

KEY AND TELEGRAPH



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Horace G. Martin

— *Part One: The Telegrapher* —

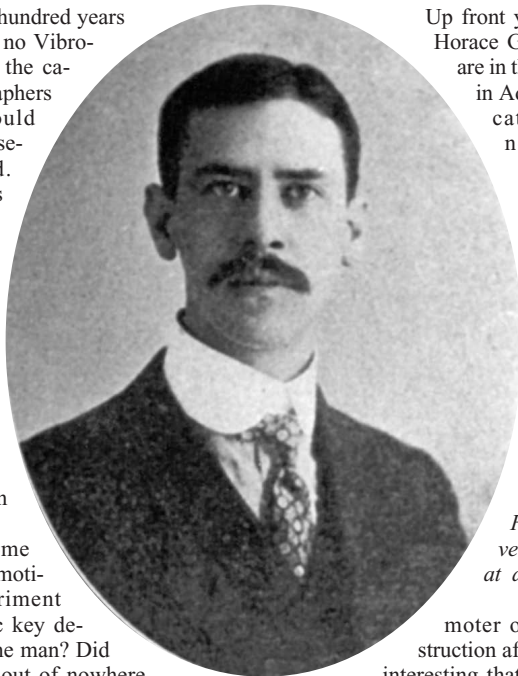
Behind all the data that exists today about Vibroplex keys: the various models, their manufactured dates, and the many labels, is the story about Horace G. Martin. Without Martin's sole invention of the Martin Vibroplex, almost a hundred years ago, there would be no Vibroplex Company, and the careers of many telegraphers in this country would probably have been severely shortened. Martin's inventions in semi-automatic key design have been used by thousands of commercial, press, military and amateur telegraph and radio operators both on land and at sea for decades, yet very little has been documented about Martin himself.

Where did he come from? What or who motivated him to experiment with semi automatic key designs? What about the man? Did he seemingly come out of nowhere just to seize a marketing opportunity for telegraphers who were suffering from "telegrapher paralysis?" This was a crippling syndrome resulting from the daily abuse of manipulating a manual telegraph key. It affected the arms of many telegraphers.

I will attempt to answer these questions in a multi part article that will trace Martin's life at least to the point where he first introduced the Martin Vibroplex. This installment will cover his early years. It that will also focus on a very remarkable telegraphic event in which Martin participated as a young man. Some of you may have heard, or suspected, that Martin was a

telegrapher before he invented his famous Vibroplex. After reading this installment you will learn that Martin was not just an ordinary telegrapher, but one of the finest telegraphers in the United States.

Up front you should know that Horace Greeley Martin's roots are in the South. He was born in Adairsville, Georgia, located about 50 miles north of Atlanta, in 1873. It would appear that Robert and Sarah Martin, when selecting a name for their son, were influenced by the life of Horace Greeley, founder and editor of the New York Tribune, who had died a year earlier. He was popular in Georgia as a pro-



Horace G. Martin, Inventor of the Vibroplex, at age 30.

moter of the south's reconstruction after the Civil War. It is interesting that Martin's career as a telegrapher, either by coincidence or design, heavily favored the press service.

Martin's father was a former confederate soldier. At the time of Horaces birth, he worked as a miller in a grain mill just east of Adairsville in Pine Log, Georgia. As a youth, Horace spent his time at the train depot in Adairsville, where he first learned telegraphy. Adairsville was the half-way stop between Atlanta and Chattanooga, Tennessee for the Western and Atlantic Railroad. Martin was hired as an extra operator for the railroad when he was only nine.

He was recognized for his excellent penmanship and typewriting abilities even before he be-

came a teenager. Because of these abilities, he was hired as a telegrapher for the Associated Press in Atlanta while in his early teen years. Later, he left the Associated Press to work for Western Union in Atlanta, advancing to the position of chief operator for the entire Atlanta office.

Still in his teen years, Martin was married to Miss Gena Stephens of Atlanta. She was the cousin of Alexander Stephens, the former vice president of the Confederacy, and the daughter of James M. Stephens. Like Martin, James Stephens had roots as a telegrapher with the Western and Atlantic Railroad. He later became the superintendent of Western Union's southern operations. In 1893, Horace and Gena Martin became the parents of Horace G. Martin Junior, the first of their eight children. The motivation behind some of Martin's later moves in life can be best understood knowing that he and his wife were from Georgia.

