My Search for the Elusive Wurlitzer 166 Band Organ

Glenn Thomas
(with Joe Hilferty)

Part One: The Early Years

My introduction to mechanical musical instruments was as a very young child growing up in Los Angeles during the 1950s and 1960s. Almost before I could walk, my parents would take me to the Griffith Park Merry-Go-Round to ride the horses. I was actually more captivated by the large, wonderful, colorful music machine next to the merry-go-round. Sometimes it would be covered with a large canvas tarp and the little band organ in the center would be playing instead. I would ask my parents "Why wasn't the big organ playing," and would be told that we would come back again when it was.

The Griffith Park Merry-Go-Round was, of course, the wonderful Spillman Engineering carousel owned by the Ross R. Davis family and managed by third-generation family member John O. "Bud" Davis, near the Los Angeles Zoo. The family also owned its slightly older twin at Lincoln Park, Los Angeles, and another at Tilden Park, Berkeley, CA. Each had a large band organ adjacent and a smaller organ in the center. Each carousel, its building structure and band organ arrangement, was remarkably similar.

As I entered my teenage years, I gained greater mobility and could go to Griffith Park on my own for band organ entertainment on weekends or after school on weekdays. I learned that Thursday was the weekday to go. That was when the regular manager, who ran the machine six days a week and usually played the same Wurlitzer 150 rolls all day on the small North Tonawanda Wurlitzer-conversion, was off duty. Instead, his relief, who worked in various jobs for the Davis family and a band organ enthusiast, was on duty, always playing the Wurlitzer 165, and never the same roll twice.

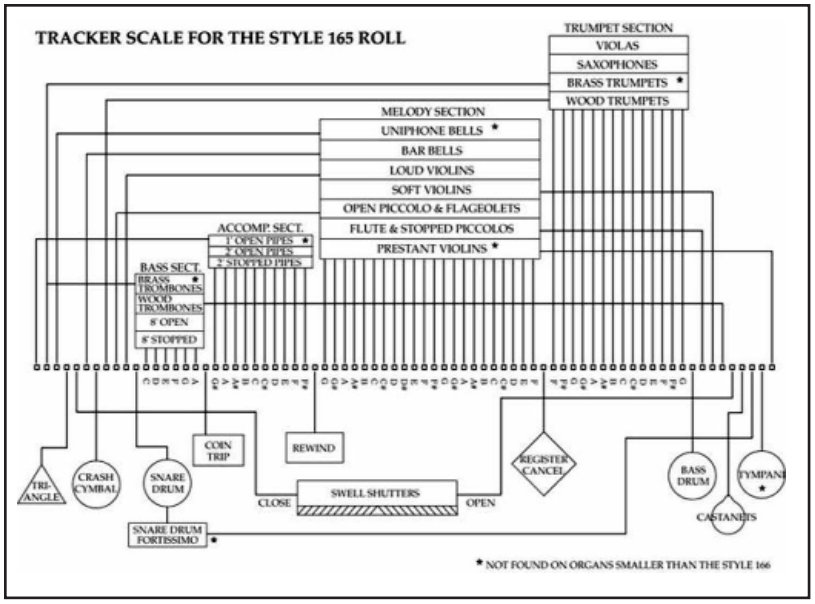

Figure 1. The Wurlitzer 165 scale.

Over time, I would also spend parts of weekends at Lincoln Park, listening to the other 165 and working as relief manager at the Griffith Park Merry-Go-Round. Of course, I had full ability to play whichever organ and whatever rolls I wanted!

That experience led me to other West Coast parks and band organs, including Playland at the Beach, San Francisco (Wurlitzer 165) Knotts's Berry Farm, Buena Park, CA (Gavioli 165 conversion and Wurlitzer 157), Disneyland (Wurlitzer 157 Caliola conversion), Santa Cruz Boardwalk, CA (Ruth 165 conversion), and other parks and organs. Thus, I rapidly expanded into other areas of mechanical music and an increasing network of friends with similar interests.

