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CAROUSEL ORGAN

The Official Journal of the
Carousel Organ Association of America (COAA)
Devoted to the enjoyment, preservation and education of all outdoor mechanical musical instruments, including band, fair and street organs, circus calliopes, and hand-cranked organs of all sizes.

Inside this issue:

Editor/Publisher — Ron Bopp
Assist. Editor — Angelo Rulli

Frati 49-Key Barrel Organ

by
Ron Schmuck

We were commissioned to restore a very interesting barrel organ by our customer, Mr. Domenic DiBernardo. The instrument was sold as an old "Bode" organ. This name didn't mean very much to me except for the short listing on page 806 of the "Encyclopedia of Automated Musical Instruments" by Q David Bowers which reads "Magdeburg; Hermanne Bode, Grossesteinerne Tischstrasse 1; Raap & Sohn, Rote Krebsstrasse 37 (founded 1889)."

General

The organ measures 52 inches high by 40 ½ inches wide and 21 ½ inches deep (Fig. 2, page 20). The first step was to completely dismantle the instrument in preparation for restoration. It was very obvious that this organ had earned its keep and absolutely everything that could be done by the previous owners to keep it working had been done. Even the cloth panels of the facade were made up of small scraps of cloth all sewn or glued carefully together to make a piece large enough to fill in the front and rear panels. Then crude paintings of flowers were drawn on the cloth to make it a little fancier. The organ's barrel measures 34 inches long and 7 inches in diameter. This organ has 49 Keys which play the organ from the barrel. A total of 8 songs are pinned on the barrel, which is also marked by what looks like a rubber stamp "H. Bode" as is every large pipe, pumps, chests, etc

The scale of the instrument is as follows:

Trumpet, 14 Notes - D, E, F, F#, G, A, B, C, C#, D, E., F, F#, G.
Melody, 17 Notes - D, E, F, F#, G, A, B, C, C#, D, E, F, F#, G, A, B, C.
Accompaniment, 12 Notes - G, A, B, C, D, E, F, F#, G, A, B, C.
Bass bourdon, 3 notes - G, C, D
Bass Trombone, 3 notes - G, C, D

. . . continued on page 16

Figure 1 The restored barrel organ presents the original Frati logo and medals on the bottom of the case.

The President Speaks . . .

The organ season is upon us. It is only weeks until the Houston, Missouri rally! So get out the organ from its winter quarters,dust it off, fix that nagging little problem that nobody else can hear but you, and lets go rallying! As you know, we have three rallys this year and would like to have a fourth one the week after the MBSI rally, which would be July 28-30, so if there is anybody out there that would like to host this one, please get in touch with me and we will get things moving.

The 2001 rally season still needs some attention,we have one rally lined up for July, but we need some members to step forward. It is not as tough as you might think!

I would like to thank the membership for the excellent response and support for the dues increase. This will give us an opportunity to give you a journal that we all can be proud of! See you all at the rallys.

Last but not least I want you to know that we are working on a new, spectacular logo as well as a web page site. This will give us more exposure and the chance to keep up with the rest of new technology.

Terry

From the Editor's Loft . . .

It is hard to believe that time has gone by so fast since the publication of the last issue but when you are having fun . . . The overwhelming response to the quanity and quality of the *Carousel Organ* has led all of us to believe that this is what you, the COAA members are wanting. Having been involved with mechanical musical instruments for nearly 30 years (over half of my lifetime) has always kept my interest up in the written word dealing with such subjects. My first involvement, like many of you, were the Vestal Press catalogs (produced by member Harvey Roehl) and the Hathaway and Bowers (later International Galleries) catalogs. Then there were all the fabulous books available including the all-encompassing *Encyclopedia of Automatic Musical Instruments* by Dave Bowers.

Over time, however, the number of publications has dwindled. It is hard for one collecting group such as AMICA or MBSI to cover outdoor mechanical musical instruments in much detail and this is where the COAA with its *Carousel Organ* fits in. Finally, the organ enthusiast has a journal devoted entirely to these great machines. And, if we can continue with the spectrum of fine articles as appeared in the last issue as well as this one then I think this is an achievable goal.

With the progression of any project comes change. One of many changes you will notice in this issue is the inclusion of a "Letters To The Editor" column. This will provide members with a chance to make comments about journal articles as well as the organization itself. There will be minimal editing of any letter but letters should be short and to the point. No deflamation of character of any member will be allowed

Ron

Letters to the Editor . . .

My compliments to the authors and editors on the fine array of articles in issue two. I'd like to offer the following comments and observations.

The Coliseum Gavioli—It's rare to find a band organ anywhere that has close to its "original" decorative treatment. Perhaps if this organ has passed through the years unchanged some information on its paint and leafing could be supplied. There is a great interest in "original" treatments in the field of carousel horses, but such appreciation has yet to reach the appropriate level in the field of band organs. There has been a general tendency to "over do" decorative treatments. Too often facades are totally stripped without documentation. No research is done in catalogs and old literature, yielding new decorative schemes that bear no resemblance to what the makers intended.

Wurlitzer's Monster—It may be appropriate to note that Bill Black's Monster was designed and, more than likely, built by deKleist and then sold under the Wurlitzer name. Does the organ have any pipework under the floor of the case?

Archival Article—Recent advice from Europe indicates that the famous Gooding Ruth is actually a Voigt-built organ with a Ruth crankshaft. The organ that originally stood behind the facade, which is a Model 37 with added drum wings from a Model 38, is in Germany, with a Voigt facade in front of it. The Gooding organ was imported to the U. S. by amusement ride owner Harry Beach, who sold it to Floyd Gooding. Before Bowers bought the organ, it was owned by Jim Miller. Wallace McPeak and Dan Slack were part of the various transactions involving the organ. The Bowers organ was later acquired by Bob Gilson, who arranged for the instrument to be restored by Durward Center and the facade redecorated by Rosa Ragan.

The Gebrueder Bruder "Selection" organ indeed has three sets of trumpets. The middle photograph on page 15 shows the usual German-style wood resonator trumpets while the bottom photo shows the brass resonator trumpets. The third set of trumpets plays behind the animated bandsmen. This organ played magnificently in Mike Kitner's shop after restoration, but in its current setting in Bruchsal sounds quite muted

. . . *continued on page 21*

Het Snotneusje ("Whippersnaper")*

by

Hans Van Oost

The date was May 7th, 1945 (two days earlier the German army officially surrendered to the Allied forces, and the Second World War in Europe was over). After suffering five long years of German occupation and a winter with extreme food shortage (elderly Dutchmen still speak of the famine of "de hongerwinter"), the residents of Amsterdam celebrated at "the Dam," the central plaza in Amsterdam. The celebration included playing happy music by one of the still-working Dutch street organs named "het Snotneusje" (Fig. 1).

Figure 1 Gijs Perlee's draaiorgel "het Snotneusje" in the 1950s. All the damage caused by the gunfire had been repaired at thie time.

The liberation festivities had irritated a group of disgruntled German SS soldiers who were drinking in their "Grote Club" (on the corner of the Kalverstraat and the Dam) and wondering about their future (Fig. 4). That afternoon they went outside

Figure 2 May 7th, 1945 — het Snotneusje stops the bullets

with their machine guns and fired random salvos at the crowd. Several people were killed and many were wounded.

Figure 3 A close-up of the street scene illustrates the group of spectators hiding behind the front of the organ.

By sheer luck the organ grinder, who was working on the side of the organ facing the gunners, managed to get behind the instrument himself. Onlookers ran, and dozens of people took cover behind the street organ, which was then riddled with machine gun bullets (Fig.s 2 & 3).

According to my dictionary the word 'snotneusje' should be translated as '"snotty nose." Figuratively, the word means something like brat, urchin, or whipper-snapper — take your pick. The organ was rather small but loudly voiced.

Figure 4 Situation Map: 1. Het Snotneusje playing nearby streetcar track; 2. Grote Club at corner Kalverstraat; 3. Position of shooters

The draaiorgel "het Snotneusje" is known to be the bravest organ of the Netherlands, and it is now preserved in the Amsterdam Historic museum.

> ". . . known to be the bravest organ of the Netherlands"

Hans van Oost lives in 's-Gravenzande, Netherlands, and is the current secretary of the Kring van Deliven.
*The "het Snotneusje" story first appeared on the Mechanical Music Digest in late 1999

Wanderings of A Small Band Organ

By
Matthew Caulfield

In 1956 I was teaching school in a small town in New York State's southern tier. Having time on my hands and money to spare, I decided to buy a band organ. Naturally I headed to North Tonawanda to see what Ralph Tussing's T.R.T. Manufacturing Company could do for me. In those early days there was no Internet to facilitate communication, and either it was the time before Hathaway & Bowers began gathering instruments and offering them for sale or else I just wasn't aware of them then. But I did know that Ralph Tussing was still carrying on the old Wurlitzer band organ business. So I headed north. I can't recall how I got there; I had no car, so it must have been by bus. But I do remember my first glimpse of Ralph's shop, dark, cluttered, stuffy, filled with parts, tools, machinery, and a few band organs.

Ralph let me look around the shop and told me a bit about his work, but I don't recall any of our conversation except his explaining the wide variety of pipe freins and other small parts he had to stock and showing me the wooden patterns for pressure bellows gaskets hanging on one wall over a cluttered workbench. My mind was on buying a band organ. He didn't have a 165 in his shop, and I do remember him saying that even then they didn't come along very often. He did have a Wurlitzer 146A for sale, serial number 3665, which I now know indicates it was originally shipped from the factory in mid-1924. Ralph started it up to show how well it worked, and it played "How Much Is That Doggie In The Window." A 146A plays the style 150 roll and has 106 pipes, bass drum, snare drum, and 3 manual stops. I really wanted an organ with bells, but being impatient, I took what was available and wrote Ralph a check for $600 for the organ and a few starter rolls.

Our town's local garbage man drove up to North Tonawanda in his truck and fetched the organ down to the small garage next door to the Catholic church in the center of the town, which I had rented as its new home. For the rest of the school year my band organ and the Catholic church co-existed peacefully: the organ didn't play on Sunday mornings and the Catholics were quiet during the week. The organ played most rolls pretty well, but it couldn't quite handle the vacuum demands of heavily cut rolls with tunes like "Under The Double Eagle." When summer came I returned to Seabreeze Park in Rochester to run the food operation, and the 146A came with me. It stayed with me at the park until 1962, when I left for a position with the Library of Congress in Washington.

