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The (Mostly) True Story of Helvetica and the New York City Subway

by [Paul Shaw](#) | November 18, 2008

There is a commonly held belief that Helvetica is *the* signage typeface of the New York City subway system, a belief reinforced by [Helvetica](#), Gary Hustwit's popular 2007 documentary about the typeface. But it is not true—or rather, it is only somewhat true. Helvetica is the official typeface of the [MTA today](#), but it was not the typeface specified by Unimark International when it created a new signage system at the end of the 1960s. Why was Helvetica not chosen originally? What was chosen in its place? Why is Helvetica used now, and when did the changeover occur? To answer those questions this essay explores several important histories: of the New York City subway system, transportation signage in the 1960s, Unimark International and, of course, Helvetica. These four strands are woven together, over nine pages, to tell a story that ultimately transcends the simple issue of Helvetica and the subway.

The Labyrinth

As any New Yorker—or visitor to the city—knows, the subway system is a labyrinth. This is because it is an amalgamation of three separate systems, two of which incorporated earlier urban railway lines. The current New York subway system was formed in 1940 when the IRT (Interborough Rapid Transit), the BMT (Brooklyn-Manhattan Transit) and the IND (Independent) lines were merged. The IRT lines date to 1904; the BMT lines to 1908 (when it was the BRT, or Brooklyn Rapid Transit); and the IND to 1932. Portions of the IRT and BMT lines originated as elevated train lines, some dating back to 1885.

The first “signs” in the New York City subway system were created by Heins & LaFarge, architects of the IRT. In 1904 they established the now-familiar tradition of mosaic station names on platform walls. The name tablets were composed of small tiles in both serif and sans serif roman capitals. The BRT/BMT followed suit under Squire J. Vickers, who took over the architectural duties in 1908. Neither line had a uniform lettering style even though the designs were prepared in studio and then shipped in sections to the stations. Thus, there is a surprising amount of variety within the mosaic station names. Smaller directional signs—with arrows indicating exits from each station—were also made in mosaic tile in both serif and sans serif roman capitals. Vickers simplified the decorative borders surrounding the name tablets but did not alter the lettering styles of either the IRT or the BMT. However, when the IND was established in 1925, he created a new style of sans serif capitals to accompany the stripped-down decoration of the stations. These letters, inspired by Art Deco, were heavier and more geometric than the earlier sans serifs rooted in 19th-century grotesques. They used larger tiles than the IRT and BMT mosaics, though the IND's directional mosaic signs employed lighter sans serif capitals and were made up of smaller tiles.



Mosaic subway signs (from the top): 1 train, Rector Street (1918); 1 train, South Ferry (1904); N/R/W, Prince Street (1917); “To 19th,” 1 train, 18th Street (1918); L, Morgan Avenue (1928); “Down town,” 4/5/6, 86th Street (1917); “Up town,” R/W, Whitehall Street (1918); E/F/G/R/V, Grand Avenue, Newtown (1936); M/R, F connection to 9th Street (1915) and BMT, Fourth Avenue (1933).

Heins & LaFarge also “hung large, illuminated porcelain-enamel signs over the express platforms, using black type [actually hand-lettering] on a white background and painted station names on the round cast-iron columns.” The latter were replaced in 1918 when Vickers commissioned enamel signs from both Nelke Signs (later Nelke Veribrite Signs) and the Baltimore Enamel Company. The two companies continued to make enamel signs throughout the 1930s, placing them on girder columns as well as cast-iron ones. Vickers’ goal was to make it easier for riders to quickly recognize their stop upon entering a station. The abbreviated station names on the porcelain-enamel signs were rendered in condensed sans serif capitals derived from common sign-painting models. For the IND Vickers also added a second set of modular tiles for the station names. These were integrated into the station walls rather than being attached to the platform columns. The lettering of these signs is in a spur serif style—common in 19th-century sign-painting manuals—that is reminiscent of social invitation typefaces such as Copperplate Gothic.



Porcelain-enamel signs: (from top left) A/C/E, Canal Street (1932) ([courtesy Joe Testagrose & Dave Pirmann](#)); “Bl’kr,” 6 train, Bleecker Street (1904); and A/C, Clinton/Washington (1936).

Beginning in the early 1950s, stations were systematically lengthened to accommodate newer and longer cars. The station walls were covered with simple glazed tiles in dull green, ochre, blue and other solid colors. Station names were silkscreened on the tiles in black geometrically constructed condensed sans serif letters. (The [Grand Street station](#) uses Delft blue letters instead.)

As if this plethora of signs were not enough, the subway system also had a bewildering variety of other porcelain enamel and hand-painted signs. The porcelain enamel signs, either hung from the ceiling or posted on the walls, were directional as well as informational. The directional signs included those on the outside of the station entrances as well as those intended for the corridors and platforms underground. Many of the informational signs warned against criminal, dangerous or unhealthy behavior: no peddling wares, no leaning over the tracks, no crossing the tracks, no smoking, no spitting. The directional and informational ones were made by Nelke Veribrite Signs and the Baltimore Enamel Company, while the behavioral ones were the product of the Manhattan Dial Company. Most were lettered in some form of sans serif capitals—regular, condensed, square-countered, chamfered, outlined—though some were in bracketed or slab serif roman capitals. They were usually white letters on a colored background (often dark green for the IND and dark blue for the IRT and BMT), yet many were also black on a white background. There was no house style.



Instructional signs: (from top left) IRT, probably on no. 4 line, north of 149th/Grand Concourse, Bronx; "Spitting," (c.1938); and Washington Heights, probably Columbus Circle, A/B/C/D (c.1930s). ([New York Transit Museum](#))

Hand-painted signs were added to the subway system as far back as the mid-1930s—maybe earlier—and were still being used three decades later. (In fact, some can still be seen today at stations such as Forest Hills/Continental Avenue in Queens.) Some were temporary in nature—lettered on easel boards—and others were more permanent. The latter, usually informational in nature—such as the location of toilets—were painted on corridor walls in red and black grotesque capitals. There is evidence that when they faded or became scuffed, they were simply



Signs at the E/F/G/R/V,

repainted.

