The Curtis Sesquicentennial Exposition Organ  
Opus 1416, Austin Organ Co., Hartford, Connecticut

Opus 1416 was built in 1926 for the Sesquicentennial International Exposition held in Philadelphia. Afterward, the organ was purchased by publisher Cyrus Curtis, donated to the University of Pennsylvania, and installed in the newly-built Irvine Auditorium in 1928-29. It was named the Cyrus H. K. Curtis Organ in honor of Mr. Curtis.

Opus 1416, at four manuals, 162 ranks (10,731 pipes) residing in Irvine Auditorium of the University of Pennsylvania, is the magnum opus (executed under a single contract) of the Austin firm. Built for Sesquicentennial Exposition in Philadelphia (in only six months!), it is a masterpiece of Symphonic organ building, remaining one of the very few, if not uniquely, unchanged symphonic instruments of the period.

Opus 1416 was relocated to Irvine Auditorium during the building’s construction, occupying the two side second-balconies, originally designated to seat 600. Installation delayed the opening of the hall by nearly two years. The organ also happens to be the second largest instrument in Philadelphia area (after the Wanamaker Organ)!

While comparatives and lists change and claims of size are hard to substantiate, the organ still ranks as one of the largest pipe organs in the world, currently estimated to be No. 22 by pipe count.
### Specification

#### GREAT DIVISION
(35 ranks, 2135 pipes, 7” w.p.)

*Unenclosed*
1. Violone Dolce 16’
2. First Open Diapason 8’
3. Second Open Diapason 8’
4. Principal 4’
5. Octave Quint 2 2/3’
6. Super Octave 2’
7. Mixture III-IV (12:15-17:19) 2’

*Enlosed*
8. Bourdon (ext. #15) 16’
9. Third Open Diapason + 8’
10. Fourth Open Diapason 8’
11. Fifth Open Diapason + 8’
12. Flauto Major 8’
13. Doppel Flöte + 8’
14. Harmonic Flute + 8’
15. Bourdon 8’
16. Clarabella + 8’
17. Gamba 8’
18. Violoncello 8’
19. Gemshorn + 8’
20. Quint 5 1/3’
21. Octave 4’
22. Hohl Flöte + 4’
23. Harmonic Flute 4’
24. Mixture V (19-22-24-26-29) 1 1/3’
25. Double Trumpet 16’
26. French Trumpet 8’
27. Trumpet + 8’
28. French Horn + 8’
29. Clarion 4’
30. Tuba Magna (Solo #155) 8’
31. Tremolo (affects stops marked +)
32. Harp 8’
33. Celesta 4’
34. Cathedral Chimes (Solo)
35. Marimba (Solo) 8’
36. Great to Great 16’
37. Unison Off
38. Great to Great 4’
39. String Organ on Great
40. Trombone Chorus on Great

#### SWELL DIVISION
(39 ranks, 2715 pipes, 7” w.p.)

*Enlosed*
41. Bourdon 16’
42. Gemshorn 16’
43. Diapason Phonon 8’
44. Open Diapason 8’
45. Horn Diapason 8’
46. Geigen Principal 8’
47. Melodia +
48. Rohr Flöte + 8’
49. Viola d’Gamba 8’
50. Viole d’Orchestre + 8’
51. Viole Celeste III 8’
52. Salicional
53. Viole Celeste 8’
54. Flauto Dolce + 8’
55. Unda Maris 8’
56. Principal 4’
57. Traverse Flute + 4’
58. Flute d’Amour 4’
59. Violina 4’
60. Twelfth* 2 2/3’
61. Fifteenth* 2’
62. Flautina 2’
63. Seventeenth* 1 3/5’
64. Twenty-First* 1’
65. Twenty-Second* 1’
66. String Mixture V (Collective*)
67. Mixture IV (19-22-24-26-29) 1 1/3’
68. Contra Fagotto 16’
69. Vox Humana + 16’
70. French Trumpet 8’
71. Cornopean 8’
72. Oboe + 8’
73. Corno d’Amore + 8’
74. Vox Humana II + 8’
75. Clarion 4’
76. Vox Humana + 4’
77. Tremolo (affects stops marked +)
78. Swell to Swell 16’
79. Unison off
80. Swell to Swell 4’
81. String Organ on Swell
82. Trombone Chorus on Swell

