

SPECIFICATIONS

1924 W.W. KIMBALL MASONIC PIPE ORGAN

OF THE

SCOTTISH RITE CATHEDRAL SAINT LOUIS, MISSOURI

W.W. Kimball Company, Chicago, KPO 6763, October 1924
4 Manuals / 144 speaking stops / 53 ranks / 3,863 pipes
3 pipe chambers (Main, Antiphonal, Echo)
10 inches of wind unless noted
9 Divisions: Pedal, Great, Swell, Choir, Solo, Echo,
Antiphonal Great, Antiphonal Swell, Antiphonal Pedal
Organ Historical Society Citation (No. 291) issued 2003

Construction of this pipe organ, Opus 6763, was begun in Chicago by the W.W. Kimball Company in February, 1924. It took 8 months to build and was delivered and installed in October of that same year. Belgian-American organ virtuoso Dr. Charles Courboin served as tonal design consultant with voicing supervised by head voicer George Michel. There are 3 floors of organ pipes in this Auditorium situated in 3 spatially separated chambers. These pipes, 3,863 in number, are spread across 53 ranks in 9 divisions. Every pipe in this organ was made flexible and expressive by enclosing the entire instrument behind 128 swell shades each on its own pneumatic motor which may be operated by division or all at once. The console placement is in an elevated 3rd floor (above the Dining Room level) balcony in the northwest corner of the Auditorium, Stage Right (Audience Left) and is fixed in position. The Main chamber is home to the 41 ranks of the Great/Choir, Solo, Swell, and Pedal divisions and is located high above and to the left of the console behind large tone grilles built into the west wall at 4th and 5th floor levels. The Antiphonal chamber houses another 5 ranks, is about 170 feet from the Main pipe chamber, and is situated behind identically shaped tone grilles built into the east wall high above the 3rd floor orchestra balcony, Stage Left (Audience Right). The Echo chamber is

located in the attic midway on 7th floor level and is home to 5 gently-voiced ranks which speak directly downward into the Auditorium through a rectangular tone grille built into the ceiling 58 feet above the floor. There are no pipes visible anywhere in the Auditorium.

This is an "8-foot [8'] organ" meaning that, save for the Dulce Mixture in the Swell, there are no independent ranks of upperwork or suboctave pitch, i.e., every off-unison winded stop is derived by unified wiring, octave extensions, or duplexing of 8' pipe ranks, a building method common for the time. There are sufficient theatre-style voices, tuned percussions, traps, and special effects included in the scheme that a unit theatre organ of 21 ranks could have been constructed to control just those voices and effects. These 21 ranks comprise 1,662 pipes or about 43 per cent of the total pipework. A full size upright Kimball piano recovered from the 1925 IV/19 Kimball theatre pipe organ of the old Saint Louis Theatre is also playable from the console. Never delivered by the Kimball factory, this was installed during the 2011-2015 renovation work to complete the instrument's original conception. The Echo is an ancillary (floating) division playable singly from any manual, with or without the Main organ, or from any 2 manuals at a time. The organ today is fully playable from top to bottom. Every pipe speaks with its original voicing, and the action and all pipes and windchests remain as originally constructed.

This paper is the only known document in existence having a complete and fully console-tested factually-accurate detailing of this instrument. Most guest organists who have been invited to play it or record it over the years were unaware that not all of its drawknobs were reliable indicators of how the pipework is wired. For example, the ivory faces of the console drawknobs controlling the unit Pedal Bombarde rank drawing at 32'-16'-8'-4' pitches, as engraved, indicate that all 4 stops derive from the 15" Great Harmonic Trumpet. They actually control a separate rank on 25", the only independent rank strictly belonging to the Pedal division. These 68 Bombarde pipes all of the same quality and strength of tone are not wired to play from the Great Harmonic Trumpet as their drawknob faces incorrectly indicate. This can be verified by taking the time to test the sound at the console; the ear can plainly detect the difference in tone color and strength between these two big reeds which indicates that different pipes are in play.

