

A History of Organs at The Presbyterian Church of Fredericksburg

by Amy Shirk, 10/8/2023

The Presbyterian Church was founded in 1808, and the current church structure built in 1833. The church suffered heavy damage during The Civil War, and records describe the rebuilding of the church between 1865-1866. However, there is little information on the early organs of the church, partly because all of the historical information pertaining to the early church was destroyed and lost in the Civil War. Any information about the church prior to 1865 has been preserved only through stories and memories passed down through the generations.

Between 1808 and 1832, The Presbyterian Church was located in a small wooden frame building on the corner of Charles and Amelia Streets. In 1906, Anne J. Carter wrote "Recollections of the Early History of the Presbyterian Church of Fredericksburg, VA.", and in this memoir, she said,

"The choir to which my grandmother ... belonged had no organ, but they sang their 'set pieces,' ... to the accompaniment of the bass viol..." *

Other references to the early choir include mention of Edwin Carter (an elder and Sunday School teacher), who died in 1878, and was a member of The Presbyterian Church choir for "more than 50 years." These descriptions of the members of the choir signify the importance of music and singing to members of the church from our earliest roots.

Although we know the first church structure did not contain an organ, what about the "new" church building, which was built and dedicated in 1833? Since records of the church before 1865 have been lost, we may never know. There are no known photographs or drawings of the inside of the church before 1865. Records of the rebuilding of the church after the Civil War describe how the carpets, pulpit, and pews that had been torn out were all rebuilt, but nobody knows if they were rebuilt according to how they looked before the Civil War, or if the sanctuary was redesigned. (We do know that in 1860, the pulpit, which was reportedly situated very high on pillars, was lowered down to a more reasonable height!) Additionally, there is no mention at all about the balcony area, and whether or not the balcony was torn apart and rebuilt as with the main floor of the sanctuary.

* From Wikipedia: The American bass viol, also called a church bass or Yankee bass viol, is a type of bowed string instrument which enjoyed popularity in early 19th century New England for use in aiding Puritan congregational singers. In its time of common use, the instrument was referred to as a bass viol, despite the fact that it more closely resembles a large violoncello than a bass viola da gamba (also known as a bass viol). The size and form of these instruments varies; many are uniquely proportioned folk instruments.

The earliest dated example of a church bass is from the maker Benjamin Crehore, made in Massachusetts in 1788. A particularly notable double bass luthier, Abraham Prescott, is known to have made 500 to 600 church basses, the earliest example dating from 1809. With the rising popularity of the reed organ in the 1840s, church basses fell into disuse.

If an organ existed between 1833 and 1865, it was likely a reed organ, which is a standalone instrument that needed to be pumped either by hand or with the feet. This type of instrument was very common in churches in the early 19th century.

The next reference to an organ does not appear until 1877, in which the minutes of a session meeting on September 9 of that year record the report on finances, which include salary amounts for the pastor, the sexton, and “organists” [plural].

So if a proper organ was not installed until (or replaced in) 1866, it likely would have been a smaller instrument that needed to be pumped by hand, but probably a more permanent fixture with actual pipes. This image of the organ can be inferred by the more concrete evidence of the organs of the church starting in the 1870s.

In 1880, the French Memorial Chapel was built, and it is very clear from the detailed descriptions of this chapel that the church members were very proud of this building! Fortunately, mention of the Chapel organ has been included:

“To the front of the Chapel was a large chancel... A pipe organ occupied the space to the right of the pulpit, with a small choir stall just in front of the console. The organ was pumped by hand from a hidden recess behind it.” *

We know that this organ, then, was the second of two co-existing organs at The Presbyterian Church. In these days before electricity-powered organs, it was common to hire someone to pump the organ bellows for the organist. A humorous insight into this practice describes the thankless and tedious job of pumping the organ bellows at The Presbyterian Church in the 1880s:

“The sexton at the time...was paid \$4.00 per week...to do all the work required at the church and chapel...[including pumping the organs]...When the sexton resigned, a replacement was found who would take the job [for only] \$3.00 per week as long as he wasn't required to pump the organ.