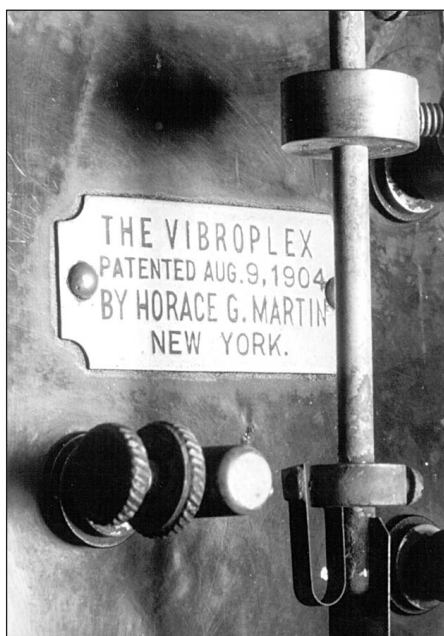
As Martin gained more and more experience as a telegrapher, he found opportunities to work circuits of greater importance. Telegraphers with the ability to move high volumes of copy in the least amount of time received the best pay, and Martin jumped around from city to city seeking such positions. He was re-employed by the Associated Press, this time based in Memphis, Tennessee, to work their important Memphis - New Orleans wire.

He became known on the wire by his personal "sine" (call sign) of "HM." As time went on, "HM" developed the reputation as being one of the best senders *ever* in the press service. Martin was also ambidextrous and had a talent as a telegrapher for doing totally different tasks simultaneously.

With this kind of reputation still better opportunities awaited him in New York City, where the nation's largest telegraph hubs were located. Early in New York he found employment with some of the brokerage firms on Wall Street or, as telegraphers referred to it, "The 'Street.'" But by the mid 1890s he was back in the press service working for various newspapers as a telegrapher, reporter, and telegraph editor.

During the 1890s two major U.S. news organizations were competing fiercely for newspaper contracts.

These were The Associated Press and The United Press (not to be confused with UPI, which was organized later). Both were headquartered in New York City at Western Union's 195 Broadway building. Martin's next move was to work as a telegrapher for The United Press. There, he developed important associations with certain people that, would directly or indirectly,



Label of early-production Vibroplex.

affect his career in the years to come. They included: General Manager Walter P. Phillips, a long time telegrapher, newspaper editor, and the inventor of a telegrapher's short hand called the Phillips code; Roderick Weiny, Lead Engineer and Electrician; and Fred Catlin, a prominent telegrapher famous for the "Catlin grip," a standard method of handling a telegraph key.

In early 1897, the United Press, losing most of their major contracts to The Associated Press, filed for bankruptcy. By April 8, 1897 The United Press had ceased operations and laid off all of their employees, including Martin. Walter Phillips went off seeking new business opportunities while Martin went back to work for Western Union. The commute from his home at 377 Seventh Ave. in Brooklyn remained almost exactly the same; he merely reported to work on a different floor at 195 Broadway.

In 1898 an event took place in Martin's life that is a story in itself. On May 14th of that year, a major telegraph competition was to be held as part of an electrical exposition sponsored by the New York Electrical Society. It overshadowed any contest of this type previously attempted and it was appropriately named "The Grand National Telegraph Tournament." No better a place could have be selected for such a competition than Madison Square Garden. Cash prizes were to be awarded to the first and second place winners in

three categories for both sending and receiving: a message class, code class, and the most difficult, the championship class.

Invitations to officiate as judges went out to a list of distinguished men associated with the field of telegraphy. Accepting as an honorary judge was Jessie Bunnell, former Civil War telegrapher and senior partner of the telegraph equipment supply firm, J.H. Bunnell & Co.: "I will serve as a judge, but hope that you will find enough more old 'has beens' for associate judges, to enable us collectively to read fifty words per minute...Of course we will also do anything else that is desired, in the way of furnishing necessary apparatus..."

Thomas Edison, a former telegrapher himself, had similar sentiments with his colorful reply: "I may come over and act as a judge of 50 word a minute Morse, but I am afraid I would not understand it. The Morse that I was brought up on was about as perfect as the record slip* on a deep sea cable. But if such fossils as Bunnell...are going to pretend to read copper plate Morse**, then I may come over and look wise."

The main event in the tournament was the championship class competition. Six senders would send five minutes of text each—selected appropriately from The Old Testament's *Book of Judges*. A panel of Judges would award prizes to the fastest two telegraphers with the least number of errors. On the receiving side of this competition, prizes would be given to the top two receiving telegraphers with the least number of errors copied with a typewriter of the operator's choice. The omission or addition of any character, including punctuation marks, would count as an error. The receiver had to accurately copy the sender's mistakes. Horace Martin was one of fifteen telegraphers competing as a receiver in this class and was one of eight from Western Union of New York City.

The tournament setting was in the concert auditorium of Madison Square Garden. The contestants were seated up on the main stage among a maze of positions, each equipped with a typewriter, sounder and resonator. The judges were off in separate quiet rooms. For the first time in tournament history, permanent phonograms were made of the six senders and these could be duplicated later for play back on a phonograph or a graphophone. The majority of the telegraph equipment was furnished by J.H. Bunnell & Co. with Western Electric also helping out. Western

Union and Postal Telegraph, along with typewriter manufacturers Smith-Premier and Remington, contributed money for the cash prizes. Smith-Premier also offered to supply a "mill" to any telegrapher unable to transport a personal machine to the tournament.