The contract and specifics for the building of this organ, which may be viewed on the guided photo tour posted on the OrganBench web site, is telling. It called for a Pedal 32' Contra Bombarde rank with NO upward extensions; for the Pedal reed chorus the Solo Tuba Sonora was to be wired to play there at 16'-8'-4' pitches; the Tibia Clausa also was to be wired to draw separately in the Swell at 16' pitch. In carrying the design into execution however, these aspects of the contract were not followed to the letter. Two significant changes were made, viz., 1) in the Pedal the 32' Bombarde rank was wired to provide its own unified 16'-8'-4' reed chorus, all 4 stops being of the same quality and strength of tone, retaining the Tuba Sonora borrowed from the Solo at 16' pitch, and 2) the Horn Diapason and Viole ranks in the Swell were made to draw at 16' pitch in that division in lieu of a 16' Tibia Clausa. What this means is, the 16'-8'-4' stops of Bombarde tone which we find included today as separate Pedal stops do not reflect Dr. Courboin's tonal conception. This is significant because, in pursuing the tonal conception which Dr. Courboin originally had in mind, the 3 Bombarde stops at 16'-8'-4' pitches would be left out of the full organ, and the Swell 16' Open [Horn] Diapason and 16' Contre Viole stops might also be left out of the fullest Swell combinations.

Additionally, the Choir Unda Maris (a rank of Dulciana-toned pipes tuned flat) is wired as a dual stop which automatically draws its "mate," the Dulciana, which is tuned true, at the same time. The Unda Maris is the only single celeste stop in the entire organ which works like this - all the others operate as single rank drawknobs requiring the mate to be drawn with it to

produce its characteristic effect. When the Unda Maris or any other celeste stop is dual like this, a Roman numeral "II" is typically engraved on the drawknob face to indicate that it draws the mate at the same time. Instead the Unda Maris drawknob face was engraved as a single rank, just like all the other celeste stops in this organ. This is important because if the Dulciana is not drawn when the Unda Maris is retired, both ranks will shut off - admittedly a minor point, but it demonstrates how a label on a drawknob face doesn't always reflect how the instrument is wired, not 100 per cent of the time.

In 2002 this instrument was nominated for recognition with the Organ Historical Society (OHS), and the following year (2003) the instrument was granted citation status (No. 291), the highest level of merit which the OHS can bestow upon a precious, historic instrument. The instrument underwent major renovation in 2011-2015 with a rebuild of the console using a computer control system and Uniflex relay. It continued to be maintained by volunteers from the Saint Louis Theatre Organ Society led by Mr. Alan Haker.

The following colors delineate tremulants in this stop list:

Divisional Tremolos - Green
 Tibia Tremolo - Blue
 String Tremolos - Amber
 Vox Humana Vibratos - Purple
 Tuba Tremolo - Red

PEDAL (enclosed): 33 stops, 1 rank, 68 pipes

64'	Gravissima (Resultant, Swell)	32 notes	Contra Bourdon (Tibia Clausa) 32' & Lieblich Gedeckt 21-1/3', resultant in bottom octave only
32'	Contra Bourdon (Swell)	32 notes	Tibia Clausa
32'	Acoustic Bass (Resultant)	32 notes	English Diapason 16' & Concert Flute (Bourdon) 10-2/3', resultant throughout
16'	Open Diapason (Wood, Great)	32 notes	Principal Diapason, Scale 38
16'	Open Diapason (Metal, Great)	32 notes	English Diapason, Scale 42
16'	Waldhorn (Great)	32 notes	
16'	Contra Tibia Clausa (Swell)	32 notes	
16'	Violone (Solo)	32 notes	Cello
16'	Contra Viole (Swell)	32 notes	Viole D'Orchestre
16'	Bourdon (Great)	32 notes	Concert Flute
16'	Lieblich Gedeckt (Swell)	32 notes	Gedeckt GGGG to BBB for 64' Resultant
8'	Octave (Great)	32 notes	English Diapason, Scale 42
8'	Flute (Great)	32 notes	Concert Flute
8'	Still Gedeckt (Swell)	32 notes	Gedeckt
8'	Violoncello (Solo)	32 notes	Cello
8'	Cellos III (Swell)	32 notes	Viole D'Orchestre & Viole Celestes II
4'	Super Octave (Great)	32 notes	English Diapason, Scale 42
4'	Flute (Swell)	32 notes	Gedeckt
4'	Violins III (Swell)	32 notes	See 8' Cellos III
32'	Contra Bombarde	12 pipes	Bombarde 25", low 26 Wood
16'	Bombarde	32 pipes	25"
16'	Trombone (Great)	32 notes	Harmonic Trumpet 15"
16'	Bassoon (Swell)	32 notes	Oboe Horn 10"
16'	Tuba Profunda (Solo)	32 notes	Tuba Sonora 20"
8'	Tromba	12 pipes	Bombarde 25"