The deacons then found a boy to blow the organs of the Church and Chapel for all services including Sunday School at one dollar per month, beginning December 1, 1881.

This arrangement did not work out...because the organ blower, having proved unreliable...required the chairman to arrange for the new sexton to attend to the organ blowing hereafter, for the additional salary of \$1.50 per month for that service.” *

We know the Chapel organ lasted until the building burned down in 1954, from newspaper accounts about the fire that state:

“Also ruined was the antique wooden-traction organ, installed originally when the chapel was built.”

* To see some examples of hand-pumped organs, see these videos:
www.youtube.com/watch?v=b03Pes5JAm8
www.youtube.com/watch?v=tHoXn_dQQGY

In 1915, a new organ was installed in the Church which ran on electricity and didn't have to be hand-pumped. This organ was Opus 1346 by the Estey company, a well-known organ company of the era (the company closed in 1960). The original receipt for this organ (badly deteriorated) is in the church archives. The money for this organ came from the government's payout of checks to several Fredericksburg churches for Civil War damages.

“For some years [starting in 1903] the church had sought reimbursement from the United States government for damages done to the building...during the Civil War. [Finally in] 1915 the claim was paid. The money came just at the right time, for at a congregational meeting in November 1914, a committee had been authorized to make a contract for a new organ...

A payment of \$2650 was received. In June of 1915, Session [presented to the congregation] that all individual subscribers to the organ fund be hereby released from their obligation, and the trustees are hereby directed to appropriate the amount to be paid them by the U. S. Government...so much as may be needed to settle indebtedness on the new organ...” *

The 1915 Estey organ remained until our current Zimmer organ was installed in 1982. Complaints of the 70+ year old organ included that the leather parts and electrical switches and magnets that opened and closed the pipes had deteriorated.

“One of the major items in the ‘Mission for the Eighties Campaign’ was raising funds for the purchase of a new organ.

The new organ, built by W. Zimmer and Sons, has 9 stops, 13 ranks, and 800 pipes, of which 61 are reused from the old Estey organ. The same organ case [pipe chamber] was used, but moved back to give greater room for the choir. A new console [the keyboards and pedals] was built...

The new organ has a much clearer and brighter sound than the old organ...” *

A newspaper article from March 1983 claimed that the rest of the old organ was put into storage to eventually be sold.

The new Zimmer organ was slightly larger than the old Estey organ, with 13 ranks of pipes. The two working ranks of pipes that were saved from the old organ are still in our pipe chamber today.

* Unless otherwise specified, historical descriptions and information were taken from the book “History of the Presbyterian Church of Fredericksburg, Virginia 1808-1976” by Edward Alvey, Jr., including the supplements.

How the Pipe Organ Works

The organ is played by the manuals (keyboards) and pedals on the console. Our organ has two manuals. The upper manual is called the Swell, and the lower manual is called the Great. Above the upper manual is a row of tabs, called the Stops. The stops are divided into three sections—those that control the pedal pipes, those that control the Swell pipes, and those that control the Great pipes.

The pipes for the Great manual are near to the front of the pipe chamber. They can be turned on or off, but there is no control over the volume. You add volume by adding more stops, and reduce volume by deleting stops.

The pipes for the Swell manual are in the back of the pipe chamber and are enclosed in a box. The front wall of the box is a set of “swell shades” which look like vertical blinds. Those vertical blinds can open and close, which give a little bit (but not much!) of control over the volume of the swell pipes. You can see the swell shades in the photos.

Underneath are the pedals, which play notes just like the manuals. There is also a swell box pedal (it looks like the “gas pedal”) which opens and closes the swell shades. In the photos, you’ll also see 5 large silver buttons, called the Toe Studs.

