THE DEVELOPMENT AND DESIGN OF THE 1924 KIMBALL ORGAN OF THE SAINT LOUIS SCOTTISH RITE CATHEDRAL

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The year 1924 marked the premiere of George Gershwin's "Rhapsody in Blue" at Carnegie Hall in New York City and "Happy Birthday To You" published by Claydon Sunny. It was a time when President Calvin Coolidge made the first presidential radio speech and later in the year declared the Statue of Liberty to be a national monument. It was a year when the 18th [Prohibition] Amendment was still in force, which made it illegal to manufacture, sell, transport, import, or export, beer, wine, whiskey, or other alcoholic beverages or liquors. With the breweries and wineries closed all through Prohibition [1920-1933], many otherwise honest and upstanding citizens were making homemade beer, wine, even corn liquor, themselves, albeit illegally. It was only 4 years after the 19th [Women's Suffrage] Amendment gave women the right to vote. It was when the 8th Olympic Games opened in Paris, France, where Johnny Weissmuller of later Tarzan film fame set the freestyle swimming record. That same year the Ford Motor Company manufactured its 10-millionth Model T automobile. On September 16th of that year Saint Louis Cardinals first baseman Jim Bottomley batted in 12 runs in one game, and second baseman Rogers Hornsby finished the year with a batting average of .424, a national league record for the 20th century. The Washington Senators baseball team won their first World Series by beating the New York Giants in 7 games. It was the heyday of silent motion pictures featuring such famous film stars of the era as Mary Pickford, Lillian Gish, Gloria Swanson, Vilma Banky, Janet Gaynor, Lon Chaney, Charlie Chaplin, Douglas Fairbanks, Harold Lloyd, and Buster Keaton. Hundreds upon hundreds of pipe organs were rolling out of factories into theatres, music halls, auditoriums, and churches, with the peak year of production being 1925 when a few more than 4,000 were built. The year 1924 also saw completion of one of the premier Masonic facilities in the world -- Scottish Rite Cathedral in Saint Louis, Missouri -- with its ambient auditorium 165 feet wide, 130 feet long, and 58 feet high permitting 3 mezzanine floors and a capacity to seat approximately

3,000 people, its 98-foot long stage (4 feet longer than the Hippodrome stage in New York City) upon which 480 uniformed men in military formation can be placed, its extraordinary collection of priceless hand-painted canvas scenery (164 changes) for ritual work, and - its crowning glory - a stupendous Kimball orchestral concert organ of 4 manuals, 52 ranks, 9 divisions, 144 stops, and 3,859 pipes. In its scheme, materials, and methods of construction, this organ represents a precious, historic landmark in the history of American pipe organ building that reflects the collaboration of many talents, being one of the finest of its kind ever produced.

To fully understand why the instrument was built the way it was it's necessary to understand some of the developments which led up to its creation. After 1890 some new and highly imitative, orchestral colors were developed by Anglo-American organ-builders, most notably the revolutionary builder and inventor Ernest M. Skinner in Boston, and the equally revolutionary builder, inventor, and eccentric genius Robert Hope-Jones in England. With Mr. Skinner, the Great division had become a source of foundation tone on top of which was to be gathered the rest of the instrument. This demoting of the Great as the division of primary importance was a concept of revolutionary proportions, but electric action freed him to redistribute the voices throughout the organ in a fresh way, and the ease of electric-action coupling made the distinction practically meaningless in the final result. In retrospect therefore, Mr. Skinner was the predominate force in American organ building from 1900-1930, but, at the time, the situation was hardly so clear. The equally revolutionary, ground-breaking novelties of Mr. Hope-Jones about how an organ should be built were absorbed with a mixture of wonder and horror. More likely the big name between 1900 and 1910 was John T. Austin, for the simple reason that Austin organs at the time were reliable and relatively uncomplicated, which was no small relief to the player. If something did go wrong, practically anyone could slip inside the Austin Universal Air Chest and fix it, a pleasant trip to the science museum compared to removing dozens of screws, sometimes by candlelight, to get at a problem in the early and unperfected Skinner wind chests. Both Mr. Hope-Jones and his close friend and collaborator Robert Pier Elliot had much to do with the early success of the Austin Company, but it was Mr. Skinner and Mr. Hope-Jones who had the most compelling vision of orchestral pipe voicing. This proliferation of orchestral voices from organ pipes along with the application of electricity to organ building and large-scale unification of pipe ranks in the late 19th century in Britain and America led to the emergence of 2 new types of organs for concert halls and theatres, and during the Roaring Twenties

there were not just 3 distinct types of pipe organs being manufactured any more. There were 5 different species: 1) church organs, 2) player organs for homes which ran automatically on a roll, like a player piano, 3) small one manual continuo organs employed in chamber ensembles and with small combinations of instruments, 4) theatre organs, sometimes called cinema organs, and 5) orchestral organs, sometimes called concert organs. During the 20th century ultimate size, tonal spread, and absolute power was reached in the last type of instrument despite the fact that monster pipe organs of incredible size and sophistication were also being built for churches and chapels.

The theatre, or cinema, organ was a parallel development to the production of silent motion pictures and the achievements of many persons besides Hope-Jones. It was the builder Frederick W. Smith, for example, another friend and collaborator of Mr. Hope-Jones, who in 1905 first conceived the idea of the "horseshoe console" having rows of engraved tongue-shaped stop tablets of various colors mounted on a curved bolster. But while history recognizes Mr. Hope-Jones as "the creator of the theatre organ," he simply set out like Mr. Skinner to develop organ pipes which would reproduce the sounds of actual orchestral instruments as closely as possible, and that is all. He thought of his orchestral organ in terms of unified ranks, not in terms of divisions – a machine geared for bringing out a single melody line as the foreground musical material. This was a revolutionary departure in thinking considering that the organ, for centuries, had been treated by composers as a polyphonic instrument in which all of the voices in a composition had equal ability to carry the foreground material. Builders constructed their instruments accordingly around this idea, with each keyboard controlling its own separate division of pipes to allow the organist to bring out all the beauty inherent in each moving line. But the innovator Hope-Jones grouped his pipe ranks into a number of separate chambers which he called "units," and he wired the keyboards to control a varied assortment of colors and pitches taken from ranks located in any of the various units. Using extensive unification and duplexing made possible by electricity, he spread his ranks and speaking stops over several keyboards and at different pitches to give the impression of large size and power. This is how the tonal forces of every theatre organ were made available. A theatre organ therefore, by definition, has no divisions. Its keyboards control "virtual divisions" formed by grouping colors and pitches taken from anywhere in the instrument. Mr. Hope-Jones also created keyboards with Second Touch (a second set of electrical contacts in the keyboard situated below the first set) which permitted the left hand to play one group of ranks with 4