That Saturday night The Garden was filled to standing room capacity for the start of the championship class competition. Anyone who was anybody in the telegraph business, along with every off-duty telegrapher in the New York metro area, was said to be in attendance. For previous tournaments, the spectators could listen in to the Morse being sent with various sounders placed in the crowd. For this event, three gigantic megaphones, each with a sounder mounted in its throats, were set up on the stage. They looked like three large cannons protecting a perimeter of a fort.

The Master of Ceremonies marked the beginning of the championship session and introduced the first sender. The official timer recorded the start and one by one each of the six senders sent five minutes of material. At its conclusion, Martin handed in seven sheets of typewritten copy to the judges. The results of the senders ranged from 43 wpm with 10 errors, to 50.8 wpm and one error. Martin's copy was praised by all of the judges as "being the cleanest and most perfect of all the copy handed in" and was an outstanding example of fast telegraphy and typewriting ability. But, there was a problem. Through a misunderstanding, Martin neglected to put the name of the sender at the top of each page he submitted, an omission that technically cost him seven errors. This put the judges in a dilemma. On one hand they were looking at Martin's perfect copy; on the other, the stated rules said the senders name had to be on each sheet. The judges could not come to a decision that night and sent everyone home while they deliberated over the week end for a decision. On Monday, they announced that Martin had been charged with the seven errors. The first and second prizes were awarded to two telegraphers who had three and five errors, respectively, in their copy.

In the days and weeks following the tournament, some publications talked about the Judge's controversial decision. One of the major telegraph publications of the day, *The Telegraph Age*, offered their unsolicited support for Martin. They did not contest the judges' decision but, like many telegraphers who were at the Garden that night, they were clearly aware of the perfect

* *Record slip*: a recording of the bipolar current pulses, representing Morse characters, received through long sea cables. The pulses were sometimes erratic in amplitude and duration.

** *Copper plate Morse*: an elegant style of handwriting typical of telegraphers.

copy turned in by Horace Martin. This publication made certain that their readers also knew about it. The "official" winner went on to become a footnote in telegraph tournament history, but *The Telegraph Age* documented a more important fact by stating: "It is safe to say there is no better telegraph operator in America than Mr. Martin."

Since Martin had the reputation of being one of the best senders in the press service, you might wonder why he did not enter the championship class competition as a sender. A reason that should not surprise you is that, by 1898, Martin was personally suffering from telegrapher's paralysis. After years of sending nearly 20,000 words of press copy per shift, he felt that he was losing his grip.

In the months following the Grand National, Martin began to go through a transitional period in his life. He was now a 16-year veteran telegrapher who had not yet reached his 25th birthday, but the "paralysis" threatened his ability to support his growing family at the pay level of a star telegrapher. In the following year he would start "periodic experimentation" with various ideas to transmit Morse other than with a manual telegraph key and would begin to seek employment opportunities that would help him develop these ideas.

Horace Martin's efforts would ultimately evolve into an inexpensive solution that would help telegraphers afflicted with the disability and would change his career from being a telegrapher to being an inventor and manufacturer... 

TELEVISION, continued from page 61

Nazi regime, the private television viewing was practically impossible.

Today we are at another turning point in television technology. We are moving towards a time when television signals will be generated digitally. The use of computer technology in both broadcast station and receiving equipment will make it possible to introduce, or improve, user services such as pay TV and TV on demand. Besides these positive developments in television technology, we should not forget that television today is a potent medium for influencing society. This means that politics and business

have strong motivation for controlling its use. An extreme and chilling example is the use of mass communication media during the Nazi regime (1933-1945) in Germany.

Norbert Wiener, the famous US mathematician and "father of cybernetics," analyzed the possible consequences of the control of television by such interest groups as early as 1948. His conclusion was very pessimistic. He felt it was crucial that the public (represented by the users) control the television medium. Yet today, in the U.S.A. and Europe, business interests remain very much in control of our television programs.

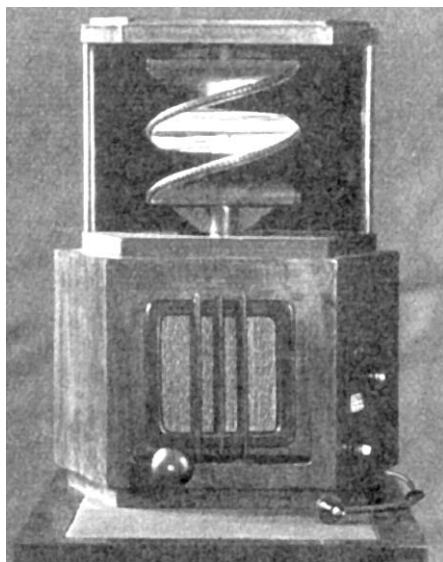


Fig. 6. TeKaDe mirror-screw receiver.