#### CHOIR DIVISION
(29 ranks, 2009 pipes, 7” w.p.)

*Enlosed*
83. Contra Gamba 16’
84. Double Dulciana + (ext. #96) 16’
85. Open Diapason 8’
86. Geigen Principal 8’
87. Stopped Diapason 8’
88. Chimney Flute + 8’
89. Quintadena 8’
90. Viole d’Orchestre + 8’
91. Viole Celeste 8’
92. Concert Flute + 8’
93. Flute Celeste 8’
94. Gemshorn 8’
95. Gemshorn Celeste 8’
96. Dulciana + 8’
97. Principal 4’
98. Flute d’Amour + 4’
99. Dolce + (ext. #96) 4’
100. Twelfth* 2 2/3’
101. Fifteenth* 2’
102. Flageolet 2’
103. Dulcet + (ext. #96) 2’
104. Seventeenth* 1 3/5’
105. Dulcinet + (ext. #96) 1’
106. Cornet Mixture (Collective*)
107. Trombone 16’
108. Baryton + 16’
109. Bass Clarinet 16’
110. Cor Anglais (ext. #115) 16’
111. Tromba 8’
112. Orchestral Horn + 8’
113. Orchestral Oboe + 8’
114. Clarinet + 8’
115. Cor Anglais + 8’
116. Vox Humana (4” w.p., Tremolo) 8’
117. Tromba Clarion 4’
118. Tremolo (affects stops marked +)
119. Cathedral Chimes (Solo)
120. Harp (Great) 8’
121. String Organ on Choir
122. Trombone Chorus on Choir

#### TROMBONE CHORUS
(5 ranks, 365 pipes, 10” w.p.)

*Enclosed with Choir*
123. Contra Trombone 16’
124. First Tromba 8’
125. Second Tromba 8’
126. First Clarion 4’
127. Second Clarion 4’
### SOLO DIVISION
(14 ranks, 1022 pipes, 10” w.p.)

*Enclosed*
- 128. Grand Diapason Phonon 8’
- 129. Flauto Major + 8’
- 130. Gross Gamba + 8’
- 131. Gamba Celeste 8’
- 132. Gedeckt + 8’
- 133. Concert Flute ( Choir #93)
- 134. Flûte Ouverte + 4’
- 135. Flute d’Amour ( Choir #98)
- 136. Concert Piccolo 2’
- 137. Tuba Profunda 16’
- 138. Harmonic Tuba + 8’
- 139. French Bugle + 8’
- 140. Hunting Horn + 8’
- 141. Bell Clarinet 8’
- 142. French Horn (Great #28)
- 143. Orchestral Oboe ( Choir #113)
- 144. Cor Anglais ( Choir #115)
- 145. Clarinet (Choir #114)
- 146. Tuba Clarion 4’
- 147. Tremolo (affects stops marked +)
- 148. Cathedral Chimes
- 149. Marimba (reiterating)
- 150. Harp (Great #32)
- 151. Glockenspiel (reiterating)
- 152. Carillons 4’
- 153. Xylophone 4’
- 154. Celesta (Great #32)
- 155. Tubal Magna (20” w.p.)
- 156. String Organ on Solo
- 157. Trombone Chorus on Solo
- 158. Solo to Solo 16’
- 159. Unison off
- 160. Solo to Solo 4’

### STRING DIVISION
(26 ranks, 1898 pipes, 7” w.p.)

*Enclosed*
- 161. Violas V 8’
- 162. Celestes V 8’
- 163. Violas III 8’
- 164. Celestes III 8’
- 165. Violas II 8’
- 166. Celestes II 8’
- 167. Violas III 4’
- 168. String Mixture III (12-15-17) 2½’
- 169. Full String Organ
- 170. Tremolo
- 171. String Organ 16’
- 172. String Organ 4’

### PEDAL DIVISION
(14 ranks, 587 pipes, 7 & 10” w.p.)

*Unenclosed except #201*
- 173. Resultant Bass (#178 & 183) 64’
- 174. Double Open Diapason 32’ (ext. #178)
- 175. Contra Violone (ext. #181) 32’
- 176. Contra Bourdon (ext. #183) 32’
- 177. First Open Diapason 16’
- 178. Second Open Diapason 16’
- 179. Metal Open Diapason 16’
- 180. Diaphone 16’
- 181. Violine 16’
- 182. First Bourdon 16’
- 183. Second Bourdon 16’
- 184. Lieblich Gedeckt (Swell #41) 16’
- 185. Gamba (Choir #93) 16’
- 186. Violes Celestes III (String) 16’
- 187. Dulciana (Choir #96) 16’
- 188. Gross Quint (ext. #183) 10½’
- 189. Octave (ext. #177) 8’
- 190. Principal (ext. #179) 8’
- 191. Gross Flute (ext. #178) 8’
- 192. Bourdon (ext. #183) 8’
- 193. Flauto Dolce (Swell #41) 8’
- 194. Dulciana (Choir #96) 8’
- 195. Violes Celestes III (ext. String #161 & 163) 8’
- 196. Violoncello Celeste II (Solo #130 & 131) 8’
- 197. Twelfth (ext. #183) 5½’
- 198. Octave Flute (ext. #178) 4’
- 199. Mixture V (12-15-17-19-22) 5½’
- 200. Contra Bombarde (ext. #201) 32’
- 201. Bombarde 16’
- 202. First Trombone 16’
- 203. Second Trombone (Choir #123) 16’
- 204. Tuba Profunda (ext. Solo #155) 16’
- 205. Contra Fagotto (Swell #68) 16’
- 206. Bass Clarinet (Choir #109) 16’
- 207. Tromba (ext. #202) 8’
- 208. Tuba Magna (Solo #155) 8’
- 209. Clarion (ext. #202) 4’
- 210. Tuba Clarion (Solo #155) 4’
- 211. Cathedral Chimes (Solo) 8’
- 212. Marimba (Solo) 8’
- 213. Glockenspiel (Solo) 8’
- 214. Trombone Chorus on Pedal
- 215. Pedal to Pedal 10½’
- 216. Pedal to Pedal 8’