ounces of key pressure (First Touch) at the same time that the right hand played a solo on additional ranks with 7 ounces of key pressure (Second Touch), all from the same keyboard. This feature also permitted a brass accent, percussion sound, or additional flute or string rank to enter without having to lift the hands from the keys. Every theatre organ is usually supplied with at least 2 Second Touch keyboards and a Second Touch pedalboard which control a few Second Touch stops. Mr. Hope-Jones referred to his orchestral organ as a "Unit Orchestra" because it was built upon his unit concept and it was a one-man surrogate for an orchestra. After 1910, when the Rudolph Wurlitzer Company acquired the Hope-Jones firm and its machinery, tools, fixtures, furniture, and patents, the product was officially known as the "Wurlitzer Hope-Jones Unit Orchestra," but in the eye of the public it quickly became "the Mighty Wurlitzer."

This organ however, like all orchestral concert organs, has its tonal forces grouped into separate divisions each of which, save for the floating Echo, is assigned to play on its own keyboard. While it was originally provided with certain amenities which assisted in the rendition of orchestral scores and transcriptions (such as sliders to assign divisional expression to any shoe, a pedal separation tablet permitting different sounds to be played by each foot in different regions of the pedalboard at the same time, even crescendo separation tablets by tone color, features typically not found on theatre organs) it was NOT provided with Second Touch stops, though it could have been, and this feature was not deemed important for this organ. By virtue of these characteristics this organ sits apart from and is a different animal altogether than a theatre organ. While it happens to be supplied with many voices developed, improved, or employed by Hope-Jones (e.g., Horn Diapason, Diapason Phonon, Diapason Stentor, Tibia Clausa, Tibia Minor, Viole D'Orchestre, Vox Humanas, Kinura, Tuba Horn, Oboe Horn, Tuba Mirabilis, etc.) along with separate tremulants and all the couplers, tuned percussions, and traps typically found in theatre organs, it was chiefly designed to accompany the Valley's choir and to excel in performing choral anthems and songs, hymn arrangements, and to blend with an orchestra without robbing it of predominance in the performance of the organ parts of orchestral works and solo transcriptions and arrangements of music not originally written for the organ. It was calculated by its tonal consultant, Belgian organ virtuoso Charles M. Courboin, to not only blend with any orchestra which occupied either the original orchestra pit on the floor of the auditorium (now closed with a floor and carpeting) or the great stage behind it but to be fully capable, when necessary, of dialoguing with that orchestra and, when needed, even to taking

the entire symphonic score upon its shoulders. True to this office, this organ was supplied with no independent upperwork, only 3 off-unison mutation stops (all of refined flute tone), and only one mixture stop composed of 3-ranks of soft Dulce pipes. No principal chorus with mixture was ever schemed for this organ, as its use would tend to swamp the other orchestral instrumentalists under the command of the conductor. Wind pressures, as expected, are high for the production of a greater number of harmonic upper partial tones in its individual stops. The entire organ is on 10 inches save for the Great Harmonic Trumpet on 15 inches, both Solo Tubas on 20 inches, the Pedal Bombarde on 25 inches, and the Echo stops and Swell Vox Humana on 7-1/2 inches. At the same time this organ had to be schemed for the performing of everything in the standard organ repertoire in an acceptable, if not stylistic, way. And while it has been successfully used to accompany silent motion picture films shown in the auditorium right up through and including the present day, this is not, and never has been, its primary office. Which is why, even though an organist is able to draw tremmed combinations and play it in "theatre mode," it would be a rather serious error to look upon this machine as a "theatre organ with drawknobs," which it is not.

A variety of tremolos with differing depths and speeds were provided for all the larger theatre organs – generally lighter for strings, a little heavier for diapasons, and much heavier for tibias. The Hope-Jones Tibia Clausa was voiced to give a nearly pure fundamental, to be used as a supplement to rather than a replacement for the Horn Diapason or Open Diapason in the scheme. In a theatre organ the Hope-Jones Diaphone (often labeled Diaphonic Diapason) was typically substituted for the Pedal Open Wood and metal Sub-Principals so often found in church organs. The "heart and soul" (if we prefer to call it that) of the larger orchestral concert organs like this one is a separate chorus of string-toned stops preponderantly at 8-foot (8′) pitch. This string chorus may have its forces grouped as a separate enclosed division, occasionally with its own keyboard, and its multiple string-toned stops may play either singly or in pairs. In the case of Skinner organs, the string chorus sometimes consisted of 3 pair of string-toned stops which played at the same time and were controlled by a single drawknob on the console. If space for the pipe work is restricted, as it often is, the string chorus also could be sized down and incorporated into an existing enclosed division, usually the Swell or Solo, and this is the arrangement with this organ; the largest division in the instrument is the Swell which is supplied with an 8-rank string chorus with 6 more ranks of string tone peppered throughout the rest of the instrument. These 14 string-toned ranks in this 52-rank organ

account for quite a large percentage (about 27 per cent) of the total pipework. Here the Swell string chorus is supplied with its own tremulant set to beat at different depths and speeds. Also, in many concert organs, one or more Vox Humana stops with their own separate tremolos are usually supplied for use in combination with the string chorus for the production of full string orchestra effects. The remainder of the instrument typically contained an abundance of 8′ stops at orchestral pitch, including many reeds and percussions and very often a Pedal Divide (Pedal Separation). As mentioned, this feature allowed one group of stops to be playable by the right foot on the top half of the pedalboard while the left foot was occupied playing another group of stops on the bottom half, all at the same time. Up until 1927 many Kimball organs were wired so much like a theatre organ that they were essentially "8-foot organs," meaning that all stops of 4′ pitch and higher (save for the occasional inclusion of a soft mixture) were unified, i.e., derived by extensions of 8′ ranks. This was and still is a common trade method employed in situations where cost and space both must be saved.

