Telephone Collectors International Newsletter

Singing Wires

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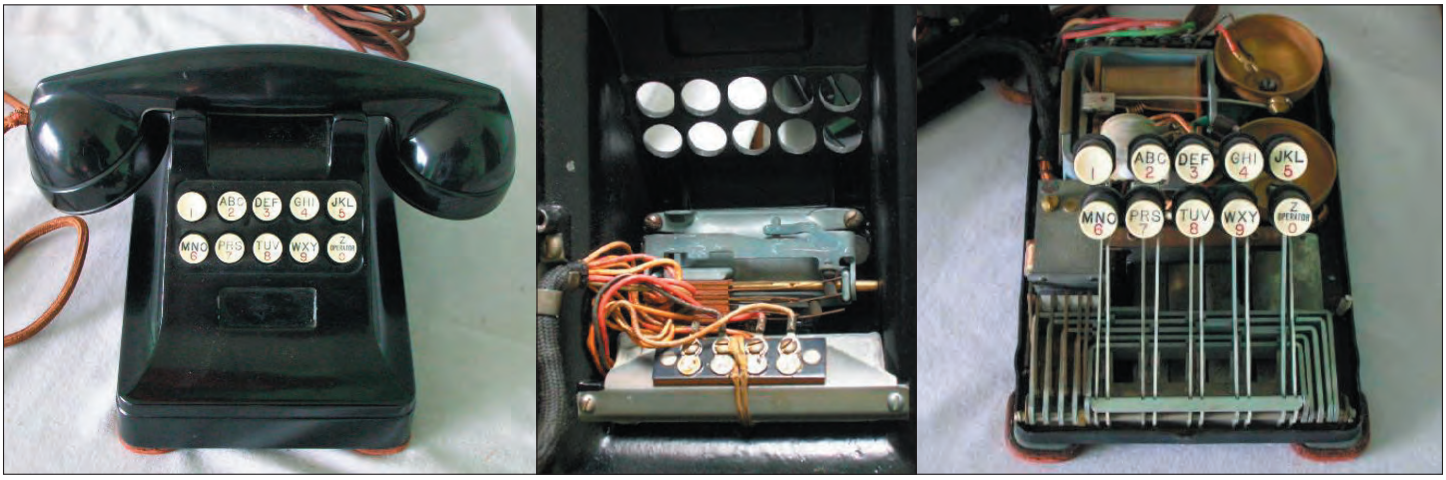

A "ONE-IN-A-MILLION" PHONE ON EBAY

by Paul Fassbender

In late October, many of us were astounded to see an eBay listing described as a "1947 Western Electric 10 Button Prototype 302 Telephone." The auction ended November 7. By the time the dust settled, 13 people had entered 29 bids – and four had bid over $13,000! The winning bid was $17,899.99!

What was that phone really? Described as "RARE" in one of the few understatements in eBay telephone auction history, there were several nice photos including interior views with 1940 and 1947 component dates. We're including some of them here for reference.

From left: Set used in the 1948 Media, PA test; Inside of cast case, switchhook, cabling; Mechanical linkage plucks 2 metal reeds for each button push.

The brief auction description looked familiar. Most was copied from a description on my web site of a set I had examined briefly at the Lucent archives several years ago. It was clearly time to learn more about this set.

What Makes this Phone so Desirable?

Bell Labs had been working on methods for replacing rotary dials with push-button tone signaling for operator toll dialing for many years. According to Bell Laboratories Record magazine, a "system using voice-frequency pulses was introduced in toll service in about 1940." [1] By the late 1940s, a system had been deployed at about 300 locations. The accompanying photo shows a New York toll switchboard with push-buttons instead of rotary dials at each operator position. [2]

This telephone represents the Bell System's first attempt to install the same push-button dial technology and tone signaling in a station set – for use by ordinary subscribers, not just operators. "A system of a-c signals for station equipment was designed, built and tested in the laboratory in 1941, but World War II interrupted further work and 7 years elapsed before equipment was installed and used on an experimental basis in a small trial at Media, Pa., in 1948." [3]

The trial, set and results are described below, in excerpts from the March 1960 Bell Laboratories Record and other Bell System publications.

The 1948 Experimental Trial

"Bell Laboratories in 1948 arranged a small-scale trial of push-button calling, limited to 35 employees of the Pennsylvania Bell Telephone Company. The trial was held in Media, Pennsylvania, the town in which the No. 5 Crossbar switching system was first introduced. This switching system had, in its registers, receivers

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It's Membership Renewal Time!

See page 12 for details!

In This Issue

THE PRESIDENT'S COLUMN

by Jonathan Finder, M.D., TCI President

An $18,000 telephone! That was an eye-opener. I guess that vintage telephones can be a recession-proof business – especially if you are lucky enough to own such a rare item. I was delighted that Paul Fassbender was willing to share his expertise in his article that appears on the front page of this month's newsletter. Paul is probably the world's expert on Western Electric prototypes, and has an amazing and authoritative web site on this subject: http://www.paul-f.com/weproto.html.

Paul and board member Russ Cowell have another article they are co-authoring that will appear in one of our next newsletters. It's great to have such expertise among our members!

Another interesting article this month is George Howard's review of the controversial book, The Telephone Gambit: Chasing Alexander Graham Bell's Secret, by Seth Shulman. The debate these days is whether Bell truly invented the telephone or whether it was actually invented by Elisha Gray. George Howard is a frequent reviewer of books on telephony for TCI. Another TCI member, Ralph Meyer, has reviewed Shulman's work, and his findings and conclusions have been published in *Singing Wires* and elsewhere in the past few months. Readers should read all of the reviews and commentaries before supporting one conclusion over another. TCI is indebted to those in our midst who provide such interesting research for our benefit.

We at *Singing Wires* and on the Board of TCI wish you all a healthy and happy holiday season. I hope to see you at the next show!

THE ART OF REPRODUCTION

by Ray E. Kotke

Our coveted Bakelite telephones are often shattered, cracked, holed or defaced when we locate them. What to do? As vintage telephone collectors, we are often faced with this painful dilemma.

This was the quandary that I was faced with several years ago; how do you restore a broken Bakelite telephone when no parts are available? Sometimes, the Bakelite can be patched with colored auto putty and sanded smooth, but I wanted true replacement parts! Thus, my form of vintage telephone "art" was born. I am often asked, "HOW on earth do you create such strikingly original creations?" In all fairness to my craft, and myself, I certainly cannot let out all of my secrets (it's how I make my living), but I would like to share with you a simple explanation of the process and its possibilities. It is truly a fascinating process, and it has taken me many years of exhausting research and experimentation to perfect!

Think of one of those replacement teeth that many of us have. How many dentist's patients actually know how these teeth are manufactured, and how do they do it so fast? If you have ever had an impression taken of your teeth, then you are on the right track! Of course, there is a multitude of specialized tools and machines utilized in this process, but I think we are on the right track in our explanation.

Simply put, a resilient molding material that starts out in liquid form is carefully poured over an original part (a vintage telephone part in this instance). After curing, the original part is carefully removed from this molding material to create the precise negative cavity that is subsequently utilized to cast replacement parts.

Continued on the following page.

Specialized pigmentation is carefully measured (to the gram) and added to the resins when opaque coloration is desired. Utilizing a photo spectrometer, virtually any color can be re-created. The opaque pigments used are very similar to those used in the fiberglass boating industry.

This entire process is sometimes referred to as "Rapid Prototyping" in the trades. It is also noted as "low pressure injection molding." The major difference is that this process of TelephoneCreations.com utilizes thermoset polymers, and traditional injection molding utilizes thermoplastics, a totally different polymer.

With the proper ingredients, an identical replacement part can be created that is virtually indistinguishable from the original component. Utilizing the highest quality materials can hold shrinkage to less than .0035" per running inch of length of the cast part. This process is able to mimic details so precise that actual ink stampings on the original part are duplicated on the castings. Just about any component, no matter how complex, can be replicated in this manner, whether it is made of metal, plastic, wood, plaster, etc. The possibilities are endless, and are used in the restoration of many other forms of antiquities, collectables, and even dinosaurs! To imitate the look of metal, various finely pulverized metals can be added to duplicate the look and feel of the original metal part.

