

St. Timothy Lutheran Church

St. Paul, MN

Reuter pipe organ, Opus 1677, 1969

From the builder

by David Engen
Grandall and Engen, Maple Grove, MN

Background

Ever since it was installed in 1969, the 14 rank Reuter organ, Opus 1677 at St. Timothy Lutheran in St. Paul has been derided and complained about by every organist employed there. Complaints were that it was too harsh, didn't have enough variety, was always out of tune, etc., etc. Many reports were written and proposals considered for most of its life.

In 1979, its tenth year, organ technicians Gould and Schultz attempted to address this tide of complaint by adding two ranks (Swell 2' Principal and Great 8' Rohrschalmey) in space prepared by Reuter, and replacing the 16' metal Bourdon with an oak Subbass with greater foundation. Unfortunately, these changes didn't really address the fundamental musical issues the various organists had sensed without being able to articulate them.

The room has a complex roof that conspires to suppress reverberation, reflect treble, and concentrate heat in the gallery. The organ is in the back of the gallery on its own platform, in front of several north-facing windows. The angled ceiling panels above the organ reflect treble into the nave but do little to help the lower pitches. Carpet in the gallery, main aisle and a large chancel platform adds to the lack of room response. Addition of a second 2' Principal did eliminate a 2' unit extension of the Swell Rohrflute, but didn't help address the "lack of variety" and "harshness" complaints. Because of its snarly tone, the organists have consistently avoided using the Rohrschalmey. Furthermore, these changes did nothing to address the pernicious tuning issue.

The 30+ year old console and relay were replaced by Reuter around 2000. The new and beautiful console was equipped with a huge number of prepared stops in all divisions. Perhaps it was thought that by adding stops – eventually – the complaints would cease. It was not clear to us where those new ranks could fit in the available space. Meanwhile, to avoid confusion from having so many prepared tabs, the organists had placed narrow sticky notes over the dead stops.

Appraisal

Paul Westermeyer, recently retired from Luther Seminary nearby, was called in to offer an opinion in 2013 or 2014. The general “fault” was attributed to extensive unification, although for being only 16 ranks (in 2014) the organ's unification was actually quite minimal. Dr. Westermeyer recommended to organist Sara Drinane that we be brought in to offer our opinion since we care for the organs at the Seminary.

When I walked into the church and looked up at the organ from the main floor, I recognized it. I had played it for a wedding not long after it had been installed, somewhere around 1970. Sara provided copies of the significant number of reports and complaint documents assembled during the years, and we tried to absorb the scope of what was going on. The complaints were unending! We sensed from the narratives that we were looking at a group of symptoms recorded by a succession of very fine organists and not at the real source of its problems.

When asked to appraise an instrument such as this, we like to play it, listen to it around the room, and most significantly, tune it. Listening to individual pipes during the tuning process can be quite revealing about speech and blend. Indeed there were numerous voicing problems that showed up during this process.

This instrument was clearly lacking in variety. At only 14 original ranks, Reuter was doing what they could to create an economical church organ in a less than sympathetic room. In some ways the organ was being blamed for lacking sounds that were never designed into it due to economics. It's like blaming a bicycle for not being a car.

The heart of the organ – the Great Principal Chorus – was weak and flutey, with a non-breaking 2-rank mixture. The 8' and 4' principals were too soft to inspire any response from the room, that we felt the poorly-speaking mixture was the source of the harshness complaint. These pipes did not speak well, and none of the notes locked in tune. The two 8' flutes (Swell 8' Rohrflute and Great 8' Bourdon) were colorless and almost identical in tone and volume. There was no independent 4' flute, and both manual 2' stops were Principals. Of the two reeds, the Swell Trompette was fairly fiery while the Great Rohrschalmey was so buzzy that even the current organist never touched it. In later correspondence with J. R. Neutel, president of Reuter, we discovered that all pressures were a bit low.

Perhaps the greatest revelation happened during a pre-Christmas tuning. The furnace was cycling on and off, bringing the exposed Great pipes up and down in pitch each furnace cycle while the pitch in the Swell didn't move at all – due to lack of circulation inside the swell box. Here finally was the source of the tuning complaints – the divisions were almost never in tune with each other even though they sit side by side! The odd roof lines tend to concentrate the heat in the balcony from an overly-aggressive furnace, with numerous vents surrounding the balcony at floor level, bathing the organ and choir in too much heat.

We are enthusiastic supporters of “root cause analysis”, and after the first complete tuning we had a lot

of information to mull over in arriving at a workable, affordable solution. We looked at the organ from several perspectives, including console capacity and available space inside the organ – which was pretty much non-existent at that time. The two original straight manual chests couldn't be changed substantially, but the entire pedal was on individual unit chests, and some of the manual basses were on unit chests as well. These can be moved! We also had the biggest nine pipes of the original 16' metal bourdon sitting – unused – as a facade in front of the Swell, while the bottom end of the Great 8' Principal was on the floor at the back in front of a window on a unit chest. Chimes were hanging in front of another window, awkwardly in the way for servicing the Matters relay sitting under it. A scheme began to emerge that would give us space to add a few new ranks by moving some of these chests around and making better use of the space. Thus began one of the most complex rearrangements we've ever attempted. Each addition required something to be modified or changed, all in sequence like a house of cards. Through all of these changes we foolishly agreed to try and keep the organ working on Sundays – something we will NOT do again!