But it was always the magical Wurlitzer 165 band organ that held the greatest appeal, and I just knew I had to have one some day. As I became more conversant with Wurlitzer band organs, I became specifically interested in the Wurlitzer style 166. This was essentially a 165 with an expanded façade to house ranks of additional brass trumpets and bass trombones, along with other ranks of pipes not a part of the 165 organ. Wurlitzer 165 rolls had special additional registers included to play only on the style 166 (and larger) organ. **Figure 1** From the first style 165 rolls produced in the teens through the 1960s (when the TRT Manufacturing Company, Wurlitzer's music roll successor) finally ceased the production of 165 rolls, each roll included the additional perforations for style 166 registration.

No Wurlitzer style 166 organs are known to survive from the very few sold. Although Wurlitzer 165 rolls were all arranged to activate the additional registers on the 166, no one had ever heard that sound, except for a few

individual attempts to assemble an organ to play the expanded pipe, bell, and percussion repertoire. I knew I would never locate a Wurlitzer 166, but I always wanted to get as close as I could to the original Wurlitzer 166 sound and intent, and hear 165 rolls played as intended, using those additional registers.

Part Two: The Search, Discovery, and Restoration Plan

I had been thinking about having a custom band organ built to approximate the Wurlitzer 166 instrumentation. Early communications with two known organ builders were not successful. One wanted to build the organ more along his standard model concept and resisted the particular pipe and register combinations I wanted. Another's overseas location would add considerable complexity. Neither could offer duplex 165 roll frames. One offered MIDI only, while the other suggested I try to locate a roll frame elsewhere.

About that time, a conversation with a collector/broker offered another idea. He knew of a derelict early Wurlitzer factory 165 duplex conversion of a Bruder that had been stored for many years in a barn in Wisconsin. Multiple pictures of the organ revealed a nearly complete organ in rough condition, obviously missing some pipes and other parts, but otherwise potentially restorable. **Figures 2 & 3.** As converted (and as found), this organ had almost the identical instrumentation of a Wurlitzer 165: it lacked some ranks native to a 165 but it had the added brass trumpets found on a 166. Those brass trumpets were the incentive I needed to see if this organ could be restored and brought up to near-166 instrumentation.

Figure 2 (left). The converted Bruder organ as found.

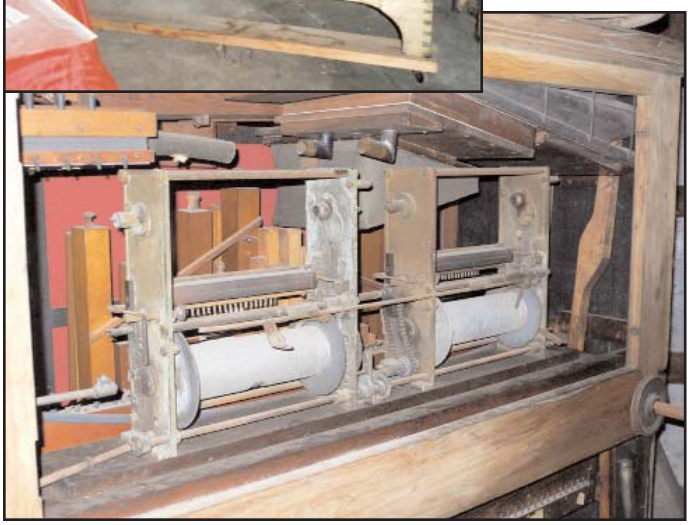

Figure 3 (below). A rear view of the organ as found reveals two incomplete roll frames.

