

The Organ of St. Paul Ev. Lutheran  
Church in Fort Atkinson, Wisconsin  
Jaeckel Organs, Opus 5, 1983



**GREAT (I) 56 keys**

Pommer 16'  
 Prinzipal 8'  
 Holzgedackt 8'  
 Oktav 4'  
 Waldflöte 2'  
 Mixtur IV (1 1/3')  
 Trompete (horizontal)  
 Chimes  
 Swell to Great

**SWELL (II) 56 keys**

Rohrgedackt 8'  
 Viola 8'  
 Viola 4'  
 Sesquialtera II (2 2/3')  
 Klein Prinzipal 2'  
 Scharf III (1/3')  
 Regal 8'  
 Tremulant

**PEDAL - 30 keys**

Prinzipal 16'  
 Gedacktbass 16'  
 Oktav 8'  
 Metalgedackt 8'  
 Choralbass 4'  
 Mixtur III (2')  
 Fagott 16'  
 Great to Pedal  
 Swell to Pedal

The Jaeckel organ at St. Paul's in Fort Atkinson is probably the first mechanical action organ I had ever seen or played. I remember singing there with the Northwestern College choir for a Lenten service in 1985 or 1986 and I had to go to the loft to try it out. I played Bach's "Now Thank We All Our God" (BWV 79-3) with the melody in chords on the horizontal trumpets. I remember the touch was delightful and the trumpets were awakening, both in their volume (just above my head) and in the stereo arrangement! Quite a difference from the Hammond C3 in my home church—even exceeding the brilliance of the Schlicker in my college's chapel.

The organ seems to be a replica of a north German organ. The Swell Scharf III is reminiscent of a Schnitger cymbel. It also reminds me of the high and bright mixtures on the organ played by Anthony Newman in some of his early Bach recordings. According to the Organ Historical Society's website, the organ is tuned to the Kirnberger III temperament.

Some exceptions to the north German organ model:

- The horizontal trumpets which were common in Spain and were made popular in America—partly by the many albums of Paul Manz hymn improvisations which were played on a Schlicker with horizontal trumpets.
- Chimes (with electric action)
- A swell box
- Electric stop action with combination action.

The Mixtur III stop on the pedal was non-functional. I suspect it is a "prepared for" stop, or possibly it was a malfunction. In the soundfont, I generated a mixture with Polyphone from the Great Oktav 4'. Pedal mixtures are usually Rauschpfeife style with no breaks. 2', 1 1/3', 1'.

**Skin**

The skin is based on elements on the original organ. Elements that do not correspond to the real instrument are from the Stratman Master Skin.

**"Pastor" and "Usher" Switches and Lights**

The original organ has switches and lights as a signaling system for starting the service. They are included here simply because they are elements on the original organ. The switches do nothing but activate the flashing light graphics.

## **Additional Controls**

### **Reverb Controls**

The virtual model has a switch for Fluidsynth reverb. The reverb is preset to be similar to the acoustics of St. Paul Lutheran Church in Fort Atkinson. The standard controls for Fluidsynth reverberation are on the Effects and Controls console screen. Since Fluidsynth reverb has its limitations, we recommend using a convolution reverb program with the St. Paul's Fort Atkinson impulse response, included in the folder "Reverb."

### **Sound Effects**

Sound Effects turns on sound effects synchronized to the keyboard, stop and coupler action, the swell action and the blower (which is also activated by the ON/OFF switches). Turning Sound Effects OFF disables all sound effects.

### **Melody Couplers / Auto Pedal**

For those playing this virtual model with a single keyboard, we include the Melody Couplers and Auto Pedal. Because of the louder horizontal trumpets on this organ, we provide two Melody couplers. The Great Melody Coupler will couple the highest note played on the Great from the Swell to the Great (keys 60-96 C3-C6). The Swell melody coupler will couple the highest note played on the Swell from the Great to the Swell. The Auto Pedal will couple the lowest note played on the Great from the Pedal division to the Great (36-57 C1-A2).

### **Dynamic Wind Simulation**

The Dynamic Wind Simulation Engine monitors key activity using jOrgan's MIDI merger and has all key activity trigger an incrementer that uses a number of switch filters to vary the pitch, thus simulating wind behavior in a pipe organ. Faster play and increased polyphony bring the pitch down as far as -10c, and the pitch then recovers in a short time. Since the wind behavior in the original organ was quite shaky, the Dynamic Wind Simulation is set to have a quick pitch drop and a quick pitch recovery. For the effect to work, all keyboards must be referenced to the jOrgan MIDI merger. An indicator in the "Dynamic Wind OFF/ON" switch shows the state of the pitch in the wind simulation. The "Wind" light on the console will also flash. It remains on when the pitch is at standard pitch.

