in the organ, included in the pedal Violone rank (43 pipes in total), which took up a great deal of space and were of poor quality, have been removed. So whilst there are now more pipes they take up less space, allowing for important revisions in the internal layout – effectively, all the pipes that matter now face East (for low notes – i.e. the largest pipes – sound is less directional, so whilst in the best 'classical' layouts the pipes would stand facing East, it does not matter so much if the largest ones don't!). Every pipe is now in a new location and behind the front pipes the layout is entirely different.

The improvements in the overall sound are complemented by the refurbished console. The changes to make the dimensions to modern standards make it much easier to use. Improvements to the playing aids make a great difference, particularly when accompanying choral music. Whilst many organists might prefer to play a three *manual* instrument, the playing aids go a long way towards making up for there being only two. The revised specification also brings the bonus that some organ music which was not practical to play previously can now be played reasonably effectively.

We have tried to make the instrument suitable for St. Giles' present day needs. As fashions and the music used in church changes, ideas as to what is a suitable instrument will certainly change yet again but the general consensus from the organ playing fraternity seems to be that we have got it right for today's uses at St. Giles.

Some Organ Jargon explained

Actions: the systems which transfer the motion of the key to the pipes. 3 types are referred to: a) Tracker, which consists of mechanical linkages, used in the original St. Giles organ; b) electro-pneumatic, which is a combination of pneumatic motors, linked to the console by wiring and electro-magnets and was used for much of the 1963 organ; c) Direct electric, which involves magnets only: they pull down leathered pallets to let the wind into the pipe and are now used for most of the St. Giles organ.

Barrel organ: a mechanical musical instrument consisting of bellows and one or more ranks of pipes.

Cornopean: This is a solo and ensemble chorus reed stop of 8' pitch. It is supposedly imitative of the orchestral cornet, or *cornet à pistons*, originally a post horn with valves. It is essentially a trumpet type stop but of larger scale, having inverted conical resonators. The name comes from the Latin *cornus* ("horn") and the English *paean*, a hymn of praise.

Couplers: These look like *stops* but they are used for connecting one keyboard to another, or to the pedals. Other couplers make a keyboard play an octave above or below as well as at the unison pitch.

Chest: the pipes are mounted on these and the wind is supplied via them. The St. Giles organ has both slider and sliderless chests but perhaps we won't go into that until we get to soundboards.....

DOA or Diocesan Organ Adviser: Every Anglican Diocese has one. Usually professional organists, they are normally not paid except for expenses. Their job is to examine a church's proposals for a new organ/alterations or works to be done to an existing instrument and advise the Diocesan Advisory Committee on approvals for granting of a faculty. Whilst other committee members may become involved if changes to appearance (casework) or the building fabric are involved, they generally take his advice on the organ itself. In practice, the DOA is keen to help parishes find the right solution and many become involved in the planning of works.

Electric/Electro-pneumatic actions: As organs became larger and more complex, the mechanical or *tracker action* traditionally used to bridge the gap between player and pipes became rather heavy. Various ways of coping with this developed, including pneumatic (air operated) action, electric (effectively magnetic) actions and electro-pneumatic, which was a combination of both. This also allowed the console easily to be detached from the organ itself. See also Tracker action.

Extension: the use of non-mechanical actions makes action makes it quite easy to have a rank of pipes available at more than one pitch. This can save a considerable amount of money and also space but can make the instrument rather limited or 'boring' tonally if done to excess.

Great: The Great Organ at St. Giles is played by the lower of the 2 *manuals*. The louder 'foundation' sounds of the organ are here. What you hear is what you've got, you can only make it louder or softer by adding or subtracting *stops* (see Swell).

Manual: Basically, a keyboard. Organs have between one and seven but the majority have either two or three. At St. Giles, the lower keyboard is the 'Great Organ' and the

Upper is the 'Swell Organ'. See 'Pedal board'

Organ Pipes: Two main types: 1) Flue pipes: these could be thought of as lots of different sizes of quite sophisticated whistles; 2) Reed pipes, where rather than a whistle the sound is produced by a vibrating reed, similar to the way that a clarinet or oboe produces sound. The organ fraternity expresses the physical attributes of pipes in human terms. Perhaps this is because, just like like people, they have moods according to the weather, i.e humidity, temperature, air pressure etc. The sound and the tuning can be quite different on some days or when the church heating is on in the same way as a choir's sound and tuning varies. It's not easy to simulate these subtle changes by electronic means, electronic organs sound the same every day. Organ pipes have feet, mouths, ears, tongues, even beards. Every pipe is different and pipe making is a highly skilled job (making one *rank* of pipes can take a pipe maker around a month's work) but when the pipe maker has finished his job they do not make a sound, or 'speak'. The pipe *voicer* sets their speech. If he is good at his art he makes them 'sing'. If, as formerly at St. Giles, they face in the wrong direction he has to make them 'shout' so that the sound comes over effectively.