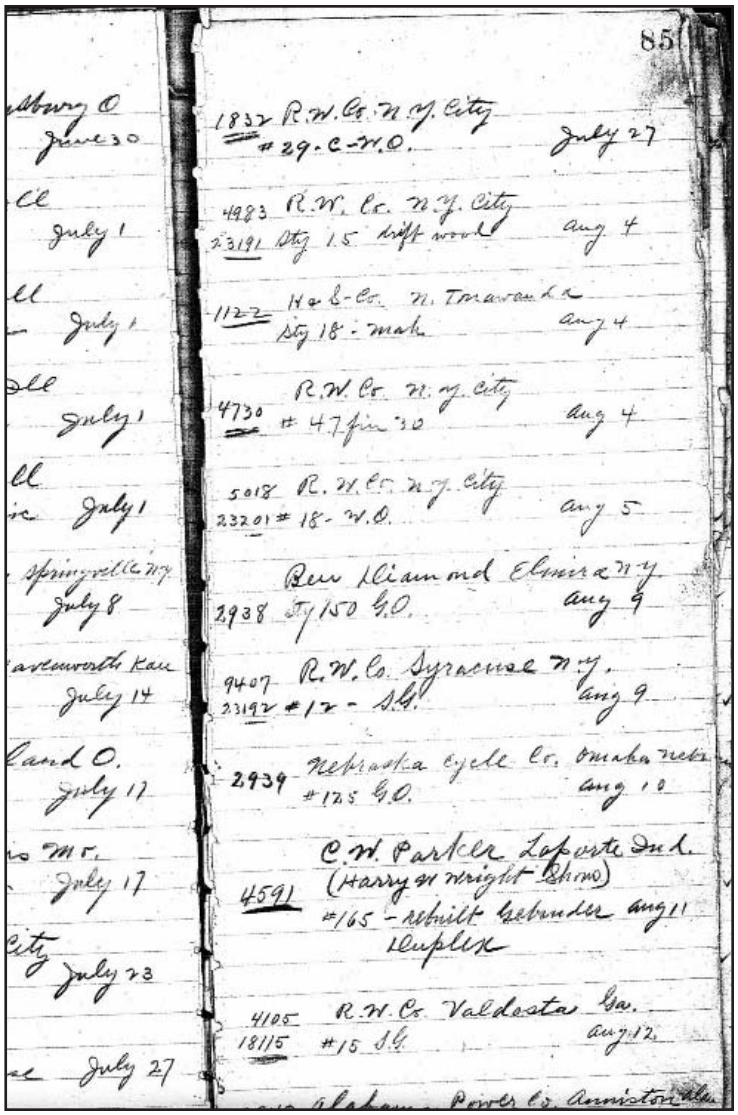

Figure 4. Organ # 4591 in the Wurlitzer shipping dock records.

The organ had no façade. It is not clear whether it ever had one. However, it did have the Wurlitzer serial number 4591 stamped several places in the interior. I located a copy of the original Wurlitzer factory archives listing all Wurlitzer organs shipped, by serial number, type of organ, and customer. The record for serial number 4591 showed the organ was a "rebuilt Gebruder" [sic] converted to a duplex 165 for C. W. Parker, La Porte, Indiana, for the Harry W. Wright Shows. It left the Wurlitzer factory August 11, 1915. **Figure 4.**

Before considering a purchase, conversations with two band organ restorers were necessary to judge the feasibility of the project and estimate costs. About a dozen detailed pictures and a description of the organ were provided to the restorers, along with the Wurlitzer catalog specifications for a Wurlitzer 166. Of the two restorers, Joe Hilferty of York, PA was enthusiastic and positive right from the beginning that my vision indeed could be accomplished. In fact, the missing pipes, gears from the roll frame, percussion, and various other items posed no problem. He could either find or make the missing parts. A price and rough timetable were agreed upon. **Figure 5.**

Figure 5. Joe Hilferty views the unrestored organ's melody pipes.

Now that a restoration plan was in place, there was still one more consideration: a façade. Although this organ would have instrumentation close to that of a 166, it made more sense to replicate a 165 façade. No Wurlitzer 166 façades are known to survive to replicate, plus the extra pipe ranks for near-166 instrumentation could easily be incorporated behind a 165-style façade. Costs and time were also factors.

Before selecting a carver to produce a replica 165 façade, I contacted two East Coast owners of original Wurlitzer 165 band organs with original façades to see if they would make their organs available for detailed measurements and detailed replication. Both graciously agreed.

I then began the process of finding an artisan capable of carving an exact Wurlitzer 165 façade replica. Beyond the actual carving, I also needed to find an artist who could paint original scenes on the various panels and create the gold leafing and stunning colors necessary to bring the panels to life!

