INFORMATION TO USERS

This manuscript has been reproduced from the microfilm master. UMI films the text directly from the original or copy submitted. Thus, some thesis and dissertation copies are in typewriter face, while others may be from any type of computer printer.

The quality of this reproduction is dependent upon the quality of the copy submitted. Broken or indistinct print, colored or poor quality illustrations and photographs, print bleedthrough, substandard margins, and improper alignment can adversely affect reproduction.

In the unlikely event that the author did not send UMI a complete manuscript and there are missing pages, these will be noted. Also, if unauthorized copyright material had to be removed, a note will indicate the deletion.

Oversize materials (e.g., maps, drawings, charts) are reproduced by sectioning the original, beginning at the upper left-hand corner and continuing from left to right in equal sections with small overlaps.

Photographs included in the original manuscript have been reproduced xerographically in this copy. Higher quality 6" x 9" black and white photographic prints are available for any photographs or illustrations appearing in this copy for an additional charge. Contact UMI directly to order.

ProQuest Information and Learning
300 North Zeeb Road, Ann Arbor, MI 48106-1346 USA
800-521-0600

Pieter A. Visser, Organ Builder

His Life, Work and Rejuvenation of Principles of Classical Organ Building

Approved by
Supervisory Committee:

Carroll L. Gonzo

Frank N. Speller

Gayle N. Barrington

Edward R. Pearsall

David A. Renner

Russell E. Schulz

Pieter A. Visser, Organ Builder

His Life, Work and Rejuvenation of Principles of Classical Organ Building

by

Jon Allan Stuber, B.M.; M.M.

Treatise

Presented to the Faculty of the Graduate School of

the University of Texas at Austin

in Partial Fulfillment

of the Requirements

for the Degree of

Doctor of Musical Arts

The University of Texas at Austin

May, 2001

UMI Number: 3008253

Bell & Howell Information and Learning Company
300 North Zeeb Road
P.O. Box 1346
Ann Arbor, MI 48106-1346

Dedication

This dissertation is dedicated to my friends Jason Hobratschk and Becky Reyes,

whose continual interest, support, enthusiasm and encouragement

have been my inspiration and incentive to pursue the completion of this work.

Acknowledgments

Special appreciation is expressed to committee co-chairs Dr. Carroll L. Gonzo and Dr. Frank N. Speller, who gave generously of their time, advice, and encouragement to enable me to complete this project. Also important was the support of the other committee members: Dr. Edward R. Pearsall, Professor David A. Renner, Professor Gayle H. Barrington, and Dr. Russell Schulz.

Pieter A. Visser, Organ Builder

His Life, Work and Rejuvenation of Principles of Classical Organ Building

Publication No._____

Jon Allan Stuber, D.M.A.
The University of Texas at Austin, 2001

Co-Supervisors: Carroll L. Gonzo, Frank N. Speller

Pieter A. Visser has built more than 120 organs across the United States. Utilizing twentieth-century technology, principles of aerodynamics, and his knowledge of historical Northern European instruments of the seventeenth and eighteenth centuries, Visser produces organs of remarkable clarity, reliability, and versatility allowing for the performance of a wide range of literature; these instruments simply are works of art.

This study is a description of the life and work of Pieter Visser; the factors which led to the formation of his philosophy of organ design and principles of classical organ building. Information used to draw conclusions about the nature of

Visser's organs was gathered from questionnaires answered by contemporary organ builders, concert and church organists familiar with his work, and interviews with Visser conducted by the author. In addition, Visser's opinions and philosophies regarding organ building as expressed in non-published and published sources were examined. These include articles written by Visser in a variety of professional publications and articles at *PIPORG-L*, an Internet discussion group of more than one thousand individual members interested in pipe organs and related topics.

Visser's success in organ building arises from the combination of several factors: his early training and exposure to organs in his native homeland, the Netherlands; his knowledge of aerodynamics and adherence to principles of classical organ building; his utilization of twentieth-century technology in the design and production of organs; and his careful attention to the details of all aspects of organ building.

TABLE OF CONTENTS

LISTS OF FIGURES AND TABLES

FIGURES

TABLES

CHAPTER 1

BIOGRAPHY OF PIETER ARNOLDUS VISSER

The family history of Pieter Arnoldus Visser can be traced back to 1298, when the Visser men were fishermen in Peasens, a small town in Northern Friesland, Holland.[1] The Visser fishing profession, led by men whose names consistently alternated between Ate and Pieter, continued until 1893, when a fleet of thirty-seven ships and 196 crewmen were destroyed in a hurricane. A single ship under the command of Pieter A. Visser's great-great-great-grandfather survived, along with its crew of six men. This disaster caused the economic ruin of the Visser family, so they turned inland to become farm hands, leading lives of extreme poverty.[2] From that unhappy tradition, the family moved on to better professions. This trend was continued by Pieter A. Visser, who was born on November 3, 1940, in Amsterdam, Holland. He was to have the distinction of becoming the first organ builder in the history of his family.

Visser was born into a family with considerable musical talent. His parents, Ate and Anna Hendrika Eggers Visser were singers.[3] His mother also was an organist as was her father, Arnold Eggers.[4] As a result, young Visser's home was

---

[1] Pieter A. Visser, "Re: More Details," E-mail to author, 8 November 2000.

[2] Ibid.

[3] Pieter A. Visser, interview by author, 21 July 1999, Tomball, Texas, tape recording, Visser Associates Pipe Organ Builders.

[4] Pieter A. Visser, "Re: Dissertation Questions," E-mail to the author, 23 September 2000.

filled with music. Moreover, he had exposure to many of the finest Dutch organs and organ music from his earliest days.[5]

Though blind, Visser's maternal grandfather was organist at different times for two churches in Amsterdam: the Ronde Luterse Kerk and the Wester Kerk, as the associate organist.[6] Visser regularly attended services at the Wester Kerk in the company of his grandfather.[7] The pastor's sermons often lasted well over an hour, and during many of them, the pastor realized that a given hymn would be appropriate at a particular moment. After he announced the hymn number, the pastor expected the organist to begin the hymn introduction. Since Visser's grandfather remained seated at the console throughout each service, and because he had memorized all the hymns and hymn numbers, Visser's grandfather immediately started the hymn introduction.[8] In addition, his musical preludes to the service were improvised and expected to last approximately five minutes. It was his grandfather's custom to use hymn tunes and scriptures assigned to the particular Sunday as the subjects of his improvisations.[9] Such spontaneity of church music must have made quite an impression on young Pieter.

On one Sunday during World War II, Visser's grandfather began to improvise the prelude prior to the church service. On this particular day, armed German soldiers

---

[5] Visser, interview by author.
[6] Visser, "Re: Dissertation Questions."
[7] Visser, interview by author.
[8] Ibid.
[9] Pieter Visser, "The Long Promised Sermon," *PIPORG-L Archives*, October 1998, week 3 (#155) <http://www.albany.edu/piporg-l/>.

were present. As the prelude continued, Visser's grandfather began to improvise on the Dutch national anthem in a subtle fashion. The German soldiers were completely unaware of the subject used in the improvisation, but the other members of the congregation recognized the theme. This improvisation so inspired the people that upon completion of the prelude, the congregation stood and sang the national anthem with full voice, accompanied by full organ. The soldiers in an attempt to silence this outburst rushed to the organ loft just as Visser's grandfather completed the song. He was marched out of the church and lined up against a wall to be executed. Upon realizing the organist was old, blind, and very frail, the soldiers spared his life and ordered that he never play the organ for a church service again. Fortunately, the war ended a few weeks later and Visser's grandfather returned to the organ bench. For Pieter Visser, this incident embodied the power of music and the effect organ music could have as a tool for motivating people.[10]

At the age of seven, Visser was the lead treble voice in the Naarden Boys Choir of the Netherlands.[11] In addition to his singing in that choir, he began to assist the organ tuner of the Wester Kerk with maintenance of the church's pipe organ.[12] Visser held down the appropriate keys at the console while the technician tuned the organ's pipes. When he was nine years old, Pieter was permitted to assist the tuners to a greater extent by helping to maintain the key action and tuning some of the

---

[10] Ibid
[11] Visser, resume sent to author, 21 July 1999.
[12] Visser, interview by author.

pipes.[13] By age eleven, Pieter had learned to set a temperament.[14] It is impressive that he learned such skills at such an early age; however, introducing young musicians to such training was in keeping with European traditions.

Upon graduation from the Higher Burger School in 1954, the equivalent of an American High School, Visser began a formal apprenticeship with Verschueren Orgel Bouw [Verschueren Organ Builders] in Heythusen, while at the same time attending night school and studying mechanical engineering as well as technical drafting at the Technical Institute in Roermond, Holland.[15] At that time, Verschueren was one of the most respected organ building firms in Holland. It had over eighty employees who built various types of organs with mechanical and non-mechanical action.[16] The company spared little expense on Visser's training, and he was exposed to all aspects of organ building and design: key actions, scaling, voicing, [17] wood and metal pipe making, and servicing and maintaining organs. In addition, Visser received formal training in academic subjects related to organ building at The School for Musical Instruments in Ludwigsburg, Germany.[18]

While at the Verschueren firm, Visser was guided by several mentors in various disciplines of organ building. Frans Verschueren, the tonal director and

---

[13] Ibid.

[14] A temperament is an intricate system of tuning intervals within an octave to make an instrument playable in all keys.

[15] Visser, resume sent to author.

[16] See Chapter 2 for complete description and diagrams of mechanical and non-mechanical actions.

[17] See Chapter 2 for explanation and descriptions of key action, scaling and voicing.

[18] Visser, resume sent to author.

company voicer was instrumental in developing Visser's skills as a pipe voicer.[19] Henri Grados, one of the last reed voicers of the famous nineteenth-century French organ building firm, Cavaillé-Coll, gave Visser instruction in reed pipe voicing and reed pipe making.[20] Of all Visser's mentors, Joseph Bremm was probably the most influential. Bremm was instrumental in honing Visser's scaling and voicing skills, and also gave him many valuable lessons in all aspects of organ building.[21]

Bremm was a stubborn and difficult person with whom to work, especially when guiding the company's young apprentices whom he often thought were unworthy.[22] To keep them from observing and learning, he turned his back on them while working on any critical aspect of organ building.[23] As punishment for a trivial incident during his apprenticeship, Visser was sent to a job site to work on an organ with "Papa Bremm" for an entire week. After the third day of work on this particular instrument, Bremm returned from his lunch break clearly inebriated. While tuning a large stop with many pipes in the organ, Bremm passed out, and Visser, who was holding keys at the console, heard Bremm slump over the top of the pipes. Visser left the console, climbed up to the place in the organ where Bremm had been working, only to find him asleep and snoring. Visser carried him down the ladder, out of the organ case and onto the balcony floor. As a student

---

[19] Visser, interview by author.
[20] Reed stops included trumpets, oboes, and clarinets.
[21] Visser, interview by author.
[22] Ibid.
[23] Ibid.

from a nearby school held keys at the console, Visser repaired the pipes on which Bremm had fallen and finished tuning the stop. Just as Visser finished his work, Bremm began to sober, but Visser was unaware that Bremm knew of the work he had done. From that point on, Bremm requested Visser to accompany him on all future job sites, and began to teach Visser everything he wanted to know about organs and organ building.[24] He gave Visser his first important instruction on the path to becoming a master organ builder.

Bremm was an expert not only at scaling and voicing, but also in acoustical matters. When entering a building for the first time, organ builders ordinarily clapped their hands in order to sense the qualities of reverberation of a given room. Bremm did not approve of this method.[25] Instead, he instructed Visser to listen to the building as he walked in and be sensitive to the ambient sounds that exist in the space. He showed Visser how to listen to his own voice and to listen not only with his ears, but also with his body. Instructed to use all of his senses when entering a room for the first time, Bremm could "feel" the acoustics before hearing any sounds with his ears.[26] Bremm instructed Visser to combine all the data received from his five senses. For example, their eyes gathered information about the size of the space, which in turn would effect the acoustical properties.

---

[24] Ibid.
[25] Ibid.
[26] Pieter A. Visser, telephone conversation with author, 14 November 2000.

Bremm believed one should listen to and interpret the feedback that the body received in order to understand the acoustics of a given space.[27] Bremm and Visser often visited cathedral spaces with exceptional amounts of resonance and remarkable organs. They sat on the floors in these buildings and made sketches of their designs to determine what made the marriage of room and instrument so successful.[28] In short, Bremm taught Visser how to hear acoustics and how they affected the voicing of organ pipes.

Visser continued his training by studying organs throughout Europe, specializing in the Dutch, German, Scandinavian, and French styles of organ building.[29] Having documented various aspects of European organs, Visser assisted MaartenVente and Arie Bouwman with the research of their important publication *The Organ and Its Music in the Netherlands, 1500-1800.* In this book, Visser provided the authors with various drawings and documentation regarding scaling, wind systems, key actions, stop actions, and acoustical environments.[30] He also wrote several chapters included in the publication. During these early years, Visser became intimately acquainted with the work of the eighteenth-century German organ builder, Christian Müller (1690-1763), who worked throughout in the Netherlands.[31] Visser particularly admired Müller's monumental masterpiece in the Bavokerk, Haarlem, the Netherlands. This renowned instrument later became Visser's

---

[27] Visser, interview by author.
[28] Ibid.
[29] Ibid.
[30] Visser, resume sent to author.
[31] Visser, interview by author.

inspiration in designing two of his large instruments; Opus 29, St. Luke's Episcopal Church in San Antonio, Texas, and Opus 43, Bates Recital Hall at the University of Texas, Austin, Texas.[32]

Visser received his Master Organ Builder equivalency[33] test in 1959.[34] He successfully completed examinations in scaling and voicing, mechanical actions, pneumatic actions, cabinet making, service and maintenance, pipemaking, design, flue voicing, and reed voicing, and customer relations.[35] He was considered the most talented individual ever to have apprenticed at the Verschueren firm.[36]

At the age of nineteen, Visser left the Verschueren firm and immigrated to the United States. His first American organ building position was with Holzinger Organs in Los Angeles, California. There he was made head voicer of the company the first week of his employment because of his impeccable organ building skills.[37] Visser shared his knowledge of European characteristics such as lower wind pressures and improvements in windchest and key action designs with the company.

In July 1960, after receiving offers from other organ builders such as Holtkamp in Cleveland, Ohio, Austin Organs in Hartford, Connecticut, Casavant Frères in St. Hyacinthe, Quebec, Canada, and Wicks Organs in Highland, Illinois,

---

[32] Ibid.

[33] This term "equivalency" is typical in Holland. It is equivalent to the German master builder exam with the exception of who administers the exam. In Germany, the government gives the exam and in Holland the foreman of the shop where the student has apprenticed gives the test.

[34] Visser, resume sent to author.

[35] Ibid.

[36] Ibid.

[37] Visser, interview by author.

Visser left the Holzinger Organ Company.[38] He chose the Wicks Organ Company and worked as a subcontract installer and tonal finisher through September 1966. He completed over 171 organs throughout the United States for the Wicks company.[39] He continued to influence American organ building with his European knowledge technique and skills.

In January 1963, Visser married his first wife, Patricia Ann Wiltgen.[40] In the same year, Visser received his private pilot license, something one might consider to be totally unrelated to organ building.[41] Having gained practical knowledge of aerodynamics, he related this knowledge to organ building by studying the flow of air in organ pipes in a new way.[42] By using the principles of air under pressure and air in motion, Visser was able to manipulate various parts of pipes to produce clearer, more articulate sounds.[43] He continued to use his experience as a pilot and the study of aerodynamics and fluidics[44] to conduct further studies on pipes and pipe speech, some of which were later published in *The American Organist, The Diapason,* and other professional journals.

From October 1966 to December 1968, Visser served as pilot, flight engineer, examiner and instructor of DC7, DC8, C46, L100, and Boeing 727 airplanes at Airlift

---

[38] Ibid.
[39] Ibid.
[40] Visser, "Re: More Details."
[41] Visser, resume sent to author.
[42] Visser, interview by author.
[43] Ibid.
[44] Fluidics is the study of the flow characteristics of liquid or gas.

International Airlines, Miami, Florida.[45] Also in 1968, the marriage of Pieter and Patricia produced an only child, a son, Michael. While caring for his new family, Visser continued to serve several airlines in various capacities through 1972.

From January 1969 through May 1971, he served Air Pacific Airlines, Seattle, Washington as chief pilot, director of operations, and pilot examiner.[46] From June 1971 through January 1973, Visser was pilot and instructor for Scenic Airlines, Las Vegas, Nevada.[47] In addition to his pilot duties, he worked part-time with Walcker Organ Builders, a German organ company known for introducing Germanic styles of organ building in the United States. As their U.S. Tonal Director and Installer, Visser supervised many of their installations across the country.[48] For nine months, beginning in February 1973, he worked for the Berkshire Organ Company of Springfield, Massachusetts. From the information given Visser at his interview by Berkshire, the company appeared to be financially stable, and the firm assured Visser of the potential the company offered. Upon arriving at the firm, Visser soon discovered that the company was in deep financial trouble; he had been brought in to aid in re-establishing the company's financial security.[49]

---

[45] *PIPORG-L Biographies*, Pieter A. Visser <http://www.albany.edu/piporg-l/bios/visser.p-bio>.

[46] Visser, resume sent to author.

[47] Ibid.8

[48] Visser, interview by author.

[49] Ibid.

While working for Berkshire, Visser began to investigate the prospect of establishing his own organ building company. He began a cross-country search for the most advantageous location to open his new firm. In examining several areas, he found Houston, Texas, to be the best choice, since its economy was healthy, despite a national recession in the early 1970s. When he left Berkshire in September 1973, a co-worker, Jan Rowland, who had previously worked with Visser at the Wicks Organ Company, joined him. These two adventurers and their wives moved to Houston and established a shop. Each man began with an investment of $5,000 and brought equipment already in his possession. Additional tools and machinery needed to launch the business were soon acquired. Visser-Rowland Associates was legally incorporated on October 10, 1973. The company occupied a 3,000 square-foot shop located on Johanna Street and remained there for twenty-six years. In the first day of business, the company signed a contract for an Opus 1[50] for Redford Lutheran Church, Redford, Michigan.[51] From the beginning, Visser-Rowland Associates had the intention of building the best organs available at the most reasonable cost.[52] Visser, Rowland and their wives worked seven days a week, and often from six o'clock in the morning until ten o'clock every night, to ensure the fledgling company's success.[53]

---

[50] This common practice among organ builders of referring to consecutive opus numbers makes instruments easy to identify.

[51] Visser, interview by author.

[52] Ibid.

[53] Ibid.

With Visser's knowledge of all aspects of organ building and Rowland's mechanical skills, their position among their contemporaries was quite advantageous and brought much attention to their innovative firm. Additional exposure was gained from a Houston-area television program that reported on their organ building firm. Business began to expand, and in 1978, the company signed contracts for their first two large projects, Opus 7 (38 stops) to be installed in Memorial Drive United Methodist Church, Houston, Texas, and Opus 11 (37 stops) to be installed in Westbury Baptist Church, Houston, Texas.[54]

Although Visser-Rowland Associates primarily produced instruments in a classic (Baroque) style, they also occasionally produced more eclectic organs that catered to American tastes.[55] The company also rebuilt several existing organs which, according to Visser, were much more exciting than the original instruments.[56] In an extensive renovation, the organ builder restores the entire console, key action and pipes. Two such instruments are Opus 3R[57], St. Philip Presbyterian Church, Houston, Texas, and Opus 86R, Texas Lutheran College, Seguin, Texas.[58] On a simpler project, such as Opus 68R, only the console and its mechanical parts are restored.[59]

---

[54] Ibid.

[55] See Organ Specification in Appendix A: Opus 22, (classic design); Appendix B: Opus 16R, 15R (eclectic design). Eclectic organ design exhibits more unison stops (8') in the manuals, more orchestral reed stops on all manuals and a Celeste in the swell division.

[56] Visser, interview by author.

[57] The "R" after the opus numbers designates the organ as a rebuild or renovated instrument.

[58] See Appendix B for stop lists.

[59] See Appendix B for console details.

According to Visser, the installation of Opus 29 in St. Luke's Episcopal Church, San Antonio, Texas in February 1982, met with amazing success.[60] Among all the organs that he has built, Visser regards this instrument to be the most closely related to the work of Christian Müller.[61] Visser combined the inspiration of Müller along with his own knowledge and early training to produce an instrument of exceptional quality.[62]

Visser's partner, Jan Rowland, left the company in 1982. The Visser-Rowland staff which included Visser's son Michael, continued to build organs under the Visser-Roland Associates name. In May of 1989, Pieter and his wife divorced, and in January of 1990 he married Marsha Seale, who was then organist at St. Luke's Episcopal Church in San Antonio, Texas. Marsha soon left her position at St. Luke's and joined Pieter in Houston.

In February 1999, the company relocated in Tomball, Texas, and on February 4, 2000, the company was renamed Visser and Associates Pipe Organ Builders, Inc.[63] In addition to managing his own firm, Visser was a founding member of the American Institute of Organ Builders (AIO) in 1974 and in subsequent years has served as examiner and chairman of the Examination Committee and Educational Committee.[64] Visser has also served as Lecturer of Pipe Organ Construction and

---

[60] Visser, interview by author.
[61] Ibid.
[62] Ibid.
[63] Pieter A. Visser, "Re: 20 Questions continued, " E-mail to author, 27 September 2000.
[64] Visser, resume sent to author.

History, an adjunct faculty position, at Rice University, Houston, Texas since 1975.[65] He has lectured throughout the United States, speaking on topics such as organ building, and acoustics and architecture. He also has presented lectures to the American Institute of Architects, the American Institute of Acousticians, and at several American Guild of Organist National and Regional Conventions.[66]

Pieter Visser has served as President of the Associated Pipe Organ Builders of American and Vice President of the International Society of Organ Builders.[67] On May 9, 1998, Concordia University at Austin, Texas, awarded Visser an honorary doctorate, Litt.D., which was titled "Gospel herald in pipes, Preserver of the church's heritage in music, and Preeminent designer of organs."[68]

Visser has written numerous articles that have appeared in a variety of professional publications on all facets of organ building. These publications include *The American Organist, The American Institute of Organ Builders Newsletter, The International Society of Organ Builders ISO News and Yearbook,* and *The Diapason.* Topics include winding systems, aerodynamics in the organ pipe, windchest development and design, pipe scales and their relationship to room sizes and acoustics, structural engineering of the organ case, mechanical action design and construction, acoustics, fluid dynamics, computer aided design (CAD), and computer aided machining (CAM) in organ building.

---

[65] Ibid.
[66] Ibid.
[67] Ibid.
[68] *Concordia University Baccalaureate and Commencement Program: Spring 1998* (Austin: Concordia University), 9 May 1998, 12.

Since the beginning of his career, both with his own company and before, Visser has built over 400 organs in the United States. [69] Of this number, 120 were built under the names of Visser-Rowland Associates or the Visser and Associates Pipe Organ Builders, Inc.[70] His organs have been installed in churches, universities, and several private residences. At present, pipe organ building is not as active as in the past, due in part to the introduction of contemporary worship styles that do not use the organ. Visser believes that this trend will eventually subside and that the demand for fine quality organs will again increase.[71] Pieter Visser continues to strive to build each instrument better than the last and to imprint his personal signature on the sound and appearance of each of his instruments. [72]

---

[69] *PIPORG-L Biographies,* Pieter A. Visser <http://www.albany.edu/piporg-l/bios/visser.p-bio>.

[70]Ibid.

[71] Visser, interview by author.

[72] Ibid.

CHAPTER 2

A BRIEF HISTORY OF ORGAN CONSTRUCTION

Organ music is greatly affected by an organ's sound, which is, in turn, determined by its design and construction. An organist with a working knowledge of an organ's construction can more effectively study and perform music on his instrument. With this knowledge, the organist can take advantage of the instrument's strengths and overcome its limitations. In order to identify these traits, however, a historical understanding of the structure and inner workings of the organ is essential to an organist.

The organ reached a pinnacle in design and sound by the late seventeenth and early eighteenth centuries. During the nineteenth century, inventions and improvements produced new varieties of organ styles and sounds that deviated from the classical principles[73] of previous centuries. Advocates of the organ reform movement of the twentieth century sought a return to the classical principles of organ design, building, purpose, and sound. In order to gain a perspective of the building philosophy of Pieter Visser, it may be helpful to examine certain aspects of the classical organ, the move away from these aspects in the nineteenth century, and the return to the classical ideals sparked by the organ reform movement in the twentieth

[73] For the purpose of this study, the term "classical" refers to the style in which organs were built in Northern Europe from roughly 1500 to 1800.

century. These aspects include pressure and flexibility of organ wind, key action and windchests, the case and location of an organ, voicing and scaling of pipes, and choice of an organ's stops.

ORGAN WIND

The wind device, or lungs, of the organ produces air under pressure required to make the pipes sound. Wind pressure on organs of the seventeenth century was raised by hand or foot to inflate bellows. These single-fold bellows were somewhat standardized in shape in northern Europe by the seventeenth century.[74] Two wooden boards were hinged on one end, the lower board being fixed to the floor whereas the upper was moveable. Strips of leather were then attached to the remaining three sides to form an enclosed prism. The top board was raised diagonally, allowing an intake of air at normal atmospheric pressure; then the board was allowed to drop under its own weight, creating pressurized wind. In southern Europe, a multi-fold bellow was used, allowing a greater intake and exhaust of air by expanding the volume of a rectangular prism with wooden ribs. A leather membrane enclosed all moving parts.[75] As the number of bellows increased, individual bellows were operated alternately. As one bellow was exhausted, a neighboring bellow was inflated, thereby supplying a stronger and steadier supply of wind. To further increase the amount of air pressure,

---

[74] Stephen Bicknell, "Organ Construction," *The Cambridge Companion to the Organ*, Nicholas Thistlethwaite and Geoffrey Webber, eds. (Cambridge: Cambridge University Press, 1998) 19.

[75] Ibid.

builders began to place lead or stone weights on top of the bellows. This pressurized wind was then fed into a wind canal made of wood, which led directly to windchests upon which the pipes were placed.

From about 1650 to 1750, typical wind pressures for organs in Germany and the Netherlands ranged from 2½ inches to 3½ inches, as measured by a device known as a manometer, which measures air pressure by using the displacement of water.[76] Wind pressures continued to remain relatively consistent throughout the eighteenth century, and most organs utilized the same pressure throughout the entire organ. For example, Christian Müller, in his large organ in the Bavokerk, Haarlem, the Netherlands, built in 1735-1738, used pressure of approximately three inches.[77]

The early nineteenth century brought about several changes in winding in order to accommodate the Romantic repertoire, which required a greater and steadier supply of wind. Circa 1800, the English developed a horizontal bellows design that employed inverted folds.[78] By enlarging the size of the bellows and adding weights and springs, organ builders were able to obtain higher wind pressures. Also, valves on these bellows supplied wind at different pressures to the various windchests of the organ. This development signaled a definite departure from the seventeenth- and eighteenth-century organ builders' practice of using low, uniform wind pressure throughout the entire organ. William Hill, an English organ builder, made use of high

---

[76] Thomas Donahue, *The Modern Classical Organ: A Guide to its Physical and Musical Structure and Performance Implications* (Jefferson: McFarland and Co., Inc.) 64.

[77] Peter Williams and Barbara Owen, *The Organ*, The New Grove Musical Instrument Series, ed. Stanley Sadie (New York: W. W. Norton) 145.

[78] Bicknell, "Organ Construction," 19.

wind pressures in reed stops such as his Tuba Mirabilis at the 1837 organ in Birmingham Town Hall. This stop is thought to be the first high-pressure reed stop.[79]

With the advent of electricity in the early twentieth century, electrically-powered rotating-fan blowers were used to feed wind to the windchests, and manually pumped bellows were no longer used.[80] Wind generated from an electric blower was first directed to a reservoir, an enclosed wooden box that stored and regulated the wind, and then sent to the windchest. The top of the reservoir was fitted with an accordion-fold lid which moved up and down. Weights or springs were attached to the lid of the reservoir to force the lid down, maintaining the desired wind pressure. As air was depleted from the reservoir to make the pipes sound, the blower sent more air in to raise the lid, and the cycle continued. With this development of electrically-driven blowers along with the reservoir, builders had an almost unlimited supply of wind, which gave them the means for a radical increase of wind pressures according to the organ building style of the early twentieth century.

From 1910 through 1950, the typical range of wind pressure spanned four inches to ten inches, with some powerful reed stops requiring twenty-five inches or more. In 1930, the Atlantic City organ in New Jersey reached the ultimate organ wind pressure by employing a reed stop which required 100 inches of wind.[81] *The Guinness Book of World Records* has officially recognized this instrument as the

---

[79] *Mander Organs Home Page*, January, 2000 <http://www.mander-organs.com/html/birmingham_town_hall.html>.

[80] Williams and Owen, *The Organ*, 23.

[81] Charles Hendrickson, "Wind Pressures," *The American Organist*, April 1992, 65.

largest pipe organ in existence, as well as the biggest and loudest musical instrument ever built.[82] These higher wind pressures produced sounds of extreme magnitude, a decisive break from pre-nineteenth-century practices in organ building.[83]

Flexibility of Wind

A given wind supply can be categorized as flexible or steady. In the eighteenth century, pressurized wind was fed directly from the bellows to the windchest; no collection or stabilization apparatus existed to accumulate or cushion the pressurized air.[84] The flexible wind supply which resulted was somewhat unsteady, but this was not considered a defect.[85] During the nineteenth century, builders began to regard flexible wind as undesirable and begin to construct devices designed to produce a steadier wind supply.

With flexible winding, each time a valve leading to a pipe is opened, a small disturbance occurs in the wind system. As air is released from the windchest into a pipe to make it sound, there is a small decrease in the wind pressure inside the windchest. This decrease is followed by an almost instant recovery of the wind to the original pressure. The disturbance is slight and will take place only as the valve opens. As the key is released and the valve is closed, another disturbance occurs in the windchest. There is a slight increase in wind pressure, followed immediately by a recovery to the original wind pressure. Again, this occurrence is slight and happens

---

[82] Steven D. Smith, *Atlantic City Convention Hall Organ Society: Main Auditorium Organ,* 2000 <http://www.acchos.org/html/main_organ.html>.

[83] See following sections on voicing and scaling.

[84] Williams and Owen, *The Organ,* 15.

[85] Bicknell, "Organ Construction," 19.

only once as the valve is closed. These fluctuations in pressure have a direct impact upon the aural impression of a pipe's sound. Its pitch, volume and tone color are all affected.[86] This phenomenon is especially noticeable when a note is sustained and a moving line is played against it.

In performing polyphonic music of the seventeenth and eighteenth Centuries, flexible wind helps to delineate the movement of an inner-voice against sustained outer-voice parts,[87] thus focusing the listener's attention to the moving line. This effect is often desirable and gives the music a lively, buoyant quality, described by some musicians as giving resilient nervousness or noticeable shakiness.[88] Since no additional collection or stabilizing apparatus existed to accumulate or cushion the pressurized air, the flexible wind supply that resulted was considered characteristic.[89] In the last fifty years, this quality has again been considered a virtue.

In order to achieve absolute steadiness in the wind system required to play literature of the mid-nineteenth century,[90] builders began to use devices to control flexibility in the wind.[91] Along with the reservoir, builders developed the Schwimmer to help further regulate organ wind. The Schwimmer consists of a diaphragm and a spring-loaded plate attached to the bottom of the windchest. As the windchest receives wind from the wind line, the Schwimmer plates are pressed

---

[86] Donahue, *Modern Classical Organ,* 66.
[87] Ibid.
[88] Ibid.
[89] Bicknell, "Organ Construction," 19.
[90] Works by Franz Liszt (1811-1886), César Franck (1822-1890),Charles-Marie Widor (1844-1937), and Max Reger (1873-1916) fall into this time frame.
[91] Charles Hendrickson, "Wind for the Organ," *The American Organist*, October 1987, 28.

downward by the wind, and springs underneath the plate provide upward pressure to counteract the force of the wind pressure. The plates react to the slightest disturbance in wind by moving upward from the force of the springs, thus regulating the smallest changes in wind pressure.[92]

Builders also developed concussion bellows, which served as additional shock-absorbing devices in organ wind.[93] These were small, wedge-shaped bellows added externally to the windchest and connected to it by a small tube. Wind pressure from the windchest forced the concussion bellows to open. As multiple pipes were required to play simultaneously and a sudden drop of air pressure occurred in the chest, a spring inside the concussion bellows forced air to return to the windchest thus minimizing the sudden depletion of wind. Small concussion bellows were also referred to as winkers due to the resemblance of their motion to a moving eyelid.[94]

WINDCHEST

The pipes of each keyboard (manuals and pedal) have their own windchests located inside the organ. These chests hold the pipes, organize and distribute the wind under pressure to the pipes, and contain the pallets or valves linked to the keys at the console. The manipulation of these valves is controlled by the organist at the

---

[92] Hans Klotz, *The Organ Handbook: Structure, Design, Maintenance, History and Function of the Organ*, trans. Gerhard Krapf (St. Louis: Concordia Publishing House), 7.

[93] Bicknell, "Organ Construction," 20.

[94] James H. Cook, *Organ History: The Pipe Organ from its Origin through the Twentieth Century*, 1998 <http://panther.bsc.edu/~jhcook/OrgHist/works/works06.htm>.

console by means of various linkages from the keys to the pallets. This linkage system is known as the organ's key action.

From the fifteenth through the nineteenth centuries, several chest types were developed. With each new chest type a distinctive kind of key action appeared, specifically designed to work together with the chest. In this study, I will focus on the slider chest and its particular action.

The fifteenth century saw the development of the slider chest, which allowed individual sets of pipes to sound at the discretion of the organist. Located at the bottom of the slider chest, the pallet box, a small box running the length of the chest contains a pallet for each note of the keyboard. Directly above each pallet, a partitioned groove or tone channel leads to all of the pipes of a single note on that chest. These channels are separated from each another by thin partitions of wood, and the lower edges of the partitions provide seals for the pallets.[95]

In order to control the flow of air from the tone channel to a given set of pipes, a device known as a slider is used to control which stops would speak. A slider is a thin strip of wood that runs the length of the chest between its top and the toeboard, the board of the chest on which sets of pipes stand. Holes are drilled through the toeboard and through the slider into the tone channel. Sliders are allowed to move back and forth and are controlled from the console as the organist draws or withdraws stops. When holes in the slider line up with holes in the chest, known as the "on"

---

[95] Thomas W. Byers, "Fundamentals of Organ Construction," *Organ Institute Quarterly*, Winter 1955, vol. 5, no 1, 23.

position, wind is permitted to travel from the chest into the tone channel and then into the pipe. In the "off" position, the slider blocks the holes. The tone channel still receives the wind from the pallet box, but the wind is prevented from entering the pipe by the slider.[96] This type of stop action is still employed today by a majority of organ builders, including Visser.

Additional types of chests which departed from the principal type above were developed later. In the sixteenth century, a chest known as a spring chest was devised. In this type of chest, the slider was removed and replaced with a secondary pallet or groove-valve for each pipe.[97] The organist controls a stop lever at the console, which operates a stop lever bar within the windchest. As the stop lever is notched into the on position, the stop lever bar opens a set of secondary pallets within the windchest. Wind is admitted to the tone channel, but only allowed to reach the pipe if the secondary pallet is opened.

As builders endeavored to increase the mechanical reliability of windchests, the concept of sliderless chests developed from 1775 to 1875.[98] Since slider chests are made of wood, they expand and contract during extreme changes of humidity and temperature, leading to air leaks, and ciphers -- pipes speaking of their own accord. In order to reduce the occurrence of leaks and ciphers, builders designed new types of windchests, such as the Kegellade [cone valve chest] introduced by E. F. Walcker of

---

[96] Bicknell, "Organ Construction," 20.
[97] Williams and Owen, *The Organ*, 14.
[98] Ibid., 24.

Ludwigsburg, Germany.[99] In the cone chest design, all pipes of a single set of pipes are mounted on a channel that runs the length of the windchest. When the stop knob is drawn at the console, wind is admitted to the channel below the pipes. Keys at the console in turn activate a note-specific series of cone-shaped valves, one for each set of pipes. Although all the valves corresponding to the key at the console moved when the key was activated, air is permitted to reach a particular set of pipes only if the stop knobs are drawn.[100]

Sliderless chests continued to evolve throughout the nineteenth and early twentieth century, principally in America. Many organ builders patented designs, including those of the Roosevelt, Pitman, and Universal windchests.[101] As with new chest types, new key actions were also developed throughout this time period. These new actions will be briefly discussed later.

KEY ACTION

From medieval times to the nineteenth century, the organist controlled the opening and closing of the pallets through direct mechanical linkages from the keys to the pallets in the windchest. The simplest type of mechanical action is known as suspended action. As figure 1 shows, the key is allowed to pivot at its end, and a wire or wooden tracker is attached roughly at the midpoint of the key and rises to the pallet

[99] Bicknell, "Organ Construction," 21.
[100] Williams and Owen, *The Organ.*
[101] Bicknell, "Organ Construction."

at the windchest. As the key is depressed or released, the action is transmitted through the attached tracker to the pallet. In suspended action, the actual weight of the key at rest and the mechanisms that connect it to its corresponding pallet in the windchest are supported by the same amount of force that holds the valve closed.[102]

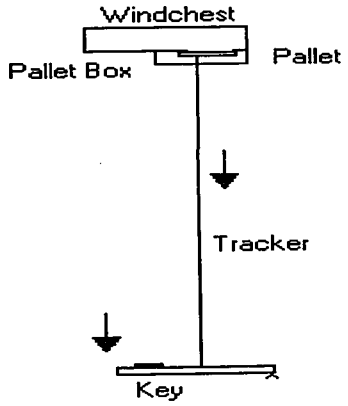

Figure 1. Suspended Action

In what is known as balanced action (see Figure 2), the key pivots in the middle causing the end of the key to rise and fall. A sticker, or wooden dowel, attached to the end of the key, then transmits its action indirectly to the pallet. This sticker leads to a row of levers known as backfalls which change the action from push to pull and vice versa. Devices known as squares each change the direction of the tracher ninety degrees and eventually lead to the opening of the pallet in the windchest.