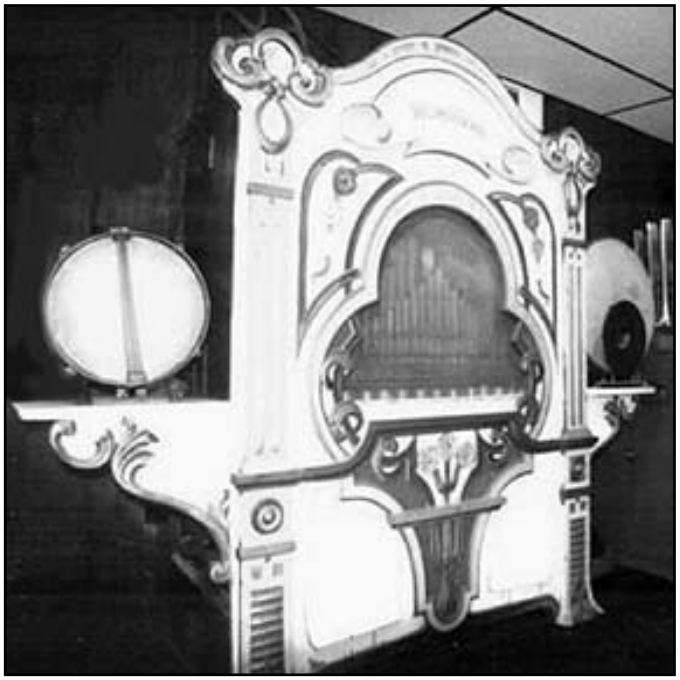

Figure 1 The Wurlitzer Style 146A carousel organ (number 3665).

In 1958 I decided to tackle the problem of insufficient vacuum. Not knowing then some of the things that I know now, I decided that the organ needed larger vacuum pumps. If only someone had asked, "Don't you suppose that Wurlitzer knew what they were doing when they made the organ?" I removed the vacuum pumps and broke them down, saving the reservoir and the valve boxes for re-use. Everything else I made larger, cutting new boards out of poplar, increasing their length by about a foot while keeping their other dimensions the same. After assembling them and giving them up several coats of orange shellac, I bought a huge cowhide to cover the new pumps. That hide was just big enough to cover the four bellows without any splicing, because I didn't trust my ability to skive and glue a seam so that it wouldn't later come apart in a place where it couldn't be reached. The leather wasn't as airtight as kangaroo and its hair side was unsealed, so many applications of neatsfoot oil, Lexol, and other coatings were required to make it tight.

Lesson #1:
"The original builders knew what they were doing"

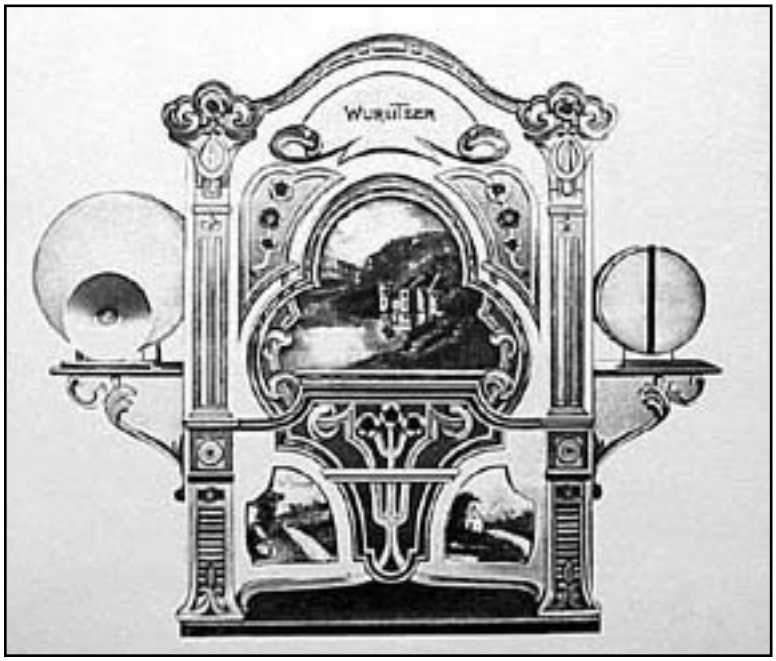

Figure 2 Wurlitzer 146A as depicted in the 1923 Catalog (**check this date)**

That new set of pumps was my pride and joy. It completely filled the upper organ, with the reservoir sitting now over the tracker frame instead of to its right. George Koeberle, the park electrician, used to say, "Listen to the bellows when they run. If they say, 'Chevrolet, Chevrolet, Chevrolet,' then they aren't pumping evenly on every stroke; but if they say 'Studebaker, Studebaker, Studebaker,' then you know they are running like a top!" The new pumps passed the Koeberle test, but tunes like "Under The Double Eagle""still didn't play any better. Lesson number 1: The original builders knew what they were doing.

Learning lesson number 1 brought understanding of lesson number 2: hundreds of tiny pinhole leaks add up to one big leak. Some testing proved that the vacuum pumps were delivering plenty of vacuum to the chest, but it was being lost through old pneumatic cloth that wasn't airtight and through leaky valves (unit blocks). I decided to tackle the easier job first. So I cracked loose all the finger pneumatics and recovered them with the same thin pneumatic cloth that Wurlitzer had used, re-glued them in their original places with hot hide glue, and re-installed the chest in the organ. Fingers crossed, I fired up "Under The Double Eagle." There was considerable improvement in the way it played, but still not perfection. So I unscrewed a few unit blocks from the chest and removed the top caps to get at their valve facings. I imagined that a nice new rubber valve facing would seal a lot tighter than the leather Wurlitzer had used. I replaced the old leather with rubber and re-installed the group of "improved" unit blocks.

Lession #2
"Hundreds of tiny pinhole leaks add up to one big leak!"

That's when I learned lesson number 3: Don't try to improve on what the factory used. The organ wouldn't even play "How Much Is That Doggie In The Window" now! So I determined to start over with the unit blocks and to rebuild them completely, using the same materials the factory had used: tan pouch leather for the valve facings and zephyr skin for the pouches. But the metal caps were becoming slightly deformed in the removal process because of the soft metal from which they were made, and I needed a substitute for the wooden rings used as pouch retainers, because they usually broke in the removal process. Somehow Californian Ross R. Davis and his band organ man, Herbert N. Vincent, came to my rescue. They supplied new caps made of stainless steel and phenolic pouch retaining rings, as well as advice on rebuilding the unit blocks. A few days of assembly-line work found me becoming pretty proficient at unit block overhaul. The only part I never fully mastered was Wurlitzer's technique for covering the bottom of the unit block. They used fabric-covered cardboard and were able to make a 45-degree angle on the edges, while still neatly trimming the fabric. I finally resorted to using shellacked cardboard, trimmed to the edge of the block, with no angling.

Finally my band organ played perfectly, hitting every note on every roll. So it was time to have it tuned. The tin ear I was born with had not been improved by years of hearing the big Wurlitzer 165 on the merry-go-round, so I hired a professional to tune it. I wasn't there when he came to do the work, and he later told me, "I had trouble pulling up some of the pipe stoppers. The handles came out, but the stoppers wouldn't budge. So I tuned the whole a few cents sharp." The organ sounded better than before, so I didn't argue.

I kept that 146A for another three years or so. Only a limited number of rolls were available for it, and they were all post-war T.R.T. products. If there were any original green-paper Wurlitzer 150 rolls for sale anywhere, I didn't know about them. And my little machine always lost out in comparison with the big 165 on the merry-go-round. To raise its status, I added two features that no 146 ever came with: a triangle and a set of swell shutters. Swell-control perforations are already in the style 150 roll, but no triangle perforations. So I had to add them by hand to all my rolls, which I willingly did.

When I was hired by the Library of Congress in 1962, I was faced with the choice of moving the organ, storing it, or selling it. I decided to sell. The details are fuzzy in retrospect, but I remember a man coming to look at it and offering me $900 for it, $300 more than I originally paid. Sold!

Lession #3
"Don't try to improve on what the factory used"

In the 1970s and 1980s even small band organs were fetching dazzling prices on the market and there was an abundance of good music being produced by Play-Rite Music Rolls, Inc. I began to regret selling my organ and to wonder where it was and whether I'd ever see it again. Every park and band organ rally I visited and every issue of the MBSI and AMICA publications I received offered the chance that I'd recognize the lost organ. But it never happened.

On January 7, 2000, I received an email from Mr. James Arnold, of Trafford, PA, telling me that he found "1958 M. CAULFIELD" inscribed inside the suction reservoir of his family's recently-acquired band organ. An Internet search led him to me, hoping that I might know something about the organ. A rapid exchange of emails and a long phone conversation answered a lot of questions for both of us.

When Jim Arnold was 10, he went with his father to a suburb of Beaver Falls, PA, and there saw the amazing "big toys" that Mr. Clyde Lightfoot had collected. A lasting friendship developed between the Arnold and Lightfoot families, and Jim was always allowed to operate the Lightfoot instruments, including his Wurlitzer 146A, so long as he took good care of them. Jim recalled seeing swell shutters and a triangle on the Lightfoot organ. But everyone he later told of this said, "No, impossible. The 146A never came with swells or triangle."

Clyde Howard Lightfoot died April 1998, but Jim remembers Mr. Lightfoot saying that he bought the 146A at an amusement park on a lake in New York State, where they also had a Berry-Wood orchestrion and a couple of big band organs. Mr. Lightfoot's mother took special care that the Arnold family should have the 146A. When the organ was delivered to the Arnolds in Trafford, PA, it indeed had no swell shutters or triangle.

Figure 3 The penciled inscription inside the bass drum pneumatic reading: "Leo A. Lazus, Mt. Wash., Pgh, Pa. 5-15-33."

I don't recall putting my name in the organ when I rebuilt the vacuum pumps, but if I hadn't—and if it weren't for the Internet—neither Jim nor I would have had the opportunity to get answers to some of the questions surrounding this little wandering organ. The organ now has a library of 30 rolls, not so many by today's standards, but a huge improvement over the number that I owned. Jim is naturally disappointed that I can't tell him anything about the organ's previous owners. I never thought to ask Ralph Tussing such questions back in the 1950s. Jim hopes that the Wurlitzer shipping records owned by Don Rand will show where it went in 1924.

One mystery remains: there is a pencilled inscription inside the large pressure pneumatic that beats the bass drum, in a hand that is so clear that there is no doubt to its reading: LEO A. LAZUS, MT. WASH., PGH, PA. 5-15-33. But a search of today's Pittsburgh telephone directory turns up not one family named "Lazus." If that name means anything to you, Jim and I would both like to hear from you. Our email addresses are mc707@earthlink.net and kb8vvt@nb.net.

Jim is currently restoring the organ to correct some damage from humidity. He plans to add to the inscriptions in the organ the name of Clyde Howard Lightfoot and James E. Arnold. On our side, my wife and I look forward to the Arnold family's visit to our Rochester home and to Seabreeze Park.

Matthew Caulfield is well known for his historic expertise on the Wurlitzer 165 and its hundreds of rolls and currently is curator of the Wurlitzer 165 at Seabreeze Park in Rochester, NY.