After a lengthy search, Robert Yorburg of Yorktown Heights, NY, was selected to do the carving, with two additional artisans chosen for the illustration and finishing. The selection process for these artisans, the carving and finishing, and ultimate installation of the façade will be the subject of the second of two articles in this series.

Now that an organ restorer and a façade carver and illustrator had been selected, the purchase of the organ could be completed and the restoration begun!

Part Three: The Organ Restoration

Joe Hilferty moved the organ from Wisconsin to his shop. The pictures of the as-found organ showed a case in poor condition, brass trumpets clearly visible in the front, a mounted bell board, several ranks of violins and other melody pipes, and various other pipes from the accompaniment and bass sections. Rear views showed pumps, transmission, and rods reasonably intact, but a duplex roll frame clearly missing some gears and other parts. The tracker bars and other critical parts were included. **Figure 6.**

Figure 6. Unrestored roll frame and other parts that came with the organ.

A detailed inspection of the organ showed a nearly typical Wurlitzer 165 pipe installation except for some missing melody and accompaniment ranks and brass trumpets in place of wood. This organ apparently was Bruder-built and sent to Wurlitzer for conversion to a 165/166. The pipes were placed in similar positions to that of a 165, including some accompaniment and bass pipes underneath the organ. Joe and I consulted about the potential pipe configuration. My vision was to bring the instrumentation up to 166 except for brass trombones (bass) and uniphone bells. Joe agreed this could be done with a combination of the original pipes included with the organ, additional pipes he had, and a few others that could be made. The only modification to the case would be that it had to be extended from front to back by a few inches to hold the pipes. The length (right to left) of this case was a few inches narrower than that of a Wurlitzer 165.

The pipe chart (**Table I**) shows the pipe layout and configuration as originally found with the organ, Wurlitzer 165 and 166 instrumentations from a Wurlitzer catalog, and the proposed restored configuration for this organ.

Joe first removed everything from the case, inventoried the pipes and other parts, and determined what needed to be made or obtained. The case was extended and refinished. A platform was built to hold the organ, add mobility, and add resonance for the underneath pipes.

The original board with the mounted bells could not be used, but once removed, the original paint and lettering showing a C. W. Parker logo was revealed!

Table I

Pipe Layout and Configuration

Organ as Found	Wurlitzer 165 - Specs.	Wurlitzer 166 - Specs.	As Restored
Trumpet-Counter Melody			
14 Brass Trumpets		14 Brass Trumpets	
14 Cello (or basoon)			
14 Stopped Flutes (or violas)			
	14 Wood Trumpets	14 Wood Trumpets	Add Wood Trumpets
	14 Wood Bassoons (Sax)	14 Wood Bassoons (Sax)	
	14 Wood Viola	14 Wood Viola	
Melody			
22 Wood Piccolo	22 Piccolo	22 Piccolo	
22 Wood Flageolet	22 Flageolet	22 Flageolet	
22 Violin (color-white)	22 Soft Violin x 2 = 44	22 Soft Violin x 2 = 44	Add 1 rank of 22
22 Violin (Wurlitzer)	22 Loud Violin x 2 = 44	22 Loud Violin x 2 = 44	Add 1 rank of 22
	22 Flutes	22 Flutes	Add Flutes
	22 Open Piccolo	22 Open Piccolo	Add Piccolo or similar
		22 Prestant Violin	Add Prestant Violin
Accompaniment			
10 Stopped - 2 Ft.	10 Stopped - 2 Ft.	10 2 Ft. Stopped Flutes	
	10 Open - 1 Ft.	10 2 Ft. Open Flutes	Add 2 Ft. Open Flutes
10 Open - 1 Ft.		10 1 Ft. Open Flutes	
Bass			
6 Bass Trombones	6 Wood Trombones	6 Wood Trombones	
6 Stopped Bass	6 8 Ft. Stopped Bass	6 8 Ft. Stopped Diapason	
6 Large Open Cello	6 8 Ft. Open Bass	6 8 Ft. Open Diapason	
		6 Brass Trombones	
		6 4 Ft. Open Diapason	
Registers			
Unknown	Trombone	Trombone	Include
	Trumpets	Trumpets	Include
	Flute and Piccolo	Flute and Piccolo	Include
	Flageolet and Open Piccolo	Flageolet and Open Piccolo	Include
	Loud Violin	Loud Violin	Include
	Soft Violin	Soft Violin	Include
		Brass Trumpets and Trombones	Include
		Prestant Violin	Include
		Octave Bass and Accompaniment	Include
	22 Bells	22 Bells	Include
		22 Uniphone Bells	

Part Four: Joe Hilferty's Restoration Description

See inset box on page 38 for the description of the restoration.

