

The Edgerton 89-key Gavioli Fairground Organ

William Edgerton

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Public amusement park operators have long realized the power of music to attract crowds. Throughout history unamplified singers and instrumentalists, barrel pianos, barrel organs, and ultimately electronic sounds have attracted and held the attention of crowds.

The coming of the steam age in the 1850s permitted the invention of bigger, louder, and more spectacular rides and musical instruments including the fairground organ, which could be driven by the same steam engine used to power the merry-go-round, or other rides. Anselmo Gavioli's patent, allowing organs to play with perforations in a long strip of cardboard folded to look like a book, provided a reliable means of playing elaborate music automatically and permitted hundreds of different tunes.

These organs, designed for public amusement and usually intended to play outdoors, were built in France, Germany, and Belgium. Their peak of popularity was from the 1890s to the 1920s with reduced popularity until the Second World War



Figure 1. A front view of the restored 89-key Gavioli fairground organ.

whereupon the novelty of the 78-rpm phonograph drove them to near extinction.

Today, few survive to provide public amusement. Most of the organs that survive do so as the property of museums and private collectors worldwide. There are fewer than twenty 89-key Gavioli organs in America and perhaps fifty more worldwide (Figure 1).

History of the Instrument

In the fall of 1979 I attended an auction at Sotheby's in New York City. The sale included a number of desirable mechanical musical instruments and I am sure that there were many other interesting things on offer that day, but the one item that caught my eye during the inspection was an 89-key Gavioli Fairground Organ in unrestored and poor condition (Figures 2 & 3).

It caught my eye because it was too big and awkward to bring to the auction salesroom and was, therefore, shown at the time of sale as a series of slides projected on one wall. To see the instrument itself required a visit to Sotheby's nearby warehouse, and once there I found that the organ was truly a derelict. Although there were some pieces missing, all of the 35 pipes under the case were missing, large strips of veneer were peeling off the case, and there was a one-quarter inch of soot and coal dust on every flat surface from the steam engine that had driven the bellows and turned the music book rollers. All brass clarinet resonators had been pilfered, many of the brass piccolo tubes were gone, and all of the remaining wooden pipes had either become unglued or parts were missing from them. In fact, when the better-looking ones were tested, not one was working properly. There were no drums, no cymbal, and no music. Even the paint was badly chipped and alligatored, and pieces of it would fall off at random. Given this sorry condition, the estimate of \$1,000-\$1,500 seemed reasonable.



Figure 2. A close-up of one end of the lower facade panel showing the distressed original paint. All carvings looked like this.

However, at the auction other bidders must have assumed the estimates were reasonable too as many hands were raised at \$1,500, but ultimately my final, self-imposed limit of \$7,500 stopped the bidding and the organ was duly hammered down to me.

Unable to locate a small moving van which would accommodate the seven-foot one-inch height of the organ, I engaged an automobile carrying truck, a sort of flat-bed which tilted and had neither sides, top, front, nor back. The organ was strapped down and off it went with me in pursuit in an automobile. As our convoy proceeded towards Connecticut, small pieces of the organ were blown off by the wind. Several of these were large enough to cause me to screech to a halt and pick them up.

Some time later I gingerly partially dismantled the organ and commenced some restoration. Decorative metal stampings hanging down from the top of the organ were partly gone and badly corroded, but enough sections remained to help create one “whole” fourteen-inch piece which went to a foundry and was the pattern for additional cast replacements. A carved piece on one side of the façade was missing so I carved a replacement using the one on the other side as a pattern.

The purchase of a snare and bass drum “from a Gavioli fairground organ” was fortuitous for when I held them up to my drum-less organ, they fit exactly and thus were identical to the originals.

I moved my workshop—together with the organ—using a similar flatbed truck. More pieces of the organ flew off in the move. Once in the new location the organ was completely dismantled and the case restored and re-painted.

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More than fifteen years had elapsed since the original purchase and one evening my wife, Ann, said to me that if I ever wanted to hear the organ in my lifetime, I had better hire someone to restore it!

A visit to A. C. Pilmer, Ltd. in York, England, convinced us that Andrew Pilmer and Russell Wattam had the skills, access to appropriate craftspeople and equally important, the knowledge to undertake a complete restoration. In addition Pilmer had available a similar Gavioli organ which was complete with all its bass pipes under the case together with other Gavioli instruments. These permitted him to have identical copies made and voiced like the original Gavioli bass pipes missing from my organ. Whatever original pipe pieces we had were used—sides, blocks, stoppers, etc. The incomparable repetition and distinctiveness of voicing so clear on this recording is not only true to the Gavioli original but a testament to the knowledge and craftsmanship of Russell Wattam, Andrew Pilmer, and their associates.