4'	Clarion	12 pipes	Bombarde 25"
16'	Piano		
	Triangle		
	Chimes (Solo)	13 notes	tenor G to middle (high) G
	Cymbal		
	Bass Drum Stroke		
	Bass Drum Roll		
	Snare Drum Roll		

GREAT (enclosed): 25 stops, 9 ranks, 733 pipes

16'	Major Diapason	61 notes	English Diapason, Scale 42
16'	Bourdon	61 notes	Concert Flute
8'	Principal Diapason (Wood)	85 pipes	Scale 38
8'	English Diapason (Metal)	85 pipes	Scale 42
8'	Clarabella	73 pipes	
8'	Waldhorn	85 pipes	
8'	Concert Flute	97 pipes	
8'	Gamba	73 pipes	
8'	Gemshorn	73 pipes	
4'	Octave	61 notes	English Diapason, Scale 42
4'	Traverse Flute	61 notes	Concert Flute
2 2/3'	Twelfth	61 notes	Concert Flute
2'	Fifteenth	61 notes	Concert Flute
16'	Double Trumpet	61 notes	Harmonic Trumpet 15"
8'	Harmonic Trumpet	85 pipes	15"
8'	Tromba	73 pipes	10"
4'	Clarion	61 notes	Harmonic Trumpet 15"
8'	Marimba	49 notes	wood bars (Deagan)
8'	Harp	49 notes	from Marimba
8'	Chimes	20 tubes	in Echo (A to e2) Deagan Class A
8'	Piano	61 notes	
4'	Piano	61 notes	
4'	Xylophone	37 notes	wood bars (Deagan)
4'	Bugle	4 pipes	F-Bb-D-F
	Snare Drum Roll		
	Snare Drum Tap		
	Tremolo (rebuilt to Kimball specs)		

SWELL (enclosed): 28 stops, 18 ranks, 1,213 pipes

32'	Contra Bourdon	12 pipes	
32'	Gravissima	5 pipes	G-B, for 64' resultant
16'	Open Diapason	61 notes	Horn Diapason, Scale 43
16'	Lieblich Gedeckt	61 notes	Gedeckt
16'	Contre Viole	61 notes	Viole d'Orchestre
8'	Diapason Phonon	73 pipes	Scale 40, first 10 wood
8'	Horn Diapason	85 pipes	Scale 43
			Scale 46 above tenor C
8'	Tibia Clausa	85 pipes	
8'	Gedeckt	101 pipes	
8'	Flute Celeste	73 pipes	single rank, mistuned flat
8'	Viole d'Orchestre	85 pipes	
8'	Viole Celestes II	146 pipes	2 ranks mistuned sharp and

			sharper
8'	Salicional	73 pipes	
8'	Voix Celeste	73 pipes	single rank, mistuned sharp
4'	Octave	61 notes	Horn Diapason, Scale 46
4'	Flute	61 notes	Gedeckt
4'	Tibia	61 notes	Tibia Clausa
4'	Violin I	61 notes	Viole d'Orchestre
4'	Violins II	61 notes	Viole Celeste, 2 ranks mistuned sharp and sharper
2 2/3'	Flute Twelfth	61 notes	Gedeckt
2'	Flautino	61 notes	Gedeckt
1 3/5'	Tierce	61 notes	Gedeckt
III	Soft Mixture	183 pipes	Dulce pipes (15-17-19)
16'	Contra Fagotto	61 notes	Oboe Horn 10"
8'	Posaune	73 pipes	10"
8'	Oboe Horn	85 pipes	10"
8'	Vox Humana	61 pipes	7"
4'	Oboe Clarion	61 notes	Oboe Horn 10"
8'	Celesta	49 notes	metal bars (Deagan)
4'	Celesta		
	Tibia Clausa Tremolo (Wurlitzer)		
	String Tremolo Fast (rebuilt to Kimball specs)		
	String Tremolo Slow (rebuilt to Kimball specs)		
	Vox Humana Vibrato (Kimball, original, fly-swatter design)		
	Tremolo (rebuilt to Kimball specs)		