NOTE: In this organ the only independent Pedal rank of complete compass is the Bombarde. Every other Pedal stop, save for 12 pipes of the Contra Bourdon, is borrowed from manual divisions. The Swell Tibia Clausa rank is extended downward by 17 pipes to 32′ G, and this extension is not counted as a separate rank. The Pedal Contra Bourdon is an incomplete rank formed of 12 pipes in its bottom octave only; its remaining 20 Pedal notes are wired at tenor C to play the Swell Tibia Clausa. The Pedal Gravissima is resultant throughout. Its bottom octave is formed by wiring the bottom 5 pipes (GGG to BBB) of the Swell Tibia Clausa extension to the 12 pipes (CCC to BBB) of the Contra Bourdon, each Pedal key sounding 2 pipes standing a perfect 5^{th} apart to generate the differential 64′ tone; the remaining 20 Pedal notes of the Gravissima are formed of the Swell Tibia Clausa wired at 16′ and 10-2/3′ pitch, each key sounding 2 pipes standing a perfect 5^{th} apart to generate the differential 32′ tone.

Typically, in this type of instrument, every division including the Pedal was placed under full or partial expression which, since it needed to be cost effective as well, often necessitated an almost wholly borrowed Pedal division. The Great and Choir divisions were often enclosed together and shared some duplexed stops. These consoles were provided with multiple expression shoes, and Kimball even provided a slider panel built into the coupler rail above the highest manual to permit the expression of any division to be assigned to any shoe.

This organ was supplied with electro-pneumatic action and many couplers including a Master Swell Coupler, an invention of Hope-Jones, which made it possible using electricity for the expressive dynamics of all divisions to be controlled from just one shoe, simultaneously. An electrically-operated moving combination action also permitted large clumps of stops to be added or retired in a split second. These features provided the symphonic orchestral organ with a massive tonal palette for the blending of tone colors and a massive dynamic palette with virtually unlimited shadings to nuance the music. Between 1915 and 1930 American organ-building factories designed, built, and installed over 7,000 Theatre organs for movie palaces, music halls, and auditorium venues. Every big movie palace had one. Sadly, fewer than 600 of these wonderful instruments remain today, but very few orchestral concert organs like this one were ever built at all. This organ is quite possibly the largest fully playable organ of its kind still in existence in its original location.

Mr. Hope-Jones and Mr. Skinner moved and worked in the climate of the Anglo-American style of organ building around 1900. The aural interest in this style, with its little or no harmonic development in the chorus, is not provided by the organ tone itself, which is terribly lacking in harmonic content, but in rapid changes of registration. It did not matter what the other colors were - they just had to be different from each other. The prevalent thinking in America at the time was, in scheming a new organ, to dispense with the inclusion of independent upperwork, off-unison mutation stops, and mixture stops. The feeling was that no injury to the instrument's tonal structure would result, provided that a generous supply of heavily-blown color stops, being naturally rich in harmonic upper partial tones, were introduced. It was also presumed that organists and conductors have ears which can always discern the fundamental orchestral pitch no matter what stops are playing on the organ, but that multiple mutation stops and strong mixture work can confuse the ears of orchestral players to where discerning the fundamental pitch of the orchestra can be difficult for them. Therefore symphonic orchestral (concert) organs were generally provided with very few off-unison mutation stops; those that were provided were often of soft flute tone derived from 8-foot extensions. In this species of organ one might find no principal chorus anywhere in the instrument. The by-product of this method of building was an organ having striking individual effects and a dark-sounding ensemble. To make up for the scarcity of upperwork these instruments generally employed much higher wind pressures than one might find elsewhere. When entire organs were speaking on wind

pressures of 5 inches or less, Hope-Jones was employing wind pressures as high as 50 inches for his biggest Diaphone and brass reed ranks, 29 inches for his Solo String ranks, 25 inches for his biggest Violone and Tibia ranks, and 15 inches for his Solo Vox Humanas.

As the turn of the 20th century approached, and continuing for about 3 decades afterwards, American organ building experienced a phase in which imitation of the orchestra was thought to be progress. This style of building solidified around 1920 as organists were more and more occupied with performing transcriptions of orchestral works and arrangements of music not originally written for the organ. This style seemed to be clinched by the popularity back then of a sort of dark "cast-iron" reed tone made famous by Willis organs in Britain and Skinner organs in America. But not everyone was swept away with the orchestral concert organ, and some ears were even dismayed at how dark and chocolatey their full ensembles had become. Elsewhere in the world orchestral influences in organ-building came to be viewed as having robbed the organ of its former glory and integrity and made these new instruments less effective as a medium for stylistic presentations of early (pre-1800) music, and Bach in particular. This type of instrument proved itself, over time, as an extreme capable of violent revolt, as would be seen in the organ reform movement of the late 1920's and early 1930's best exemplified in the instruments built by Walter Holtkamp and those built under the supervision of G. Donald Harrison by the Aeolian-Skinner Company. In time Mr. Harrison's reform was smoother, perhaps more palatable, and more carefully orchestrated than Mr. Holtkamp's, and the appeal of his concept of reform ultimately became more widespread.

Robert Pier Elliot (1871-1941), the close friend of Mr. Hope-Jones, is a little known figure today, but he was a nearly ubiquitous force in early 20th century American organ building. Of the many threads that weave together into that tapestry, Mr. Pier Elliot's was one of the strongest and most colorful. When we think of that era, the legacy left by Skinner tends to overshadow the work of other builders, but there was tremendous activity, some of considerable excellence, and at one time or another Mr. Pier Elliot had a hand in much of it. It is with Kimball that most people often associate Mr. Pier Elliot's work because he helped to revolutionize their mechanical methods into one of the most refined examples of pitman-chest electro-pneumatic organ building. As a younger man he apprenticed with the Farrand & Votey Company of Detroit through the mid-1890's, during which time Farrand and Votey acquired the Roosevelt patents and pipe scales.

While there he got to know John T. Austin. A few years later he went with Austin and helped to organize the Austin Organ Company, first in Boston and then in Hartford. There he worked to get Mr. Hope-Jones over from England, going so far as to relinquish his post as company secretary in order to allow Hope-Jones to be vice-president. A year later, in 1904, Mr. Pier Elliot traveled to England and obtained the American rights to build Kinetic organ blowers. He left the Austin firm in 1905 to set up the Kinetic Engineering Company of America, of which he was president. In 1905 Mr. Hope-Jones also left Austin to work for about a year with Ernest M. Skinner in Boston. In 1906 he left the Skinner firm with about 15 chest builders and started the Hope-Jones Electric Organ Company in Elmira, New York. After a couple of years Mr. Pier Elliot began working in the mining and smelting business in Latin America. Mr. Hope-Jones, like any number of 20th century organ builders, living and dead, valued artistic statement more than financial solvency. When Mr. Pier Elliot received word in 1909 that the Hope-Jones firm was in serious financial trouble he returned to serve as the company's president. The following year, in 1910, the Hope-Jones firm was absorbed by the Rudolph Wurlitzer Manufacturing Company of North Tonawanda, New York. Mr. Pier Elliot then went to Los Angeles and the California Organ Company, a firm that turned out to be a lettuce leaf in the sandwich of fame. In 1914, that tragic year that witnessed both the suicide of his close friend and colleague Mr. Hope-Jones and the breakout of the Great War, Mr. Pier Elliot accepted a position as eastern manager of the W.W. Kimball Company, transferring to the factory in 1918 as manager of the Organ Department. Some of the talented Hope-Jones pipe-makers with whom he was already acquainted, notably Joseph J. Carruthers, also were employed in the Kimball factory around this same time. Mr. Carruthers undoubtedly had much to do with the fabrication of the pipe-work, especially those ranks which Mr. Hope-Jones himself invented, for the Saint Louis Scottish Rite Kimball.