If there is one hindrance, it is that one must have a perfect original in which to begin the process of replication. If an extremely rare component needs to be replicated, it is sometimes possible to repair the part with epoxy and judicious filling with automotive type fillers and careful finish sanding of the part. The repairs simply need to be made "invisible" to the molding material since it is fully capable of duplicating even human fingerprints carelessly left on an original being molded. Sometimes, a final thin coat of sprayed-on paint will create the desired ultra-smooth surface if the master part is unable to be polished to sufficient smoothness.

I have successfully re-created many vintage bakelite components from antique telephones, but there are many more that need my help, so my quest continues!

In addition to the Water-Clear GPO 162 depicted in this article, I will soon be tackling other complete telephones, possibly including the Gecophone, and the various models of the 300 series. If there are other parts that are needed in our community, please do not hesitate to contact me with your requests or questions.

Project updates can be found on my website at: www.telephonecreations.com when they become available.

I would also like to thank all of the THG leaders that have welcomed me to this fine organization. As past president of TCI, Telephone Collectors International, based in the US with members worldwide, I am very familiar with the challenges faced with overseeing a successful telephone collector organization. I look forward to meeting more THG members, and will try my best to attend the THG gathering in June – 2008. ☎

This reprint first appeared in the Telephone Heritage Group's publication in 2008.

TCI Welcomes New Members

Arthur Bloom, NY, Mike DeGeer, AZ, Vin Dijohn, OH, Darrin Dunn, MI, Warren Ehn, TX, John Fehl, CA, David Frechette, CA, David Friedman, CA, Dean Gassman, IL, Ed Gloeggler, NY, Sebastian Hernandez, CA, Bob Hill, CA, Martin Kusch, MI, Charlotte Mager, NJ, John McClung, TX, Tom/Cathy Moorehead, ON, Canada, Ken Rehor, CA, Alex Niforos, NC, Doug Rose, MA, Serge Rodrigue, QC, Canada, Lawrence Rudolf, UK, Alex Rushing, AL, Richard Strowger, MI, Jim Tener, TX, Nicolas Uccellatore, Argentina, Ken Vaal, KY, Nigel Williams, UK, Arnold Wylie, ON, Canada ☎

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FRENCH POLISHING

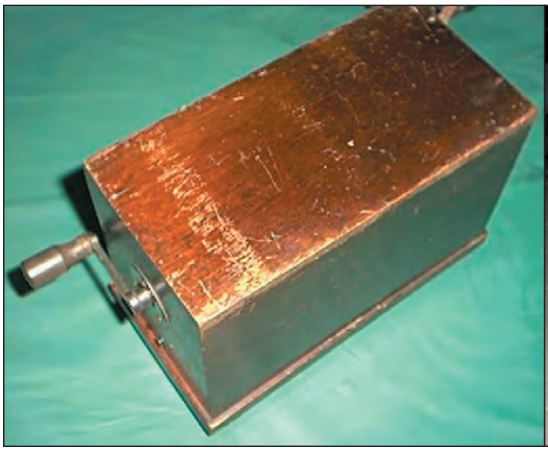
by Dave Dockray (Australia • http://www.telephonetalk.com.au/)

The following restoration description is an extract from Dave Dockray's book, Telephone Talk. Other newsletters will contain explanations of some of the other restoration techniques.

Chapter 19: French Polishing

French Polishing is a topic which alone could fill the contents of my book if we were trying to deal with all aspects of the subject. Different timbers and different items of furniture require slightly different techniques; for example, a spindle-backed chair would require a very different approach to that of a dining table. With that in mind, the author has restricted the description to a "Quick Reference Guide" to cater to the requirements of a typical timber telephone. Apart from that, the reader will only need to know how to make themselves a "rubber" to apply the shellac mixture to the flat surface of the wood to be polished. The rubber is pad of wadding that is well shaped, soft, pliable, and with its cloth cover free from any wrinkles on the rubbing surface. The best shape is a pointed shape like a 1⁄2 a pear which will fit neatly into the hand and allow the rubber to get into corners, around turned work and up to the edge of mouldings. Cotton wool makes a reasonable wadding pad, but any clean cloth will also suffice. This should be formed into the shape of a half pear and charged with shellac and then covered with a clean (white cotton) cloth. Fold the cloth inward over the wadding; twist it on the upper side of the rubber, avoiding any creases on the working surface. The twisting commences at the point and finishes at the rounded end to form a knob with which the polisher can grip the rubber. Although the rubber in the below picture may look dirty, this is not so, and dirt can be fatal to a good French Polish finish. Practice on unimportant items or just plain pieces of timber before attempting the special treasure. Start with a critical assessment of your item. The objective should not be to make your antique item look like a new one, but merely a preservation, and restoration to some of its former condition. At the same time, some signs of ageing will add to the appeal of the item. Bear in mind also, that wooden telephones were typically French Polished using a shellac mixture, for a protective coating, but not to the mirror finishes of fine furniture pieces. So, the author strongly recommends, "doing as little work as possible" to make the phone look attractive but also retain some of its original character. This said though, some of your finds will be in such a poor state that there will be no alternative but to "start from scratch", and completely strip the original finish down to bare timber - there is a great sense of achievement when an item is found which, to the uninitiated, looks beyond salvation, but could be hiding a real treasure. The question of whether to completely strip the old coatings is the first one to answer and if the collector/restorer is in any doubt whatsoever, then the item should not be completely stripped. Usually when one looks at the item, it will be quite clear when stripping is the only option. "Borer" holes are very common in old timber pieces, but they are also one of the easiest problems to rectify with a selection of different colour wax sticks – more on that later.

There are also some very simple items with very clean square lines, such as the BE generator box shown which could be used as the collectors first attempts into French Polishing. Even the larger single box magneto wall phones are quite straightforward for the learner.



Equipment

Protective rubber gloves. Coarse steel wool. Very fine steel wool (000-0000). A sanding block and extremely fine sandpaper. Rubbing Pads and/or good quality camel hair art-brushes of 1 cm and 1⁄2 cm width at the bristles. Masking tape. A spatula – I find it best to use one shaped like the "pirates cutlass." The author uses two rubbers – one larger and one smaller. These are made into a pear shape to fit easily in the hand, and the narrower end is used to apply the shellac. The rubbers must be stored in an airtight container with a few drops of methylated spirits to keep them moist when not in use.

Materials

Button shellac (pictured on the next page) and methylated spirits, or a commercially pre-mixed French polish. Prepare the button shellac by immersing it in methylated spirits in a wide-mouthed

glass jar of about a 1⁄2 litre capacity with a screw top lid. Fill the jar about 3⁄4 full with the buttons and then just cover it with methylated spirits – this will result in a mixture, which has the consistency of gloss paint and it will be thinned further just prior to use. Remember that methylated spirits evaporates very quickly so a good seal on the lid is important. It will take around about a week for the "buttons" to completely dissolve, stirring or mixing the jar regularly. The final mixture is cleansed through a sieve made from a double layer of nylon stocking. Clean methylated spirits will be required for cleaning and thinning of mixtures. Use a good quality furniture wax – the author uses "Black Bison" – although it is expensive. Paint remover for those projects which require a complete stripping of the existing coating/s. For filling damaged areas of timber, plastic wood plus woodstains, and/or wax sticks in a range of colours (upper right image). The author prefers wax sticks because of the wide range of available colours and relative ease of use.

Preparation

The need for proper preparation can't be overstated and we will all see items which have had additional coatings of shellac covering the wrong parts on a phone which was not dismantled (i.e., covering some of the Nickel plated parts). So, it is far easier and better if the item is completely dismantled before restoration. In this age of digital cameras, it can be very worthwhile to take a number of pictures before disassembly. This can assist greatly in the re-assembly when wires are to be reconnected etc. Be sure to use masking tape to protect any old transfers which are in reasonable condition. Other nickel-plated or painted parts that can't be easily removed without damage should also be masked so that they don't suffer damage during the preparation stage.