[102] Thomas Turner, "Pipelines" *The American Organist*, July 1986, 33.

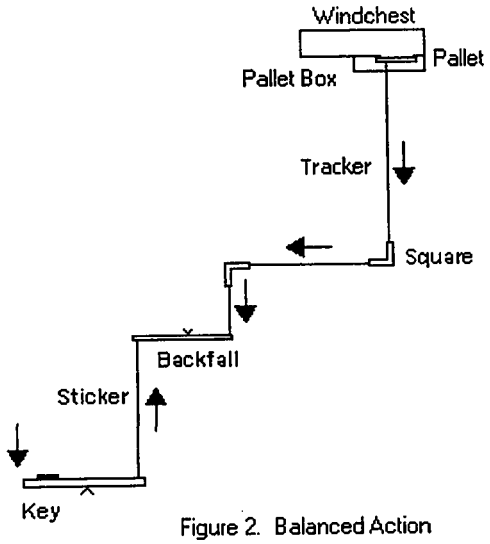

Figure 2. Balanced Action

In most organs, the length of the windchest is longer than the length of the keyboard; therefore, the action of the trackers must be fanned out to correspond to the spacing of the pallets in the windchest. When pipes are arranged on the windchest in any order other than chromatic, the action must also be rearranged in order to correspond to the appropriate pipe. A device known as a rollerboard is required to transfer the motion laterally to the windchest and rearrange the action to correspond to the placement of the pipes on the windchest.

In both balanced and suspended mechanical action, care must be taken when designing the path the motion must take between key and pallet. As the distance from key to pallet is increased, the action's course must be increasingly altered through the use of backfalls, squares and rollerboards. Each pivot point increases friction and, in turn, adds resistance to the key action.[103] In order to keep the key action from

[103] Donahue, *The Modern Classical Organ,* 91.

becoming too resistant or "heavy," trackers and stickers are as short as possible, and pivot points are kept to a minimum. Therefore, the proximity of the console to the windchests and pipes is paramount in organs with mechanical action.

The Impact of Mechanical Action on Pipe Tone

The tone of an organ pipe consists of three distinct parts: (1) the attack, (2) the sustained tone, and (3) the end of the tone. Each of these parts has a sequential affect upon the other and each part contributes to the listener's aural impression of the sounding note.[104] The importance of the beginning and end of a pipe's tone cannot be overrated. With mechanical action, the amount of pressure used to depress the key and the manner in which the key is released has a direct impact on the tone of the speaking pipe. A fast, forceful depression of the key opens the pallet immediately producing a quick, precise attack. A slower depression of the key allows the pallet to open gradually, creating a more gentle attack. Likewise, a quick release of the key and rapid closing of the pallet produces a crisp end of the tone whereas a slow release of the key and a gradual closing of the pallet produces a gentle end of the tone. Mechanical action, therefore, provides the ability for the organist to control the beginning and end of the tone through manipulation of the pallet.

The Impact of Non-Mechanical Action on Pipe Tone

In the nineteenth century, builders began to experiment with an organ's mechanical key action. As more stops were added to an organ and wind pressures

---

[104] Roy S. Caddy and Howard F. Pollard, "An Objective Study of Organ Actions," *Organ Institute Quarterly,* Summer 1957, vol. 7, no. 2, 47.

were increased, operation of the mechanical linkages became heavier and more difficult to manipulate. In an attempt to assist the action between key and pallet, the mechanical link was interrupted. Initially, pneumatic motors, small bellows using organ wind to facilitate the movement of the pallets, were added to assist pallet opening and to reduce key resistance. Electricity was to be later used with this particular action and eventually evolved into what is known as electro-pneumatic action. Electro-pneumatic action employed air and electricity in combination to enable the pallet to open, allowing the pipe to speak. These new types of key actions eliminated the organist's ability to control the attack and release of pipe speech through the manipulation of the pallet.

As a result of this interruption of the mechanical linkage between key and pallet, the organ console was no longer required to be kept in close proximity to the windchests and pipes. As early as 1868, electrification of the Gloucester Cathedral organ key action allowed the console to be placed at a great distance from the pipes.[105] Although this development may have given the organist a better perception of balance and sound output of the organ, it also removed the performer from the source of sound he was creating.

Eventually, the original mechanical action was replaced entirely by direct electric action which used only electricity. In this system, when a key is depressed, a

---

[105] Peter Williams, *A New History of the Organ from the Greeks to the Present Day,* (Bloomington: Indiana University Press, 1980) 160.

contact is made which sends an electrical signal to a magnet controlling the valve beneath a pipe. The valve opens and the pipe speaks as long as the key is depressed.

From the initial interruption of the mechanical linkage by pneumatic motors, the sensitive aspect of mechanical key action was completely removed and the organist could no longer control the nuance of pipe speech by manipulation of the pallets. By the middle of the twentieth century, mechanical key action had been replaced by a series of impersonal electric switches. The resulting pipe speech contained no more subtleties than does turning on or off a light switch.

Tone Channel

Another notable feature in mechanical action instruments is the presence of the tone channel. Studies have shown that the tone channel has a controlling effect on the end of the tone.[106] When the pallet closes, there is a large amount of pressurized air which must be exhausted through the pipe. Rather than being shut off rapidly and producing an abrupt cut-off, the air trapped in the tone channel after the pallet closes yields a gentle release of air through the pipe. This release of air from the channel provides an extended decay time to the tone of the pipe and thus produces a more favorable "rounded tone."[107]

Additionally the tone channel helps to reinforce the resonance and, accordingly, the volume of the pipes. Harmonic vibrations produced by sounding pipes travel back into the tone channel, allowing the vibration of the pipe to resonate

---

[106] Caddy and Pollard, "An Objective Study," 51.
[107] Ibid.

sympathetically in the tone channel as well as in the pipe itself.[108] This concept is similar to striking a tuning fork and then placing the vibrating fork against a resonating surface to hear more easily the pitch.

By the 1890s, windchests were developed in which wind did not travel through a tone channel before reaching the pipes. The Austin Organ Company built such a windchest which was marketed as the Universal Air Chest™.[109] In this chest type, large box-shaped chambers serve multiple sets of pipes which are not separated from each other in any way. Wind in the chamber is admitted to the pipes through pneumatic or direct electric valves. Because the wind supply to the pipes is not separated by tone channels, the positive attributes of resonance and gentle exhaust of air provided by the tone channel are lost.

ORGAN CASE

The concept of the organ case likely originated with the encasement of small portable organs in the fourteenth century.[110] As organs became larger and, consequently, stationary in churches, the use of a case was consistently applied. Cases served to protect delicate organ mechanisms and to keep dust and dirt from the pipes. They also helped deter thieves and vermin.[111] Cases served practical

---

[108] Donahue, *Modern Classical Organ*, 12.

[109] Cook, *Organ History: The Pipe Organ from its Origin through the Twentieth Century* <http://panther.bsc.edu/~jhcook/OrgHist/works/works16.htm>.

[110] Michael I. Wilson, *Organ Cases of Western Europe*, (Montclair: Abner Schram, 1979), 9.

[111] Stephen Bicknell, "The Organ Case," *The Cambridge Companion to the Organ*, Nicholas Thistlethwaite and Geoffrey Webber, eds. (Cambridge: Cambridge University Press, 1998) 56.

purposes: they focused the organ's tone and were used as an artistic medium, with carved figures, elaborate painting, and other ornaments.[112]

In early sixteenth-century Germany and the Netherlands, the large classical organ case was highly developed both visually and tonally.[113] Stops in the case were organized systemically by groups according to the manual that controlled them. Names of the various claviers, or divisions, indicated their locations relative to an organist when seated at the console. From the bottom to the top of a case, the divisions were as follows:[114]

German	Dutch	translation
Rückpositiv	Rugpositiv	"back"
Brustwerk	Borstwerk	"breast
Hauptwerk	Hoofdwerk	"head" or "most important"
Oberwerk	Bovenwerk	"upper" or "over"

This manner of placing the different manual divisions in the case was given the term Werkprinzip [work-principle] in the twentieth century.[115] A Werkprinzip organ of the seventeenth century with four keyboard divisions and a pedal division would generally be designed as shown in Figure 3.

---

[112] Wilson, *Organ Cases of Western Europe*, 10.
[113] Ibid., 11.
[114] All of these divisions do not necessarily appear on every organ.
[115] Ibid., 12.

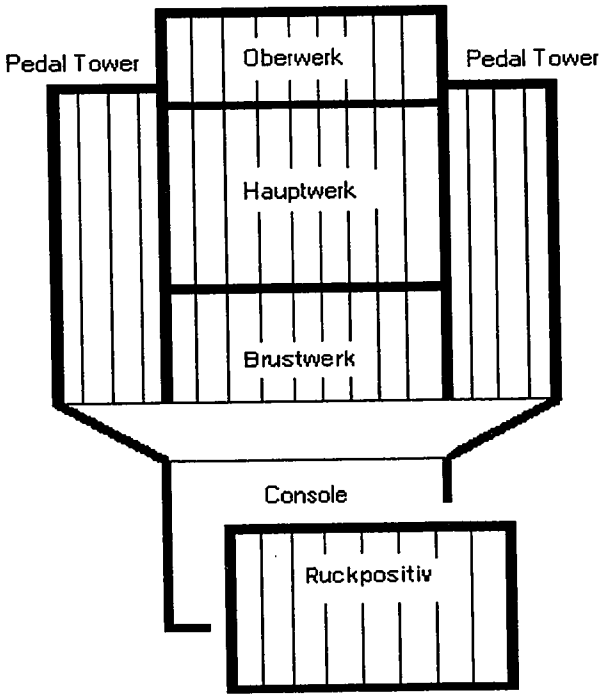

Figure 3. Werkprinzip Case Layout

Located below the main case and placed behind the player's back were the pipes of the Rückpositiv division. The bottom keyboard controlled this division. The Hauptwerk was the main division of the organ and was controlled by the next higher keyboard. Because of its tonal importance, this division occupied the main center section of the case. The third keyboard or Brustwerk division was located directly above the key desk and below the Hauptwerk division. Above the Hauptwerk were placed the pipes of the fourth keyboard, the Oberwerk. Towers on either side of the main case contained the pipes of the pedal division, the tallest pipes in the organ.

Tonal Aspects of a Werkprinzip Organ

In terms of design and relation of the tonal aspects of a Werkprinzip organ, the Hauptwerk division contained the stops of the principal chorus, flutes, mixtures,[116] and reeds. These stops served as the main division of the organ and produced a rich, full sound.[117] The Rückpositiv served as a secondary division to the Hauptwerk and typically included stops of a lighter principal chorus, flutes, mixtures and softer reed stops. The sounds of the Rückpositiv had a more penetrating and brighter quality than those of the Hauptwerk.[118] Since the pipes of the Rückpositiv were in close proximity to the listeners seated in the congregation, their sound was more immediate than that of the pipes in divisions placed farther away. The third keyboard or Brustwerk ordinarily contained the lightest principles, flutes, and reeds and often contained several high-pitched mixtures. These stops were likely intended to be used more as solo color stops rather than stops in an ensemble.[119] The Oberwerk contained a variety of ensemble stops and the sound of this division was somewhat softer than the Hauptwerk.[120] Finally, the pedal division had its own principal chorus, flutes, mixtures and reed stops. This division provided either the

---

[116] Mixtures are stops composed of several sets of pipes that sound at various pitch levels, usually octaves and fifths. By emphasizing the overtone series, these stops serve to brighten the foundation tone of the organ.

[117] Cook, *Organ History: The Pipe Organ from its Origin through the Twentieth Century* <http://panther.bsc.edu~jhcook/OrgHis/history/hist033.htm>.

[118] Ibid.

[119] Ibid.

[120] Williams and Owen, *The Organ*, 315.

fundamental bass line for ensemble music or a solo color stop for *cantus firmus* textures.[121]

Not only were the divisions of a Werkprinzip organ tonally related, there existed a pitch relationship between the principal stops of each individual division. Each was based upon a different pitch level of a principal stop with the lowest in the Pedal, the next higher in the Hauptwerk, the next in the Rückpositiv and the highest in the Brüstwerk, etc. In other words, for an organ of three keyboards and pedal, the Pedal was built on the 16' pitch; the Hauptwerk on the 8' unison pitch; the Rückpositiv on the 4' pitch; and the Brustwerk on the 2' pitch.

An exceptional example of a case built in the Werkprinzip style is the Christian Müller organ in the Bavokerk, Haarlem, the Netherlands. Müller worked closely with the town architect, Hendrick de Werff, in designing the case.[122] Along with the painter, Hendrick van Limborch, and the sculptors, Jan van Logteren and Jan Baptist Xaverij, these artists produced a case of perfect balance, order, and harmony.[123] The proportions of the case have been described as "nearly perfect as possible."[124] In the typical Werkprinzip tradition, the main manual division of the organ (Hoofdwerk) stands in the center of the case with the third manual (Bovenwerk) placed at the top and the pipes of the pedal divided in tall towers on

---

[121] Cook, *Organ History.*
[122] Wilson, *Organ Cases of Western Europe*, 29.
[123] Bicknell, "The Organ Case," 67.
[124] Wilson *Organ Cases of Western Europe.*

either side.[125] The bottom keyboard (Rugwerk) stands on the gallery front, back to back with the organist seated at the console.[126]

By the middle of the eighteenth century, the Werkprinzip concept of the organ case began to be replaced by new and original forms.[127] At the 1851 Great Exhibition held in London, the exhibit organ built by the firm of Gray & Davison abandoned the case entirely by displaying the pipes completely in the open.[128] By 1890, casework on some English church organs was no longer present, as evident in the organ built by Henry Willis, Sr., installed at Truro Cathedral, Cornwall, England.[129] In the 1930s, this movement was manifested in the work of the American organ builder Walter Holtkamp.[130] At the opposite end of the spectrum, other builders began to place divisions deep within recessed chambers or behind screens. As a result, organ sound became muffled. Many other builders followed the examples cited above, abandoned the classical organ case and, consequently, the focused organ sounds it yielded. Not until the mid-twentieth century with the work of the Organ Reform movement did organ builders again take into account the effect an organ case had on the sound of an organ.

---

[125] Bicknell, "The Organ Case."
[126] Ibid.
[127] Bicknell, "The Organ Case," 71.
[128] Ibid., 74.
[129] Williams, *A New History of the Organ*, Plate 43.
[130] Bicknell, "The Organ Case," 78.

SCALING AND VOICING

Scaling is the term used to describe the ratio of a pipe's length to its diameter. By using a specific method of scaling, an organ builder establishes the size of one pipe in relation to all the other pipes in any stop. In addition, there are relationships in scaling from any one stop to all other stops in an organ. Throughout the history of organ building, scaling of organ pipes has been largely empirical, even to the point of trial and error by the earliest organ builders.[131]

An early system for determining organ scales on a mathematical basis was made by Johann Gottlob Töpfer in his publication *Die Theorie und Praxis des Orgelbauer* [The Theory and Practice of the Organ Builder] in 1833. Töpfer, a German mathematician, took the measurements of many organ stops and by statistical means derived a formula he termed *Normalmensur* [Normal Measure]. In his findings, he determined the average diameter of the C two octaves below middle C of the 8' Principal on the main division of an average organ in an average church to be 155.5 millimeters [6 1/8 in.].[132] The scaling would then progress so that the diameters would become half as large at every sixteenth or seventeenth pipe. Even though this Normal Measure of Töpfer was designed from the existing work of many organ builders, it was not intended to serve as a method of scaling that was to be used

[131] Burton K. Tidwell, "Scaling," *The American Organist*, December 1988, 38.
[132] Monette, *The Art of Organ Voicing*, 20.

in actual practice.[133] Instead, Töpfer's approach continues to be a point of reference for developing pipe scalings for particular organs.[134]

Ultimately, scaling is left to the artistic taste, experience, and logic of the individual organ builder. A good builder must take into account the acoustical nature of the space in which the organ is located and subsequently develop scaling patterns best suited to a particular acoustical environment. By understanding the way in which certain frequencies behave in an organ's environment, an organ builder must adjust scaling patterns to compensate for variations in frequency response of a particular room.[135]

Scaling is only the initial step in determining a pipe's tonal production. After the pipe scaling has been determined, the pipe must be voiced or made to speak properly. With both flue and reed pipes there are roughly forty variables that the builder can adjust to ensure proper speech, volume, and timbre of the pipe.[136] These include steadiness and pressure of wind, the diameter of the toe hole and opening of the mouth for flue pipes, and the length and curvature of the tongue for reed pipes.

The ultimate deviation from classical organ principles occurred when organ builders and organists of the mid-nineteenth century began to reject the *sound* of the classical organ itself.[137] Windchests no longer supported pipe sound or produced a

---

[133] Donahue, *The Modern Classical Organ*, 6.
[134] Tidwell, "Scaling," 38.
[135] Monette, *The Art of Organ Voicing*, 21.
[136] Stevens Irwin, *Dictionary of Pipe Organ Stops*, (New York: G. Schirmer, Inc., 1962) 150-151, 202.
[137] Williams and Owen, *The Organ*, 177.

cohesive balance. Increased wind pressures produced unrefined pipe tone. The removal of the resonating case and placement of pipes in the open or buried in chambers yielded unfocused and muffled sound. The introduction of new pipe forms produced sounds imitative of the dark and heavy nineteenth century orchestra. These deviations from classical principles birthed a nineteenth-century organ which was similar to its classical predecessor in name only.

COMPARATIVE STOP LISTS

Classical Tradition

By comparing various stop lists of organs of the seventeenth and eighteenth century, one finds that organ builders used the smallest number of stops to provide the greatest variety of timbre. There was no duplication of a stop's timbre at any given pitch and the range of color stops available on seventeenth- and eighteenth-century organs was greater than those of the nineteenth century. Organs in later centuries had a greater number of stops to choose from, but the variety in these stops was primarily in volume, not color or pitch level. Prior to the nineteenth century, builders were also concerned with the tonal blending of each stop with all others in an organ and with the functional relationship of a group of stops with all other groups. [138] For example, principals of one keyboard had to blend and contrast properly with principals of another keyboard. They also needed appropriate dynamic relationships.

---

[138] Peter Williams, *The European Organ 1450-1850,* (London: B. T. Batsford Ltd., 1966) 153.

Two outstanding builders of this time were Arp Schnitger (1648-1719) and Gottfried Silbermann (1683-1753), who were later inspirations for the German Organ Reform Movement [Orgelbewegung] of the 1920s.[139] Another outstanding builder was Christian Müller (1690-1763), whose famous organ in the Bavokerk, Haarlem, inspired the work of Pieter Visser. By comparing the following stops list of Müller's organ, an organ from the early twentieth century, and a representative stop list by Pieter Visser, the move away from and return to classical ideals can be traced.

Bavokerk, Haarlem, the Netherlands
Christian Müller, 1735-1738[140]

HAUPTWERK		OBERWERK	
16'	Praestant	16'	Quintadena
16'	Bourdon	8'	Praestant
8'	Oktave	8'	Quintadena
8'	Rohrflöte	8'	Baarpijp
8'	Viola de gamba	4'	Oktave
5 1/3'	Rohrquinte	4'	Flachflöte
4'	Oktave	2 2/3'	Nasard
4'	Gemshorn	2'	Nachthorn
2 2/3'	Quintpraestant	1 1/3'	Flageolet
2'	Waldflöte	2 2/3'	Sequialtera II
1 1/3'	Terzian II	IV-VI	Mixture
IV-X	Mixtur	III	Zimbel
16'	Trompete	8'	Schalmei
8'	Trompete	8'	Dulzian
8'	Hautboy	8'	Vox humana
4'	Trompete		

[139] Williams and Owen, *The Organ*, 103.
[140] Ibid., 145.

RÜCKPOSITIV

8' Praestant
8' Quintadena
8' Holpijp
4' Oktave
4' Flûte douce
2 2/3' Spitzflöte
2' Superoktave
II-IV Sesquialtera
V Cornet
VI-VIII Mixtur
III Zimble
16' Fagott
8' Trompete
8' Trichterregal

PEDAL

32' Praestant
16' Praestant
16' Subbass
10 2/3' Rohrquinte
8' Oktave
8' Holpijp
5 1/3' Quintpraestant
4' Oktave
2' Holpijp
III Rauschquinte
32' Posaune
16' Posaune
8' Trompete
4' Trompete
2' Zink

Because of the variety of families of stops present, this instrument gives a genuine richness of tone. Additionally, Müller assigned different pitch levels to the different families in this instrument. For example, complete choruses of principals, flutes, and reed stops appear in consecutive octaves on most divisions of the organ. In accordance with the Werkprinzip tonal design, a pitch relationship exists between the principal stops of each individual division.

PRINCIPALS

HAUPTWERK

16' Praestant
8' Oktave
4' Oktave

OBERWERK

8' Praestant
4' Oktave

RÜCKPOSITIV

8' Praestant
4' Oktave
2' Superoktave

PEDAL

32' Praestant
16' Praestant
8' Oktave
4' Oktave

FLUTES

HAUPTWERK
16' Bourdon
8' Rohrflöte
4' Gemshorn
2' Waldflöte

OBERWERK
8' Quintadena
4' Flachflöte
2' Nachthorn

RÜCKPOSITIV
8' Holpijp
4' Quintadena
4' Flûte douce

PEDAL
16' Subbass
8' Holpijp
2' Holpijp

REEDS:

HAUPTWERK
16' Trompete
8' Trompete
8' Hautboy
4' Trompete

OBERWERK
Solo reeds at 8' only

RÜCKPOSITIV
16' Fagott
8' Trompete
8' Trichterregal

PEDAL
32' Posaune
16' Posaune
8' Trompete
4' Trompete

The Werkprinzip tonal design is further affirmed by the presence of mixtures and mutations.[141] Mixtures serve to crown the principal chorus but do not dominate it. Mixture stops of four to ten ranks appear on the Hauptwerk, and mixtures of four to six ranks and three ranks are located on the Oberwerk. The Rückpositiv contains the Mixtur and Zimble which contain eleven ranks. Mutation stops appear at 10 2/3',

[141] Mutations are single sets of pipes that speak at pitches other than that of the key depressed at the console. For example, when middle C is played at the keyboard with the Nazard 2 2/3 drawn, the second G above middle C will sound. Mutations when combined with one or more sets of pipes, add color to organ tone.

5 1/3', 2 2/3', and 1 1/3'. These stops add fullness and color to the organ tone, either in combination with solo stops or in conjunction with the full ensemble.

In addition, Müller varied stops of the same family, thereby providing a great range of organ tone. Four of the five flute stops appearing at 8' pitch on this organ have different names, indicating different timbres. For example, the third harmonic of the Rohrflöte is slightly softened and gives the tone a light but not bright sound.[142] On the other hand, the Quintadena yields a very strong third harmonic which gives the tone a nasal sound. This stop is often used in combination with the other flute stops.[143] The Holpijp has a strong fundamental and produces a broad but somewhat neutral timbre.[144] On the Oberwerk division Müller included three different solo reed stops of the 8' pitch. The Schalmei characteristically produces a "bright, nasal and whining tone."[145] The Dulzian at the 8' produces a fairly gentle tone[146] whereas the rich sound of the Vox Humana strove to imitate the human voice.[147] When Müller's design necessitates the inclusion of various stops at the same pitch level in the same family, this variety in timbre adds more tonal color and interest.

Romantic Tradition

In the nineteenth and early twentieth centuries, organs evolved from more or less classical types to the so-called "symphonic organ" to theater organs in England

---

[142] Irwin, *Dictionary of Pipe Organ Stops*, 166.
[143] Ibid., 157.
[144] Ibid., 236.
[145] Ibid., 170.
[146] Williams and Owen, *The Organ*, 273.
[147] Ibid., 291.

and the United States. Organs increased in size and included color stops appropriate to the musical taste of the day. [148] Many of these color stops were Romantic in nature. Included were the French Horn, English Horn, Basset Horn, Tuba and Flute Triangulaire.[149] These stops were well received by organists who consequently used them in orchestral transcriptions and accompaniments for silent films.[150] Because of these resources, the organist began to be viewed as a "one-man orchestra."[151] The placement of divisions of stops in an organ was no longer correlated to the placement of the keyboards at the console. No longer was there a specific tonal relationship of the divisions to themselves or to each other.

Although the concept of the organ as an imitator of other instruments was familiar to organ builders of the seventeenth and eighteenth centuries, the orchestra had changed drastically by the nineteenth century.[152] The tone of the nineteenth-century orchestra was much heavier than the orchestral tone of the seventeenth-century orchestra. Correspondingly, the sound of the Romantic organ had to change. The organ of this era was much larger than the previous centuries and often sounded dark and thick. The instrument exploited the extremes of loud and soft by encasing most if not all of the instrument in louvered boxes which provided expressive

---

[148] Williams, *A New History of the Organ*, 155.

[149] Douglas Reed, "North American Organ Music after 1800," *The Cambridge Companion to the Organ*, Nicholas Thistlethwaite and Geoffrey Webber, eds. (Cambridge: Cambridge University Press, 1998) 305.

[150] Ibid.

[151] Williams, *A New History of the Organ*, 156.

[152] Ibid.

opportunities.[153] As the following stop list shows, stops of the unison 8' pitch appeared in abundance in organ stop lists, replacing stops higher in the harmonic series, mixtures and mutations. While they suited music of the Romantic period well, these instruments were not successful in the rendition of the idiomatic ideal of music of previous centuries.

New York State School for the Blind
Batavia, New York
Robert Hope-Jones, 1907[154]

GREAT

16' Bourdon
8' Open Diapason
8' Open Flute
8' Gedact
8' Dulciana
4' Flute
8' Tromba

CHOIR

16' Dulciana (tenor G)
8' Flute
8' Gedact
8' Viol d'Orchestre
8' Viol Celeste (tenor G)
8' Dulciana
8' Unda Maris (tenor C)
4' Flute
4' Unda Maris
16' Oboe
8' Clarinet
8' Oboe

SWELL

16' Bourdon
8' Flute
8' Gedact
8' Viol d'Orchestre
8' Dulciana
8' Unda Maris (tenor C)
4' Lieblich Flute
4' Gambette
4' Celeste
16' Clarinet (tenor C)
8' Tromba
8' Clarinet
8' Oboe

PEDAL

32' Resultant Bass
16' Open Diapason
16' Bourdon
8' Flute
8' Cello
8' Dulciana

[153] Williams and Owen, *The Organ*, 167.
[154] David H. Fox, *Robert Hope-Jones*, (Richmond: The Organ Historical Society, 1992) 253.

The nineteenth-century aesthetic of organ design is apparent in the preceding stop list. The manual divisions are crowded with unison pitch stops of principal, flute and reed stops, and there is conspicuous omission of mixtures and mutations in all divisions. This inclusion of numerous stops at the 16' and 8' pitch and the absence of stops above the 4' pitch certainly gave the organ a thick, dark tone.

Pieter Visser and the Return to the Classical Tradition

With renewed interest in organ tone of the seventeenth and eighteenth centuries brought about by the organ reform movement, builders of the twentieth century began to use historic models as guides for better esthetics of organ tone which allow the performance of a majority of organ literature.[155] By studying organ stop lists, scaling and voicing principles of classical organs, twentieth-century organ builders began to produce instruments with clear, articulate, unforced sounds. As a builder of the organ reform movement, Visser created an instrument at the University of Texas at Austin,[156] which, in principle, bears a strong resemblance to the Müller instrument in the Bavokerk. The contrast of Visser's instrument to the previous nineteenth century example is strong. Visser returned to the classical practice of stop selection by placing a complete chorus of principals, flutes and reed stops on each manual. These stops appear in consecutive octaves.

---

[155] Lynn A. Dobson, "Organ Reform Reconsidered: Dobson Pipe Organ Builders at 20," *The American Organist*, December 1995, 65.

[156] See stop list for Opus 43 in Appendix A.

PRINCIPALS

HOOFDWERK
- 16' Praestant
- 8' Praestant
- 4' Octaaf

RUGWERK
- 8' Praestant
- 4' Octaaf
- 2' Superoctaaf

ZWELWERK
- 8' Praestant
- 4' Octaaf
- 2' Flageolet

PEDAALWERK
- 16' Praestant
- 8' Octaaf
- 4' Koraalbas

FLUTES

HOOFDWERK
- 8' Roerfluit
- 4' Koppelfluit
- 2' Woudfluit

RUGWERK
- 8' Bourdon
- 4' Spitsfluit

ZWELWERK
- 16' Gedekt
- 8' Gedekt
- 4' Nachthorn
- 2' Flageolet

PEDAALWERK
- 32' Subbass
- 16' Gedektbas
- 8' Gedekt
- 2' Nachthoorn
- 1' Fluitje

REEDS

HOOFDWERK
- 16' Trompet
- 8' Trompete
- 8' Vox Humana
- 4' Klaroen

RUGWERK
- 16' Dulciaan
- 8' Trompet
- 8' Kromhoorn
- 4' Regaal

ZWELWERK
- 16' Fagot
- 8' Trompet
- 8' Musette
- 4' Klaroen

PEDAALWERK
- 32' Contra Bazuin
- 16' Bazuin
- 16' Fagot
- 8' Trompet
- 4' Schalmei
- 2' Regaal

A total of ten mixtures and seven mutation stops are distributed among the keyboards and pedal. The mixture stops serve to add brilliance to the principal chorus and reinforce the treble pipes. The mutations appear at 2 2/3', 1 3/5', 1 1/3', 1 1/7', and 8/9' to provide a greater range of color, encouraging experimentation in choosing sounds to perform contemporary literature and altering traditional sounds at will.

As in Müller's instrument, Visser varies the timbres of stops of the same family to produce a great range of tone color. All three flute stops at the 8' pitch level are of different names, thus indicating variety. This is also true of the 4' and 2' flutes, each of which has a slightly different tone color. Although Visser does not vary the names of many of the reed stops, each have a different color and volume depending on the manual on which the stop is located. For example, five 8' trumpets appear on the organ, one in each of the four manuals and one in the pedal.

Such variety of tone color would not be found for example on the organs of Cavaillé-Coll, the most influential French organ builder of the nineteenth century. All stops of various families had the same color, though each had different volumes. By allowing variance in tone color and volume, Visser returns to the esthetic of seventeenth- and eighteenth-century German and Dutch organ building which provides for a more rich organ tone.

SUMMARY

Many factors contributed to the vast changes that occurred in organ building from the seventeenth to the twentieth century. Motorized fans run by electricity generated an unlimited supply of wind, giving builders opportunity to produce stops of unprecedented volume. The power of electricity was harnessed and used to replace the mechanical link between key and pipe. Organs increased in size, and explored further the stops of previous centuries which provided basic colors and volumes. The inclusion of multiple stops of the unison pitch, the absence of high pitched mixtures and mutations produced instruments of dark, heavy and thick sonorities, far removed from the esthetic of previous centuries. As builders made use of different types of windchests, bellows, and case design, experimentation in organ building was encouraged, if not exploited. These devices further removed the Romantic organ from the instrument of the seventeenth and eighteenth centuries.

By the mid-twentieth century, advocates of the organ reform movement found that "the future of the organ lay in its past."[157] Builders sought a return to classical principles and rediscovery of the early instruments and their repertoire. By studying the many construction details of pre-nineteenth-century instruments, twentieth-century builders produced organs with clear, articulate sounds produced from slightly unsteady or flexible winding systems. Housed in artistic casework,

---

[157] Stephen Bicknell, "Organ Building Today," *The Cambridge Companion to the Organ,* Nicholas Thistlethwaite and Geoffrey Webber, eds. (Cambridge: Cambridge University Press, 1998) 86.

these instruments have "recovered [their] position as a most remarkable hand-crafted object...."[158] It is upon review of these characteristics that one discovers Pieter Visser's approach to organ building and design.

[158] Ibid., 91.

CHAPTER 3

PARTICULAR ASPECTS OF VISSER'S APPROACH TO ORGAN BUILDING

ORGAN WIND

Visser believes that good organ winding consists of an adequate supply of low-pressure wind for the entire organ, enabling the organist to use all stops simultaneously. This supply should have a gentle, barely noticeable, but "living" quality in terms of its flexibility. According to Visser, poor wind systems exist in either of two extremes: rock-solid stable wind or an insufficient supply of wind which is highly unstable and nervous.[159] Visser was an early advocate of low wind pressures from the time he began his work with the Holzinger Organ Company in the 1960s.[160] Such wind pressures yield improvements not only in tone quality, but also in the speech of organ pipes.[161]

In addition to the above considerations, the steadiness of wind is dependent upon the primary purpose of the instrument. Instruments which are placed in colleges and universities find academic study and performance of all organ literature as their main goals, while instruments installed in churches primarily fulfill liturgical needs.

---

[159] Pieter A. Visser, "Understanding Organ Wind," *International Society of Organbuilders Yearbook*, 1991, 40.

[160] Visser, interview by author.

[161] Hans Klotz, *The Organ Handbook: Structure, Design, Maintenance, History and Function of the Organ*, translated by Gerhard Krapf (St. Louis: Concordia Publishing House, 1969) 17.

Development of a winding system that suits the purpose of the instrument is one of Visser's goals for all the organs he builds.[162] In particular, instruments in both churches and academic environments are often required to perform music ranging from a Baroque prelude to a Romantic anthem within the same service or concert. [163] The presence of a wind system in which there is adequate but reasonable flexibility in wind accommodates a wide variety of organ literature.

For example, in the Bates Recital Hall organ at the University of Texas, Austin, a compromise has been attained by employing various degrees of steady and flexible wind. Schwimmers and concussion bellows are used on the wind systems of the Hoofdwerk, Zwelwerk and Pedaal divisions, whereas the Rugwerk has a more flexible winding system. Pipes on this keyboard are consequently most appropriate for performing music composed prior to the nineteenth century. This variety in the winding system makes the Bates instrument suitable for performing works of various time periods and genres, an important consideration given the instrument's academic setting.

WINDCHESTS AND KEY ACTION

From experiments conducted by Visser and his employees in the early 1970s, Visser has found the slider windchest to be superior to all other windchest types.[164]

---

[162] Ibid.

[163] Uwe Pape, comp. and ed., *The Tracker Organ Revival in America,* (Berlin: U. Pape Verlag, 1978) 52.

[164] Pieter A. Visser, "Chest Layout Information: Separating Fact from Fiction," *PIPORG-L Archives*, May 1997, week 5 (#61) <http://www.albany.edu/piporg-l/>.

Since the slider chest has a fewer number of moving parts than other windchests, fewer potential problems arise. In addition, fewer moving parts decrease production cost. Furthermore, pipes are placed close together on a slider windchest since the spacing of pipes is not dictated by the action housed underneath.[165] This is advantageous in all circumstances as this permits the case to be as shallow as possible, thus providing a greater projection of sound.

In terms of key action, the use of mechanical action dramatically increases the integrity of the entire action system. Repeated notes, no matter how quickly repeated, speak with nearly 100 percent accuracy and consistency.[166] Visser regards other types of action with a lesser degree of reliability to be insufficient.[167] Not only is the consideration of key action important in terms of its reliability, but also in terms of its effect upon pipe speech.

In organ pipes, all aerodynamic motion related to pipe speech takes place between the foot and mouth of the pipe.[168] All acoustical effects beyond this point result from this motion. A dramatic distinction can be heard between pipe speech of organs with direct electric action and sliderless chests and those with mechanical action and slider chests. In direct electric action, before the valve opens, there exists air at normal atmospheric pressure (ambient air) directly over the bore leading to the pipe. As the valve opens, it is pulled straight down, and pressurized wind from the

---

[165] Ibid.
[166] Ibid.
[167] Ibid.
[168] Pieter A. Visser, "Understanding Organ Wind," *PIPEORG-L Archives*, September 1997, week 5 (#1) <http://www.albany.edu/piporg-l/>.

chest and the ambient air violently collide. Furthermore, the direct valve opens at such a high speed that a short vacuum shock wave is actually created in the body of air in the pipe foot above the valve. This negative or vacuum wave causes inconsistent speech and complicates pipe voicing. [169]

With the slider chest, the pallet opening still produces a vacuum shock wave; however, the wave dissipates within the tone channel. The tone channel functions as a relatively large expansion area and absorbs the shock wave prior to the entrance of the wind into the pipe, thus producing clearer pipe speech.[170] In addition, the tone channel synchronizes pipe speech by delivering air to all the pipes on the tone channel simultaneously, producing a precise attack of all speaking pipes. [171]

Acoustic Phase Lock

As pipes sound, harmonic vibrations travel through the case and tone channels, as well as to other speaking and non-speaking pipes. These vibrations cause the tone of the pipes to be reinforced, and the pitch stronger. Visser calls this occurrence "acoustic phase lock."[172] Vibrations from a sounding pipe travel back into the tone channel and both pipe and tone channel resonate sympathetically.[173] This lock occurs in the tone channel since the dimensions of this confined space are designed to harmonically reinforce the pitches of the pipes.[174] If, for example, a

---

[169] Ibid.
[170] Ibid.
[171] Donahue, *Modern Classical Organ*, 12.
[172] Visser, "Understanding Organ Wind," *PIPEORG-L Archives*.
[173] Ibid.
[174] Visser, "Phase Lock," *PIPEORG-L Archives*, June 1997, week 4 (#261) <http://www.albany.edu/piporg-l/>.

given tone channel space is specifically designed to match the pitch of C, it will support all pitches of the C harmonic series.[175] All pipes served by the same tone channel experience acoustic reinforcement, thus promoting tonal unity, clarity, blend, and intonation.[176]

Visser has found that speaking pipes in close proximity to non-speaking pipes within a similar harmonic series also experience sympathetic acoustic phase lock. For example, if one holds a C of a principal pipe in one's hand and plays another C from the same set of pipes, the pipe in the hand will vibrate. This is because the air in the body of the non-speaking pipe is harmonically in tune with the speaking pipe.[177] This is similar to striking middle C on a piano and finding that the other strings in the harmonic series of C vibrate as well.