The Kimball executives knew exactly what they were doing in hiring Mr. Pier Elliot. It was as if they were hiring Mr. Hope-Jones, himself. They were purchasing not only experience but sophistication and perhaps the one person who best had his finger on the pulse of American organ building. Mr. Pier Elliot's correspondence during the 1920's reveals a rich string of insight, wisdom, sensibility, scandal, intrigue, and first rate gossip. He was just the sort of person who could skim the cream of American talent into a fresh group and then work to create a polished impression and generate initial key sales. He in a very real sense created the mechanical and aesthetic foundation with Kimball upon which this organ rests. It is little wonder, then, why most

organists today seem to be willing to kill, literally, for the chance to play regularly on an electro-pneumatic action Kimball organ like this one, a rare and unique specimen of Mr. Pier Elliot's management, Mr. Carruther's voicing, the influence of Mr. Charles M. Courboin as tonal consultant, and the remarkable quality and craftsmanship for which this company was known. It's an interesting fact that Kimball was the most expensive builder (cost per rank) of any builder during that era. This meant that this company was not only capable of attracting some of the finest technicians and pipe voicers in the world but that the only limitation on the design of this instrument seems to have been the size of the chambers.

Tonally, Kimball organs had always placed special emphasis on individual effects, with particular excellence in orchestral strings and reeds. Up until 1927 all Kimball organs were developed, tonally and mechanically, very much like theatre organs, with Mr. Pier Elliot making use of many design elements he had learned during his association with Mr. Hope-Jones, of whom he thought a very great deal. Both Vox Humanas in this organ, for example, were mounted in a box to muffle the sound ("Vox-in-a-box") and were supplied with their own separate tremulants. Some of the other reed ranks in this organ, such as the Solo Kinura and Tuba Sonora, and the Swell Oboe Horn, were invented by Mr. Hope-Jones, who also spent much time developing the Diapason Phonon, Horn Diapason, Viole d'Orchestre, Tibia Clausa, and Tibia Minor ranks which also were included in the scheme. Of all the major American builders of theatre organs -- names which included Wurlitzer, Kimball, Robert Morton, Barton, Page, Marr & Colton, Moller, and Kilgen -- Kimball produced more theatre organs, next to Wurlitzer, than any other company.

Kimball continued to produce pipe organs until mid-1942, hoping to resume organ production after the War. As a large piano company it had never really depended upon organ sales for its profits, and many have suggested that Kimball management looked upon organs merely as large promotional tools for piano sales. After the War the company decided to branch out into other avenues and sold its stock of wood pipes and organ metal to Aeolian-Skinner. But with their superb electro-pneumatic action and refined pitman chest construction, their outstanding solo flute voicing, colorful stopped-flutes, and excellent tibias, color reeds, brass reeds, and other high pressure stops, string stops so enriched with harmonic upper partial tones that hey almost sound like a reed (the Solo Cello, Cello Celeste, and Swell Viole D'Orchestre in this organ are examples), enclosure of all departments as a standard, and 32' Pedal stops in the best earth-

moving tradition, Kimball organs can stand proud to this very day against any other builder's work.

NOTE: Stop lists for this instrument over the years have been submitted to various databases which, unfortunately, include errors notably in the number of ranks and pipes possibly due to being assembled verbatim from console drawknob labels. Drawknobs like these are sometimes manufactured and installed in the stop jambs at the factory according to the original plan on paper but before final configuring during construction or installation. One way to detect this is by pulling out a drawknob for a certain Pedal stop marked borrowed from a manual division and checking that pipe's volume and tone quality while holding down a pedal key, then checking it against the same pipe in the equivalent octave of the manual division and listening to whether it's the same pipe or a different pipe. The biggest reed, for example, in the Pedal is the Bombarde which has been made playable as a chorus of 4 stops all of the same quality and strength of tone which are managed and controlled by 4 separate drawknobs (Contra Bombarde, Bombarde, Tromba, Clarion) marked borrowed from the Great (Harmonic Trumpet). These 4 Pedal stops are not borrowed as indicated on the drawknobs but are all derived from one rank strictly belonging to the Pedal. This discrepancy with the labeling evidently was never addressed by the Kimball factory and has gone mostly unnoticed not only by the vast majority of guest organists but also by some of the Scottish Rite organists as well. Thus the full truth about how a pipe organ works cannot always be learned from a stop list on file with a database somewhere, but instead by spending time with the instrument, crawling within it or talking with a reliable source who has, by working its console controls and using our ear to lead us, and not always by what we're reading on the instrument's drawknobs – not 100 per cent of the time. The stop list and specifications for this instrument posted on this author's web site, while it disagrees slightly with those submitted by others to the Saint Louis Pipe Organ Database and OHS Database, happens to be the correct one and is free of errors.