CHOIR: (enclosed): 25 stops, 6 ranks, 438 pipes

16'	Waldhorn	61 notes	duplexed from Great
8'	English Diapason	61 notes	duplexed from Great, Scale 42
8'	Tibia Minor	73 pipes	
8'	Concert Flute	61 notes	duplexed from Great
8'	Waldhorn	61 notes	duplexed from Great
8'	Viola	73 pipes	
8'	Dulciana	73 pipes	
8'	Unda Maris	73 pipes	two ranks, one is mistuned flat, paired with Dulciana
4'	Waldhorn	61 notes	duplexed from Great
4'	Traverse Flute	61 notes	duplexed from Great
2'	Piccolo	61 notes	duplexed from Great
8'	Orchestral Oboe	73 pipes	10"
8'	Clarinet	73 pipes	10"
8'	Piano	61 notes	
8'	Harp	49 notes	from Marimba
4'	Harp		
4'	Xylophone		
2'	Glockenspiel		from Solo
2'	Orchestral Bells		from Solo
	Wood Block		
	Tom Tom		
	Castanet		
	Tambourine		
	Snare Drum Roll		
	Snare Drum Tap		
	Tremolo (rebuilt to Kimball specs)		

SOLO (enclosed): 16 stops, 9 ranks, 669 pipes

8'	Diapason Stentor	73 pipes	Scale 36
8'	Melophone	73 pipes	
8'	Cello	85 pipes	
8'	Cello Celeste	73 pipes	single rank, mistuned sharp
16'	Tuba Profunda	61 notes	Tuba Sonora 20"
8'	Tuba Mirabilis	61 pipes	20"
8'	Tuba Sonora	85 pipes	20" all harmonic
8'	French Horn	73 pipes	10"
8'	English Horn	73 pipes	10"
8'	Kinura	73 pipes	10"
4'	Tuba Clarion	61 notes	Tuba Sonora 20"
8'	Chimes	25 tubes	G to g2 (Deagan Class A)
8'	Marimba		from Great
4'	Marimba		from Great
2'	Glockenspiel	37 notes	metal bars (Deagan)
2'	Orchestral Bells	37 notes	Glockenspiel reiterate
	Tuba Tremolo (from old Saint Louis Theatre IV/19 Kimball)		
	Tremolo (from theatre organ, unknown origin)		

ANTIPHONAL GREAT (enclosed with Ant. Swell & Pedal):

4 stops, 2 ranks, 146 pipes

8'	Open Diapason	73 pipes	Scale 41
8'	Claribel Flute	61 notes	from Ant. Swell
8'	Gemshorn	73 pipes	
4'	Forest Flute	61 notes	from Ant. Swell

ANTIPHONAL SWELL (enclosed with Ant. Great & Pedal):

6 stops, 3 ranks, 243 pipes

16'	Bourdon	61 notes	Claribel Flute
8'	Claribel Flute	97 pipes	
8'	Viola	73 pipes	
4'	Forest Flute	61 notes	Claribel Flute
2'	Piccolo	61 notes	Claribel Flute
8'	Horn	73 pipes	Tuba Horn pipes, 10"
	Tremolo (Kimball, original)		

ANTIPHONAL PEDAL (enclosed with Ant. Great & Swell): 2 stops

16'	Bourdon	32 notes	Claribel Flute
8'	Flute	32 notes	Claribel Flute
	Main Great, Swell, and Pedal Off		

ECHO (enclosed): 5 stops, 5 ranks, 353 pipes

8'	Viola Aetheria	73 pipes	
8'	Vox Angelica	73 pipes	single rank, mistuned sharp

8'	Fern Floete	73 pipes	
8'	Corno D'Amour	73 pipes	capped Oboe pipes, 7'1/2"
8'	Vox Humana	61 pipes	7-1/2"
8'	Chimes	20 tubes	A to e2 (Deagan Class A)

Vox Humana Vibrato (inoperable, never installed by builder)
Tremolo (Kimball, original, operable on all Echo stops)

COUPLERS

8' Great to Pedal	16' Antiphonal Swell
8' Swell to Pedal	4' Antiphonal Swell
4' Swell to Pedal	
8' Choir to Pedal	16' Solo to Great
4' Choir to Pedal	8' Solo to Great
8' Solo to Pedal	4' Solo to Great
	16' Swell
16' Great	4' Swell
4' Great	16' Choir to Swell
16' Swell to Great	8' Choir to Swell
8' Swell to Great	4' Choir to Swell
4' Swell to Great	8' Great to Swell
16' Choir to Great	8' Solo to Swell
8' Choir to Great	
4' Choir to Great	16' Choir
	4' Choir
16' Solo	8' Swell to Choir
4' Solo	4' Swell to Choir
8' Great to Solo (Blackpool)	
	16' Echo
8' Antiphonal Great to Pedal	Echo Unison Off
8' Antiphonal Swell to Pedal	4' Echo
16' Antiphonal Great	8' Antiphonal Swell to Great
4' Antiphonal Great	4' Antiphonal Swell to Great