Gavioli originally built this organ as an 87-key instrument. The Gavioli family was one of the most innovative fair-ground organ builders who, after leaving Italy, set up business in Paris in 1845. Over the course of three generations Gavioli refined and developed the mechanical organ into a musical instrument of ever increasing proportions and capabilities, taking out many patents along the way.



Figure 3. Part of the main chest, as found, including much coal dust and soot.

“Keys” refer to the steel fingers that pop up in the holes of the music books and either play notes or set registration by turning ranks of pipes on and off. The organ bears the number 8465 and was almost certainly sent from the Gavioli factory in Paris to its first owner somewhere in Britain around the turn of the century. At that time whenever organs of this size were played, huge crowds flocked to hear what must have been regarded as yet another miracle of the age.

Despite extensive research, at present the rides this organ was a part of, and the instrument's original and subsequent owners are unknown. However, it is known that the organ was rebuilt as an 89-key organ by Varetto Brothers, in Manchester, England, in 1926; the organ is signed in two places. There existed evidence that the organ may have been in an accident—the narrow trucks in use to transport such organs at the time often fell over, so this may have contributed to the need to rebuild. Thereafter, there are no clues to the identity of its owners. In the 1940s the organ became a derelict and was stored under a canvas tarpaulin either in the open or in an unheated shed. At that time many of the smaller pipes were vandalized—others fell apart when their glue seams were affected by dampness, and the veneer started to delaminate from the case.

The organ was exported to the U. S. in the 1950s together with a three-horses-abreast merry-go-round that had, prior to that time, been operated at Hayling Island, England, by Butlin's Sussex Amusements. Robert Dowling, a well-known New York State real estate developer purchased the merry-go-round and organ for use in a shopping center development he contemplated on New York's Long Island. The organ and the ride were stored in a Southampton, New York, warehouse until about 1975 when the ride was scrapped and the horses were used to decorate a restaurant. Dowling subsequently died and the organ was offered at auction in New York in 1979.

In 1996 we sent the organ to A. C. Pilmer, Ltd. in York, England, for a complete restoration and re-decoration; the organ was returned in 1998. Pilmer and his associates re-created exactly the original tonality of the instrument; and arranged and perforated music books for it.



Figure 4. Repainting the facade parts and columns.

Tonal Specifications

This 89-key Gavioli fairground organ is the G4 or “4” scale and contains 352 pipes, as follows:

- The melody section consists of:
 - violins - four ranks of 21 notes, fully chromatic
 - clarinets - five ranks of 17 notes, including one rank with brass resonators, fully chromatic
- The accompaniment section is 10 notes:
 - four ranks, including one reed rank
- There are also:
 - 8 Trombones - reeds with very large resonators
 - Saxophones - three ranks of 20 notes each
 - 8 Flue bass notes - three ranks
 - 17 Piccolo notes - three ranks
 - Snare Drum; bass drum with cymbal
 - 17-note Glockenspiel
- Registers: Violins; Clarinets; Forte; General Cancel

Music

During the course of a more than 40-year interest in mechanical musical instruments, I have acquired some strong opinions, a number of which pertain to the musicality of mechanical organs.

The sound of speaking organ pipes is caused by the scaling and type of pipe and by “voicing” that pipe. A flute pipe will sound the correct note whether operated mechanically or by someone playing a keyboard, and, if voiced correctly, will sound like a flute. The higher wind pressures used in mechanical organs designed to play outdoors causes the pipe expert to voice the pipe differently than the technique used for pipes played inside, and the wind pressure is increased to increase the volume of organs played outdoors. Once the wind pressure has been determined and the pipe voiced at that pressure, there is no short-cut method of changing loudness of the sound of that pipe unless the pipes are placed in a chamber with swell shutters,

which are movable panels that when shut muffle the sound. Thus the only volume control on a mechanical organ is swell shutters—rarely used—or the playing of the desired music on another rank of pipes, which speak with a different sound, louder or softer. An American Wurlitzer model 165 band organ with swell shutters sounds, in my opinion, not much better than one without. Some selections on recordings of Fairground organs may seem to have some variations in volume, but this is an illusion due to the judicious use of register controls or the choice of ranks of pipes.