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A narrative has been passed down through the Valley's organist staff from the very beginning that the George Kilgen & Son firm in Saint Louis was originally approached for the building of the organ in the auditorium, but it isn't clear whether any definite agreement with this firm was ever arrived at and signed, as no copy of a contract has survived. We also do not know whether it was the building planners who had a change of mind

about the project or whether the Kilgen firm decided not to proceed. Kilgen was not only a premiere builder back in the day but also, having its factory in north Saint Louis County, was locally available for routine care and maintenance. As the story goes, back in 1923 as the building was being planned and construction was beginning, Mr. Charles Kilgen was in charge of the Kilgen firm at the time, and he and his family happened to be staunchly Roman Catholic by faith. The organ maintenance and contract work provided to him through his association with the archdiocese of Saint Louis represented a very substantial part of his business, and, at the time, he had something close to a monopoly on maintenance and building contracts for Catholic parishes in the Midwest area. It's possible that Mr. Kilgen had in mind for the auditorium an instrument at his factory already partially built, and that perhaps he may have been asking more for its completion than the Scottish Rite planners had in mind, although this is sheer speculation. Masonic membership was high during the Roaring Twenties – high enough at any rate to where the necessary funds for a quality instrument could have been raised relatively easily, so it seems unlikely that financial concerns would have had foremost influence with any of the Scottish Rite planners. Mr. Kilgen however was inclined to place supreme value upon his remaining in good standing with the archdiocese of Saint Louis -- not only for the sake of his business but as a matter of his faith. It seems more likely that, rather than debate his Church's position toward the Masons knowing that he would lose the argument and risk the ire of the priesthood over it, that he himself made the executive decision to back away from the project. Whatever the cause of the breakdown in negotiations, it was at this point that the W.W. Kimball Co. of Chicago was approached. The result was this organ, one of the largest, most beautiful, and most complete-for-its-size specimens of its genre ever to be built. And thus ends the narrative, such as we have it.

NOTE: The original signed contract with Kimball along with 6 appendant pages of specifics concerning its stop list have been preserved. This is an incredibly rare series of valuable and important documents to have, and it is a testament both to the meticulous record keeping of the Saint Louis Valley as well as the careful stewardship shown to this great musical treasure of which this institution can be justifiably proud. The contract bears the date of December 28, 1923. It originally specified a purchase price of $50K, but the actual cost came in under that amount. Construction of the organ began at the Kimball factory in Chicago in February, 1924 and was completed in 8 months. The organ was delivered in pieces, reassembled on site, connected, voiced, tuned, regulated, and tested during a 10-day period in early

October, 1924. An initial good-faith payment of $5K had been made to the Kimball Company on June 30, 1924. The bulk of the payment was made on December 20, 1924, fully 2 months after its installation and dedication, in the amount of $41,700. A final payment was made on February 11, 1925 in the amount of $1,105.34, bringing the total cost of the organ to $47,805.34. It was constructed of the finest materials of its day and reflected the finest craftsmanship and technology of the time. To replace this instrument with an exact replica made of the same materials and constructed with equivalent craftsmanship at today's costs has been estimated to require something in excess of $4.5M.

Kimball's tonal consultant for this organ, Mr. Courboin, enjoyed much popularity in America during the 1920's and, among other things, had been engaged by department store magnate Rodman Wanamaker to oversee the second enlargement of the monumental pipe organ in the Wanamaker Department Store (now Macy's) in Philadelphia. It was he who was primarily responsible for adding its huge string and orchestral sections, all built of Kimball pipework. At the time he also served as tonal consultant for several other prominent American organ building firms for whom he helped to guide the building of several other notable instruments. As an organist he thought orchestrally, and his influence is clearly felt in this organ's tonal scheme and pipe placement. For example, there was no amplified sound during the Roaring Twenties, thus the way – the only way -- to provide a "surround-sound experience" back in the day was to place pipes on both ends of the auditorium and up in the ceiling midway – thus the Echo and 3 Antiphonal divisions which augment the other 5 divisions housed in the main chamber. Mr. Courboin was a big advocate of this type of placement for larger spaces.

A crawl through this organ shows, particularly in the perimeter of the Swell and Solo divisions, that some of its pipes are mitered (how organ builders refer to their pipes when their length exceeds the height of the room they are in). This can be clearly seen in the 16′ octaves of the Swell Horn Diapason and Viole, the longest pipes of which are mitered at their tops. The bottom 4 pipes of the 32′ Bombarde are also mitered at their feet, since their resonators are all of full length and the main chamber in which they are positioned is only 28 feet high. Some of the pipes (viz., the 16′ octave of the Solo Cello and the 12 pipes of the 32′ Contra Bourdon positioned among the pipes of the Swell Tibia Clausa), were mounted horizontally along a back wall. Here the Swell Tibia Clausa is extended downward by 17 pipes to 32′ G for use with the Contra Bourdon in generating a resultant 64′ pitch. These 2 ranks were positioned closely together spatially

in the Swell in order to best generate the differential tone by wiring their lowest notes to sound a perfect 5th apart. Mr. Courboin evidently felt that having the means to generate a 64′ pitch was important enough to figure in this organ's tonal scheme.

NOTE: Realistically, there is no musical need in an organ to have any stop lower in pitch than 32′. When the downward limit of determinate musical pitch for human hearing has been determined through scientific study to be around 40Hz (which corresponds to the low E of the 16′ octave), the 4 remaining notes of the 16′ octave down to low C are thus below the lower limit of the human ear to discern musical tone. The 32′ octave vibrating at frequencies of 16-32Hz down to low C is over an octave below that lower limit, and these sounds, in their bottom octave, are felt more than heard. The chief benefit of drawing a 32′ stop is in its production of harmonic upper partial tones which tend to reinforce the harmonics of all the other stops of higher pitch sounding with it. It also supplies additional gravity helpful in supporting any massive combinations above it. The musical benefit to be derived from stops pitched yet another octave below that, which wander in the sound tombs of the 64′ octave, is therefore less than minimal. Such grave voices generate tones at frequencies of 8-16Hz, which means that low C sounds at only 8Hz. Between the highest and lowest note in its bottom octave a difference of only 8Hz over a distance of 12 notes would be measurable. The frequencies thus produced from note to note from 32′ low C down to 64′ low C are very nearly identical and resemble more the rattling of a Venetian blind than a musical tone; while these notes may succeed in shaking the listener bodily, they fail to impress the musical senses.