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Horace G. Martin

— *Part Two: The Phillips System and the Autoplex* —

In 1899, while still working for the New York Stock Exchange as a telegrapher, Horace Martin began experimenting with various automatic Morse transmitter designs. By 1900 he had established his first shop in New York City at 75 Nassau St., where he was listed as an electrician specializing in electrical instruments. He remained at this address for the next two years, while he worked as a telegrapher, doing contract work and building an electro-medical shock device designed to treat telegraphers who had lost their grip.

It appears that Martin also spent a fair amount of this time in an unsuccessful attempt at developing a Morse typewriter transmitter. It was stated at the time of his passing, and later by his son, Horace Jr., that his very first automatic transmitter design was not the Autoplex, but a “keyboard type — as large and cumbersome as a typewriter.”

As of this writing, there is no evidence that Martin tried to introduce this transmitter commercially, or was associated with anyone else working on a similar type. But collectors may want to consider the possible existence of Martin prototypes.

After the United Press went bankrupt in 1897, Martin’s former boss, Walter Phillips, went to work for the American Graphophone Company in New York. In 1902, Phillips was working at American Graphophone’s factory in Bridgeport, Conn. as a superintendent of printing and recording expert. He recruited Martin to be his assistant and Martin relocated with his family to Bridgeport for the majority of that year.

In addition to their

work as employees of American Graphophone, both Martin and Phillips were working on their own projects in automatic telegraphy. Phillips was promoting his system called the Phillips Morse Automatic Telegraph, jointly invented by Phillips and former United Press engineer Roderrick Weiny. His system was considered an accelerated method of sending Morse by hand.

Phillips utilized Martin’s mechanical talents, and his status as a well known telegrapher, to promote the Phillips system. The system consisted of an embosser, transmitter, and sounder all in an enclosure that resembled a graphophone, only without the horn. The sending operator, using a standard Morse key, would record his messages on an embossed tape. This tape was then fed into a transmitter that sent a group of messages at a high rate of speed over the line. The receiving operator had the same equipment and recorded the incoming messages on his embosser. He could then re-transmit the received messages to himself on his own local circuit, slowing the tape down to any speed he could copy.

In March of 1902 Martin traveled to Atlanta to act as a judge in The American Telegrapher’s



The first storefront on the right is the site of Martin’s first shop at 75 Nassau St. in New York City. Amazingly, today it is a Western Union agency.

Tournament. He also made a presentation demonstrating the Phillips Automatic system and used the system to record all the senders in the tournament. As a representative of the Columbia Phonograph Company, American Graphophone's sales agent, he awarded a phonograph to one of the winning telegraphers.

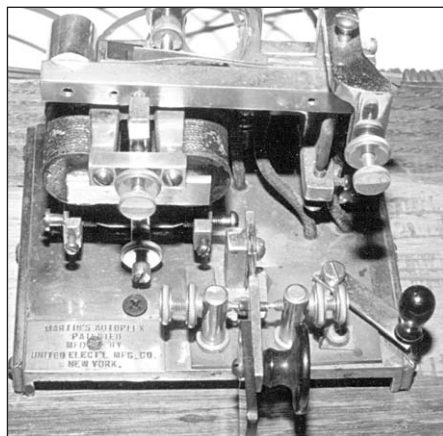
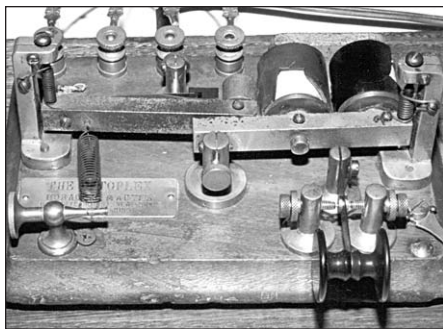
Later that month, Phillips recruited Fred Catlin to team up with Martin to promote the Phillips system. Catlin, aged 54, was a well respected telegrapher and a strong proponent of basing any automatic system on traditional Morse sending. Catlin's beliefs may have influenced young Martin's outlook on automatic telegraphy design.

During this period in Connecticut Martin was heavily involved with his own experiments, and it was while he was living at Bridgeport that his first successful transmitter was developed. "Having experimented for some time on automatic transmitters and having the occasion to observe the very interesting achievements of other workers in the automatic field. I decided that there was a demand for a small, simple and portable sending machine which, while being automatic or nearly so, would, as nearly as possible, retain the merits but not the demerits of the old Morse key."

The demerits Martin was referring to in this historic quote were the thousands of vertical key strokes a telegrapher was required to execute—frequently causing symptoms of "telegraphers' paralysis." The "merits" became the essence of Martin's key design philosophy and the template for all semi-automatic keys built in the future. There is a misconception that Martin designed his keys as "semi-automatic" solely to accommodate "American Morse," the telegraph code that included two characters with extended dash durations.