The "Trailer"

by
Larry Kern

My "Trailer"* is one proud possession that enhances my enjoyment of attending band organ rallies. One can easily note that the large white and blue striped trailer actually extends in length beyond the actual exhibit area that displays my Model 187 Stinson Band Organ (Fig. 1). A glance into the trailer from the rear walk-in access door appears to reveal a compact but well arranged over-the-road workshop and music roll storage area. But a closer inspection reveals an unusual feature for a band organ trailer. A full size folding "Murphy Bed" can appear and disappear from the wall almost like magic. And that's just the beginning of the travel trailer-like features that my son, Don, and I built into the trailer nearly ten years ago.

Figure 1 The Kern truck and "Trailer"

Features such as an electrical on-board generator, air conditioning and electric heating are all functional (the air conditioning might account for why so many members were seen going in and out of my trailer last summer). A complete entertainment center with TV, VCR, AM/FM radio, CD, stereo cassette player & recorder, along with an emergency 2-way weather alert radio, are neatly racked in an upright console. An AC/DC refrigerator, hot water capability, coffee maker, oscillating fan, lamps, magazine racks, framed pictures, and my favorite carousel horse, in miniature, also share space.

What's missing? Well, not the toilet! Not many people ask, but a functional one is on board. When "cabin fever" strikes, I enjoy extending a 20-foot long porch awning on the rear of the trailer and setting the lawn chairs out to read a good book. And, if needed, I can remove my bicycle from the rear of the trailer for bike riding. Couple all of these things together with storage cabinets for essentials and P.J. (a mischievous Miniature "Yorkie") and I are able to enjoy travel trailer life. While on the road, I find only a singular inconvenience and that is showering remote from the trailer. Although a daily must, this as only a minor obstacle to overcome while on the road. While parking overnight, recognized travel trailer campsites and large truck stops provide excellent hygiene facilities.

While at band organ rallies I normally like to stay at the motel arranged by the host. Occasionally being able to travel trailer in the host's back yard before and after rallies has proven to be a great way to visit. Having travel trailer features does not eliminate the need to use motels, but does offer a certain aspect of independence in being able to decide when and when not to use them. Curtailing the use of motel rooms, especially those needed for late night check in, significantly reduces the overall cost of traveling.

Figure 2 The interior of the "Trailer" reveals a most home-like setting with an entertainment center, refrigerator and most important, air-conditioning.

Having travel trailer features does not eliminate the need to use motels, but does offer a certain aspect of independence . . .

Larry Kern is a retired fire chief from El Paso, Texas. Not only is Larry's organ outstanding (a large Stinson Model 187) but also the trailer in which the organ is displayed.

The Ear and Hearing Protection

By
Johan Liljencrants [1]

The ear is a wonderful feat of our Creator that without immediate damage can perceive sound pressure levels from 0 to 130 dB, an impressive power range of 10^{13} = 10000000000000 times. A central trick to achieve this big range is the Stapedius muscle that pulls and displaces the smallest bone in your body, Stapes, which then transfers the sound from the eardrum to the inner ear "microphone." When you hear a strong sound this muscle contracts by a reflex to pull Stapes such that the sound transmission to the inner ear is decreased; it acts as a protective "automatic volume control."

One problem is that this muscle contraction takes time, tens of milliseconds. That is why gunshots are so dangerous to the ear, because with such short sounds there is not enough time for this mechanism to act. Also, just because the gunshot sound is so short, you don't perceive it as loud as it really is and perhaps you neglect to protect yourself for that reason. With extended strong sounds Stapedius can do its work, but after a while it is fatigued and its protective action decreases. Correspondingly, the auditory nerve system is fatigued and you are mislead this sound is not as loud as it really is and again you may neglect protection.

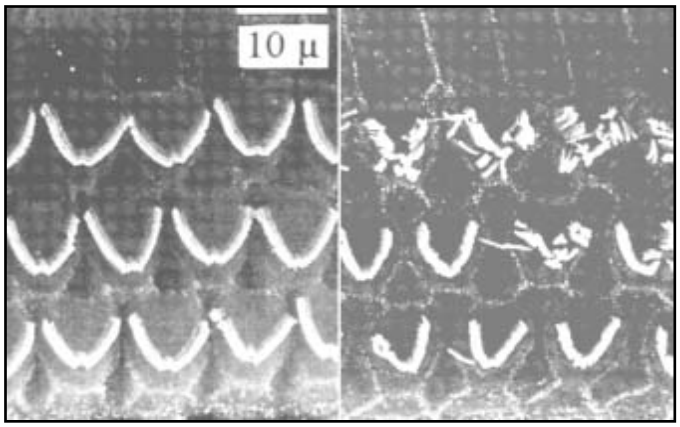

Figure. 1 Scanning electron micrographs showing about a dozen outer hair cells in rabbit. The three-row structure looks the same in all mammals. In the inner ear, the spiral shaped Cochlea, the sound induces vibrations in the thin Basilar membrane which by way of a complex wave motion makes a frequency to place conversion. This membrane carries some 30,000 hair cells, each with a characteristic V-shaped fence of tiny hairs like in these pictures. Adapted from: Borg, Conlon, Engström: Noise-induced Hearing Loss. Scandinavian Audiology, Vol. 24, suppl. 4, (1995).

The vibrations bend these hairs and this triggers the impulses to the auditory nerves. The basic mechanism in hearing damage from overexposure to sound is that you wear out and crush an increasing number of these hairs (Fig. 1, right). Once damaged they never recover and you suffer a permanent hearing loss. The hearing cells for high frequencies are adjacent to the sound input to the inner ear and these are the first ones to be decimated by over-exposure.

Another, and a worse, kind of damage is tinnitus, a virtual noise or beep that goes on forever, originating in your auditory nervous system. The cause can be infections or tumors in the inner ear, but also an over-exposure to sound. Tinnitus can drive people crazy.

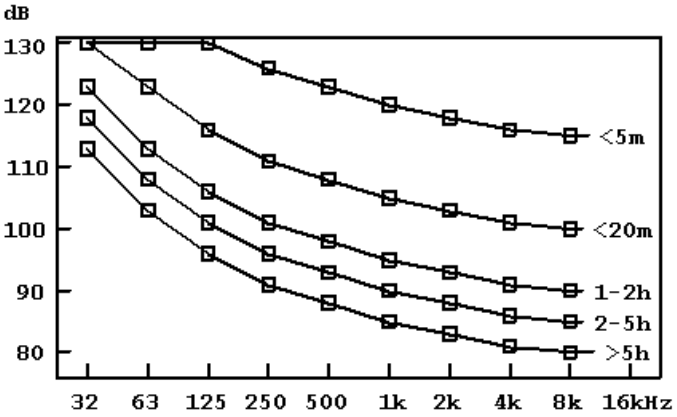

Figure 2 Hearing impairment induced by industrial noise.

Much research has been done on hearing impairment induced by industrial noise and there are consequent international recommendations for maximal noise dose to avoid such damage. Figure 2 shows a set of curves like this diagram of maximum permitted noise spectral level vs. frequency, sloping (very) roughly -3 dB per octave. At 500 Hz you allow 88 dB for more than 5 hours per day, 93 dB for 2-5 hours, 98 dB for 1-2 hours, 109 dB for less than 20 minutes per day, etc. If any of these conditions is exceeded you should wear a noise protector.

More recent investigations on symphony orchestra musicians have shown that they generally receive less hearing damage than predicted from the sound levels they are exposed to. The reason is believed to be psychological. Pop musicians using amplification, and their audience, are usually way up in the dangerous area and protectors are strongly recommended. Also, tinnitus cases among these people are much more frequent than you would like to know.

A typical mid-range organ flue pipe blown at 8 inches water column and 1 foot distance roughly matches the 1-2 hour per day curve, so you should be able to voice such pipes without fear. Calliope and reed pipes are considerably louder and clearly motivate protectors at close distance.

Figure 3 Plug protectors for musicians and other critical listeners designed for equal attenuation at all frequencies are exemplified in this figure showing a moderately priced standard type that attenuates about 20 dB. The protruding taps contain tubes forming an acoustic filter and the soft flanges ensure tightness to the ear canal. More elaborate special high equality types for 15 or 25 dB cost in the range of $200 and have to be individually tailored at a hearing clinic.

The simplest protectors are plugs made from cotton, special fibers, foam plastic, wax or molded plastic (Fig. 3). Using cotton, fold a flat pad in two and roll it hard into a cone with its tip at the fold, put it in your ear with the tip inward. These plugs attenuate high frequencies to the order of 20 dB but do very little toward low frequencies. They do a good protection job but distort the tonal balance. While doing my military service we used empty pistol cartridge shells as earplugs (hole inwards) while shooting. Slightly uncomfortable but quite efficient.

To reach more appreciable low frequency attenuation you will need the protector type with big cups covering the whole ears and soft cushioned brims resting against the head (Fig. 4). Lighter variants, perhaps with foam cushions stay in the 20-dB range. The better performance is with heavy cups and liquid filled or heavily encapsulated cushions to insure weight and tightness as shown here; this type attenuates in the 30-dB range.

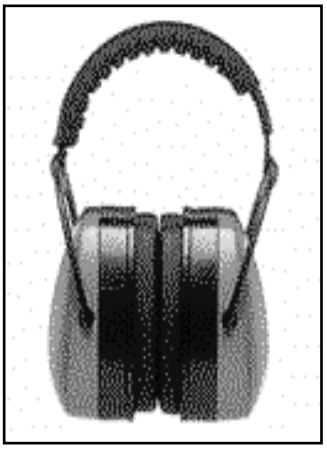

Figure 4 Cup-type protecto\rs which cover the entire ear.

You cannot get notably higher attenuation than this because of the bypass sound entering directly through your skull. For ultimate requirements like on an aircraft carrier you have to enclose your entire head in a helmet, like an astronaut.

There also exist fancy protector variants including electronics with active noise suppression. This involves a microphone at the ear driving a loudspeaker to counteract whatever external sound that penetrates into the cup. For reasons of cost and complexity this is marginally motivated for noise suppression alone, but is a logical add-on if you anyway want a speaker for distraction or communication purposes.

[1] Extended version of an article first appearing in Mechanical Music Digest 2000.01.15.

Johan Liljencrants is a professor of speech communication and electroacoustics and teaches at the Royal Institue of Technology in Stockholm, Sweden. Besides publishing many scientific articles on topics from loudspeaker enclosures to sound production in the human throat he enjoys several hobbies including pipe organ building and is moderator of the MMD Pipes Forum, an e-mail technical discussion group concerned with the theory and design of small player pipe organs.