Many of the metal pipes in this organ are formed either fully or partially of "spotted metal," so named because the spots on the metal are the visible alloy of lead and tin, with the tin being the bright white color amidst the lead islands. Different percentages of alloy produce different visual effects. Spotted metal for instruments at this time is somewhat unusual, and the introduction of this material at Kimball is possibly tied to Mr. Courboin, as he was the consultant for the instrument. Also, because the space of well over one million cubic feet had to be filled with sound and the instrument is relatively deficient in upperwork in order to blend better with an orchestra, he specified 5 big reeds in the scheme (Great Tromba and Harmonic Trumpet, both Solo Tubas, and Pedal Bombarde) whose tone involved the generation of a large number of harmonic upper partial tones. A large array of octave manual couplers operable on 8′ ranks and a 3-rank Mixture in the Swell composed of soft Dulce pipes were also

supplied. In the Great the Concert Flute was extended upward to form 2 stops at 2-2/3′ and 2′ pitch; in the Swell the Gedeckt was extended upward to form 3 stops at 2-2/3′, 2′, and 1-3/5′ pitch; in the Antiphonal Swell the Flute there was also made available at 2′ pitch; aside from octave couplers, these 6 stops of refined flute tone along with the Swell Dulce Mixture represent all there is of upperwork; there is thus no principal chorus, as such, in the entire instrument. This tends to make the fuller ensembles less effective in performing stylistic renditions of contrapuntal and other early (pre-1800) organ music, particularly that of J.S. Bach. It seems curious therefore that Mr. Courboin opened both of his dedication recitals with a major Bach work, but it's important to remember that his recitals were designed to demonstrate the instrument's versatility with a wide variety of repertoire, and he undoubtedly wanted to show right off the bat that this organ was capable of performing Bach's works, the kernel of all organ music, in an acceptable manner. To do this, he would have drawn what upperwork there was, including the Swell Mixture, along with a liberal use of octave coupling, leaving out any strongly imitative ranks with poor blending qualities, any loud thick-sounding diapasons, or the biggest reeds, in order to arrive as closely as possible to the kind of plenum sound that Bach knew. He evidently strongly believed that period music, and Bach in particular, does not always have to be performed on period instruments in order to communicate a language of warmth and meaning to an audience. Judging by the success that both of his dedication recitals enjoyed, he was not mistaken. This same idea in fact inspired this author in 2015-2018 to compose 5 new major collections of mostly contrapuntal music for this organ. There are 32 individual scores in these collections, 19 of which are stand-alone fugues or fugues paired with a prelude of some sort, all of which are written in triple or quadruple counterpoint. These compositions have been preserved electronically as PDF files and mp3 sample audio files and are available via the links found at www.OrganBench.com (this author's web site). Mr. Courboin's dedication recitals also demonstrated that the instrument excels at color effects and the rendition of orchestral transcriptions, arrangements of music not originally written for organ, and certain Romantic and Modern repertoire.

When this organ was being built a few changes were introduced at the factory which deviated from Mr. Courboin's tonal conception as outlined in the pages appended to the contract. The contract called for the Solo Tuba Sonora to be unified and wired to play in the Pedal at 16′-8′-4′ pitches, all of the same quality and strength of tone, to serve there as the Pedal's chorus reed battery; the independent Bombarde rank supplied to the Pedal was

to be made available there at 32′ pitch only, without unification; the Tibia Clausa rank in the Swell was also to be wired to play at 16′ pitch there. When the design was actually carried into execution the Tuba Sonora was wired to play in the Pedal only at 16′ pitch, and the Bombarde rank was extended to play at 32′-16′-8′-4′ pitches, all of the same quality and strength of tone; the Swell Tibia Clausa also was not wired to play at 16′ pitch there; in its place a 16′ Open [Horn] Diapason and 16′ Viole were substituted, both of which, in the bottom octaves of their pipes, were provided with mitered tops to fit into the available space.

These changes, which increased the total pipe count, added to the cost of the instrument, both in material and labor, and required additional space along the back wall of the main chamber for the placement of the additional chests and pipes of the Bombarde. The exact reasons for introducing them are not clear, but it may have to do with creating the biggest and most powerful sound possible, which was certainly the result. To more closely approach Mr. Courboin's original tonal conception for the full organ, we would therefore leave out the 3 Pedal Bombarde stops at 16′-8′-4′ and the Swell 16′ Open [Horn] Diapason and 16′ Viole. This still leaves those same 5 big, high pressure reeds previously mentioned in the organ, any one of which, when drawn in combination, tends to swamp everything else by its sheer volume and assertive tone. These 5 ranks are lions – voices of very limited use for the regular work and ceremonies save for blasting the audience attendees out of their seats. Having them in the tonal scheme taking up space in the main chamber when other more generally useful independent ranks of smaller, less expensive pipes might have been included, evidently had to do with the fact that the tone of these reeds is very rich in harmonic upper partial tones which, according to the thinking of the time, was supposed to offset the instrument's lack of independent upperwork. When they're all drawn together in the full organ however, the flood gates are opened, and the storm of tone which results is so overwhelmingly loud and unpleasant that what reaches the ear of the listener is something akin to World War III. By leaving these 5 ranks out of the fullest combinations and making judicious use of the instrument's many octave couplers, capping the resulting ensemble with the Swell Dulce Mixture, one is still left with a very powerful full organ with acceptable balance, a sound which more than fills every corner of the auditorium, and then some.

According to the 3-day printed programs of opening exercises and dedication of this organ in 1924, Mr. Courboin performed the first of 2 dedication recitals in the auditorium for members of the Scottish Rite and their families on Wednesday

evening, October 29. The following evening, on Thursday, October 30, he performed a second, but different, dedication recital for an audience of Master Masons and their families. The final program on Friday, October 31 was for the general public and did not involve Mr. Courboin. It consisted of a cantata for male voices, a violin solo, a baritone solo, a tenor solo, and string quartet, all separated by various speakers and framed by an organ prelude and postlude performed by Brother O. Wade Fallert, the Primus Organist and Musical Director for the Saint Louis Valley.

As for Mr. Kilgen, he contracted in January of 1925 with the Saint Louis Jesuits for the building of a new organ for the Saint Francois Xavier College Church at the corner of Grand Avenue and Lindell Blvd., right across the street from the Scottish Rite Cathedral. Some have speculated that the core of this instrument was the same one he was originally planning for the Saint Louis Scottish Rite auditorium, although definitive proof of this is lacking. Around this same time he also built and installed another large organ in 1926 for the Scottish Rite Cathedral in Omaha, Nebraska, which betrays his willingness to engage in business with the fraternity outside his home State. Whether or not this Oklahoma building project ever came to the attention of the archdiocese of Saint Louis is not known, but it seems doubtful. The moral of this story seems to be that what seems at first to be a calamity may turn out to be harmless in the end, if not a blessing in disguise.