Martin's design philosophy remained unchanged throughout his career and he never mentioned any accommodation to a particular type of code. Beginning with his first patent, and with incredible foresight, he worked to retain the traditional control that a telegrapher had when using a standard Morse key. He wanted to ensure that the sending telegrapher kept his ability to "emphasize" any character at will, giving him the capability to adjust to fluctuating line conditions, adapt instantly to the receiving telegrapher's abilities, and to send different ways to multiple operators on the same circuit.

"This emphasis is accomplished almost entirely by lengthening or shortening the dashes and spaces"..... "These and kindred features have been the stronghold of the Morse key and



Two examples of the Autoplex built by Martin. The wood-based version is an early model made at 62 Cortlandt St. The other instrument is a UEM version from 53 Vesey St. From the collection of Gil Schlehman, K9WDY.

the cause of the practical failure of all automatic transmitters heretofore devised." (And those that were developed thereafter.)

Martin's 1902 invention, the Autoplex, embodied these principles. He considered his invention "auto" or "nearly so" because it produced dots automatically but he kept the duration of the dashes and spaces up to the operator. The number of key strokes now required were considerably reduced and all horizontal.

The Martin Autoplex was a small, portable instrument that required one to two dry cells. The design was simple and its operation can be best understood by referring to the early wood-based version of the Autoplex. Look at the two horizontal levers running across the instrument. The one on the right is an armature, which makes an electrical connection to one on the left, a weighted pendulum, where they meet at the center.

When the operator moves the key lever to the
(continued on page 57)

les Angels during their 1961 debut season and announced the first run hit by Angel player, Ted Kluszewski, on KMPC(AM). Other members of the original broadcast team included Bob Kelley and Steve Bailey. He was hired by Gene Autry, owner of the team, and Golden West Broadcasting Co. which, in turn, owned KMPC. In 1972 Wells joined KFWB(AM) where he announced sports and general news until his retirement in 1988. He began his career at WCFL(AM) in Chicago broadcasting White Sox and Chicago Cardinals football games.

Information for this column was obtained from *The American Musical Theatre*, *The Big Bands* (4th edition), *The Complete Directory to Prime Network TV Shows 1946-present* (4th ed.), *The Encyclopedia of Jazz* (1st ed.), *The Hartford Courant*; *On the Air: The Encyclopedia of Old-Time Radio*, www.broadcastingcable.com, www.hci.harvard.edu, www.netlondon.com, www.nytimes.com and www.yiddishradioproject.org.

Thanks to David W. Kraeuter, Frank Q. Newton, Jr., W6SYG; and Dr. A. David Wunsch for additional source material. 

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right, current flows through the electromagnets attracting the armature. The armature kicks the pendulum towards the rear of the instrument, breaking its center connection and causing it to swing over to the far stationary contact—producing a dot. With the center connection now broken, the armature returns to its stop. The pendulum is returned by two springs, and reconnects the two levers. This whole sequence starts over again and will continue to produce dots until the operator releases the key. To produce a dash the operator simply holds the key lever to the left for the desired length of time.

In the Fall of 1902 Martin returned to Brooklyn with his wife and three children and on October 6th filed a patent on the Autoplex, his first telegraphic transmitter patent. He assigned one half of this patent to Walter Phillips, most likely as payback for the employment arrangement during the past year. Martin is the only inventor listed on the patent.

In 1903, Martin set up shop at 62 Cortlandt St in New York City and began to manufacture the Autoplex on his own. His involvement with the Phillips Automatic system continued and in fact, after the death of Roderick Weiny in 1903, Phillips began to rely even more on Martin's technical expertise. Martin seemed to take over Weiny's role, and was now being referred to as an "electrical engineer."

By 1904, it became necessary to take a more organized approach to the manufacture of the Autoplex. On February 17th, Martin, Walter Phillips, and a group of investors, many of them former telegraphers, formed The United Electrical Manufacturing Company. The Certificate of Incorporation listed four subscribers: Albert Brown, Lewis Young, Frank Schoonmaker, and G. Lee Stout. Start-up capital was stated as one thousand dollars.



A telegrapher using his "mill" to copy messages played back on the embossed tape of the Phillips Morse Automatic Telegraph System instrument on the table at right.

Martin was the fifth director out of the seven comprising UEM's board of directors for the first year's operation. Even though the company was formed for the manufacture of electrical and mechanical devices of all kinds, the primary product was initially the Autoplex. Martin's position with the company was vice president and general manager in charge of both sales and manufacturing.

The company's offices were at 25 Broad St. but the shop where Martin worked was at 53 Vesey St. In March of 1904, both Martin and Phillips traveled to the Louisiana Purchase Fair at St. Louis to exhibit both the Phillips Automatic system and the Martin Autoplex. At that time, the Phillips system was said to have been "greatly improved" by Martin and Phillips. 

The third and final part of this article, "A Vibroplex in Every Telegraph Office," will appear in the next issue of The OTB.