Not only do speaking pipes cause sympathetic acoustic phase lock in the non-speaking pipes around them, they also cause speaking harmonic phase lock in nearby speaking pipes. This phase lock actually draws pipes with strong fundamental harmonics in tune with nearby pipes of similar harmonic spectra.[178] This means that two speaking pipes sharing portions of a given harmonic series complement and reinforce each other by being close together and, in effect, play closer in tune with each other.

---

[175] Ibid.
[176] Visser, "Chest Layout Information," *PIPORG-L Archives.*
[177] Visser, "Phase Lock," *PIPEORG-L Archives.*
[178] Visser, "Chest Layout Information," *PIPEORG-L Archives.*

Acoustic Phase Lock and Pipe Layout

Based on the various acoustic phase lock phenomena, Visser is convinced of the advantages of arranging pipes in thirds (tierce layout) upon a windchest.[179] According to Visser, approximately one-third of contemporary builders conform to this practice.[180] The Visser-Rowland Company first began employing this tierce method in 1974, and Visser continues to do so.[181] Pipes can be arranged upon the windchest according to several systems: chromatic, diatonic, or tierce (thirds). The following Table 1 illustrates the pipe order of a hypothetical one-octave set of pipes arranged according to these different systems.

Table 1. Windchest Pipe Layout

Layout	Pipe Order on Windchest											
Chromatic	C	C#	D	D#	E	F	F#	G	G#	A	A#	B
Diatonic	C	D	E	F#	G#	A#	B	G	F	E	D#	C#
Tierce	C	E	G#	A#	F#	D	D#	G	B	A	F	C#

In the tierce layout, pipes sounding major thirds are placed next to each other: C-E-G#-c-e-g#; D-F#-A#-d-f#-a#; D#-G-B-d#-g-b; C#-F-A-c#-f-a. The overall acoustical effect is this: since pipes stand close to each other in major thirds, they are in speaking harmonic phase lock with each other and therefore draw each other in

[179] Ibid.
[180] Visser, telephone interview with the author, 18 January 2001.
[181] Ibid.

tune. Minor seconds and major seconds are spaced far enough apart that they do not interfere with one another. Consequently, all intervals sound better.[182]

The order of the stops in the layout is also of critical importance. Not only must the stops be easily accessible for tuning purposes, they must also be allowed to effectively "interblend" with each other.[183] Conversely, stops that should not draw each other in tune must be placed farther apart from each other than stops that should draw each other in tune. Two such stops that should not be placed close together are the Salizional and its Celeste. The Celeste stop is deliberately tuned slightly sharper than the Salizional in order to produce an undulating "string" effect. These stops should have at least two stops separating them from each other.[184] This distance will keep the stops from attempting to draw themselves in tune with each other. It is advantageous for all other stops to be close together as they will sound more in tune through acoustic phase lock.

ORGAN CASE

Visser believes the organ case allows the sound of the organ to focus, to blend, and to reinforce its own sound or resonate.[185] The case serves as the resonating wooden body of the instrument, much like the wooden body of a violin or guitar, which provides a somewhat confined body of air in which the previously

---

[182] Visser, "Understanding Organ Wind," *PIPORG-L Archives*, May 1997, week 5 (#61).
[183] Ibid.
[184] Ibid.
[185] Pieter A. Visser, "The Organ Case: Is It Really Important?" *The American Organist,* November 1989, 99.

discussed acoustic phase lock may occur.[186] In an organ without a case, a confined resonating space is not present. The sound waves of speaking pipes are not directed toward other nearby pipes, and their energy quickly dissipates.

According to Visser, the case functions as a support structure for the organ pipes as well as housing all windchests, wind lines, and key actions.[187] By keeping all the components of the organ together, relatively consistent temperature and humidity are maintained throughout the structure. This facilitates ease in tuning as well as regulating consistent expansion and contraction of wooden parts due to fluctuations in humidity. While accommodating the above considerations, the case dimensions must also remain as compact as possible to ensure the best possible emanation of sound from the case.[188]

Visser follows a general rule that the case should be no greater than five feet in depth and no less than two feet.[189] Such a shallow case allows the organ builder and voicer to let the pipes speak in an unforced manner on low wind pressure without worrying about making the pipes over-project in order for their sound to escape the case.[190] This ensures the best possible sound potential from the pipes. In a deeper case, much of the sound from the pipes remains inside the case and is never directed out into the room.[191] In order to compensate for the associated loss of sound, pipes

---

[186] Ibid.
[187] Ibid., 100.
[188] Ibid.
[189] Ibid.
[190] Donahue, *Modern Classical Organ*, 12.
[191] Ibid.

must be voiced to speak in a forced manner with higher wind pressures. Further, Visser makes the following statement regarding the organ case:

> Encased organ tone has a singing, cohesive quality and a tightness to its ensemble that is lacking in instruments with pipes in the open and those with tone reproduced through [electronic] speakers. Without a case, an organ is only half an organ. An organ case makes a musical instrument or entity out of a bunch of pipes, windchests and mechanisms.[192]

In terms of using the case as an artistic medium, Visser always employs religious symbolism in the design and layout of his cases for church organs.[193] For example, in the instrument located in First Presbyterian Church, Stamford, Connecticut (Opus 87), the organ case has the overall appearance of a seven-fingered hand, seven symbolizing completeness. The three pedal towers symbolize the three persons of the Holy Trinity. The carved wood surrounding the pipes contains rays of light, giving each tower the effect of having a nimbus, an historical religious art symbol indicating divinity. Placement of the horizontal trumpets contrasts with the vertical pipes of the façade to form a cross.[194] Visser also utilizes more obvious signs of his religious faith, such as the inscription "*Soli Deo Gloria*" placed above the console in the organ of the Wooddale Church, Eden Prairie, Minnesota (Opus 90).[195] On the contrary, if an instrument is placed in an academic setting, Visser generally avoids the practice of using religious symbols.

---

[192] Visser, "The Organ Case," 100.

[193] Visser, interview by author.

[194] Ibid.

[195] Latin, "To God alone be the Glory." This inscription was a favorite of Johann Sebastian Bach and is found on many of his manuscripts.

SCALING AND VOICING

Many contemporary organ builders simply copy the scales of historical instruments and replicate their findings in American churches with little to no regard to different acoustical environments. Visser believes there is nothing wrong in copying the work of historical instruments for educational purposes but thinks that the result will be far from the original given wildly different acoustical settings.[196] Since most European cathedrals are vastly different acoustically from most American churches, an exact replica of a European cathedral organ in an average America church would not be successful. Visser, therefore, caters the scaling of each individual organ to its setting.

To determine the scaling of pipes in an organ, Visser first takes into account the acoustical properties of the room in which the instrument will be located. Drawing upon his early training with Josef Bremm,[197] Visser enters a room; listens to the ambient sounds present in the room; and interprets the feedback his body receives from the sound of his own voice. By determining the desired strength of bass and treble ranges, Visser is able to determine the wind pressure required to fill the space with organ tone.[198] With the wind pressure established, Visser can then set the bass scales, followed by the treble scales and other variables including case size and shape, location of the pipes within the case and location of the case within a room.[199]

---

[196] Pieter A. Visser, "Scaling? Voicing?" *The American Organist*, 52.
[197] See Chapter 1, 6.
[198] Visser, interview by author.
[199] Visser, "Scaling? Voicing?"

The scaling of organ pipes is one of the most important tonal and artistic aspects of organ design.[200] The scaling of each stop on a given organ must be determined so that any stop will blend with any other on the organ.[201] Visser has achieved this primary goal through his early training and his many years of study and research in maintenance and restoration of organs in Holland, France, Scandinavia, and Germany.[202] Visser uses traditional Dutch scalings, many of which come directly from the work of Christian Müller of Holland.[203] Utilizing an average wind pressure of seventy millimeters and moderate-length pipe mouths, the sound produced is unforced and musical.[204] This superior tonal quality often has been a major selling point for many of Visser's instruments.[205] It is difficult for any organ builder to produce distinctive tone colors that have the ability to blend well. According to more than one opinion, Visser succeeds.[206]

If a stop is scaled properly, made well and out of the correct materials, it is then ready for voicing. Voicing primarily involves the alteration and adjustment of the aerodynamics of a pipe by trimming, cutting and adjusting its various components, primarily those associated with the mouth.[207] In short, the pipe should be made to produce its maximum musical potential as was determined by its

---

[200] Burton K. Tidwell, "Scaling," *The American Organist*, December 1988, 53.
[201] Visser, interview by author.
[202] Ibid.
[203] Brian K. Davis, interview with the author, 21 October, 1999.
[204] Ibid.
[205] Rob Gerlach, interview with the author, 29 September, 1999.
[206] Davis, Kiehl, Gerlach, Morris, questionnaire responses sent to the author.
[207] Visser, "Scaling? Voicing?"

scaling.[208] As each pipe is individually voiced, Visser also takes great care to insure that a pipe is compatible with all of the pipes of an individual stop and also with all other pipes of the organ.[209] Such concern on Visser's part makes him fairly unique among contemporary builders.[210]

Because the sound of the pipes is the culmination of every other organ component, the voicer must have complete understanding of all aspects of organ building.[211] They also must have both general and historical knowledge of winding systems, windchests, key action, and the design and placement of the case in a room in order to correctly judge an organ's optimum sound. It is with an expertise in all of these areas that the voicer produces a harmonious result. As Visser states, "without perfection within the whole instrument, there will not be a perfect instrument."[212]

REPRESENTATIVE STOP LISTS

In tracing Visser's search for perfection in his instruments, certain tendencies can be identified through studying stop lists of his organs. The following tables contain specific stop names and tone family names of small (six stop), medium (twenty stop), and large (thirty-three stop) organs built by Visser. An 'X' is placed in the opus number column if the stop appears on that particular instrument.

---

[208] Ibid.

[209] Visser, interview by author.

[210] Of the five builders consulted while researching this paper, only the Mander firm representative mentioned this concern to the author.

[211] Visser, "Scaling? Voicing?"

[212] Ibid., 53.

Table 2. Comparative Stop List for Small Visser Organs

SMALL ORGAN – 6 STOPS								
Stop Name (family name)	Opus Numbers							
	5	9	28	34	47	49	67	98
Manual I								
8' Rohrflöte (flute)	X	X	X	X	X	X	X	X
4' Prinzipal (principal)	X	X	X	X	X	X		
4' Flöte (flute)							X	X
2' Waldflöte (flute)	X	X	X	X	X	X		
1 1/3' Larigot (mutation)	X	X	X	X	X	X	X	X
1 1/3' Mixtur III (mixture)	X	X	X	X	X	X		
Manual II								
8' Rohrflöte (flute)	X	X	X	X	X	X	X	X
4' Prinzipal (principal)	X	X	X	X	X	X		
2' Prinzipal (principal)							X	X
2 2/3' Sesquialtera (mixture)								X
8' Krummhornregal (reed)							X	
Pedal								
16' Subbass (flute)	X	X	X	X	X	X	X	X

A small Visser organ generally consists of one to ten stops and this size constitutes thirty-six percent of Visser's total output of new organs.[213] By examining the stop list of eight six-stop organs (Opus Nos. 5, 9, 28, 34, 47, 49, 67, 98), one would expect a typical small Visser organ to have the following general stops, identified by family name and pitch level, divided between two manuals and pedal:

[213] Rebuilt instruments are not included in this count.

Manual Stops (Two Manuals)	Pedal
8' Flute	16' Flute
4' Principal	
2' Flute	
1 1/3' Mutation	
1 1/3' Mixture*	

* This stop occupies the small organ color stop position and could be replaced by another color stop such as a Sesquialtera or 8' reed stop.[214]

Table 3. Comparative Stop List for Medium Visser Organs

MEDIUM ORGAN – 20 STOPS						
Stop Name (family name)	Opus Number					
	14	26	54	72	85	104
Hauptwerk						
8' Prinzipal (principal)	X	X	X	X	X	X
8' Rohrflöte (flute)	X	X	X	X	X	X
4' Oktav (principal)	X	X	X	X	X	X
4' Nachthorn (flute)	X	X	X	X		
4' Koppelflöte (flute)					X	
2' Waldflöte (flute)	X	X	X	X	X	X
2 2/3' Sesquialtera (mixture)	X	X	X	X	X	X
1 1/3' Mixtur (mixture)	X	X	X	X	X	X
8' Trompete (reed)	X	X	X	X	X	X
Brustwerk						
8' Gedeckt (flute)	X					X
8' Gemshorn (flute-string[215])		X	X	X	X	X
8' Celeste (celeste[216])		X	X	X	X	X

[214] The Sesquialtera is a double-rank stop composed of the 2 2/3' and the 1 3/5' pitch levels. When middle C is played, the second G above middle C and the E above the G sound simultaneously. This stop may be used as a solo color stop in conjunction with 8', 4', and 2' stops, or may be used to color the entire ensemble.

[215] This stop has characteristics of both flute and string colors.

[216] This stop is tuned slightly sharp to the Gemshorn to produce an undulating "string" effect.

MEDIUM ORGAN – 20 STOPS						
Stop Name (family name)	Opus Number					
	14	26	54	72	85	104
Brustwerk, continued						
4' Prinzipal (principal)	X	X	X	X		
4' Blockflöte (flute)		X	X	X		
4' Kleinflöte (flute)	X					
4' Nachthorn (flute)					X	
4' Spitzflöte (flute)						X
2' Oktav (principal)	X	X	X	X		
2' Prinzipal (principal)					X	X
2 2/3' Nasat (mutation)						X
1 1/3' Larigot (mutation)	X	X	X	X	X	
8/9' None (mutation)	X					
1' Scharff III (mixture)				X	X	X
1' Scharff IV (mixture)	X	X	X			
8' Krummhorn (reed)		X	X	X	X	X
8' Musette (reed)	X					
Pedal						
16' Subbass (flute)	X	X	X	X	X	X
8' Prinzipal (principal)	X	X	X	X	X	X
8' Gedeckt (flute)						X
4' Choralbass (principal)	X	X	X	X	X	X
16' Fagott (reed)				X	X	X
16' Posaune (reed)	X		X			
16' Stillposaune (reed)		X				
4' Rohrschalmey (reed)					X	

A medium-size Visser organ consists of eleven to twenty stops and this size constitutes twenty-seven percent of Visser's total output of new organs. One would expect a typical Visser organ of twenty stops to have the following general stops, divided over two manuals and pedal:

Hauptwerk	Brustwerk	Pedal
8' Principal	8' Flute-String	16' Flute
8' Flute	8' Celeste	8' Principal
4' Principal	4' Principal	4' Principal
4' Flute	4' Flute	16' Reed
2' Flute	2' Principal	
2 2/3' Sesquialtera	1 1/3' Mutation	
1 1/3' Mixture	1' Mixture	
8' Reed	8' Reed	

In this typical medium size organ, Visser utilizes the Werkprinzip pitch relationship between principal stops of the various divisions to a certain extent. Each division is based on a principal of a different pitch, with the lowest being found in the Pedal, the next in the main manual (Hauptwerk), and consecutive pitches in subsidiary manuals (Rückpositiv or Brustwerk). The lowest pitch level of the principal stop is found at the 8' in the Pedal; at 4' in the Hauptwerk; and at 2' in the Brustwerk.

Table 4. Comparative Stop List for Large Visser Organs

LARGE ORGAN – 33 STOPS				
Stop Name (family name)	Opus Number			
	30	75	80	100
Hauptwerk				
16' Quintaton (flute)	X		X	X
8' Prinzipal (principal)	X	X	X	X
8' Rohrflöte (flute)	X	X	X	X
4' Oktav (principal)	X	X	X	X
4' Koppelflöte (flute)	X			
4' Nachthorn (flute)		X	X	X
2' Waldflöte (flute)	X	X	X	X
8' Cornet V (mixture)	X			
2' Mixtur V (mixture)	X			
1 1/3' Mixtur IV (mixture)		X	X	X
2 2/3' Sesquialtera (mixture)			X	X
8' Trompete (reed)	X	X	X	X
Brustwerk				
8' Gedeckt (flute)		X	X	X
8' Gemshorn (flute-string)	X			
8' Salizonal (string)		X	X	X
8' Celeste (celeste)	X	X	X	X
4' Prinzipal (principal)	X	X	X	X
4' Blockflöte (flute)		X	X	X
4' Nachthorn (flute)	X			
2' Oktav (principal)	X	X	X	X
2 2/3' Sesquialtera (mixture)	X			
2 2/3' Nasat (mutation)			X	
1 1/3' Scharff V (mixture)	X			

LARGE ORGAN – 33 STOPS				
Stop Name (family name)	Opus Number			
	30	75	80	100
Brustwerk, continued				
1 1/3' Larigot (mutation)		X		
1' Scharff IV (mixture)		X	X	X
16' Rankett (reed)	X			
16' Fagott (reed)				X
16' Dulzian (reed)			X	
8' Trompete (reed)	X	X	X	X
Rückpositiv				
8' Kleingedeckt (flute)	X			
8' Gedeckt (flute)		X	X	X
4' Prestant (principal)	X			
4' Blockflöte (flute)	X			
4' Kleinflöte (flute)		X		X
4' Flöte (flute)			X	
2' Prinzipal (principal)	X	X	X	X
2 2/3' Nasat (mutation)	X			
1 1/3' Larigot (mutation)	X	X	X	
1 3/5' Terz (mutation)				X
1' Kleinmixtur III (mixture)	X	X	X	X
2 2/3' Sesquialtera (mixture)		X		
8' Krummhorn (reed)	X	X	X	X
Pedal				
16' Prinzipal (principal)	X	X	X	X
16' Subbass (flute)		X	X	X
8' Oktav (principal)	X	X	X	X
8' Gedeckt (flute)	X	X	X	X
4' Choralbass (principal)	X	X	X	X

LARGE ORGAN – 33 STOPS				
Stop Name (family name)	Opus Number			
	30	75	80	100
Pedal, continued				
2 2/3' Mixtur IV (mixture)	X	X	X	X
16' Posaune (reed)	X			X
16' Stillposaune (reed)		X		
16' Fagott (reed)			X	
8' Trompete (reed)		X	X	X
4' Schalmei (reed)	X		X	

A large Visser organ consists of twenty-one to forty stops and this size constitutes thirty percent of Visser's total output of new organs. One would expect a typical organ of thirty-three stops to have the following general stops and pitch levels, divided over three manuals and pedal:

Hauptwerk
16' Flute
8' Principal
8' Flute
4' Principal
4' Flute
2' Flute
1 1/3' or 2' Mixture
8' Reed

Brustwerk
8' Flute
8' Flute-String
8' Celeste
4' Principal
4' Flute
2' Principal
1 1/3' or 1' Mixture
16' Reed
8' Reed

Rückpositiv
8' Flute
4' Flute
2' Principal
1 1/3' Mutation
1' Mixture
8' Reed

Pedal
16' Principal
16' Flute
8' Principal
8' Flute
4' Principal
2 2/3' Mixture
16' Reed
8' Reed

Stops which could appear on any manual of a large organ:
2 2/3' Mutation
2 2/3' Mixture (Sesquialtera)

In this typical large-size organ, Visser follows the Werkprinzip pitch relationship between principal stops of the various divisions to a great extent. The lowest pitch level of the principal stop is found at 16' in the Pedal; at 8' in the Hauptwerk; at 4' in the Brustwerk; and at 2' in the Rückpositiv. Each of these divisions also includes mixtures and mutations to add brilliance to the principal ensemble, in accordance with the Werkprinzip principle.

Because of the rarity of organs containing over forty stops in Visser's total output, these large organs have not been included in this survey. There are three organs of approximately fifty stops each (Opus Nos. 29, 87, 110) and two organs of approximately seventy stops (Opus Nos. 43, 90). Organs of over forty stops simply have more stops added to the typical thirty-three stop organ specification. These stops include secondary reeds, stopped and open flutes, mixtures, and mutations. Included in the pedal stops are flute and/or reed stops of the 32' pitch. All of these stops simply extend in range and tonal palate of the stops of a typical large organ.

TWENTIETH-CENTURY TECHNOLOGY

In 1974, Visser was one of the first organ builders to utilize computer technology in many facets of organ building.[217] Computer-aided design (CAD), which produced drawings of the mechanics and appearance of an organ, and computer-aided machining (CAM) of windchests began to be used in Visser's

[217] Visser, resume sent to author.

shop.[218] CAD and CAM are useful in areas such as drafting and construction as well keeping an inventory of parts used in the construction of an instrument.[219]

The CAD program has practically replaced the pencil-and-paper method of drafting.[220] Since lines on a CAD computer screen are, in essence, only electrical signals, the organ builder is free to experiment and make many changes without having to manually redraw the draft.[221] Visser uses the computer programs for these tedious projects, leaving himself free to create and design new organs. In the CAD system, the various components of an organ are stored in the memory banks as bits of data. Keyboards, pipes and windchest are drawn once and will appear in all subsequent drawings made from the original data. If alterations are made to the original data, such as moving a windchest within the case, the program automatically recalculates any spatial differences, identifies and resolves any design conflicts.[222]

Visser continues to utilize the CAD/CAM system in his shop for drafting and machining, but he prefers to make the more artistic decisions himself.[223] It may seem strange to use these modern conveniences to build instruments in historic styles; however, Visser sees no contradiction. He cites as an example in the great nineteenth-century French organ builder, Aristide Cavaillé-Coll, who used a slide rule

---

[218] Visser, interview by author.

[219] Herbert L. Huestis, "Computer Assisted Design: Three Challenges for the Future," *The Diapason*, December 1989, 19.

[220] Ibid.

[221] Ibid.

[222] Ibid.

[223] Visser, interview by author.

in designing his instruments.[224] Cavaillé-Coll was simply using a tool which was modern to his time, just as Visser utilizes the computer today.

OPINIONS OF VISSER AND HIS WORK

Visser's contemporaries hold him in high regard as an organ builder. In interviews conducted with organ builders and church and concert organists by the author, Visser was admired for the mechanical, musical, and artistic aspects of his instruments which are "well executed and thought out."[225] Visser has surrounded himself with "a highly trained staff of artists who care deeply about what they are doing."[226] This high degree of commitment to their craft produces a consistent level of fine craftsmanship and beauty in every instrument built.[227]

Tonally, Visser's instruments exhibit a tonal purity which yields "a magnificent sound for all literature."[228] This characteristic of his instruments provides extreme clarity when performing counterpoint.[229] His instruments also speak clearly and distinctly no matter how many or how few stops are drawn.[230] Because of the great care taken in voicing each pipe, Visser's organs have an overall pleasant character, beauty and richness of sound.[231] Meticulous attention to scaling

---

[224] Ibid.
[225] See Appendix E, interviews by the author.
[226] Brian Davis, interview with the author 21 October 1999.
[227] Ibid.
[228] Marilyn Keiser, "Re: Thesis on Pieter Visser, Questionnaire attached," E-mail to author, 30 September 1999.
[229] Ibid.
[230] Rob Gerlach, interview with the author, 29 September 1999.
[231] Vicky Keihl, interview with the author, 25 October 1999.

and the voicing of pipes permits a great versatility in performing an expansive range of repertoire from Bach to transcriptions.[232] It should be noted that the Pedal divisions of some of his early instruments are underscaled and therefore somewhat weak. The company later began to incorporate larger scales for this division, thus producing a better balance between the Pedal and manuals. [233]

Visser bases organ case designs on traditional Dutch models while translating this principle into contemporary visual designs.[234] By maintaining proper proportions of the height and width of the organ case and the relative size of its base, a natural beauty and balance are present. This natural balance allows the case to blend well into the room in which it located.[235] This blending is further achieved by incorporating elements of the architecture of the room into the case, causing the organ to be in visual harmony with the room.[236]

As a salesman, Visser is described as personable, knowledgeable, helpful, and extremely professional.[237] Since he possesses extensive knowledge of all of the aspects of organ building, Pieter Visser has impressed many organ search committees.[238] His willingness to listen and understand the needs, theology, history

---

[232] Spillman, Mardirosian, Papadakos, interviews with the author.
[233] Davis, interview by author.
[234] Fritz Noack, "Peter Visser." E-mail to author, 28 October 2000.
[235] Davis, interview with the author, 21 October 1999.
[236] Visser, "The Organ Case."
[237] Keihl, Spillman, Morris, interviews with the author.
[238] Keihl, Gerlach, Davis, interviews with the author.

and traditions of prospective clients has often secured contracts to build given organs.[239]

SUMMARY

As a builder of the twenty-first century, Pieter Visser works well within the principles and goals set forth by the Organ Reform Movement of the early twentieth century. He takes great care in planning the placement of the organ to ensure the best possible projection of sound within a given room. Visser's shallow case designs give optimum projection, blend, and reinforcement to organ tone. Pipes are voiced in Visser's organs on low wind pressure, ensuring proper speech and character. Scaling of all stops is related to the unison pitch within each division as well as to the acoustical environment in which the organ finds itself. Light, responsive mechanical key action provides intimate control of the organ's speech by the organist at the console. On Visser's medium and large organs, the selection of stops provides principal and flute choruses on each division, along with a variety of reed stops. Mixtures and mutations are also included to give proper brilliance and color to each division. Although characteristic sounds of organ of seventeenth- and eighteenth-century Northern Europe predominate, the majority of organ repertoires are playable on Visser organs.

In both the tonal and mechanical designs of his instruments, Visser combines

[239] Keihl, Gerlach, Morris, Davis, interviews with the author.

his traditional Dutch training with his knowledge of aerodynamics. He also utilizes the latest advances in computer-aided design and machining, allowing optimal accuracy in the design and manufacture of organ components. Consequently, Visser has more time to concentrate on the more creative, artistic aspects of organ building and design.

Visser lends a personal artistic touch to his organs through the implementation of religious symbolism in his casework. The traditional proportions of Dutch case design augmented by the artistic manifestations of Visser's faith produce a truly unique and personal work of art. Not only are his instruments pleasant aurally and visually, they enjoy the reputation of being reliable, versatile, well-built, and enjoyable to play. Visser's success to-date foreshadows an even more promising and innovative future as an organ builder who explores possible extensions of viable, historic traditions.

APPENDIX A

OPUS LIST OF NEW ORGANS

ABBREVIATIONS

BW	Brustwerk* Bovenwerk	*For this and following abbreviations where two division names are given, the abbreviation applies to that division which is present on that particular instrument.
Ext	Extension	Stop is an extension of a set of pipes and is found on two keyboards at the same or at different pitch levels.
GO	Grand Orgue	
HW	Hauptwerk Hoofdwerk	
KP	Kronpositiv	
OB	Oberwerk	
Pos	Positiv	
RP	Rückpositiv	
RW	Rugwerk Rugpositief	
Spw	Spaanswerk Spanischewerk	
SW	Schwellwerk	
TC	Tenor C	Set of pipes begins on tenor C.
TG	Tenor G	Set of pipes begins on tenor G.
U	Unison Off	Suppresses all stops at their intended level of a particular manual as indicated on the stop knob.
ZW	Zwelwerk	

All organs have a manual keyboard compass of 61 notes and pedal compass of 32 notes unless otherwise noted.

REDFORD LUTHERAN CHURCH

REDFORD, MICHIGAN

OPUS 1

HAUPTWERK (Manual II)

8' Prinzipal
8' Rohrflöte
4' Oktav
2' Waldflöte
2 2/3' Sesquialtera II (TG)
1 1/3' Mixtur III

SCHWELLWERK (Manual III)

8' Gedeckt
8' Salizional
4' Nachthorn
2' Prinzipal
1 1/3' Sifflöte
1' Scharff III
8' Musette
Tremulant

PEDAL

16' Subbass
16' Zartbass (from Subbass)
8' Octavbass
4' Choralbass
2 2/3' Hintersatz III

COUPLER ** (Manual I)

COUPLERS

HW + Pedal
SW + Pedal

Mechanical Key Action and Electric Stop Action

**This third keyboard, or Coupler manual has no stops of its own, but instead directly operates the other two manual keyboards simultaneously.

IMMANUEL UNITED CHURCH of CHRIST

SPRING, TEXAS

OPUS 2

MANUAL (56 Notes)

8' Gedeckt
4' Prestant
2' Waldflöte
1 1/3' Mixtur III

PEDAL (30 Notes)

Mechanical Key and Stop Action

ST. DUNSTAN'S EPISCOPAL CHURCH

HOUSTON, TEXAS

OPUS 4

MANUAL I (56 Notes)

8' Gedeckt (Manual II)
4' Prinzipal (Manual II)

MANUAL II (56 Notes)

8' Gedeckt
4' Prinzipal
2' Waldflöte
1 1/3' Larigot (from Mixtur III)
1 1/3' Mixtur III

PEDAL (30 Notes)

16' Subbass

COUPLERS

Manual I + Pedal
Manual II + Pedal

General Tremulant

Mechanical Key and Stop Action

ST. CHRISTOPHER CATHOLIC CHURCH

HOUSTON, TEXAS

OPUS 5

MANUAL I (56 Notes)

8' Rohrflöte
4' Prinzipal
2' Waldflöte
1 1/3' Larigot
1 1/3' Mixtur III

MANUAL II (56 Notes)

8' Rohrflöte (Manual I)
4' Prinzipal (Manual I)

PEDAL (30 Notes)

16' Subbass

COUPLERS

Manual I + Pedal
Manual II + Pedal

Mechanical Key and Stop Action

ST. SAVIOUR'S EPISCOPAL CHURCH

BAR HARBOR, MAINE

OPUS 6

HAUPTWERK (Manual II)

8' Prinzipal
8' Rohrflöte
4' Oktav
4' Nachthorn
2' Waldflöte
2 2/3' Sesquialtera II (TC)
1 1/3' Mixtur IV
8' Spanische Trompete
Tremulant
Zimbelstern

SCHWELLWERK (Manual III)

8' Gedeckt
8' Weidenpfeife
8' Celeste (TC)
4' Prinzipal
4' Kleinflöte
2' Oktav
1 1/3' Larigot
1' Scharff IV
8' Fagott
Tremulant

PEDAL

16' Offenbass
16' Subbass
8' Prinzipal
8' Gedeckt
4' Choralbass
16' Fagott

COUPLER (Manual I)

COUPLERS

HW + Pedal
SW + Pedal

Mechanical Key Action and Electric Stop Action

MEMORIAL DRIVE UNITED METHODIST CHURCH

HOUSTON, TEXAS

OPUS 7

HAUPTWERK (Manual II)

8' Prinzipal
8' Rohrflöte
4' Oktav
4' Koppelflöte
2' Waldflöte
8' Cornet V (TG)
1 1/3' Mixtur V
8' Trompete
Tremulant

POSITIV (Manual I)

8' Singend Gedeckt
4' Prestant
4' Kleingedeckt
2' Oktav
1 1/3' Larigot
1' Sifflöte
2 2/3' Sesquialtera II (Tenor C)
1' Kleinmixtur IV
8' Krummhorn
Tremulant

COUPLERS

HW + HW 16' U 4'
Pos + HW 16' 8' 4'
SW + HW 16' 8' 4'

Pos + Pos 16' U 4'
SW + Pos 8'

SW + SW 16' U 4'

SCHWELLWERK (Manual III)

8' Gedeckt
8' Salizional
8' Celeste (TC)
4' Prinzipal
4' Nachthorn
2' Oktav
1 1/3' Quinte
1' Scharff V
16' Fagott
8' Trompete
4' Klarine
Tremulant
Zimbelstern

PEDAL

32' Resultant
16' Prinzipal
16' Subbass
8' Oktav (Ext)
8' Gedeckt (Ext)
4' Choralbass (Ext)
2 2/3' Mixtur III
16' Posaune
8' Trompete (Ext)
4' Kleintrompete (Ext)

HW + Pedal 8' 4'
Pos + Pedal 8' 4'
SW + Pedal 8' 4'

Electric Key and Stop Action

DALLAS BAPTIST COLLEGE

DALLAS, TEXAS

OPUS 8

MANUAL I (56 Notes)

8' Rohrflöte
4' Prinzipal
2' Waldflöte
1 1/3' Larigot
2 2/3' Sesquialtera II (Tenor C)
1 1/3' Mixtur III

MANUAL II (56 Notes)

8' Rohrflöte (Manual I)
4' Prinzipal (Manual I)

PEDAL (30 Notes)

16' Subbass

COUPLERS

Manual I + Pedal
Manual II + Pedal

Mechanical Key and Stop Action

FIRST PRESBYTERIAN CHURCH

LIVINGSTON, TEXAS

OPUS 9

MANUAL I (56 Notes)

8' Rohrflöte
4' Prinzipal
2' Waldflöte
1 1/3' Larigot
1 1/3' Mixtur III

MANUAL II (56 Notes)

8' Rohrflöte (Manual I)
4' Prinzipal (Manual I)

PEDAL (30 Notes)

16' Subbass

COUPLERS

Manual I + Pedal
Manual II+ Pedal

Mechanical Key and Stop Action

TRINITY LUTHERAN CHURCH

ORANGE, TEXAS

OPUS 10

MANUAL I (56 Notes)

8' Rohrflöte
4' Prinzipal
2' Waldflöte
1 1/3' Mixtur III

MANUAL II (56 Notes)

8' Rohrflöte (Manual I)
4' Prinzipal (Manual I)

PEDAL (30 Notes)

16' Subbass

COUPLERS

Manual I + Pedal
Manual II + Pedal

Mechanical Key and Stop Action

WESTBURY BAPTIST CHURCH

HOUSTON, TEXAS

OPUS 11

HAUPTWERK (Manual II)

16' Quintaton
8' Prinzipal
8' Gedeckt
4' Oktav
4' Nachthorn
2' Waldflöte
8' Cornet V (TG)
1 1/3' Mixtur V
8' Trompete
Tremulant
Glockenspiel

SCHWELLWERK (Manual III)

8' Rohrflöte
8' Salicional
8' Schwebung (TC)
4' Oktav
4' Koppelflöte
2' Superoktav
1 1/3' Mixtur V
16' Fagott
8' Trompete
4' Klarine
Tremulant

POSITIV (Manual I)

8' Gedeckt
4' Prestant
4' Kleingedeckt
2 2/3' Nasat
2' Oktav
1 3/5' Tierce
1 1/3' Larigot
1' Scharff IV
8' Krummhorn
Tremulant
Zimbelstern

PEDAL

32' Acoustic Bass
(from Prinzipal)
16' Prinzipal
16' Subbass
8' Oktav (Ext)
8' Gedeckt (Ext)
4' Choralbass (Ext)
2 2/3' Mixtur IV
16' Posaune
8' Trompete (Ext)
4' Kleintrompete (Ext)

COUPLERS

HW + HW 16' U 4'
Pos + HW 16' 8' 4'
SW + HW 16' 8' 4'

Pos + Pos 16' U 4'
SW + Pos 8'

SW + SW 16' U 4'

HW + Pedal 8' 4'
Pos + Pedal 8' 4'
SW + Pedal 8' 4'

Electric Key and Stop Action

The KAREN WHITE RESIDENCE

THE WOODLANDS, TEXAS

OPUS 12

(FORMERLY OWNED BY KATHLEEN A. HOLFORD, HOUSTON, TEXAS)

MANUALS I and II

PEDAL

8' Gedeckt

Mechanical Key Action

The CHURCH of the SACRED HEART

GALVESTON, TEXAS

OPUS 13

MANUAL I (56 Notes)

8' Gedeckt
4' Prinzipal
2' Waldflöte
1 1/3' Larigot
2 2/3' Sesquialtera II (TC)
1 1/3' Mixtur III

MANUAL II (56 Notes)

8' Gedeckt (Manual I)
4' Prinzipal (Manual I)

PEDAL (30 Notes)

16' Subbass

COUPLERS

Manual I + Pedal
Manual II + Pedal

Mechanical Key and Stop Action

PILGRIM LUTHERAN CHURCH

HOUSTON, TEXAS

OPUS 14

HAUPTWERK (Manual II)
(56 Notes)

8' Prinzipal
8' Rohrflöte
4' Oktav
4' Nachthorn
2' Waldflöte
2 2/3' Sesquialtera II (TC)
1 1/3' Mixtur V
8' Trompete
Zimbelstern

BRUSTWERK (Manual III)
(56 Notes)

8' Gedeckt
4' Prinzipal
4' Kleinflöte
2' Oktav
1 1/3' Larigot
8/9' None (TC)
1' Scharff IV
8' Musette
Tremulant

PEDAL (30 Notes)

16' Subbass
8' Prinzipal
4' Choralbass
16' Posaune

COUPLER (Manual I)

COUPLERS

HW + Pedal
BW + Pedal

Mechanical Key and Stop Action

ST. CECILIA CATHOLIC CHURCH

HOUSTON, TEXAS

OPUS 17

HAUPTWERK (Manual II)
(56 Notes)