Restoration Description

I first talked to Glenn Thomas via a phone call one August evening in 2006. He called to inquire whether I would consider rebuilding a Wurlitzer Band Organ he was considering buying. The Organ in question was an early Bruder Barrel Organ that had been converted by Wurlitzer around 1916 to play the 165 roll. The organ, in its condition at the time, was not playing. Glenn expressed to me he had been looking for awhile to acquire a 165 organ.

After more conversation, he told me that he actually would like the sound of a 166 organ. The pipe work that was in the organ did not have the full complement found in a 165, but it did have brass trumpets. Consequently, the conversation turned to rebuilding this organ as close to a style 166 as possible. I had just begun the rebuilding of Don Neilson's 165 at the time, and wasn't sure if I wanted to start on the 166 project until a later date, but the more I thought about it, since Neilson's organ needed some major surgery as well, I might as well do both organs at the same time as both needed a lot of the same work done and I could copy from each organ what was missing from the other. I was still not sure how much needed to be done to the organ, as I still had not seen it, but from what was known it seemed to be a worthwhile project.

The case of the organ was not as large as a 165 case, so the first project was to enlarge the case to accommodate additional pipe work needed for a 165/166. I added 10" in height to the case to make it the same as a 165 case. The width of the case was also not as wide as a 165, and room was still needed for the pipe work. Because the pallet chest Wurlitzer installed was built to handle the melody and the counter melody trumpet section all in the center portion of the chest, adding more space, side to side, presented a problem. I decided to extend the pallet chest forward instead, rather than to the sides; 10" was added to the front of the pallet chest and to the sides of the case.

After all the case remodeling was done, quarter-sawn oak veneer was applied to the entire case. Original melody pipes in the organ only consisted of two ranks of violins on a register and a rank of flageolets and piccolo playing all the time. This additional room allowed for the flutes, violins, and piccolos, needed to bring the organ up to the 166 scale. The original organ only had two melody register valve boxes, so five more register boxes were fabricated like the originals. The side portions of the pallet chest were originally used only to supply the trombones and ten accompaniment pipes. This left enough extra room for the addition of another rank in the accompaniment, as well the addition of bassoons and violas to complete the counter melody. When completed, the center section of the pallet chest would supply air for 13 ranks of a combination of melody and counter-melody pipes. The organ has 11 ranks in the upper section with two ranks mounted below and behind the bell unit.

In 1915, when Wurlitzer rebuilt this organ, the 165 concept was in its infancy. They were rebuilding this organ for C.W. Parker, and although they installed duplex 165 spool frames, the pipe work did not take full advantage of the 165 roll. The organ only had 168 pipes along with 22 bell bars. 170 additional pipes needed to be added to bring this organ close to a 166 design. All of the added pipes were obtained from the remains of other band organs, with the exception of a set of piccolos.

While the main flywheel was original, an electric motor and other wheels and parts of the drive system had to be obtained, but they were modeled exactly on a 165.

Joe Hilferty

Part Five: Glorious Sounds!

Since the façade wouldn't be ready until many months later, the organ was assembled and set up to play using temporary wings to hold the bass drum, snare drum, crash cymbal, triangle, and a wood block (substituting for the eventual castanets). The organ would ultimately be placed in a large room, acoustically designed to offer the right listening environment. Swell shutters would be part of the façade. Until then, the sound was unencumbered and very intense!

