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Rotoplex: The Last Martin Key

The Rotoplex was the last semi-automatic key produced by a member of the Martin family. This key is often credited to Horace G. Martin, the inventor of the Vibroplex. However, it was his eldest son, Horace Jr., who actually received the patent and marketed the key.

A few years ago I had the opportunity to interview and correspond with Horace G. Martin Jr.'s son, James Martin. He let me borrow and examine some of the early marketing material and original drawings of the Rotoplex. I thought I would share some of this information.

HGM Junior: The Early Years

Horace Junior, whose nickname was Hal, was born on February 8, 1893—in Adairsville, Georgia, like his father. When he was three, his father was working as a telegrapher at the rail depot in Adairsville. According to a family story, one day Horace Senior spotted his son going down a street alone on a tricycle. He left his position to go out and grab him, missed important train traffic, and got fired. Soon after this event, Martin and his family moved to New York City.

Horace Junior's brief obituary in the New York Times (June, 1953) stated that he had helped his father develop the Vibroplex key. When the Vibroplex was first patented and introduced in 1904 and 1905, Horace Jr. was only 11 and 12. But, during the years when additional models of the Martin Vibroplex were developed, (Model X, Blue Racer, Upright, Midget), Horace Junior was working with his father.

There are several entries in the city directories of New York City and East Rutherford, New Jersey, prior to World



Captain Horace G. Martin, Jr. of the Civilian Conservation Corps ca. 1935.

War I, that show Horace Junior was working at his father's shop. In fact, he is listed in 1915 as being the manager of his father's 51 Cliff St. shop in New York City.

During this period, Horace Junior and his father also spent a lot of time experimenting with wireless devices—especially crystal sets. It was said Hal was proficient in American Morse.

During World War I, Martin received a commission as a Second Lieutenant in the Signal Corps. He spent all of his time as an instructor of battlefield communications equipment with the 101st Signal Battalion at Camp Alfred Vail, N.J.

After the war and during the 1920s, he worked in the construction business and was successful as a brick salesman. Martin filed his first patent, for a telephone booth, in 1926. In 1928, he obtained a New York City Master Electrician License and operated his own business, listed as the Martin Electric Company, in Brooklyn.

New construction slowed during the Great Depression and Martin was forced to seek other employment. In 1933, President Roosevelt created the Civilian Conservation Corps. It was sometimes referred to as “Roosevelt’s Forest Army.” The CCC was intended to put young unemployed men to work on reforestation projects and building fire towers, bridges, trails and drainage systems. The Corps was administered by the U.S. Army and run by military officers, many of them reservists.

With his military background, Martin received a commission as Captain. He worked in camps in California and Idaho, leaving his wife and two children behind in Brooklyn. He returned in 1937 and was hired by Western Union—working first as a branch manager in the textile area of New York City on Worth St. At the end of his 16 year career, he was a representative in the cable department of Western Union’s International Communications Division.

The “Dot Generator”

Soon after his return from the CCC and, apparently on his own time while he was working for Western Union, Martin became active in designing telegraph instruments. He filed for a patent on November 2, 1937 for a “Telegraphic Trans-

mitter” that was essentially a semi-automatic electric keyer. It used either a motor with a simple revolving disc or an electromagnet with a vibrating arm that could constantly generate dots as long as it was powered. It could be used as an individual key or as a common “dot generator” centrally located and available for several operators to use at the same time.

Each operator would have a standard Martin Bug frame but without the vibrating pendulum. Each “frame” had stan-



The Rotoplex as pictured in original marketing material.

dard dash contacts, knobs and a dot lever with contacts that were in parallel with those of the common dot generator.

In September, 1938, a somewhat mysterious agreement was made between Martin and the Vibroplex Company. Martin created a receipt that showed he had received from John La Hiff, the general manager of Vibroplex, a down payment of \$100.00 for a patent that was pending at the patent office in Washington, D.C.. The patent was for an “Improvement in Telegraph Transmitters.” An additional \$200.00 was to be paid to Martin Jr. after assigning the patent to James and William Albright, the owners of Vibroplex.

It is unclear if this agreement was for his pending 1937 patent or for an entirely different patent that may have been applied for but never issued to him. The

1937 patent was granted in February of 1939 to Horace Jr. with no assignments listed. It is possible that there were second thoughts and the assignment never happened. But, in any case, Vibroplex was obviously interested in what Martin was offering at that time.