Repair and Polishing

Using a coarse steel wool, but with light rubbing, remove all dirt, paint splatters, etc. Small paint spots can usually be dislodged with careful use of the spatula, then a light rub with steel wool. An item

such as the one pictured here has most of the French Polish remaining, but it has spots of bare timber showing through from age. After removal of the nickel-plated parts and the makers' nameplate, it only requires a light rub with steel wool. That provides a good surface for the new coatings of shellac and will blend the damaged spots into the completed finish. With two or three coats of shellac and a final coat of furniture wax, this type of ageing damage will be almost invisible when the job is completed. If the item has a lot of paint on it, then paint remover may be the only alternative – usually this paint will only be on the backboard of the telephone. It may be possible to use paint remover only on the backboard and still retain a consistent colour match between the backboard and the rest of the telephone. Paint remover should be brushed onto the required area and when the original polish starts to blister, it can be scrubbed off using fine steel wool liberally soaked in methylated spirits. After the steel wool, use paper towel again liberally soaked in methylated spirits to remove any traces of the paint remover. When the timber is completely dry, use very fine clean (dry) steel wool again to remove any of the pale colour marks, which remain from the drying methylated spirits. Now, repair any damaged areas with wax sticks or plastic wood. The advantage of wax sticks is that they are available in a wide range of colours – and unlike plastic woods, the colour does not change when the item is French Polished. The advantage of plastic woods is that they are stronger than the wax sticks and they are therefore much more suitable for any damaged area which is on the edges/corners of the item. Repair with wax sticks by pressing softened wax into the hole, or damaged area. Remove excess wax with a very clean metal straight edge – if the straight edge is held at a very shallow angle and pressed very hard, the finish will be complete without any additional work (sanding, etc.), and it will blend in very well if the colour selection is correct. This picture shows an early French mahogany candlestick telephone, which had been badly attacked by borers and for the buyer, priced accordingly. Af-

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BOOK REVIEW

The Telephone Gambit: Chasing Alexander Graham Bell's Secret

by George Howard

Since shortly after the U.S. Government awarded the first patent for a telephone transmitter to Alexander Graham Bell (1876), controversy has surrounded the invention. The patent was challenged in courts of law. After the lawyers retreated from the field of inquiry, historians took over, unencumbered by the narrow processes and theories of the legal system.

A list of the principal books that have been written on the invention of the telephone shows interest in the subject even to this day. William Aitkin's Who Invented the Telephone? (1939) is a general review of the subject. Several deal only with the conflicting claims of Alexander Bell and Elisha Gray: Lewis Coe's The Telephone and its Several Inventors (1995); Burton Baker's The Gray Matter: The Forgotten Story of the Telephone (2000); and A. Edward Evenson's The Telephone Patent Conspiracy of 1876: The Elisha Gray – Alexander Bell Controversy and Its Many Players (2000). Some advance claims for "pretenders" to the invention of the telephone: Silvanus P. Thompson's Philipp Reis: Inventor of the Telephone (1883); Harder Warran's Daniel Drawbaugh, The Edison of the Cumberland Valley (1960); and Nese and Nicotra's Antonio Meucci, 1808-1889 (1989).

A new book has added scholarship to the query. Seth Shulman has written The Telephone Gambit: Chasing Alexander Graham Bell's Secret (New York: W.W. Norton & Company, 2008). Shulman is a journalist who specializes in science and technology. He spent a year as a visiting scholar at the Dibner Institute for the History of Science and Technology at the Massachusetts Institute of Technology (MIT) in Boston. His book is the result of a year's research into Bell's invention.

The journalist began his research by studying Bell's notebook written as Bell conducted his telephone researches. If you have access to a computer, you too can study Bell's notebook that is in the Library of Congress. Go to: http://memory.loc.gov/cgi-bin/ampage?collId=magbell&fileName=253/25300201/bellpage.db&recNum=21.

The U.S. Patent Office granted a patent to Bell for the telephone transmitter on March 7, 1876, before Bell had even transmitted one word. Although the Patent Office normally requested that an inventor submit a model of an invention to ensure it worked before granting a patent, the Patent Office never asked Bell to submit a working telephone transmitter.

The patent application included two methods for transmitting the human voice. The first method, for which experiments had been recorded at length in Bell's notebook, was the "magneto" generation of electrical currents. This involves the generation of electricity when an iron object (the transmitter diaphragm) cuts across a magnet's lines of force. The second method, not reflected in Bell's laboratory notebook until after he received his patent, was the variable resistance of a direct electrical current (the way telephone transmitters have worked from circa 1880 to today – excluding the very modern "condenser" transmitters used with disposable electronic telephones).

It is undisputed that Bell invented the magneto telephone transmitter. Unfortunately, the magneto transmitter yielded an electrical current that was so weak that it would not form the basis for a commercially feasible telephone. On the other hand, the variable resistance transmitter from the beginning yielded a strong current, and would immediately prove to be the basis for a commercially feasible telephone, and would obviously make its inventor a very rich man.

The inquiries into Bell's claim to the invention of the telephone are focused entirely on his claim to have invented the variable resistance transmitter – the one that was commercially successful as Bell's magneto transmitter could never be.

All readers should be aware that Elisha Gray, at the time a much better known inventor of electrical gizmos, filed an application for a caveat the same day that Bell's application for a patent was filed – February 14, 1876. The subject of Gray's caveat was the claim for invention of a variable resistance telephone transmitter. It is the conflict between Bell's claim and that of Gray's that formed the basis for subsequent events.

Shulman read Bell's notebook. He noticed two important things. First, Bell took a two-week vacation from his research in the period February-March 1876; second, on March 8th, 1876, his notebook recorded a radical and unexplained departure from his previous line of inquiry – from the magneto transmitter concept to the variable resistance transmitter concept. What had happened between the last entry on February 24th and the next entry on March 8th? This question consumed Shulman's further research and led to the book he wrote.

The author discovered that during Bell's absence from the laboratory, he had traveled to Washington, D.C. to support his patent application. It had been filed on February 14, 1876. On February 19th, the patent examiner had suspended consideration of Bell's patent application for 3 months. This was in accord with the rules at the time, designed to give Gray the opportunity to file a full patent application. Had Gray done so within the 3-month period, the Patent Office would then have determined who the first inventor was. However, Bell's attorneys had gotten that suspension canceled by approaching the Patent Commissioner directly with a novel legal theory – and without giving Gray an opportunity to respond.

In later correspondence (March 2, 1877) between Bell and Gray, Bell wrote: "I do not know the nature of the application for a caveat to which you have referred . . . except that it had something to do with the vibration of a wire in water – and therefore conflicted with my patent." This statement was a stunning admission that Bell had secured information from the Patent Office about Gray's caveat – entirely contrary to law. And in the Dowd case, Bell testified

under oath that he had a conversation with the patent examiner about Gray's caveat and the point of interference between the two applications. Bell always maintained that he didn't actually see or read Gray's caveat. But the fact that he knew anything about the contents of Gray's caveat was entirely improper.

The U.S. Patent Office awarded a patent to Bell for the invention of the telephone transmitter on March 7, 1876, a scant 3 weeks after Bell's application was submitted. Upon Bell's return to Boston, his laboratory notebook entry, dated March 8, 1876, recorded his first work on a variable resistance transmitter – on the plan as outlined in Gray's caveat! Accompanying Bell's notes in the book was a diagram of a head speaking into a liquid transmitter – a strikingly similar duplicate of the diagram found in Elisha Gray's application for a caveat. Two days later, Alexander Graham Bell succeeded in transmitting the human voice for the first time using a transmitter that Gray would have recognized as Gray's.

The author relates other suspicious activity surrounding Bell's patent application. As other historians have noted, it appears that the variable resistance theory was added to Bell's patent application after it was filed with the Patent Office – a clear breach of the rules. Why would it have been added, but for the purpose of claiming Gray's variable resistance theory as Bell's own? Of course, it was this added theory that formed the true basis for a commercially viable telephone.

The author's carefully documented research leads him to the conclusion that Bell did not invent the variable resistance transmitter.

Why would Alexander Graham Bell, an otherwise honorable man, stoop to use another's idea? The author noted that Bell was a young man, and often younger people do things they later regret. Bell was under enormous psychological pressure to achieve a secure financial future, because he wanted to ensure that his future wife (Mabel Hubbard) would remain in comfortable circumstances. His future wife was the daughter of his business partner, Gardiner Hubbard. Lawyer Hubbard had already threatened to withhold his daughter's hand of marriage unless Bell performed inventive feats.

