# Johann Andreas Silbermann Organ - 1769

## St. Bartholomäus Munster

Ettenheim, Ortenau region, Germany.

By Blair Batty

# Forward

I am a retired organbuilder. I've always had an interest in pipe organ scaling and voicing. Scaling are the measurements of the pipes, that give them the particular sound of a particular organ. Over the years, I have collected and studied the scales of dozens of organs. As it was for my personal use, and I am not an academic, I often failed to note where I got the measurements from.

As this data may be useful to others, I decided to share it. You must use it with caution, as some of it was written down years ago. I may no longer know the source, or how reliable it may be.

Bear in mind when studying the scales, this organ is pitched at approximately A=392 Hz *(a whole tone below modern concert pitch of A=440 Hz)*, characteristic of its time.

If you are new to scaling, I recommend: http://www.blairbatty.ca/tonal.html#scales

Do contact me, if you have any comments, corrections, sources or questions. I won't be offended.

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BlairBatty@Gmail.com

BlairBatty.ca

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# Ettenheim Munster Organ

The Slibermann organ in the Münster St. Bartholomäus in Ettenheim, Germany, is a true gem of organ building history and a monument of sound. It is one of the very few, and arguably the best-preserved, surviving organs by the legendary Johann Andreas Silbermann (1712-1783) of Alsace.

It was built in 1768-1769 for the newly constructed Ettenheim Münster. It is a prime example of a South German/Alsatian Late Baroque organ, perfectly voiced for the polyphonic music of the time *(e.g., J.S. Bach, Buxtehude, but especially French Classic composers like Couperin and* Grigny.

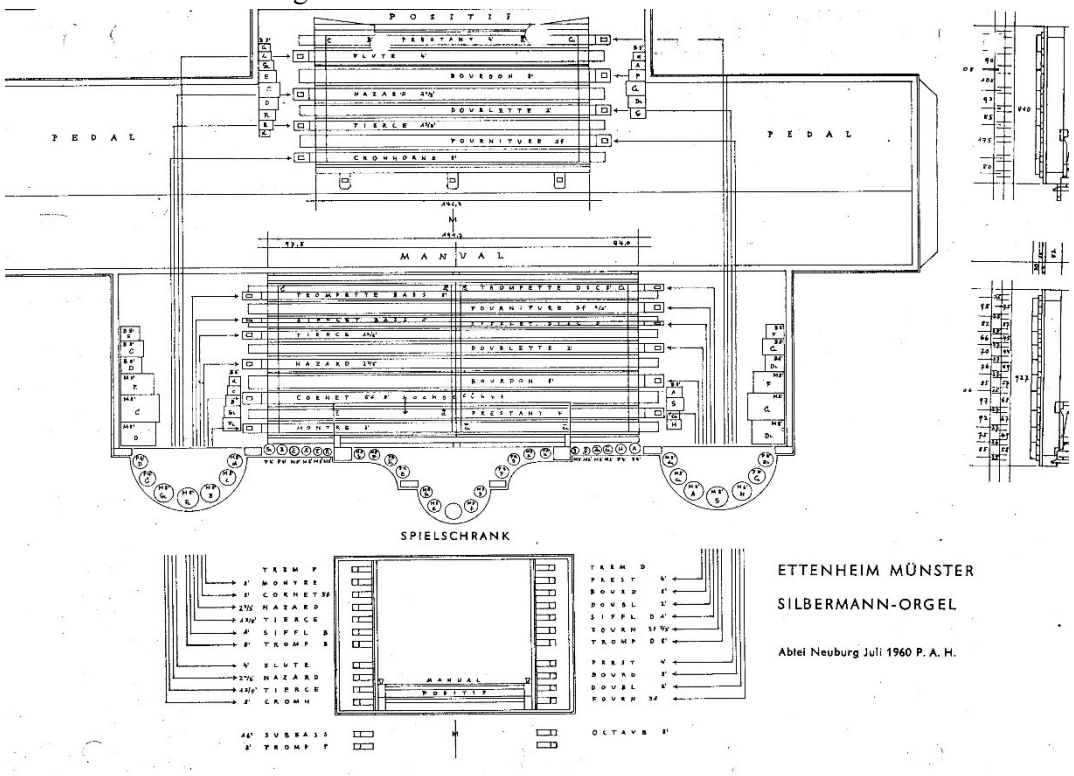
Miraculously, the organ survived secularization, wars, and ill-advised modernizations almost completely intact. Its original pipework, windchests, and most of the key action are preserved.