There are differences between American and European organs. American instruments—Wurlitzer particularly—are extremely well crafted and the music roll systems very well engineered, but the finished sound is often not as good as their European counterparts. American scales were often out-of-date when the organs were made, the type of music often chosen was sometimes not suitable for the instrument, and small cases meant reduced numbers of bass pipes. The silence imposed by a missing bass note is very apparent, as is the dissonance when an incorrect note is substituted for one not existing. Finally, while few organs are fully chromatic, American organs are less chromatic than their European cousins are and this is very noticeable in the music.

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For variations in sound quality, individual ranks or groups of pipes can be controlled by registers activated by perforations in the music which turn that rank on and off. Or, if the notes in that rank have perforations in the music dedicated solely to that rank, when no notes are perforated, the pipes in that rank do not play.

The size of an organ can affect the quality of the music one hears, so there are some principal reasons why “bigger is often better” applies to mechanical organs. Larger organs:

- Often have registers, or more registers, than smaller organs.
- Often have independent ranks that only play when perforations appear in the music.
- Have a larger compass, or range, than that of smaller organs—there are more higher and lower notes in that rank that can be used for the desired music and/or more sharps and flats, making that organ closer to being fully chromatic.

Smaller organs—or those without registers—are more limited in the sound of the music they play. At a minimum this means that the smallest organs will sound the same whether playing a march, dance music, or when, for example, a solo instrument should be performing.

A mechanical organ is often not known for its subtlety, which can be a result of poor design, poor original craftsmanship, or poorly chosen or poorly arranged music, but is most often the result of less than perfection in its re-building. Organ builders and pipe makers have years of learning, apprenticeship, and experience on the job, so the dull tools and lack of knowledge of a “Saturday” mechanic are no match for the craftsmanship required to properly re-build an organ.

At the time in the Twentieth Century when these instruments were used to make money for their owners, not only were experienced tuners and repairers available, but the organs had a different type of value than they do today when they are considered antiques or of historical interest. They were “commercial” instruments. The passage of time and the changes in musical styles have relegated most of these fairground organs to “collector” status rather than still being a business asset. Collectors of whatever commodity tend to be fussy about the things they collect. Thus today’s organ aficionados examine the artistry, craftsmanship, and musicality of these instruments with a much more critical eye than did the amusement park owner or visitor decades ago. Subtlety, delicateness, even voicing and sound, good repetition, and being true to the original are much more appreciated in a restored instrument today than were expected by its original owners when novelty was a primary attraction.

One anecdote will prove this point. Originally this organ, and most other similar fairground organs, had key-frames mounted in the center of the back of the instrument. The music was fed through a slot in the left side of the case, then through the key frame, and finally out through a hole in the other side. This physical layout required an operator to periodically move the recently played pile of the music from one end of the organ to the other, often a backbreaking job that took its toll on both the operator and the music, particularly in the confines of the small center area in British merry-go-rounds. During repairs or re-building,

key-frames were often moved to one end of the organ to ease the changing of music, which was the configuration of this organ when acquired. Unfortunately, changing the key-frame location on this instrument lengthened the longest tubing run from the key-frame to the valves from about three feet to eight feet, and repetition and reliability suffered. So Pilmer installed a pneumatic relay to maintain repetition in varying conditions of humidity and temperature, resulting in the ability of this organ to sound its pipes as fast as the music might require. This ability is noticeable many times on the recording, and the music thus sounds true to form.

One defect most often noticed in a fairground organ restored by a “Saturday” mechanic is poor voicing of the pipes—the restorer just lacks the knowledge and skills to create a set of pipes with even sound. The final selection on the disk that has been made of this organ is a demonstration of the various voices of the organ. The evenness of sound from one note to the next in any given rank, which is possible to hear on the recording, is remarkable.

Tunes and Music

Since no original music survived with the organ, new music was required. The selections for this instrument were chosen, for the most part, from tunes which were popular at the time these organs were at the height of their popularity (1900 - 1930) and which sound “good” when played on this organ. Tempos tend to be slightly on the fast side for fast fairground organ music is inevitably more interesting. Often some small tempo changes occur within a selection, particularly in repeated sections, to add to the interest. Waltzes, marches, and polkas were popular at the time, and are typical of the music that sounds good when played on the organ. Thus it is no surprise that some of the selections on our CD are favorites on many fairground organs. However, long-time fans of this sort of music will find several new “old” selections, rarely or never recorded before, to interest them.



Figure 5. A partial side view of the 89-key Gavioli showing figure details.

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