Alas, this reviewer suggests that while the book and the author's conclusions are of much interest, the results of his research are entirely academic. Two studies in the Twentieth Century firmly established that the Philipp Reis instrument actually transmitted the human voice over the wire by electricity in 1860 – well before either Gray or Bell conceived their telephone instruments. Philipp Reis understood his invention to be for the purpose of carrying the human voice over wires by electricity. He also explained how it worked, although the description was lacking in precision by standards of a dozen years later. And there were many competent and knowledgeable people that witnessed the voice transmissions in the early 1860s. So far as the reviewer is concerned, it is to the German, Philipp Reis, to whom the honor of the invention of the variable-resistance telephone transmitter belongs.

The courts in the U.S. confirmed Bell's very broad claims to the invention of the telephone, including both magneto and variable resistance methods. With the confirmed patent claims, and with the financial backing and business acumen of his two business partners (Sanders and Hubbard), a monopoly of the telephone business was organized. This monopoly lasted until the basic patents expired in 1893 and 1894.

The telephone monopoly did not inure to the benefit of the broad public. Understandably, the Bell interests focused their business in urban areas where they could serve the greatest number of customers with the least cost in plant. That left a large majority of the land surface of the U.S. un-served by the telephone until after

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20 Years of Singing Wires

20 Years of Singing Wires on CD or DVD

The Twenty Year History of TCI CD is now available to telephone collectors everywhere. Bev McFadden, co-editor of the *Singing Wires* Newsletter for 15 years, has taken every newsletter ever published by TCI between June, 86' and Dec, 06' and assembled them on this DVD or two-CD set. That's 244 newsletters, thousands of articles and items and hundreds of photos, many of them in color.

The CD is in PDF format. PDF files are all text searchable, you can quickly find a story or reference to any topic by simply entering a keyword into the Adobe Acrobat search window. Put in Western Electric and you will get hundreds of hits. Customize it to colored telephones and you're down to dozens of hits with half of those being Jon Kolger ads requesting colored phones. Put in Pekin red and there will be nine hits ... only 4 for mahogany A/E.

This CD is available for $20.00 U.S. It can be paid for with PayPal ... send payment for your CD ORDER to: Singwires@aol.com.

The Telephone Gambit

Continued from the previous page.

the mid-1890s. The Bell monopoly could have changed its business plan to serve more people, but it was not challenged to do so by the discipline of a free market. It was protected from competition by the power of the government through the patent law. Old habits die hard. Even well into the Twentieth Century, the Bell organization, then a quasi-monopoly, refused to serve its customers with many features created elsewhere. Stanley Swihart, in his forthcoming book Telephone Dials and Pushbuttons: Their Usage, Development and History (to be privately printed) has documented numerous examples from the period 1900 to 1960 where the Bell organization failed and refused to provide service that was available from "Independent" telephone companies. A short list includes the dial telephone, handset telephone instruments, and direct inward dialing from city exchanges to extensions on Private Automatic Branch Exchanges. Another study that documents this dysfunctional organizational behavior was the 1939 report of the Federal Communications Commission to Congress, often styled The Walker Report.

Alexander Graham Bell's claim to the invention of the telephone continues to influence the telephone industry today. Even after the basic telephone patents expired (1893, 1894), the Bell organization was in such a solid financial position, thanks to its lengthy monopoly, it could, and did, harass competitors, and eventually bought out many of them. This behavior was an expression of long-time AT&T CEO Theodore Newton Vail's slogan: "One Policy, One System, Universal Service". Bell's claim strongly contributed to the power and influence of "the Bell System", headed by AT&T, until court-ordered divestiture in 1984. Today, a much diminished AT&T, together with its progeny referred to as "Baby Bells", continue in the business. Some of them, such as Verizon, have had peculiar advantages when entering the new field of cellular telephony.

Kevin Carson has stated: "The extent to which present-day concentrations of wealth and corporate power are the legacy of past injustices, I call the subsidy of history." (See, "The Subsidy of History" by Kevin Carson, found in *The Freeman: Ideas on Liberty*, Vol. 38, No. 5, June 2008, at pages 33-38. This is also found at http://www.fee.org/publications/the-freeman/article.asp?aid=8295.) A spectacular example of the subsidy of history is the overwhelming advantage given to the Bell Telephone interests by Alexander Graham Bell's patent.

The monopoly given the Bell interests was illegitimate on two grounds. First, Bell's claim to the invention of the variable resistance transmitter was a fraud. Second, the patent law itself is viewed by some as illegitimate, as it takes away the right of subsequent inventors to sell or use their own inventions, and furthermore, is unnecessary to foster innovation. (See, "Patently Unnecessary?" by Sheldon Richman, in *The Freeman: Ideas on Liberty*, Vol. 56, No. 3, April 2006. This is also found at http://www.fee.org/pdf/the-freeman/0604RichmanPerspective.pdf. See also, "Open Source Software: Who Needs Intellectual Property?" by Michele Boldrin and David K. Levine, in *The Freeman: Ideas on Liberty*, Vol. 57, No. 1, January 2007. This is also found at http://www.fee.org/publications/the-freeman/article.asp?aid=6608.) The patent law guaranteed that Bell would establish a monopoly and prevent the free market from satisfying the need for telephone service. Thanks to AT&T's initial patent position, it became the largest corporation in the world, and maintained that position for many years. It was one of the most lucrative businesses, too. The introduction of numerous non-Bell long distance carriers in the 1970s, the court-ordered divestiture of the Bell operating companies by AT&T in 1984, and now the rapidly accelerating destruction of the hard-wired telephone business by numerous cellular telephone carriers, may substantially reduce the subsidy of history in favor of Bell and its progeny. But I would not bet on it.

This reviewer strongly recommends that everyone interested in the history of science and technology, and especially the history of telephony, read this book. It is unusually well written, with never a boring page. It can be purchased from book stores, and is available on-line at www.amazon.com for the price of about $16 (plus $4 shipping). ☎

French Polishing

Continued from page 5.

ter repairing it with coloured wax sticks and re-polishing, the damage is almost invisible. It is restored to a more than acceptable condition and the value of the telephone is greatly increased. The complex shape of the edging around the telephone base made this an ideal candidate for French Polishing using a good size art-brush rather than the more traditional rubber. Filling with plastic wood requires experimentation with colours with particular attention to the final colour after shellac is applied. Excess plastic wood is removed using an extremely fine grade of sandpaper on a rubber sanding block.

Polishing

Pour a small amount of shellac in to a wide-mouthed container such as a plastic cereal bowl. Reduce the shellac with methylated spirits until it is the approximate consistency of milk (i.e., not quite as thin as water). Using a lightly soaked rubber, apply the shellac using a smooth circular or "figure 8" motion to fill the timber grain as much as possible without "flooding" the timber surface. Work reasonably quickly and finish off the coating by rubbing with the grain. Set the pieces aside to harden – in warm climates the shellac dries very quickly and should be ready for a second coat within the hour. When dry, lightly scuff with fine steel wool, clean with a dry cloth or dry paint brush. The rubber is better for plain and smooth surfaces, and the art brush is best for complex surfaces such as carvings or complex, bevelled edges, etc. Two or three coats of shellac should be more than ample, with a final coat of furniture wax to enhance the polish. With careful attention, the result should reveal the hidden quality of the original item as shown in the foregoing picture of a French Burgunder style pedestal telephone. ☎

One-in-a-Million Phone

Continued from page 1.

that used the two-out-of-six multifrequency code. Registers are the units that store and then spill out the dialed digits as they are required by the switching mechanisms. These receivers thus made the No. 5 system very well suited to a trial of customer signaling with push buttons.

"For the trial, the customers were given a special, mechanical push-button station mechanism. The unit had mechanical linkages that plucked two of six metal reeds, each tuned to resonate at a desired frequency. When the customer pushed any one of the ten buttons, two reeds would be plucked and transmit the code for the desired digit...

The frequency pulses were generated in coils by magnetic induction from the reeds. Although this mechanism was not handy by present-day standards for push buttons, the customers were enthusiastic. Their performance was reasonably adequate, according to both field and laboratory studies. This trial established the desirability of push-button signaling, from the customer's viewpoint. But the technical approach did not appear attractive, so further work on this form of signaling was deferred." [4]

The phones were placed in the employees' homes and used by their families. One test participant who was particularly pleased with the set and wanted to keep it commented, "When you come to take the phone out after the trial, I'm going to unleash the dog and lock the door." [5]

"As compared with this form of signaling by operators, the receivers here were connected to lines and hence were exposed to spurious speech or background transmission from the customer while he or she used the pushbuttons. Also, the plucked reeds were found not to be stable and rugged enough to maintain adjustment with constant usage in a station environment." [6]

The 1947 Pushbutton Test Set

The component dates suggest this set was one of a small batch that was hand made for this limited experiment – either for tests conducted within BTL or for customer use. The model was never intended for production. Based on its exceptional condition, this set probably lived in the lab, not in the field.