The organ has two manuals and a pedalboard with a total of 23 stops. Originally, it was tuned in a variant of "Silbermann Temperament" *(a well-temperament, not equal)*, which gives each key a distinct color and character. Many recordings aim to restore this tuning. It uses wedge bellows, supplying a gentle, steady wind pressure typical of the era.

The sound is clear, bright, and silvery (hence the name "Silbermann"?), with beautifully singing principals and flutes. The reeds (like the Trompette 8' on the Hauptwerk) are fiery and articulate. The blend of stops is perfect for contrapuntal music. It is a reference instrument for understanding the sound ideal of Central European organs in the mid-18th century. It's not a massive cathedral organ; its power lies in its clarity, balance, and articulation.

A major, museum-quality restoration was completed in 2005-2006 by the renowned organ builder Jürgen Ahrend. The goal was not to "modernize" but to meticulously conserve and restore the original material and sound. This work won great acclaim and is considered a benchmark in organ restoration.

In summary, the Ettenheim Münster Silbermann organ is a priceless, living museum piece. It offers an authentic sonic window into the 18th century and stands as a testament to the genius of the Silbermann family and the art of historical organ restoration



# Stoplist

## Positif (C–c3)

| | | |
|---|---|---|
| 8’ | Bourdon | |
| 4’ | Prestant | |
| 4’ | Flûte | |
| 2 2/3’ | Nazard | |
| 2’ | Doublette | |
| 1 3/5’ | Tierce | |
| 1 1/3’ | Larigot | (M) |
| III | Fourniture | (M) |
| 8’ | Cromorne | (M) |

## Hauptwerk (C–e3)

| | | |
|---|---|---|
| 16’ | Bourdon | |
| 8’ | Montre | |
| 8’ | Bourdon | |
| 4’ | Prestant | |
| 2 2/3’ | Nazard | |
| 2’ | Doublette | |
| 1 3/5’ | Tierce | |
| 1’ | Sifflet 1 | |
| III | Fourniture | (M) |
| II | Cymbale | (M) |
| V | Cornet | c25-c49 |
| 8’ | Trompette | (M,W) |
| 8’ | Voix humaine | (M) |
| | RP-HW | |

## Récit/Echo (C–c3)*

| | | |
|---|---|---|
| 8’ | Bourdon | |
| 4’ | Prestant | |
| 2 2/3’ | Nazard | |
| 2’ | Doublette | (M) |
| 1 3/5’ | Tierce | (M) |
| 8’ | Basson/Trompette | (W,M) |

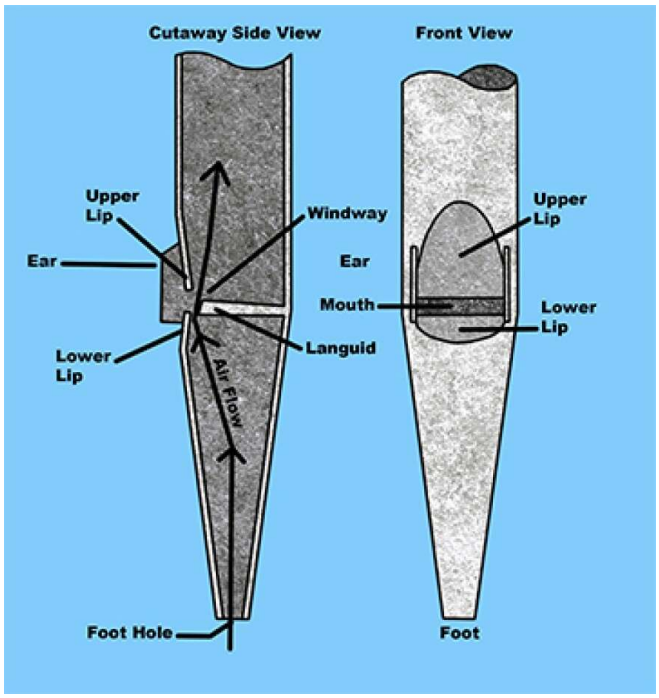
## Pedal (C–d1)

| | | |
|---|---|---|
| 16’ | Subbass | |
| 8’ | Octavbass | |
| 5 1/3’ | Quinte | (M) |
| 4’ | Prestant | (M) |
| III | Fourniture | (M) |
| 16’ | Bombarde | (M) |
| 8’ | Trompette | (M) |
| 4’ | Clairon | (M) |
| | HW-P | |