The 5 toe studs correspond to the 5 Pistons (buttons numbered 1-5, which can be seen beneath each manual). These 5 buttons, then, can be pressed by either your fingers or by your feet. These pistons are a way for organists to program which stop tabs are up or down, making it easier and faster to change stops. To the far right, you’ll see one more piston with a letter C. This is the Cancel piston, and turns off (deactivates) all stops at once.

To the right of the manuals is the Memory Select panel. This is a computer panel with buttons that scroll through the numbers 1-32. Each level from 1-32 can program those 5 pistons. I tend to use level 1, and instruct visiting organists to choose any other level to program the pistons for their use. This way, nobody is reprogramming my 5 pistons when I’m gone.

Pipes are generally grouped into four categories, by the type of tone they produce—principals, flutes, strings, and reeds. The names on the stop tabs are usually never in English, but translated, they mean very easily understood terms, like Flute, Trumpet, Bassoon, Clarinet, Strings, and Principal (which just means your basic organ sound!).

The numbers on the stop tabs refer to the octave designation. The 8’ stop is the regular octave sounding pipe. A 16’ stop will sound an octave lower than regular pitch. Conversely, a 4’ stop will sound one octave higher, and a 2’ stop will sound 2 octaves higher.

By combining these different octaves, we can essentially play 3-4 different octaves of notes by playing just one key. Combine this with the different tones (ranks) of stops, and that’s how organists can create big sounds by playing common chords of just 3-4 notes.

2023 Organ Rebuild Details

When talking about our aging organ, the most common comment I get from others is, “the organ sounds good to me!” I think it’s important to distinguish between the different parts of the organ and understand exactly which parts are in need of repair and replacement.

First, the pipe chamber. This is the part that most people imagine in their minds when talking about a pipe organ. Apparently, our current pipe chamber is the same chamber that was used for the 1915 Estey organ. In 1982, when the Zimmer organ was built, the existing pipe chamber was reused, but pushed back to make room for the choir. I’m assuming that means pushed back against the porch wall. If, in 1915, the pipe chamber was reused from whatever organ was previously there, that previous organ would have needed to be pumped by hand, probably from behind the pipe chamber, explaining why it wasn’t up against the wall to begin with. In 1915, the new Estey organ would have kept the pipe chamber in the same place, even though electricity required that the organ did not need to be pumped by hand anymore. This is just speculation, though, and not based on any evidence of the previous organs.

It’s been told to me by visiting organists that the design of the pipe chamber is a great example of architecture common in the 19th century. I think most of us will agree that its design fits our sanctuary perfectly! We are not planning on changing the exterior appearance of the pipe chamber in any way.

Inside the pipe chamber is, obviously, all of the pipes, but also the fan (electric blower), the tubes that carry the air to the pipes, the “bellows” (which are really pressure tanks for the air), and a board of electronic circuits and switches.

According to our organ technicians (the Lewis & Hitchcock Organ Company), the pipes are in fine condition, even the two ranks of pipes that have been saved from the 1915 Estey organ (the wooden square pedal pipes, and a Celeste rank, which can be seen in the photos). It hasn’t been proven for sure, but the gold facade pipes in the front of our pipe chamber are probably pipes also taken from the 1915 Estey organ, spray painted gold and used as decoration. They are pipes that are not connected to the wind chest, and don’t actually play anymore.

The organ pressure tanks are sealed with white leather tapes (see photos) and are a component that eventually will deteriorate and leak air. I’ve been told that the average life span of that flexible material is about 40-50 years. Although there are currently no leaks that we’ve found, it would make the most sense to replace those seals as part of the renovations, as they are now 41 years old.

The fan (blower) and air tubes are currently working as well, but may be replaced during renovations if it is determined that they need to be upgraded. There are also some parts of the wind chests in which the sliders that open and close certain pipes are not functioning correctly. In the photos, you can see two pipe cleaners that have been jammed into pipes in order to disable them. This is not because the actual pipes don’t work, it’s because the slider mechanism that controls the air to the pipes is unreliable, so we’ve had to disable the pipes to keep the air from going through them unexpectedly.