*Forest Hills/71st Avenue
station (1936).*

Next: Bringing Order Out of Chaos...

Bringing Order Out of Chaos



From "Out of the Labyrinth," by George Salomon (c.1957). (courtesy New York Transit Museum Archives)

The untenable mess of overlapping sign systems finally got attention in 1957 when George Salomon, typographic designer at Appleton, Parsons & Co., made an unsolicited proposal to the New York City Transit Authority (NYCTA) entitled "Out of the Labyrinth: A plea and a plan for improved passenger information in the New York subways." The unpublished typescript anticipated many of the suggestions for overhauling the signage of the subway system that Unimark would make a decade later. Salomon suggested that the distinctions among the IRT, BMT and IND be abolished and replaced by five major trunk lines and eleven subsidiary routes. The trunk lines would be color-coded and identified by a letter and the branch lines by a derivative letter/number combination. Thus, Salomon's system consisted of the Lexington Avenue line (B, blue), the Broadway BMT line (C, purple), the Sixth Avenue line (D, orange), Seventh Avenue line (E, red) and Eighth Avenue line (F, green). The Seventh Avenue line branched off into single lines, designated E1 through E5. Similar markings were used for the other subsidiary lines.

Salomon proposed that the color-coding be used for the trains, signage and maps to ensure consistency and uniformity throughout the subway system. He also wanted the signage to be standardized. His preference was for signs to be set in Futura Demibold—which he claimed was the most legible face available—set in white on a black background and supported by large directional arrows. Salomon concluded his proposal by stating: "It's a big job. But for the sake of the subway itself and for the sake of the city it serves and for the people of that city it must be done soon."

The only one of Salomon's ideas that was taken up by the TA (short for NYCTA) was his suggestion for a color-coded route map. [His subway map design](#), heavily influenced by Henry Beck's famous map for the London Underground, was published in 1958. It was the first official map issued by the TA since its inception in 1953—and the first to show the entire system. (Maps issued by the Board of Transit, the TA's predecessor, were produced by private companies such as Hagstrom Maps.) Salomon's map was not as ambitious as his "Out of the Labyrinth" ideas. The IRT lines were colored black, the BMT lines green and the IND lines red. The map was set in a mix of News Gothic, News Gothic Bold, Standard and Times Roman—no Futura.

Apparently, the TA did make some kind of an attempt in 1958 to improve the signage within the subway system. It engaged Ladislav Sutnar to design exit signs



for the stations but they were not “properly implemented” by the TA’s sign shop—an portent of what Unimark was to face a decade later. No further details about the assignment are known.

Signage in the 1960s

In the 1960s, urban planners, architects and graphic designers, both here and in Europe, took an interest in the systematic design of signage for cities, highways, railways, subways and airports. At the beginning of the decade, two publications, published almost simultaneously, touched on the issues: *Lettering on Buildings* (1960), by Nicolette Gray, and *Sign Language for Buildings and Landscape* (1961), by Mildred Constantine and Egbert Jacobson. Unfortunately, Gray did not examine transportation system signage, and Constantine and Jacobson devoted only a few sentences and images to the topic, primarily focusing on above-ground signs for the Paris Metro and London Underground. Their lone image of signage within an underground railway system was, surprisingly, from the Philadelphia subway.



Proposed sign by Ladislav Sutnar (1958), from "Making New York Understandable," Print July/August 1972.

One reason for this lacuna is that, at the time, coordinated subway sign systems were rare. New York was not the only major city to have a visual mess underground. Even the famed Paris Métro was plagued by a welter of different styles of signs that was not brought under control until 1971, when Métro, designed by Adrian Frutiger and based on his Univers typeface, was introduced. The lone exception to this state of affairs was London where Johnston Railway Sans—designed by calligrapher Edward Johnston at the behest of Frank Pick, publicity manager at London Transport—had been in use since 1916 for signage as well as on posters and advertising.



*Signage in the Oceanic Building, Heathrow (1961); Airport alphabet, by Matthew Carter (1960).
(courtesy Matthew Carter)*

The first coherent transportation sign system was created by [Colin Forbes](#) in 1961 for the Oceanic Building at Heathrow Airport. Now called Terminal 3, the Oceanic Building was the second terminal to be built at the airport. Forbes' sign system for it employed modular panels with sans serif lettering in black on white (though white on black was allowed for some levels of information) combined with arrows. Guidelines for spacing and sizing the letters were an essential aspect of the system. For the lettering, Forbes, who had a solo practice at the time, hired a young Matthew Carter (b. 1937) to design a custom grotesque. The design, eventually called Airport, was based on Standard (as Akzidenz-Grotesk was then called in England), which Forbes praised for its "simple, bold, easily identifiable letterforms with an individual but unaggressive personality." Carter drew a special weight, increased the x-height and amended several individual letters (principally replacing the angled terminals of c, e and s with horizontal ones).

The result looked a lot like Helvetica Medium. Forbes acknowledged this years later in *A Sign Systems Manual* (1970) when he wrote: "Since this amended design was produced a new typeface, Helvetica, has been issued. Helvetica incorporates many of the adaptations made to Standard and it is now often used for signs by reproducing directly from printers' and filmsetters' type." In 1960, when the signage for The Oceanic Building was being planned, Forbes and Carter were unaware of the existence of Helvetica. "If we'd known about it," Carter said in 2007 to Alice Rawsthorn of the International Herald Tribune, "I'm sure we would have used it, since it's a much better typeface than the one I drew."

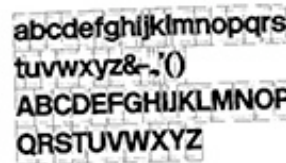
All of the elements of the Oceanic Building sign system resurfaced in other transportation sign systems of the 1960s. In November 1964, work on the M1 (Red) line, the first of the three-line Metropolitana Milanese, was completed. Franco Albini and Franca Helg did the station designs, while the signage was by Bob Noorda, who was also responsible for suggesting the color-coding of the system's three lines. At the time, Noorda—a Dutch designer who had moved to Italy in 1952 and gained a reputation for his work as art director of Pirelli—had his own design firm in Milan. His sign system for the Milan metro involved modular enamel strip signs placed along the station walls at consistent intervals. Along with the platform signage Noorda designed route diagrams, neighborhood maps, clock faces and posters for each station. The entire Milan system won Noorda and the architects the Premio Compasso d'Oro in 1964.