Book Review by Phil Jamison

On Display

The publication of the Fair Organ Preservation Society's 40th Anniversary book *On Display* is a welcome addition to the limited literature on our favorite subject. It's large (8 1/2 " X 12") glossy format is based on the Dutch organ society's superb "Draaiorgels" anniversary book, edited by the esteemed Romke deWaard. In fact, both books end at 128 pages (and, unfortunately, lack indexes). Both mix color and black and white photographs in abundance. DeWaard's text and photo captions are a bit more detailed, but *On Display* has the distinct advantage (from our perspective) of being entirely in English. Not only that, it contains several articles about fair/band organ history including "The Fairground Organ in Great Britain" (Philip Upchurch), "The Australian Mechanical Music Scene" (Richard Ellis and Bob Hunt), "Mechanical Music in the Netherlands" (Hans van Oost and Rein Schenk) and "The American Market" (Tim Trager and myself). John Page contributes a useful "Glossary of Terms" addendum which clearly defines organ terms from "accompaniment" to "zinc." Numerous other writers familiar to all organ buffs add their own knowledge to the text. The entire project was supervised by "Key Frame" editor Phil Benson whose hard work must be heartily commended. Very little if any material is repeated in this book from the Dutch publication, so enthusiasts can confidently purchase both. Historic photos are always of interest to collectors, and David S. Smith of Cornwall and Tim Trager have contributed several interesting shots. Primarily, though, we see organs as they appear today. The full range of mechanical organ is displayed, from the huge Mortier, DeCap, and Gavioli to the petite portable models. The paper seems of good quality, so this book should amuse and inform for many years. Price: $35.00 (*On Display* may be ordered from Phil Jamison, 17 Sharon Alley, West Chester, PA 19382).

Easter Bunnies and Organ Grinders

by

Angelo Rulli

Easter is among the most cherished of holidays for millions of Americans, especially those of European extraction. Yet, for all of the religious importance of this most holy of holidays, it is curious beyond words to attempt to describe the symbols used for Easter. Take for example, Easter bunnies and Easter eggs. What in the world do such animals have to do with the Risen Christ? Fortunately, for organ grinder aficionados, such symbols offer a humorous and entertaining glimpse into such artifacts of a time long ago.

As collectors of such items know, the image of the organ grinder was inculcated into the American scene and psyche for decades. This character was so pervasive he could be expected to show up virtually anywhere and everywhere. There is, as near as I can tell, nothing that escaped the powerful allure of this charicature, regardless of what the medium might have been.

So in this season of Eastertide, let's enjoy some of the ways that bunnies and chicks and organ grinders were called together to celebrate the joy of Easter.

Figure 1

Easter has always offered the chance to participate in an age-old American custom: gift-giving. It is not a surprise to see toys among the items that give cause to recognize Easter. In Figure 1 we see an example of what was a tremendously popular toy of the 1950s: a hand-cranked rubber-band music box in the shape of a "hurdy-gurdy" or crank organ. The infamous and ever-found Mattel Creations music box is seen in a model created exclusively for Easter. On the bottom is imprinted "Music Maker Toys, Stock No. 437, 8436 Warner Dr., Culver City, Calif. U.S. Patent No. 2,504,666." This model does not have the ordinary credit to Boyd Duncan, the music arranger. Also missing is the year of manufacture, which typically is 1950-1953. This piece measures 6" high x 5" wide x 2" deep and the bunny, which bobs up and down as the music plays, adds another four inches to the height. To further confuse the matter of Easter symbolism, the tune played is "London Bridge is Falling Down." This would possibly suggest that the piece was made early in the 1950s and was a short-run production. In other production pieces, where larger production runs were made, more customary tunes such as "Easter Parade" and "Peter Cottontail" were featured. Of significance is the rope strap, which allowed a child to hand the toy around the neck and parade outside with what could be considered a very primitive "Walkman." Neat image, huh?

While there were scores of other hand-cranked toys made to celebrate Easter, they are more tuned to music boxes than organs.

Figure 2

Figure 2 is of a street organ with a music box movement. It stands 4" tall x 4" wide by 5" deep and is painted in pastel colors. There are no marks to indicate maker, etc. What's special is that it incorporated both typical images: the bunny and the chick! The tune played is "Easter Parade." I have never seen another of this model.

When collecting organ grinder artifacts, probably the most popular source of such items would be the postcards of years gone by. There is no better record of American correspondence than the post card. Before the advent of the telephone, and because of their meager cost, the penny postcard was the most common means of communicating. The postcard commenced in 1907 in America but it was forbidden to write on the address (reverse) side of the card until Congress changed the law in 1911; hence, we see many cards with handwritten notes scribbled over the front of the card. Because of the popularity of postcards, it's no surprise that Easter post cards were made and sent. Imagine the organ grinder theme being so popular at the turn of the century that the grinder was not only featured in postcards, but the Easter theme allowed for the grinder to be portrayed as bunnies and chicks! The following cards are from my collection which include organ grinders featured for all of the major holidays.

Figure 3

Figure 3 is of an unmailed card and is highly unusual because if features both a chick and a young maiden. Almost always animals were used exclusively, and humans were left out. The card is gold embossed and is in full color. The verse reads: While the

maiden hops about Mr. Chick the tune grinds out." Doesn't make much sense, but then it doesn't have to.

Figure 4

Figure 4 shows a rather solemn looking, and nattily dressed, rabbit grinder with an organ that doesn't appear to be modeled after a real organ. This is another gold-embossed and full-color card. Interestingly, the crank is "C" shaped, which suggests that the artist actually saw such a crank at some time. However, "C" cranks typically were not used after about 1870. Note the dancing chick with a string about its neck to prevent it from flying away. The card was mailed March 29, 1907 to Miss Hazel Palmer Blooming Prairie Minnesota. No street address was needed. What a simple time it was!

Figure 5 is also in full color and gold embossed. It was mailed March 25, 1910 in Milwaukee, Wisconsin. The organ here has the crank on the right side, as do most of the organs. The only logical reason for the crank to be shown on the side is that it makes it visible to the reader. Few crank organs actually had the crank on the side because it would be extremely difficult to connect the cranking mechanism to the barrel..

Figure 5

Figure 6

The bunny in Figure 6 has the good fortune of playing a tune that inspired the two chicks to begin singing. The card is hand painted in soft hues. Printed on the front is the following information: Huld's Easter Series 21-30. Copyrighted 1905 by Franz Huld, Publisher, New York. There apparently was a series of Easter cards, perhaps even more featuring organ grinders. It was mailed April 22, 1905 to Miss Catherine Armanu, Plant Ave. Webster Grove MO.

Women are rarely featured as organ grinders

Figure 7

Women are rarely featured as organ grinders, and more difficult to find is a female bunny grinder. Such is the case in Figure 7. This card was mailed to Mssr. Arthur van Deth, Jr. Brussels, Belgium, April 3, 1903.

The egg and gathering of babies in Figure 8 probably has some significance, but it would be tough to figure out what it is. They appear to be a happy lot, as do the bunnies dancing to the bunny grinder.

Figure 8

Figure 9

Figure 9 is of another gold-embossed card in full color. Of note is that only the bunny on the right, who is ringing the bell, is clothed. Curious. The card was mailed to Mrs. Lewis Selzer, Dunkeetin, Iowa, on March 19, 1912.

A flock of chicks is seen in Figure 10, with the chick grinder holding out a hat for passers-by to drop a tip. It was mailed in Ottumwa, Iowa, March 13 at 6 PM but no year is stamped.

Figure 10

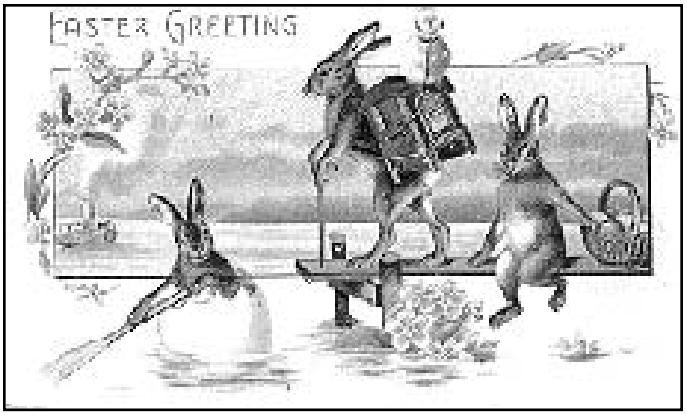

Figure 10

A very accurate-looking organ is featured in Figure 10. Once again the chick is leashed to the organ. The whimsy continues with the bunny on the left rowing an egg. Once again we see this curious combination of bunnies and chicks and eggs all commemorating Easter. The card was mailed to Master Arthur Elliot, Box 22 No 4, Tampa, Fla, on April 10, 1909.

Figure 11

The card in Figure 11 is special because the glitter effect is layered onto the card. Again we see the happy, dancing bunnies and the undressed grinder. The verse is unique: "Easter Joys Attend You." This probably makes sense to the bunnies. It was mailed April 17, 1911 to Master Charles Rosenbaum, 2224 Wash. St., San Francisco, Cal.

Figure 12

We conclude with two foreign cards: Figure 12 celebrates Easter with the German proclamation Frohliche Ostern and shows a chick grinder serenading three chicks. The card is gold-embossed and in full color.

Figure 13

The last postcard, in Figure 13, is in full pastel colors and appears to be of a circus theme with a tight rope walker overhead while the bunny in the foreground is collecting tips from the chicks. It was mailed on March 29 and appears to have been mailed in 1932, which would be quite late for such a theme.

Figure 14

Lastly, a business card featuring a one-legged, singing chick cranking a left-handed egg (Figure 14)! It's obviously time to close this article. And what could be more fitting than such a grinder?

I hope you've enjoyed this brief look into organ grinding and Easter. There is little doubt this beloved character has made his mark on history.

Angelo Rulli serves as the Assistant Editor of the Carousel Organ and his expertise in editing and publications is invaluable to this journal. Angelo, besides enjoying playng his crank organ, collects organ grinder memorabilia and has one of the largest of that type in the United States.

Johnson Reopens Band Organ Department

Fargo, ND, September 16, 1999 - The Johnson Organ Company, Inc. of Fargo, North Dakota, now in its 45th year in the manufacture of pipe organs, has announced that they are again building band organs (mechanical pipe organs that play music rolls) for merry-go-rounds. They have been contacted by ride owners who have discovered that band organ music greatly enhances their merry-go-round ridership. The new organs have reliable brushless motors instead of perishable leather bellows and weight about 100 pounds less than the traditional band organ.

The Very First Time

by

Tom McAuley

. . . September 1995.
. . . Discovered mechanical organs.
. . . A new adventure begins.

While I grew up in a fairly musical family, my experiences with musical instruments were limited to the common band instruments that seem to take considerable skill and practice to play well. I had seen the occasional player piano and had read the term "organ grinder" in stories, but I was not really familier with those types of instruments. I thought that nickelodeons had long been extinct, and that carousels had always used recorded music. So you can imagine my surprise and delight when I walked onto the Kansas State Fairgrounds one day and found all kinds of mechanical pipe organs on display. There were big ones and little ones, loud ones and soft ones, fancy ones and plain ones. I found small ones that the owners called "monkey organs" on little push carts and big ones called "band organs" in trailers. I even found a calliope in a truck. They were scattered throughout the fairgrounds, so almost everywhere I went, I found another organ.