It is believed that fewer than 50 of these sets were made. Photos of a version with square buttons are also in some publications. Since the phones weren't useful after the trial, they were reportedly returned to Bell Labs for study. Most subsequently found their way into lobby displays and museums, including Telephone Pioneer museums.

A source at Lucent confirmed that after 1984, many of these former Bell System assets were discarded, sold or "walked home." One can only speculate how this set wound up on an eBay auction.

Toll switchboard in New York City showing push button dials at each position.

The eBay Seller and Buyer

While the auction was running, the seller reported that he found the set at a dealer in Washington state. He thought it looked unusual and didn't think to ask the dealer for any historical information. He guessed the set might optimistically sell for $500. Needless to say, he's now feverishly looking for more phone gear!

The buyer contacted me after the auction to discuss the set. He primarily collects coin-operated game devices and has branched out into very early pay telephones. Upon learning about our group, he bought a copy of Ron's Payphone History book, and is considering joining the club. Perhaps he'll introduce himself one day soon.

The buyer found the phone while monitoring early auction activity looking for the "herd effect," trusting that auctions generating a lot of early collector interest are worthy of closer study. He noted that there were 2,352,665 items available to US buyers in the "Collectibles" category. This phone peaked at #3 on his list of items most added to the watch lists of eBay users. In other words, it ranked 99.99987249% in popularity, or in the top 0.00012751%. Mathematically, this is very close to a true "one-in-a-million" item.

Conclusions

The messages to collectors are clear. First, the big finds are still out there! Second, even in a bad economy, a truly unusual and historically significant item can command a premium price. Third, there are lots of non-members using sophisticated techniques like auction activity to determine which items to buy. Think about that the next time you click the "Watch this Item" button on an eBay auction. Finally, contacting non-members and informing them about the club and benefits of membership may help increase membership. It should at least encourage a new phone collector and get you a new "phone-friend" contact. Happy hunting! ☎

For more photos, please visit: http://www.paul-f.com/weprotot.html#WE1500.

End Notes:

1. "Push-button 'Dialing'," H. F. Hopkins, Bell Laboratories Record, March 1960, p. 85.

2. "Toll Dialing by Operators Reaches Some 300 Places," Ernst J. Guengerich, *Bell Telephone Magazine*, Winter 1948-49, p. 230.

3. "Application of Touch-Tone Calling in the Bell System," AIEE Paper 62-224, M. L. Benson, et al. Submitted 10/31/61.

4. "Push-button 'Dialing'," p.86.

5. "Kickoff for Touch-tone," AT&T press release dated 2/13/63.

6. "A History of Engineering and Science in the Bell System, Switching Technology, 1982 Bell Telephone Laboratories, pp. 165-166.

ROGER'S REMINISCENCES

Dial Phones with Pushbuttons to Ring the Called Number

by Roger Conklin (roger.conklin@usa.net)

AT&T's Chief Engineer, J. J. Carty, in his September 14, 1910 speech in Paris on the Automatic vs. the Manual Telephone (October & November 2008 issues of *Singing Wires*) emphasized the fact that that the automatic dial telephone, as it existed at that point in history, wasn't really that "automatic" after all. You had to manually lift the receiver, manually dial the number - one digit at a time, and then manually press a button to cause the called telephone to ring. The first automatic dial telephones did not have automatic ringing. (Carty did not mention waiting for dial tone before dialing because dial tone had not yet been adopted as the standard indication that had to be present before you dialed the number. That came later.)

The earliest such telephones were equipped with a magneto generator which, after you dialed the called number, you had to crank by hand to ring the called number. Very soon the magneto was replaced by a pushbutton which grounded one side of the line, thus causing a relay in the connector in the central office to operate to place ringing voltage on the called line while the button was being pressed. You could "ring" one long ring, several short rings, or whatever combination of long and short rings you wanted to use. Long before the availability of caller identification, subscribers were quick to learn how to establish ringing patterns to let the called person know who was calling by the way the phone rang.

Automatic ringing was first introduced by Automatic Electric with the installation of the new Strowger system for Citizens Telephone Company in Lansing, Mich. in 1908. This was two years before Carty's Paris speech, so most of the already-installed automatic dial systems being used by Independent companies still employed pushbutton ringing. The large Citizens system in Grand Rapids, Mich. (the second largest city in that state) which had several central offices in different parts of the city, was converted from pushbutton to automatic ringing in 1919, upon completion of the modification of the installed central office equipment to provide this additional feature. At the time that was one of the largest automatic dial systems in the world. The Grand Rapids conversion to automatic ringing is described in an article in the September 2001 issue of *Singing Wires*.

During my formative years growing up in Southern Michigan, Michigan Bell's automatic dial exchange in Hastings. Mich. still used pushbutton ringing in its Automatic Electric SxS exchange located on the second floor over Reed's Drug Store at 101 E. State St. in downtown Hastings. This exchange had been a property of Citizens Telephone Company of Michigan when that company was acquired by Michigan Bell in 1923. In Hastings, pushbuttons were used for ringing rural magneto subscribers only. Calls dialed to other automatic subscribers within the city employed automatic ringing. In 1954, pushbutton ringing was eliminated in Hastings when a new Stromberg-Carlson XY system, one of a relatively few of these systems purchased by Bell companies, was placed in service in a brand new building across the back alley from Reed's Drug Store. At that time all of the rural magneto telephones were replaced with new 500-type dial phones. Before this change, the rural numbers consisted of 3 digits, followed by a dash, the letter F and the ringing code. To call 745-F33 the city subscriber dialed 745, which connected him to the called line, and then pressed the ringing button to ring 3 long and 3 short rings. If the called line was busy, the calling subscriber would receive busy tone only if the parties using that line were connected with each other through the switchboard or switching equipment. If both parties who were talking were

Continued on the following page.

Above: Automatic Electric Type 21 Telephone with grounding pushbutton for ringing the called telephone after dialing. Right: Reed's Drug Store, Hastings, MI. The covered stairway leads to the second-floor location of Michigan Bell's Automatic Electric Toll Switchboard and Local SxS Switching Equipment which remained in service until 1954.

on that same party line, then dialing the 3-digit line number caused the city subscriber to be connected to the busy line where he could hear the parties already talking. This was somewhat like taking a receiver down on a party line and hearing other parties talking. The caller would then simply hang up and try again later.

Fellow antique telephone collector, telephone historian and TCI member John Stambaugh, who is also the curator of the Telephone Pioneers' Museum in Dallas, TX, has provided information he has gleaned from old telephone directories which confirms that pushbutton ringing was used in other telephone companies in various parts of the United States. Here are some examples:

• Ohio State Telephone Company, Dayton, OH - 1920

Individual line phone numbers had either 4 or 5 digits. Two-party line phones had either 4 or 5 digits followed by either -1 or -2. The number following the hyphen indicated the number of rings to be rung by pressing the ringing button after the 4 or 5 digit number had been dialed.

• Interstate Telegraph Company, Big Pine, CA -1921

Party line numbers were followed by a hyphen and a number, or an F and a dash and a number. 19-4 meant you dialed 19 and then pushed the button to ring 4 rings. 23F-12 meant you dialed 23 and then rang 1 long and 2 shorts.

• Pennsylvania Telephone Corporation, Hollsopple, PA - 1938

Individual (private) line numbers listed in the directory were 12, 15, 20, 29 and 38. All others were party line numbers such as 14-R-1, 34-R-14 and 40-R-12. Subscribers had to push the ringing button for the ringing code after the number was dialed in order to cause the called subscriber's phone to ring.