Inside of the pipe chamber, the pipes are separated into two groups (divisions)—the pipes that are controlled by the upper manual (Swell), and those controlled by the lower manual (Great). The swell box shades in the front of the swell box seem to be working fine now. Years ago, they were malfunctioning and not responding to the swell pedal. Inside the swell chamber, there is a thin piece of board to separate some ranks of pipes from each other (this has to do with the Celeste rank, which is intentionally slightly detuned from the neighboring pipes to give an orchestral or vocal ensemble effect). This board has warped over the years, causing the board to push against some of the pipes and knock them out of tune. Technicians over the years have tried to stabilize the board, but it still pushes against some of the pipes.

Next, the console. This is the piece that needs the most attention. Each stop controls a rank of pipes, and each key opens a specific note for each rank. Our organ has an electro-pneumatic action, which means that each key controls the notes by wires and magnets and electrical current. The pedals also control their notes the same way. In contrast, a tracker mechanism has an actual, physical connection between each key and the pipes behind the console (the organ in the Episcopal church across the street has a tracker action).

If we open the top of the organ console, you'll see that the inside is mostly hollow. There is a circuit board with rows of wires and computer chips that control the action of the manuals, pedals, and stops. The control panel inside the pipe chamber has similar wires and chips.

I arrived at The Presbyterian Church in 1998, when the organ was only 16 years old. Within about a year, the pedals stopped functioning. The technician at the time disassembled the pedal board and found that there was only one contacting wire per pedal. He explained that normally, there are 4 wires per note. With only one wire, the wires were worn out from "electrical arcing" and needed to be replaced. They took out the entire pedal board for rewiring, and promised to return it by Sunday. On Sunday, I went up to the loft and found that the pedals were not returned, and had to play the service on manuals only!

During my first few years here, I complained to the technicians about the tuning issues - the swell pipes, especially, were constantly out of tune. The technicians blamed that thin piece of board next to the Celeste rank, which was pushing against the pipes and causing them to go out of tune. They tried to stabilize the board by attaching a "spine" to it and forcing the board to straighten out. It helped a little, but the board still pushes against some of the pipes.

Other electrical issues popped up here and there, including the inoperability of the swell shades, and in 2002, the Rappahannock Organ Company (our previous technicians) offered to completely rebuild the organ console. It seems that the Zimmer Organ Company cut a lot of corners in building the organ, and after only 20 years, there were enough electrical problems that it was proposed that the best solution would be to rebuild the console. An official proposal was sent to Allen Fisher on January 30, 2002. The proposal outlined the complete removal of the console, and cleaning, repairing, and rebuilding it with new wires, magnets, and circuits. Part of the proposal was adding a little more functionality by the addition of more pistons, and a few more

stops (not more pipes, but doubling up on existing pipes to give a fuller sound). Keep in mind that the organ was only 20 years old at this point.

Unfortunately, the upgrades and repairs were never done because right around the same time, a renovation was happening in the sanctuary, and the wallpaper unexpectedly came down, more than doubling the cost of the renovations. The organ repairs were put on hold. Instead, the technicians installed one stop tab to move the one reed rank (8' trumpet) down on the Great manual; and removed the old-fashioned toggle switches that were used to program the 5 pistons, and replaced it with the current LCD panelboard, which was reused and repurposed from an old retiring organ.

Over the years, the electrical problems have only gotten worse. I usually leave notes on the organ music rack for the technicians, detailing the problems with notes not playing, or electrical issues, so they can try to fix it when they come to tune the organ.

The Memory Select panel (which is a used piece of equipment) very often “scrolls” through the numbers 1-32 when I first turn on the organ. The only way to make it stop is by pushing the up button. Once it stops, it won't happen again until the following week. The technicians have never been able to reproduce the problem, so after several years of this issue, it has not been fixed.