8' Rohrflöte
4' Prestant
1 1/3' Mixtur III
8' Trompetregal

BRUSTWERK (Manual III)
(56 Notes)

8' Gemshorn
4' Kleinflöte
2' Waldflöte
1 1/3' Larigot
Tremulant

PEDAL (30 Notes)

16' Subbass

COUPLER (Manual I)

COUPLERS

HW + Pedal
BW + Pedal

Mechanical Key and Stop Action

ST. PIUS V CATHOLIC CHURCH

PASADENA, TEXAS

OPUS 18

HAUPTWERK (Manual II)
(56 Notes)

8' Prinzipal
8' Rohrflöte
4' Oktav
4' Blockflöte
2' Waldflöte
1 1/3' Mixtur IV
8' Trompete

RÜCKPOSITIV (Manual III)
(56 Notes)

8' Gedeckt
4' Kleinflöte
2' Prinzipal
1 1/3' Larigot
1' Kleinmixtur III
8' Trompetregal
Tremulant

PEDAL (30 Notes)

16' Subbass
16' Fagott

COUPLER (Manual I)

COUPLERS

HW + Pedal
RP + Pedal

Mechanical Key and Stop Action

ST. CYRIL of ALEXANDRIA CATHOLIC CHURCH

HOUSTON, TEXAS

OPUS 20

HAUPTWERK (Manual II)
(56 Notes)

8' Rohrflöte
4' Prinzipal
4' Nachthorn
2' Waldflöte
1 1/3' Mixtur IV

BRUSTWERK (Manual III)
(56 Notes)

8' Gemshorn
4' Kleingedeckt
2' Prinzipal
1 1/3' Larigot
8' Krummhorn

PEDAL (30 Notes)

16' Subbass
4' Choralbass
16' Dulzian

COUPLER (Manual I)

COUPLERS

HW + Pedal
BW + Pedal

Mechanical Key and Stop Action

The EPISCOPAL CHURCH of the HOLY SPIRIT

HOUSTON, TEXAS

OPUS 21

HAUPTWERK (Manual II)

8' Prinzipal
8' Rohrflöte
4' Oktav
4' Nachthorn
2' Waldflöte
8' Cornet V (TG)
1 1/3' Mixtur V
8' Trompete
Tremulant

SCHWELLWERK (Manual III)

8' Gedeckt
8' Salizional
8' Celeste (TC)
4' Prinzipal
4' Kleingedeckt
2' Oktav
1 1/3' Larigot
1' Scharff V
8' Rohrschalmei
Tremulant
Zimbelstern

PEDAL

16' Prinzipal
16' Subbass
8' Oktav
8' Gedeckt
4' Choralbass
2 2/3' Mixtur III
16' Posaune

COUPLER (Manual I)

COUPLERS

HW + Pedal
SW + Pedal

Mechanical Key Action and Electric Stop Action

HOLY FAMILY CATHOLIC CHURCH

WHARTON, TEXAS

OPUS 22

HAUPTWERK (Manual II)
(56 Notes)

8' Rohrflöte
4' Prinzipal
2' Waldflöte
1 1/3' Mixtur III
8' Trompet

OBERWERK (Manual III)
(56 Notes)

8' Gedeckt
4' Kleinflöte
2' Prinzipal
1 1/3' Larigot

PEDAL (30 Notes)

16' Subbass
4' Rohrschalmei

COUPLER (Manual I)

COUPLERS

HW + Pedal
OB + Pedal

General Tremulant

Mechanical Key and Stop Action

The CLAIRE PATTERSON RESIDENCE

HOUSTON, TEXAS

OPUS 23

(FORMERLY OWNED BY PEGGY WYLIE, HOUSTON, TEXAS)

MANUALS I and II

PEDAL

8' Gedeckt

Mechanical Key Action

ST. PAUL LUTHERAN CHURCH of PHILLIPSBURG

BRENHAM, TEXAS

OPUS 24

(FORMERLY OWNED BY ST. MARY MAGDALENE CATHOLIC CHURCH, HUMBLE, TEXAS)

MANUAL I (56 Notes)

8' Rohrflöte
4' Prinzipal
2' Waldflöte
1 1/3' Mixtur III

MANUAL II (56 Notes)

8' Rohrflöte (Manual I)
4' Prinzipal (Manual I)

PEDAL (30 Notes)

16' Subbass

COUPLERS

Manual I + Pedal
Manual II + Pedal

Mechanical Key and Stop Action

FIRST LUTHERAN CHURCH

TEMPLE, TEXAS

OPUS 25

HAUPTWERK (Manual II)
(56 Notes)

8' Prinzipal
8' Rohrflöte
4' Oktav
4' Blockflöte
2' Waldflöte
2 2/3' Sesquialtera II (TC)
1 1/3' Mixtur IV
8' Trompetregal

BRUSTWERK (Manual III)
(56 Notes)

8' Gedeckt
4' Gemshorn
2' Prestant
1 1/3' Larigot
1' Scharff IV
8' Krummhorn
Tremulant

PEDALWERK (30 Notes)

16' Subbass
8' Prinzipal
4' Schalmey

COUPLER (Manual I)

COUPLERS

HW + Pedal
BW + Pedal

Mechanical Key and Stop Action

The CHAPEL of VILLA de MATEL CONVENT

HOUSTON, TEXAS

OPUS 26

HAUPTWERK (Manual II)
(56 Notes)

8' Prinzipal
8' Rohrflöte
4' Oktav
4' Nachthorn
2' Waldflöte
2 2/3' Sesquialtera II (TC)
1 1/3' Mixtur IV
8' Trompete
Tremulant
Nachtigall

BRUSTWERK (Manual III)
(56 Notes)

8' Gemshorn
8' Celeste (TC)
4' Prinzipal
4' Blockflöte
2' Oktav
1 1/3' Larigot
1' Scharff IV
8' Krummhorn
Tremulant

PEDAL (30 Notes)

16' Subbass
8' Prinzipal
4' Choralbass
16' Stillposaune

COUPLER (Manual I)

COUPLERS

HW + Pedal
BW + Pedal

Mechanical Key Action and Electric Stop Action

ZION LUTHERAN CHURCH

TOMBALL, TEXAS

OPUS 27

DESTROYED BY FIRE 1989

HAUPTWERK (Manual II)
(56 Notes)

8' Rohrflöte
4' Praestant
2' Waldflöte
2 2/3' Sesquialtera II (TC)
1 1/3' Mixtur IV

RÜCKPOSITIV (Manual III)
(56 Notes)

8' Gedeckt
4' Kleinflöte
2' Prinzipal
1 1/3' Larigot
1' Sifflöte
8' Krummhorn

PEDAL (30 Notes)

16' Subbass
8' Gedeckt
4' Choralbass
16' Dulzian

COUPLER (Manual I)

COUPLERS

HW + Pedal
RP + Pedal

Mechanical Key and Stop Action

ST. DAVID'S EPISCOPAL CHURCH

SAN ANTONIO, TEXAS

OPUS 28

MANUAL I (56 Notes)

8' Rohrflöte
4' Prinzipal
2' Waldflöte
1 1/3' Larigot
1 1/3' Mixtur III

MANUAL II (56 Notes)

8' Rohrflöte (Manual I)
4' Prinzipal (Manual I)

PEDAL (30 Notes)

16' Subbass

COUPLERS

Manual I + Pedal
Manual II + Pedal

Mechanical Key and Stop Action

ST. LUKE'S EPISCOPAL CHURCH

SAN ANTONIO, TEXAS

OPUS 29

HOOFDWERK (Manual II) (56 Notes)

16' Quintadeen
8' Praestant
8' Roerfluit
4' Octaaf
4' Koppelfluit
2' Woudfluit
8' Cornet V (TG)
2' Mixtuur V
1' Scherp III
16' Trompet
8' Trompet
Tremulant
Zimbelstern
Klokkenspel

RUGPOSITIEF (Manual I) (56 Notes)

8' Gedekt
8' Quintadeen
4' Praestant
4' Blokfluit
2' Octaaf
1 1/3' Larigot
8/9' None (TC)
2 2/3' Sesquialtera II
1' Mixtuur IV
1/2' Cymbel II
16' Dulziaan
8' Kromhoorn
Tremulant

BOVENWERK (Manual III) (56 Notes)

8' Gedekt
8' Baarpijp
8' Zweving (TC)
4' Praestant
4' Nachthoorn
2 2/3' Nasard
2' Octaaf
1 3/5' Terts
1' Sifflet
1 1/3' Mixtuur V
16' Fagot
8' Trompet
4' Klaroen
Tremulant

PEDAAL (30 Notes)

16' Praestant
16' Subbas
8' Octaaf
8' Gedektbas
4' Koraalbas
4' Spitsfluit
2' Nachthoorn
2 2/3' Mixtuur IV
32' Groote Bazuin
16' Bazuin
8' Trompet
4' Trompet
2' Cornet

ST. LUKE'S EPISCOPAL CHURCH (continued)

OPUS 29

SPAANSWERK (Manual IV)
(56 Notes)

8' Spaanse Trompet

COUPLERS

RP + HW
BW + HW
BW + RP
HW + Pedaal
RP + Pedaal
BW + Pedaal

Mechanical Key Action and Electric Stop Action

ST. ANNE'S CATHOLIC CHURCH

HOUSTON, TEXAS

OPUS 30

HAUPTWERK (Manual II)

16' Quintaton
8' Prinzipal
8' Rohrflöte
4' Oktav
4' Koppelflöte
2' Waldflöte
8' Cornet V (TG)
2' Mixtur V
8' Trompete
Tremulant

BRUSTWERK (Manual III)

8' Gemshorn
8' Celeste (TC)
4' Prinzipal
4' Nachthorn
2 2/3' Sesquialtera II (TC)
2' Oktav
1 1/3' Scharff V
16' Rankett
8' Trompete
Tremulant

RÜCKPOSITIV (Manual I)

8' Kleingedeckt
4' Prestant
4' Blockflöte
2 2/3' Nasat
2' Prinzipal
1 1/3' Larigot
1' Kleinmixtur III
8' Krummhorn
Tremulant

PEDAL

16' Prinzipal
8' Oktav
8' Gedeckt
4' Choralbass
2 2/3' Mixtur IV
16' Posaune
4' Schalmei
Zimbelstern

COUPLERS

RP + HW
BW + HW
BW + RP
HW + Pedal
RP + Pedal
BW + Pedal

Mechanical Key Action and Electric Stop Action

SOUTHWESTERN UNIVERSITY

GEORGETOWN, TEXAS

OPUS 31

(FORMERLY OWNED BY THERESA FORD, WACO, TEXAS)

MANUALS I and II	PEDAL
8' Gedeckt	

Mechanical Key and Stop Action

ST. TIMOTHY'S EPISCOPAL CHURCH

LAKE JACKSON, TEXAS

OPUS 32

GRAND ORGUE (Manual II)
(56 Notes)

8' Montre
8' Flûte à cheminée
4' Prestant
2' Doublette
1 1/3' Fourniture IV
8' Trompette

RÉCIT (Manual III)
(56 Notes)

8' Bourdon
4' Flûte harmonique
2' Doublette
2 2/3' Sesquialtera II (TC)
1' Cymbale III

PÉDALE (30 Notes)

16' Soubasse
8' Bourdon
4' Prestant
16' Basson

COUPLER (Manual I)

COUPLERS

GO + Pédale
Récit + Pédale

Tremblant Doux

Mechanical Key Action and Electric Stop Action

FAITH AMERICAN LUTHERAN CHURCH

HOUSTON, TEXAS

OPUS 33

HAUPTWERK (Manual II)
(56 Notes)

8' Prinzipal
8' Rohrflöte
4' Oktav
4' Koppelflöte
2' Waldflöte
2 2/3' Sesquialtera II (TC)
1 1/3' Mixtur IV
8' Trompete

BRUSTWERK (Manual III)
(56 Notes)

8' Gemshorn
8' Gemshorn Celeste (TC)
4' Prinzipal
4' Blockflöte
2' Oktav
1' Scharff III
8' Rohrschalmey
Tremulant

RÜCKPOSITIV (Manual I)
(56 Notes)

8' Gedeckt
4' Kleinflöte
2' Prinzipal
1 1/3' Larigot
1' Kleinmixtur III
8' Krummhorn
Tremulant
Zimbelstern

PEDAL (30 Notes)

16' Prinzipal
16' Subbass
8' Prinzipal
4' Choralbass
2' Mixtur III
16' Fagott

COUPLERS

Pos + HW
BW + HW
BW + Pos

HW + Pedal
Pos + Pedal
BW + Pedal

Mechanical Key Action and Electric Stop Action

IMMANUEL LUTHERAN CHURCH

KILLEEN, TEXAS

OPUS 34

MANUAL I (56 Notes)

8' Rohrflöte
4' Prinzipal
2' Waldflöte
1 1/3' Larigot
1 1/3' Mixtur III

MANUAL II (56 Notes)

8' Rohrflöte (Manual I)
4' Prinzipal (Manual I)

PEDAL (30 Notes)

16' Subbass

COUPLERS

Manual I + Pedal
Manual II + Pedal

Zimbelstern

Mechanical Key and Stop Action

HANKAMER CHAPEL OF SECOND BAPTIST CHURCH

HOUSTON, TEXAS

OPUS 35

HAUPTWERK (Manual II)
(56 Notes)

8' Rohrflöte
4' Prinzipal
2' Waldflöte
1 1/3' Mixtur III

POSITIV (Manual III)
(56 Notes)

8' Gedeckt
4' Kleinflöte
2' Prestant
1 1/3' Larigot

PEDAL (30 Notes)

16' Subbass

COUPLER (Manual I)

COUPLERS

Manual I + Pedal
Manual II + Pedal

Mechanical Key and Stop Action

HOLY TRINITY EPISCOPAL CHURCH

DICKINSON, TEXAS

OPUS 36

MANUAL I (56 Notes)

8' Rohrflöte
4' Prinzipal
2' Waldflöte
1 1/3' Larigot
2 2/3' Sesquialtera II (TC)
1 1/3' Mixtur III

MANUAL II (56 Notes)

8' Rohrflöte (Manual I)
4' Prinzipal (Manual I)

PEDAL (30 Notes)

16' Subbass

COUPLERS

Manual I + Pedal
Manual II + Pedal

Mechanical Key and Stop Action

ST. JOHN VIANNEY CATHOLIC CHURCH

HOUSTON, TEXAS

OPUS 37

HAUPTWERK (Manual II)
(56 Notes)

8' Prinzipal
8' Rohrflöte
4' Oktav
2' Waldflöte
2 2/3' Sesquialtera II (TC)
1 1/3' Mixtur IV
8' Trompete

SCHWELLWERK (Manual III)
(56 Notes)

8' Gemshorn
8' Gemshorn Celeste (TC)
4' Kleinflöte
2' Prinzipal
1 1/3' Larigot
1' Kleinmixtur III
8' Krummhorn

PEDAL (30 Notes)

16' Subbass
8' Prinzipal (HW)
8' Gedeckt (Ext)
4' Choralbass
16' Fagott

COUPLER (Manual I)

COUPLERS

HW + Pedal
SW + Pedal

General Tremulant

Mechanical Key Action and Electric Stop Action

ST. BARNABAS EPISCOPAL CHURCH

DELAND, FLORIDA

OPUS 38

HAUPTWERK (Manual II)
(56 Notes)

8' Prinzipal
8' Rohrflöte
4' Oktav
2' Waldflöte
1 1/3' Mixtur IV
8' Trompete

BRUSTWERK (Manual III)
(56 Notes)

8' Gedeckt
4' Nachthorn
2' Prinzipal
1 1/3' Larigot
2 2/3' Sesquialtera II (TC)

PEDAL (30 Notes)

16' Subbass
8' Pommer
4' Choralbass

COUPLER (Manual I)

COUPLERS

HW + Pedal
BW + Pedal

General Tremulant

Mechanical Key and Stop Action

The CLEIS C. JORDAN RESIDENCE

LINCOLN, NEW MEXICO

OPUS 39

MANUALS I and II (56 Notes) PEDAL (30 Notes)

8' Gedeckt

Mechanical Key and Stop Action

ST. PETER LUTHERAN CHURCH

HALLETTSVILLE, TEXAS

OPUS 40

MANUAL I (56 Notes)

8' Rohrflöte
4' Prinzipal
2' Waldflöte
1 1/3' Mixtur III

MANUAL II (56 Notes)

8' Rohrflöte (Manual I)
4' Prinzipal (Manual I)

PEDAL (30 Notes)

16' Subbass

COUPLERS

Manual I + Pedal
Manual II + Pedal

Mechanical Key and Stop Action

The ELAINE F. SCHUMACHER RESIDENCE

MAITLAND, FLORIDA
OPUS 41

MANUAL I (56 Notes)

8' Rohrflöte
4' Prinzipal
2' Waldflöte
1 1/3' Larigot

MANUAL II (56 Notes)

8' Rohrflöte (Manual I)
4' Prinzipal (Manual I)

PEDAL (30 Notes)

16' Subbass

COUPLERS

Manual I + Pedal
Manual II + Pedal

Mechanical Key and Stop Action

ST. MARTIN'S EVANGELICAL LUTHERAN CHURCH

AUSTIN, TEXAS

OPUS 42

HAUPTWERK (Manual II) (56 Notes)

8' Prinzipal
8' Rohrflöte
4' Oktav
4' Nachthorn
2' Waldflöte
2 2/3' Sesquialtera II (TC)
2' Mixtur IV
8' Trompete
Tremulant

BRUSTWERK (Manual III) (56 Notes)

8' Gedeckt
8' Quintaton
4' Prinzipal
4' Kleinflöte
2' Oktav
1 1/3' Larigot
8/9' None (TC)
1 1/3' Mixtur IV
16' Dulzian
8' Krummhorn
Tremulant

PEDAL (30 Notes)

16' Prinzipal
16' Subbass
8' Oktav
8' Gedeckt
4' Choralbass
2 2/3' Mixtur III
16' Posaune
8' Trompete
4' Schalmei

COUPLER (Manual I)

COUPLERS

HW + Pedal
BW + Pedal

Zimbelstern

Mechanical Key and Stop Action

BATES RECITAL HALL OF The UNIVERSITY of TEXAS

AUSTIN, TEXAS

OPUS 43

HOOFDWERK (Manual II)

16' Praestant
8' Praestant
8' Roerfluit
8' Baarpijp
4' Octaaf
4' Koppelfluit
2 2/3' Kwint
2' Woudfluit
8' Cornet V (TC)
2' Mixtuur V
1/2' Cymbel III
16' Trompet
8' Trompet
8' Vox humana
4' Klaroen
Tremulant

RUGWERK (Manual I)

8' Praestant
8' Bourdon
8' Quintadeen
4' Octaaf
4' Spitsfluit
2' Superoctaaf
1 1/3' Larigot
1 1/7' Septime (TC)
1' Sifflet
8/9' None (TC)
2 2/3' Sesquialter II
1 1/3' Tertiaan III (TG)
1' Scherp V
16' Dulciaan
8' Trompet
8' Kromhoorn
4' Regaal
Tremulant

ZWELWERK (Manual III)

16' Gedekt
8' Praestant
8' Salicionaal
8' Voix celeste (TG)
8' Gedekt
4' Octaaf
4' Nachthoorn
2 2/3' Nasard
2' Flageolet
1 3/5' Terts
1 1/3' Klein kwint
2' Scherp mixtuur IV
1' Cymbel III
16' Fagot
8' Trompet
8' Musette
4' Klaroen
Tremulant

SPAANSWERK (Manual IV)

16' Trompet (TC)
8' Trompet
2' Terts mixtuur V

BATES RECITAL HALL OF The UNIVERSITY of TEXAS (continued)

OPUS 43

PEDAALWERK

32' Subbas
16' Praestant
16' Gedektbas
8' Octaaf
8' Gedekt
4' Koraalbas
2' Nachthoorn
1' Fluitje
2 2/3' Mixtuur V
32' Contra Bazuin
16' Bazuin
16' Fagot
8' Trompet
4' Schalmei
2' Regaal
Tremulant
Cymbelster

COUPLERS

RW+HW
ZW+HW
Spw+HW
ZW+RW
HW+Pedaal
RW+Pedaal
ZW+Pedaal
Spw+Pedaal

Coupler Assist to Hoofdwerk
Coupler Assist to Rugwerk

Mechanical Key Action and Electric Stop Action

HARDIN-SIMMONS UNIVERSITY

ABILENE, TEXAS

OPUS 44

MANUAL I (56 Notes)

8' Rohrflöte
4' Prinzipal
2' Waldflöte
1 1/3' Larigot
2 2/3' Sesquialtera II (TC)
1 1/3' Mixtur III

MANUAL II (56 Notes)

8' Rohrflöte (Manual I)
4' Prinzipal (Manual I)

PEDAL (30 Notes)

16' Subbass (Ext)

COUPLERS

Manual I + Pedal
Manual II + Pedal

Mechanical Key and Stop Action

The SHELLEY McGEHEE RESIDENCE

TEMPE, ARIZONA

OPUS 45

MANUAL I (56 Notes)

8' Rohrflöte
4' Kleingedeckt

MANUAL II (56 Notes)

8' Rohrflöte (Manual I)
2' Prinzipal

PEDAL (30 Notes)

16' Subbass (Ext)

COUPLERS

Manual II+ Manual I
Manual I+ Pedal
Manual II+ Pedal

General Tremulant

Mechanical Key and Stop Action

ST. JOHN LUTHERAN CHURCH

CYPRESS, TEXAS

OPUS 46

HAUPTWERK (Manual II)
(56 Notes)

8' Prinzipal
8' Rohrflöte
4' Oktav
2' Waldflöte
1 1/3' Mixtur IV
8' Trompete

BRUSTWERK (Manual III)
(56 Notes)

8' Gedeckt
4' Gemshorn
2' Prinzipal
1 1/3' Larigot
2 2/3' Sesquialtera II (TC)
8' Krummhorn
Tremulant

PEDAL (30 Notes)

16' Subbass
8' Prinzipal
4' Choralbass
16' Posaune
4' Schalmey

COUPLER (Manual I)

COUPLERS

HW + Pedal
BW + Pedal

Mechanical Key and Stop Action

NOTRE DAME CATHOLIC CHURCH

HOUSTON, TEXAS

OPUS 47

MANUAL I (56 Notes)

8' Rohrflöte
4' Prinzipal
2' Waldflöte
1 1/3' Larigot
1 1/3' Mixtur III

MANUAL II (56 Notes)

8' Rohrflöte (Manual I)
4' Prinzipal (Manual I)

PEDAL (30 Notes)

16' Subbass (Ext)

COUPLERS

Manual I + Pedal
Manual II + Pedal

Mechanical Key and Stop Action

CYPRESS CREEK CHRISTIAN CHURCH

SPRING, TEXAS

OPUS 48

HAUPTWERK (Manual I)
(56 Notes)

8' Rohrflöte
4' Prinzipal
2' Gemshorn
1 1/3' Mixtur III
8' Krummhornregal

BRUSTWERK (Manual II)
(56 Notes)

8' Gedeckt
4' Blockflöte
2 2/3' Quinte
1' Spitzprinzipal
Tremulant

PEDAL (30 Notes)

16' Subbass
8' Pommer (Ext)
4' Dulzian

COUPLERS

BW + HW
HW + Pedal
BW + Pedal

Mechanical Key and Stop Action

The CHURCH of RECONCILIATION (Episcopal)

SAN ANTONIO, TEXAS

OPUS 49

MANUAL I (56 Notes)

8' Rohrflöte
4' Prinzipal
2' Waldflöte
1 1/3' Larigot
1 1/3' Mixtur III

MANUAL II (56 Notes)

8' Rohrflöte (Manual I)
4' Prinzipal (Manual I)

PEDAL (30 Notes)

16' Subbass (Ext)

COUPLERS

Manual I + Pedal
Manual II + Pedal

Mechanical Key and Stop Action

The UNIVERSITY of TEXAS

SAN ANTONIO, TEXAS

OPUS 50

MANUAL I (56 Notes)

8' Rohrflöte
4' Kleingedeckt

MANUAL II (56 Notes)

8' Rohrflöte (Manual I)
2' Prinzipal

PEDAL (30 Notes)

16' Subbass (Ext)

COUPLERS

Manual II+ Manual I
Manual I+ Pedal
Manual II+ Pedal

Mechanical Key and Stop Action

The UNIVERSITY of TEXAS

SAN ANTONIO, TEXAS

OPUS 51

MANUAL I (56 Notes)

8' Rohrflöte
4' Kleingedeckt

MANUAL II (56 Notes)

8' Rohrflöte (Manual I)
2' Prinzipal

PEDAL (30 Notes)

16' Subbass (Ext)

COUPLERS

Manual II+ Manual I
Manual I+ Pedal
Manual II+ Pedal

Mechanical Key and Stop Action

ST. RICHARD'S EPISCOPAL CHURCH

WINTER PARK, FLORIDA

OPUS 52

HAUPTWERK (Manual I) (56 Notes)

8' Prinzipal
8' Rohrflöte
4' Oktav
2' Waldflöte
2 2/3' Sesquialtera II (TC)
1 1/3' Mixtur IV
8' Trompete

BRUSTWERK (Manual II) (56 Notes)

8' Gemshorn
4' Kleingedeckt
2' Prinzipal
1 1/3' Larigot
8' Rohrschalmei

PEDAL (30 Notes)

16' Subbass
8' Prinzipal (HW)

COUPLERS

BW + HW
HW + Pedal
BW + Pedal

General Tremulant

Mechanical Key and Stop Action

The ALISON LUEDECKE RESIDENCE

DEL MAR, CALIFORNIA

OPUS 53

(FORMERLY OWNED BY RICHARD F. WOODS, HOUSTON, TEXAS)

MANUAL I (56 Notes)

8' Rohrflöte
4' Kleinflöte

MANUAL II (56 Notes)

8' Rohrflöte (Manual I)
2' Prinzipal

PEDAL (30 Notes)

Manual I + Pedal
Manual II + Pedal

Mechanical Key and Stop Action

The COMMUNITY CHURCH

VERO BEACH, FLORIDA

OPUS 54

HAUPTWERK (Manual II)
(56 Notes)

8' Prinzipal
8' Rohrflöte
4' Oktav
4' Nachthorn
2' Waldflöte
2 2/3' Sesquialtera II (TC)
1 1/3' Mixtur IV
8' Trompete

BRUSTWERK (Manual III)
(56 Notes)

8' Gemshorn
8' Gemshorn Celeste (TC)
4' Prinzipal
4' Blockflöte
2' Oktav
1 1/3' Larigot
1' Scharff IV
8' Krummhorn
Tremulant

PEDAL (30 Notes)

16' Subbass
8' Prinzipal
4' Choralbass
16' Posaune

COUPLER (Manual I)

COUPLERS

HW + Pedal
BW + Pedal

Mechanical Key Action and Electric Stop Action

The LUTHERAN CHURCH of OUR SAVIOR

TULSA, OKLAHOMA

OPUS 55

HAUPTWERK (Manual I) (56 Notes)

8' Prinzipal
8' Rohrflöte
4' Oktav
4' Nachthorn
2' Spitzprinzipal
2 2/3' Sesquialtera II
1 1/3' Mixtur V
8' Trompete

BRUSTWERK (Manual II) (56 Notes)

8' Gedeckt
8' Gemshorn
8' Celeste
4' Kleingemshorn
2' Prinzipal
1 1/3' Larigot
1' Scharff IV
8' Krummhorn

PEDAL (30 Notes)

16' Subbass
8' Prinzipal
8' Gedeckt (Ext)
4' Choralbass
2' Mixtur III
16' Posaune
8' Trompete (Ext)

COUPLERS

BW + HW
HW + Pedal
BW + Pedal

Zimbelstern

General Tremulant

Mechanical Key and Stop Action

The CHURCH of ST. CLEMENT

EL PASO, TEXAS

OPUS 56

HAUPTWERK (Manual II)
(56 Notes)

16' Quintaton
8' Prestant
8' Rohrflöte
4' Oktav
4' Nachthorn
2' Superoktav
2 2/3' Cornet III (TC)
1 1/3' Mixtur V
8' Trompete

SCHWELLWERK (Manual III)
(56 Notes)

8' Gedeckt
8' Harfpfeife
8' Celeste (TC)
4' Prinzipal
4' Blockflöte
2' Oktav
1 1/3' Larigot
1' Scharff IV
16' Rankett
8' Oboe
Tremulant

POSITIV (Manual I)
(56 Notes)

8' Gedeckt
4' Prinzipal
4' Kleinflöte
2 2/3' Nasat
2' Waldflöte
1 3/5' Terz
1' Sifflöte
1' Mixtur IV
8' Krummhorn
Tremulant

PEDAL (30 Notes)

16' Prinzipal
16' Subbass
8' Oktav
8' Gedeckt
4' Choralbass
2' Mixtur III
16' Posaune
8' Trompete
4' Schalmei

COUPLERS

Pos + HW
SW + HW
SW + Pos
HW + Pedal
Pos + Pedal
SW + Pedal

Mechanical Key Action and Electric Stop Action

TRINITY LUTHERAN CHURCH

VICTORIA, TEXAS

OPUS 57

HAUPTWERK (Manual II)
(56 Notes)

8' Prinzipal
8' Rohrflöte
4' Oktav
2' Waldflöte
2 2/3' Sesquialtera II (TC)
1 1/3' Mixtur IV
8' Trompete

SCHWELLWERK (Manual III)
(56 Notes)

8' Gedeckt
8' Salizional
8' Celeste
4' Flöte
2' Prinzipal
1 1/3' Larigot
8' Krummhorn

PEDAL (30 Notes)

16' Subbass (Ext)
8' Gedeckt (Ext)
4' Choralbass
16' Fagott

COUPLER (Manual I)

COUPLERS

HW + Pedal
SW + Pedal

Mechanical Key and Stop Action

The JOHN KELLICH RESIDENCE

HOUSTON, TEXAS

OPUS 58

MANUALS I (56 Notes)

8' Regal

Mechanical Key and Stop Action

A PORTATIVE ORGAN

FOR

ROY S. ROSENTHAL RESIDENCE

DALLAS, TEXAS

OPUS 59

MANUAL (56 Notes)

8'	Gedeckt	]	
4'	Flöte	]	These stops are split and can be drawn C to b
2'	Prinzipal	]	and c^1 to g^3
1 1/3'	Larigot	]	Treble only

Mechanical Key and Stop Action

FIRST UNITED METHODIST CHURCH

VICTORIA, TEXAS

OPUS 61

HAUPTWERK (Manual II)
(56 Notes)

16' Quintaton
8' Prinzipal
8' Rohrflöte
4' Oktav
4' Blockflöte
2' Flachflöte
1 1/3' Mixtur V
8' Trompete

BRUSTWERK (Manual III)
(56 Notes)

8' Gemshorn
8' Celeste (TC)
4' Spitzflöte
2 2/3' Nasat
2' Prinzipal
1 3/5' Terz
1 1/3' Larigot
1' Scharff III
8' Schalmei
Tremulant

PEDAL (30 Notes)

16' Prinzipal
16' Pommer
8' Oktav (Ext)
8' Gedeckt (Ext)
4' Choralbass
2 2/3' Mixtur III
16' Posaune
8' Trompete
4' Trompete

COUPLER (Manual I)

COUPLERS

HW + Pedal
BW + Pedal

Mechanical Key Action and Electric Stop Action

A PORTATIVE ORGAN

AT

MEMORIAL DRIVE PRESBYTERIAN CHURCH

HOUSTON, TEXAS

OPUS 62

MANUAL (56 Notes)

8'	Gedeckt		
4'	Flöte	]	
2'	Prinzipal	]	These stops are split and can be drawn C to b
1 1/3'	Larigot	]	and c^1 to g^3

Mechanical Key and Stop Action

CHRIST the VICTOR LUTHERAN CHURCH

VICTORIA, TEXAS

OPUS 63

MANUAL I (56 Notes)

8'	Rohrflöte
4'	Prinzipal
2'	Waldflöte
1 1/3'	Mixtur III

MANUAL II (56 Notes)

8'	Rohrflöte (Manual I)
4'	Flöte
1 1/3'	Larigot
2 2/3'	Sesquialtera II (TC)

PEDAL (30 Notes)

16'	Subbass (Ext)

COUPLERS

Manual II + I
Manual I + Pedal
Manual II + Pedal

Mechanical Key and Stop Action

UNION UNIVERSITY

JACKSON, TENNESSEE

OPUS 64

HAUPTWERK (Manual II)
(56 Notes)

8' Prinzipal
8' Rohrflöte
4' Oktav
4' Koppelflöte
2' Waldflöte
2 2/3' Sesquialtera II (TC)
2' Mixtur V
8' Trompete

SCHWELLWERK (Manual III)
(56 Notes)

8' Gemshorn
8' Gemshorn Celeste (TC)
4' Prinzipal
4' Blockflöte
2 2/3' Nasat
2' Oktav
1 3/5' Terz
1 1/3' Mixtur V
16' Rankett
8' Trompete
Tremulant

POSITIV (Manual I)
(56 Notes)

8' Gedeckt
4' Prestant
4' Kleinflöte
2' Oktav
1 1/3' Larigot
1' Kleinmixtur III
8' Krummhorn
Tremulant

PEDAL (30 Notes)

16' Prinzipal
16' Subbass
8' Oktav
4' Choralbass
2 2/3' Mixtur IV
16' Posaune
4' Schalmei

COUPLERS

Pos + HW
SW + HW
SW + Pos
HW + Pedal
Pos + Pedal
SW + Pedal

Mechanical Key Action and Electric Stop Action

A PRACTICE ORGAN AT UNION UNIVERSITY

JACKSON, TENNESSEE

OPUS 65

MANUAL I (56 Notes)

8' Rohrflöte
4' Kleinflöte

MANUAL II (56 Notes)

8' Rohrflöte (Manual I)
2' Prinzipal

PEDAL (30 Notes)

Manual I + Pedal
Manual II + Pedal

Mechanical Key and Stop Action

ST. TIMOTHY LUTHERAN CHURCH

HOUSTON, TEXAS

OPUS 66

HAUPTWERK (Manual II)

8' Prinzipal
8' Rohrflöte
4' Oktav
2' Waldflöte
2 2/3' Sesquialtera II (TC)
1 1/3' Mixtur IV
8' Trompete

BRUSTWERK (Manual III)

8' Gedeckt
4' Gemshorn
2' Prinzipal
1 1/3' Larigot
1' Scharff III
8' Krummhorn

PEDAL

16' Subbass
8' Prinzipal (HW)
4' Choralbass
16' Stillposaune

COUPLER (Manual I)

COUPLERS

HW + Pedal
BW + Pedal

General Tremulant

Mechanical Key and Stop Action

The JOHN B. SPIKER RESIDENCE

SAN JOSE, CALIFORNIA

OPUS 67

MANUAL I (56 Notes)

8' Rohrflöte
4' Flöte
1 1/3' Larigot

MANUAL II (56 Notes)

8' Rohrflöte (Manual I)
2' Prinzipal
8' Krummhornregal

PEDAL (30 Notes)

16' Subbass (Ext)

COUPLERS

Manual II+ Manual I
Manual I+ Pedal
Manual II+ Pedal

Mechanical Key and Stop Action

FAITH AMERICAN LUTHERAN CHURCH

BELLAIRE, TEXAS

OPUS 69

HAUPTWERK (Manual II)
(56 Notes)

8' Prinzipal
8' Rohrflöte
4' Oktav
4' Koppelflöte
2' Waldflöte
2 2/3' Sesquialtera II (TC)
1 1/3' Mixtur IV
8' Trompete

BRUSTWERK (Manual III)
(56 Notes)

8' Gemshorn
8' Gemshorn Celeste (TC)
4' Prinzipal
4' Blockflöte
2' Oktav
1' Scharff III
8' Rohrschalmey
Tremulant

RÜCKPOSITIV (Manual I)
(56 Notes)

8' Gedeckt
4' Kleinflöte
2' Prinzipal
1 1/3' Larigot
1' Kleinmixtur III
8' Krummhorn
Tremulant
Zimbelstern

PEDAL (30 Notes)

16' Prinzipal
16' Subbass
8' Oktav
4' Choralbass
2' Mixtur III
16' Fagott

COUPLERS

Pos + HW
BW + HW
BW + Pos
HW + Pedal
Pos + Pedal
BW + Pedal

Mechanical Key Action and Electric Stop Action

FIRST UNITED METHODIST CHURCH

BAINBRIDGE, GEORGIA

OPUS 70

HAUPTWERK (Manual II)

16' Quintaton
8' Prinzipal
8' Rohrflöte
4' Oktav
4' Nachthorn
2 2/3' Nasat
2' Superoktav
1 3/5' Terz
1 1/3' Mixtur IV
8' Trompete

BRUSTWERK (Manual III)

8' Gemshorn
8' Celeste (TC)
4' Prinzipal
4' Rohrflöte
2' Flachflöte
1 1/3' Larigot
1' Scharff III
8' Krummhorn

PEDAL

16' Subbass
8' Prinzipal
4' Choralbass
16' Fagott

COUPLER (Manual I)

COUPLERS

HW + Pedal
BW + Pedal

General Tremulant

Mechanical Key Action and Electric Stop Action

FIRST PRESBYTERIAN CHURCH

MOREHEAD CITY, NORTH CAROLINA

OPUS 71

HAUPTWERK (Manual II)
(56 Notes)

8' Prinzipal
8' Rohrflöte
4' Oktav
2' Waldflöte
2 2/3' Sesquialtera II (TC)
1 1/3' Mixtur IV
8' Trompete