Tremulant: Hauptwerk + Echo, Tremulant: Positif
Pipework original by Johann Andreas Silbermann, except:
M) Metzler 1962
W) Wegmann/Alsace 1840

# Description of Measurements

If you are not familiar with scaling measurements, I recommend you checkout my book of Scaling. It is available for free download from my website http://www.blairbatty.ca/tonal.html#scales. I typically measure every "c" and "f#" pipe, to understand how the dimensions of the pipes change, throughout the compass, from bass to treble.




**Diameter:** This is the inside diameter of the pipe, measured in millimeters.

**Mouthwidth:** width of the mouth in millimeters.

**Cutup**: is distance between the upper and lower lips, in millimeters.

**Windway:** is the width of the slit of the windway, in millimeters.

**Toehole:** Is the diameter of the wind hole in the bottom of the foot, in millimeters.

**Foot WP**: Is the windpressure inside the foot of the pipe, measured in Pascal. Ten Pascal = ~1 millimeter watercolumn.

# Calculations

Not everything was measured. Some of the numbers written down here were calculated from the measurements.

**Topfer NM:** The diameter, mouthwidth and cutup measurements were converted to Topfer Normmeasure and graphed. Mouth NM presumes ¼ mouth as normal, cutup presumes ¼ cutup as normal.

**Mouthwidth and cutups:** are commonly described as fractions *(e.g. ¼ mouthwidth, ¼ cutup)*. So, these fractions were also calculated.

# What do the Numbers Tell Us?

Some people, like I, enjoy measuring the various dimensions of the pipes in an organ, and generating various charts and graphs of that data. We do that to discover how the original designer and voicer scaled and manipulated the pipes, to arrive at the sound they wanted.

In very simplistic terms, scaling and voicing can be described in this way:

- Diameter determines the loudness of the fundamental of the pipe.
- Cutup fine-tunes the harmonic content.
- Toehole/mouthwidth/windway fine-tunes the loudness.

Of course, it's not that simple. For example, you can increase the scale of the pipe, which would increase the loudness of the fundamental *(and will also make the tone brighter)*. Then by reducing the toehole size which reduces the wind and loudness, and by using a lower cutup to reduce the brightness you can approximate the original pipes sound. But it is not identical, change has consequence.

## ETTENHEIMMÜNSTER JOH AND SILBERMANNORGEL

1769

GRAND ORGUE C-d''' Obermanual

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Montre | 8' | C | S' | 152,0 | L' | 114,0 | A' | 31,0 | NHolz „montre" | | |
| Same scale as Prestant & Doublette of nazard | | F | | 118,0 | | 88,0 | | 24,5 | | | |
| | | Fs | ø | 121,5 | L | 93,2 | A | 22,2 | Zinn W | 0,95 | „m" |
| | | c | | 94,8 | | 73,0 | | 18,0 | | 0,95 | |
| | | c' | | 55,8 | | 42,3 | | 10,0 | | 0,95 | |
| | | c'' | | 34,0 | | 24,4 | | 7,8 | | 0,7 | |
| | | c''' | | 20,8 | | 15,5 | | 4,7 | | 0,6 | |

C-F NHolz innen, Fs-g' Zinnprospekt, gs'-d''' auf der Lade Zinn, Füße Metall.

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2. Prestant | 4' | C | ø | 95,5 | L | 72,8 | A | 17,2 | Zinn W | 0,95 | „p" |
| | | c | | 55,6 | | 42,0 | | 11,0 | | 0,8 | |
| | | c' | | 34,1 | | 26,1 | | 7,3 | | 0,6 | |
| | | c'' | | 21,3 | | 15,3 | | 4,4 | | 0,6 | |
| | | c''' | | 13,9 | | 10,5 | | 3,0 | | 0,5 | |

C-H Zinnprospekt, c-d''' auf der Lade Zinn, Füße Metall.