I was fascinated with the discovery that fine organ music could be produced by anyone capable of turning a crank at a consistent rate. I was awed by the beautiful designs, the carvings, and the paintings that covered these wonderful machines. I was entranced by the variety of music these instruments were playing, from waltzes to marches to showtunes. But best of all, I was welcomed into the circle—encouraged to ask questions and take a turn at cranking out a tune.

The mechanical aspects of the organs were truly fascinating to me. I looked and watched and questioned, and eventually began to understand how they worked. The idea that a few holes punched into a strip of paper could actually make a pipe organ play seemed awfully clever to me. And I was quite intrigued that just turning that one crank could bring the whole instrument to life. I had a great time watching as the crank turned, and the bellows pumped, and the paper moved, and the organ produced its wonderful music.

The artistry of the designs on the fronts of the organs was outstanding. I learned that the organs had been hand-crafted in England, or Belgium, or Germany and each one was unique. A small red one featured paintings about Mozart, while a big shiny black one had scenes of Germany and portraits of composers painted on the front. I saw one that was decorated like a circus, with animated clowns ringing the bells, and I saw others with very elaborate gold-leaf carvings, and still others with exquisite inlaid wood. Some of the organs were very simple, while others were just overwhelming celebrations of the wood-carvers art. Each of the organs was beautiful in its own way, and it was interesting to see how some of the owners even dressed in appropriate costumes to match the theme of their organs.

Music, music, music! A wonderful variety of tunes was being played. I heard classical waltzes, and medleys of Broadway musicals, drinking songs, children's favorites, dance numbers, and marches. The music was just so cheerful, I felt like I could listen for hours. I also realized that each organ had a unique tone. Some had a very mellow sound, while others had a brighter tone. As I explored the various organs scattered throughout the fairgrounds, I discovered that some used a paper roll, some used a cardboard book, and some used a microprocessor to control the organ. The big organs were producing a full, rich sound with more than one hundred pipes, and the smaller ones played light melodies with as few as twenty pipes.

Tom McAuley eagerly playing "The Happiest Music on Earth."

Many times I have attended festivals or events where the exhibitors ignored the crowds or acted as if they were completely bored. Not this time! All the organ grinders had smiles on their faces. They were encouraging the crowd to not only stop and listen, but also to sing and dance along with the music. The theme seemed to be "The Happiest Music on Earth" and they certainly believed it. Their enthusiasm was contagious, and most of the crowd quickly entered into the spirit of the occasion by singing along, or clapping, or just smiling and nodding in time to the music. When somebody, like me, seemed especially interested or asked a question, the answers came quickly and cheerfully. More serious interest was rewarded with an invitation to look inside the organ to see how it all worked, or an opportunity to crank out a tune.

I hung around so long that one of the organ grinders finally insisted I take over his organ while he went to look at the other exhibits at the fair. I had a fabulous time playing his organ! He told me I could choose any rolls I wanted, and he had shown me how to change them, so I took my turn playing anything I liked. Of course, the other grinders let me play their organs, too, so I got to play several songs on several different sizes and types of organs. I even received a certificate proclaiming my new accomplishments!

That was a very, very special weekend for me. I discovered a whole new world that I had not even known existed before. I have since joined a couple of organizations and met a lot of really nice people. I have begun the process of learning about these fascinating instruments. I'm learning about their history, how they are built, and how they have been used through the years. I'm beginning to learn the names and the models. And, I'm discovering that these organs, both big and small, are tucked away in all types of little corners of the world—I just have to listen and look to keep finding them. I've even purchased my own little monkey organ. Now I'm one of those cheerful people bringing the "Happiest Music on Earth" to the crowds at fairs and festivals, and I'm still having a wonderful time!

Tom McAuley is a newer member of the Heart of America Chapter of AMICA and attends all the local rallies that he can. His enthusiasm is refreshing and contagious.

The Magic World of Showman's Models

by
Clarry Atkinson

My love of pipe organs began with visits to Blackpool Tower (520 feet tall) and Ballroom, Blackpool, Lancashire, where I fell in love with the three manual Wurlitzer Theatre organ, played at the time by Reginald Dixon. To me, nothing produced music like this magnificent instrument. In the late fifties band organs on fairgrounds were very thin on the ground and the ones I saw were in such a bad state that they did nothing for me.

I then obtained a 10" long-play record of the Carousel Bequart, a Hooghuys organ owned and displayed by Albert Bequart of Belgium who traveled with his beautifully-maintained Hooghuys organs in very ornate carousels. This fired up my enthusiasm for the band organ. Unfortunately at this time there was nothing to be had in the way of recordings so I followed the theatre organ.

Figure 1 The Wurlitzer theater organ modeled off the Blackpool Tower organ. This model was made in the early 1980s.

In the early 1980s I made about eight models of the Wurlitzer consoles, which were received quite well (Fig. 1). These were all modeled after the Blackpool Tower Wurlitzer which I loved so well.

Figure 2 The Grand Carousel Organ and caravan has 80 pipes and is five feet wide; three feet tall and 18 inches deep.

By this time recordings of band organs began to appear and my enthusiasm moved back to the band organ. I made a series of models such as the Polyphone, barrel piano, calliope on a circus display (or parade wagon) and a band organ trailer with a showman's steam traction engine.

About 10 years ago I decided to go for something different which I could exhibit on rallies (I had not the funds to purchase a real organ). I decided to build a simplified model of a gypsy caravan and install a freelance model of a band organ, which incorporated my own ideas of design. The enthusiasm that I received on my first outings astonished me. The organs were not real but attracted people more than the real thing.

Figure 3 The Atkinson's Showvan organ which has 180 pipes. It is now rallied by a couple around the Cueshire area.

The enthusiasm shown did wonders for my ego and I really felt proud that my humble efforts received such acclaim. My first one was sold and went to the USA (bought by Ripleys of Orlando, Florida). After this I made one each year but I was never able to retain one longer than 12 months. The second one went to Western Australia and two went to Ireland—the remaining four remained in the United Kingdom.

Figure 4 The Grand Gavioli is 5 feet and 6" wide; 3 feet tall; 18 inches deep with approx. 160 pipes.

I no longer have one, as I am now 66 and lack the energy to produce them. None have been accurate models of real organs but rather products of my own interpretation of band organs. While these organs are wooden models, the music is provided by tape system with speakers. I now occupy myself by painting and have recently finished repainting an early carousel horse (fiberglass but quite old). I also make chests and panels which I decorate in fairground style.

Figure 4 (above) is the Wurlitzer organ displayed at the Fleetwood Tram Festival in 1977. On the right (Figure 5) is the back view of the same display unit.

None have been accurate models of real organs but rather products of my own interpretation of band organs!

Clarry Atkinson is enthusiast of mechanical music who lives in Briercliffe area of Burnley in the United Kingdom. Although his models are non-playing he provides music by tape player.

. . . continued from page 1 (*Frati 49-Key Barrel Organ)*

Casework

We began the cabinet restoration by carefully stripping off the old paint, which was obviously, a home-done job. As each coat of paint came off it was recorded for color and type of paint with the intention of restoring the case to its original painted color. As we went deeper and deeper it became evident that the wood on the sides and back was actually a beautiful rosewood matched veneer. The entire front was ebony. As the stripping process continued, images of the name Frati & Co. Buchholzer, Strass 1, Berlin came into view (Fig. 1). Below the name appeared a large floral panel of marquetry. You cannot believe the excitement that went through the shop at that moment. Our customer decided that the now designated Frati barrel organ should receive a full 100 point restoration.

Work was started on the case, which needed a great deal of repairs. The name and large flower panel were made up of wood marquetry—the art of making pictures from small pieces of different colored woods. We had to replace many missing pieces that had fallen out and some sections that were gouged out and completely missing. The old legs of the cabinet were worn down more then an inch from what looks like simply being dragged over a rough floor! We removed the original veneer from the lower section and replaced the old legs with new ones. The old veneer was then replaced over the new legs, complete with a section of new veneer to fill in the missing section at the bottom that had been worn away. New brass corners of the correct height were also made using the originals as our pattern. These original corners will be saved and will be kept with the instrument, as will all the other interesting items we found yet to be discussed.

Figure 2 The "Bode" barrel organ as it was brought into the shop. At this point there was no clue that it was orignally a Frati organ.

The entire case was re-glued, along with repairs to the rosewood veneer, which was stained to bring out the full grain of the wood. It was decided that the new finish should be a "French Polish" finish—the application of special brewed shellac onto the surface of the cabinet. By rubbing the finish and using varying degrees of abrasive powders and oil this will create a perfectly smooth, clear finish, exactly the way it was done hundreds of years ago. Domenic DiBernardo is an expert at French polishing and did the entire case over a six month period. The main ingredient in this process is plenty of talent, time, patience and lots of good old elbow grease.

Pipework

The ground pipe work (these pipes are located underneath the organs) was, as one might expect, quite rough! After many years of working on the streets, in all types of weather, all were found to be split at the joints and many had been blocked off with a piece of leather so they would not speak. As each pipe split it would produce an awful sound so rather then repair the pipe it was simply plugged. Every pipe had to be taken apart and re-glued, then sealed. Some pipes have a stopper in their tops. These "stoppers" are used to tune the pipe and must move freely, so all of these stoppers had to be re-leathered, and then, fitted back into the pipe for a snug, air tight fit (but yet able to be movable for tuning the pipe). The pipes were then re-voiced and rough tuned—the final tuning to be done later (after installed into the organ and using the organs own bellows pressure). Next these pipes were glued to the bottom of the organ's floor onto strips of leather (Fig. 3). Then the floor could be reinstalled into the instrument, and the bottom skirt section slid into place and fastened to the main cabinet. We also made a special dolly of angle iron and rubber wheels to make it easy to move the instrument — this also gives strength to the entire instrument, which probably weighs in excess of 200 lbs.

Figure 3 The ground pipe work have just been glued to the bottom of the case . These are protected by a wooden skirt.

Figure 4 The brass piccolo pipes have been restored and now back in position.

The main ingredient in French Polishing is plenty of talent, time and patience — and lots of good old elbow grease!

The Piccolos were stripped of their painted finish — underneath the paint was the traditional black egg corn tops. These tops have a threaded wire that holds the tuning plug in place. These we replaced with new cork plugs, which are turned on the lathe for a tight, yet movable fit in the pipes. Several new bases for the piccolo brass tubes had to be made because of worm damage and to replace some home-made ones that simply didn't work. The pipes were then buffed back to a high polish, finished and mounted on their pipe rack (Fig. 4). The original red cloth back was cleaned and reinstalled behind the piccolo pipes.