(from left) From Bob Noorda's 1964 "Studies for Signs and Indicator Board in the Milan Underground": a comparison of Akzidenz-Grotesk and Milano; the Milano alphabet; and Metropolitana Milano sign system.

The lettering for the Milan metro signs was a modified version of Helvetica drawn by Noorda himself. Finding the available weights of Helvetica to be either too bold or too light, Noorda created an intermediate weight. He also reduced the height of the capitals and ascenders and the depth of the descenders to make a more compact design. Several characters were drawn following those of Akzidenz-Grotesk: Q, R and 2, for instance. The letters were designed to be white reversed out of a red matte background. Station names and exit signs were set in all caps while informational signs were set in upper- and lowercase characters. Noorda established a spacing system for his custom typeface.

Noorda was not the only designer in the early 1960s dissatisfied with Helvetica as a face for transportation signage. In 1964, Jock Kinneir and Margaret Calvert, of Kinneir Calvert Associates, designed Rail Alphabet as part of a comprehensive sign system for British Railway done in parallel with a full corporate identity program by Design Research Unit (DRU). Their typeface was a modified version of Helvetica Bold, available in both positive and negative versions. The capitals, ascenders and descenders were all reduced, while the Q and 2 were modeled after Standard. The individual letters—as well as arrows and the new BritRail logo—were made as individual artwork tiles for easy assembly and spacing. [The BritRail identity](#), including Rail Alphabet, was unveiled in 1965.



Rail Alphabet (1964). (from [A Sign Systems Manual](#))



Schipol alphabet (1965) used on a bus. (from [A Sign Systems Manual](#))

Work on Amsterdam's Schiphol Airport, designed by M. Duintjer and Kho Liang Le, began in 1962. The sign system design was carried out by Benno Wissing, of Total Design, who used an altered Standard—ascenders and descenders chopped down—as the typeface. With the exception of the gate designations, the signs were set in all lowercase letters. The colors were a combination of black and white on either yellow or green backgrounds. The system was publicized in 1965 but the airport did not open until two years later.

The same year that the Red Line of the Metropolitana Milanese opened, plans for modernizing the Boston subway system were announced. The newly created Massachusetts Bay Transportation Authority (MBTA) awarded the contract for station renovation in January 1965 to

Cambridge Seven Associates, a multidisciplinary architectural and design firm led by architect Peter Chermayeff. The design partners in the firm, Ivan Chermayeff and Thomas Geismar, were responsible for the station graphics. They created a new symbol for the Boston system (a black sans serif T in a circle), color-coded its four lines (and renamed them red, blue, orange and green), designed a Beck-inspired diagrammatic map, and established a uniform typographic style for all signage in the subway and bus system.

The enamel signs were split in half horizontally with white lettering on a colored background at the top for the name of each station and black letters on a white background below for additional information about each stop. The typeface, used on maps as well as the signs, was Helvetica Medium. “As to the choice of Helvetica, it’s a bit fuzzy,” Geismar said recently, “but I recall that we were generally excited to have a machine-set version, and felt that its directness was appropriate to our whole effort to simplify and clarify the MBTA transit system. Also, as part of the program, I had designed the T in the circle to identify and rename the system, and that featured a very simple, Helvetica-like T.” The MBTA signage was publicly introduced in August 1965, but the first renovated station—Arlington Street—did not open until October 1967. It was the [first transportation signage system to use Helvetica](#) without modifications.

Next: The NYCTA and Unimark International...

The NYCTA and Unimark International

At the same time that Milan was opening the first line of its new metro system and Boston was overhauling its T system, the New York City subway was still bumbling along. But the 1964/1965 World's Fair, in Flushing, Queens, pressured the NYCTA to improve its image and information graphics. They commissioned a new logo for the agency from Sundberg-Ferar, an industrial design firm responsible for designing a new subway car, and they created special strip maps (set in Futura) for use on the No. 7 Flushing Line. The TA also decided to hold a competition for a new map.

The 1964 TA map competition was apparently the idea of Len Ingalls, director of public information and community relations at the agency, who was eager to see if the London Underground map's color-coding

could be applied to the New York City subway map. The contest—judged by Harmon H. Goldstone, head of the New York City Planning Commission, and Jerry Donovan, cartographer for *Time* magazine—drew only nine entries. Four were awarded \$3,000 prizes but none were chosen as a final winner. The best one, Raleigh D’Adamo’s submission, emulated London’s seven-color coding system but was deemed “too complex for general use.” Goldstone later said that there was no winner “because a good map is not possible for a system which lacks intellectual order and precision”. In the wake of this disaster, Prof. Stanley A. Goldstein, a professor of engineering at Hofstra University, was hired as a consultant in January 1965 to devise a map that would successfully solve the color-coding problem posed by New York City’s tangled subway system. Six months later he submitted a 39-page report entitled “Methods of Improving Subway Information” that went beyond ideas for a new map to include suggestions on “train designations, car information and station information.” Goldstein’s recommendations did not bear immediate fruit, but they set in motion the events that eventually led the NYCTA to hire Unimark International.