The Rotoplex

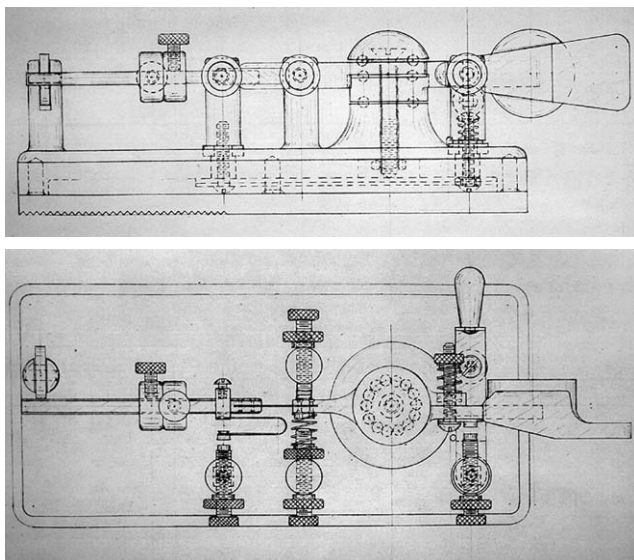
In April of 1940, Martin filed for a new “Semi-automatic Telegraphic Sending Machine” called the Rotoplex. In this design, Martin Jr. appears to have addressed any and all possible criticisms or defects with the Vibroplex no matter how remote they might have been. He points out that the levers on “old pivot-supported Martin bugs” are all mounted on a trunnion held by needle points riding in the holes of two trunnion screws. He claimed that the points of the pivots were subject to rust and to loosening due to wear. They could thus develop high resistance at the bearings. Loose alignment was possible with the slightest twist of the main frame.

Martin claimed the Rotoplex was the first semi-automatic transmitter ever built with precision die cast parts, including the dot and dash levers and base. The vertical superposed levers rested on a die cast boss with thirty friction-reducing ball bearings of chrome steel set in precision ball races. A solid shaft passed through the levers and boss and locked them into the base.

The die cast parts allowed for parts interchangeability and consistent, superior alignment during assembly—the latter resulting in better current-carrying capa-

bilities in use. Under a separate patent he designed a one-piece molded knob with the same dimensions and feel of the old two-piece handle, but with no screws to loosen. Binding posts were eliminated, with the key’s wiring going directly to screw terminals in the bottom. There were no rubber feet—a molded rubber mat covered the bottom. To prevent rust, critical parts were made of non-ferrous metals.

Martin focused his marketing of the



Two of Martin's design drawings for the Rotoplex.

Rotoplex initially on the military market. He received very favorable response from the U.S. Navy on October 24, 1940. “From a casual examination it appears to be far superior to the bug now in use...” On December 6, 1940 the Navy followed that they did not have a need for a large number of the keys, but were considering “a small number for trial in the fleet.” The U.S. Army Signal Corps asked Martin specific questions about his production capabilities. “It is understood that the manufacture of the Rotoplex is conducted by yourself,” and asked if he was “willing to license reli-

able manufacturing facilities.”

The Army’s concerns may be the reason why Martin arranged for the James Clark Jr. Electric Company of Louisville, Kentucky to construct the Rotoplex in quantity. Many of the Rotoplexes found today show both Clark markings and a separate tag with Signal Corps markings. Other Rotoplexes have no manufacturer labels.

Martin was critical of the competition, all of whom he considered were selling designs derived from the Martin Bug. Without mentioning the Vibroplex Company by name, he appears to be especially critical of John La Hiff’s January 16, 1940 patent that included the use of jewel bearings. La Hiff had incorporated such bearings in Vibroplex’s Deluxe and Presentation models. Martin said: “Those manufacturers who claim machines covered by patents do not say that their design is limited to an added detail of questionable merit and not on basic design....substitution or inclusion of other so called bearings could not change the basic design or eliminate the trouble.”

The Rotoplex “company” listed a business address (65 Nassau St. in New York), although it was just a one-man operation. Earlier Martin did have help from a brother-in-law.

He tried to get the business of commercial operators and radio hams by encouraging them to retire their “old antiquated pivot action Martin Bug” and offering a trade-in allowance of \$5.00 towards the purchase price of \$25.00. Martin also stated in his ads “This offer subject to withdrawal since materials are limited and manufacture is dependent upon conditions.” A leather navy black or army russet case with an adjustable shoulder strap was available for \$5.00. Most earlier models had a black satin enameled base with chrome levers. A mirror chrome or satin chrome base was just \$2.00 more and a left-handed model was available for \$5.00 extra.

It is unfortunate that Hal never received any marketing help or backing for the Rotoplex as his father had, from James Albright, for the Vibroplex. During the 1940s, the Vibroplex Company was being managed by John La Hiff and James Albright passed away in 1946.

It seems unlikely that La Hiff would be interested in marketing a design that would compete with his own successful line of jewel bearing keys.

Horace Jr’s 1937 “electric keyer” patent was later updated to include Rotoplex levers and the ability to generate both dots and dashes automatically. It was years ahead of the electronic keyer revolution and would have also benefited with some marketing help.

Horace G. Martin Jr. felt that the Rotoplex was “the successor to all past Martin keys.” It was definitely worthy of that claim but it remains today just an outstanding key sought after by collectors. It is the old simple designs of his father’s Vibroplex that have established the Martin legacy.

SOURCES

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New York Times, June 6, 1953

Horace G. Martin Jr.: Rotoplex drawings, marketing material, U.S. military correspondence, patent letters (courtesy of James Martin).

John La Hiff’s files: Receipt from Horace G. Martin Jr., September 1, 1938

Phone Interview and correspondence with James Martin

U.S. Patents: Horace G. Martin Jr.: 1,779,482, 2,148,028; 2,228,469; 2,228,470; 124,643; John A. La Hiff: 2,187,351

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Horace G. Martin Jr. photo courtesy of Allan Goldston