Master Swell Lock (rewired from original Pedal [Treble] Separation tilting tablet)

NON-ORIGINAL COUPLERS NOT PART OF COMPUTER'S GENERAL DEFINITION

Main Pedal to Great (formerly Diapasons to Crescendo)
Main Pedal to Swell (formerly Strings to Crescendo)
Main Pedal to Choir (formerly Flutes to Crescendo)
Main Pedal to Solo (formerly Reeds to Crescendo)

ON/OFFS IN MANUAL KEY CHEEKS

LEFT	RIGHT
Solo Unison Off	Echo to Solo
	Release
	Echo On, Solo Off

Swell Unison Off	Echo to Swell Release Echo On, Swell Off
Great Unison Off	Echo to Great Release Echo On, Great Off
Choir Unison Off	Echo to Choir Release Echo On, Choir Off

MOVING COMBINATION ACTION

Universal Thumb Pistons (Generals) C-1-2-3-4-5-6-7-8-9-10-11-12 beneath Swell and Great manuals
 Universal "Typewriter Key" Pistons (Generals) C-1-2-3-4-5-6-7-8 above Solo manual, duplicated as Toe Pistons
 Great Thumb Pistons C-1-2-3-4-5-6-7-8
 Choir Thumb Pistons C-1-2-3-4-5-6-7-8
 Swell Thumb Pistons C-1-2-3-4-5-6-7-8
 Solo Thumb Pistons C-1-2-3-4-5-6-7-8
 Antiphonal Great Thumb Pistons C-1-2-3-4
 Antiphonal Swell Thumb Pistons C-1-2-3-4
 Transposer Thumb Pistons [formerly wired as Echo Pistons 1-2-3-4 (1 transposes down by half steps, 2 releases, 3 transposes up by half steps, 4 is unwired)]
 Pedal Toe Pistons 1-2-3-4-5

MISCELLANEOUS MECHANICALS

Chinese Gong (thumb piston)
 Birds (thumb pistons) Echo, Main (Solo), Antiphonal
 Bugle Call ("typewriter key" pistons above Solo manual) F, Bb, D, F
 Thunder Loud (toe lever), wired to bottom C, C#, D, D# of 16' Bombarde
 Thunder Soft (toe lever), wired to bottom C, C#, C, D# of 16" Concert Flute
 Sforzando (manual piston and toe lever) -- unwired
 Mezzo (manual piston and toe lever) -- unwired
 Expression shoes w/indicator panel
 left to right: Echo, Solo, Great/Choir, Swell, Antiphonal
 original slider panel unwired
 Programmable Crescendo shoe - far right, wired for 183 positions
 Original Crescendo tilting tablets may be reconfigured (optional, upon request of the organist), otherwise they remain unwired
 Pedal to Swell -- formerly Strings to Crescendo
 Pedal to Choir - formerly Flutes to Crescendo
 Pedal to Great - formerly Diapasons to Crescendo
 Pedal to Solo - formerly Reeds to Crescendo
 Pedal [Treble] Separation tilting tablet
 rewired as Master Swell coupler (all shoes to Swell)

WIND PRESSURES

Great Harmonic Trumpet 15"
Both Solo Tubas (Mirabilis and Sonora) 20"
Pedal Bombarde 25"
Swell Vox Humana and Echo stops 7"
The rest of the instrument 10"

PIPE RANKS

theatre ranks in red

GREAT - 733 pipes

- Principal Diapason (wood) - 85 pipes
- English Diapason (metal) - 85 pipes
- Clarabella - 73 pipes (16' missing)
- Concert Flute (theatre voice) - 97 pipes
- Waldhorn - 85 pipes
- Gamba - 73 pipes (16' missing)
- Gemshorn - 73 pipes (16' missing)
- Harmonic Trumpet - 85 pipes
- Tromba - 73 pipes (16' missing)

CHOIR - 438 pipes

- Dulciana - 73 pipes (16' missing)
- Unda Maris (flat) - 73 pipes (16' missing)
- Tibia Minor - 73 pipes (16' missing)
- Viola - 73 pipes (16' missing)
- Clarinet - 73 pipes (16' missing)
- Orchestral Oboe - 73 pipes (16' missing)