Pumps

The Main pumps also held a wonderful surprise in the form of an autograph of Bacigalupo inside the reservoir — however, no dates or initial. In all there were three signatures but just the one could be read. Another mystery! These pumps have had many repairs over the years and I assume Bacigalupo made one of these repairs. The pumps in this Frati were of the standard type used for street organs of this era. This comprises of four pumps and a reservoir. The reservoir has four large springs which push down on it as it tries to inflate from the wind which the four pumps are pushing into it as the organ is being cranked. The pressure of these springs is what creates the wind pressure needed to make the pipes play loudly for outdoor use. The pressure in a street organ is usually about 8 (water column) inches and sometimes higher. A typical church organ works on about 3 (water column) inches of pressure.

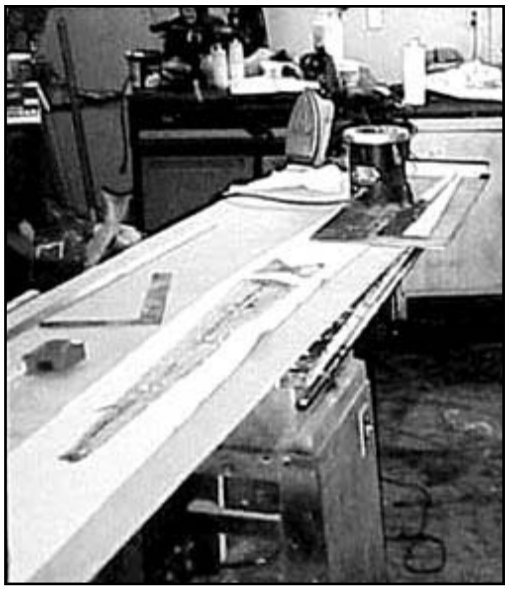

Figure 5 The rigid gussets being glued to the one piece leather bellows.

A lot of the leather had split at the edges and the rigid gussets had come away from the leather and jammed against each other inside the bellows. We had to make several new bellows boards because of worm damage and large cracks which could not be glued properly to insure a strong enough bellows. Also, the usual wood spreaders between the pump sections had to be replaced with new wood pieces. We sent samples of the original leather to The Leather Supply house of South Bend IN. They carefully matched all the required leather for the pumps and reservoir with leather of the same weight and thickness. They were also able to supply us with long pieces so the bellows could be formed in one piece rather then having to splice pieces together as original. We found this instrument to be using fairly light-weight leather for the bellows so extra care was spent to ensure it was correctly stretched before installing to ensure a long life.

Figure 6 The author testing the newly covered bellows. Each will move easily because of the new, light-weight leather.

The alignment devices . . . can actually be the difference between success or failure of a good instrument.

We installed new rigid gussets onto all the leather pieces and increased the distance between the gussets' bottom and where the bellows boards fit on to the panel by about ¼ of an inch (Fig. 5). This ¼ inch will actually be glued to the inside edge of the pump boards on all three movable sides. This makes a sort of shelf or edge and will stop the leather from simply tearing off the side wall of the thin bellows boards for many years. All of the pump boards were resealed and re-hinged. New valve flaps were made using the same three-piece build-up as original. This build-up is comprised of three sections of leather — the top piece was a rigid cowhide while the next 2 pieces were of thick suede goatskin. Two strips of thin leather straps hold down these flaps. Once assembled we found the pumps to crank very easily (because of the thin leather panels) and the pressure to be 8" of wind (Fig. 6).

Metal Parts:

Surprisingly there are quite a number of special metal parts used in a barrel organ. Included are the main crankshaft, bearings and various sliding plates to adjust the barrel for song selection. In addition there are the adjusters for aligning the barrel to the keyframe and keyframe to the pallet sticks, bellows springs, and screws of all types and sizes. All need just as much attention as the rest of the instrument. In fact, the alignment devices (used to remove lost motion between the barrel, keyframe and pallets as well as square up the keyframe to the barrel) can actually be the difference between success or failure of a good instrument. Simple regulation! For these parts to work properly they must also be restored.

Figure 7 Some of the metal parts, cleaned and polished or plated, and installed back on the organ.

We operate our own plating shops, which can handle nickel, copper, brass and gold. But most important is Electro-cleaning. This is a process where the parts are put into a special heated bath and an electrical current is passed through them. The current causes hydrogen bubbles to form on the part and literally scrub the part clean of all dirt, rust and grease. Once cleaned the part can then be either polished or replated to its original color. Often parts have become very pitted and rusty with their original plating literally falling off. When this happens we simply strip off the old metal plating electrically. We place the part to be stripped in another special bath along with a metal plate, and then pass an electrical current through the part. This causes the old plate to leave the part and form on the metal part, actually saving the old nickel or brass for later to reapply it back onto the cleaned part. The part must then be polished to a perfect surface. To repair scratches or bad spots caused by rust we then apply a thick coat plate of copper. Copper is very soft and builds up quickly on the part; this allows us to easily buff out the damaged section and then re-plate the part in nickel. It often takes three or four of these sandwiches of plating of brass, nickel, and then re-polishing before the part is ready to go back onto the organ. We can also plate brass parts with 24-caret gold. This will keep the part bright and shiny as new and never need polishing.

Pipe Chest

Over the years water got into the instrument and soaked the pipe chest as well as all the other various parts. The pipe chest, with all it's many channels that supply air to each of the pipes, was badly warped and most of the boards had separated or split, including a large number of the thin boards that divide each of the 49 notes from the next (Fig. 8). We were able to completely dismantle the chest and re-glue all of the original boards back into the two large boards that make up the top and bottom panels of the chest. All of the thin boards that make up the 49 separate channels were then cleaned and re-glued into their respective slots. The fun really starts when you have to fit all of these boards into the slots cut in the top board. This operation certainly does take a lot of pushing and gentle nudging until all of the parts slip into place. This job should be only undertaken when you are all alone and no one is able to hear you yelling and cursing at the stubborn pipe chest. We then re-clamp the entire chest in a special jig I made up especially for straightening pipe chests. After four or five days of drying, it is taken from the rack. We then fill the chest with a special sealant, which runs into every nook and cranny, leaving a clear, airtight seal. The chest is then allowed to dry and the entire resealing process done again. I like to do this flooding at least three times to ensure a good job. One leak and the result is several pipes of different notes playing together, not very nice to hear! If that happens then the entire organ must be dismantled so the pipe chest can be removed and the offending leaks found and sealed. So it is a good idea to take your time here and test every channel as best you can before continuing with the pipe chest restoration.

Figure 8 The pipe chest prior to restoration. Many boards were warped or split.

Next the pallets were cleaned and recovered with soft leather of the same type as used originally. The pallets were re-glued in place in the pipe chest with special attention to the hinge end. This hinge must be a very good bond, as must the bond between the leather and pallet board. The pressure of the opening and closing of the pallets as the organ plays can cause the hinge to separate allowing the leather to “gather up” allowing wind to enter the windway and cause a pipe to play continuously. The pallet boards were also lubricated with graphite in the little slot cut into their top. When the pallet box lid is replaced a small wire leaf spring is slid into each of these slots and secured in the top board. As the pallet opens and closes this spring must slide freely in the pallet slot. The back of the chest was simply covered with a thick brown paper. I could see that this paper had been cut many times to allow for repairs to be made on pallets that had become unglued or stuck. The repaired sections then simply had another piece of paper glued over the hole made for the quick repair. I decided to replace this paper seal with a thin wood panel which can be more easily opened allowing for any adjustments that may be needed in the future just like on the larger band organs.

So it is a good idea to take your time here and test every channel as best as you can before continuing with the pipe chest restoration

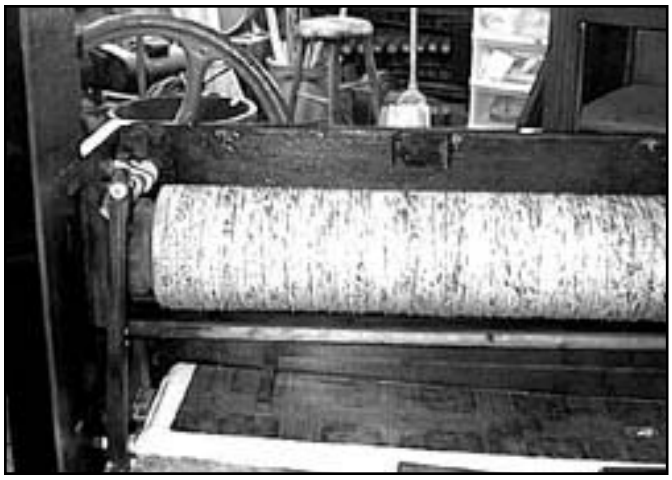

Figure 9 The pinned barrel, restored pump and crank and crank arms now have been put back into the case and ready for testing.

Partial Assembly

Following the pipe chest work we installed the main crank assembly and begin to realign the crank and crank arms for a smooth travel (Fig. 9). The barrel tray and its brackets were installed and the barrel slid into place for alignment with the worm gear on the main crank. When the casework was being done, we re-veneered right over all the many holes that had been made in the case sides over the years. Holes to compensate for wear as well as the holes to readjust the various levers for selecting the songs and lifting the fingers off the barrel. Now we have to carefully cut through the new veneer and position all the controls where they were when the organ was new. Once this is completed we are able to tighten down the pipe chest and install the big pressure springs. Now is the moment of truth, when for the first time in many years the heavy iron wheel is slowly turned allowing wind from the restored pumps to enter the pipe chest. Nothing is more satisfying then watching the reservoir come up to the top and become rock hard as the pressure regulator valve balances off the wind at an even nine inches of pressure. Each of 49 the pallets is then checked for tightness by shoving a wire down its key frame hole and simply listen for the snap as it reseats.

Trumpets and top melody pipes

As restoration of the pipe work continued, we are always looking for pipes which will help confirm the original pitch the organ was tuned to. Often the trumpet reeds will have a mark left on the tongue where the tuning wire held the reed in place for many years. In fact you can see how the trumpet was tuned over the years by simply studying the different marks. Often the pipe would come loose from its rack and for some reason the screw hole in the resonator never seemed to line up with the screw in the rack. Often the problem was solved by simply making a new screw hole. Rarely is the old unused hole ever found to have been properly filled. Usually a crack starts from the new screw that was forced into the soft wood of the resonator. This hole in the resonator causes the note to go sharp and of course the organ grinder had to retune the trumpets by pulling back on the tuning wire making the trumpet slightly lower in pitch. Next the piccolo would also have to be made lower to be in tune with the trumpets. This goes on through the entire instrument - each pipe has been "adjusted" or tuned over the years to be as close to original pitch as possible until finally it can no longer be tuned and usually makes such a screech that it is blocked off. The more pipes we can find that haven't been altered completely out of whack the better. We record every pipe and its condition and where the tuning device was last positioned. (Fig. 10) Then as each pipe was restored and taken apart we can see where it was originally tuned. Care must also be taken as occasionally the scale was altered and your new discovery as to where the pipe was originally tuned may not be correct for the instrument's scale as it is now. Occasionally you will find that pipes have been switched with one another for one that would tune better or even pipes that have been sawn shorter so they would come into tune (sort of) even though it is now an octave higher! (pipes that have had sections glued on to make them lower in pitch).

