

# The American Organist

October 2017





# ST. MARY'S CATHOLIC CHURCH

AUBURN, NEW YORK

1890 CARL BARCKHOFF PIPE ORGAN • RESTORED BY PARSONS PIPE ORGAN BUILDERS

BY DAVID MCCLEARY



The organ set up in the workshop for testing without its case

The 1890 Carl Barckhoff organ at St. Mary's Catholic Church, Auburn, New York, is thought to be the builder's largest extant organ, and unlike most of the organs of its period, survives in relatively unaltered and undamaged condition. These two factors, combined with Barckhoff's exceptional tonal design and the fact that the organ continues today as the primary instrument of the parish, made it imperative that it receive the restorative attention necessary to continue its mission.

When we approach any restoration project, we weigh the value of restoring the instrument as a historic artifact. Restored in this manner, we would first divest the Barckhoff of any modifications and then preserve or reintroduce the organ's originally-specified components, all using historic methods and materials. In contrast, we also consider the value of a restoration that would be respectful of the historic nature of the organ, yet

would incorporate a limited amount of modern materials in crucial areas to improve its longevity and function. This second approach would not jeopardize the organ's Organ Historical Society Citation (No. 397), nor the unique historic character and function. In consultation with the pastor and director of music and considering the organ's rigorous schedule at St. Mary's, we arrived at a consensus that it should be restored according to the second approach.

Organbuilders at Parsons devoted some 7,000 hours to the restoration. The work included restoring deteriorated pipework and repairing severely cracked wooden parts, strengthening key and stop-action components to ensure reliable operation through seasonal changes, replacing missing components, replacing crumbling and rotted leather, stabilizing and strengthening structures such as windchests, pipe racking, and internal passage boards, and finally, refinishing the chassis.

With the exception of the electric blower, the Barckhoff organ operates entirely without electricity, using thousands of mechanical parts. During the restoration, each of these sensitive wood, metal, and leather parts was painstakingly adjusted, cleaned, and rebuilt so that each note plays quickly and evenly. Pallet springs were regulated and wooden tracker guides were precisely modified and relocated for optimal performance. Dilapidated and tired felt tracker square bushings were replaced with a modern, friction-free material, and felt bushings were removed from specific action points to make the key action more responsive. In each instance, as much original material was retained as possible. All parts were cleaned, adjusted, repaired, and renewed during the restoration.

In addition to the straightforward restoration of existing components, we were challenged to address a known shortcoming of the organ: the lack of accompanimental bass stops to balance with the otherwise bold sound of the organ. The Swell 16' Bourdon was incomplete, lacking its all-important bottom octave, and the Pedal division did not include any reed stops. To gain insight into the appropriate construction and positioning of these pipes, we visited this instrument's sister organ in Lancaster, Pennsylvania. Following this visit, we provided new pipes to complete the Swell 16' Bourdon, matching Barckhoff's scaling, materials, and construction techniques.

Adding the 16' Trombone to the Pedal division presented a bigger challenge. To start, we located and restored a rank of vintage 16' Trombone pipes with wooden resonators. Through careful planning, the Trombone was added to existing Pedal chests by building a new toeboard that accommodates both the existing 8' Violoncello and the new 16' Trombone. The toeboard is situated at the front of the windchest, with both stops sharing a single stop mechanism. Pulling the stop drawknob halfway engages the Violoncello alone, while a full draw adds both the Trombone and the Violoncello. In this way, we were able to add the 16' Pedal Trombone tastefully and respectfully, without any significant visible alterations to the original console or drawknobs, and with minimum alteration to the windchests and internal stop actions.

An electric blower generates wind, which first passes into a preliminary pressure regulator known as a static reservoir, which quiets and stabilizes the wind supply. Both blower and static reservoir are located outside the organ case in a remote,



Pipework in the Great division



Detail of facade stencil design by Marylou Davis

climate-controlled room. From the static reservoir, wind passes through wooden wind ducts to the newly constructed double-rise reservoir described below, where pressured air is stored and stabilized for the manual divisions, and to a separate reservoir for the Pedal division.

Some history is needed to understand the changes to the winding system. In the early 1950s, when the Barckhoff's original double-rise reservoir failed, the technicians had elected to replace the large and bulky reservoir with several smaller single-rise reservoirs, because it would have been impossible to restore the large double-rise reservoir without dismantling the entire organ. At the same time the original reservoir was broken apart and removed, some of the original wooden wind ducts were also removed and replaced with metal ducts. Because the winding system is the "lungs" of the organ and affects tone, Parsons felt that it was critically important for the winding system to reflect the original builder's intent. New wooden wind ducts and a new double-rise wind reservoir were crafted to serve the Swell and Great windchests after the style of Barckhoff's other extant organs. A separate reservoir for the Pedal windchests was retained for wind stability. To prevent the dilemma that had occurred with the original double-rise reservoir, Parsons specifically engineered the new double-rise reservoir to offer access for repair and restoration in place.

Over the years, previous repairs had resulted in an unresponsive and unreliable stop action. In addition, the original Barckhoff tremulant was present but unable to function correctly, due to the introduction of an oversized flexible wind duct and springs on the reservoir added in the 1950s. In our restoration, we replaced the flexible duct to the tremulant with an appropriately sized zinc duct, and with the return of a weighted double-rise reservoir, the restored tremulant functions as Barckhoff intended, and provides the desired undulating effect that had not been heard in years. Pneumatic stop actions were carefully restored to the original Barckhoff specifications. The pre-set, all-mechanical combination pistons and mechanism were restored, and the original piston settings were put into place. In sum, the original Barckhoff stop action, wind system, and various mechanical parts were restored, not simply as separate parts, but as a functional, integral whole, keeping an eye to Barckhoff's original intent, nonetheless insuring complete reliability and function.