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 3. Cornet | 8' | 5fach, 85 cm hochgeführt | | | | | | | | |
| Bourdon | 8' | c' | ø | 43,3 | L | 38,2 | A | 13,7 | Metall, Rohrfl. | |
| | | c'' | | 27,8 | | 24,7 | | 9,2 | | |
| | | c''' | | 18,5 | | 15,4 | | 4,3 | | |
| Prestant | 4' | c' | ø | 37,2 | L | 25,3 | A | 7,2 | Metall | |
| | | c'' | | 24,3 | | 16,2 | | 5,5 | | |
| | | c''' | | 14,2 | | 10,5 | | 3,5 | | |
| Nazard | 2 2/3' | c' | ø | 28,5 | L | 18,6 | A | 6,0 | Metall | |
| | | c'' | | 19,0 | | 12,5 | | 4,1 | | |
| | | c''' | | 13,1 | | 8,9 | | 2,5 | | |
| Doublette | 2' | c' | ø | 24,5 | L | 16,8 | A | 5,5 | Metall | |
| | | c'' | | 16,0 | | 10,4 | | 3,3 | | |
| | | c''' | | 11,5 | | 7,6 | | | | |
| Tierce | 1 3/5' | c' | ø | 21,0 | L | 14,0 | A | 4,9 | Metall | |
| | | c'' | | 14,3 | | 9,5 | | 2,9 | | |
| | | c''' | | 10,6 | | 6,9 | | 1,6 | | |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 4. Bourdon | 8' | C | S | 120,0 | : | 90,0 | A | 39,0 | E- N Holz, Gedackt | |
| | | c | | 73,0 | : | 50,0 | A | 25,0 | | |
| | | d | | 71,0 | : | 46,0 | | 24,0 | | |
| | | ds | ø | 70,5 | L | 55,4 | A | 21,8 | Metall, Rohrfl. | |
| | | c' | | 50,8 | | 42,0 | | 13,5 | | |
| | | c'' | | 32,8 | | 27,0 | | 8,7 | | |
| | | c''' | | 23,7 | | 18,3 | | 4,9 | | |

C-d E-N Holz seitlich weggeführt. ds-d''' auf der Lade Metall.

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 5. Nazard | 2 2/3' | C nicht original | | | | | | | | |
| | | Cs | ø | 67,8 | L | 46,0 | A | 13,7 | Metall, zyl offen | |
| | | c | | 43,0 | | 27,2 | | 8,5 | | |
| | | c' | | 26,1 | | 17,3 | | 5,8 | | |
| | | c'' | | 16,7 | | 10,9 | | | | |
| | | c''' | | 12,8 | | 9,0 | | 2,1 | | |
| 6. Doublette | 2' | C | ø | 54,6 | L | 42,5 | A | 10,7 | Zinn, Füße Metall | |
| | | c | | 34,0 | | 25,6 | | 7,3 | | |
| | | c' | | 21,8 | | 15,3 | | 4,3 | | |
| | | c'' | | 13,8 | | 10,5 | | 2,6 | | |
| | | c''' | | 10,2 | | 7,0 | | 1,8 | | |
| 7. Tierce | 1 3/5' | nicht erhalten, heute Kleingedackt 4'. | | | | | | | | |
| 8. Sifflet | 1' | Diskant nicht erhalten, heute Gamba 8'. | | | | | | | | |
| 9. Sifflet | 1' | Baß teilweise erhalten. | | | | | | | | |
| | | C | ø | 23,8 | L | 20,4 | A | 7,5 | Zinn, Füße Metall | |
| 10. Fourniture | | C | ø | 17,8 | L | 15,1 | A | 5,5 | 2/3' „C" Zinn, | |
| | | | | 14,1 | | 12,1 | | 5,2 | 1/2' Füße Metall | |
| | | | | nur D und F erhalten | | | | | 1/3' | |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | c | ø | 17,5 | L | 14,9 | A | 5,9 | 1 1/3' „c“ |
| | | | | 14,4 | | 12,8 | | 4,8 | 1' |
| | | | | 11,4 | | 9,5 | | 3,7 | 2/3' |
| | | c' | ø | 14,1 | L | 12,7 | A | 5,0 | 2' „c'“ |
| | | | | 11,5 | | 9,5 | | 3,5 | 1 1/3' |
| | | | | 9,7 | | 7,9 | | 3,1 | 1' |
| | | c'' | ø | 14,2 | L | 12,9 | A | 5,0 | 4' „c''“ |
| | | | | 11,3 | | 9,9 | | 3,3 | 2 2/3' |
| | | | | 9,7 | | 7,7 | | 3,2 | 2' |
| | | c''' | ø | 9,6 | L | 8,8 | A | 3,0 | 4' „c'''“ |
| | | | | 8,1 | | 6,7 | | 2,6 | 2 2/3' |
| | | | | 7,1 | | 6.1 | | 2,1 | 2' |