BRUSTWERK (Manual III)
(56 Notes)

8' Gemshorn
8' Celeste (TC)
4' Kleinflöte
2' Prinzipal
1 1/3' Larigot
1' Scharff III
8' Schalmei

PEDAL (30 Notes)

16' Subbass
8' Prinzipal (HW)
8' Gedeckt (Ext)
4' Choralbass
16' Fagott

COUPLER (Manual I)

COUPLERS

HW + Pedal
BW + Pedal

General Tremulant

Zimbelstern

Mechanical Key Action and Electric Stop Action

SEABREEZE UNITED CHURCH of CHRIST

DAYTONA BEACH, FLORIDA

OPUS 72

HAUPTWERK (Manual II)
(56 Notes)

8' Prinzipal
8' Rohrflöte
4' Oktav
4' Nachthorn
2' Waldflöte
2 2/3' Sesquialtera II (TC)
1 1/3' Mixtur IV
8' Trompete

BRUSTWERK (Manual III)
(56 Notes)

8' Gemshorn
8' Gemshorn Celeste (TC)
4' Prinzipal
4' Blockflöte
2' Oktav
1 1/3' Larigot
1' Scharff III
8' Krummhorn
Tremulant

PEDAL (30 Notes)

16' Subbass
8' Prinzipal
4' Choralbass
16' Fagott

COUPLER (Manual I)

COUPLERS

HW + Pedal
BW + Pedal

Mechanical Key and Stop Action

FIRST UNITED METHODIST CHURCH

DELAND, FLORIDA

OPUS 73

MANUAL I (56 Notes)

8'	Rohrflöte
4'	Prinzipal
2'	Waldflöte
1 1/3'	Mixtur III

MANUAL II (56 Notes)

8'	Rohrflöte (Manual I)
4'	Flöte
1 1/3'	Larigot
2 2/3'	Sesquialtera II (TC)

PEDAL (30 Notes)

16'	Subbass	
8'	Gedeckt	(Ext)
4'	Flöte	(Ext)

COUPLERS

Manual II+ Manual I
Manual I+ Pedal
Manual II+ Pedal

General Tremulant

Mechanical Key and Stop Action

EASTMINSTER PRESBYTERIAN CHURCH

WICHITA, KANSAS

OPUS 74

HAUPTWERK (Manual II)

16' Quintaton
8' Prinzipal
8' Rohrflöte
4' Oktav
4' Nachthorn
2' Waldflöte
1 1/3' Mixtur IV
8' Trompete
Chimes

POSITIV (Manual I)

8' Gedeckt
4' Prinzipal
4' Flöte
2' Oktav
1 1/3' Larigot
2 2/3' Sesquialtera II
1' Kleinmixtur III
8' Krummhorn
8' Trompete (HW)
Tremulant

COUPLERS

Pos + HW	16'	8'	4'
SW + HW	16'	8'	4'
SW + Pos		8'	
HW + Pedal		8'	4'
Pos + Pedal		8'	4'
SW + Pedal		8'	4'

SCHWELLWERK (Manual III)

8' Gedeckt
8' Salizional
8' Celeste (TC)
4' Prinzipal
4' Blockflöte
2 2/3' Nasat
2' Oktav
1 3/5' Terz
1' Scharff IV
16' Fagott
8' Trompete
4' Klarion
8' Trompete (HW)
Tremulant

PEDAL

16' Prinzipal
16' Subbass
16' Quintaton (HW)
8' Oktav (Ext)
8' Gedeckt (Ext)
4' Choralbass
2 2/3' Mixtur IV
32' Kontrafagott
16' Posaune
16' Fagott (Ext)
8' Trompete (Ext)
4' Rohrschalmey

Electric Key and Stop Action

REDEEMER LUTHERAN CHURCH

AUSTIN, TEXAS

OPUS 75

HAUPTWERK (Manual II)

8' Prinzipal
8' Rohrflöte
4' Oktav
4' Nachthorn
2' Waldflöte
1 1/3' Mixtur IV
8' Trompete
Zimbelstern
Chimes

BRUSTWERK (Manual III)

8' Gedeckt
8' Salizional
8' Celeste (TC)
4' Prinzipal
4' Blockflöte
2' Oktav
1 1/3' Larigot
1' Scharff IV
16' Fagott
8' Trompete

RÜCKPOSITIV (Manual I)

8' Gedeckt
4' Kleinflöte
2' Prinzipal
1 1/3' Larigot
2 2/3' Sesquialtera II (TC)
1' Kleinmixtur III
8' Krummhorn

PEDAL

16' Prinzipal
16' Subbass
8' Oktav
8' Gedeckt
4' Choralbass
2 2/3' Mixtur IV
16' Stillposaune
8' Trompete

SPANISCHEWERK (Manual IV)

8' Trompete

COUPLERS

RP + HW
BW + HW
BW + RP
Spw + RP
HW + Pedal
RP + Pedal
BW + Pedal
Spw + Pedal

Mechanical Key Action and Electric Stop Action

OUR LADY of MOUNT CARMEL CHURCH

CHICAGO, ILLINOIS

OPUS 77

HAUPTWERK (Manual II)
(56 Notes)

8' Prinzipal
8' Rohrflöte
4' Oktav
4' Nachthorn
2 2/3' Quinte
2' Waldflöte
1 3/5' Terts
1 1/3' Mixtur IV
8' Trompete

BRUSTWERK (Manual III)
(56 Notes)

8' Gemshorn
8' Gemshorn Celeste (TC)
4' Prinzipal
4' Blockflöte
2' Oktav
1 1/3' Larigot
1' Scharff III
8' Rohrschalmey
Tremulant

PEDAL (30 Notes)

16' Subbass
8' Prinzipal
4' Choralbass
16' Fagott

COUPLER (Manual I)

COUPLERS

HW + Pedal
BW + Pedal

Mechanical Key Action and Electric Stop Action

ST. THOMAS MORE CATHOLIC CHURCH

DARIEN, CONNECTICUT

OPUS 78

HAUPTWERK (Manual I)
(56 Notes)

8' Prinzipal
8' Rohrflöte
4' Oktav
2' Waldflöte
2 2/3' Sesquialtera II (TC)
1 1/3' Mixtur IV
8' Trompete

BRUSTWERK (Manual II)
(56 Notes)

8' Gemshorn
8' Celeste (TC)
4' Kleingedeckt
2' Prinzipal
1 1/3' Larigot
8' Rohrschalmey

PEDAL (30 Notes)

16' Subbass
8' Prinzipal
8' Gedeckt (Ext)
4' Oktav (HW)
16' Fagott

COUPLERS

BW + HW
HW + Pedal
BW + Pedal

General Tremulant

Mechanical Key and Stop Action

CENTRAL PRESBYTERIAN CHURCH

RUSSELLVILLE, ARKANSAS

OPUS 79

HAUPTWERK (Manual II)

8' Prinzipal
8' Rohrflöte
4' Oktav
4' Nachthorn
2' Waldflöte
2 2/3' Sesquialtera II (TC)
1 1/3' Mixtur IV
8' Trompete

BRUSTWERK (Manual III)

8' Gemshorn
8' Celeste (TC)
4' Prinzipal
4' Blockflöte
2' Oktav
1 1/3' Larigot
1' Scharff III
8' Rohrschalmey
Tremulant

PEDAL

16' Subbass
8' Prinzipal (HW)
8' Gedeckt (Ext)
4' Choralbass
16' Fagott
4' Schalmey

COUPLER (Manual I)

COUPLERS

HW + Pedal
BW + Pedal

Mechanical Key Action and Electric Stop Action

WESTMINSTER PRESBYTERIAN CHURCH

PEORIA, ILLINOIS

OPUS 80

HAUPTWERK (Manual II)

16' Quintaton
8' Prinzipal
8' Rohrflöte
4' Oktav
4' Nachthorn
2' Waldflöte
2 2/3' Sesquialtera II
1 1/3' Mixtur IV
8' Trompete
Tremulant

SCHWELLWERK (Manual III)

8' Gedeckt
8' Salizional
8' Celeste (TC)
4' Prinzipal
4' Blockflöte
2' Oktav
2 2/3' Nasat
1' Scharff IV
16' Dulzian
8' Trompete
Tremulant

POSITIV (Manual I)

8' Gedeckt
4' Flöte
2' Prinzipal
1 1/3' Larigot
1' Kleinmixtur III
8' Krummhorn
Tremulant

PEDAL

16' Prinzipal
16' Subbass
8' Oktav
8' Gedeckt
4' Choralbass
16' Fagott
8' Trompete
4' Schalmey

COUPLERS

Pos + HW
SW + HW
SW + Pos
HW + Pedal
Pos + Pedal
SW + Pedal

Mechanical Key Action and Electric Stop Action

FOUNTAIN of LIFE LUTHERAN CHURCH

SUN CITY, ARIZONA

OPUS 81

HOOFDWERK (Manual I)

16' Quintadeen
8' Praestant
8' Roerfluit
4' Octaaf
4' Koppelfluit
2 2/3' Nasard
2' Woudfluit
1 3/5' Terts
1 1/3' Mixtuur IV
8' Trompet

ZWELWERK (Manual II)

8' Gemshorn
8' Celeste (TC)
4' Praestant
4' Nachthoorn
2' Octaaf
1 1/3' Larigot
1' Scherp III
8' Roerschalmey
8' Trompet (HW)

PEDAAL

16' Subbas
16' Quintadeen (HW)
8' Praestant
8' Gedekt
4' Koraalbas
2' Kleinbas
16' Fagot
8' Trompet

COUPLERS

ZW + HW 16' 8' 4'
HW + Pedaal 8' 4'
ZW + Pedaal 8' 4'

General Tremulant

Electric Key and Stop Action

The CHURCH of the HOLY TRINITY

OXFORD, MARYLAND

OPUS 82

HAUPTWERK (Manual I)
(56 Notes)

8' Prinzipal
8' Rohrflöte
4' Oktav
2' Waldflöte
2 2/3' Sesquialtera II (TC)
1 1/3' Mixtur IV
8' Trompete

BRUSTWERK (Manual II)
(56 Notes)

8' Gedeckt
8' Salizional
8' Celeste (TC)
4' Flöte
2' Prinzipal
1 1/3' Larigot
8' Rohrschalmey

PEDAL (30 Notes)

16' Subbass
8' Prinzipal (HW)
4' Choralbass (HW)
16' Dulzian
8' Trompete (HW)

COUPLERS

BW + HW
HW + Pedal
BW + Pedal

General Tremulant

Mechanical Key Action and Electric Stop Action

TRINITY UNITED METHODIST CHURCH

WILMINGTON, NORTH CAROLINA

OPUS 83

HAUPTWERK (Manual II)

16' Quintaton
8' Prinzipal
8' Rohrflöte
4' Oktav
4' Nachthorn
2' Waldflöte
1 1/3' Mixtur V
8' Trompete

SCHWELLWERK (Manual III)

8' Gedeckt
8' Salizional
8' Celeste (TC)
4' Prinzipal
4' Blockflöte
2' Oktav
1' Scharff IV
16' Fagott
8' Oboe
Tremulant

POSITIV (Manual I)

8' Gedeckt
4' Prinzipal
4' Kleinflöte
2' Oktav
2 2/3' Sesquialtera II
1 1/3' Larigot
1' Kleinmixtur IV
8' Krummhorn
Tremulant
Chimes

PEDAL

16' Prinzipal
16' Subbass
8' Oktav (Ext)
8' Gedeckt (Ext)
4' Choralbass
2 2/3' Mixtur IV
16' Stillposaune
8' Trompete
4' Schalmey

COUPLERS

Pos + HW
SW + HW
SW + Pos
HW + Pedal
Pos + Pedal
SW + Pedal

Mechanical Key Action and Electric Stop Action

FIRST PRESBYTERIAN CHURCH

SAINT JOSEPH, MISSOURI

OPUS 84

HAUPTWERK (Manual II)

16' Prinzipal
8' Oktav
8' Rohrflöte
4' Oktav
4' Nachthorn
2' Oktav
1 1/3' Mixtur IV
8' Trompete
Zimbelstern
Chimes

SCHWELLWERK (Manual III)

8' Gedeckt
8' Salizional
8' Celeste (TC)
4' Prinzipal
4' Blockflöte
2 2/3' Nasat
2' Waldflöte
1 3/5' Terz
1' Scharff IV
16' Fagott
8' Trompete
4' Klarine
Tremulant

POSITIV (Manual I)

8' Gedeckt
4' Kleinflöte
2' Prinzipal
1 1/3' Larigot
2 2/3' Sesquialtera II (TC)
1' Kleinmixtur III
8' Krummhorn
Tremulant

PEDAL

32' Resultant
16' Prinzipal
16' Subbass
8' Oktav (Ext)
8' Gedeckt (Ext)
4' Choralbass
2 2/3' Mixtur IV
32' Kontrafagott
16' Posaune
16' Fagott (Ext)
8' Trompete (Ext)
4' Schalmey

COUPLERS

Pos + HW 16' 8' 4'
SW + HW 16' 8' 4'
SW + Pos 16' 8' 4'
SW + SW 16' U 4'
HW + Pedal 8' 4'
Pos + Pedal 8' 4'
SW + Pedal 8' 4'

Electric Key and Stop Action

The LUTHERAN CHURCH of OUR SAVIOR

SAN BERNARDINO, CALIFORNIA

OPUS 85

HAUPTWERK (Manual II)

8' Prinzipal
8' Rohrflöte
4' Oktav
4' Koppelflöte
2' Waldflöte
2 2/3' Sesquialtera II (TC)
1 1/3' Mixtur IV
8' Trompete

BRUSTWERK (Manual III)

8' Gemshorn
8' Celeste (TC)
4' Nachthorn
2' Prinzipal
1 1/3' Larigot
1' Scharff III
8' Krummhorn

PEDAL

16' Subbass
8' Prinzipal (HW)
8' Gedeckt (Ext)
4' Choralbass
16' Fagott
4' Rohrschalmey

COUPLER (Manual I)

COUPLERS

HW + Pedal
BW + Pedal

General Tremulant

Mechanical Key and Stop Action

FIRST PRESBYTERIAN CHURCH

STAMFORD, CONNECTICUT

OPUS 87

HAUPTWERK (Manual II)

16' Prinzipal
8' Prinzipal
8' Rohrflöte
4' Oktav
4' Nachthorn
2' Waldflöte
8' Cornet V (TG)
2' Mixtur V
2/3' Zimbel III
16' Trompete
8' Trompete
4' Hellklarine
Tremulant

SCHWELLWERK (Manual III)

16' Stillgedeckt
8' Gedeckt
8' Salizional
8' Celeste (TC)
4' Prinzipal
4' Blockflöte
2 2/3' Nasat
2' Oktav
1 3/5' Terz
1' Sifflöte
1 1/3' Mixtur V
16' Fagott
8' Trompete
8' Oboe
4' Klarine
Tremulant

POSITIV (Manual I)

8' Gedeckt
8' Quintaton
4' Prinzipal
4' Koppelflöte
2' Oktav
1 1/3' Larigot
8/9' None (TC)
2 2/3' Sesquialtera II
1' Scharff IV
1 1/3' Terzian III
16' Dulzian
8' Krummhorn
Tremulant

SPANISCHEWERK (Manual IV)

8' Trompete

FIRST PRESBYTERIAN CHURCH (continued)

OPUS 87

PEDALWERK

16' Prinzipal
16' Subbass
8' Oktav
8' Gedeckt
4' Choralbass
2' Mixtur IV
32' Posaune
16' Posaune
16' Fagott
8' Trompete
4' Schalmey
Tremulant
Zimbelstern

COUPLERS

Pos + HW
SW + HW
Spw + HW
SW + Pos
HW + Pedal
Pos + Pedal
SW + Pedal
Spw + Pedal

Mechanical Key Action and Electric Stop Action

ST. LUKE'S EPISCOPAL CHURCH

MADISON, WISCONSIN

OPUS 88

MANUAL I (56 Notes)

8'	Prinzipal
8'	Rohrflöte
4'	Oktav
2'	Waldflöte
1 1/3'	Mixtur III

MANUAL II (56 Notes)

8'	Rohrflöte (Manual I)
4'	Flöte
1 1/3'	Larigot
2 2/3'	Sesquialtera II (TC)
	Tremulant
	Zimbelstern

PEDAL (30 Notes)

16'	Subbass
8'	Gedeckt (Ext)
4'	Flöte (Ext)

COUPLERS

Manual II+ Manual I
Manual I + Pedal
Manual II+ Pedal

Mechanical Key and Stop Action

FIRST PRESBYTERIAN CHURCH

MESA, ARIZONA

OPUS 89

HAUPTWERK (Manual I)

16' Quintaton
8' Prinzipal
8' Rohrflöte
4' Oktav
4' Nachthorn
2' Waldflöte
2 2/3' Sesquialtera II
1 1/3' Mixtur IV
8' Trompete
Zimbelstern

SCHWELLWERK (Manual II)

8' Gedeckt
8' Salizional
8' Celeste (TC)
4' Prinzipal
4' Blockflöte
2' Oktav
1 1/3' Larigot
1' Scharff IV
16' Fagott
8' Trompete
Tremulant

PEDAL

16' Prinzipal
16' Subbass
8' Oktav
8' Gedeckt
4' Choralbass
2 2/3' Mixtur IV
16' Stillposaune
8' Trompete
4' Schalmey

SPANISCHEWERK (Manual III)

8' Trompete (Prepared)

COUPLERS

SW + HW
Spw + HW
HW + Pedal
SW + Pedal
Spw + Pedal

Mechanical Key Action and Electric Stop Action

THE WOODDALE CHURCH

EDEN PRAIRIE, MINNESOTA

OPUS 90

HAUPTWERK (Manual II)

16' Prinzipal
8' Prinzipal
8' Rohrflöte
8' Harfenpfeife
4' Oktav
4' Koppelflöte
2' Waldflöte
8' Cornet (TG)
2' Mixtur V
1' Scharff V
16' Trompete
8' Trompete
4' Klarine
Tremulant
Chimes

POSITIV (Manual I)

8' Holzgedeckt
8' Gemshorn
8' Gemshorn Celeste (TC)
8' Dulciana
8' Unda Maris (TC)
4' Prinzipal
4' Rohrflöte
2' Oktav
1 1/3' Larigot
1' Sifflöte
8/9' None (TC)
2 2/3' Sesquialtera II
1' Kleinmixtur V
1/2' Zimbel III
16' Dulzian
8' Krummhorn
Tremulant

SCHWELLWERK (Manual III)

16' Gedeckt
8' Prinzipal
8' Gedeckt
8' Salizional
8' Celeste
4' Oktav
4' Nachthorn
2 2/3' Nasat
2' Oktav
1 3/5' Terz
1 1/3' Carillon III
1 1/3' Scharff V
2/3' Kleinmixtur III
16' Fagott
8' Trompete
8' Oboe
8' Vox humana
4' Klarine
Tremulant

KRONPOSITIV (Manual IV)

8' Prinzipal
8' Metalgedeckt
4' Oktav
4' Flöte
2' Oktav
1 1/3' Quinte
2 2/3' Sesquialtera II (TC)
1' Mixtur V
8' Rohrschalmey
Tremulant

THE WOODDALE CHURCH (continued)

OPUS 90

SPANISCHEWERK (Manual V)

16' Trompete (TC)
8' Trompete
1' Terzmixtur V-VI

PEDAL

32' Prinzipal
32' Untersatz
16' Prinzipal
16' Prinzipal (HW)
16' Subbass
8' Oktav
8' Gedeckt
4' Choralbass
4' Flöte
2 2/3' Mixtur V
32' Posaune
16' Posaune
16' Fagott
8' Trompete
4' Schalmey
2' Kornett
Tremulant

COUPLERS

SW + HW
Pos + HW
Spw + HW
KP + HW
SW + Pos
KP + Pos
Spw + Pos
Spw + SW
HW + Pedal
SW + Pedal
Pos + Pedal
Spw + Pedal
KP + Pedal

Main Console with Mechanical Key Action (with Electric Coupling) and Electric Stop Action

Remote Console with Electric Key and Stop Action

JOHN CALVIN PRESBYTERIAN CHURCH

METAIRIE, LOUISIANA

OPUS 91

MANUAL I (56 Notes)

8' Rohrflöte
4' Oktav
2' Waldflöte
1 1/3' Mixtur III

MANUAL II (56 Notes)

8' Gemshorn
4' Flöte
1 1/3' Larigot
2 2/3' Sesquialtera II (TC)
Tremulant
Zimbelstern

PEDAL (30 Notes)

16' Subbass
8' Gedeckt (Ext)
4' Flöte (Ext)

COUPLERS

Manual II+ I
Manual I + Pedal
Manual II+ Pedal

Mechanical Key and Stop Action

ST. MARY'S CATHEDRAL

CHEYENNE, WYOMING

OPUS 92

HAUPTWERK (Manual II)

16'	Quintaton
8'	Prinzipal
8'	Rohrflöte
4'	Oktav
4'	Spitzflöte
2 2/3'	Quinte
2'	Oktav
2'	Mixtur V
8'	Trompete
	Tremulant

SCHWELLWERK (Manual III)

8'	Gedeckt
8'	Salizional
8'	Celeste
4'	Prinzipal
4'	Nachthorn
2 2/3'	Nasat
2'	Flachflöte
1 3/5'	Terz
1 1/3'	Scharff V
16'	Dulzian
8'	Oboe
	Tremulant

RÜCKPOSITIV (Manual I)

8'	Holzgedeckt
4'	Prinzipal
4'	Koppelflöte
2'	Oktav
1 1/3'	Larigot
2 2/3'	Sesquialtera II
1'	Kleinmixtur IV
8'	Krummhorn
	Tremulant
	Zimbelstern

PEDAL

16'	Prinzipal
16'	Subbass
8'	Oktav
8'	Gedeckt
4'	Choralbass
2 2/3'	Mixtur IV
16'	Posaune
16'	Fagott
8'	Trompete
4'	Schalmey

COUPLERS

SW + HW
RP + HW
SW + RP

HW + Pedal
RP + Pedal
SW + Pedal

Mechanical Key Action and Electric Stop Action

LOGSDON CHAPEL OF HARDIN-SIMMONS UNIVERSITY

ABILENE, TEXAS

OPUS 93

GRAND ORGUE (Manual II)

16' Montre
8' Montre
8' Bourdon
4' Prestant
4' Cor de nuit
2' Doublette
2 2/3' Sesquialtera II
Fourniture V
8' Trompette

POSITIF (Manual I)

8' Violon
8' Flûte à cheminée
4' Prestant
4' Flûte à fuseau
2 2/3' Nasard
2' Quarte de nasard
1 3/5' Tierce
Cymbale IV
8' Cromorne

Tremblant doux (G.O. and Positif)
Tremblant fort (Récit and Pédale)

COUPLERS
Récit au Grand Orgue
Positif au Grand Orgue
Récit au Positif
Grand Orgue a la Pédale
Récit a la Pédale
Positif a la Pédale

RÉCIT (Manual III)

8' Bourdon
8' Viole de gambe
8' Voix céleste
4' Flûte octaviante
2' Doublette
1 1/3' Larigot
Plein jeu V
16' Basson
8' Hautbois
4' Chalumeau

PÉDALE

32' Basse acoustique
16' Montre
16' Soubasse
8' Octavebasse
8' Flûte bouchée
4' Prestant
16' Bombarde
8' Trompette

Mechanical Key Action and Electric Stop Action

ALL SAINTS' EPISCOPAL CHURCH

PHOENIX, ARIZONA

OPUS 94

HAUPTWERK (Manual II)

16' Quintaton
8' Prinzipal
8' Rohrflöte
4' Oktav
4' Koppelflöte
2 2/3' Nasat
2' Waldflöte
1 3/5' Tierce
2' Mixtur V
8' Trompete

BRUSTWERK (Manual III)

8' Gemshorn
8' Gemshorn Celeste
4' Prinzipal
4' Blockflöte
2' Oktav
1 1/3' Larigot
1 1/3' Scharff IV
8' Krummhorn
Tremulant
Zimbelstern

PEDAL

16' Prinzipal
16' Subbass
8' Prinzipal
8' Gedeckt
4' Choralbass
16' Stillposaune

COUPLER (Manual I)

COUPLERS

HW + Pedal
BW + Pedal

Mechanical Key Action and Electric Stop Action

ZION LUTHERAN CHURCH of HELOTES

SAN ANTONIO, TEXAS

OPUS 95

HAUPTWERK (Manual II)

8' Prinzipal
8' Rohrflöte
4' Oktav
2' Waldflöte
1 1/3' Mixtur III

BRUSTWERK (Manual III)

8' Gemshorn
4' Flöte
2' Prinzipal
1 1/3' Larigot
8' Krummhorn

PEDAL

16' Subbass (Ext)
8' Gedeckt (from Rohrflöte)
4' Choralbass

COUPLER (Manual I)

COUPLERS

HW + Pedal
BW + Pedal

General Tremulant

Mechanical Key and Stop Action

ST. JOHN LUTHERAN CHURCH

ANGLETON, TEXAS

OPUS 96

MANUAL I (56 Notes)

8'	Rohrflöte
4'	Oktav
2'	Waldflöte
1 1/3'	Mixtur III

MANUAL II (56 Notes)

8'	Rohrflöte (Manual I)
4'	Flöte
1 1/3'	Larigot
2 2/3'	Sesquialtera II (TC)
	Tremulant

PEDAL (30 Notes)

16'	Subbass

COUPLERS

Manual II+ Manual I
Manual I+ Pedal
Manual II+ Pedal

Mechanical Key and Stop Action

CHRIST CHURCH EPISCOPAL

PORTOLA VALLEY, CALIFORNIA

OPUS 97

HAUPTWERK (Manual II)

8' Prinzipal
8' Rohrflöte
4' Oktav
4' Koppelflöte
2 2/3' Nasard
2' Waldflöte
1 3/5' Terz
1 1/3' Mixtur IV
8' Trompete

BRUSTWERK (Manual III)

8' Gedeckt
8' Salizional
8' Celeste (TC)
4' Prinzipal
4' Flöte
2' Oktav
1 1/3' Larigot
1' Scharff IV (Prepared)
16' Dulzian (Prepared)
8' Rohrschalmey

PEDAL

16' Subbass
8' Prinzipal
8' Gedeckt (Ext)
4' Choralbass
16' Posaune
8' Trompete (Prepared)

COUPLER (Manual I)

COUPLERS

HW + Pedal
BW + Pedal

General Tremulant

Mechanical Key Action and Electric Stop Action

JESUIT CHAPEL OF GONZAGA UNIVERSITY

SPOKANE, WASHINGTON

OPUS 98

MANUAL I (56 Notes)

8' Rohrflöte
4' Flöte
1 1/3' Larigot

MANUAL II (56 Notes)

8' Rohrflöte (Manual I)
2' Prinzipal
2 2/3' Sesquialtera II (TC)

PEDAL (30 Notes)

16' Subbass

COUPLERS

Manual II+ Manual I
Manual I+ Pedal
Manual II+ Pedal

Mechanical Key and Stop Action

The CHURCH of SAINT VINCENT de PAUL

SAN FRANCISCO, CALIFORNIA

OPUS 99

HAUPTWERK (Manual I)

8' Prinzipal
8' Rohrflöte
4' Oktav
4' Nachthorn
2 2/3' Nazard
2' Waldflöte
1 3/5' Terz
1 1/3' Mixtur V
8' Trompete

BRUSTWERK (Manual II)

8' Flöte
8' Gemshorn
8' Celeste (TC)
4' Prinzipal
4' Blockflöte
2' Oktav
1 1/3' Larigot
1' Scharff IV
8' Rohrschalmey

PEDAL

16' Subbass
8' Prinzipal
8' Gedeckt (Ext)
4' Choralbass
16' Posaune

COUPLERS

BW + HW
HW + Pedal
BW + Pedal

General Tremulant

Zimbelstern

Mechanical Key Action and Electric Stop Action

DILWORTH UNITED METHODIST CHURCH

CHARLOTTE, NORTH CAROLINA

OPUS 100

HAUPTWERK (Manual II)

16' Quintaton
8' Prinzipal
8' Rohrflöte
4' Oktav
4' Nachthorn
2' Waldflöte
2 2/3' Sesquialtera II (TC)
1 1/3' Mixtur IV
8' Trompete

SCHWELLWERK (Manual III)

8' Gedeckt
8' Salizional
8' Celeste (TC)
4' Prinzipal
4' Blockflöte
2' Oktav
1' Scharff V
16' Fagott
8' Trompete
Tremulant

POSITIV (Manual I)

8' Gedeckt
4' Kleinflöte
2 2/3' Nasat
2' Prinzipal
1 3/5' Terz
1' Kleinmixtur III
8' Krummhorn
Tremulant

PEDAL

16' Prinzipal
16' Subbass
8' Oktav
8' Gedeckt
4' Choralbass
2 2/3' Mixtur IV
16' Posaune
8' Trompete

COUPLERS

Pos + HW
SW + HW
SW + Pos
HW + Pedal
Pos + Pedal
SW + Pedal

Mechanical Key Action and Electric Stop Action

FAITH LUTHERAN CHURCH

ARLINGTON, VIRGINIA

OPUS 101

HAUPTWERK (Manual II)

16' Quintaton
8' Prinzipal
8' Rohrflöte
4' Oktav
2 2/3' Nasat
2' Waldflöte
1 3/5' Terz (TC)
1 1/3' Mixtur IV
8' Trompete
Chimes

BRUSTWERK (Manual III1

8' Gemshorn
8' Celeste (TC)
4' Flöte
2' Prinzipal
1 1/3' Larigot
1' Scharff III
8' Rohrschalmey

PEDAL

16' Subbass
16' Quintaton (HW)
8' Prinzipal (HW)
4' Choralbass
16' Stillposaune

COUPLER (Manual I)

COUPLERS

HW + Pedal
BW + Pedal

General Tremulant

Mechanical Key Action and Electric Stop Action

ST. ANDREW'S EPISCOPAL CHURCH

NASHVILLE, TENNESSEE

OPUS 102

MANUAL I (56 Notes)

8' Prinzipal
8' Rohrflöte
4' Oktav
2' Waldflöte
1 1/3' Mixtur III

MANUAL II (56 Notes)

8' Rohrflöte (from Manual I)
4' Flöte
2' Prinzipal
1 1/3' Larigot
2 2/3' Sesquialtera II
(Double draw)

PEDAL (30 Notes)

16' Subbass
8' Gedeckt
4' Choralbass

COUPLERS

Manual II+ Manual I
Manual I+ Pedal
Manual II+ Pedal

General Tremulant

Zimbelstern

Mechanical Key and Stop Action

ROEBUCK CHAPEL OF FIRST UNITED METHODIST CHURCH

FORT SMITH, ARKANSAS

OPUS 103

MANUAL I (56 Notes)

8' Prinzipal
8' Rohrflöte
4' Oktav
2' Waldflöte
1 1/3' Mixtur III

MANUAL II (56 Notes)

8' Rohrflöte (Manual I)
4' Flöte
1 1/3' Larigot
2 2/3' Sesquialtera II (TC)

PEDAL (30 Notes)

16' Subbass
8' Gedeckt (Ext)

COUPLERS

Manual II+ Manual I
Manual I+ Pedal
Manual II+ Pedal

Mechanical Key and Stop Action

SAINT LOUIS CATHOLIC CHURCH

PITTSFORD, NEW YORK

OPUS 104

HAUPTWERK (Manual I)

8' Prinzipal
8' Rohrflöte
4' Oktav
2' Waldflöte
2 2/3' Sesquialtera II (TC)
1 1/3' Mixtur IV
8' Trompete

BRUSTWERK (Manual II)

8' Gedeckt
8' Gemshorn
8' Celeste (TC)
4' Spitzflöte
2 2/3' Nasat
2' Prinzipal
1' Scharff III
8' Krummhorn

PEDAL

16' Subbass
8' Prinzipal
8' Gedeckt (Ext)
4' Choralbass
16' Fagott

COUPLERS

BW + HW
HW + Pedal
BW + Pedal

General Tremulant

Mechanical Key Action and Electric Stop Action

CATHEDRAL of ST. JOHN BERCHMANS

SHREVEPORT, LOUISIANA

OPUS 105

GREAT

8' Prinzipal
8' Gedeckt
4' Oktav
4' Flute
2' Oktav
1 1/3' Mixtur IV
8' Trompete

PEDAL

16' Subbass
8' Prinzipal (Great)
8' Gedeckt
4' Choralbass
16' Pousane

Zimbelstern

Electric Key and Stop Action

SHEPHERD SCHOOL of MUSIC OF WILLIAM MARSH RICE UNIVERSITY

HOUSTON, TEXAS

OPUS 106

MANUAL (49 Notes)

8' Gedeckt
4' Flöte
8' Regal

Mechanical Key and Stop Action
Winded by Two Feeder Bellows
Electric Blower Optional

HOLY TRINITY EPISCOPAL CHURCH

GAINESVILLE, FLORIDA

OPUS 107

HOOFDWERK (Manual II)

16' Bourdon
8' Praestant
8' Roerfluit
4' Octaaf
4' Nachthoorn
2 2/3' Kwint
2' Woudfluit
2 2/3' Sesquialter II
2' Mixtur V
8' Trompet

ZWELWERK (Manual III)

8' Holpijp
8' Gemshoorn
8' Gemshoorn Celeste (TC)
8' Salicionaal
4' Praestant
4' Koppelfluit
2' Octaaf
1 1/3' Scherp V
16' Fagot
8' Trompet
4' Klaroen
Tremulant

RUGWERK (Manual I)

8' Praestant
8' Gedekt
4' Octaaf
4' Spitsfluit
2 2/3' Nasard
2' Superoctaaf
1 3/5' Terts
1' Kleinmixtuur III
8' Kromhoorn
Tremulant

PEDAALWERK

32' Subbas
16' Praestant
16' Gedektbas
8' Octaafbas
8' Gedekt
4' Koraalbas
2 2/3' Mixtuur IV
16' Posaune
8' Trompet
4' Schalmei

COUPLERS

RW + HW
ZW + HW
ZW + RG
RG + Pedaal
HW + Pedaal
ZW + Pedaal

Mechanical Key Action and Electric Stop Action

ST. THOMAS EPISCOPAL CHURCH

COLLEGE STATION, TEXAS

OPUS 108

MANUAL I (56 Notes)

8' Rohrflöte
4' Prinzipal
2' Waldflöte
1 1/3' Mixtur III

MANUAL II (56 Notes)

8' Rohrflöte (from Manual I)
4' Flöte
1 1/3' Larigot
2 2/3' Sesquialtera II (TC)

PEDAL (30 Notes)

16' Subbass (Ext)

COUPLERS

Manual II+ Manual I
Manual I+ Pedal
Manual II+ Pedal

Mechanical Key and Stop Action

CHURCH of the HOLY SPIRIT

SAN ANTONIO, TEXAS

OPUS 109

HAUPTWERK (Manual II)

16' Quintaton
8' Prinzipal
8' Rohrflöte
4' Oktav
4' Nachthorn
2' Waldflöte
2 2/3' Sesquialtera II (Tenor C)
1 1/3' Mixture IV
8' Trompete

SCHWELLWERK (Manual III)

8' Gemshorn
8' Celeste (Tenor C)
4' Prinzipal
4' Blockflöte
2' Oktav
1' Scharff IV
16' Fagott
8' Oboe
Tremulant

POSITIV (Manual I-prepared)

8' Gedeckt
4' Kleinflöte
2' Prinzipal
1 1/3' Larigot
1' Kleinmixtur III
8' Krummhorn
MIDI
Zimbelstern

PEDAL

16' Prinzipal
10' Quinte
8' Oktav
8' Gedeckt
4' Choralbass
16' Posaune
8' Trumpete
MIDI

COUPLERS

POS + HW
SW + HW
SW + POS
HW + Pedal
POS + Pedal
SW + Pedal

Mechanical Key Action and Electric Stop Action

FIRST BAPTIST CHURCH

JACKSON, TENNESSEE

OPUS 110

HOOFDWERK (Manual II)

16' Bourdon
8' Praestant
8' Roerfluit
4' Octaaf
4' Nachthoorn
2' Woudfluit
2 2/3' Sesquialter II
2' Mixtur V
1' Zimbel III
8' Trompet

ZWELWERK (Manual III)

8' Praestant
8' Holpijp
8' Salicionaal
8' Celeste
4' Praestant
4' Koppelfluit
2 2/3' Nasard
2' Fluitpraestant
1 1/3' Larigot
1 1/3' Scherp V
16' Fagot
8' Hobo
4' Klaroen
Tremulant

POSITIEF (Manual I)

8' Gedekt
8' Gemshorn
8' Kwintadeen
8' Dulciaan
8' Celeste
4' Octaaf
4' Spitsfluit
2 2/3' Nasard
2' Superoctaaf
1 3/5' Terts
1' Kleinmixtuur IV
16' Dulziaan
8' Roerschalmei

PEDAALWERK

32' Subbas
16' Praestant
16' Gedektbas
16' Bourdon
8' Octaafbas
8' Gedekt
4' Koraalbas
4' Fluit
2 2/3' Mixtuur IV
16' Posaune
16' Fagot
8' Trompet
4' Schalmei

COUPLERS		
Manual	I + II	16' - 8' - 4'
Manual	III + II	16' - 8' - 4'
Manual	III + I	16' - 8' - 4'
Manual	I	16' - Unison Off - 4'
Manual	II	16' - Unison Off - 4'
Manual	III	16' - Unison Off - 4'
Manual	I + Pedal	8' - 4'
Manual	II + Pedal	8' - 4'
Manual	III + Pedal	8' - 4'

Electric Key and Stop Action

The HEE SUNG KIM RESIDENCE

SOUL, KOREA

OPUS 111

MANUAL I (56 Notes)

8' Rohrflöte
4' Kleingedeckt

MANUAL II (56 Notes)

8' Rohrflöte (Manual I)
2' Prinzipal

PEDAL (30 Notes)

16' Subbass (Ext)

COUPLERS

Manual II + Manual I
Manual I + Pedal
Manual II + Pedal

Mechanical Key and Stop Action

ST. MICHAEL LUTHERAN CHURCH

HOUSTON, TEXAS

OPUS 112

GREAT (Manual I)

8' Prinzipal
8' Rohrflöte
4' Oktav
2' Superoktav
1 1/3' Mixtur IV
8' Trompete
Zimbelstern

SWELL (Manual II)

8' Gedeckt
8' Gemshorn
8' Celeste (TC)
4' Spillflöte
2 1/3' Nazard
2' Prinzipal
1 1/3' Tierce
8' Rohrschalmey
Tremulant

PEDAL

16' Subbass
8' Prinzipal
4' Choralbass
16' Posaune
8' Trompete

COUPLER

SW + GT
GT + Pedal
SW + Pedal

Mechanical Key Action and Electric Stop Action

HOLY TRINITY CATHOLIC CHURCH

DALLAS, TEXAS

OPUS 114

HAUPTWERK (Manual I)

8' Prinzipal
8' Rohrflöte
4' Oktav
4' Nachthorn
2' Waldflöte
1 1/3' Mixtur V
8' Trompete

SCHWELLWERK (Manual II)

8' Gedeckt
8' Salizional
8' Celeste (TC)
4' Blockflöte
2' Oktav
2 1/3' Sesquialter II (TG)
8' Oboe

PEDAL

16' Subbass
8' Prinzipal (HW)
4' Choralbass
16' Posaune

COUPLERS

HW + Pedal
SW + Pedal
SW + HW

Mechanical Key and Stop Action

FIRST UNITED METHODIST CHURCH

ERIE, PENNSYLVANIA

OPUS 115

GRAND ORGUE

16' Quintaton
8' Montre
8' Flûte à cheminée
4' Flûte cônique
2' Doublette
Cornet V
Fourniture IV
8' Trompette
Tremblant

POSITIF

8' Bourdon
4' Prestant
4' Flûte à fuseau
2 2/3' Nasard
2' Doublette
2' Quarte de nasard
1 3/5' Tierce
1 1/3' Larigot
1' Sifflet
Fourniture IV
Cymbale III
8' Cromorne
Tremblant

COUPLERS

Rec + GO
Pos + GO
Rec + Pos
Rec + Ped
Pos + Ped
GO + Ped

RÉCIT

8' Salicional
8' Voix celéste
8' Flûte bouchée
4' Flûte harmonique
4' Principal cônique
2' Flûte à bec
2 2/3' Sesquialtera II
Fourniture IV
8' Hautbois
Tremblant

PÉDALE

32' Basse acoustique
16' Contrebasse
16' Soubasse
8' Octave basse
8' Bourdon
4' Basse de choral
Fourniture IV
16' Bombarde
16' Basson
8' Trompette
4' Chalumean

Mechanical Key Action and Electric Stop Action

OUR LADY'S CHAPEL at UNIVERSITY OF THE INCARNATE WORD

SAN ANTONIO, TEXAS

OPUS 116

HAUPTWERK (Manual II)

8' Prinzipal
8' Rohrflöte
4' Oktav
4' Nachthorn
2' Waldflöte
1 1/3' Mixtur V
8' Trompete

SCHWELLWERK (Manual III)

8' Gemshorn
8' Celeste (TC)
4' Prinzipal
4' Blockflöte
2 2/3' Quinte
2' Oktave
1 3/5' Terts
1 1/3' Larigot
8' Rohrschalmey

POSITIV (Manual I)

8' Gedeckt
4' Kleinlflöte
2 2/3' Quinte
2' Prestant
1 3/5' Terts
1' Zimbel III
8' Krummhorn

PEDAL

16' Subbass
8' Prinzipal
8' Gedeckt
4' Choralbass
16' Posaune

COUPLERS

SW + HW 16' - 8' - 4'
Pos + HW 16' - 8' - 4'
HW + HW 16' - 4'

HW + Pedal 8' - 4'
SW + Pedal 8' - 4'

General Tremulant

Zimbelstern

Electric Key and Stop Action

HOLY TRINITY CATHOLIC CHURCH

GEORGETOWN, WASHINGTON, D.C.