8', 4', 2', 16' etc.: These show the length of the longest pipe in the stop. If middle C on the stop sounds at the same pitch as Middle C on the piano the longest pipe is 8 feet long, if it is an octave higher the longest pipe is 4', an octave lower is 16 feet and so on. Some 'mutation' stops and Mixture stops do not sound at the normal pitch, they sound some notes higher so the longest pipe is a weird length, such as 13/5'. Just to complicate matters, if you put a stopper in the top of a pipe it sounds an octave lower, so for the almost all the so-called 16' stops at St. Giles today the longest pipe is only 8' long! Actually, there is not even room in our gallery for a pipe that is 8' long so some of the longest pipes are mitred (bent over) towards the top and a few are mounted horizontally.

Pedalboard/Pedal Organ: To many people this is what characterises an organ and is a keyboard but played with the feet. The layout of it is the same as a *manual* keyboard (with 'white and black' notes). The largest pipes of the organ are included in the Pedal Organ. In such things as hymns and anthems the pedals play the bass part, in dedicated organ music their involvement can be more (frighteningly) complex. In the UK pedalboards can be 'straight' or radiating and concave.

Pistons: See Registration aids.

Rank: basically a row of pipes. The St. Giles organ has a total of 26 ranks of pipes.

Registration: Stops are used singly or in various combinations to produce the desired sounds and volumes.

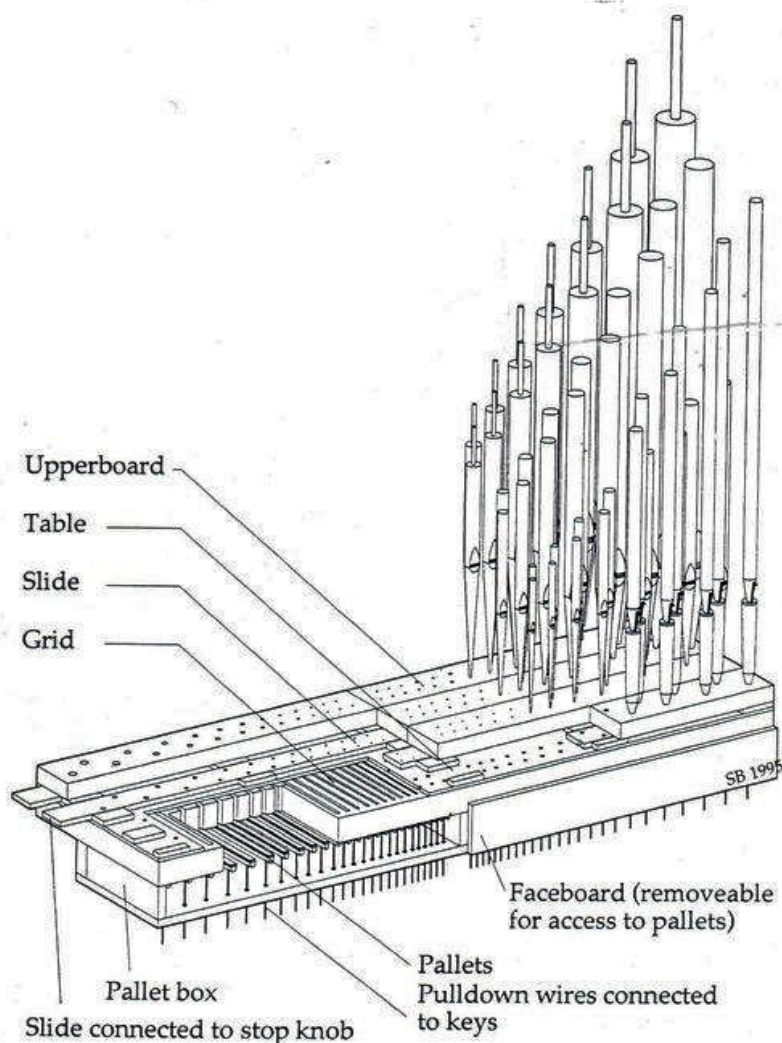
Registration aids: The toe and foot buttons - pistons - which put on pre-set combinations of stops and couplers. (our new system allows them easily to be changed and the settings to be stored.)