It's also of interest that this brand new Kilgen organ at St. Frances Xavier Jesuit College Church, one of the greatest and mightiest instruments in the Midwest at the time, was the same instrument upon which the famous French organist/composer Louis Vierne gave a recital on April 3, 1927 when he was traveling through Missouri on his American tour. The Jesuits at that time, with the financial backing of the Saint Louis archdiocese, were evidently willing to embrace the magnificence of music which could take place there. Msr. Vierne gave his enthusiastic approval to this organ, and a historic photo of Vierne seated at this console was taken at the time (see subpage photo, Vierne in St. Louis). During the 1920's, 1930's and early 1940's this instrument also received international praise for the beauty of its voicing. It served as a prototype for the larger Kilgen organ built later for Saint Patrick's Cathedral in New York City (it was this organ in fact which sold Saint Patrick's on Kilgen). For all its glory however, problems arose for this organ over the ensuing decades. Like all pipe organs, it needed to be maintained. By 1947, after some 20 years without any maintenance whatsoever, it was needing more costly, extensive repairs which the Jesuits said they could

not afford. Not surprisingly, the efforts which were made at the time to recruit an organist under these conditions failed. From then until the late 1980's the instrument continued to deteriorate and was never properly maintained or refurbished. For reasons unknown, it was neglected until it became completely unplayable and was removed from the gallery and sanctuary finally in the early 1990's when the building itself underwent a much needed and very expensive renovation. There was insufficient interest and financial support at the time to fund the needed repairs or to install even a very modest new organ as a replacement. Instead of removing the precious Kilgen and placing it in storage until the necessary funds for its rebuilding could be raised, it was as if Oliver Cromwell were in charge … sadly, in what amounted to a crime against music, it was dismantled (some of the pipework had gone mysteriously missing and was never recovered -- no one seems to be quite sure where those pipe ranks ended up), what remaining pipework could be saved and used is believed to have been rescued and delivered to another Roman Catholic Church in Indiana, and the rest of this treasure of an organ, console and all, was put in a dumpster. The magnificent Kilgen organ that once graced this edifice with the wonderful gift of music is now only a distant whisper of a memory. All that remains today is the grillwork of what was once a very substantial and impressive Kilgen. Sadly, there are many stories like this from the pipe organ world, and it's nothing short of revolting to recount them.

Great and mighty pipe organs like this one were thrown away in other cities, too, simply for lack of maintenance, and it's just staggering to contemplate these losses to the musical world. When any fund raising program is set up to help maintain, tune, and repair these precious pipe organs, those who donate to the cause aren't doing it for that space exclusively; it's much more broad than that. They're investing in great organ music which spans hundreds of years, music which will be heard by countless numbers of people, indefinitely into the future.

Annual religious holidays and days of devotion can be a reminder of the old adage about whether a place of worship first needs a good pipe organ in order to make sense of hiring a good organist, or must first find a good organist who's willing to work toward a good organ -- for who knows how long. If the powers that be either don't want or can't make up their minds about either one, then it's no longer a question of which should come first, the chicken or the egg, the good organ or the good organist: that same farm will never have a chicken coup worthy of itself if the members of the institution cannot make their voice heard about whether unaccompanied Gregorian chant or organ hymn leading and

organ accompanied choral anthems in the worship service should be supreme. Fortunately, in some few parishes there still remains a vibrant and growing musical life in the liturgy, some of which still employs the richness and beauty of Gregorian chant. These parishes are tremendously enriched by the organ-based music making that takes place there. But for many parishes, the point about the chicken and the egg becomes moot when the only appetite on the farm seems to be for beef, i.e., something other than a good organ.

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Since its creation this instrument has experienced a number of triumphs and as well as numerous indignities. During the 1960's and 1970's its maintenance was contracted to a builder who made many strange alterations. For unknown reasons he removed almost all of the original Kimball tremulants and replaced them with another inferior type of unit, made changes to wind regulators affecting the wind supply for the organ, and removed the original combination action from the console which had become unreliable, wrapped it in newspaper, and put it under the seating. During the 1980's a different technician, well experienced and responsible, was hired to refurbish the organ as best as possible with the available funds. He was confronted with a bigger challenge than before and is to be credited with helping to keep this organ at least partially playable through some difficult years. He gave the workers at the Saint Louis Valley plans for the original style Kimball tremulant boxes, and they built new ones. Unfortunately they made them out of the wrong type of wood and only one of those remained functional prior to the 2011-2014 renovation work. He also installed a new Peterson combination action which used battery power for its memory, but unfortunately the organ was so seldom used back then that the batteries would not stay charged. A photo of the console taken during the 1990's shows a small bank of toe studs on both ends of the pedalboard which are no longer there. These were additions which the technician at that time constructed according to Kimball designs that he rightly felt would offer the organist an additional means of control. These were positioned close to and just outside the pedal keys on both sides. Significant time was invested in building and installing these additions in order to take fullest advantage of the new Peterson combination action, but, while the premise was good, they were well crafted, and the industry displayed was commendable, none of the instrument's pistons or toe studs would work due to the new combination action to which they were wired remaining insufficiently charged. These additions were disconnected finally and removed from the pedalboard during the

2011-2014 renovation work, as the Valley's organist at the time expected to make no use of them and they were not original with the console.

During the closing decades of the 20th century this organ also managed to suffer in another way from the effects of disuse. All pipe organs, even newer ones, require regular servicing to keep them in top playing condition, and, when an organ like this sits for months at a time without anyone playing it, problems develop which require even more attention. Its action being electro-pneumatic, this organ is filled with thousands of small leather pneumatics, almost all of which, at the time this renovation work began, were still running on original early 1920's leather. In what seems to be an irony, if an organ like this is played more often it actually holds up better against wear and tear than if it just sits there; the fact of the matter is, perishable leather pneumatics in an organ wind chest get brittle from disuse and, over time, tend to deteriorate quicker than if the organ were to be played more frequently.

It was in 1998 that calamity struck, and it was a sight to see. The instrument suffered a very serious setback when a 60-foot long vertical drain pipe from the roof backed up and leaked over the Great/Choir divisions in the main chamber. Water and filth were carried down into the pipework and chests of these 2 divisions, causing severe damage to the leather pneumatics and metal and wooden parts. The result was an organist's nightmare: pipes covered with filth inside and out, moisture in the wind chests, multiple ciphers, legions of dead notes, pipes leaning, air leaks everywhere – this part of the organ had been seriously crippled. All of this was in addition to the pipes sitting there mostly uncleaned for 74 years accumulating their usual share of dust and dirt. The drain pipe was completely replaced, but these 2 important and crucial divisions in the organ remained virtually inoperative after that. The situation had become dire, and it was around this same time that the then Principal Organist and Musical Director, now deceased, for the Valley submitted a plan estimated to cost $500K to rebuild the organ's action, changing it to direct electric, with all the work going to a certain out-of-state organ building firm. This change was being promoted with the idea that it would require less maintenance over time. When one of the other organists, who also happened to be 1st Vice-President of that same firm, explained that this would not work on a high pressure organ like this and that the Valley would not be happy with the result, a rift developed over their disagreement that resulted in further neglect and inaction. This radical change in design of the action merely to save on future maintenance costs, thankfully,

was never carried into execution, as direct electric works far better in instruments voiced on wind pressures of up to about 5 inches, but not as well for pressures above that. It's of note that direct electric action was invented 10 years before this organ was ever built, but the Kimball engineers did not choose to use it in this instrument, precisely because this is a high pressure organ.