House of cards

Early on we decided the organ needed a more independent pedal. The pedal had only two ranks of its own. One of the complaints had been the imprecise pedal. Our original plan was to cantilever a new pedal chest over the stairwell, but structurally that couldn't be done without significant and expensive engineering. In working with members of the church who found the original structural drawings of the balcony, we instead found we could cantilever a small chest over the heads of the choir, directly in front of the Great. This new chest now holds an 8' Gedeckt, a 4' Choralbass, the repurposed pipes of the Rohrschalmey at 4', and a 2' Mixture III repurposed from the original Great Mixture II. The cantilever hangs slightly more than a foot in front of the Great.

This new and independent Pedal division was the first entry in this sequence. We then removed the two chests added in 1979 (Great 8' Rohrschalmey and Swell 2' Principal) to take the organ back to its original layout with preparations. We took the biggest 12 pipes of the 16' Rohrbourdon out of the Swell and moved the 8' Rohrflute unit chest to the back of the box where the 16' had been, opening up enough space for a new chest to hold a 4' Koppelflute, 1-1/3' Quint, short compass Cornet III and a new 8' Oboe.

The next installment came when we moved the bass end of the Great 8' Principal out from its window location to the unused chest in front of the Swell box, freeing room on the floor at the back. Visually the 8' Principal replaced the abandoned 16' metal bourdon. Unfortunately these pipes didn't look the best, so we had to repaint them for facade use. The chimes were in the same area in back, so they moved to the stairwell where they can now be seen (the donors like that). We now had room in back to just barely squeeze in a new 16' Trombone that extends to an 8' Trumpet on the Great. The Swell 16' Rohrbourdon found its way into this same area, along with the majority of the pedal 8' Octave and the upper end of the 16' Subbass. The unit chests allowed this to be rearranged without undue difficulty.

One financial contributor to this project was quite elderly and all were concerned she would not live to see it completed. For her we started almost a year before doing the major work by revoicing the 8' and 4' Principals on the Great. We found that they were of the same scale, so we added a new pipe at tenor C in the 8' to make it one note larger than the 4'. In the process we found that in its 40+ years the toes of all pipes in the 4' range of both ranks had closed under the weight of the metal above. This was true in all spotted metal pipes – both principals and flutes. By opening them up again we found the foundations could be made considerably bigger and actually “moved” the air in this dead room. This may have been closer to what was originally voiced by Reuter. We had these two foundations reinstalled in time for Christmas, 2014. The overall effect of the organ changed so much that some thought the project was complete!

The same closed toe problem was found in the manual 8' flutes. When they were opened up again these stops took on much more interest and color, and they now sound different from each other.

We completed the changes on the Great by replacing the 2' Fifteenth with a 2' Piccolo (harmonic) and, with minor chest changes, replaced the 2-rank mixture with a standard octave-breaking 1-1/3' Mixture IV. The old Fifteenth and Mixture II became the 2' Mixture III for the expanded pedal.

Patience on all fronts

We are forever indebted to organist Sara Drinane who exhibited a great deal of patience as various parts of the organ came and went for the better part of a year. From week to week she was never sure what would be working. She was always cheerful and flexible. For a few Sundays she was able to use the piano when we found it simply too difficult to keep the organ working. As a company, we learned a lesson that we really should not try to keep the organ working while such extensive work is going on. It adds a lot of overhead.

Sara also worked with us while doing the tonal finishing in the room. In spite of best intentions, voicing new stops and revoicing old in the shop is sometimes just an educated guess. While the 8' and 4' Principals on the Great were very successful right away, the enhanced treble effect of the angled ceiling made the new Mixture too much to take. In a bigger room with reverberation it would have been glorious, but we had to soften the entire thing for this space.

The 16' Trombone/8' Trumpet turned into a long labor of love. Shallots and boots came from Booth in England, but without tongues. We cut new tongues from reed brass supplied by Laukhuff in Germany. Tim Duchon made resonators and assembled the parts to deliver a full-length trombone to us that was too tall for our shop ceiling. In fact, when we went to install in the church, in spite of measuring ahead of time, we found that low C was just slightly too long to fit without hitting ceiling beams. We had Tim miter the resonator. Without being overly loud it adds quite a bit to the full ensemble. Its smooth character is completely different from the Reuter Trompette in the Swell. The leathered shallots in the bass add a welcome gravitas and definition to the pedal.