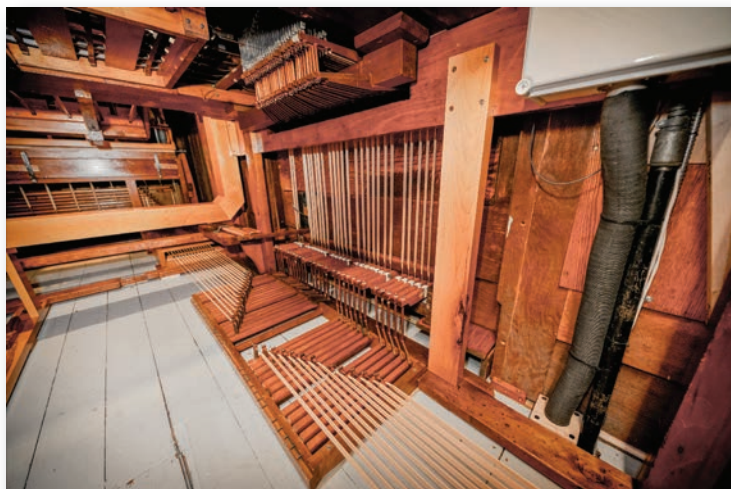


During the course of their existence, the windchests suffered from low humidity and the effects of modern heating systems, and the original supports had proven to be inadequate in preventing warping and stress, particularly in the Pedal division. Wood had cracked beyond the point of repair causing pipes to speak when not called upon. Wind leaks had affected pipe speech and volume, and caused significant audible wind noise. To remedy these issues, critical windchest surfaces were removed, and replaced with level, high-quality void-free birch laminates designed to ensure longevity. A proper floor frame and supports were added to improve the structural integrity of the windchests, which, though robust, had been inadequate to support the weight of the organ's pipes. Lastly, an internal humidification system was installed to keep the various wooden and leather parts stable during winter months.

Although every component plays a key role in determining the quality of the sound, nothing is as important as the pipes, with their unique construction, careful voicing, and tonal finishing. In the many years since 1890, the Barckhoff's 1,546 all-original pipes had become deteriorated and worn. Tonal Director Duane Prill worked methodically to restore, repair, regulate, and voice each pipe, while remaining respectful of the Barckhoff voicing style. Jonathan Ambrosino assisted with the on-site tonal finishing process.

Parsons was able to restore most of the organ's pipework, but even before the restoration process had begun, we knew from the organ's history that, in addition to the usual deterioration of time, the speaking facade pipes had been damaged severely on one occasion, and poorly repaired over several other occasions, to the extent that few of the pipes were speaking. No repairs could reverse the damage and deterioration, so high-quality replica pipes were therefore necessary. Jacques Stinkens Pipe-makers copied the original pipes' specifications, tone, and appearance in their workshop in the Netherlands. After the replica pipes arrived in the United States, Marylou Davis, an art conservator specializing in the conservation of painted and gilded surfaces, created an original design with an eye to the architecture and colors of St. Mary's Church. Together with Ms. Davis, Ellen Parsons and Bridget Byrne painted and stenciled the new facade pipes over a period of three weeks in Woodstock, Connecticut. Detail of the stencil pattern can be seen in photos that accompany this article.

While our goal for this organ was preservation, not modernization, we incorporated a few select adaptations to make the organ more serviceable and reliable. Passage boards and ladders were improved to ensure safe access for tuning and repairs. To address the heavy key action and the resulting playing difficulties (indeed, a common reason so many 19th-century mechanical-



Key action

action organs were "modernized" with electric action), we used modern, friction-free materials, which also will improve longevity. All of these adaptations protect the organ's historic value and ensure its unique Barckhoff sound will be enjoyed for years to come.

We would like to thank Fr. Frank Lioi, pastor of St. Mary's Church, and Joel Morehouse, director of music during the

planning and fundraising for the restoration, for their tireless efforts, and for their full support in addressing the issues that required the attention of the church. Restoration of the 1890 Barckhoff would not have been possible without their patience, understanding, and support.

**David McCleary** serves as project developer for Parsons Pipe Organ Builders. His training includes process architecture and elongated sales cycles with an emphasis on collaborative relationships. He has extensive experience in the field of pipe organs, and holds memberships in several AGO chapters.

*Joel Morehouse kindly contributed material to this article.*

## St. Mary's Catholic Church • Auburn, New York Carl Barckhoff (1890)

### Restoration by Parsons Pipe Organ Builders

Two manuals, 30 ranks, 26 stops

#### GREAT

- 16 Open Diapason (partially in facade)
- 8 Open Diapason (partially in facade)
- 8 Doppel Flute
- 8 Gamba
- 8 Dulciana
- 4 Principal
- 4 Flute Traverso
- 2½ Twelfth
- 2 Fifteenth
- Mixture III
- 8 Trumpet

#### SWELL (enclosed)

- 16 Bourdon (1–12 new)
- 8 Open Diapason
- 8 Geigen Principal
- 8 Stopped Diapason
- 8 Salicional
- 4 Fugara
- 4 Flute Harmonic
- 2 Piccolo
- Cornet III
- 8 Oboe and Bassoon

#### PEDAL

- 16 Open Diapason
- 16 Bourdon
- 8 Flute
- 8 Violoncello (half draw)
- 16 Trombone (new; full draw)

#### ACCESSORIES

- Tremolo
- Fixed mechanical combinations
- Great: 6
- Swell: 6
- Swell to Great
- Great to Pedal
- Swell to Pedal