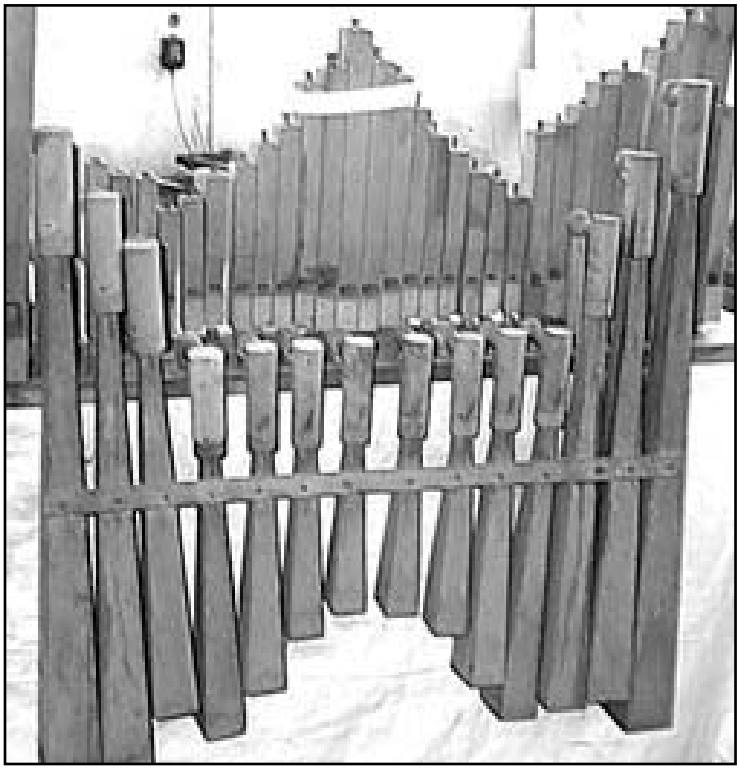

Figure 10 The trumpet pipes (foreground) and melody and accompaniment pipes (background) sit on the workbench before restoration.

Once all the pipes are restored I like to rough tune the pipe on the work bench to its original pitch as the various marks inside it show where it was tuned. After all the pipes are rough-tuned and their pitch noted you can begin to see where the instrument was originally tuned. Often the note shown on the key frame is not the actual note the pipe is tuned to. I make up two scale sticks, each stick has all the notes marked on them starting at C and running up at least three or four octaves. Next I set my first note of my melody section which is D (on this Frati Organ) and then sound the first melody pipe (as we feel it was originally tuned) and it plays F. I then simply align the two scale sticks so that D on stick #1 is beside F on stick #2. We have now found one of the ways to the way the instrument was originally tuned. All notes are transposed up three notes automatically by referring to the scale sticks, and after com-

paring the original locations of the pipes tuning marks, I find this to work 9 out of 10 times. Always keep in mind that the organ may not have been tuned right on the note as is a piano is. Many times you will find the note to be sharp or flat of the actual true note — sort of in-between — and again this is where people try to get the organ into tune with their "modern electronic tuning scope" damage a lot of instruments.

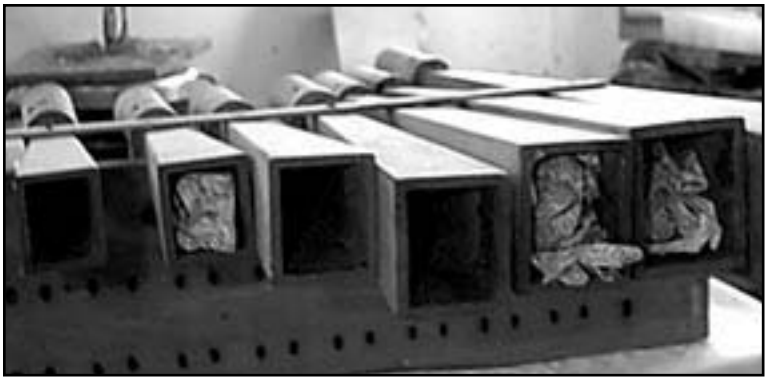

Figure 11 This view reveals the paper "stoppers" in some of the organ's trumpet pipes.

We now begin fine-tuning the pipes. All are installed in the organ and the wind is supplied by the organs own pumps. As you tune each section of the scale you will notice how each pipe speaks with good volume while main-taining its unique sound or voice (and is able to speak quickly at the correct pitch). Just like magic! The actual tuning procedure would take several pages to cover. In fact, many entire books have been written on this subject, so for now we will skip this, and save it for a future article in the Carousel Organ.

Sometimes even the things people jammed into the pipes to stop them from playing can become a very important clue for further investigation (Fig. 11). The paper that we found jammed into the trumpets is dated 6 January 1949 and is the German newspaper "Braunschweiger." This tells us that the instrument was still working in Germany in 1949. Who knows with luck and help from other collectors in Europe, it is actually possible that some day we will know who the original owners of this wonderful instrument were and perhaps even learn to what extent this Frati influenced their day to day life.

Final Casework

There are many details involved in the restoration of a barrel organ. From the very beginning the cost of the restoration must balance the end product. Instruments like this Frati deserve a full restoration. And the hundreds of hours involved in such a project simply cannot be rushed. On this Frati we found two marks in the veneer right beside the Frati name, on further investigation we realized that this is where the Frati Company displayed two of their distinguished awards (Fig. 1). These medals had long ago disappeared. We are very fortunate to have another Frati of similar size in for restoration from the collection of Rick and Betty Cooley of Hockessin, DE. On the Cooley's Frati we found very similar, if not identical, awards medals. Rick unselfishly allowed us to make exact copies of his Frati's medals in order for us to complete this Frati to the last final detail. This is the sort of comradeship that exists in this collecting group. People who love these amazing machines want to see every instrument restored as complete as possible.

Figure 12 The restored 49-key Frati barrel organ.

Final Assembly

Now is the time to assemble all of the various parts that have been collected over the past months (Fig. 12). Parts such as new custom-made hinges, eye and hook fasteners, locks and keys, moldings, corner brackets and handles to name just a few. All machined from solid brass and polished to perfection just waiting for this day. Each section is carefully aligned and fitted into place. This is not the time to slip with the screwdriver! Red cloth is secured into the front facade for the time being. These cloth panels will also soon have hand painted floral decorations as the instrument did originally.

This ends my brief description of a typical restoration of a Frati barrel organ. There are many items we did not discuss in detail in this article such as the barrel restoration, key frame finger re-tipping, regulation or any of the various adjustments required to get a barrel organ to perform as it once did 100 years ago. These we will save for a later date. I do hope you enjoyed this Frati story and would certainly like to hear from you and hope you will share with me your favorite restoration ideas and how you solved some of the many problems encountered in all restoration of automated musical instruments.

Ron Schmuck is a mechanical music restorer who resides in Ontario, Canada. He frequently attends organ rally functions and recently, took time from his restoration work to document this interesting organ.

Letters to the Editor . . .

(continued from page 2)

Heller Gavioli—I doubt the suggestion that the organ was originally an 89 violin-baritone scale organ. To the best of my knowledge, that was a Marenghi-devised scale that was not employed by Gavioli. So, the two, the make and the scale, are mutually exclusive. I believe a recent issue of *Het Pierement* has some further commentary on the organ's original scale. There is a second organ in England that shares some of the same facade design with this instrument. It was, and may still be owned, by Dan Shorey/Storey (apologies to the owner, the resources differ on the spelling).

Fred Dahlinger, Jr.

In the News . . .

Puyallup Fair carousel now has its very own band organ

Rare Wurlitzer was overlooked and in need of expert's touch

By Bart Ripp
The News Tribune

The Puyallup Fairgrounds, asleep much of the winter, greeted March 1 with marches galore.

A rare Wurlitzer band organ, lost but never misplaced, tolled a tremendous tremolo from paper music rolls of Scott Joplin rags and the regal pomp of John Philip Sousa's mighty marches.

The fair's priceless carousel, crafted by the Philadelphia Toboggan Co. in 1917, now has a peerless accompanist in the Model 145 band organ made in about 1929 by the Rudolph Wurlitzer Co. of North Tonawanda, N.Y.

Ron Bopp of Jay, Okla., author of "The American Carousel Organ" and editor of a quarterly journal on these very American forms of entertainment, said this 145 may be the only one left in the world. Wurlitzer made a 145B model, adding a frill called a bell bar for chiming tunes. A few 145B models survive at amusement places such as Back Lake Ranch in Angola, Ind., and Old Town in Kissimmee, Fla.

"I can't think of another 145," Bopp said. "It's a rare organ, no matter what. Wurlitzer didn't make very many of them."

The 900-pound organ sat, unappreciated and undetected, in the carousel pavilion at the heart of the fairgrounds.

"Nobody even noticed it," said Bill Lauer, who has cared for the carousel and the wonderful wooden Roller Coaster – the coaster's official name is not Bob's or Cyclone but Roller Coaster – for 29 years. While tapes and CDs pumped carousel music through the pavilion, the organ sat in a corner, rotting inside, sun-soaked in the afternoon and splashed by rain, soft drinks and perhaps a few tears.

Bill Masterman, a mechanical music

Please see Organ, B10

Puyallup Fair Manager Bob Carlson, left, listens Wednesday as mechanical music enthusiast Bill Masterman of University Place describes the process he went through to restore the fair's rare Wurlitzer Model 145 band organ. Saved from years of neglect, the organ is now a fit companion for the fair's priceless carousel.

Bruce Kellman/The News Tribune

The Thurston County (Seattle, WA) *SOUTH SOUND* daily newspaper published on March 2, 2000, the above article detailing a rare Wurlitzer organ (Style 145) which has been united with its carousel, a 1917 Philadelphia Toboggan Co. (PTC). The organ has been restored under the watchful eyes of COAA member Bill Masterman (above photograph, right) and will debut at the Spring Fair on April 14 - 16, 2000.

The story about the organ is interesting as it apparently sat —forgotten—tucked away in obscurity for years. Recently, when Bill and his family were enoying the carousel, "Masterman's daugher Natalia was riding the carousel when his wife, Nita, spotted something in the corner. "Look, Honey," she said, "there is a band organ." "Yeah, right," Masterman said. It was the Wurlitzer 145 band organ that serenaded fairgoers until about 1970, when an older, less ornate carousel was located in the fairground's northwest corner." And the rest is history . . .

> "I want this organ to play . . so some 7-year-old can stand in the crowd, drooling, and carry on this tradition of music!"

. . . information courtesy of Bill Masterman

Chico, an aging organ grinder sidekick, was his old animated self at a party for his 30th birthday.

No business like monkey business

By Bryan Smith
Staff Reporter

He's not ready to pack in his little pillbox hat or retire the embroidered vest, but Chico the monkey's best days as an organ grinder's sidekick may be waning.