This organ never had a soft reed, and given the acoustic character of the room we were concerned that an oboe might come off as just another trumpet. We opted for completely capped resonator tops, which gives it a closed, almost choked quality that, surprisingly, works quite well and contrasts nicely with the two trumpets. The Rohrschalmey received lids to tame it, and it works well in the pedal. On listening to it from the pews, Sara commented “I might even use that thing now!”

And the tuning problem? We think we solved it by adding two silent Panasonic fans in the back of the swell box to constantly draw room air through the shutters. So far we've made it through one winter and are not aware of having that acute tuning issue anymore. We also have made sure that most of the heating vents in the balcony are covered so the organ doesn't get the direct and immediate blast from the furnace.

We ultimately increased the organ from 16 ranks to 29 ranks and revoiced almost everything for the new scheme. There is very little unification left, and what's still there is fairly easy to work around. By embarking on this complicated rearrangement, we used “root cause analysis” to try and remedy all of the complaints that had accumulated over the years. The organ certainly has a lot more color possibilities and is much more fun to play!

Shop staff:

David Engen, president, tonal director

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From the Organist

by Sara Drinane

St. Timothy Lutheran Church in St. Paul is a vibrant congregation of just under 1,000 members. The congregation is supportive of Music Ministry. I have served the congregation for twelve years, balancing the position with a public school teaching career and family. Prior to my arrival, there had been a steady stream of fine organists using St. Timothy as a springboard to more satisfying positions. I was convinced that the condition of the instrument was partly to blame for the high turn-over.

For the stability of the program, action was required. We needed an instrument that could capably lead congregational singing, accompany, and perform classic organ repertoire. Grandall and Engen were

recommended, and to our delight, accepted the challenge. They are skilled and creative technicians, tenaciously tackling each problem as it arose. Most importantly, they are experienced church musicians, sensitive to the needs the church organist. The process of educating the congregation, fund-raising and renovation was systematic and steady. We made haste slowly, with an outcome well worth the wait.

Original organ, 1969, 14 ranks

GREAT

8'	Principal	61 pipes
8'	Gedeckt	61 pipes
8'	Rohr Flute	From Swell
4'	Octave	61 pipes
4'	Rohr Flute	From Swell
2'	Fifteenth	61 pipes
1-1/3'	Mixture II	122 pipes
	Chimes	

SWELL

16'	Rohr Gedeckt	12 pipes
8'	Rohr Flute	61 pipes
8'	Viole de Gambe	61 pipes
8'	Viole Celeste TC	49 pipes
4'	Spitz Principal (not tapered)	61 pipes
4'	Rohr Flute	12 pipes
2'	Rohr Flute	12 pipes
1-1/3'	Larigot	61 pipes
8'	Trompette	61 pipes
	Tremulant	

PEDAL

16'	Bourdon	32 metal pipes
16'	Rohr Gedeckt	From Swell
8'	Octave	32 pipes
8'	Bourdon	12 pipes
8'	Rohr Flute	From Swell
4'	Super Octave	12 pipes
4'	Rohr Flute	From Swell

Revised organ, 2016, 29 ranks

GREAT

16'	Rohrflute	From Swell
8'	Principal	61 pipes, rescaled 1 note larger at C13, restored voicing
8'	Gedeckt	61 pipes, restored voicing
8'	Rohrflute	From Swell
4'	Octave	61 pipes, restored voicing
2'	Piccolo	61 new Tim Duchon pipes, harmonic
1-1/3'	Mixture IV	244 new Tim Duchon pipes
8'	Trumpet	61 new Tim Duchon pipes, boots from Booth
	Chimes	

SWELL

16'	Rohrflute	12 pipes, 1-12 moved outside swell box
8'	Rohrflute	61 pipes, restored voicing
8'	Viole de Gambe	61 pipes
8'	Viole Celeste TC	49 pipes
4'	Principal	61 pipes
4'	Koppelflute	61 pipes, recycled from First Baptist, St. Paul
2'	Octave	61 pipes, added in 1979 by Gould and Schultz
1-1/3'	Quint	61 pipes, rescaled larger
2-2/3'	Cornet III	87 new Tim Duchon pipes, from G20
8'	Trompette	61 pipes
8'	Oboe	61 new Tim Duchon pipes
	Tremulant	New, by Arndt

PEDAL

32'	Untersatz	Bourdon resultant
16'	Bourdon	32 wood pipes, added in 1979 by Gould and Schultz
16'	Rohrflute	From Swell
10-2/3'	Quint	From Swell
8'	Octave	32 pipes
8'	Gedeckt	32 pipes, from First Baptist and Rochester Covenant
8'	Rohr Flute	From Swell
4'	Choralbass	32 new Tim Duchon pipes
2'	Mixture III	96 pipes, Fifteenth and Mixture II from Great
16'	Trombone	12 new Tim Duchon pipes
8'	Trumpet	From Great
4'	Schalmey	32 pipes, added in 1979 by Gould and Schultz