By 2002 the organ had become so unreliable that even partial functioning was doubtful and a breakdown in the middle of an important event was expected. It was around this time that this author nominated the instrument for citation status with the Organ Historical Society (OHS), which is the highest level of recognition the OHS can bestow upon an organ of historic merit. A citation (No. 291) was granted to the Kimball the following year, in 2003. This was done with the hope that, once the citation had been secured, this would help raise awareness of the real value and precious nature of this machine. For the time being, in the Spring of 2003, the Valley management made the decision, at the urging of another one its organists, also now deceased, to purchase a 3-manual Allen digital theatre organ as an electronic substitute for the Kimball at a cost of $67K. It was installed in the auditorium during June of that year and was given significant use when the Kimball was down for repairs from 2003 until that organist passed away in 2015.

After the purchase of the Allen this national treasure of a pipe organ worth millions was listed for sale on the internet for the giveaway price of $60K with buyer to remove the entire organ and make any repairs to the building from damage done to get the organ parts out. A Professor of Organ and several other people from Indiana University then came to inspect the Kimball as they were looking for an American organ of this vintage to restore and install at Indiana for teaching and performance. After their initial inspection they wished to present the idea to the Music Faculty and Administration of the University for approval and funding. Before doing so, however, they wanted it to be somewhat playable. He and a crew of several others came and spent 3 weeks working virtually around the clock to get the organ back to playable condition, tuning right up until the hour of the showing to the people from the School (they didn't try to do anything with the Antiphonal and Echo, just the pipes in the main chamber). After their presentation they all went back to Indiana to ponder the question.

Indiana University was given 6 months to make a decision and were then given an extension. In the end they could not come to

an agreement. In the Spring of 2006 their Professor of Organ recontacted the Valley authorities and said he had accepted a position at Oklahoma University, mostly because of the indecision of the Indiana people, and that the Dean at Oklahoma had committed $2M to obtaining a suitable pipe organ, removing it, transporting it, and doing a total renovation and installation in an auditorium where the organ would be used on a daily basis. Oklahoma's initial offer for the organ was $100K, however the Scottish Rite decided in the end not to sell the Kimball because of its historical value, citation status, and the fact that it was original to the building. The action taken by this author to obtain its citation status thus could not have hindered the cause for keeping the instrument in its original location (Oklahoma was fortunate thereafter to obtain a large Moller organ from an auditorium in Philadelphia which was already removed from its original location and in storage).

In 2007 the President of the Saint Louis Chapter of the American Theatre Organ Society contacted one of the Valley organists, now deceased, who at the time happened to be one of its members, and said the Chapter would like to see the Kimball remain so they could hold their meetings there from time to time. During the next 4 years a volunteer crew from this organization led by technician Alan Haker examined the organ thoroughly and found a great deal needing to be done -- work that involved an immense number of mechanical parts. Mr. Haker presented a proposal to the Preservation Association Board in October, 2011 to renovate the entire organ from top to bottom, offering all-volunteer labor with the Valley paying for any necessary parts and materials. This proposal being an 80-90 per cent savings over any other estimates provided by for-profit organ building firms, it was unanimously accepted by the Board. Renovation work began at that time and was largely completed during the next 3 years after literally thousands of man-hours had been spent doing the necessary cleaning, tuning, and repairs. The original relay was in very poor condition and accounted for many dead notes in the organ. It was evident that this either needed to be completely rebuilt or replaced with a computerized relay, and the latter option was chosen. Many miles of the original 1924 cotton covered wiring had also become unreliable and needed replacement with modern wiring throughout the entire instrument. Only 2 of the many tremulants in the organ were functioning when work began, and one was distractingly noisy. These were also rebuilt. A full-size upright Kimball piano which was once part of a period theatre pipe organ was also located and installed in the main chamber during the 2011-2014 renovation work, preparation for same being part of the original Kimball contract. Every pipe in every division was

removed and cleaned prior to reassembly, tuning, and regulating. All of the many wind chests were taken apart and releathered at the same time.

The console also needed a basic rebuild. When the new computerized relay was installed inside the console the left side of the console shell was retrofitted with a door which opens to its interior where a computer with mouse and screen is located to control the moving combination action for each organist. The regular Valley organists and guest organists are all assigned an individual memory bank on that computer which stores their own thumb piston, toe piston, and crescendo combos. These are all adjustable by means of the setter button on the far left and underneath the lowest manual. Once the organ is turned on, the organist simply opens the door of the console, uses the mouse to move the arrow on the computer screen to "select organist," then clicks their own name, which sets the organ's memory for them. Any subsequent changes made to the combos already stored for that memory are captured for future recall. In addition, the organ is now equipped with a computerized sequencer which allows the organist to record a performance. The organ will now play back the entire work automatically -- note for note, complete with stop, coupler, and volume changes -- just like a player piano. This allows the organist to record a work, then leave for the floor or lobby to hear himself as the audience hears him. The organ will also store these recordings for future recall at any time.

Today, in 2019, thanks to the volunteer work and countless labor-of-love man-hours spent by Mr. Haker and his crew, this 95-year-old instrument has been brought up to speed, and the same volunteers are seeing that it stays maintained. The organ world is fortunate indeed to still have this instrument playable from top to bottom, and so it remains to this day despite its ups and downs. This is not just one of the very few surviving examples of a genre of pipe organ that likely will never be designed or built again the same way, but a truly musical instrument. Its entire tonal forces are hidden from view behind large tone grills from where a vast number of 128 swell shades can be made to operate all at the same time to nuance the music. This permits the instrument to whisper a barely audible phrase one moment and in the next moment permit a roaring, bone-jarring, towering wall of sound to emerge over the organist's head in all of its fire and fury, speaking with a voice several times larger than expected. Despite its tonal structure, this is an awful lot of organ – a literal symphony orchestra of color and pitches from which the conductor/organist can express the entire range of human emotion

and sensitivity at the touch of a key -- something which truly must be heard in person and played to be fully appreciated.