The early Strowger candlestick and wall dial telephones (equipped with large Strowger dials) were equipped with ringing pushbuttons. But Automatic Electric continued to offer its later model Type 21 wall telephones having the smaller Mercedes dial equipped with grounding pushbuttons for use in these exchanges that still required push buttons for ringing the called number. Western Electric provided specially-equipped 202 desk handsets with grounding pushbuttons for Bell companies, such at Michigan Bell for use in Hastings, and other exchanges that still used pushbutton ringing. I remember well when our friends in Hastings had phones like this. These phones were never listed in Western Electric Catalogs (as far as I know), but were made available to Bell companies for those early exchanges requiring pushbuttons for ringing. ☎

SHOW ANNOUNCEMENTS

Maitland Antique Telephone Show

Saturday, January 17, 2009 - 8 A.M. to 4 P.M. • Maitland Civic Center, 614 Maitland Ave., Maitland, Florida

Registration: $5, Table $15, additional tables $10. Send to Paul Mikula, 650 Chapman Ct., Oviedo, FL 32765.

Accommodation: Days Inn North (Formerly Comfort Inn) 8245 D US Hwy. 17/92, Casselberry, FL 32730, Tel. (407) 339-3333 • Motel 6, Hwy. I-4 at Lee Road exit #88, 5300 Adanson Road, Winter Park FL 32810, Tel (407) 647-1444.

Friday evening open house at the Mikula's home. Come early to visit Renninger's Antique Extravaganza, Jan. 16-18, in nearby Mt. Dora.

Host: *Paul Mikula* • E-mail: wecoman@bellsouth.net • Telephone: (407) 365-4686

☎

Virginia Regional Telephone Show

Saturday, February 28, 2009, 8:00 A.M. - 1:00 P.M. [Setup at 8:00 A.M.] • Holiday Inn - Patriot, 3032 Richmond Road, Williamsburg, Virginia 23185.

Please call the Holiday Inn directly at (800) 446-6001 and ask for the "telephone show" rate of $59 plus taxes per night.

Registration: $10 for ATCA / TCI members. No charge for spouses / guests. Tables: $10 for the first, $5 for each additional table. Early registration and table reservations appreciated. • Please make checks payable to Russ Cowell and mail to Russ at: 105 Woodmere Drive, Williamsburg, VA 23185.

On Friday evening (5-7 P.M.) there will be a meet and greet gathering in the Back 9 Bar and Grill at the Holiday Inn Patriot. Pizza will be provided by the host. Cash bar.

Host: *Russ Cowell* • E-mail: WECoguy@cox.net • Telephone: (757) 258-5308

☎

Spring Show - Mason, Michigan

Friday - Saturday, April 3-4, 2008, 8:00 A.M. to 2:00 P.M. • Cobblestone Events Center in the Mason Antique's District, 205 Mason Street, Mason, MI 48854

Social reception Friday, April 3th. 6 P.M. to 10 P.M. Complimentary refreshments and pizza for registered attendees and guests Friday Night!

Registration: Admission - $10.00; Tables - $10.00. Set-up - 8:00 A.M. Saturday. Complimentary Starbuck's Coffee & Krispy Kremes Saturday morning. If you want to register early, just mark how many tables you would like and send a check for the total to: Ray Kotke, P.O. Box 37, Bath, MI 48808.

Accommodations: Red Roof Inn - (517) 332-2575 $59.90 / night. There are many other hotels in the Lansing area too.

For FANTASTIC Hamburgers, Pizza, & Smelt dinners, go to LEO'S LODGE just down the street from the Red Roof Inn. It is located on Jolly Rd. (Jolly Rd exit on I-127 North, then right 1⁄2 mile on the right - looks like a Log Cabin!) Contact Ray Kotke for more information.

Host: *Ray Kotke* • E-mail: kleenax@gmail.com • Telephone: (517) 230-6730

☎

TCI Spring Show

June 5-6, 2009 • Lancaster, PA

More information will be made available in upcoming issues of *Singing Wires*.

☎

15th Annual Telephone Collectors International Labor Day Show

September 4-5, 2009 • Holiday Inn - Cincinnati Airport, 1717 Airport Exchange Blvd., Erlanger, KY 41018.

More information will be made available in upcoming issues of *Singing Wires*.

BUY / SELL / TRADE

BUY / SELL / TRADE Ads are free to TCI members. Please send an e-mail to: editor@telephonecollectors.org. (Large display ad space is available for a modest fee. Visit www.telephonecollectors.org and click on "Singing Wires" for rates.)

FOR SALE

480 page Payphone History. The book is divided into 3 main sections: I. The Payphone (321 pgs), II. Booths (63 pgs) III. Signs - 810 signs (74 pages) $25.00 + $5.00 shipping. Thanks much.

ALSO... Since the 1970s, we have saved and restored many things. One of these items are switches out of torn-down 500's, AE80's, AE90's, business-phones and others. • At the time we embarked on having replica payphones made, we found ourselves short of original switches for them, so we had some manufactured for $7.00 each. • While attempting to organize things, we noticed that the Leich convertibles switch resembled the payphone switch and began using them with slight modifications. In the 2000s, we became aware of precious metals within the contacts of these old switches and some were sacrificed to be refined. • It hurts to do this to a switch which we believe could be used in the making of replicas. We have a sizable quantity remaining. 10 for $10.00, Larger quantities down to .66 ea.

LAST... Your supplier for cords, cordage, in 7 different colors & cord restraints since 1973. Repro and old parts, History books and memorabilia. • We'd like to sell the entire business--not desperate yet. Many marketing opportunities. Since there is no long line, we will offer it in small chunks. • Complete erico phone inventory for sale (large U-Haul load) • Prices are Take ALL of 1 style.
- Semi load of mostly refurbed Deco phones from the 70s, $12 ea. w/ parts.
- 200 302's w/o dials, w/ some imperfections $20 ea.
- Oak magneto crank small wood phones w/bakelite cradle @ $39.00 ea.
- 2000 steel deskphone carcasses w/202 like cradle @ $2.25 ea.
- 600 1950-60's rotary 3 & 5 line phones (good for ringers, etc. @ $3.00 ea.
- 2,000 Norweigen 1940s-50s desk-wall (convertible) rotary; mostly w/ cloth cords.
- 2 1/2" brass bells, etc. Some have backwards dials. @$2.50 ea.
- 1,000 old walnut LME bell boxes w/original hex-head bell screws. 100 @$20.00 ea.
- Over 500 large wood wall crank phones and 600 magneto ringer boxes w/ associated parts.
- Over 1000 Princess phones, $12.00 ea.
- Hundreds of other items in inventory.

Ron and Mary Knappen • (608) 582-4124 • phonecoinc@aol.com • www.phonecoinc.com

.....

- Automatic Electric desk black dial phone with a 2-line turn switch in the left front, working with a 4-prong jack attached to its long line cord $35.
- Connecticut wall mounted 12-position annunciator-switchboard in oak, separate receiver and transmitter, 101/2" x 26" $450.

David Martin • 6016 Sheaff Lane, Ft. Washington, PA 19034 • (215) 628-9490

.....

Still have Dial Pulse to Touch Tone converters for sale for your rotary phones. Great for Internet phone service where the service provider does not support dial pulse. Easy to install, plug and play. No external power required. The price is $47.00, which includes shipping in the U.S. Thanks.

Larry Kolb • (703) 754-3832 • Larrykolb@comcast.com

.....

New old stock bottom covers for Automatic Electric #40 telephones. These come with factory-installed black felt covering, five dollars each. Melco Laboratories KR-19 Intercom for use with rotary-dial phones on a 1A2 system. These can be used with a stand-alone power source (you provide) to animate your rotary-dial display phones. Ten dollars each. Postage extra. Don't forget that I will still repair your rotary dials, any brand, for six dollars each plus postage (major parts extra).

Steve Hilsz • PO Box 429, Salome, AZ 85348 • (928) 859-3595 • jydsk@tds.net

WANTED

Looking for the following items for reasonable price:
- Federal black desk stand telephone(1919)with or without short receiver. Must have metal name tag.
- Oak WE fiddleback wood phone with or without transmitter/receiver.

Ben Salem • Brampton, Ontario, CANADA • dinquisitive1@yahoo.com

Renew your Membership for 2009 NOW!