OPUS 123

MANUAL I (56 Notes)

8' Rohrflöte
4' Prinzipal
2' Waldflöte
1 1/3' Mixtur III

MANUAL II (56 Notes)

8' Rohrflöte (Manual I)
4' Flöte
2 2/3' Sesquialtera II (TC)
2' Prinzipal
1 1/3' Larigot

PEDAL (30 Notes)

16' Subbass

COUPLERS

Manual II+ I
Manual I+ Pedal
Manual II+ Pedal

Mechanical Key and Stop Action

ST. JOHN OF THE CROSS CATHOLIC CHURCH

HOUSTON, TEXAS

OPUS 124

HAUPTWERK (Manual II)

8' Prinzipal
8' Rohrflöte
4' Oktav
4' Nachthorn
2' Waldflöte
2 2/3' Sesquialtera II (TC)
1 1/3' Mixtur IV
8' Trompete

SCHWELLWERK (Manual III)

8' Gedeckt
8' Salizional
8' Celeste (TC)
4' Prinzipal
4' Blockflöte
2' Oktav
1' Scharff IV
16' Fagott
8' Oboe
Tremulant

POSITIV (Manual I)

8' Gedeckt
4' Kleinflöte
2 2/3' Nasard
2' Prinzipal
1 3/5' Tertz
1' Kleinmixtur III
8' Rohrschalmey
Tremulant

PEDAL

16' Prinzipal
16' Subbass
8' Prinzipal
8' Gedeckt
4' Choralbass
16' Posaune
8' Trompete

COUPLERS

Pos + HW	16'	8'	4'
SW + HW	16'	8'	4'
SW + Pos	16'	8'	4'
HW + Pedal		8'	4'
Pos + Pedal		8'	4'
SW + Pedal		8'	4'

Electric Key and Stop Action

APPENDIX B

OPUS LIST OF REBUILT ORGANS

MISCELLANEOUS OPERA

ST. PHILIP PRESBYTERIAN CHURCH

HOUSTON, TEXAS

OPUS 3R

HAUPTWERK (Manual II)

8' Prinzipal
8' Gedeckt
4' Oktav
4' Rohrflöte
2' Super Oktav
1 1/3' Mixtur IV
8' Spanische Trompete

SCHWELLWERK (Manual III)

8' Holzgedeckt
8' Weidenpfeife
8' Schwebung (TC)
4' Prinzipal
4' Kleinflöte
2' Waldflöte
1' Scharff III
16' Fagott
8' Trompete
4' Klarine
Tremulant

POSITIV (Manual I)

8' Zingend Gedeckt
8' Erzähler
8' Erzähler Celeste (Tenor C)
4' Spitzprinzipal
4' Koppelflöte
2' Gemshorn
1 1/3' Quintflöte
1' Sifflöte
2 2/3' Sesquialtera II (Tenor C)
1' Kleinmixtur III
8' Krummhorn
Tremulant

PEDAL

32' Resultant
16' Prinzipal
16' Subbass
8' Oktavbass (Ext)
8' Gedeckt (Ext)
4' Choralbass (Ext)
4' Kleingedeckt (Ext)
2 2/3' Mixtur III
16' Posaune
8' Trompete (Ext)
4' Schalmei

Electric Key and Stop Action

TRINITY LUTHERAN CHURCH

HOUSTON, TEXAS

OPUS 15R

HAUPTWERK (Manual II)

16' Quintaton
8' Prinzipal
8' Rohrflöte
4' Oktav
4' Nachthorn
2' Waldflöte
8' Cornet V (Tenor G)
2' Mixtur V
8' Trompete
8' Horizontal Trompete
Tremulant

SCHWELLWERK (Manual III)

8' Gedeckt
8' Salizional
8' Celeste
4' Prinzipal
4' Nachthorn
2 2/3' Nasat
2' Oktav
1 3/5' Terz
1 1/3' Scharff V
16' Fagott
8' Hautbois
4' Schalmey
Tremulant

POSITIV (Manual I)

8' Holzgedeckt
4' Prinzipal
4' Rohrflöte
2' Oktav
1 1/3' Larigot
8/9' None (TC)
2 2/3' Sesquialtera II (TC)
1' Kleinmixtur IV
16' Dulzian
8' Krummhorn
8' Horizontal Trompete (HW)
Tremulant

PEDAL

32' Prinzipal (Ext)
32' Subbass (Ext)
16' Prinzipal
16' Subbass
8' Oktav
8' Gedeckt
4' Choralbass
2 2/3' Mixtur IV
16' Posaune
8' Trompete
4' Klarine

COUPLERS

Pos + HW
SW + HW
SW + Pos

HW + Pedal
Pos + Pedal
SW + Pedal

Electric Key and Stop Action

ST. MICHAEL CATHOLIC CHURCH

HOUSTON, TEXAS

OPUS 16R

GREAT

16' Quintaton
8' Montre
8' Flûte à cheminée
4' Prestant
4' Flûte
2' Doublette
Fourniture IV
8' Trompette

SWELL

8' Viole
8' Voix celéste
8' Flûte bouchée
8' Flûte celéste
4' Prestant
2' Flûte à bec
2 2/3' Sesquialtera II
16' Basson
8' Cromorne bouchée
4' Clairon

POSITIV

8' Bourdon
4' Prestant
4' Flûte à fuseau
2 2/3' Nasard
2' Doublette
1 1/3' Quinte
1' Sifflet
Cymbale IV
8' Cromorne

PÉDALE

16' Montre
16' Quintaton
16' Soubasse
8' Montre
8' Soubasse
4' Choralbasse
2' Flûte à fuseau
Fourniture III
16' Bombarde
8' Regal
4' Regal

COUPLERS

Great to Great	U	4'	
Positiv to Great	16'	8'	4'
Swell to Great	16'	8'	4'
Positiv to Positiv	16'	U	4'
Swell to Positiv		8'	4'
Swell to Swell	16'	U	4'
Great to Pedal	8'	4'	
Positiv to Pedal		8'	4'
Swell to Pedal		8'	4'

Electric Key and Stop Action

ST. VINCENT DEPAUL

HOUSTON, TEXAS

OPUS 19R

RIEGER ORGAN RESTORATION

3 Manuals and Pedal

NO SPECIFICATION AVAILABLE

CHURCH of JESUS CHRIST OF LATTER-DAY SAINTS

HOUSTON, TEXAS

OPUS 60R

GREAT (Manual I)

8' Prinzipal
8' Holzgedeckt
8' Spitzgamba
4' Oktav
4' Rohrflöte
2' Prinzipal
1 1/3' Mixtur IV
8' Trompete

SWELL (Manual II)

8' Gedeckt
8' Gemshorn
8' Celeste (TC)
4' Spiltzflöte
2 2/3' Nasat
2' Waldflöte
1 3/5' Terz
1/2' Zimble II (TC)
8' Krummhorn

PEDAL

16' Subbass
8' Prinzipal
8' Gedeckt
4' Choralbass
16' Fagott

COUPLERS

GT + Pedal
SW + Pedal
SW + GT

Electric Key and Stop Action

CHRIST CHURCH CATHEDRAL

HOUSTON, TEXAS

OPUS 68R

Console and Coupler System Rebuild Only

Three Manual (61 notes) and Pedal (32 notes)

NO SPECIFICATION AVAILABLE

The DARREL NANCE RESIDENCE

HOUSTON, TEXAS

OPUS 76

HARPSICHORD

3 Stops

TEXAS LUTHERAN COLLEGE

SEGUIN, TEXAS

OPUS 86R

GREAT (Manual II)

16' Quintaton
8' Principal
8' Spillfloete
4' Oktav
4' Hohlfloete
2' Octave
1 1/3' Mixtur V
8' Trompete

SWELL (Manual III)

8' Rohrfloete
8' Saliconal
4' Prinzipal
4' Koppelfloete
2' Waldfloete
1 1/3' Kleinnasat
1' Siffloete
Mixture IV
Terzzimble III
16' Dulzian
8' Oboe
Tremolo

RUECK-POSITIV (Manual I)

8' Gedeckt
4' Prinzipal
4' Rohrfloete
2 2/3' Nasat
2' Principal
2' Blockfloete
1 3/5' Terz
1' Scharf III
8' Krummhorn
Tremolo

PEDAL

16' Prinzipal
16' Subbass
8' Oktav
8' Metalgedeckt
4' Choralbass
2 2/3' Nachthorn
2' Mixtur III
16' Posaune
4' Schalmei

COUPLERS

SW + GT
RP + GT
SW + RP
GT + Pedal
RP + Pedal
SW + Pedal

Mechanical Key Action and Electric Stop Action

THE IMMACULATA

HOUSTON, TEXAS

OPUS 113R

HAUPTWERK (Manual II)

16' Quintaton
8' Prinzipal
8' Harmonique Flöte
8' Rohrflöte
4' Oktav
4' Nachthorn
2' Waldflöte
8' Cornet V (TG)
1 1/3' Mixtur V
8' Trompete
8' Trompete Real

SCHWELLWERK (Manual III)

8' Gemshorn
8' Celeste
8' Holtzgedeckt
4' Prinzipal
4' Rohrflöte
2' Spitzflöte
2 2/3' Sesquialtera II (TC)
2' Mixtur V
16' Bombarde
8' Trompete
8' Hautbois
4' Klarine
Tremulant

POSITIV (Manual I)

8' Prinzipal
8' Rohrgedeckt
4' Oktav
2 2/3' Quinte
2' Oktav
1 3/5' Terz
1' Mixtur IV
8' Krummhorn

PEDAL

32' Bourdon
16' Prinzipal
16' Subbass
8' Oktavbass
8' Gedeckt
4' Choralbass
32' Bombarde
16' Posaune
16' Fagotte
8' Trompete
4' Schalmey

COUPLERS

Pos + HW
SW + HW
SW + Pos
HW + Pedal
Pos + Pedal
SW + Pedal

Mechanical Key and Electric Stop Action

The EL PASO COMMUNITY FOUNDATION

EL PASO, TEXAS

OPUS 117R

WURLITZER ORGAN RESTORATION

9 Ranks

NO SPECIFICATION AVAILABLE

RESURRECTION LUTHERAN CHURCH

SPRING, TEXAS

OPUS 118R

GRESS-MILES ORGAN RESTORATION

24 Ranks

NO SPECIFICATION AVAILABLE

ZION LUTHERAN CHURCH

PASADENA, TEXAS

OPUS 120R

POSITIV

8'	Gedeckt
4'	Prinzipal
4'	Flöte
2 2/3'	Nasat
2'	Oktav
1 3/5'	Tertz
1'	Sifflöte
8'	Rohrschalmey
8'	Festival trompete
	Tremulant

COUPLERS

GT + GT 16' - 4'
Great Unison Off
SW + SW 16' - 4'
Swell Unison Off
Pos + Pos 16' - 4'
Positiv Unison Off
SW + GT 16' - 8' - 4'
Pos + GT 16' - 8' - 4'
GT + Pedal 8' - 4'
SW + Pedal 8' - 4'
Pos + Pedal 8' - 4'

Rebuild Console and Combination Action

OPUS 121R

NO SPECIFICATION AVAILABLE

ST. MARY'S CATHOLIC CHURCH

HOUSTON, TEXAS

OPUS 122R

WICKS ORGAN RESTORATION

9 Ranks

NO SPECIFICATION AVAILABLE

APPENDIX C

PORTIONS OF THE AUTHOR'S INTERVIEW

WITH PIETER A. VISSER

Pieter A. Visser
July 21, 1999
Houston, Texas

STUBER: [When I asked about the opportunity to gain exposure to organs in various countries due to his extensive travel as an airline pilot...]

VISSER: I know organs about as well as anybody in the world. I could go in churches and look at organs... in East Germany, or in Poland, or even in Russia... I even ended up in China for some reason...

STUBER: I don't want to duplicate the information that might already be in the resume you sent me, but if we can hit on some of the major points of your life and career. Were your parents musical?

VISSER: Yes, my mom was. My mom was an organist who was not very good. And she basically stopped playing by the time I was nine or ten because I did all the playing at that time. She sort of stepped back and was a singer. Both my Mom and Dad were singers. But the big music [influence] came from my grandfather, my mother's dad. He was a blind organist in the reform church where the hymns aren't published in advance. So the pastor would call off the hymn from the pulpit. The sermons are an hour and a half long so he would say, "We will sing Psalm 47, verses 1, 2, 3, 20, 60" or whatever number they had and he would memorize it and he would know all of them from memory. He didn't have to look it up Braille-wise. He knew the number and the music. And he had to improvise the prelude, because you couldn't start digging through your music in those days. And the prelude was expected to last probably about five minutes.

STUBER: What church was this?

VISSER: It was the Westerkerk in Amsterdam.

STUBER: Anyone else musical in your immediate family?

VISSER: I have two brothers, neither one of them is musical. None of my family other than my parents was musical.

STUBER: Your interest in organ building came at an early age, from the influence of your grandfather?

VISSER: Yes, and from a very early age. Because when he was there, I would hold keys for the tuners and I was seven years old... I knew all the keys... By the time I was nine, they would send me to the top of the organ to tune Krummhorns and things like that because the tuners were too lazy to climb back and forth. I could set a temperament by the time I was eleven.

STUBER: Your first job was an apprenticeship at Verschueren in 1954-1959. What was your position there?

VISSER: My position was being an apprentice. At Verschueren, we were hired in two different ways. One was you could come in as a helper or you could come in as a student. If you went in as a student, the first two years you wouldn't be paid at all. If you go in as a helper, you would be paid. As a helper you would get to sweep the floor, go get this and hand me that, and stuff like that. As a student you actually got to do things. And people would kind of "supposedly" lead you through all the projects and things.

STUBER: Why did you choose this firm?

VISSER: Primarily because they were relatively close to where I lived. They were also, at that time, the most famous organ builders in Holland. In the states we knew Flentrop as the famous builder from Holland, but in Holland he wasn't so famous at the time. At Verschueren, we had eighty-four people working and Flentrop had about twenty. We got to work on many more different systems [of organ action]. Flentrop was sort of hung up on 1750 and at Verschueren they had a lot of latitude, so I learned a variety of styles of organ building from French Romantic to Schnitger Baroque.

STUBER: Was there any one person who was a mentor for you?

VISSER: There were several. One was Frans Verschueren who was the voicer/tonal director of the company. He was my primary mentor but I had six or seven mentors that I worked with all in different ways. Henri Grados was a French reed voicer and reed maker and I learned reed making from him. He was one of the last Cavaillé-Coll reed voicers... Voicing I learned from Frans Verschueren and several others, but he was the main one. When I started to work there and within a few months, I was basically adopted by the Verschueren as one of their kids. When I left there, Leon Verschueren who was the president of the company at the time (he is dead now) literally cried when I left. He set me across from the desk and said, "Just stay. Let your family go. Just stay!"

STUBER: What type of organ was Verschueren building at the time?

VISSER: They were building a lot of mechanical action organs but they also built a lot of electro-pneumatic organs and some small unit organs so I learned just about all of them. And they didn't spare time or money about training as far as I was concerned. I couldn't do wrong with them. I'm still in touch with them all the time. I get phone calls from young Leon Verschueren who runs the company now.

STUBER: In the 60s you went to Holzinger?

VISSER: Holzinger organs in Los Angeles.

STUBER: This was your first job in the States?

VISSER: That was my first American job. I was hired there on January 2. He wouldn't hire me before the holidays because he would have to pay me holiday pay. He hired me on January 2, 1960. I went to work there starting out a $1.50/hour. He had no idea who I was and in this country nobody could understand that a kid of nineteen knew anything about organs. Within a week I was the head voicer of the company.

STUBER: So they liked what they heard?

VISSER: Not only what they heard but also what I could do because the lowest wind pressure of the time were four inches of wind. I said, "You guys don't know what you are talking about. I will show you something." And so I lowered the wind pressure to two inches, actually I lowered it to one inch to prove to them what could be done with an inch. It's not good to do that but I did. I voiced a whole set of pipes on one inch of wind and they were astonished that it was something that could be done. Holzinger was a low class organ builder. The only reason I went to work for him was that he spoke German and I spoke no English. So for me it was a good transition point to go from one to another, from one language to another. He gave me the whole company a couple of years later but I turned him down. I didn't want the company. The machinery, the buildings, everything, the whole works. He just wanted to give it to me. His reputation was so bad that it would have brought me down rather than build me up. Besides that, I didn't want to be tied down. I didn't feel like I was qualified to run a business at twenty-two years old.

STUBER: Besides the voicing and low wind pressure, what else did you bring to the company? What was your "European" influence?

VISSER: The making of the reeds...flue pipes...and scaling.

STUBER: What where your beliefs on scaling at this time?

VISSER: They were very much in the Dutch-Germanic Christian Müller type scales. We didn't use number scaling like here in this country. I started coming up with millimeter charts and scaling sticks and the pipe maker they had at Holzinger was a wonderful old man. His name was Archie Marsh, who worked with the Robert Morton Pipe Organ Company... He knew everything by number scales and could make fabulous pipes. When I went to work there and started doing the different scales and did it all in metric, it kind of blew his mind. He couldn't calculate so I had to make sticks for him. So I made all the sticks for him and we started making all the pipes that way and he was astonished at the kind of sound we where getting. And people were just, you know with the low wind pressures (because we were using two to 2 1/2 inches of wind or so), they were just excited about it. So a whole new trend started to fly across the country.

STUBER: With the lower wind pressure?

VISSER: Yes, at that time even Herman Schlicker was doing everything with four inches of wind. Otto Hoffman was experimenting in this part of the country with low wind pressures at the time.

STUBER: About the use of the sticks for making pipes... Had American builders used this type of device to make pipes?

VISSER: They used sticks, but they were based on the number scale so everything was the same from one organ to another. Like Möller would have scales A, B, and C of diapasons, and would have scales A, B, and C of gedackts and scales A, B, and C of strings. That is all they used.

STUBER: So as they went to a room where an organ would be installed, they would say, "We should use scale A or B," not taking into account the acoustical properties of the room?

VISSER: Right, they didn't understand scaling at all other than how to sell it and how to get it in to the organ and they dealt more with space inside the organ rather than the reality of sound outside of the organ.

STUBER: In essence, they were building factory organs.

VISSER: Oh sure. Pretty much everybody was doing this, even Skinner did. Skinner did a little higher quality of pipe making but basically there was not much difference between a Skinner and a Wicks. If you have really studied and looking at the mechanics, you would say "Holy Cow!" It was all based on hype...

STUBER: You went to work for Wicks after Holzinger...

VISSER: Well, I had offers from everybody. I had letters from Walter Holtkamp, Jr., and I had letters from Austin Organs, and even from Casavant but I wasn't about to go to Canada. I had made it to this country and had letters from Wicks and so on. What had happened at the time was that I was made all kinds of promises by Wicks. First of all, their salary was about four times as high as anyone else. I was told that I could make changes and improve things or promised as such. That sounded exciting to me. The facilities were, at that time, probably one of the best in the United States... I started at about 1962 with Wicks as a subcontractor (I didn't want to go in as a whole employee)... I did all the things they wanted me to do as a subcontractor and gave me latitude to work with some of the others, too. In the 60s, I was making more money than Martin Wick was making as president of the company. And he complained about it... But, I could get him out of trouble and that is basically what they used me for, to get him out of trouble. I got very tired of that in 1966. I told them, "Enough. I really don't want to do this anymore."

STUBER: What exactly did you do at the company?

VISSER: I was doing installations, finishing, voicing... Stuff was made in such a way that you'd get done with it and two hours later, it would just be the same as if you'd never touched the pipes. Skinner wasn't all that different either, but people didn't hear that – they didn't want to hear that. If you paid $10,000 or more a stop, then it has to be good. It's like driving a Rolls Royce – you pay $200,000 for a car, it has to be the best car ever made. Doesn't matter if it is or not.

STUBER: Did you influence the company in any way?

VISSER: Yes, actually in a whole lot of ways. I got them to lower the wind pressures...a little bigger in scaling... I developed systems on the chests... They had used little cones on the bottom. I took the cones off because they actually created more turbulence. They were made to seat the valve better but when you took them off, the valve would seat just as well and the wind was a little more stable going into the pipe so the pipe was easier to voice. I did influence them in a variety of ways. At the same time, they kept saying to make it cheap, make it fast, and get rich in a hurry.

STUBER: Had your ideas about voicing changed any at this point?

VISSER: I was continually battling trying to get these people to conform... to improve to make things work better.

STUBER: Had you thought of your own company yet?

VISSER: In 1966, there was a fellow named Victor Wenzel, in Macanada, California. He calls me, and he had known me for a while. I had gone to his house

where he had an organ, which I would maintain for him. He was old, and he liked me and he said, "Pieter, how much money would it take to start an organ company? I will finance the whole thing, whatever it will be." His wife would own 51% and I would own 49%. At that time, I was twenty-five years old... I told him it would probably be as much as three quarters of a million dollars if you really want to do it right...a company with the highest standards...and not making any money for three years. He said, "Done." I didn't think he would say, "Done," so I went home and thought about it and thought about it. I just felt that at twenty-five, I wasn't mature enough to run a company...even though my personal reputation was very, very good in the area, pretty well all of the south United States. I just felt that I wouldn't be strong enough in order to really do it and it would really beat me down more than it would do me any good. I felt that I needed to be in my mid-thirties in order to start a company; to have the maturity in order to deal with the stresses and complexities of it. So, I told him that I couldn't do it even though I was honored by the offer...

STUBER: In 1966-7, you were the US Tonal Director for Walcker.

VISSER: I did that on a part time basis. Installed a bunch of Walckers in this country, and it was worse than Wicks. I just did that to make a little extra money on the side... At the same time I was involved with the airlines... I'd be home a couple of weeks or so a month and rather than sitting on my hands (which I can not do), I would do organ work.

STUBER: Were you still carrying over the same ideas in construction and voicing?

VISSER: Their scaling was good but their mechanics were terrible. Their windchest construction was terrible, their overall organ construction was terrible, and the planning was terrible.

STUBER: Then you went on to Berkshire Company.

VISSER: Well, I worked with Scenic Airlines in there too. It was flying tourists through the Grand Canyon... I did go to Berkshire in early '72, May of '72... I was hired as a voicer, designer, and I was promised all sorts of things to go there. Jan Rowland was there at the time. He was a factory man. I was there in order to make it a real organ company. That was my primary function. They showed me books that were just unbelievably good. I mean they really were financially set, the company was rolling in money, and the potential was all there... I moved to West Springfield, Massachusetts, which cost me many thousands of dollars. When I got there, I discovered that the books they had showed me were books they might show to people that buy organs from them, but they certainly weren't the truth. They were probably close to half a million dollars in the hole at the time. Jan had worked with me during my Wicks days as a helper, from 1963 on during the summer... I knew Jan from there

and he knew what I could do, so he decided that he wanted me there so he went along with them...in order to get me there. Once I got there, I knew enough about business that I had learned up in the Seattle area, that they were in real trouble. So I got basically trapped there, but I went to work...in May and I immediately discovered the problems, and started thinking about getting out. I started a search across the country on what's the best place for an organ builder.

STUBER: To set up shop?

VISSER: Yes, to set up shop. You certainly didn't want to do it in Boston, Massachusetts where everything had been established. Immediately going against the establishment, you lose. So, we looked everywhere. The West Coast, overall, at that time other than Seattle area, was too "fly by night..." We looked at the South...at Atlanta, Houston, Florida...We looked at the economic status and did the economic studies of the areas and Houston came out by far the winner. We even looked at the overall economy of the United States. We were in a recession in '73, but Houston was doing quite well. Houston was going to be the place. I knew Houston; I pretty well knew the whole country... We just loaded up the truck in Springfield...actually when I told Jan that I was leaving, he said, "Well, what about me?" I said, "Look, you got me here..." I felt that it had destroyed me financially. "I don't want to do this anymore." At that time I had decided to go out on my own to Houston... I told Jan, "Well, all right..." Jan is very talented, was very talented at the time anyway. And I said, "OK, you really want to stick out your neck, we can stick it out together..." We did. We got in the truck, all of us, and moved down here at the same time. Rented the shop, and within one day we had a contract for an organ up in Michigan.

STUBER: The first day?

VISSER: The first day...Radford Lutheran church... We were officially incorporated October 10. We hired a lawyer... We had a 3000-foot shop on Johanna, which we rented. Jan and I built the organs with our wives helping, seven days a week. From 6:00am in the morning until 10:00pm every night. We did a mechanical action organ with a remote console that was about fifteen feet away from the organ. Everybody said it couldn't be done... it worked so well, that many organ builders have been out there to see what we did in order to make it work! But even Jan Rowland at the time said, "No, it's never going to work, it's never going to work. We should never have agreed to this." But when it was done, he was in awe because it worked. During the construction of that organ...our local television station found out what was going... They sent over a crew from "The Eyes of Texas" which is a little show that they have to show Texans what's going on in Texas. They put us on television. People saw the show and there were several people in town that wanted organs so within a few weeks we had contracts for Opus 2 and Opus 3. Things began to explode in all kinds of

directions at the same time. It just kept blossoming from then on. What we call major projects (thirty stops) came along. Memorial Drive Methodist, Westbury Baptist. Those are all electric action organs that couldn't be tracker because of their settings. We built those and they worked very well. Those organs have functioned very well over the years, and still are doing exceptionally well. They just need to be tuned more often than they are because they let the buildings get so hot. And then of course, St. Luke's in San Antonio came along. It was a pretty amazing success. Frank Speller from the University of Texas at Austin had heard about us, so he brought a group of students around [to see the installation].

STUBER: When you started the firm in Houston, how much money did you start up with, and what equipment did you have?

VISSER: We had some equipment that we already had, that I had anyway, and then some equipment that we bought. Then we started with $5,000.00 each – Jan and I. We figured we would give it a shot. That's all we had left after my move from Massachusetts. It was about $20,000 by the time I got moved. It was just Jan and I.

STUBER: Who did you consider were your main competitors at the time?

VISSER: We never even thought of competitors. We just went out and did what we wanted to do and if you don't worry about the competitors, then there aren't any. Our goal was to build the best that we could build and do it at a reasonable cost.

STUBER: You both were in agreement with that concept and other ideals such as voicing, scaling, and mechanical action organs?

VISSER: Yes, very much so. Jan didn't know much about voicing or scaling or even mechanical action organs. Jan had built electric action organs at Berkshire. A lot of rebuild stuff. When he did the rebuild stuff he learned a lot from that. So I basically had to train Jan as well as everybody else. Jan had good mechanical skills and he could manufacture anything that you could sketch. But I had to train everybody.

STUBER: You still had the same ideals. Was there anything "American" that you were incorporating into your work?

VISSER: Oh, we picked up a little bit "American." Primarily, the romantic aspects of the early American organs such as Hook and so on. Some of the strings. In Europe, the strings or the stuff that I grew up with was minimal in strings. At Verschueren we didn't use strings at all when I was there. I learned string voicing in this country from Val Holzinger, who was a string voicer at Robert Morton...
STUBER: How long did it take to turn a profit?

VISSER: We made a profit the very first year we were in business.

STUBER: So you knew you would succeed?

VISSER: We had a pretty good idea because we had a good product that I think was unique. Basically we put the entire organ industry in the United States on edge because all of a sudden everybody had to produce or else.

STUBER: You stuck with a quality product?

VISSER: Yes. Quality and a kind of an instrument that we felt would be more successful for the overall literature that was being played at the time.

STUBER: Tell me about the first rebuild.

VISSER: The first rebuild was at St. Philip Presbyterian here in Houston, Opus 6. It says on the opus list, you can tell where there is a "R" before the number. (Opus 3 is St. Philip) You know, there too, we made significant changes to these organs and all of a sudden they were far more exciting now than they were in the past.

STUBER: Talk more specifically about what a VRA organ can do that no other organ can do. What do you claim they can do?

VISSER: I think the latitude in literature. You play any of my organs and you find they have a much greater stand than most other organs. You find yourself really limited on many other organs. As soon as you sit down, you want to try this and doesn't work. You have a hard time doing that with ours, except on the very small organs. I think the organs like St. Luke's – it is the keyboard that limits you there. You have the fifty-six keys. But we're not doing that any more. After that big organ, we did all the others ones with sixty-one [manual keys] and thirty-two [pedal keys], the full compass... People have played the UT organ, Eden Prairie, or the organ at Stamford, Connecticut and they haven't found any literature they can't play. I don't think there's another organ builder in this country that has achieved this.

STUBER: Do you think this is due to the overall basic design, to the disposition, to the views of the organ reform? Why can your organs play all the literature?

VISSER: No, it is the scale, the scaling. It is how we make the individual scales work in such a way that they interact with all other aspects of the organ. It doesn't matter which angle you look at it from; you have to look at it in three dimensions. That is what many organ builders do not do. Many people are hung up on one, two, or three composers... I'm not hung up on any composers. That's what the secret is.

STUBER: An organ for all composers?

VISSER: Yes, and as much latitude as you want. Every stop to go with every stop. Obviously there are things like a mixture that can't go with other stops because of the pitches and so on. But any of the key or root stops on an organ must be made in such a way that they go with every other stop in the organ. No matter which combination. And that takes an enormous amount of forethought and thinking through and a lot of experience. You can't learn that out of a textbook. That is what I learned from the masters that I worked with and for.

STUBER: How much of this did you assimilate from the work of Christian Müller?

VISSER: Oh, a good bit. Because if you look at what he did and you start plotting it out and begin to find out why the man did what he did, everything had a reason. He didn't just put a 2' stop in someplace because that division needed a 2' stop. If it was a 2', how does it relate to the other stops? Or if you have two or three 8' on one division, what are those 8' and what can you do them? What are their harmonic structures? How do the harmonic structures overlap? How do they work together? How do they work individually? Why did he do what he did? Try to get into his mind. It is very difficult to do. It helps if you have people around you, the people that I grew up with, which were very modest people. People like Joseph Bremm. He was a guy nobody could work with... He was a little fellow, maybe five foot tall. He was a little German. He didn't speak any Dutch at all so to work with him you spoke German. He understood Dutch but he wouldn't speak it. So I would go out on jobs with him. My first trip out with him, I was sent out because I was being punished... The boss had come into our department...I was working in the chest department putting cone chests together. Leon Verschueren, who was the president of the company, came into my room and I had a glue pot with hot glue, which I put on his coat, which I didn't know. He was sort of sitting on my bench and the belt was on the glue pot and he sat down and he rotated away and he pulled the glue pot off the bench onto his trousers and onto his shop coat... It just splattered him full of glue. He kind of yelled at me but it really was his fault, he was interfering with my work. I didn't see what he had done. As he walked out of the room, he took the coat and hung it on a nail by the door out of the room where we worked. As he walked out, he had gone out the door and I didn't see him come back in again. I had turned around and I had taken one of these sort of like a scale sticks and whacked on that coat a couple of times and said, "What are you yelling at me for, you son of a bitch!" in Dutch. What I hadn't realized was that he had gone out the door and come right back in again, so he watched this whole thing happen. He said to me, "Are you feeling better now?" So I sort of passed out then. You don't call your boss by their first name, it is Mr. This and so on, then you click your heels. So, he left the room and anyway I was sent to Papa Bremm for punishment because nobody wanted to work with him. He was a real bear. He wouldn't let you do anything, he wouldn't show you anything,

wouldn't teach you anything. He would do all the work himself and if ever he did anything critical, he would turn his back to you so you couldn't see it. So one day, that very first week we were out, I was supposed to go out the whole week and old Mr. Verschueren felt that I would have learned my lesson then. It was just a way of keeping you in check. But Papa Bremm came back on Wednesday from lunch and he was smashed out of his mind. We had been working on this big mixture, a double rank mixture, in order to get that thing in tune – those things are just miserable to tune. As so he figured he would get drunk first and then it wouldn't matter. But he could tune! I tell you that man could do more with an organ pipe than I've ever seen anybody do. When he came back, he was smashed. He climbed up there and he started telling me what notes to hold. When he got up there he passed out and he sort of sagged on top of the mixture and bent over maybe half an octave of that big mixture. I went up there and I could hear him...snoring. He was so little I could pick him up and carry him to the ladder and put him down on the balcony. I went up and fixed all the pipes while he was passed out. I got a kid from the school to hold keys and I tuned the mixture. He never said anything. The interesting thing about a drunk is they know what they did, after the fact too. So the next week, we went out again and he requested for me to go with him. He went to old man Verschueren and he had requested for me to go with him and Verschueren sent me back with him. So we went out and he started teaching me everything and anything I wanted to know. The man just went out of his way in every way. So, I learned a whole lot from him. I learned from him to understand scaling. He would take me into a room and we would walk into a church and I called him "Papa." "Papa, why did they do what they did?" Everybody else claps their hands and he says, "That's not good. You can't tell anything from that. Just listen to the building as you walk in." You hear the ambient sound, the ambient noises there. Then he said to talk and listen to your own voice. Not with your ears but with your body. This tells you a whole lot about the building too. You learn how to interpret the feedback that your body gets. How strong is the bass, how strong is the treble? He could tell very quickly and we would practice. Then he started pointing out how all that works. We got out and sat on the floor in the church. And I'm not talking about little churches; I'm talking about cathedrals. Then we started sketching and people would walk by and we would look like two idiots out there, but I was learning. The man would just show me anything I wanted to know and the same thing with voicing. "If you do this and if you do that and you pull the languid up and you pull the upper lip out in order to make that work, this is what happens to the tone. Is that what you want or do you want it to do something else?" Or the languid goes down or upper lip goes back in and all of a sudden you had a whole different sound. Same with regulating. A pipe can never be totally precisely on speech. It is either on the fast side or slow side. It can't be on the middle side. There is no middle side. It either flips over or flips under. So all of your pipes are going to be under or all your pipes are going to be over. In regulation and voicing and so on, that became very, very critical. The man began to teach me things that most people never get to know. You go out to hear voicing and you listen

very carefully – lets say the Rosales over at University Presbyterian – it is a very nice organ except when you listen to the voicing very carefully. You will have a note that is on the positive side then another that is on the negative side. I was very lucky learning that and then having a guy a like Tom Turner. I could teach Tommy that and Tommy instinctively would learn that stuff very quickly. Tom was probably at one point the best voicer in the country. He did it every day and that's all he did. I had to do all areas of organ building and you don't get quite as good at voicing if you don't get to do it all the time seven days a week. Tom at the same time was learning about scaling with me but it took forty organs of going over scaling. After we were down at the UT organ, Tom started doing scaling more on his own and he was still coming to me, laying down a sheet and say, "OK, what do you think?" And we would do it together. He would do his and I would do mine, we would compare and they would be exactly the same. The way that happened is pretty phenomenal. He was one of those people...we were closer than brothers... The work that was done was just phenomenal, and worked very well.