11. Basson 8' Baß nicht erhalten, heute Aeoline 8'.

12. Trompette de recit 8' Diskant nicht erhalten.

POSITIF C-d''' Untermanual

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1. Prestant | 4' | C | ø | 84,5 | L | 65,0 | A | 18,0 | Zinn W 0,8 |
| | | c | | 53,3 | | 40,3 | | 10,4 | ab c Füße Metall |
| | | c' | | 31,3 | | 23,1 | | 7,2 | |
| | | c'' | | 19,1 | | 13,8 | | 4,6 | |
| | | c''' | | 12,3 | | 9,0 | | 2,8 | |
| 2. Flûte | 4' | C | ø | 67,2 | L | 56,0 | A | 23,0 | Metall, Rohrfl. |
| | | c | | 43,0 | | 37,2 | | 15,8 | |
| | | c' | | 27,3 | | 24,4 | | 10,5 | |
| | | c'' | | 18,9 | | 16,0 | | 4,2 | |
| | | c''' | | | | | | | |
| 3. Bourdon | 8' | C | S | 108,0 | : | 77,0 | A | 42,0 | E-N Holz, Gedackt |
| | | c | | 63,0 | : | 43,0 | | 25,0 | |
| | | d | | 61,0 | : | 40,0 | | 24,0 | |
| | | ds | ø | 62,5 | L | 50,0 | A | 21,0 | Metall, Rohrfl. |
| | | c' | | 45,4 | | 35,0 | | 14,6 | |
| | | c'' | | 29,2 | | 22,9 | | 10,6 | |
| | | c''' | | 21,0 | | 16,8 | | 5,1 | |
| 4. Nazard | 2 2/3' | C | ø | 51,0 | L | 41,8 | A | 17,6 | Metall, Rohrfl. |
| | | c | | 41,1 | | 27,4 | | 10,8 | offen zylindr. |
| | | c' | | 25,5 | | 16,6 | | 6,8 | |
| | | c'' | | 16,9 | | 10,7 | | 4,4 | |
| | | c''' | | 10,9 | | 6,8 | | 3,2 | |
| 5. Doublette | 2' | C | ø | 50,5 | L | 38,8 | A | 12,3 | Zinn, Füße Metall |
| | | c | | 31,0 | | 23,1 | | 8,7 | |
| | | c' | | 18,8 | | 14,7 | | 5,1 | |
| | | c'' | | 12,5 | | 8,6 | | 3.1 | |
| | | c''' | | 9,0 | | 6,4 | | 2,5 | |

6. Tierce 1 3/5' nicht erhalten, heute Salicional 8'.

7. Fourniture 3fach nicht erhalten.

8. Cromhorne 8' nicht erhalten, heute Flöte 8'.

PEDAL C-d

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1. Subbaß | 16' | C | S | 205,0 | : | 150,0 | A | 68,0 | N Holz, Gedackt |
| | | c | | 122,0 | : | 82,0 | | | |
| 2. Octavbaß | 8' | C | S | 162,0 | : | 122,0 | A | 45,0 | N Holz |
| | | c | | 105,0 | : | 78,0 | | | |
| Trompettenbass | 8' | C | ø | 110,0 | Länge | 2190,0 | bis zur Nuß, Zinn | | |
| | | c | | 82,0 | | 1030,0 | | | |

Tremblant doux

Tremblant fort

Manual Schiebekoppel