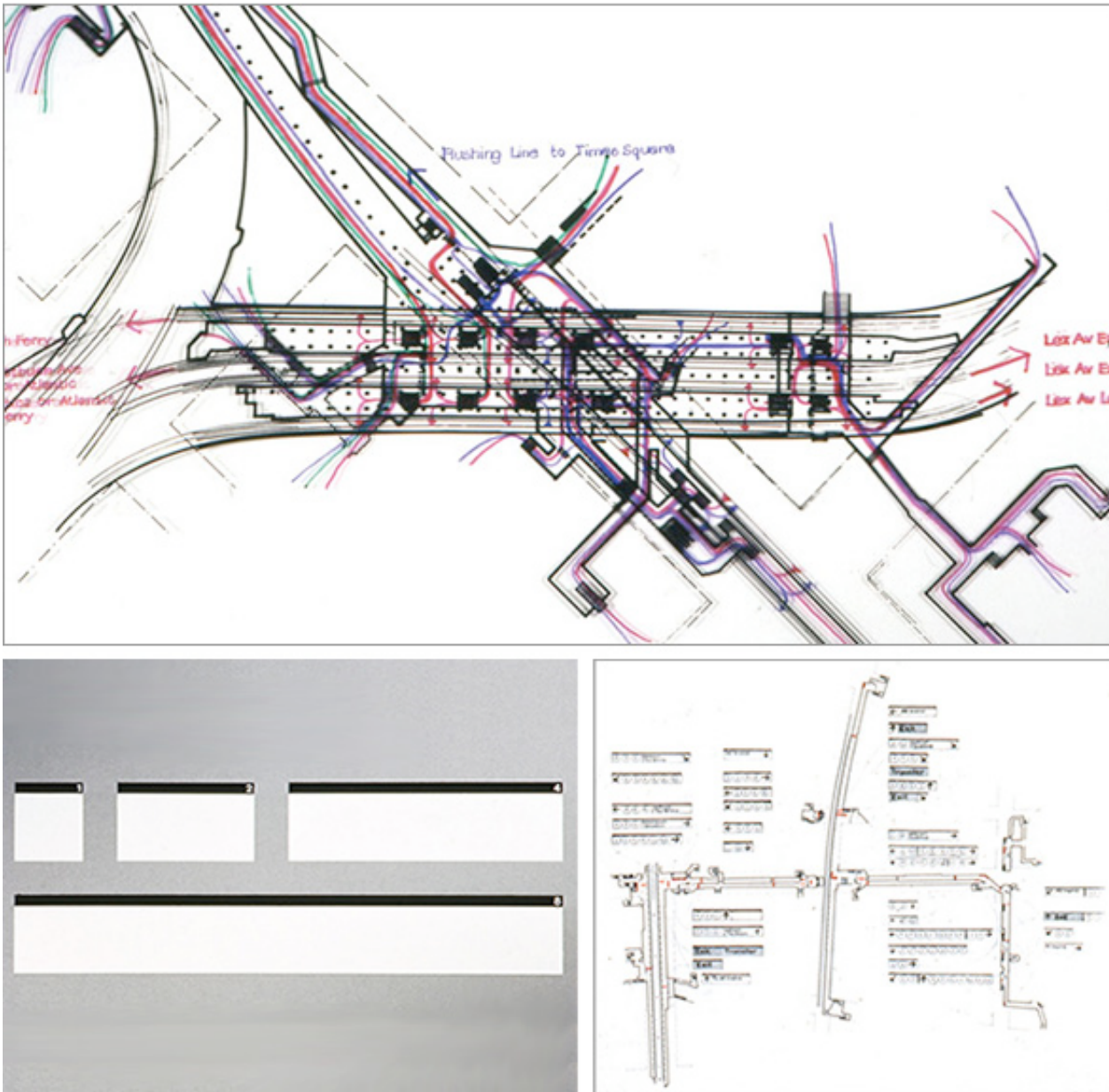
(from left) Hand-painted sign at an IRT station (c.1965), from *Print* September/October 1965; and signs at 59th Street/Lexington (c.1965), from [Subway Style](#).

The new Milan metro finally came to the notice of the American design community in 1965. Industrial designer William Lansing Plumb, in the September/October 1965 issue of *Print*, compared the London, Milan and New York—but not Boston—subway systems. He angrily described the latter as “grimy, dingy and slumlike,” complaining that the original beauty of the mosaic decorations of Heins & LaFarge and Vickers had been covered over in the intervening decades by dirt and grime, as well as advertising and newer signs. He also criticized the new TA logo by Sundberg-Ferar as dated. In contrast Plumb praised Noorda’s graphics—including his use of a “modified grotesque” typeface—for the Milan metro, suggesting that they could be applied to New York City. His suggestion proved prescient.

In late 1965, [Massimo Vignelli](#), a Milanese graphic designer, moved to New York City. He had come to the United States to head up the New York office of Unimark International, an international design consultancy established earlier that year. The firm was the brainchild of Vignelli and Ralph Eckerstrom, former design director of Container Corporation of America (CCA). The two men, who had first met in Chicago in 1958

while Vignelli was teaching at the Institute of Design at the Illinois Institute of Technology on a Moholy-Nagy Fellowship, shared a similar philosophy of design. In establishing Unimark they sought to wed American marketing to European modernist design. Along with Vignelli and Eckerstrom, the other founding partners of the firm were Bob Noorda, Jay Doblin, James K. Fogleman and Larry Klein. Herbert Bayer, the former Bauhausler, served as a consultant, giving Unimark immediate legitimacy.

Within months of Vignelli's arrival in New York, Unimark gained a plum assignment. In May 1966, the NYCTA, on the recommendation of the Museum of Modern Art, hired the firm to advise it on signage and to assess Prof. Goldstein's report—new maps meant new signs. The recommendation came from Mildred Constantine, associate curator in the department of architecture and design at MoMA. It is likely that the TA turned to Constantine because of her longstanding interest in signs and her intimate knowledge of graphic design. She curated the exhibition "Signs in the Street" at MoMA in 1954 and later co-authored *Sign Language for Buildings and Landscape*. She was on the AIGA board of directors and was well familiar with graphic design firms, especially the nascent Unimark. Constantine had met both Vignelli and Eckerstrom in 1959 when all three served as jurors on the Art Directors Club of Chicago's annual competition. And, most importantly, she was aware of Noorda's graphics for the Metropolitana Milanese from having served in 1964 on the United States selection committee for the 13th Triennale di Milano. Unimark had the connections and it had the experience.