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Horace G. Martin

— *Part Three: A Vibroplex in Every Telegraph Office* —

Some of the first telegraphers to use Horace Martin's Autoplex in the U.S. were known as "Bonus Men." Both Western Union and Postal Telegraph companies had contracts with such telegraphers, who were capable of sending large numbers of messages in the shortest period of time. Bonus Men were paid a premium for each message sent over an agreed upon quota. In turn, the companies provided them with the best possible telegraph circuits and kept routine company traffic interruptions to a minimum. These circuits were called "Bonus Wires."

Martin's instrument was very attractive to the Bonus Man. He could maintain a high speed for an entire shift and not be subject to the fatigue and strain of using a standard Morse key. But the Autoplex was owned by the telegrapher rather than the company and required a local battery. So the telegrapher had to transport the required dry cells to each shift along with his autoplex.

Telegraphers argued that their companies should provide a permanent bonus desk equipped with a "suitable local arrangement" of the station's batteries. Companies were generally willing to comply, but they could not agree on a standard coil resistance for the electro-magnets to be used by Martin and other emerging makers of "magnetic" type keys. This provided motivation for Martin and other inventors to design a totally mechanical transmitter.

In May of 1904, Martin filed for his second

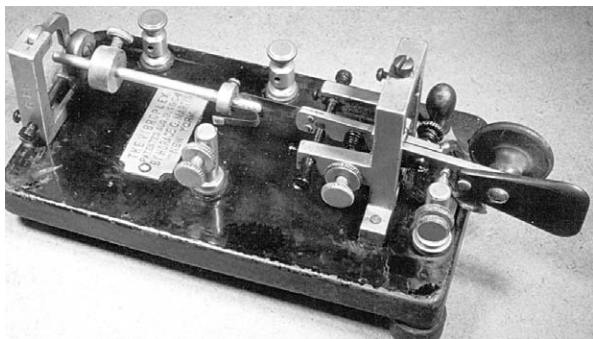
transmitter patent. It included his first attempt at a totally mechanical design, utilizing a vibrating pendulum to produce dots. In this design, the key lever runs parallel to a spring-mounted horizontal pendulum, holding it in a position that puts tension on the spring. When the operator moves the key lever to the right, the lever withdraws from the pendulum, allowing it to vibrate.

But it is unlikely that this design went into production. Martin appeared to have problems with the vibrating efficiency of this pendulum right from the start. In fact, the two other design options in this patent relied upon electro magnets to help amplify the pendulum swing. Also, four months earlier, another telegrapher, William Coffe of Cleveland, filed for a patent that used a similar lever design with an unassisted vertical pendulum.

In Martin's next mechanical design attempt, he distanced himself from any similarities with the Coffe patent and greatly improved the efficiency of the vibrating pendulum. The design incorporated the lever, main spring, and pendulum all in one piece. This one-piece vibrating pendulum became the basis for the name, "Vibro"-plex.

In the new design, moving the key lever to the right forces it to strike a stop after causing the spring mounted pendulum to go into vibration. After the desired number of dots are produced via the contact spring on the pendulum, the operator releases the key, the lever returns to its static position, and the pendulum is arrested by a damper. The dashes are produced by moving an independent lever to the left. This design resulted in Martin's third transmitter patent. It was filed on April 16, 1906 and is today referred to as the "original" design.

There has been an ongoing debate surrounding the actual introduction date of Martin's Vibroplex. The confusion is generated by the date of Martin's second transmitter patent (1904) shown on labels of early production models of the Vibroplex. How-



An early production Martin Vibroplex – serial #679.

ever, there is no evidence indicating that a mechanical transmitter of any type was either manufactured or formally introduced by Martin in 1904. In fact, it appears that the very first public introduction of the Martin Vibroplex took place in May of 1905 and it did not occur in New York, but about 750 miles further south in Tennessee.

The biggest trade show in the telegraph industry during this era was held during the annual Railway Telegraph Superintendent's Convention. These superintendents, jointly employed by the railroad and telegraph companies, were very influential in recommending the purchase of telegraph supplies. The convention for 1905 took place in Chattanooga, Tennessee and superintendents from all the major railroads in the U.S. and Canada were present.

Chattanooga, located 50 miles north of Adairsville Georgia, was in Martin's home territory. One of the local papers stated that he had friends and family in Chattanooga and used to be referred to as the "boy wonder telegraph operator." On May 17, 1905, a listing of exhibits at the convention showed that UEM had samples of their batteries on display, along with the Martin Vibroplex — which was drawing a lot of interest.

Back in New York, UEM was expanding their facilities at 53 Vesey St. The offices and store rooms would now occupy the second floor, while the manufacturing facilities where Martin was building the Autoplex and Vibroplex were located up in two large lofts that extended the entire depth of the building.

UEM's most popular products at this point were not the Martin keys, but the Uneco and Autoplex dry cells, both $2\frac{1}{2}'' \times 6''$ in size, sold for various applications. Martin was also advertising that his manufacturing facilities, now upgraded with new machinery, were available for contract and royalty work.