### COUPLERS
(Tilting Tablets above Solo)
- 1. Great to Pedal 8’
- 2. Great to Pedal 4’
- 3. Swell to Pedal 8’
- 4. Swell to Pedal 4’
- 5. Swell to Pedal‡ 2’
- 6. Choir to Pedal 8’
- 7. Choir to Pedal 4’
- 8. Choir to Pedal 5½’
- 9. Solo to Pedal 8’
- 10. Solo to Pedal 4’
- 11. Swell to Great 16’
- 12. Swell to Great 8’
- 13. Swell to Great 4’
- 14. Swell to Great‡ 2’
- 15. Choir to Great 16’
- 16. Choir to Great 8’
- 17. Choir to Great 4’
- 18. Choir to Great‡ 5½’
- 19. Solo to Great 16’
- 20. Solo to Great 8’
- 21. Solo to Great 4’
- 22. Swell to Choir 16’
- 23. Swell to Choir 8’
- 24. Swell to Choir 4’
- 25. Solo to Choir 16’
- 26. Solo to Choir 8’
- 27. Solo to Choir 4’
- 28. Great to Choir 8’
- 29. Choir to Swell 16’
- 30. Choir to Swell 8’
- 31. Choir to Swell 4’
- 32. Solo to Swell 16’
- 33. Solo to Swell 8’
- 34. Solo to Swell 4’
- 35. Swell to Solo 8’
- 36. Great to Solo 8’
- 37. Choir to Solo 8’

‡ 1980 console addition
In 1980 the Pedal to Great 8’ coupler was removed.
Expression shoe coupling fully assignable.
Some Curtis Organ fun facts, trivia and numbers:

I. The main divisions speak on 7” wind pressure (water-column inches, approx. 180 mm), with Solo, Trombone Chorus and some Pedal Division stops on 10” wind, powered by a 40 h.p. Spencer blower. The unenclosed Tuba Magna (one of only six the company made at 6” scale) is on 20” wind, boosted by a 5 h.p. Spencer blower.

II. The official counts: 162 ranks, 184 stops, 10,731 pipes.

III. The organ boasts 38 ranks of reeds, including four unique French Horns, a floating 5-rank Trombone Chorus, two unified ranks of Pedal Division reeds and the Tuba Magna, on 25” wind.

IV. There are 12 Diapason ranks at 8’ pitch and 25 Flute ranks in the manual divisions.

V. The organ contains 45 ranks of Strings, including 15 in the Swell Division and the floating 26-rank String Division, a 32’ & 16’ metal Violone unit in the Pedal, and an extension (playable in the Pedal only) to 16’ CCC of the Viole Celeste III borrowed from the String Division. Strings are tuned unison, sharp and flat throughout.

VI. The organ contains the largest Universal Air Chest™ ever built by Austin. In its original configuration in the Exposition Great Auditorium, which seated 20,000 people(!), the organ spanned 75 feet across the stage platform at the front of the room. At the dedication, a dinner for 150 was held in the airbox while the organ was played.

VII. Original designs called for an elaborate case spanning the full width of the organ, similar in style to Opus 1416's older, smaller sibling installed in the Merrill Auditorium in Portland, Maine. The case was never built due to financial constraints.

VIII. The organ is built in the Symphonic style, designed to play orchestral-style music and orchestral transcriptions. It was publicized as the “Organists’ Organ” because the specifications were drawn up a committee of prominent Philadelphia organists: Henry S. Fry (chairman), Rollo F. Maitland, Frederick Maxson, S. Wesley Sears, and John McE. Ward.

Overhead in Irvine Auditorium the heraldry and flash of color take on great dimension and variety.

1416 recordings

A portion of the front Swell Division showing several of its wooden flutes. One of the Swell Vox Humana ranks is at left.

The unenclosed Great chorus stands in front of half the Swell Division.

Fans of the Curtis Organ