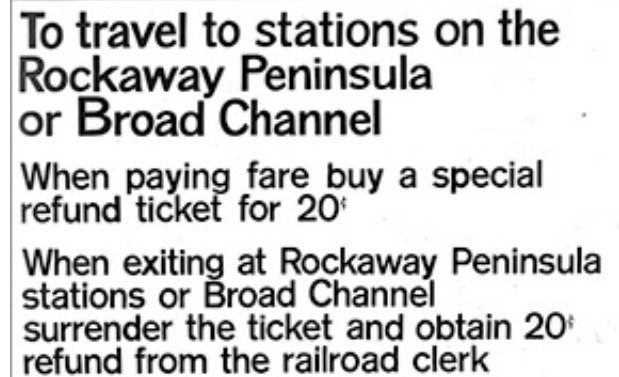


(clockwise from top) Bob Noorda's 1966 study of subway traffic flow at Grand Central Station; sketches for proposed subway signage; and modular sign system. (courtesy Bob Noorda)

With the hiring of Unimark it seemed that the TA had finally realized the need to rectify the Piranesian situation underground. But the assignment was brief—Unimark was expected to submit their report by September 1966—and ultimately very unsatisfying. In the summer Noorda flew to New York to carry out a detailed survey of the traffic flow at five key subway stations: Times Square, Grand Central Station, Broadway/Nassau, Jay Street and Queensborough Plaza. Previously, the NYCTA had sent him architectural drawings of each station, but they were not at the same time and he had difficulty coordinating them. Noorda spent three weeks as a “mole” tracking the paths of commuters in these stations to find the essential message points—entering/exiting, transferring—for each sign. He plotted decision points on a tree diagram. And, as in Milan, he viewed signs in perspective to test their legibility. He and Vignelli then created a modular sign system with different components for the arrows, route designations—using the color-coding proposed

earlier by Goldstein—and train information. The text was black on a white background; the typeface was Standard. Three sizes of type were established to distinguish different levels of information. A modular support system for the signs—in which they fit into black metal channels suspended from the ceiling by black struts—was created since the TA insisted that no structural changes could be made to the stations. Noorda returned to Milano to have prototype signs mocked up. These were shipped to New York where additional presentation boards were created. Then, according to architectural critic Peter Blake, Vignelli and Noorda made their presentation, were “thanked and, apparently, forgotten.”

The TA was glad to have Unimark’s advice, but nothing more. It did not have enough money to pay Unimark to create a complete manual of design recommendations or even an explanation of the modular system; and it failed to ask for a working document. Instead the TA sought to carry out the proposals on its own using its in-house sign shop. The result was, in Vignelli’s words, “the biggest mess in the world.” The TA’s Bergen Street Sign Shop ignored the modular system, misinterpreted the black stripe at the top of the drawings (which indicated the metal channel housing holding the signs) as a design element, rendered the type by hand rather than photomechanically and did not space the letters to Vignelli’s satisfaction. “It had never occurred to us that they would carry out the proposals in their own shop,” Vignelli said. “We were able to give them a little instruction, but not enough. Whenever we inquired how the project was going, they were very optimistic. We weren’t even allowed to inspect it.” The new signs were often installed on top of old ones, creating more confusion in the subway system. The whole clash between the Bergen Street “sign painters”—as Vignelli called them—and the designers at Unimark reflected fundamentally different expectations between craftsmen and designers. The former were intent on making signs while the latter were interested in sign systems.



**To travel to stations on the
Rockaway Peninsula
or Broad Channel**
When paying fare buy a special
refund ticket for 20¢
When exiting at Rockaway Peninsula
stations or Broad Channel
surrender the ticket and obtain 20¢
refund from the railroad clerk

Combination of hand-painted (first sentence) and silkscreened hand-cut stencil lettering (1969). (courtesy New York Transit Museum Archives)

Lack of money was the principal explanation for the TA’s refusal to allow Unimark to oversee the implementation of their signage recommendations, but several other factors were probably at work as well: bureaucratic inertia, labor union rules and outside political forces. Certainly TA management would have been wary of antagonizing the Transport Workers Union and Amalgamated Transit Union in the wake of the 12-day transit strike that brought New York City to a halt in January 1966.

Next: The Big Switch...

The Big Switch

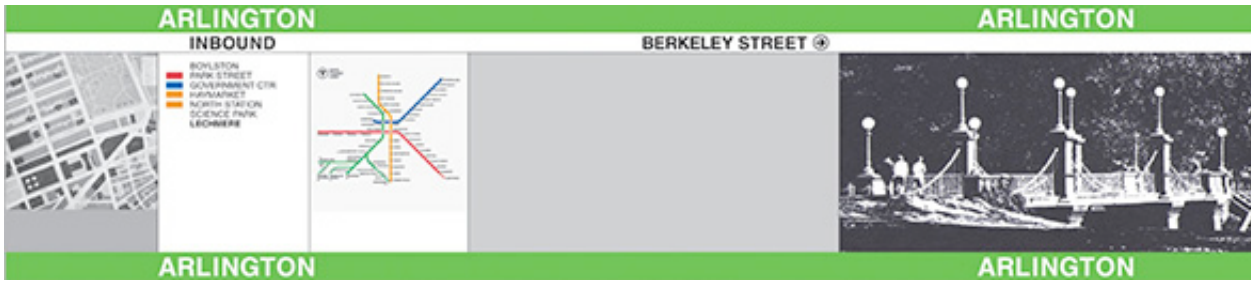
The Chrystie Street Connection—the largest overhaul of the New York City subway system since unification in 1940—opened on November 26, 1967. The Connection linked the former IND Sixth Avenue Line east of Broadway-Lafayette with the BMT Nassau Street Line via the Manhattan Bridge. It was the first true

integration of the IND and BMT and resulted in the creation of a new station at Grand Street, eight new routes and several new free-transfer points. The massive changeover was accompanied by a set of new maps overseen by Prof. Goldstein and the first Unimark signs, both of which incorporated new color-coding and naming for all of the subway lines.

The “big switch” was announced well in advance by the NYCTA, and newspaper columns explained the changes in detail several days beforehand. Still, the opening of the Chrystie Street Connection did not go smoothly. Under the headline “Riders Burn as TA Pulls the Switch,” the *New York Post* described the confusion and chaos that reigned at several of the affected stations, especially in Brooklyn. Passengers were unable to quickly absorb the new train routes and designations, nor the introduction of free transfer points. Confusion was not limited to the subway passengers. “A mild panic set in at the Atlantic Av. station when TA officials arrived early to find old signs still hanging,” the *Post* wrote. “They quickly ordered the old signs and maps covered with newspapers before the rush set in.” Atlantic Avenue was one of the stations where free transfers between the IND and the IRT were instituted for the first time. However, despite the presence of Unimark-designed red, gray and blue metal “Transfer Exit” signs directing them to the Lexington Avenue and Seventh Avenue Lines, passengers did not fully grasp their meaning and the TA was forced to add “hand-lettered cardboard signs” announcing free transfers.