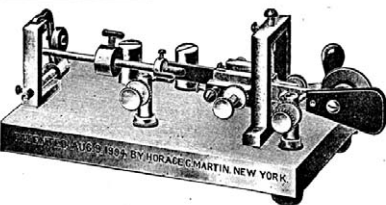
One of the first formal evaluations done on Morse transmitters was done by the Postal Telegraph Company in September of 1906. The purpose of the evaluation was not to recommend one particular model over the other, but to compare sending with mechanical and magnetic transmitters to sending with a conventional Morse key.

The transmitters evaluated were a mechanical and magnetic version of the Auto-Dot, a Mecograph # 4 (derived from the Coffe patent), Mar-

MARTIN'S

VIBROPLEX

The Perfect
Transmitter



Operated without a battery; embodies all of the essential features of Martin's famous Autoplex.

Scientifically constructed, it will carry on the longest of circuits.

Its signals can instantly be made light or heavy, slow or fast.

Its touch is easy and elastic, and adjustable to suit the sender.

IT IS EASY TO LEARN—A PLEASURE TO USE.

You Need a

VIBROPLEX

For it makes the dots.

If you have lost your grip—
If it tires you to work the Morse key—
If you have a heavy, exacting sending trick—
If you wish to send perfect Morse at any speed,
Write for circulars containing description and testimonials.

UNITED ELECTRICAL MANUFACTURING CO., Inc.
53 Vesey Street New York

From Telegraph Age, May 1906.

tin's Autoplex and Vibroplex, and a Yetman Morse typewriter transmitter.

Present for the evaluation were George Conkling, the G.M. of the Delany Telegraphic Transmitter Co., representing the Auto-Dots; D.A. Mooney, New York sales agent for the Mecograph Co.; Horace Martin; and J.P. Gallagher of the Yetman Transmitting Typewriter Co. The Yetman produced uniform characters, but was physically demanding on the sending operator, and its perfect machine-like Morse was considered tiresome for the receiving telegrapher. Also, its individual characters could not be slowed down.

The Autoplex and the magnetic Auto-Dot transmitters, if properly adjusted and using good batteries, produced the "most reliable signals." The all-mechanical transmitters, including the Auto-Dot, Mecograph and Vibroplex, were all considered capable of producing favorable signals but it was felt that "bonus men" and first class press operators were the only ones that were operating them properly.

The average operator was criticized for not knowing how to adjust the transmitters correctly, causing many errors on Postal's system. Martin dealt with the problem of educating and reaching the average telegrapher on several fronts. He became what is known in the Ham Radio ranks today as an "Elmer" (mentor) to many telegraphers—personally helping them make the transition from a straight key to a Vibroplex.

He solicited the aid of some of his telegrapher friends, many of them only in their twenties, signing them up to be agents and give demonstrations in various U.S. cities. To encourage home practice, Martin offered his small "Gem" key and sounder set for a dollar, with the idea that its sounder could be used as a receiver with

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the moving rotor. Other tubes included two 6D6s, a 75, and the 80 rectifier. Tuning ranges were standard BC, 500 to 1500 kHz, the “police band” (1.6 to 4.5) MHz (also marked in meters), and the short-wave band of 6 to 17 MHz.

The Warwick name is not heard very often, but if you will look in the Rider’s indexes, you will see that they built a lot of radios. I could not find this particular set in Riders. The Model 630 listed there bears little resemblance to this radio. However, the original diagram that came with the set is labeled as covering the Models 630 and 635 and another model I could not determine.

Despite the relatively low price, some good features were built in. The tuning capacitor is a three-gang unit; as noted there is a separate oscillator stage; and by my count there are three stages of audio. The speaker is a Jensen Series R with a 1500-ohm field coil. A six-inch celluloid disc, driven by a pinch wheel, makes for positive tuning.

However, component quality was not of the best—not unexpected given the economy and relative inexperience of the manufacturers. One of the first parts to go was the AC switch on the back of the volume control. Some time later the power transformer failed with a glorious burst of smoke, and of course, some capacitors and resistors also had to be replaced.

Over the years I had repaired this radio, keeping it operating, sometimes with parts scrounged from old TV sets. A Stancor replacement took care of the power transformer, and a proper switch/gain control replaced the temporary fix for the broken AC switch. The original filter caps were replaced with a large can that just managed to fit under the chassis.

Finally, in the 1970s, with more parts available, I brought the old set back to good working condition. This year I went over it once more, replacing two questionable capacitors and discovering the source of a bandswitch intermittent. It seems that, over the years, the moving of the

bandswitch rotor back and forth led to a complete break of one of the attached moving wires. That was discovered only by using a strong light and a magnifying glass.

Some other notes. The primary of the power transformer is by-passed with a 0.05 mfd 400-volt capacitor. Current thinking is to by-pass both sides of the line with not more than 0.01 caps with at least a 1200-volt rating. Disc ceramics work well here.