The musical experience is very close to that of a Wurlitzer 165. The most notable difference is the combination of wood and brass trumpets producing a very strong brassy counter-melody when the brass trumpets activate, usually in combination with the wood trumpets at the end of a chorus. The added melody and accompaniment ranks produce a very full sound, and the register combinations, especially on Wurlitzer's earlier rolls, produce a greater variety of sound and register changes than on a 165! The prestant violin rank is still a work in process: the current rank produces a higher, shriller sound than might have been intended; so this rank may be replaced with one giving a lower, more contrasting sound.

A tympani drum beater will be added on the bass drum to take advantage of the special tympani perforation in the 165 roll, intended by Wurlitzer for use on style 166

organs, though several of the existing 165s have been retrofitted with a tympani action.

Although the Wurlitzer 165 roll incorporates six additional registers and tympani perforations for use on style 166 organs and larger, these extras are unused on virtually all existing Wurlitzer band organs. An inspection of the Wurlitzer style 165 tracker bar illustration shows the additional register holes, mostly at each end of the tracker bar, that activate the added registers. Of those additional registers, this organ uses all three of the added 166 pipe rank registers.

Wurlitzer roll arrangers used the added 166 registers right up until Wurlitzer factory roll production ceased in 1945, even though few, if any, organs having 166 pipe configurations probably survived by then. Different arranging styles for the added 166 registers seemed to have been used by Wurlitzer arrangers over the years. During the 'teens and early 20s, rapid register changes, lots of solo combinations, and heavy tympani use were normal. Later 20s and 30s rolls used fewer solo combinations, lots of brass, and little tympani. Near the end of Wurlitzer's arranging, brass was heavy, with far fewer register changes and little creativity in combinations.

Ralph Tussing, of the TRT Manufacturing Company, continued to include 166 registrations during the 20 years he arranged rolls as Wurlitzer's successor, although his arrangements mostly were formulaic and seemed to be brassy, repetitious, and full. Modern arrangers mostly seemed to abandon the added registers, but rolls arranged by Rich Olsen have included them.

Since most organs play only the 165 registers and lack the 166 registers, arrangers never arranged rolls with the 166 registers playing solo, since to do so would have created a sound void!

The Wurlitzer 165 roll collection for this organ includes a copy of nearly every 165 roll known to exist. Most are recuts. A few BAB-to-Wurlitzer 165 transcriptions are included. Newly-arranged rolls by modern arrangers such as Bob Stuhmer and Rich Olsen are included. Where copies of known rolls were lacking, Valley Forge Music Roll Co., Audubon, PA, has made perfect laser-cut copies.

The music doesn't stop there. Band organ historian Matthew Caulfield, Rochester, NY, is working with arranger Rich Olsen to produce new 165 rolls and to add tunes now missing on previously recut rolls. I am also working with Rich Olsen to produce some new 165 rolls with classical and popular tunes that should have been on Wurlitzer 165 rolls, but apparently were not. These are also being arranged in the style of Wurlitzer arrangements.

Figure 7 (below). The completed Style 166 organ (sans façade) ready to play.

Figure 8 (right). The restored roll frames loaded with Style 165 roll music.

American and European band organs, both old and modern are unique in that they all have their own special musical qualities with music and arranging styles unique to their heritage and geography. While I enjoy them all and seek them out, nothing is as enjoyable to me as the Wurlitzer 165/166 playing Wurlitzer style music as it was intended to be!

The restored organ today awaiting the façade is viewed in **Figures 7 & 8.**

The author would like to thank the following:

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Frank and Amanda Himpsl, Valley Forge Music Rolls, Audubon, PA, for assistance in making a copy of any 165 roll or MIDI-arranged tune.

Rich Olsen, San Diego, CA, for creative musical arranging as if he were a Wurlitzer arranger from the 1920s.

Glenn Thomas is a lifelong mechanical music hobbyist. He is a member of COAA, AMICA, and MBSI. His collection consists of rerproducing grand pianos, coin operated orchestrions, and of course this band organ. His collection may be seen at www.nickelodeonhouse.net. He lives near Princeton, NJ and may be contacted at wurlitzer165@comcast.net.

Joe Hilferty is a full time restorer of mechanical musical instruments specializing in band organs as well as a hobbyist and collector of same. Joe lives in York, PA and may be contacted at jhilf148@comcast.net.