### **Transposer**

The transposer allows you to change the key of the music you are playing. The real instrument does not have a transposer.

### **Temperaments**

This organ was built and tuned in the Kirnberger III temperament. In the process of building the soundfont, all samples were retuned to standard pitch and equal temperament. jOrgan's Fluid Tuning feature and pitch adjustment (below) returns the organ to its original temperament and pitch. Equal, Bach-Lehman and Werckmeister III temperaments, along with some blank user definable temperaments are provided in the jOrgan disposition.

### **Pitch Adjust**

Pitch can be changed with the slider. Deviation from standard pitch (A = 440 Hz) is displayed in cents. "OP" is the setting for the original pitch of the organ, which is about 32c below standard pitch. The "0c" button resets the organ to standard pitch. With this feature, the organ can be tuned to other instruments on the fly.

### **Panic Switch**

The jOrgan logo also serves as a panic switch that momentarily disconnects all keyboard activity.

## **Chorused Tuning On/Off**

All samples were precision tuned by hand which improves the sound of the organ, but can also make it sound unnaturally perfect. Chorused tuning switches the presets from precision tuned ranks to ranks with randomized tuning. The following ranks are affected: Great: Prinzipal 8', Octave 4', Waldfloete 2', Mixtur IV, Trompete 8', Swell Gemshorn 4', Prinzipal 2', Scharf III, Regal 8'.

## **Recorder**

The recorder records a performance with a MIDI file, and can also play a performance back, along with registration and expression changes.

## **Trumpet Volume**

Because of the location of the recording device and the closeness to the organ, the mouths of the horizontal trumpets were about 6-7 feet (2 meters) closer to the recorder than the rest of the organ. The recording device was about 10-12 feet (3 meters) from the organ. To adjust the volume of the trumpets so they blend better with the rest of the organ, a trumpet volume slider was added. For the natural volume as it was recorded, turn the volume to 1.00.

## **Note**

This model was not made in consultation with or with any approval from [Jaeckel Organs](#).

## **Thanks**

**Sounds from the Jaeckel organ (Opus 5) in St. Paul Ev. Lutheran Church in Fort Atkinson, Wisconsin, U. S. A. were recorded and are used in this virtual model with the kind permission of St. Paul Ev. Lutheran Church.**

## **Recording and Processing Information**

Organ was recorded April 7, 2016.

Sounds recorded with a [TASCAM DR-07 MK II](#) digital recorder at 44,000 Hz.

Processing done with [Audacity](#). Mild noise reduction done. Samples divided. Attack trimming was done with [Wavosaur](#).

Soundfont built with [Polyphone](#). Samples looped in Polyphone. Additional equalization was done with Polyphone to reduce or remove all frequencies below the fundamental.

For most ranks, C, E and G# notes were recorded. For the horizontal trumpets, C, D#, F# and A notes were recorded. If noise reduction or looping were more difficult, some notes were not used and neighboring sounds stretched.

Analysis of Great Principal 4' samples. Principal samples were on average 31.93c below standard pitch. According to the [Jaeckel website](#) and the [Organ Historical Society database](#), organ is tuned in the Kirnberger III temperament. Samples are tuned to equal temperament in the soundfont. Kirnberger III and other temperaments are included in the jOrgan disposition.

Pedal Mixtur III was constructed with Polyphone, derived from Great Octav 4'

Some of the samples in Great Mixtur IV and all of the samples in Swell Scharf III were resynthesized from recorded samples using [SPEAR](#) to correct some unsteadiness of tone. The original samples in the Swell Scharf III are included in the soundfont as a separate instrument.

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**Church in Fort Atkinson, Wisconsin, U.S.A.**

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Recordings of the classical organ literature or of Christian hymnody and organ literature based on Christian hymnody using this virtual organ are permitted as derivative works, and such recordings may be shared with attribution as described above.



## Additional Information

Jaeckel Organs website: <http://jaeckelorgans.com/index.php/organs?id=107>

Organ Historical Society: <http://database.organsociety.org/SingleOrganDetails.php?OrganID=51896>

St. Paul's in Fort Atkinson: <http://stpaulsfort.org/>

Pipedreams, "Year of the Jaeckel" <http://pipedreams.publicradio.org/listings/2006/0639/>