"He likes his naps a little more and he isn't nearly as active as he once was," says Robert Hoffman, Chico's owner, trainer and fellow performer.

"We limit the organ grinder's jobs to about two hours. After a couple of hours of grabbing coins, he's ready to go home."

The monkey, one of only about two dozen organ grinder sidekicks in the country, celebrated his 30th birthday Monday, complete with cake, balloons and hats.

With an expected lifespan of about 40, Chico will probably perform a few more years, Hoffman says, the monkey shakes hands and snatches coins and bills. But already his schedule has been trimmed. Where he once performed a couple hundred times a year, he's down to 100-150, showing up at schools, at corporate events and parties.

He hardly seemed too jeopard to party on Monday at his home at the Animal Kingdom Pet Center, 2900 N. Milwaukee. Surrounded by children, his little eyes darted back and forth, his head bobbed up and down. He chattered and scrambled up on a table where he nibbled some chocolate cake.

Born Jan. 17, 1970, Chico is a white-throated Capuchin, a breed found in the rain forests of Central and South America and the breed most often used by organ grinders.

Hoffman, whose father owned a Chicago pet store and worked as an organ grinder, has cared for Chico since the animal was 8 months old and says Chico is in excellent health. Hoffman said the Capuchin showed the gentle temperament needed for an organ grinder's sidekick from early on, welcoming attention and human touch.

With only a handful of organ grinder monkeys left in the country, Hoffman knows he practices a dying art. Still, when Chico does retire, Hoffman says he won't train another.

"He'll be the last one for us," said Hoffman, 37, who owns Animal Kingdom. "We'll probably retire around the same time. I'm starting to like naps in the afternoon, too."

Meanwhile, he said, the monkey continues to enjoy the spotlight. And children love giving it to him.

On Monday, 4-year-old Crystal Mack brought the monkey some flowers and a banana.

And 5-year-old Aaron Mayes seemed mesmerized. After giving a tentative pat on the head to Chico, he pulled his hand back in glee. "He's nice!" he said, flashing a big smile.

Chico the monkey celebrates his 30th birthday at the Animal Kingdom Pet Center on Monday. While his owner says Chico is slowing down, he still performs at least 100 times a year as an organ grinder monkey.

Tom Cruze/Sun-Times

From the January 18, 2000 issue of the *Chicago Sun-Times* comes this interesting article about a organ grinder's monkey. The photo caption reads "Chico the monkey celebrates his 30th birthday at the Animal Kingdom Pet Center on Monday. While his owner says Chico is slowing down, he still performs at least 100 times a year as an organ grinder monkey."

[The monkey is a white-throated Capuchin, a breed found in the rain forest of Central and South America and the breed most often used by organ grinders.]

The story goes on to say "the monkey, one of only about two dozen organ grinder sidekicks in the country, celebrated his birthday with cake, ballons and hats." His owner, Robert Hoffman, whose father also worked as an organ grinder, said "the Capuchin showed the gentle temperament needed for an organ grinder's sidekick from early on, welcoming attention and human touch." And the story finishes with "with only a handful of organ grinder monkeys left in the country, Hoffman knows he practices a dying art."

. . . information courtesy of Jerry Biasella

Rally information . . .

COAA Rally at ***Dutch Heritage Days*** (Dutch Village at Holland, Michigan)

The COAA rally will be the featured event at the annual ***Dutch Heritage Days*** at Dutch Village in Holland, MI on June 23 to 25, 2000. There will be additional artists and food vendors in the village and on Saturday, June 24, all paid entrys to the village (as well as all attending COAA members) will get a chance for a free trip to Holland. There will be a meal provided by Dutch Village on Saturday evening. Set-up will be on Friday and playing is encouraged through Sunday (if your schedule permits). They expect at least 3,000 tourists on this day so it should be good exposure for the COAA and its members. Headquarters is Motel 8 and information as well as registration for this rally is included on the insert included with this issue of the *Carousel Organ.*

COAA/Snowbelt Chapter, MBSI (**Pioneer Power Show**, LeSueur County, Minnesota)

The third COAA rally of the year will be in conjunction with the Snow Belt chapter of the MBSI. The rally will be a **Pioneer Power**, a steam and gas tractor show (going on for 26 years), in LeSueur County, Minnesota. We will play our organs on Saturday and Sunday, August 26th and 27th. Organizer, Ralph Schultz, has planned many additional activities. These include an open house/picnic at his house on Friday along with a tour of Albrecht's carousel; a trip to view the Artizan organ on the PTC #76 carousel at Valley Fair; and also a chance to see the newly restored Wurlitzer 153 on the Cafesjian's carousel in Como Park in St. Paul. More details and registration to follow.

Old Thresher's Reunion Organ Rally (Mt. Pleasant, Iowa)

The Heart of America (HOA) Chapter of AMICA is sponsoring an organ rally to be held in conjunction with **The Old Thresher's Reunion** at Mt. Pleasant, Iowa Labor Day weekend Friday, Saturday, and Sunday, September 1-3, 2000.

The Old Thresher's Reunion has the largest display of steam engines in the US—hundreds of large and small steam engines including a steam driven carousel cover the 100-acre grounds. Moreover, this area contains a museum, a log village, a grandstand with nightly big name entertainment, an operating railroad with three antique steam engines, and an antique mall. In addition there are large collections of antique cars, trucks, and tractors. Five electric streetcars and interurban cars operate around a 60-acre campground adjacent to the main grounds.

The event runs for five days ending on Labor Day. Yearly crowds are estimated at 125,000 people with the largest crowds during the week-end. This will be the 50-year anniversary for the event. The sponsors believe that the crowds this year will be bigger than ever before.

The number of spots for large organs is limited as are the motel rooms blocked for the rally. There will be spots for 7 or 8 big organs open to non-HOA organs. Interested COAA members with big or small organs will need to make a definite commitment (call Gary directly) about coming before July 15th. It will be first come first served. Fortunately, there is no limit on monkey organs.

The host motel is in Fairfield, Iowa 25 miles west of Mt. Pleasant. The rate is $60 a night for one or two people. Thirty rooms have been reserved. There will be no registration fee, no tee shirts, no pins, and no posters, but lots of fun. For registration/motel information, contact:

Gary Craig, 2941 Russell Blvd., St. Louis, MO 63104 314-771-1244 (phone or fax) / E-mail ccraig@postnet.com

Meet Your Member

Captain John Leonard has been involved with organ rallies for several years and stories abound about his ventures with organs and previous adventures. Capt. John and his wife, Pauline, live in St. Catherines, Ontario. He grew up as a boy in Toronto, Ontario and his first experience with band organs was riding his bicycle to the merry-go-round at Hanlan's Point on West Centre Island on Toronto Island (just south of Toronto on Lake Ontario).

Capt. John Leonard with his friendly smile and his favorite, a North Tonawanda Instrument Works Style 173 Military Band Organ.

During WW II he applied as a sailor on the regional lake boats and then later (1943) joined the Canadian Navy. In 1944 he was moved to the North Atlantic Convoy duty where he would visit New York City and Coney Island while on leave. There he would enjoy the organ at Luna Park (before it burned) as well as other organs in New York City. All his interest in organs over the years just helped to foster a greater love for carousel organs and in the 1950s he decided to buy his first band or carousel organ. He visited the B.A.B. factory in New York looking at several different organs but none met his fancy. Then he paid a visit to Ralph Tussing (T.R.T. Manufacturing Co., North Tonawanda, NY) where he bought his North Tonawanda Instrument Works Style 173 band organ. Several organs have since passed through his hands.

Included in issue #4 will be a featured article: ***The Story of Captian John Leonard's Fascination with Military Band Organs***

COAA News

COAA Logo — the officers have been at work putting together a logo for the COAA. Several proposals will be presented at the business meeting at the Houston, Missouri rally in early May. This logo, in turn, will then be used on t-shirts, sweaters, hats and what-have-you.

COAA Web Site — once the official COAA logo is developed the web site will be formed. Many members have asked about this and as we are all part of the Internet age this is important. This is important also to spread the word on the education and fun that we enjoy as COAA members.

COAA Dues — the ballot (insert of issue #2) requesting an increase of yearly dues from $5.00 to $15.00 per year (to support our journal, the *Carousel Organ*) brought an amazing 38% return in comments (amazing because similar mail ballots in other organizations only draw 20% from their membership) and the final tally was a resounding "YES" to increasing the dues. This dues increase will take effect July 1, 2000. This will insure that we are able to have 4 quality issues of the *Carousel Organ* each year.

In order to implement this dues increase a "Registration and Dues Renewel" form is included as an insert (along with a registration form for the COAA Rally at *Dutch Heritage Days* Dutch Village, Holland, MI) with this issue. Please take the time to fill this out and mail back your check for $15.00 to Marge Waters. This will then insure uninterrupted service of your membership until June 30, 2001. Those members that have paid two or three years in advance will need to subtract that amount from the 2000-2001 dues.

If you have any questions, contact Marge Waters, 7552 Beach Rd, Wadsworth, OH 44281 Tel.: 330-334-1344

Schedule of Rallies (2000)

Event	Location	Contact Person	Date
COAA's *Emmett Kelly Clown Festival*	Houston, MO	Ron Bopp 918-786-4988	May 5 - 6, 2000
Southern California (AMICA) Band Organ Rally	Temecula, CA	Frank Nix 818-884-6849	Mid-May, 2000
Heart of America (AMICA) *Great American Midway* Band Organ Rally	Kinsley, KS	Tom Griffith 785-625-9677	May 19 - 21, 2000
Milestone Father's Day *Car Classic & Organ Rally*	Thousand Oaks, CA	Frank Nix 818-884-6849	June 18, 2000
COAA's *Dutch Village*	Holland, MI	Terry Haughawout 419-454-3671	June 23 - 25, 2000
Mid-America (MBSI) Annual Band Organ Rally	Crossroads Village Flint, MI	Sharon & Carl Curtis 734-428-0268	July 20 - 22, 2000
COAA/Snowbelt (MBSI) *Pioneer Power Show*	LeSueur, MN	Ralph Schultz 612-873-6704	Aug. 26 - 27, 2000
Heart of America (AMICA) *Old Threshers Reunion*	Mt. Pleasant, IA	Gary Craig 314-771-1244	Sept. 1 - 3, 2000
Mid-America (MBSI) Monkey Organ Rally	Sandusky, OH	Bill & Marge Waters 330-334-1344	Sept. 8 - 9, 2000
Fullerton Arborfest & Band Organ Rally	Fullerton, CA	Frank Nix	Mid-Oct., 2000

Do you have something for the *Carousel Organ?*

All items (of interest to our readers) are welcome for inclusion in one of the forthcoming issues of the *Carousel Organ*. Please submit photos, articles, newspaper clippings, or what-have-you to Ron Bopp, 55801 E 365, Jay, OK 74346 or by email: bopp@rectec.net.
Phone: 918-786-4988 Fax: 918-786-8049