If you receive your *Singing Wires* newsletter by U.S. Mail, note the year printed on the mailing label above and to the right of your last name. If the date is 2008, it is time for you to renew. If the date is 2009, you have already paid your renewal or you have just joined and been given the bonus months. If you receive your newsletter by email and you are not sure when your memberhip expires, please contact Gary Goff, Membership Chairman, at membership@telephonecollectors.org. All memberships expire as of December 31st and are renewable for the period of January through December. We hope we have earned your support.

Pay online by credit card, debit card or PayPal at www.telephonecollectors.org/membership, or send a check or money order using the enclosed membership renewal form. (E-members can print the form located in the Bonus Pages of this newsletter.) ☎

Membership Enrollment/Renewal

Telephone Collectors International

Member Information

New Member _____ Renewal _____ (Check One)

Date	
Name	
Spouse (if applicable)	
Street Address	
City ST ZIP Code	
Home Phone	
FAX	
E-Mail Address	

Memberships (January 1 - December 31) *(see below for Junior Membership - under 18)*

Choose one (E-membership or Standard Membership):

E-Membership: Global Dues - $25; Newsletter sent in electronic form only--NO PRINTED VERSION (Must have valid Email) _____

Standard Membership: **USA, Canada, Mexico Dues - $36**; Elsewhere - $44; Printed newsletter sent via USPS Mail _____

Choose one (Switcher's Quarterly or E-Switcher's Quarterly):

Switcher's Quarterly (Print Version): Add $15 _____

E-Switcher's Quarterly (Electronic Version): Add $8 (Must have valid Email) _____

Spousal Membership: Add $10 _____

Contribution to the TCI Reserve Fund (Tax Deductible) _____

Total _____

Payment Options

Option 1	Pay online with your Visa, Mastercard, American Express, or Discover or instant transfer through your PayPal account by visiting http://www.telephonecollectors.org/membership *(No PayPal account required for credit or debit card transaction)*

Option 2	Send Check or Money Order (U.S. Funds Only Please) made payable to *Telephone Collectors International* to: Telephone Collectors International, Inc. 3805 Spurr Circle Brea, CA 92823

Survey *(Optional)*

Would you be willing to be nominated as a candidate for election to the TCI Board of Directors? Y N

Junior Membership

Junior Membership is for collectors under the age of 18 when there is no adult collector in the same residence/family. Junior Membership includes subscription to the TCI Singing Wires e-newsletter (must have access to a valid Email address) and a listing in the member directory.

The statue now known as "Golden Boy" was first installed in 1916 at the location of the headquarters of AT&T and Western Electric on 195 Broadway in New York City. Its original name was "Genius of Electricity." Today the statue's official name is "Spirit of Communications." The statue, commissioned in 1914, was sculpted by artist Evelyn Beatrice Longman (1874-1954). She is best known for the bronze work that adorns the Lincoln Memorial. Her statue has been moved several times since 1916. It stood for 65 years on top of 195 Broadway until it was moved in 1980 (with a 3 year hiatus) to a place of honor in the 7-story lobby of the new AT&T headquarters at 555 Madison Avenue. Apparently the proximity of the nude statue's anatomic correctness to the viewers in the lobby of of the great corporation was considered inappropriate. In the reinstallation process, the statue was reportedly altered to remove the offending anatomic parts. After 10 years indoors the statue was moved in 1992 to to AT&T's new headquarters in Basking Ridge, NJ, where it appeared on a pedestal in front of the building for 10 years. In 2002 it was moved to Bedminster, NJ along with the rest of AT&T's headquarters. Since the AT&T name has been taken over by SBC, there has been talk of moving the statue to Dallas, Texas. To learn more about the artist, see http://http://www.evelynbeatricelongman.org. We present to you the announcement of the new statue from a pristine copy of "Western Electric News" from January 1917 below.

To learn more about AT&T's original headquarters, see this link: http://www.nytimes.com/2006/01/20/nyregion/20lobby.html

Western Electric News
PUBLISHED ONCE A MONTH FOR THE EMPLOYEES

JANUARY, 1917 VOLUME V, NUMBER 11

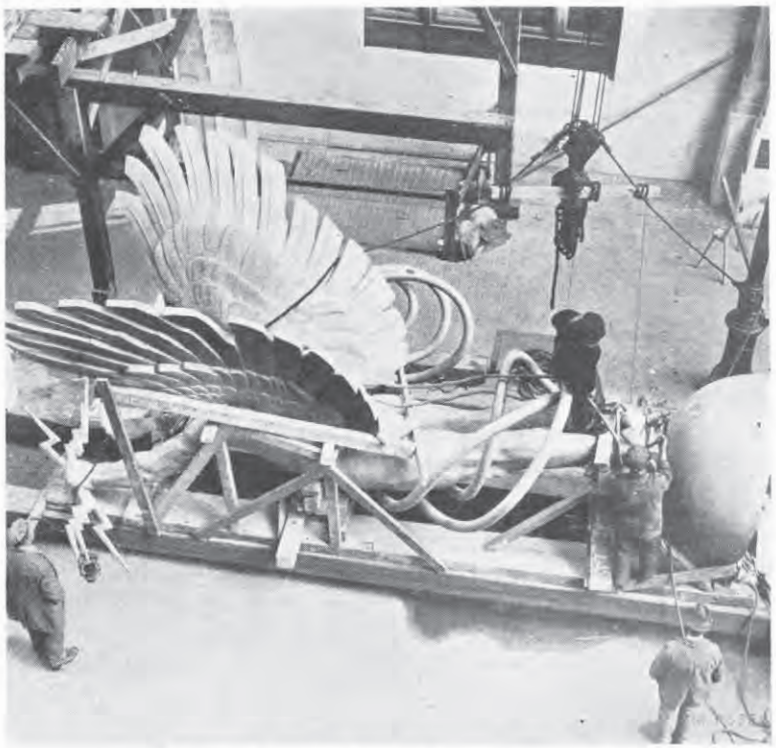
Soliloquy

I am named Electricity—
E'en though a ribald member of the hoisting crew,
In a moment of uncalled-for facetiousness,
Called me Cupid.
True, I bear great wings, outspread for flight,
Yet they but typify my restless spirit as it dashes
Over wire highways that traverse the continent,
And through the ethereal realms.
Three darts of lightning have I drawn from out the sky
And hold within my left hand firmly grasped.
A great coil formed of cabled wires
Springs from my dexter hand
And winding 'round my body many times
Goes to earth.
Thus is symbolized the wondrous power
With which my energy transmits
Man's messages.
I stand above the turmoil of a great city,
Ready poised for instant flight
Into the spaces that inviting loom about me—
Yet never do I go.
I see the myriad workers passing back and forth
Upon the crowded thoroughfares beneath,
Each dependent on my power
For transportation to and from the daily tasks.
I see the mighty rivers flowing ceaselessly,
Bearing great vessels on their bosoms;
Vessels that seek me on the seas
When in distress
I see the days change into night
With all the twinkling lights that come to view,
Needing my force mysterious
To give them life.
I wield a mighty force—my sway is absolute;
Yet have I a hunch
Notwithstanding the coat of gold leaf
That I now have,
I'm going to be mighty cold up here
This winter.

W. A. WOLFF.

195 Broadway

THE Telephone and Telegraph Building, or "195," as Western Electric men in New York have come to call their fine new home during the last few months, has been crowned recently. The crown we mean is on the cover of this issue of the NEWS. It stands 24 feet in height, 16 tons in weight, 400 odd feet above the swirl of Broadway, its wings outstretched — "Electricity," a symbol of the swift communication of our times. Just now they are covering the statue's bronze surface with gold leaf, for natural bronze would blacken if exposed to the elements, but soon "Electricity" will emerge from its hibernation gleaming bright—the latest and, admittedly, one of the finest tenants of New York's alpine sky line.



"Electricity," Resting While Waiting for the Derrick

There are other noteworthy features about 195 Broadway. William Wells Bosworth, the well-known architect who designed the building, describes them thus in the current number of ARCHITECTURE:

"The new Telephone and Telegraph Building at the corner of Broadway and Dey Streets, New York, is composed of nine orders in height and its broad elevation on Dey Street is composed of three bays decorated with the orders and separated by plain undecorated bays. The style is Greek. . . . . The offices within are abundantly lighted and the positions of the windows in relation to the interiors are practical and agreeable. The columns projecting beyond the wall surface do not obstruct the view or the light. . . . . .