SWELL - 1,213 pipes

- Contra Bourdon - 12 pipes (C-B, incomplete rank, 32'C to 32'B)
- Gravissima - 5 pipes (incomplete rank, 32'G to 32'B)
- Diapason Phonon - 73 pipes (16' missing)
- Horn Diapason - 85 pipes (mitred)
- Tibia Clausa - 85 pipes
- Lieblich Gedeckt - 101 pipes
- Flute Celeste (flat) - 73 pipes (16' missing)
- Salicional - 73 pipes (16' missing)
- Voix Celeste (sharp) - 73 pipes (16' missing)
- Viole D'Orchestre - 85 pipes (mitred)
- Viole D'Orchestre (sharp) - 73 pipes
- Viole D'Orchestre (sharper) - 73 pipes
- Soft Mixture (III ranks) - 183 pipes (4' top octave doubles back)
- Posaune - 73 pipes (16' missing, mitred)
- Oboe Horn - 85 pipes (mitred)

- Vox Humana - 61 pipes (16' and 4' top octave missing)

SOLO - 669 pipes

- Diapason Stentor - 73 pipes (16' missing)
- Melophone - 73 pipes (16' missing)
- Cello - 85 pipes (mitred)
- Cello Celeste (sharp) - 73 pipes (16' missing, mitred)
- Tuba Mirabilis - 61 pipes (16' and 4' top octave missing, mitred)
- Tuba Sonora - 85 pipes (4' top octave missing)
- French Horn - 73 pipes (16' missing)
- Kinura - 73 pipes (16' missing)
- English Horn - 73 pipes (16' missing)

ECHO - 353 pipes

- Vox Angelica (sharp) - 73 pipes (16' missing, mitred)
- Fern Floete - 73 pipes (16' missing)
- Viola Aetheria - 73 pipes (16' missing, mitred)
- Corno D'Amour (capped Oboe) - 73 pipes (16' missing)
- Echo Vox Humana - 61 pipes (16' and 4' top octave missing)

ANTIPHONAL - 389 pipes

- Open Diapason - 73 pipes (16' missing)
- Claribel Flute - 97 pipes
- Gemshorn - 73 pipes (16' missing)
- Viola - 73 pipes (16' missing, mitred)
- [Tuba] Horn - 73 pipes (16' missing)

PEDAL

- Bombarde - 68 pipes (mitred, first 26 wood)

TUNED PERCUSSIONS

- Piano
- Marimba/Harp
- Glockenspiel/Orchestral Bells
- Xylophone
- Celesta
- Chimes - Great
- Chimes - Solo

TRAPS

- Bass Drum
- Snare Drum
- Gong
- Tambourine

- Wood Block
- Triangle
- Tom Tom
- Cymbal
- Castanets

CHAMBER PIPE COUNT

Main - 3,121 pipes
 Antiphonal - 389 pipes
 Echo - 353 pipes
 TOTAL - 3,863 pipes

Voices by Tone Families

6 DIAPASONS

Horn Diapason - Scale 43/46 - smallest in tone
 English Diapason - Scale 42(?)
 Open Diapason - Scale 41
 Diapason Phonon - Scale 40
 Principal Diapason - Scale 38
 Diapason Stentor - Scale 36 - largest in tone

8 FLUTES + 2 TIBIAS

Fern Floete - smallest in tone
 Lieblich Gedeckt
 Flute Celeste
 Concert Flute
 Clarabella
 Claribel Flute
 Tibia Minor
 Tibia Clausa
 Waldhorn
 Melophone - largest in tone

13 STRINGS

Viola Aetheria - smallest in tone
 Vox Angelica
 Salicional
 Voix Celeste
 Dulciana
 Unda Maris
 Viola (Choir)
 Viola (Antiphonal)
 Viole D'Orchestre
 II Violes Celeste

Gamba
Cello Celeste
Cello - largest in tone

16 REEDS

Corno D'Amour - smallest in tone
Vox Humana (Echo)
Vox Humana (Swell)
Kinura
Orchestral Oboe
Clarinet
Oboe Horn
Posaune
French Horn
English Horn
Tuba Horn
Tromba
Tuba Sonora
Harmonic Trumpet
Tuba Mirabilis
Bombarde - largest in tone