STUBER: Are there any builders that you admire today?

VISSER: I admire people like Fritz Noack primarily because of his tenacity. He does make a real, honest effort. I admire Charlie Fisk for the guts he has...

STUBER: I read in one of you articles, you stated to "do only what you know" and to "not experiment at the customer's expense."

VISSER: The big thing is that it's not how things work if you do a work of art or if somebody buys a work of art from you, it shouldn't be an experiment to see how it comes out in the end. They expect to have a certain thing a certain way because it is a tool to them.

STUBER: It should come out the way one plans it.

VISSER: Yes, if it is not the way it is planned, it is by chance... Another fellow that I admire, is Larry Phelps. He genuinely wanted to accomplish things. Larry too, was a product of Skinner. They were working through trial and error, rather than by knowledge... All you need to do is read their biographies, their histories and you'll find out why they did it that way...

STUBER: Tell me about religious symbolism in your work.

VISSER: I love religious symbolism in my work, especially when people don't expect it and in churches where they do not want it.

STUBER: Do you always include religious symbolism?

VISSER: Always, Unless the organ does not go into a church, that's a different story. The University of Texas is not a church; it's a University so you can do some other things. In churches I like to put in or work in the numbers three and seven – the triune symbols... At Eden Prairie...we did the organ in seven towers; the three main towers are thirty-two feet. In that church, they didn't want any symbolism at all. So the architect and I got together and we designed the church as a triangle. The church is a great big triangle which when you transept off each one of the triangles and you tie all of those together and you have the number seven. It wraps around the triangle. Then what we did was design the organ with the trinity. The seven areas of the pipes, the symbol of forgiveness, "How many times must I forgive..." The trumpet forms the cross up high. When the organ was all done, we had the dedication... We went to church in the morning to see what it was going to be like with 3,000 people in there. It is a huge place. The place was packed and the pastor did a sermon against symbolism. He knocked symbolism off the map! My sermon, which I was preaching in the afternoon, was all on symbolism. And I said to Marsha [his wife], "What the heck am I going to do. I don't have time to write a new one right now." She said, "Do it anyway." And I did in the afternoon. People were sitting there with their mouths open including the pastor. He was like, "Wow!" I explained the building, what was done with the building and the transepts. What was done with the organ and what was in the organ and so on. How things were designed, and what it was supposed to do in the building. There was liturgical significance... In the Baptist church, the liturgy is never mentioned. I explained liturgy to them, and what the word meant... The people were in awe. It went over very well. You could see the people making the way to the edge of the seat, like when Dr. Speller plays a recital... When I finished, I immediately got a standing ovation. People just jumped out of their seats when I got done with that sermon. That's an unusual thing for a sermon! Anyway, I was done and by the time we were all finished, the pastor did the sermon the next Sunday and the organist/music director sent me a bulletin. And the title was "Symbolism- Soft Symbolism in the Church." What he did was he retracted a whole bunch of stuff that he had splattered all over the church. And the credo on the bottom of every bulletin now says "Soli Deo Gloria" which is on the organ. They had never used that...it's Latin. Right now it is on their bulletin. Every bulletin, every program they print, it is on the bottom.

For the organ at Stanford, they didn't want any symbolism either. Even though the whole building is symbols. The organ is a hand, but the hand is seven fingers. It has the triune, the three towers. There is the symbolism of light in the pipe shades. It has the symbolism of the cross in the trumpets. And so, I preached there too and the people loved it because it was a little easier. It wasn't a hard sell like the Baptist setting at Eden Prairie.

STUBER: In one of your articles you speak about working with architects and acoustical engineers. One of the points that you make is that it is an important that

the organ builder should be in on the very beginning, the initial planning stages of the building that is going to have the organ. How often, percentage-wise does it happen that you are in on the planning from the very beginning?

VISSER: Very seldom. You usually end up with a building that already exists. That is the majority of where my organs are done. But if you get an opportunity to work with the architect, very often you have to overcome the ignorance of the architect, because all he sees is a sculpture. He doesn't understand the building as a tool, as an inspiration device, as a mood machine. You can't design good acoustics into a building without spending a whole lot of money.

STUBER: Is there anything that you do "special" to compensate for those poor acoustical buildings? Besides the scaling, voicing?

VISSER: Organ placement if you can do it and scaling, yes, and very often try to talk the church into making changes within those buildings if it is possible...to improve the building from a worship perspective. St. Luke in San Antonio is a classic example... The building had cork floors, and a great big curtain on each side of the transepts. There was an organ on the wall in each transept, hanging from the wall... It was all particleboard. It was pretty bad out there. When I was brought in to talk about the organ, I talked quite a lot about the building before I talked about the organ. I explained to them the function of the building, as I perceived it for their worship style and what they were trying to do there. Everything was counterproductive to that. By the time I was all done, they seemed to be impressed and I seemed to have them convinced. Then they said, "What would you do for an organ?" "Oh, I would probably put in about fifty stops or so." That was all that was said about the organ. I left and about a week later I got a phone call to meet with the architect. I meet with the architect and told him what I thought should be done with the building and he did that by angling some walls, taking the cork off the floor, put slate down and all that sort of stuff. When that was done, they called me in and told me to get on the design for their organ, which I did. Bob Fenster had been to Holland. He had played the organs like Haarlem, and so on. I asked him, "Well, what did you think of the organs." He said they were the most enjoyable experiences he had ever had in his whole life. I said, "Would you like an organ like that?" He said, "No, I can do with a real small version of it – like a fifty stop organ is exactly what I want." And that is what we gave him. So that is basically what that organ is. He listened to two recordings... We have actually done that, overlapped them [the St. Luke organ and St. Bavo, Haarlem]. Have someone play the same piece and just take a piece and splice them every other segment and cut the acoustics off and you can't tell the difference.

STUBER: Is that organ more closely related to the St. Bavo than the UT organ?

VISSER: Yes. At UT we had to do more things. I knew Speller had his French accent. That was his thinking and his training and everything else. So, I had to make sure that that organ had capabilities more so than St. Luke's toward the French. So we did that with the reeds. We did that with some of the flues...and we tried to blend... if you do it with the reeds you can pretty well get it everywhere else. With the French organs, it's primarily the reeds that make them. You take all the rest and it pretty well stinks... If you listen to the cornet at St. Luke's, it is very Germanic, very Dutch. The one at UT is very different. Much more French, but it is not totally French. It is bridged. The reeds are definitely French in impact, a French sound... What we did with those reeds, and a lot people don't realize the terror I went through on that... I took scales; I had studied Clicquot, Cavaillé-Coll, Christian Müller, Schnitger, and everybody else. What made them work? What was good about them, bad about them? Let's sort out all the things that I can incorporate... The good of this builder with the good of that builder to make it two good, three good, and four good. It took a tremendous amount of work. I took this huge chance, and all the reeds for the UT organ (the St. Luke too, but in a slightly different way) all went to Killinger. I said, "Rolland, this is what I want to do." He got all excited. We had all these numbers – it's all charts and numbers, that's all it is. When we sat down, we worked and worked and worked. We said, "Well, the only problem I see...I think this is going to work...etc." By the time we slew the thing out between the two of us and developed all these reeds in that whole organ and they all worked. I tell you, we were both scared because we had a lot of money riding on that. By the time that they were done, I don't think there is a reed on that organ that isn't successful.

STUBER: So would you say that was an invention of yours?

VISSER: Not really. It was a development of a combination of understandings of a lot of early and later masters, particularly in reeds. If you go to Killinger right now, you'll find his files and on the outside of the wrappers it will say "VRA." He uses these scales for other people now. A lot of his scales in his books now have "VRA" on them, and people wouldn't know what they are. They are the scales that were developed specifically for that organ in Eden Prairie, Stamford, and more of the later organs.

STUBER: The French Romantic/Contemporary composers where often influenced by the builders of their day, Cavaillé-Coll, etc. To your knowledge, have you or your organs inspired any composer to create works for the organ?

VISSER: Speller, of course and his *Te Deum*. But, there are so few organ composers right now. And when I listen to a lot of organ compositions, they were developed and designed on piano, you can tell. And with Speller, you can definitely tell the influence of the Bates organ on his compositions. That is one of the goals I have too, not only to inspire the player but also to inspire the writer. There are some pieces that

were written for the organs I've done. People like Scott Bennett who has done some stuff but doesn't have a publisher. It is really hard to get organ music published. I think Speller has been probably the primary one and I think he has done a marvelous job at a lot of his stuff. If I have one gripe about his music, it is that it is so hard to play, that just doesn't make it sellable. He forgets that 99.9 percent of the organists today aren't one-tenth of his caliber. I think he is probably the finest organist alive today. He doesn't think so, but he is.

STUBER: I know of Dr. Speller's recording on the Bates instrument, also of Herndon Spillman and Cherry Rhodes at UT. Of Marilyn Keiser on the Fish Church, and also Desiderius Klempay on the Eden Prairie instrument; are there any other recordings or Visser instruments available to the public?

VISSER: Eden Prairie they also did a CD of Herndon Spillman... In Chicago at Mt. Carmel, they've done a lot of choral recordings using that organ out there by William Ferris. I think also, that Fred Hohmann, or maybe Cherry Rhodes but that's the Calvin Hampton stuff. Unfortunately, nobody has finished anything on the St. Luke's organ other than Speller, who has something [in the works]. There are CD's out there that churches have done individually but I don't have any idea about them. Desi Klempay has done two or three now on the Eden Prairie organ, just organ works.

STUBER: I see where you have been, and I see where you are now. Where are you going next? What is next for you?

VISSER: We are in a time and history of organ building where the churches are in some sort of transition to contemporary worship styles, and so a lot of the organs have been put on the back burner. Even though that trend is now turning around back the other way because churches are beginning to find out, short of liquor during church (and that is about what it amounts to), contemporary music doesn't work in church. Save that for the bar and the parlor. A lot of that is happening. I think that one has to be better than we have been in the past. Build better instruments. And I think some builders are really making an attempt at it. There are some fine organs being built by several builders in the United States right now. I think some of it is still about the hype factor, which is against my nature... I don't like the hype game. You see an organ being built for a concert hall and it is hyped all over the Internet and everywhere else before it is ever finished. Then the builders make this commitment that this is the greatest thing that was ever done and when it's finished, they can't retract and then they make idiots of themselves. So, that is something I have no want or intention of ever doing. Just do what I do and do it well. Right now, the overall organ business across the country is way down. It is coming back up again...

STUBER: What were the best years for the company?

VISSER: I would say the best years were actually for us the first twenty years, from say 1973 to 1993. They were the best years in organ building. Right now, we are coming back. Organ history has been like that. If you look at it, it comes in big spurts, then slows down.

STUBER: After I've studied the opus listing and the company a little more, it might be feasible that I can divide the history of VRA into certain stylistic period or trends. As far as I can tell, basically the cases have a distinct look about them. Have you done much experimentation with the visual aspects of your organs?

VISSER: Well, we did try to do what Silberman, Schnitger, and Cavaillé-Coll did with their own organs, to maintain a signature, which I think is important. At the same time, we are trying to design organs with a little bit more imagination with current architecture. The big thing is that I like to stay within harmony of the building that I'm working with. This sometime limits you, but at the same time, I don't want to be known as a guy that destroys architecture with my organ. There are those builders out there. When it is done, it needs to look like it has always been there, rather than something that was just stuck there. It's like putting a small dot of dirt on a white wall; all you see is the small dot of dirt.

STUBER: You have trained all of the voicers for your company?

VISSER: Every one of them.

STUBER: So with that fact, it might be difficult to divide the history of the company up into different stylistic periods depending on the voicer. An organ from 1973 is going to sound similar to an organ in 1999.

VISSER: Yes, except that the organ in 1999 is going to be slightly more Romantic. I too have become a little more romantic in my thinking.

STUBER: How do you mean, "more Romantic?"

VISSER: We've gotten a little bigger on the scales. The wind pressures have gone up a little bit. We are now dealing with 80 and 85mm, instead of 65 and 70mm. The scaling therefore has gone up proportionally, slightly bigger. I still stay with the firm belief that an organ is an organ... A Cavaillé-Coll organ is not necessarily an organ; it is more a theater organ machine. We are on a French kick in the US now and we have certainly done some of the French style here. I feel that it is going to be a trend that isn't going to last. These organs are not made for congregational participation as much. Congregational participation is what church is all about. It is academia that is shoving this down our throats that we ought to have these French organs. It is something that is going to be short lived, and we are going to end up changing back.

Like at Rice, it is a wonderful organ, it really is, but it is very limited. There are things that you cannot play [on that organ]. Anything you can play at Rice, you can play at UT. But anything that you can play at UT, you cannot play at Rice. Even Clyde [Holloway] has admitted that... It is a very nice organ... A lot of French organists that have played [the Rice organ], and it is supposed to be a French organ, but they have all said that it isn't a French organ at all. First of all, it is much too well in tune. It is much better regulated than most French organs are; it is not a French organ. It is what we call a typical Fisk; it is loud and louder. If you can't be good, be loud. Manuel Rosales does the same thing. The organ at First Presbyterian in Oakland that was done by Rosales is so loud that you can play a concert on it and hear it is San Francisco if you open up the windows. It is painful. John Braumbaugh said, "Boy, he paints with a big brush, doesn't he?"

STUBER: I'm going to send out a couple of questionnaires to some other builders to get their impressions of you and your work. Noack, Fisk...who else would you suggest?

VISSER: Manuel Rosales, Austin, Möller, and Martin Wick. Send a letter to Martin Wick and see what he says... Also send it to some suppliers too, like Organ Supply Industry... You can find all the addresses in the ISO address book.

STUBER: What is your best instrument, or which one are you most proud of?

VISSER: I'm proud of all of them, some more than others. I think probably St. Luke [San Antonio] is the one I like the most as an organ, because there were a lot of things attached to that instrument that a lot of people don't know about. The romance, the fear, the terror, everything... People have a concept of organ builders, that it is this wonderful thing... and the final product is... the pure hell that the organ builder goes through when you start out with simply a white piece of paper, and design an organ and develop the whole thing in great detail...is really something. Many organ builders don't do that. One person designs the case, another the scaling, and so on. I design it all. By the time I'm done, every scale, every dimension on that organ, every scribble is mine. And if there is anything wrong with it, that's mine too. It's my baby. And there are not many people in the world that can do that. Probably the most single successful organ is a little organ of only four stops, one manual, and couple down pedal, which is installed in Emanuel United Church of Christ, in Houston. It is now at Salem Lutheran in Tomball. That little organ with four stops can do more with those four stops than any organ I've ever seen in my life. It is a very musical little machine. We built it for maybe $7,500.00. It is Opus 2. More thinking went into that instrument per pipe that anything I've ever done in my life. I wanted to make a splash... The very first organ we got to build, we had some restrictions; the case design was not really ours – we modified it in some ways but we were stuck with it. With the second one we did, we kind of had the room to do some

things. At the same time, we didn't have the money to do it, but we did it anyway. To build something that was just tall and spectacular...mechanically it is wonderful. It is a real music-making machine... it sold St. Luke on our firm. The people at St. Luke came out and they heard that little organ and said, "If you can do that much with four stops, we can just imagine what you can do with fifty stops."

STUBER: I am going to include in the paper some of the innovations that you are associated with. In particular, the Computer Assisted Drawing software programs. Are you one of the first to use the CAD?

VISSER: We were the first. We were the first to use CAD. We were the first to use CAM. We were the first to use computers in organ building all together. We used computers for making draw knobs. That was the very first thing we used computers for.

STUBER: Was this from your own interest in computers?

VISSER: Jan and I both had a real interest in computers. We had a real interest in anything that would make our jobs more productive. People think of an artist as somebody that doodles around a lot. You might think an artist as somebody that can create his art and have the mundane stuff done by a computer. The real thinking and creativity are done by our minds. You've got a lot more room for design. The CAD allows me to do one hundred times as much as I could if I had to do it all with pencil.

STUBER: It is true that you have to be very precise with the information that is entered into the CAD, such as measurements and fine details?

VISSER: Yes you must be precise...[the computer] doesn't do it for you. The CAD is like a word processor. It allows you to write ten or a hundred times as much in a word processor as you would otherwise because you can do spell check and things like that. In CAD, you have similar things that you can do. You draw a set of keyboards once and you don't have to draw that same set of keyboards over again. That is just mundane drawing of lines... The important part is the scales that you put on the chest and where you are going to put those pipes in the organ. Right now there are programs that you still have to do the scaling and you still have to make all the artistic decisions. You click in the pipes and the program lays out the wind chest for you. I'll show it to you. It is stuff that we were very much involved with in on the development. I have been to Austria, Germany, and Holland to teach organ builders how to use CAD. First of all, the organ consultants in Europe said that if anybody uses the computer in the design of this organ, then we aren't going to buy the organ from them. They felt that it took the art out of organ building... The point is that Cavaillé-Coll used a slide rule stick or used forms of slide rules. Whenever you use a tool to make the job more efficient in order to do it more accurately, does that tool

become a hindrance to the art or does it allow greater creativity and greater forethought? So we use computers for scaling programs but it didn't do the scaling for us. What it does is it allow us to calculate every pipe between C and F, or between two C's with cutups and lengths and all that sort of stuff which normally is just a number game. It has nothing to do with the art. It is how you mix the red paint for your picture; if you use an electric mixer or a hand mixer, does it make any difference? It doesn't make any difference.

STUBER: What about the interplay between organist and organ builder?

VISSER: I think there should be more interplay between organist and organ builder in understanding more of the building aspects of the instruments and anything that gives one or the other more understanding is heading in the right direction.
That is one of the nice things about Rice... I am on the faculty there and I work with the classes out there. They are a great bunch. We do a whole semester where they come here [to the shop] once a week or I go there and we go over organ building from the technical points of view. Mixture layouts, mixture planning, what is scaling, how does scaling work and all that sort of stuff. So they have a pretty good idea of what goes on so that when they become consultants. It has paid off for me. A lot of the students have actually bought organs from me. They also have a better understanding of the instrument.

APPENDIX D

QUESTIONNAIRES

Questionnaire Sent to Contemporary Organ Builders

1. Name of Firm

2. Location of Firm

3. Name of person completing survey

4. Number of staff personnel

5. Number of new installations in the last 5 years

6. Number of rebuilds to date

7. Type of organs built by your firm
   Action:Mechanical, EP, Direct Electric, other
   Stop: Mechanical, Electric slider

8. Are your organs built in a particular style: i.e., Historical, Eclectic, and National?

9. What is the philosophy of your organ building firm?

10. Are you a certified master organ builder?

11. With whom did you apprentice?

12. Do you offer apprenticeship programs at your firm?

13. What are your professional affiliations? APOBA? ISO? Other?

14. Do you manufacture your own pipes? If not, who is your preferred pipemaker?

15. What is your philosophy of scaling? Wind pressure?

16. Do you use religious symbolism in your casework?

17. What distinguishes your organs from those of other contemporary builders?

18. What is the most outstanding aspect of your firm or organs?

19. Do you employ the use of CAD and CAM in your organ building and design? Why, why not?

20. What is your professional opinion of the works of Visser and Associates Organ Builders regarding the following areas:

Visual impressions:
- Casework
- Console
- Façade

Aural impressions:
- Scaling
- Blend
- Reeds
- Flues

Mechanical aspects:
- Reliability
- Ease of operation
- General workmanship/craftsmanship

21. Do you believe Visser and Associates has controversial attributes regarding the following:
- Scaling
- Wind pressures
- Organ placement
- Specifications
- Acoustic settings

22. Visser claims his organs can play "great latitudes in style and literature," especially on his mid-size and larger organs. Do you agree, disagree? Why? Are your organs successful in numerous literatures/styles?

23. Compare one of your organs to a comparable-size instrument built by Pieter Visser.

24. If you are given a contract to install an organ in a space with less than adequate acoustics, what steps do you take to ensure a successful installation?

25. What developments, innovations, or inventions are particularly or uniquely related to your firm?

26. In your opinion, which organ is the best example of your company's work?

27. If you had to pick a favorite organ built by your company, which would it be and why?

28. How has your philosophy of organ building evolved since the foundation of your firm?

29. What do you see as the future of organ building?

Questionnaire Sent to Concert Organists

1. Name of person completing questionnaire

2. Name/location of Visser organ used in recitals or recording

3. Did you find that a great latitude of literature and styles could be performed on Visser's organs?

4. What literature did you find most difficult to register?

5. What literature did you find easiest to register?

6. If you could change anything about the Visser organ(s) on which you performed/recorded, what would it be?

7. What is the most successful trait of the organ on which you performed?

8. What is the least successful trait of the organ on which you performed?

9. What is your opinion of Pieter Visser as a craftsman? Artist? Businessman?

10. Has Visser's organ inspired you musically in any way? How?

How would you rate the following aspects of the Visser organ on which you performed/recorded?	Very Poor	Poor	Fair	Good	Very Good
Reliability of the Instrument					
Craftsmanship/Workmanship					
Effectiveness of the Swell Box					
Availability of Color Stops					
General Utility of the Instrument					

Questionnaire Sent to Church Organists with Visser Instruments

1. Name of person completing questionnaire

2. Organ opus number, church, location

3. Organ specifications:
   - Date of contract signing
   - Date of installation
   - Organ Specifications:
     - Number of manuals
     - Number of stops
     - Number of ranks
     - Key action type
     - Stop action type

4. Why did your committee decide on a Visser organ for your church?

5. What other organ builders were considered? Why?

6. Were you involved with the organ committee? In what capacity?

How would you rate the following aspects of Visser and Associates and/or your VRA organ?	Very Poor	Poor	Fair	Good	Very Good
Service (if contracted with VRA)					
Craftsmanship/Workmanship					
Reliability					
General Utility of the Instrument					
Effectiveness in Congregational Leadership					
Effectiveness in Choral Accompaniment					

7. Does your casework contain religious symbolism? If so, describe in your own words the symbolism and its relevance to your particular church.

8. Have you been able to play a great latitude of literature and styles on your Visser organ?

9. If you could change anything about the organ, what would it be?

10. What is the most successful trait of your organ?

11. What is the least successful trait of your organ?

12. What is your opinion of Pieter Visser as a salesman? Craftsman? Artist? Businessman?

13. Has your organ inspired you musically in any way? How?

APPENDIX E

RELEVANT PORTIONS OF RESPONSES

TO AUTHOR'S QUESTIONNAIRES

ORGAN BUILDERS

CONCERT ORGANISTS

CHURCH ORGANISTS

Brian K. Davis, Organ Builder
John-Paul Buzard Organcraftsmen, Inc., Champaign, Ill.
October 21, 1999

STUBER: What types of organs are built at your firm?

DAVIS: Our firm uses slider chests for the main portion of the pipework which is controlled either through direct linkage in our tracker organs or with electric pulldowns on our other organs. The exceptions to this are our specialty stops such as the high-pressure tubas or when limited unification is done. In these cases EP or electro-mechanical (direct electric) actions will be used only for those pipes. The stop actions can be either mechanical in the trackers or electric slider on instruments where mechanical isn't an option.

STUBER: Are your organs built in a particular style?

DAVIS: I would have to describe our organs as eclectic but with an English influence. There is an ongoing debate over what to label the style of instruments that we build right now. Dr. Marcia von Oyen should have an article in the December issue of the Diapason addressing this issue.

STUBER: What is the philosophy of your organ building firm?

DAVIS: I think our philosophy can best be described as one in which we are striving to build an instrument of the highest quality which will serve the clients current needs while being agile enough to cope with future needs. We always take into consideration the historical background of a congregation and their musical heritage as well as their current needs when proposing and building an instrument. There is a limit on what will be done of course. I can't say that we have ever sacrificed the integrity of an instrument as a whole to fit a particular need. Here in the United States we as organ builders have the disadvantage of having to build instruments that can perform a much wider range of liturgy and literature than anywhere else in the world. Combine that necessity with the particular needs of a client and you can have quite a challenge on your hands. First and foremost the instrument must be able to do the liturgy of the church and lead robust hymn singing. It is our belief that this goal goes hand in hand with being able to perform large portions of the organ literature that has been written in many styles. You may not be able to perform a piece authentically but you can perform it musically. That is much more important to our company than any one historical style.

STUBER: With whom did you apprentice?

DAVIS: I apprenticed in voicing with Tom Turner at Visser-Rowland Associates in Houston, Texas.

STUBER: What is your philosophy of scaling and wind pressure?

DAVIS: Scaling and wind pressures are determined directly by the environment that the instrument must perform in and are not constrained by historical or stylistic boundaries. They are adjusted so that the Buzard sound can be achieved in a wide range of circumstances. This means there can be a wide variance in scaling from narrow to wide and low wind pressure from 2 1/4 " up to 15" in our last organ for the tuba. This doesn't mean that one organ sounds north German and another one English. It does mean that we achieve different volumes of a similar sound to fill the given space. You would be surprised at the number of builders out there who miss this point entirely. One can make a narrow scale principal have the same tone as a very fat one. The volumes will just be different! There is an amazingly wide variety of tone colors available that are often overlooked simply because a builder doesn't realize how to get it at the volume he or she needs.

STUBER: Do you use religious symbolism in your casework?

DAVIS: There is some symbolism in some of our organ cases and fronts. The most recent case front was divided into three sections suggesting the Trinity. In general we don't do as much as Pieter (Visser).

STUBER: What distinguishes your organs from those of other contemporary builders?

DAVIS: Our organs usually have a few stops that are part of our ongoing Buzard tradition. When the instrument size allows it we will almost always have a soft flute celeste called a Flute Cœlestis. This is always an open wooden flute celeste. On the other end of the spectrum we will have a big reed usually called a tuba of some sorts. It is a "trumpety" tuba though, not dull and blatty as some can be. It's not a trumpet enchamade though. This stop can solo out over full organ easily. Another stop that our organs can have is called a flute a biberon. This is a type of rohrflute but without sliding caps for tuning. What little tuning that needs to be done is accomplished by changing the chimney length slightly. Visually our organs don't follow a design that can be picked out at a glance as a "so and so organ" but rather we try to strive to make the instrument fit into the room. It needs to look like it has always been there and always was intended to be.

STUBER: What is the most outstanding aspect of your firm or organs?

DAVIS: We are a small firm with a staff of artists who all care about what they produce and how it will be perceived. This allows us a high degree of quality control while striving to perfect our style and it's performance. As time goes on we will be known for a particular sound and perhaps even visual design but the firm is simply too young for this to have happened yet...

STUBER: Do you employ the use of CAD/CAM in your organ building and design?

DAVIS: We use the CAD program in a limited function now to lay out our chests. We plan to start using it in the case design and for working drawings in the near future. The CAD system allows for a much easier standardization of certain components such as wind chest layouts, while allowing for great flexibility in overall visual design. One can correct mistakes and modify drawings with a few keystrokes as opposed to doing a drawing over on the drafting board. This can save a great deal of time and improve productivity and overall quality. This is why quite a few organ builders around the world are currently using the system.

STUBER: What is your professional opinion of the work of Visser and Associates regarding visual, aural and mechanical aspects?

DAVIS: Visually, Piet likes to follow traditional Dutch casework designs based on traditional proportions. He feels, as I do, that this is very important to the visual impact and balance of an instrument. The height, width, and base of the organs are usually of a certain proportion in relation to each other. This allows for a natural beauty in the case itself. His consoles are built for reliability and ease of use. The facade usually reflects the divisions within the organ, usually allowing for some sort of symbolism in the number of towers or levels in the facade. Again this is a very traditional look but one that has an inherent beauty and balance to it. It is this natural balance that allows Piet's organs to fit and blend into their spaces so well. They are beautiful without drawing too much attention to themselves. An out of balance case or facade would scream out, " Focus your attention here!"

Piet's organs use traditional Dutch scaling, some of which come straight from some of the well-known instruments in Holland such as the Müller organ in St. Bavo's. The cut ups are moderate for the wind pressures used. This allows for an unforced musical sound to be produced. One of the most important things I learned in voicing at VRA was the importance of blend. If you play any VRA organ you will find that almost any combination of stops will work to produce a coherent sound. This is very important especially in smaller instruments where the stops must do double or triple duty. It allows a player to pull off musical performances on small instruments that wouldn't be possible on some of the other builder's organs. A wide variety of reeds were used while I was at the firm. All were made by Roland Killinger's firm or in our own shop. They ranged from distinctive baroque sounds to fuller romantic

sounds when needed. They were always balanced for the organ and the particular needs. The blend factor here is again very important. On larger instruments it is the reeds that make or break an organ! They must always be of the highest quality and be very stable. VRA used a wide variety of flue stops to enrich the tonal pallet of the organ. Also, these always worked well together. This was paramount to the success of the instruments as a whole. I think Piet firmly believes that one should be able to pull 8' and 4' on one manual and it will balance and blend with an 8' and 4' on another manual. I think this attitude explains the relative rarity of specialty stops such as harmonic flutes. I have spoken with many other builders about concept of blend verses special function. Henry Willis IV will tell you in no uncertain terms that harmonic flutes only blend with harmonic flutes. Actually he and Pieter share a lot when it comes to that idea of what stops should and shouldn't do. I'm not sure either one of them would admit that though. I can say from personal experience that it is harder to make them blend but it can be done. Cavaillé-Coll's method works the best without a doubt and is a joy to voice when done properly. These types of stops don't always fit into a national stylistic influence, such as Dutch. Hence the Harfenpfeife on the great at UT. Big fat flutes are also expensive and take up a lot of room in the case, which is in turn, also expensive.

In general VRA instruments were very reliable and stabile. There were times when I could go without tuning reeds for years. I went without tuning the enchamade reed at St. Martin's Lutheran Church in Austin for three years one time. The big reeds at UT are similarly stable. The actions needs very little if any adjustment as they are designed to self adjust with climactic change. The cases themselves are designed to move freely with weather changes and thereby avoid binding and other problems that can be associated with this situation. I have made it a point to always ask incoming artists as well as the local church musicians what their impressions are of certain instruments that they are playing. VRA instruments have always been described to me as being easy to feel at home and be comfortable in playing. It takes very little time to get accustomed to playing one of these instruments

VRA always had a highly trained staff of artists who cared deeply about what they were doing. This shows itself in the consistent level of craftsmanship that came out of the shop. This was true even when the production schedule called for putting out five organs a year.

STUBER: Do you believe Visser and Associates have any controversial attributes in scaling, wind pressures, specifications, and acoustics?

DAVIS: There was a time when I was at the company that we seemed to use the same scales on an organ no matter what acoustic environment it went into. This was when Tom Turner was the tonal director. I'm not sure how things are now. For example, the church in Eden Prairie, MN has the same scales for the great principal

chorus as the organ at UT. The room at UT seats 750 while the church in Eden Prairie seats 2100. You can only push a given scale of organ pipe so hard so that the result was a huge organ that didn't fill the room with sound, as the church would have liked. I believe the pedal divisions of most of the organs we did were also underscaled and therefore too weak. As I mentioned before, many of the scales came straight from Holland where they were appropriate for the acoustical setting. American churches have notoriously bad acoustics that usually are not kind to low frequencies. Larger scales would allow for a pedal department that could balance the manuals without having to resort to using the reeds. This isn't to say that an organ has to have a "booming" bass. When I took over as tonal director, we started moving slowly toward slightly larger scales in the pedal which seemed to work very well. Again, I'm not sure what they are doing now but that was my perception at the time. The wind pressures at VRA gradually increased over the years. The early organs were on fifty-five or sixty millimeters of wind pressure. This was more than adequate for the style at the time that was definitely neo-baroque. By the time the organ at the University of Texas came around things were at a standard seventy millimeters pressure for most organs. The pedal reeds at 32' and 16' pitches at UT are on 100 millimeters as are the enchamades. The rest of the organ is all on seventy however. For small organs seventy millimeters everywhere is fine. For larger recital instruments it can cause problems however. UT is probably the upper limit of sound that one can get for those scales of pipes at that pressure. Seventy millimeters isn't foolproof, even though we seemed to use it everywhere. For one thing it is very difficult, but not impossible, to get the lower end of an 8' string rank to play properly on seventy millimeters. Dutch organs are not famous for their strings in the first place. Some organs don't even have them. It was only a few years before the UT organ went in that we started regularly putting salicional type strings in our instruments. Trinity Lutheran in Victoria was one of the first to normally have them if memory serves me correctly. There is no bottom octave to the Salicional 8'. There it came from a stopped flute. My point is that Piet didn't have much experience with cylindrical strings on his instruments. I heard him say more than once that he didn't like them. He preferred conical strings such as the one on the Great at UT, or the strings in the Swell at St. Luke's in San Antonio. They can be very beautiful.

The wind pressures were raised to eighty millimeters for most organs after a while. This solved the string problem and made reed voicing easier. Any higher than eighty millimeters and you start to feel it in the action so you have to be careful. In large rooms, it's a necessity however. The organ at Eden Prairie has the manuals on ninety millimeters.

I think we finally reached a good balance with pressures at my favorite VRA organ at First Presbyterian Church in Stamford, CT. The Great and Positive are on eighty millimeters. The Swell is on ninety millimeters while the Pedal is on eighty and 110 millimeters. That sort of pressure variation starts to look much more like what

Cavaillé-Coll did and we know how well many of his instruments work. The divisions still all balance each other but the reeds are happier and the strings all speak well. The flue basses in the pedal also benefit from the increased pressure. Pieter didn't like to do organs with multiple pressures. Some of it had to do with needing to have more reservoirs for the different pressures. This is expensive but it has an added benefit. The wind doesn't shake as much when the load is divided amongst several reservoirs. It can still flex but not usually shake like a bowl of jelly. Too many VRA organs would do just that.

As for organ placement, we did installations in just about every place in a room that you could think of. The best was always when the organ had a clear shot for proper egressive sound down the length of the room. Being located high in a room would also help greatly. Otherwise there wasn't anything controversial about them.

Specifications got to be very repetitious after a while but for the most part they worked very well. I remember laughing when I got the reply from our reed maker in Germany for the order for St. Mary's Cathedral in Cheyenne, Wyoming. The confirmation of the order started off with "Gott Sei Dank, Kein en Chamade Trompete!" [Thank God, no enchamade trumpet!].

Pieter tried to work with churches to see that they improved their acoustics when possible. One of the beauties of the style of instruments that VRA produced then was that they worked even in bad acoustics. They weren't as stunning as organs in good rooms, but they worked. You have to be very careful when playing around with higher pressures in a bad room. The results can be disastrous. Our wind pressures (seventy-eighty millimeters) were low by most builder's standards but safe and reliable. Good results were almost always achieved even if they weren't stunning.

STUBER: Visser claims his organ can play "great latitudes in style and literature." Do you agree, disagree?

DAVIS: I agree with Piet on this. I voiced quite a few organs for him and you can play a lot on literature on them. Even the small ones can do more than you would think. You have to do some creative registering but you still get a musical sound. That's the bottom line in my book. I've carried this knowledge and experience with me and built upon it... I have been told by several of our clients that our organs have taken on a more refined sound now that I have joined the staff here. That observation, if it is accurate, is directly related to my experience at VRA. Balance, blend, and a good understanding of how a pipe actually works-there is no substitute for that. I'll always be grateful for my time at Visser-Rowland Associates for that very reason.

STUBER: What is your philosophy of organ building?

DAVIS: I think that it is very important to have a good understanding of how sound and organ pipes work. I'm talking almost on a scientific level here. It drove John Paul Buzard nuts at first when I first came to the firm. He would describe a desired sound in florid, almost poetic terms. One person's concept or interpretation of a word can vary wildly as you can well imagine. For example, what would you think of if you were asked to imagine a smokey flute? I had to listen to these sounds and put these descriptions in a more scientific definition so that they could be recreated under different circumstances. I suppose this is how my philosophy can best be described as having evolved. When I was working for Piet, I was learning the basics, but mostly just copying an already established style. Too many people in organ building want a certain sound so they go and copy the pipe work from a given instrument. To my way of thinking... one must understand the desired sound and take steps to recreate it. Copying the scales won't do you any good. Understanding how the original sound was formed in those acoustics will. It is simply a matter of adjusting the pipe work so that you can get "that sound" in the new environment.

STUBER: What do you see as the future of organ building?