"The Fulton Street wing provides offices for the administration which can be lighted on three sides, and produces a tower thirty stories in height and only 33 feet wide. It is surmounted by a litfle Ionic temple with stepped roof, which supports the figure "Electricity."

"The masonry is of fine white granite with solid bronze metal work. The materials of the lobbies are Botticino marble and bronze. The marble is cut from large blocks returning deeply around the corners. The woodwork of the chief executive offices is Italian walnut. The corridors are lined with Alabama marble with mosaic floors of white marble and Alps green base. This same base is used throughout the building. The steel and kalemein work are treated with an antique green bronze effect."

When it comes to statistical data, it may interest the engineers, the accounting department and other persons of a precise turn of mind to know that the Broadway frontage of 195 is exactly neither more nor less than 75 feet and 3 inches. The Dey Street frontage runs a great deal more than this—nearly 300 feet. The approximate area of the site is 24,300 square feet. There are 27 stories. The height of the main building is about 365 feet, compared with the height of the Fulton Street wing (which includes the tower), 422 feet. From the top of the building to Broadway's pavement is 500 feet, and there are 5 stories below grade sunk to a depth of 71 feet. The gross floor area is 600,000 square feet.

Light, heat, power, ventilation, refrigeration and vacuum for cleaning are furnished by an isolated plant. Three 400 H.P. and two 250 H.P. engines are connected direct to generators, giving a total output of 5,200 amperes at 240 volts, at the present time generating 185,000 K.W. per month. The boilers, five in number, are of the water-tube type, built for 200-lb. pressure and are equipped with mechanical stokers. There are 21 elevators in the building, of which fourteen are express, six local and one private to the tower. And lastly, but by no means last in point of convenience to those folks who live in "Bagdad-on-the-Subway," there is a direct entrance from "195" to the subway express.

In the Telephone and Telegraph Building are located the headquarters of the American Telephone and Telegraph Company, the Western Union Telegraph Company, and New York Telephone Company, besides our own offices.

The Western Electric Company occupies three floors of the building. On the 15th floor are situated the offices of the President, the Vice-Presidents, the Comptroller, the Secretary and the Treasurer. The various departments are located as follows:

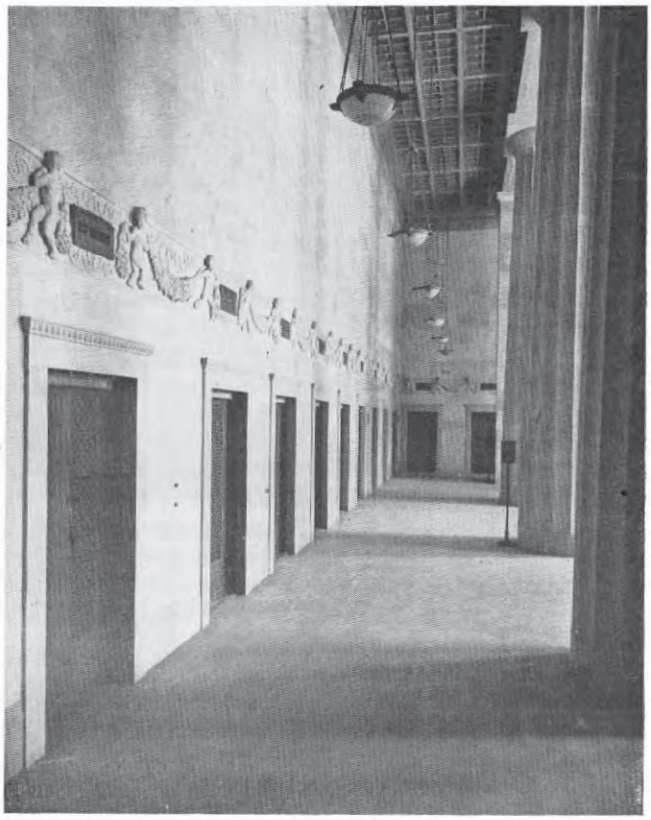
15th Floor—Accounting, Auditing, Comptroller's, Executive, Legal and Treasury departments.

14th Floor—Sales and Advertising departments.

13th Floor—Cashier's, Foreign, Mailing, Purchasing and Traffic departments.

Some Views of 195 Broadway

The Main Lobby



Part of 195 Broadway's Elevators

Looking Southwest, Old St. Paul's Church at the Right.

The Tower: Woolworth Building to the Left.

THE HAWAIIAN TELEPHONE STORY

"A Day That Will Live in Infamy..."

by William A. Simonds, 1958

Written for The Seventy-Fifth Anniversary of the Founding of the Hawaiian Telephone Company

Chapter Twelve; The Telephone Goes to War

On Sunday morning, December 7, at 7:55 a.m., while most of Honolulu was still asleep, a wave of Japanese bombers dropped their deadly load on Pearl

Harbor, signaling the outbreak of hostilities. While the bombs were still exploding, a hurried phone call was received at his home by Mutual's

Commercial Manager. A naval office was at the other end of the line. "There is an attack and it's the real thing. We want some through trunking connections as fast as you can make them.

It took him but a few seconds to reach the Plant Manager with word to arrange the lines. They drove downtown to the main exchange, while Japanese planes flew overhead and anti-aircraft shells burst on all sides, and arrived there at 8:15 a.m.

In three different areas, anti-aircraft shells fell and exploded within two blocks of the main building. An operator hurrying to her post had to step over the body of a Chinese man who had been killed only a minute earlier in one of the explosions.

The Traffic Manager was standing by the transpacific board when an explosive landed in the Palace grounds. The resulting explosion and concussion were terrific. "I saw the operators rise at least six inches of their chairs," he said, "and then settle back without a single break in their work."

With America at war, the telephone company went into action smoothly and efficiently. Employee mobilized at the exchange voluntarily, hurrying there as soon as they learned of the assault. Within a half an hour after the attack, employees comprising the anti-sabotage guard had reported, armed with riot guns and other equipment, and taken their stations.

Washington learned of the attack by overseas telephone. Switchboards were choked with calls, for it seemed everyone was trying to talk to someone else to pass on news, or inquire what was happening. The Army asked Honolulu's two radio stations, KGMB and KGU, to broadcast an appeal not to use the service except for emergency purposes, in order to free the lines for urgent official calls. A 30 percent reduction in private messages was immediately effected. This cooperation by the public continued throughout the emergency. By mid-morning, Army and Navy censors took over supervision of all radiotelephone, as well as overseas cable and radio telegraph communications. Persons making calls were forbidden to speak in any language but English. They could not mention shipment of goods so as to reveal movement of shipping or inventories on hand.

Company operation was placed under military control on December 9, giving the Army first call on all services and equipment needed to supplement its own communications. Mutual was left free to set its own policies and priorities for civilian requirements.

To provide for the 100 to 150 operators and others who did not leave the building throughout the first week, a restaurant was set up on one of the floors, and a dormitory was created in a section of the new addition to the main building then under construction. The Army supplied cots and blankets where the exhausted workers could snatch a few hours sleep. Every executive had a cot in his office in case he had to remain on the job overnight, and one of the Company's five top men had to be present at the exchange both day and night. Most of the executives did not leave the building all during the first week. At the warehouse, repair crews and trucks were constantly ready for action.

Sandbag barricades guarded by armed soldiers protected the entrance to the exchange....

Soldiers, sailors and marines, officers and enlisted men alike, thronged the lobby of the exchange building where 24-hour service to the mainland was maintained. Most of them had not heard the voices of their loved ones for many months, and while they waited for the calls to go through, paced up and down across the floor like expectant fathers at a hospital. In fact, the place became known as "The Maternity Ward."

When the connection was ready, the caller was notified by loud speaker and he hurried into one of the waiting booths. Some conversations were long and protracted, regardless of cost. "I don't care about the money," more than one said, even when tolls ran as high as $300 or more.

"Some went into the booths happy," recalled an attendant, "and came out sad, even crying. Others went in sad and came out smiling broadly. They confided in the girls at the counter: "It's a baby boy!" or 'She's agreed to marry me!' The attendants were always sympathetic and interested and helped speed the calls through." ☎

(Editor's Note: This item was contributed by a telephone collector who believes that this is a good reminder of that fateful day in 1941, 67 years ago. TCI surely wishes to acknowledge the work of the original author and the telephone company about whom it was written.)