The grid bias circuitry for the 75 detector/audio stage includes a small bias cell, a battery that failed decades ago. This was an innovation promoted by one of the battery manufacturers as contributing to better performance of the radio. The mounting is somewhat unique, and for this exercise I simply by-passed it with a lead directly to ground. The radio works fine without it.

Also, I detected some instability in the first IF transformer. The design of the times had both IF screens fed with one resistor and one 0.1 mfd bypass. I was able to tune out the instability, but if you run into a regenerative IF with one of your sets, don’t be afraid to decouple each of the IF-tube screens with a separate resistor and bypass. And if you still can’t find the problem, you can (carefully) take the IF transformers apart, examine them, and clean and repair as needed.

Two things I did not do here. Since the tubes seemed to be working, I didn’t test them. Also, the alignment was not disturbed other than noted above. However, a good restoration job should include a realignment. The tuning capacitor gum-rubber mounting grommets are worn and should be replaced, and the cabinet should be cleaned and touched up.

Fortunately, the set had been taken care of over the years, and has survived pretty well—even through a couple of moves. The original wood knobs were still in place, and the cabinet was in decent shape. It was a family set, an old friend, and it was and is worth preserving. 📺

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the Vibroplex. Also, in these early months, he was known to give away many Vibroplexes in order to get them introduced at important offices.

Martin furthered his efforts at introducing the Vibroplex by entering into a price war with his two major competitors: Mecograph and Auto-Dot. In the spring of 1906, the Martin Vibroplex was being sold for \$12.00, the Auto-Dot for \$10.75, and the Mecograph model # 3 for \$10.00. By mid-summer, Martin had lowered his

price to \$7.50, but Mecograph countered this by lowering the price of all their models to \$7.50 including their newest model #4. Around the time of the Postal Telegraph evaluations Martin, most likely tired of dealing with the Mecograph Co., further lowered the price of his Vibroplex to \$5.00. It is hard to imagine he could operate in the black at this price.

Throughout his career, Martin was more preoccupied with achieving his goals than in mak-

ing a profit. In 1906, he was clearly “determined to place in every telegraph office in the United States and Canada at least one Vibroplex.” In this he was clearly successful. Horace Martin has never really received the recognition and credit he deserves for his many accomplishments — especially for his efforts during these early years and the impact he had on the career of the average telegrapher.

During the World War II era, it was stated that wherever Morse was spoken in the U.S., and wherever Americans had traveled to speed up Morse transmissions throughout the world, a Martin Vibroplex was most likely being used. This seems a fitting legacy for the quiet and very modest telegrapher from Georgia.

I hope to cover other periods of Horace Martin’s life in future articles. 

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ateur allocations at 10, 18 and 24 MHz during the International Amateur Radio Club meeting held in Geneva in 1972. Walker later chaired the Advisory Committee of Amateur Radio which prepared the proposal for presentation at the 1979 World Administrative Radio Conference (WARC-79). He was presented with a special achievement award at the Dayton Hamvention 2000 for his effort in obtaining the new amateur allocations.

FAY GILLIS WELLS, 94, (12-2-02) broadcast journalist. Wells began her journalism career reporting from Russia during the 1930s for *The New York Herald Tribune*, *The New York Times*, and Associated Press. In 1936 she married Linton Wells and began radio broadcasts from Latin America for *The Magic Key* of RCA. After completing an assignment for President Roosevelt and heading a commercial firm in West Africa she opened the Washington News Bureau for Storer Broadcasting Company in 1963. Wells served as Storer’s White House correspondent from 1964 to 1977 and became the first female broadcaster accredited to the White House. She received the *American Women in Radio and Television 2001 Lifetime Achievement Award*.

THOMAS A. WYMAN, 73, (1-8-03) executive. Wyman was Chairman of CBS from 1983

until 1986 and President and Chief Executive beginning June 2, 1980. During his tenure CBS was faced with declining advertising revenues, hostile takeover attempts, a downturn in ratings and soaring debt. Wyman’s proposal to sell the company to Coca-Cola lead to his resignation when it was blocked by William F. Paley, the founder of CBS, and Laurence A. Tisch, the company’s largest shareholder. After leaving CBS he held other executive positions including a seat on the board of General Motors Corp. Prior to joining CBS he was President of Green Giant Company from 1975 until it was acquired by Pillsbury and he was named Vice Chairman of the conglomerate. Earlier he worked at Nestle for ten years before joining Polaroid in 1965.

Information for this column was obtained from the *Big Bands* (4th edition), *The Complete Directory to Prime Network TV Shows 1946-present* (4th ed.), *The Encyclopedia of Jazz* (1st ed.), *The Hartford Courant*, *The Murrow Boys*, *On the Air: The Encyclopedia of Old-Time Radio*, *QST*, www.broadcastingcable.com, www.cbsnews.com, www.latimes.com, www.nytimes.com, www.rtnda.org, www.soc.american.edu and www.variety.com.

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