Goldstein’s suite of maps—a large wall map for the platforms, a mini-map for the new routes, individual strip maps for each route and a new overall system map—and Unimark’s signs failed to prevent commuter confusion because they were not fully supported by the route designators on the trains. According to the *Post* and the *New York Daily News*, many trains still had their old route numbers and letters. The schematic maps themselves may also have been at fault, if one is to believe Blake. “The new maps and diagrams were quite stunning in composition and in color... but, unfortunately, they failed to communicate,” he wrote in *New York* magazine in April 1968. He described them as “a battlefield filled with typographers and color-experts locked in mortal combat.” Unimark’s signs escaped criticism, but it was clear there were not enough of them. They were only installed on the platforms and not throughout the stations as Vignelli had urged. “Flubway”—as the *Daily News* dubbed it—made clear what the NYCTA already knew. It needed to do more to make the subway system navigable. Merely installing a few new signs was not the same as implementing a coordinated sign system.

A month before the Chrystie Street Connection opened, the NYCTA publicly announced that it had hired Unimark to “devise a new system of signage.” The announcement was part of a presentation on the New York City subway by Daniel T. Scannell, one of the three TA commissioners, at the “Transportation Graphics: Where Am I Going? How Do I Get There?” symposium held October 23 at MoMA. Among the other speakers, assembled by Constantine, were Jock Kinneir, Peter Chermayeff and Noorda. If the NYCTA was not already aware of the gap between its own transportation signage and that for BritRail, the Boston T and the Metropolitana Milanese, they certainly knew after the close of the symposium. In fact, Arlington Street, the first of Boston’s renovated T stations, had finally opened that month to much publicity and praise. Ironically, *The New York Times* waited until November 28 to profile the station, placing the article next to one detailing the problems caused by the “big switch” in New York. That must have really stung the NYCTA.



Signage for Arlington station, Boston T (MBTA) (1967). (courtesy Thomas Geismar)

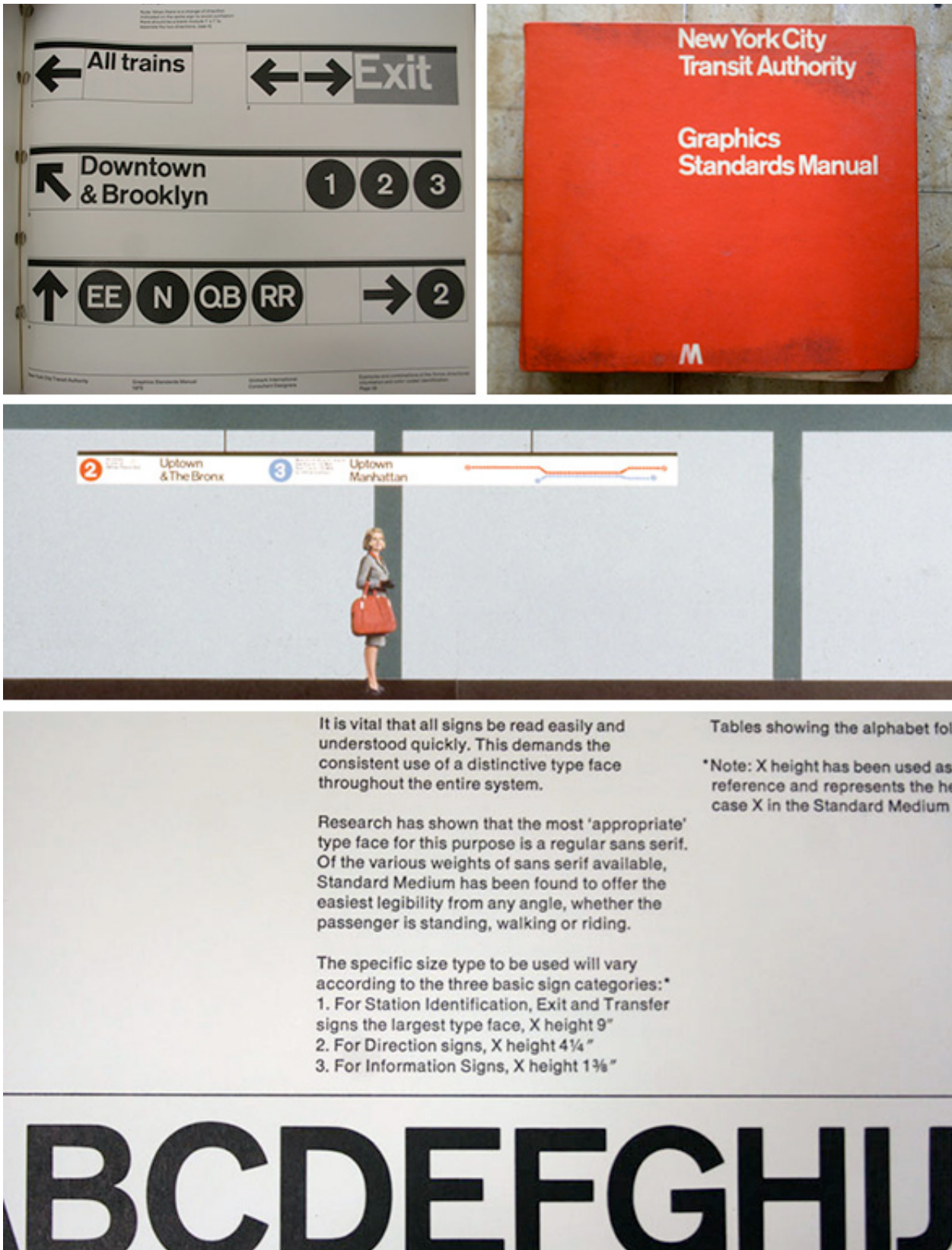
It is unclear whether Scannell's announcement at the MoMA symposium that the NYCTA had hired Unimark referred to the first contract or to the second contract the design firm had with the agency. Certainly by early 1968—if not fall 1967—Unimark had been rehired to prepare a comprehensive set of guidelines covering the design, fabrication and installation of signs for the subway system. The MoMA symposium coupled with the Chrystie Street Connection fiasco made it clear to the commissioners that they could not continue to do things the old way. In December 1967, the TA undertook a comprehensive survey of the subway system to determine how many signs it needed and where they should be posted. This marked the first about-face from the way the agency had been doing business. Previously, it had ignored Unimark's broader ideas about signage. As Vignelli recalls, "We designed the system to standardize the production and accelerate the implementation. No way. They were still doing all the signs individually—one here, another there, without a precise implementation plan. I wanted to do one line at a time; they were doing a station here and there, just like they have done since the beginning of the subways." It is doubtful that the TA adopted Vignelli's line-by-line approach, but they certainly sped up the pace of installation in the wake of the events of November 26. By the end of June 1968, they were boasting that "3,000 new signs had been installed at 100 stations and old ones removed to reduce visual clutter."