One Sunday, about 6-7 years ago, after the choral introit, I pushed the cancel button, but nothing happened. I pushed the button again, and wires fell down to my knees! I quickly tucked them up under the keyboard, held the wires in place with post-it notes, and during the service reprogrammed piston #3 to be blank, effectively creating a cancel button. Later, John Copley was able to attach the very thin and worn wire back to the cancel button.

Mary Ann has already recalled the story from two years ago, when I showed up to practice on choir dedication Sunday, and after just a few minutes of practicing, the spring for the middle D pedal (one of the most commonly played notes, since it is in the middle of the pedalboard) broke. With no spring to push the pedal back up, it was stuck down, and constantly on. Les and Milton promptly went to work on coming up with a solution to fix the D pedal. With some paper wedges and bungee cords, they were able to raise the D pedal back up again, but not without disabling it. I spent the last few minutes of my practice session reworking the pedal passages in my music, in order to avoid the middle D pedal.

The pistons don't always work reliably. There are times when I push a piston, and instead of engaging the correct stops, all of the stops flutter up and down rapidly. At first, it was only the number 5 piston, which is the one that is used the most often. In trying to fix it, the organ technicians replaced the actual button. Instead of using normal piston buttons, the Zimmer organ company used common doorbell buttons. So the technicians picked up a blank doorbell button from Lowe's, and replaced the number 5 (you'll see in the pictures that our number 5 piston is now blank). However, the fluttering still happens on occasion, making the pistons unreliable enough that I usually hand-register the stops instead of using the pistons.

All this to say that every so often, something unexpected goes wrong with the organ. I can't ever predict what component is going to fall apart next. And for the last 20+ years, we've been patching it up with band-aids instead of addressing the real

problem, much like the way we were constantly dealing with our aging HVAC system before the Education Building renovations.

As a friend recently said to me, we all replace our phones, tablets, and computers every few years, because anything older than that is outdated technology. The Zimmer company kept low cost in mind when building this organ, and our organ is now struggling to function on 40 year old wiring and computer chips. An update is sorely needed!

The Lewis & Hitchcock organ company is proposing a complete rebuild of the console, along with some minor repairs in the pipe chamber. As part of the rebuild, they and we agree that adding new functionality to the organ would also be a welcome addition. The rebuild will include 10 pistons and toe studs, and add a crescendo pedal. These functions are standard on most organs—it's actually unusual that our organ does not include those things. The Memory Select panel will be taken out and replaced with something more reliable.

But as with the pipe chamber, we believe that the design of the console is perfect for our church. Even though stops, toe studs, and pistons will be added, most people will not notice any difference in the appearance of the organ console.

Because it's not possible to add more pipes to our current pipe chamber for lack of space, and because enlarging the pipe chamber is not a project we'd like to embark on at this time (because changing the interior of the church usually involves the Historical Society), we've asked about adding some digital ranks to our organ. This is a very common solution to recent rebuilding and expanding projects. In fact, the Methodist Church behind us had many digital ranks included in its organ rebuild back in 2008.

The digital ranks require that speakers be installed inside the pipe chamber, although one larger speaker will likely have to be installed outside the pipe chamber.

I believe that the \$96,000 estimated cost of this rebuild is very reasonable. In contrast, rebuilding the entire organ is cost prohibitive right now. The average cost of a new pipe organ is currently about \$25-30k per stop. That means a brand new organ that is the same size as our current organ would be about \$350,000-\$400,000. Keep in mind that this does not include any expansion or improvements - just replacing the organ with something of a similar size and nature. If we were to replace our current organ with something that was expanded or improved upon, we should expect the cost to be \$500,000+.

An organ that is built with quality in mind, not just cost, will last. Our Zimmer organ was built very cost-efficiently, which means after only 40 years, it needs a lot of attention.

Please feel free to come up to the organ to view the console and pipe chamber after our presentation.

More information on the value of a pipe organ can be found here:
From The Associated Pipe Organ Builders of America
A Guide to Purchasing a Pipe Organ
<https://apoba.com/guide-to-purchasing-a-pipe-organ/>