DAVIS: I'd like to be optimistic about the future of organ building but it is really hard for me to do so. If I had a son, I wouldn't encourage him to go into the business. I don't see the threat to organ building coming from the electronic copies that are being made. Instead, I see it in the changing structure of our society and the increasingly smaller part of the role of the church. Many churches are making drastic changes in their worship services to try to bring people back in. Little room for pipe organs and traditional forms of worship remain. Trends can always reverse themselves but this is where I see things heading right now. I don't think I will ever suffer from a lack of work. If I do, thank God I have other skills to fall back on. I think organ builders and organists alike must make a much greater effort to bring the instrument and it's value in the worship service to the attention of the average congregational member. Most people that I meet and tell what I do respond with some sort of statement telling of their amazement that pipe organs are still made. The organ is seen as an outdated antique by far too many people. It is the thing that sat in the balcony of their church when they were small, not an instrument that can be part of a vibrant worship experience today. This is a mindset that must be changed if organ builders and organists are to survive. I think the combined arts of organ builder and organists are certainly worth the effort. I hope our culture will come to feel that way too.

Steven Dieck, Organ Builder
C. B. Fisk, Inc., Gloucester, Mass.
January 21, 2000

STUBER: What is the philosophy of your firm?

DIECK: We try to build instruments that make music come to life.

STUBER: What is your philosophy of scaling and wind pressure?

DIECK: Do whatever is necessary to make the organ work in a given room.

STUBER: How is your firm different from other contemporary builders?

DIECK: We have innovative visual designs and do much fussing in tonal design and pipe finishing. We also give great attention to detail. We believe on working on every part of the instrument until it works optimally.

STUBER: Do you employ CAD/CAM in your shop?

DIECK: We use CAD, but not CAM. CAD is a great time saver. CAM is still a bit expensive for small shops.

STUBER: What are your impressions or opinions of Visser and Associates Organ Builders?

DIECK: Visually, their design is clean and contemporary. Casework, console, and façade are all well executed. Aurally, the tone is lackluster overall. I wish it would hold together better aurally, be a more beautiful sound with more attention to voicing and final sound. How this is accomplished, I really don't care in an organ builder's work, but to my mind and ear, his organs don't wear well aurally. Mechanically, they are well executed and well thought out.

STUBER: Do you find any controversial attributes in Visser's work?

DIECK: No, they are pretty mainstream and consistent.

STUBER: Visser claims his organs can play "great latitudes in style and literature." Do you agree? Can your instruments make this same claim?

DIECK: I won't touch the first question, but the key to the second one is to play the literature as voicing progresses and adjust and change as is necessary.

STUBER: What steps do you take to insure a successful installation in a room with less than adequate acoustics?

DIECK: I insist that the church engage an acoustician and improve the space acoustically. If they don't then their commitment to a really good musical situation is lacking and they should look to someone else to build the organ. The room is 50% of the success of the organ.

STUBER: How has your philosophy of organ building changed over the course of your company's firm?

DIECK: Basically, the key is to follow one's interests in the music and allow the spirit to guide. We must always pursue what is interesting and exciting.

STUBER: What do you see as the future of organ building?

DIECK: Fewer pipe organs will be built, but those that are built will be of the highest quality and artistic merit. There is no longer room in the marketplace for mediocre pipe organs – the electronic instruments have seen to that.

Caspar von Glatter-Götz, Organ Builder
Glatter-Götz Orgelbau, Owingen, Germany
October 1, 1999

STUBER: What is the philosophy of your organ building firm?

GLATTER-GÖTZ: To build instruments of solely modern design, with beautiful sound and good technique. All three points should be equally good!

STUBER: What is your philosophy of scaling and wind pressure?

GLATTER-GÖTZ: It depends upon the room.

STUBER: What distinguishes your organs from those of other contemporary builders?

GLATTER-GÖTZ: A different style in modern design, different details at the console, simple and clear layout inside the organ.

STUBER: Do you employ CAD/CAM?

GLATTER-GÖTZ: Yes, CAD is more exact and gives more possibilities. It also allows for data to be transferred via wire.

STUBER: What are your impressions of the work of Visser?

GLATTER-GÖTZ: Visually very contemporary. I cannot comment on aural impressions, as I have never heard one of his organs. I have only seen them in pictures.

STUBER: What do you see as the future of organ building?

GLATTER-GÖTZ: We must build very good contemporary organs. This will create its own development.

John Pike Mander, Organ Builder
Mander Organs, London, England
September 27, 1999

STUBER: What is the philosophy of your organ building firm?

MANDER: We strive to meet and exceed the highest expectations of our clients. Organ building is an art that requires great patience, meticulous attention to detail and an unfailing determination to excel. We are convinced that our ideals, as well as those of the people for whom we build instruments, can only be realized through adherence to the highest principles with regard to material, design and manufacture-principles which have been the foundation of over sixty years of craftsmanship at Mander. (from the company's web site <http://www.mander-organs.com>)

STUBER: What is your philosophy of scaling and wind pressure?

MANDER: Pipes are scaled to blend with each other, although this has more to do with the voicing than the scaling. Scales are set individually for each organ. Wind pressures vary from forty-five millimeters to 250 millimeters, occasionally more.

STUBER: What distinguishes your organs from those of other contemporary builders?

MANDER: This is a difficult question to answer, but we would say warmth of tone and a high degree of blend between stops for maximum flexibility. For example, we aim to have sufficient blend to allow a Flute 8' to blend with a Mixture and a manual 16' to blend with a mixture. Also, a blend which allows flutes to be mixed with principles, etc.

STUBER: What is the most outstanding aspect of your firm?

MANDER: The musical result, but that is what every organ builder would say... Also a large variation in case design.

STUBER: What is your professional opinion of the works of Visser and Associates visually, aurally, and mechanically?

MANDER: I do not know enough Visser organs to comment on this really, but I thought the organ in the Fish Church in Stamford was very interesting. For my own personal taste (and this is a very personal thing as everybody thinks differently, so this must be taken with a pinch of salt), I find the tone of the one organ I have heard a

little on the steely side. I really do not know enough of the instruments to give a fair impression.

STUBER: Visser clams his organ can play "great latitudes in style and literature." Do you agree and are your organs successful in numerous literatures/styles?

MANDER: All organ builders claim (and believe) that they display a "great latitudes in style and literature" and I certainly believe it of our instruments, but would not deny that attribute to a Visser organ. This is only based on limited knowledge of the instruments.

STUBER: If you are given a contract to install an organ in a space with less than adequate acoustics, what steps do your take to ensure a successful installation?

MANDER: We try to convince the authorities to do something about the acoustic. If that fails, we simply do what we can in making the scales sufficiently large to give latitude and try to compensate in the voicing, but in all honesty (in spite of what some builders may claim) there is not an awful lot one can do in fact.

STUBER: What developments, innovations, or inventions are particularly or uniquely related to your firm?

MANDER: None. It is very rare to come up with something in organ building that has not been done before. Perhaps we can credit ourselves with the invention (or development of an existing idea) to allow electric blowing to be added to a historic organ without cutting into the trunk and still allowing the original hand blowing to function without making any connections or disconnections to the original system.

STUBER: What do you see as the future of organ building?

MANDER: It will be difficult for all organ builders, but the best ones will survive and flourish, but I fear twenty percent may have to go to the wall if the economic climate stays similar to the way it is at present.

Fritz Noack, Organ Builder
Noack Organ Company, Inc., Georgetown, Mass.
October 28, 1999

STUBER: What is the philosophy of your organ building firm?

NOACK: The style is NOACK, but based on much research into historic instruments. Occasionally, instruments are in historic style, then as accurately as possible. A research project with a delightful by-product equals a beautiful organ.

STUBER: What is your philosophy of scaling and wind pressure?

NOACK: Do what works. "Philosophy" of scaling sounds too heavy for me, but I have analyzed literally hundreds of organs' scales, starting in 1950.

STUBER: Do you use religious symbolism in your casework?

NOACK: Not as a rule. The Holy Spirit does not need help once we accept excellence.

STUBER: What distinguishes your organs from those of other contemporary builders?

NOACK: You be the judge (we work harder).

STUBER: What is your professional opinion of the works of Visser and Associates Organ Builders regarding visual, aural and mechanical aspects?

NOACK: Visser has elegant contemporary visual designs. I have insufficient information to evaluate the aural aspects. From the bit I saw, mechanical was reliable, working well, and standard workmanship.

STUBER: Do you believe Visser and Associates have controversial attributes regarding scaling, pressure, placement, specifications, and acoustic settings?

NOACK: Creative yes, but nothing "controversial" in my opinion.

STUBER: Visser claims his organs can play "great latitudes in style and literature." Do you agree, disagree? Are your organs successful in numerous literature/styles?

NOACK: You ask me to pat myself on the back... We builders all say our organs can play nearly anything, but that's not for us to decide. I guess Pieter and I (and most of us) try to allow latitude while maintaining integrity.

STUBER: What steps do you take to ensure a successful installation regarding acoustics?

NOACK: We try whatever possible to improve acoustics. We've built reasonably successful organs even in horrid spaces. I guess I have suffered enough of this dubious success and probably will not again accept commissions for "hopeless" spaces.

STUBER: What developments, innovations, or inventions are particularly or uniquely related to your firm?

NOACK: In 1960, we were only one of two still surviving firms consistently building trackers (except where inappropriate). We used self-adjusting actions (floating) from day one (almost all do it now). You look at our work and decide.

STUBER: What is the best example of your company's work?

NOACK: Always the last one built (we still try to get better). Reykjavik's Langholtskirkja organ was greeted by one of the big-name recitalists as "probably the finest organ I ever played." Now we need to up that record. Or you could mention the pair of unlike sisters: Houston - a painstakingly researched Zacharias Hildebrandt or Dallas - big (electric action) Romantic monster. A variety of historically informed excellence.

STUBER: How has the philosophy or organ building evolved since the foundation of your firm?

NOACK: The philosophies of an untiring pursuit of the most wonderful sound, sight, feel, and workmanship has never changed. The results, of course, keep evolving. Once I know how to build the perfect organ, I shall shoot myself. Do not worry.

STUBER: What do you see as the future of organ building?

NOACK: It's really simple: the electronics have taken over the market of "utility" organs. The truly misguided will for a while purchase those hideous pipe/electronic combos. This leaves a small, but firm and demanding market for excellent organs. Suits me just fine, especially since I enjoy working with a small staff (we had nineteen in 1965 and I hated it!). I suspect Pieter feels pretty much the same.

Dr. Marilyn Keiser, Professor of Music
Indiana University, Bloomington, Ind.
September 30, 1999

STUBER: What instrument(s) of Pieter Visser are you familiar with either through recording or recitals?

KEISER: The organ at Bates Recital Hall, University of Texas at Austin.

STUBER: Did you find that a great latitude of literature and styles could be performed Visser's organs?

KEISER: I did find great latitude in the literature that I could play on the organ.

STUBER: What literature did you find most difficult to register?

KEISER: I found French music the most difficult to register because of the extremely heavy action of the Positiv.

STUBER: What literature did you find easy to register?

KEISER: I found Bach and early music very easy to register. In the double pedal *Aus Tiefer Not* of Bach, the pedal reeds produced a sound of incredible clarity.

STUBER: What is the most successful trait of the organ on which you performed?

KEISER: The most successful trait was clarity of counterpoint.

STUBER: What is your opinion of Visser as a craftsman, artist, and businessman?

KEISER: My opinion of Pieter Visser, a real artist. Beautiful workmanship.

STUBER: Did Visser's organ musically inspire you in any way?

KEISER: His organ did inspire me! A magnificent sound for all literature. I don't think I have ever played the Clavierubung Chorales of Bach in a place where I have found the sound more convincing.

Dr. Haig Mardirosian, Professor of Organ
American University, Washington, D.C.
January 27, 2000

STUBER: What instrument(s) of Pieter Visser are you familiar with either through recording or recitals?

MARDIROSIAN: Bates Recital Hall, The University of Texas at Austin.

STUBER: Did you find that a great latitude of literature and styles could be performed on Visser's organs?

MARDIROSIAN: Yes.

STUBER: What literature did you find most difficult to register?

MARDIROSIAN: Reubke, Sowerby. In general, colorist and Romantic rather than the symphonic literature.

STUBER: What literature did you find easy to register?

MARDIROSIAN: Obviously, Bach.

STUBER: If you could change anything about the Visser organ on which you performed/recorded, what would it be?

MARDIROSIAN: Electric couplers to facilitate virtuoso playing in Romantic works, and up to date combination action.

STUBER: What is the most successful trait of the organ on which you performed?

MARDIROSIAN: Voicing expansive enough to permit a range of repertoire.

STUBER: What is the least successful trait of the organ on which you performed?

MARDIROSIAN: None.

STUBER: What is your opinion of Pieter Visser as a craftsman? Artist? Businessman?

MARDIROSIAN: I do not know Mr. Visser personally. Based on several of his instruments that I've played, I admire his craft and the inherent musicality of his organs.

STUBER: Did Visser's organ inspire you musically in any way? How?

MARDIROSIAN: One cannot quantify it, but all fine instruments have a particular personality that gives, takes, and inspires a player. I recall being drawn to the Bates organ at the University of Texas.

Dorothy J. Papadakos, Organist
Cathedral of St. John the Divine, New York, N.Y.
January 31, 2000

STUBER: What instrument(s) of Pieter Visser are you familiar with either through recording or recitals?

PAPADAKOS: Bates Recital Hall, The University of Texas at Austin.

STUBER: Did you find that a great latitude of literature and styles could be performed on Visser's organs?

PAPADAKOS: Yes.

STUBER: What literature did you find most difficult to register?

PAPADAKOS: Improvisational music.

STUBER: What literature did you find easy to register?

PAPADAKOS: Transcriptions.

STUBER: If you could change anything about the Visser organ on which you performed/recorded, what would it be?

PAPADAKOS: The action is terribly heavy, especially the bottom manual...

STUBER: What is the most successful trait of the organ on which you performed?

PAPADAKOS: The tonal colors.

STUBER: What is the least successful trait of the organ on which you performed?

PAPADAKOS: The action.

STUBER: What is your opinion of Pieter Visser as a craftsman? Artist? Businessman?

PAPADAKOS: Very fine (craftsman and artist). Do not know (as a businessman).

STUBER: Did Visser's organ inspire you musically in any way? How?

PAPADAKOS: Yes, it had a clarity and fire which made pieces like the "Nutcracker" and "Greek Dance" really take off!

Dr. Herndon Spillman, Professor of Organ
Louisiana State University, Baton Rouge, La.
September 24, 1999

STUBER: What instrument(s) of Pieter Visser are you familiar with either through recording or recitals?

SPILLMAN: The University of Texas at Austin and the Woodale Church, Eden Prairie, Minnesota.

STUBER: Did you find that a great latitude of literature and styles could be performed Visser's organs?

SPILLMAN: Yes

STUBER: What literature did you find most difficult to register?

SPILLMAN: In some cases the French repertoire.

STUBER: What literature did you find easy to register?

SPILLMAN: Baroque, German Romantic, Modern or Contemporary American.

STUBER: If you could change anything about the Visser organ on which you performed/recorded, what would it be?

SPILLMAN: I would change the concept of the bass division, and I would give more attention to the inclusion of wide scaled flutes, particularly Bourdons and the Flute Harmonique. I would give more attention to the principals. I found them on the thin side for my taste.

STUBER: What is the most successful trait of the organ on which you performed?

SPILLMAN: Outstanding workmanship. Excellent attention to voicing. Great versatility in performing a wide range of literature. An excellent example of concert and service instrument is to be found in the Eden Prairie organ.

STUBER: What is the least successful trait of the organ on which you performed?

SPILLMAN: I sometimes found that his tonal concept is too thin and the organ does not have enough "thunderous sound." His approach seems to be a rather gentle one.

STUBER: What is your opinion of Pieter Visser as a craftsman? Artist? Businessman?

SPILLMAN: Pieter Visser is an excellent craftsman and artisan. He is extremely professional and an excellent businessman.

STUBER: Did Visser's organ inspire you musically in any way? How?

SPILLMAN: The two organs that I am acquainted with did definitely inspire me. This is especially true of the Eden Prairie instrument, which I think is a vast improvement over the UT organ. I was tremendously moved by some of the effects I was able to create especially in my recording of Thomas Kerr's *Anguished American Easter*, 1968 and Persichetti's *Drop, Drop, Slow Tears.*

Rob Gerlach, Organist
Redeemer Lutheran Church, Austin, Tex.
September 29, 1999

STUBER: With which church instrument of Pieter Visser are you associated?

GERLACH: Opus 75, Redeemer Lutheran Church, Austin, Texas.

STUBER: Were you involved with the organ committee for selecting an organ builder for your church? In what capacity?

GERLACH: Everyone on the committee had a task. Mine was to analyze the console for ease of playing, stop layout, etc. When possible, we heard instruments in a worship setting to see how they functioned in hymn leading, choir accompaniment, etc.

STUBER: Why did your committee decide on a Visser organ?

GERLACH: Superior tonal quality and craftsmanship. All Visser instruments we heard and saw were consistent. They sounded good; materials and craftsmanship used in building the instruments were the best. Visual beauty was also best.

STUBER: Does your casework contain religious symbolism? If so, describe the symbolism and its relevance to your particular church.

GERLACH: Pipe layout is in groups of three and seven are significant. (There are) carved crosses throughout...

STUBER: Have you been able to play a great latitude of literature and styles on your Visser organ?

GERLACH: For the most part. Our design does not compliment French Romantic very well, but that is O.K. for a church steeped in a German heritage.

STUBER: If you could change anything about the organ, what would it be?

GERLACH: I would couple the Spanish Trumpet to at least the Great and/or Pedal. I would split the Sesquialtera into two stops of 2 2/3' and 1 3/5' stops.

STUBER: What is the most successful trait of your organ?

GERLACH: I think its ability to speak very clearly in a quiet mode. I have often led packed houses with only a flute or two on selected (hymn) stanzas.

STUBER: What is the least successful trait of your organ?

GERLACH: Not sure... Some people have told me that it needs to be voiced louder, especially the Spanish Trumpet. My complaint is not with the organ but rather with the sanctuary. The room is dry, not very alive or responsive.

STUBER: What is your opinion of Visser as a salesman? Craftsman? Artist? Businessman?

GERLACH: A professional through and through. At the top of the qualities listed here should be a theologian. He certainly considered our theology, our history and heritage, and our hymnody when building our organ.

STUBER: Has your organ inspired you musically in any way?

GERLACH: Absolutely! Enough to pursue a Masters degree. I am writing some hymn-based arrangements. I want to be the best I can for the organ, which will in turn inspire and direct the worshiper in the pew.

Vicky Kiehl, Organist
Central Presbyterian Church, Russellville, Ark.
October 25, 1999

STUBER: With which church instrument of Pieter Visser are you associated?

KIEHL: Opus 79, Central Presbyterian, Russellville, Arkansas.

STUBER: Were you involved with the organ committee for selecting an organ builder for your church?

KIEHL: Yes. As organist at the church, the committee and the church wanted my opinions and input. I was a member of the committee...

STUBER: Why did your committee decide on a Visser organ?

KIEHL: First, from reading new organ stop lists in *The American Guild of Organist* magazine. Then we attended another church's committee meeting as they interviewed Pieter Visser. His expertise and forthright honesty were impressive. Then we heard instruments in Tulsa, including his, and we like his proposed placement and tonal design and stop list.

STUBER: Does your casework contain religious symbolism? If so, describe the symbolism and its relevance to your particular church.

KIEHL: Scrollwork on the Great is of vines of grape leaves and grillwork over the Swell shades has a cluster of grapes and a shock of wheat, symbolizing communion. Three towers of principal pipes symbolize the trinity.

STUBER: Have you been able to play a great latitude of literature and styles on your Visser organ?

KIEHL: Yes, although some music requiring three divisions is not possible, and Baroque music is especially successful.

STUBER: If you could change anything about the organ, what would it be?

KIEHL: I would separate the Sequialtera ranks and extend them to the bottom of the manual. I would include a 16' stop on a manual.

STUBER: What is the most successful trait of your organ?

KIEHL: Its presence of sound and the beauty and richness of individual stops.

STUBER: What is the least successful trait of your organ?

KIEHL: Having the Swell and horizontal trumpets so close to my ears! My hearing is suffering. Maybe having the sforzando and zimbelstern pistons next to each other on the pedal board...

STUBER: What is your opinion of Visser as a salesman? Craftsman? Artist? Businessman?

KIEHL: He seems to know so much. Definitely knows his craft. Has pride in his work and is there to help when needed. He took care of a long distance emergency call just before a hymn festival held at out church.

STUBER: Has your organ inspired you musically in any way?

KIEHL: Yes, it has! The sound is so wonderful, whether I'm playing or listening to someone else.

C. Richard Morris, Organist
St. Martin's Lutheran Church, Austin, Tex.
October 4, 1999

STUBER: With which church instrument of Pieter Visser are you associated?

MORRIS: Opus 42, St. Martin's Lutheran, Austin, Texas.

STUBER: Were you involved with the installation of the organ for your church?

MORRIS: No, this was before my tenure at the church.

STUBER: Does your casework contain religious symbolism? If so, describe the symbolism and its relevance to your particular church.

MORRIS: Just "Soli Deo Gloria." A good Lutheran sign from J. S. Bach!

STUBER: Have you been able to play a great latitude of literature and styles on your Visser organ?

MORRIS: Yes, but this was largely due to the fine acoustics in the room. With no strings, swell shades, or pistons, the organ was somewhat limited in its flexibility, but the room was a great asset and I "pulled off", more "stuff" than I thought possible – Baroque, Romantic, Contemporary French.

STUBER: If you could change anything about the organ, what would it be?

MORRIS: Pieter Visser and I were in conversation about adding a Swell division. The organ was truly fine as far as it went, but it lacked expressive elements.

STUBER: What is the most successful trait of your organ?

MORRIS: The purity of sound in a fine room. I really loved the organ in spite of its expressive limitations. It was well designed and simply needed one more division (a Swell under expression).

STUBER: What is the least successful trait of your organ?

MORRIS: Flexibility for a twentieth-century organist in church music. I missed having pistons and expressiveness... Also the lack of strings.

STUBER: What is your opinion of Visser as a salesman? Craftsman? Artist? Businessman?

MORRIS: Excellent. I found him to be personable, helpful, interested and willing to listen.

STUBER: Has your organ inspired you musically in any way?

MORRIS: The combination of a fine instrument in a fine room encouraged me to be "lean" in my registrations. Not using any more stops than necessary. It also forced me to be very creative, and I always was able to do something interesting in any style even if the registration approach was somewhat unorthodox, but it worked!

APPENDIX F

DISCOGRAPHY OF PERFORMANCES

ON ORGANS BUILT BY PIETER VISSER

Opus 18
St. Pius V Catholic Church
Pasadena, Texas

The Organ and the Renaissance
Robert Lynn, organist
Telarc records, (phonograph) 1979.
Petri, *Vexilla regis;* Cabezon, *Beata viscera Mariae; Tiento del Primer Tono;* Schlick, *Da pacem;* Tallis, *Veni Redemptor;* Hassler, *Introitus: mihi autem nimis;* Pellegrini, *Canzone detta la Serpentina, Canzone detta la Pellegrina;* Paix, *Ein guter newer Teu; Ungarescha;* Bernard Schmid the Elder, *Alemando novelle. Ein guter neuer Dantz, Ein guter Dantz. Man ledt uns zu der Hochzeit freud; La volte du roy; La corante du roy;* Ammerbach, *Bruder Cunrads Tanzmaass;* Kotter, *Spaniol Kochersperg;* Nörmiger, *Mattasin oder Toden Tantz.*

Opus 43
Bates Recital Hall
University of Texas at Austin
Austin, Texas

300 Years of French Glory
Herndon Spillman, organist
Titanic, Compact Disc, TI-168.
Tournemire, *Choral-Improvisation sur le "Victimæ paschali;"* Couperin, *Benedictus, Chromhorne en Taille;* D'Aquin, *Noël Etranger;* Alain, *Deuxième Fantaisie;* de Grigny, *Pange Lingua en taille à 4;* Franck, *Pièce Héroïque;* Duruflé, *Prélude, Adagio, et Choral varié sur le théme du "Veni Creator" Op. 4;* Guillou, *Toccata.*

Everyone Dance: Organ Music of Calvin Hampton
Cherry Rhodes, organist
Pro Organo, Compact Disc, #CD 7009.
Five Dances, Prelude and Variations on "Old Hundredth."

Frank Speller in Recital
Frank Speller, organist
Privately produced, Compact Disc, 1988
Bach/Speller, *Sinfonia on Wir danken dir, Gott, Prelude and Fugue in B Minor;* Lübeck, *Variations on Nun lasst uns Gott, dem Herren;* Mozart, *Fantasy in F Minor, K594;* Speller, *Passacaglia;* Gigout, *Grand-Choeur Dialogué;* Duruflé, *Prelude et fugue sur le nom d'Alain, Op. 7;* Saint-Saëns, *Prelude in E Major.*

Opus 43, continued

Organ Music of César Franck
Frank Speller, organist
Gothic, Compact Disc, to be released late 2001
Three Chorales; Grande Pièce Symphonique; Panis Angelicus (transcribed by Frank Speller).

Spirited Fantasies: Organ Music of Frank Speller
Frank Speller, organist
Pro Organo, Compact Disc, 1996, #CD 7092.
Symphony Fantasy for Brass and Organ on "A Mighty Fortress is our God;" Scottish Suite; Advent Song; Prelude on "O Come, O Come Emmanuel;" Six Preludes on Diverse Hymns-Kingsfold, Deirdre, Herzliebster Jesu, Der am Kreuz, Leibster Jesu, wir sind hier, The Call, Holy, Holy, Holy; Toccata on "The Glory of the Holy Spirit;" Fantasy for Pentecost, "Veni Creator Spiritus/Down Ampney.

Works of Frank Speller
Frank Speller, organist with the University of Texas Concert Chorale, Patrick Gardner, conductor
Albany, Compact Disc, 1990, TROY 049.
Toccata, The Majesty of Christ; Four Choral Preludes: Veni creator spiritus, The Saints' Delight/Land of Rest, Lasst uns erfreuen, King's Weston; Mass of Saint Louis, Passacaglia, Prelude and Fuge in A-flat Major "Ecumenical;" Gloria Patri; Psalm 19, "The heavens declare the glory of God;" Four Biblical Dances; Hail Mary; Te Deum.

Opus 87
First Presbyterian Church
Stamford, Connecticut

Marilyn Keiser, organist
The People Respond...Amen!
Pro Organo, Compact Disc, 1994, #CD 7025.
Locklair, *Rubrics, A Liturgical Suite for Organ;* Sowerby, *Requiescat in Pace;* Wyton, *Fanfare and A Wedding Blessing;* Ferguson, *Prelude on "Unser Herrscher;"* Howells, *Rhapsody in D-flat, Op. 17, no. 1*; Mendelssohn-Bartholdy: *Sonata in A, Op. 65, no. 3;* Duruflé, *Fugue sur le thème du carillon des heures de la Catheédral de Soissons;* Vierne, *Allegro vivace and Final from Symphony No. 1 in D, Op. 14.*

Opus 90
Wooddale Church
Eden Prairie, Minnesota

Festive Organ Music
Desiderius Klempay, organist
Privately produced, Compact Disc, 1993.
Charpentier, *Prelude to the Te Deum;*Pachelbel, *Canon in D Major;*Handel, *The Rejoicing; Sinfonia;* Stanley, *Trumpet Tune;* Bach, *Jesu, Joy of Man's Desiring; Air in G;* Holborne, *Trumpet Allemande;* Gabriel-Marie, *La Cinquataine;* Giordani, *Caro Mio Ben;* D. Johnson, *Processional in E-flat;* Widor, *Toccata from Symphony 5.*

BIBLIOGRAPHY

Published Sources

Angerstein, Daniel L. "Some Reflections on the Reform of the Organ Reform Movement." *The American Organist*, December 1991, 107.

Bethards, Jack M. "Breathing Longer Life into Pipe Organs." *The American Organist*, December 1984, 39.

_____."Expressiveness in Organ Building and Playing." *The American Organist*, May 1995, 30-32.

Byers, Thomas W. "Fundamentals of Organ Construction." *Organ Institute Quarterly*, Winter 1955, vol. 5, no. 1, 22-25.

Caddy, Roy S., and Howard F. Pollard. "An Objective Study of Organ Actions." *Organ Institute Quarterly*, Summer 1957, vol. 7, no. 2, 44-52.

Challis, John. "The Slider-and-Pallet Wind Chest." *Organ Institute Quarterly*, Summer 1953, vol. 3, no. 3, 5-8.

Concordia University Baccalaureate and Commencement Program Spring 1998. Concordia University, Austin, Texas. 9 May 1998, [12].

Dobson, Lynn A. "Organ Reform Reconsidered: Dobson Pipe Organ Builders at 20." *The American Organist*, December 1995, 64-66.

Donahue, Thomas. *The Modern Classical Organ: A Guide to its Physical and Musical Structure and Performance Implications.* Jefferson: McFarland and Company, Inc., 1991.

Ellis, Ronald F. "Some Thoughts on the Re-visioning of American Organbuilding." *The American Organist*, September 1991, 65.

Fox, David H. *Robert Hope-Jones.* Richmond: The Organ Historical Society, 1992.

Frost, Thomas P. "A Case for the Sliderchest." *Organ Institute Quarterly*, Spring 1953, vol. 3, no. 2, 17-20.

Goldschmidt, Erich. "Problems of Contemporary Organbuilding." *The Organ Institute Quarterly,* 1958, vol. 8, no. 1, 24-31.

Gress, E. Edgar. "What is Electromechanical Action?" *The American Organist,* January 1986, 86.

Hendrickson, Charles. "Cycles." *The American Organist*, December 1993, 57.

_____. "Wind for the Organ." *The American Organist*, October 1987, 28-29.

_____. "Wind Pressures." *The American Organist*, April 1992, 65.

Huestis, Herbert L. "Computer Assisted Design: Three Challenges for the Future." *The Diapason*, December 1989, 19-21.

Irwin, Stevens. *Dictionary of Pipe Organ Stops.* New York: G. Schirmer, Inc., 1962

Jamison, James Blain. *Organ Design and Appraisal.* New York: H. W. Gray, 1959.

Klotz, Hans. *The Organ Handbook: Structure, Design, Maintenance, History and Function of the Organ.* Translated by Gerhard Krapf. St. Louis: Concordia Publishing House, 1969.

Mercer, Derwent M. A. "Unsolved Problems in Acoustical Research on Organs." *Organ Institute Quarterly*, 1957, vol. 7, no. 3, 15-18.

McMahon, Greg. "The Tracker Movement and the Organist." *The American Organist*, March 1985, 48-49.

Monette, L. G. *The Art of Organ Voicing.* Kalamazoo: New Issues Press, 1992.

Ochse, Orpha. *The History of the Organ in the United States.* Bloomington: Indiana University Press, 1988.

Ogasapian, John K. *Church Organs: A Guide to Selection and Purchase.* The American Guild of Organist and The Organ Historical Society, 1990.

Pape, Uwe, comp. and ed. *The Tracker Organ Revival in America.* Berlin: U. Pape Verlag, 1978.

Peeter, Flor and Maarten A. Vente. *The Organ and Its Music in the Netherlands, 1500-1800.* Antwerp: Mercatorfonds, 1971.

Thistlethwaite, Nicholas and Geoffrey Webber, editors. *The Cambridge Companion to the Organ.* Cambridge: Cambridge University Press, 1998.

Tidwell, Burton K. "Scaling." *The American Organist*, December 1988, 38.

Turner, Thomas. "Pipelines." *The American Organist*, July 1986, 33.

Visser, Pieter A. "Acoustics." *The American Organist*, March 1988, 76-77.

_____. "Designing an Organ." *The American Organist*, August 1988, 42.

_____. "The Organ Case: Is it Really Important?" *The American Organist*, November 1989, 99-100.

_____. "Organ Planning for Architects." *The Diapason*, August 1985, 9.

_____. "The Organbuilder's Art." *The American Organist*, March 1983, 38-39.

_____. "Scaling? Voicing?" *The American Organist*, May 1984, 52-53.

_____. "Theology of Acoustics." *The American Organist*, June 1983, 37.

_____. "Understanding Organ Wind." *International Society of Organ Builders Yearbook*, 1991, 39-57.

Wagner, Gerhard D. "The Problem of Organ Wind from an Organist Viewpoint." *ISO Information.* Translated by Thomas Gieschen and Paul Bunjes, November 1989, 24-30.

Williams, Peter. *The European Organ, 1450-1850.* London: B. T. Batsford, 1966.

_____. *A New History of the Organ from the Greeks to the Present Day.* Bloomington: Indiana University Press, 1980.

_____, and Barbara Owen. *The Organ.* The New Grove Musical Instrument Series, edited by Stanley Sadie. New York: W. W. Norton and Company, 1988.

Wilson, Michael I. *Organ Cases of Western Europe.* Montclair, NJ: Abner Schram, 1979.

Unpublished Sources

Cook, James H. *Organ History: The Pipe Organ from its Origin through the Twentieth Century*, 1998. <http://www.panther.bsc.edu/~jhcook/OrgHis/history/hist033.htm>

PIPORG-L Archives. Visser, Pieter. "Chest Layout Information: Separating Fact from Fiction." May 1997, week 5, #61. <http://www.albany.edu/piporg-l/>

_____. Visser, Pieter. "The Long Promised Sermon." October 1998, week 3, #155. <http://www.albany.edu/piporg-l/>

_____. Visser, Pieter. "Phase lock." June 1997, week 4, #261.<http://www.albany.edu/piporg-l/>

_____. Visser, Pieter. "Understanding Organ Wind." May 1997, week 5, #61. <http://www.albany.edu/piporg-l/>

_____. "Understanding Organ Wind." June 1997, week 4, #261.

_____. "Understanding Organ Wind." September 1997, week 5, #1.

PIPORG-L Biographies. Pieter A. Visser. <http://www.albany.edu/piporg-l//piporg-l/bios/visser.p-bio>

Visser, Pieter A. "Re: Dissertation Questions." E-mail to Author. 23 September 2000.

_____. "Re: More Details." E-mail to Author. 8 November 2000.

_____. "Re: 20 Questions continued." E-mail to Author. 27 September 2000.

_____. Resume sent to Author. 21 July 1999.

Wechsler, Malcolm. "Re: thesis on Pieter Visser." E-mail to Author, 15 September 1999.

Interviews with the Author

Ballard, John. Conversation with Author, 4 June 1999. Austin, Texas.

Davis, Brian K. Telephone Conversation, 21 October 1999. Notes by Author.

Gerlach, Rob. Telephone Conversation, 29 September 1999. Notes by Author.

Kiehl, Vicky. Telephone Conversation, 25 October 1999. Notes by Author.

Morris, C. Richard. Telephone Conversation, 4 October 1999. Notes by Author.

Speller, Frank N. Conversations with Author, 1999-2001. Austin, Texas.

Visser, Pieter A. Interview with Author, 21 July 1999. Tomball, Texas. Tape recording.

_____. Telephone Conversation, 14 November 2000. Notes by Author.

_____. Telephone Conversation, 18 January 2001. Notes by Author.

Questionnaire Respondents

Davis, Brian K.

Dieck, Steven

Gerlach, Rob

Keiser, Marilyn

Kiehl, Vicky

Mander, John Pike

Mardirosian, Haig

Morris, C. Richard

Noack, Fritz

Papadakos, Dorothy J.

Spillman, Herndon

von Glatter-Götz, Caspar

VITA

Jon Allan Stuber, the son of Kenneth Louise Harper Stuber and John Worl Stuber, was born in South Bend, Indiana on July 28, 1960. In 1978, after obtaining his diploma from Longview High School, Longview, Texas, he entered Kilgore Junior College in Kilgore, Texas. During the fall of 1980, he transferred to Baylor University, Waco, Texas, and in 1983 completed the degree of Bachelor of Music with emphasis on Organ Performance.

In the fall of 1986, he began pursing his Master of Music degree at the University of Texas at Austin with emphasis on Organ Performance and Literature. The following year, he was a prizewinner in the William C. Hall Pipe Organ Competition in San Antonio, Texas. Upon completion of the Master of Music degree in 1990, he was appointed Organist/Choirmaster of St. Thomas More Catholic Church, Austin, Texas. While at this post, he began work on a Doctor of Musical Arts degree at the University of Texas at Austin. During the summers of 1990 and 1991, Stuber was employed as an apprentice with Visser-Rowland Pipe Organ Builders, Houston, Texas, and assisted with organ installations in Austin, Texas, Russellville, Arkansas, and Madison, Wisconsin. He continued to work for Visser-Rowland throughout the duration of his doctoral degree as the service representative for all of the pipe organs located on the University of Texas at Austin campus.

In the summer of 1997, Stuber accepted the position as Organist/Assistant Director of Music at St. Louis Catholic Church in Austin, Texas and served in this capacity until July 2000. In August of that same year, he was appointed

Organist/Choirmaster of St. Louis Catholic Church and continues in this role at the time of this composition.

Additionally, Stuber has performed with the Austin Lyric Opera, Austin Singers, Austin Symphony Orchestra, New Texas Festival, and was a recitalist in the Region VII Convention of the American Guild of Organists. In the summer of 1998, he toured Germany and Austria as accompanist of the Round Rock Community Chorus of Round Rock, Texas. In the summer of 2000, Stuber made his European organ debut at Truro Cathedral in Cornwall, England.

Address: 1703-A Ledgewood Drive, Austin, Texas 78757

This treatise was typed by the author.