The detailed survey carried out by the TA in December 1967 was a necessary follow-up to Noorda's mid-1966 investigations and an essential prelude to Unimark's subsequent formulation of comprehensive signage guidelines. Noorda had looked only at critical subway stations—those with the most traffic in the system—but now the TA needed to examine the entire system (or at least those stations affected by the Chrystie Street Connection route changes). During 1968 and 1969, Unimark worked on the guidelines while juggling work for its corporate clients. The *New York City Transit Authority Graphic Standards Manual* was finally issued in 1970. It included Noorda's traffic-flow research of mid-1966, the TA's station December 1967 survey results, and some of the original design and fabrication specifications presented to the TA in fall 1966. But it also built upon those specifications to include precise manufacturing instructions, explicit spacing guidelines, a glossary of terms, semantic rules for the information to be included on signs, examples of mandatory signs as well as informational and directional ones, and suggestions for a line map intended for use inside subway cars and a directory to aid riders seeking the best way to get from point A to point B via the subway. It also replaced Goldstein's Munsell Color System for the route disks with equivalent colors from the Pantone Matching System.

As if in response to the confusion engendered by the "big switch," the first page of the manual emphatically insisted, that there "must be no overlapping of old and new signs. All signs erected previous to this program

should be removed.” It was a brave statement, but not a practical one given both the extensive nature of the New York City subway system—at that time it consisted of 484 stations—and the NYCTA’s financial situation. The manual specified modular signs—in sections of 1, 2, 4 and 8 feet in length—with black type on a white background. Three types of signs were prescribed: station identification, exit and transfer signs (with a cap height of 9 inches); directional signs (with a cap height of 4 1/4 inches); and informational and small temporary signs (with a cap height of 1 3/8 inches). Wordspacing, letterspacing, leading and the number of lines per sign were carefully detailed. The typeface was Standard Medium.

“Research has shown that the most ‘appropriate’ typeface for this purpose [a quickly and easily read sign] is a regular sans serif,” the manual stated. “Of the various weights of sans serif available, Standard Medium has been found to offer the easiest legibility from any angle, whether the passenger is standing, walking or riding.” The inadvertent black band at the top of the signs was now accepted as part of their look: “The 1 5/8” black band at the top of the panel represents a structural device to which the panels are fastened. Whenever the panel requires a different structure, the black band should be part of the graphics on the sign.” The signs were still porcelain enamel, but the reproduction of elements was to be “by photographic means only” via silkscreening with die-cut film. Temporary signs, made with vinyl adhesive letters, were the exception. These requirements were clearly set in response to the Bergen Street Sign Shop’s use of hand-cut stencils for making porcelain enamel signs and the type of makeshift signs the TA had resorted to during the Chrystie Street Connection opening.



(top and bottom rows): From the 1970 NYCTA Graphic Standards Manual, Unimark Design Consultants, a page indicating directional information, the cover and and typeface instruction using Standard, not Helvetica; (middle) "Donna" illustration of platform signage by Bob Noorda (c.1966, colorized in 2008).

Unimark's choice of Standard Medium is shocking given Vignelli's reputation—burnished by his passionate testimony in the documentary *Helvetica*—as a life-long proponent of Helvetica. Furthermore, he has stated on several occasions that he wanted to use Helvetica for the New York City subway signage but that “it was not available.” Why not?

Next: The Myth of the Helvetica Juggernaut...

The Myth of the Helvetica Juggernaut

Helvetica celebrated its 50th anniversary with [a movie](#), [an exhibition at the Museum of Modern Art](#) and [a book](#). Despite all of the excitement and recognition, few people know its true history in the United States .

In the 1960s European types were imported and distributed in the United States by two companies: Amsterdam Continental and Bauer Alphabets. The latter was owned by the Bauersche Giesserei of Frankfurt am Main and had been in business in New York since the late 1920s, when it was responsible for introducing Futura to the American market. Amsterdam Continental, owned by Lettergieterij Amsterdam (also known as the foundry of N. Tetterode), was established in 1948. It imported types from Berthold, Stempel, Klingspor, Haas and Nebiolo as well as those from its parent company. Exactly when Amsterdam Continental began importing Standard is unclear but it appears on several record album covers as early as 1957. From 1960 on, the company heavily promoted it to the graphic design community. Bauer countered by touting Folio, a neo-grotesque designed by Konrad Bauer and Walter Baum. In late 1960, American Type Founders (ATF) began importing Adrian Frutiger's Univers and in 1961 it became available on monotype machines. Mergenthaler Linotype belatedly responded to the foreign invasion in 1963 with advertisements for Trade Gothic. ATF made no special attempts to sell its popular News Gothic and Franklin Gothic types—probably because none was needed. These were Helvetica's rivals.



Poster for Gary Hustwit's documentary.

