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INDUSTRIAL DESIGN ART AND DESIGN





In a new book, *Bell Telephone System's Preeminent Role in the Growth of Industrial Design*, Ralph O. Meyer and Russell A. Flinchum chronicle the role of the Bell System in the emergence of industrial design as a discipline and compare their telephones with many others. In this article, Meyer sheds light on two of Pratt Institute's connections to that story.

by *Ralph O. Meyer*

During a study of evolving telephone designs for our new book, my coauthor Russell A. Flinchum and I came across two of Pratt's distinguished alumni who had connections to the Bell Telephone System. One was Arthur Shilstone, Certificate, Illustration '47, whose connection was incidental but interesting, and the other was Donald Genaro, BID '57, who had a direct and profound influence

on the Bell System's telephone designs. Shilstone is fairly well known (he is among the Pratt alumni who served in the Ghost Army during WWII) and will be mentioned only briefly, but Genaro's telephone work is described here in some detail.

Arthur Shilstone: Capturing a Moment in Bell System's History

In the early 1940s, Arthur Shilstone enrolled in Pratt to study illustration. But the war interrupted his studies, and in 1942 he enlisted in the Army, as did a lot of other artists. Shilstone credits his Foundation year at Pratt for equipping him with the tools to work as an artist in the Army. Many of the artists would design camouflage during the war, but Shilstone got another assignment in the 23rd Headquarters Special Troops, also known as the Ghost Army. It was a top-secret unit designed to deceive the enemy with inflatable tanks, sound effects, and other audacious fakery.

The Ghost Army of about 1,100 troops was intended to impersonate a whole division of infantry or armor and draw German troops away from the real planned action. This special unit was activated in June 1944, just a few weeks after allied troops landed in Normandy. While

preparing for a decoy operation in France, a couple of local men inadvertently got through the security perimeter and saw four soldiers lifting an inflated rubber imitation of a Sherman tank. Shilstone tried to deflect the intruders' curiosity by telling them that the Americans were very strong. He captured the moment in a relatively well-known and delightful painting.



Arthur Shilstone's painting recalls a moment during his service with the Ghost Army during WWII, when local passersby unwittingly observed his unit lifting an inflatable fake

After the war, Shilstone returned to his studies at Pratt under the GI Bill, graduating in 1947 with a certificate in illustration. He worked mostly in watercolor, but in the 1960s he started working in watercolor collage. During that period, he was contracted by Western Electric Company, the manufacturing arm of the mammoth Bell System, to create a holiday card for its employees. In that collage, we see a small freight train heading into Western Electric's Hawthorne Works near Chicago, one of the largest manufacturing facilities in the world. Hawthorne was so big that it even had its own railway with connections to all the rail lines in Chicago. Western Electric called it Manufacturers Junction Railway—all 10 miles of it.



Arthur Shilstone's holiday card for Bell System's Western Electric Company. Courtesy of Bill Shilstone

Shilstone continued working right up to his death in 2020 at the age of 97. More than 150 images of his sporting art paintings are featured in a 2015 book by Fred Polhemus. The Western Electric train collage is included in that book.

Donald Genaro: Evolving a Classic Design, and Creating His Own

Donald Genaro's connection to Bell Telephones was more substantial. Ten years younger and a veteran of another war, Genaro returned from Korea and enrolled in Pratt's renowned industrial design program. A year before graduating in June 1957 with a bachelor's degree in industrial design, Genaro took a work-study position in the office of Henry Dreyfuss, the inaugural president of the Industrial Designers Society of America (IDSA). Following graduation, Genaro stayed with the Dreyfuss firm, where he often worked out practical solutions for design challenges. Dreyfuss had an exclusive arrangement with the Bell System to provide designs for all of its postwar telephones.



Donald Genaro '57 in his office at the Henry Dreyfuss firm. Courtesy of Donald Genaro

Soon after the end of World War II, Dreyfuss and Robert Hose designed the Bell System's No. 500 telephone, which would be recognized as one of the 10 best-designed

products of modern times and copied around the world.
They were readying a companion wall phone for
production when Genaro arrived.



Genaro's first assignment in the Dreyfuss firm was to add a feature to this wall phone such that the handset could be rested on the phone without hanging up. He added creases on top of the phone to catch the handset, and later Genaro added a parking feature to the Bell System's other wall phones.



"Call waiting" features added by Donald Genaro. Photos by
Matthew Gay

Robert Hose, who would become the second president of IDSA, was designing the Princess extension phone in the late 1950s at the Dreyfuss firm. The plastic shell for the base of this phone had a forward draft such that it could be removed from its casting mold, but this inward-sloping shape would make the phone difficult to pick up by its

base—it would slip through your fingers. To avoid this, Genaro added indented panels with lips at the top, and these lips allowed the phone to be picked up easily, with or without the handset in place. To obtain indented panels and still cast the shell in a single piece, a sliding part was built into the casting die.



Indented panels, faintly visible on the base of the phone, create lips (front and back) that make the Princess easy to pick up. Photo by Richard Rose

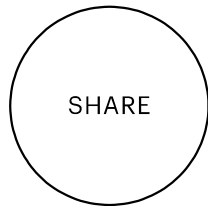
By 1963, Bell Labs had developed a touch-tone keypad to replace the rotary dial. Dreyfuss turned to Genaro to modify the No. 500 and Princess designs to accommodate the keypad.



Donald Genaro's touch-tone adaption to existing designs. Photos by Matthew Gay

The last standard telephone of the era was the beautiful Trimline dial-in-handset phone, and Genaro did its final design. Given the format of a slim rectangular shape with a small dial (or keypad) in a handset, Genaro started from scratch to create a sculpture. Every line, contour, and profile down to the smallest appearance detail was his doing.

The reverse draft in the desk base made it easy to pick up and gave the phone a unique appearance by rolling under, which contributed to the perception that the phone had a high degree of finish and subtlety. Even the surface of the push buttons on the touch-tone version followed the curvature of the handset, rather than lying in a plane, adding to its unified composition. Nevertheless, the angles and distances of the transmitter relative to the receiver were kept almost identical to the iconic handset on the earlier Bell System telephones, ensuring comfort and performance. It is these final touches—the design's last 10 percent—that make a design great, and in the case of the Trimline resulted in its being the only Dreyfuss-related object in The Museum of Modern Art.





Genaro started from scratch to create a sculpture: the Trimline telephone, versions of which are still being sold today. Left: photo by Matthew Gay; right: photo by Ted Mueller

Touch-tone versions of the No. 500 and the Princess telephones were still in production in the early 1970s when Genaro redesigned their handset. But it was too late in the production runs, and the Bell System did not back fit the new handset to those phones.



Dreyfuss-designed handset 1947 (left) and Genaro-designed revision 1973 (right). Photo by Ted Mueller

There was, however, a line of whimsical designs that were produced in the late 1970s, which the Bell System called Design Line telephones. Genaro was responsible for all of the Dreyfuss firm's entries into this line, and he personally

designed two of them. Genaro then had a venue in which to use his handsome handset.



Two of Genaro's whimsical designs in the Design Line series. Left: photo by author; right: photo by Matthew Gay

Eventually Genaro became senior partner and ran the Dreyfuss firm after Henry Dreyfuss retired. Genaro continued working on telephone designs until he retired in 1994. Bell System telephones—all manufactured by the

Western Electric Company—were placed in more than 100 million homes and offices in the US, and their Pratt-influenced designs were copied around the world. □

Bell Telephone System's Preeminent Role in the Growth of Industrial Design *by Ralph O. Meyer and Russell A. Flinchum is forthcoming in May 2025 from Purdue University Press.*

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