Regulation: the process of making each pipe 'fit in' with the other pipes in the rank, for example, making it louder or softer.

Slider seals: usually made of neoprene these look a bit like inedible Polo Mints and are glued on to the soundboard to make tuning more stable and to avoid leakage of wind into

the pipes when it's not wanted. A relatively modern development, not available in the 1960s.

Soundboard: The slider soundboard on which all the Swell Organ pipes at St. Giles stand, is quite a bit to describe, so hopefully a drawing will suffice. It should also demonstrate why the restoration of it takes so much work. The soundboard shown below has 4 *ranks* of pipes of various types standing on it. the soundboard in the St. Giles organ has 12 *ranks* so it is 3 times larger than the soundboard in the illustration. (It took around 6 people to manhandle it onto a hoist to get it out of the gallery for transport to the works.)



Specification: this boils down to a list of stops and couplers and ancillary features. Organ buffs love to read these and pontificate about them. They can be very useful if one is going to play a strange organ, as it will give an idea of what music is/is not possible to play or how it could be played. However, two organs with a similar specification can sound totally different. It's all part of the fun of being an organist!

Spotted Metal: sometimes known as Organ Builders' metal, this is an alloy containing varying proportions of lead and tin which makes it soft for forming into organ pipes and also makes a good sound. Organ pipe makers cast their own metal. What looks like spots or even the remains of bubbles appears on the surface.

Stop: while this really refers to a set (or rank/s) of pipes most organists think of it as a

component that admits air to one or more ranks of pipes. The name comes from the fact that stops can be used selectively by the organist; each can be "on", or "off". They might better have been called 'Starts'. On the organ console they are traditionally round knobs on either side but on the St. Giles console they are a row of tabs in front of the player (when it was originally made it was much cheaper to do it this way). Many names on stop labels show the type of orchestral instrument that they are closest to, e.g. flute, oboe, trumpet. Others, mainly what is known as the 'principal chorus' are more of a devoted organ sound, the basis of which is the Open Diapason.

Swell/Swell Box: The Swell Organ is so called because all the pipes are enclosed in a large box with shutters on the front, which is operated by a 'Swell Pedal' on the console; shut for soft, open for loud. It allows for crescendos (becoming gradually louder) whilst holding notes, one of the things a piano cannot do, and also diminuendos (becoming gradually softer). At St. Giles it is played using the top *manual* (See Great)

Swell Engine: This is required to operate the Swell shutters when the console is not close to the organ so it is not possible to do it by mechanical linkage. It used to be a bulky, pneumatically operated affair, now it's a fairly small box of electronic wizardry but still expensive!

Tracker action: The original way in which the keys were connected to the pipes – by a system of rods and rollers. Tracker action came to be considered obsolete during the first half of the 20th Century but many organists now consider it to be preferable and more musical so it is used in the majority of new organs. It is considerably more expensive and of course it is not possible to have the console located far away from the organ, as at St. Giles. See also Electric/Electro-pneumatic actions.

Transmission system: the way in which things done at the console (playing notes, changing stops) is transferred to the organ. Until digital systems were developed this was a fairly complex business involving hundreds of wires, sometimes even lead tubing. The former were sometimes gnawed through by squirrels, rats etc. while the latter was popular with thieves. Today a single cable is involved and is much more easily replaced.

Tonal work: A somewhat loose term to describe the art of making an organ not a collection of pipes but a musical instrument.

Unit rank: Describes a stop that has been extended so that it sounds at more than one pitch

Voicing: The pipe maker makes his pipes to the sizes and in the materials that the designer tells him to, however when his pipes are made they do not make any sound. The Voicer is the person who makes them sound, i.e. gives them a 'Voice'. He will do much of this on a Voicing Machine in the works and then finish in the building. Whilst organ building involves much craftsmanship it seems that good voicing technique is an art that can only be taught to an extent – very few people can do it really well.

Wind pressures: The amount of air blown through a pipe to make a sound, measured in inches using a manometer. The air pressures and velocities (speed) used for organ pipes are small but fairly critical: too much and the pipe 'overblows', too little and it does not make a sound properly. The wind pressure of the St. Giles organ is now 33/4" which is somewhat higher than pressures used in new organs today which can be as little as 2". Higher pressures of up to 15" or even more are used in some loud stops in large buildings.