Helvetica began life as [Neue Haas Grotesque](#), a new interpretation of a 19th-century grotesque (probably Akzidenz-Grotesk) conceived by Eduard Hoffmann and executed by Max Miedinger for the Haas'sche Schriftgiesserei (Haas type foundry) in Munchenstein, Switzerland, in 1957. Three years later it was licensed by D. Stempel AG of Frankfurt (which owned shares in Haas) and renamed Helvetica. Stempel manufactured the face in foundry type and its partner German Linotype made it available in matrices—but only in mager (light) and halbfett (medium) weights. Other weights followed in the next few years. This is one reason that Noorda was unable to find the right weight of Helvetica for the Milan metro signage in 1962.

In the days of metal type, graphic designers were forced to use whatever typefaces their local printers or type houses had in stock. There was no type candy store as there are today. And printers and type houses only bought new typefaces when they thought there would be sufficient demand for them or they filled a specific stylistic niche. Buying a typeface meant buying a range of sizes and thus metal type took up a lot of space.

Imported type was even more expensive—it meant shipping lead across the Atlantic—and had the further disadvantage of having to be specially manufactured for use with American printing presses. A new typeface often meant an investment of a thousand dollars or more.

From the designers' perspective a new typeface intended for a wide range of applications had to be available both in foundry and composition versions—the former for display use and the latter for text setting. Only a handful of sans serifs met this criteria in the early 1960s: Futura, News Gothic, Franklin Gothic, Standard and Univers. Designers were often forced to mix and match different text and display sans serifs—for example, Futura and Spartan, or News Gothic and Trade Gothic.

Helvetica joined this select group in 1963, when Stempel adapted it for the pica-point system and German Linotype prepared matrices for export. To announce Helvetica's availability for American consumption, the foundry inserted a special double-sided red-and-black advertisement in the November/December 1963 issue of *Print* touting the face for "its spare simplicity, its utter legibility, its uniformity and its flawless color." Still, Helvetica was slow to catch on in the United States. One reason was that German Linotype mats did not align with American ones. This problem was resolved when Mergenthaler Linotype in Brooklyn began manufacturing Helvetica in February 1964. They released the 10-point version first and the remaining sizes by early 1965. At the same time, the Visual Graphic Corporation (VGC), manufacturers of the Typositor which set display phototype, offered faces "similar to" Helvetica. Linofilm Helvetica, a text phototype version of the font, was conceived by Mergenthaler in 1965 but not completed until 1967.

By 1965 Helvetica began to appear in award-winning designs and advertising, principally from graphic designers working for Unimark and CCA in Chicago, and at MIT in Cambridge, Massachusetts. It took longer for designers in New York to embrace it. The ubiquity of Helvetica, which has been both lauded and lamented since, did not take off in the United States until 1969. Vignelli has often taken credit for the spread of Helvetica in this country. This may seem like braggadocio, but his claim has a very large grain of truth in it.

Vignelli was already an enthusiastic advocate for Helvetica prior to his move to the United States. What he most loved about it was its lack of sidebearings. This enabled him to tightly pack letters together—as in his famous posters for the Piccolo Teatro in Milan—without having to cut up galley proofs. Vignelli shared his love of Helvetica with his colleagues at Unimark and it quickly became the firm's "house face." The "new sans serif" was especially prized for visual identity systems such as the one Unimark developed for Varian. Not only could Helvetica be set closely but it was available in a variety of sizes and weights and on a variety of typesetting systems. More importantly, compared to its sans serif rival Standard, it was considered more harmonious in design because the terminals of c, e, s, etc., were horizontal.

Standard, Helvetica and the New York City Subway system

At the time the NYCTA awarded its first contract to Unimark in 1966,



Vignelli used Helvetica for

Helvetica was offered for sale in New York City as foundry type, linotype matrices, phototype and even transfer type. So, why was it not “available” for the subway signage? The obstacle must have been linked to the Bergen Street Sign Shop, its outside vendors and the signmaking process.

Piccolo Teatro in the mid-1960s.

In the late 1960s, the workers at the Bergen Street Sign Shop painted many signs by hand and silkscreened others, as they had done for decades. They also prepared artwork for porcelain enamel signs but did not fabricate them. That task was handled by outside vendors—most likely Nelke Sign Manufacturing Corporation, the only enamel signmaker from the Vickers era that was still in business.

Porcelain enamel signs are made by applying enamel in coats to iron or sheet metal and then heating it at a temperature of 800 degrees after each coat. Dark colors are applied before light colors. There are two methods of doing a design: stencils or screenprinting. Stencils—made from either paper or metal—are the original method, but screenprinting has been preferred since the 1960s. According to Geoffrey Clarke: “In the stencil process, the colour is sprayed on the plate and, after drying, it is of the consistency of weak distemper. The stencils, cut to the appropriate design, are placed on the plate and the exposed colour is brushed away, leaving the design intact. The plate is then fired and the colour vitrified indelibly on the background.” The process is repeated using additional stencils for color in the design. In the silkscreen method the designs are usually created photomechanically and thus have more detail. Porcelain enamel signs made by the stencil process require stencil cutters and “brushers” with a high degree of skill.



Unimark-style sign made with handcut stencils, at Rockaway Park (Canarsie), L station (early 1970s).

One of the reasons that Vignelli was unhappy with the TA’s handling of Unimark’s 1966 signage recommendations is that they were carried out by its own sign shop. The porcelain enamel signs were apparently made by the stencil method but without highly skilled stencil cutters, leading to letters that were inexact and inconsistent. To make stencils of Standard at the large sizes recommended by Unimark it would have been necessary to either draw the “type” by eye, or enlarge it using a Goodkin Lucigraph (or Luci, a form of opaque projector) or Ludlow Typograph’s Brightype process. Although there is evidence that some signs were painted by hand, the porcelain enamel ones must have been done through enlargement. Type enlarged via a Luci had to first be proofed which meant the letters were subject to being over- or underinked. Further inaccuracies were introduced during the tracing stage, depending upon the skill of the draftsman—unless a pantograph was employed. The Brightype process avoided those pitfalls. Instead of inking the type after it was locked up, it was sprayed with black lacquer or lampblack. The printing surface was then wiped clean with a rubber pad until it was shiny. Next, the

reflective form was photographed on a Brightype camera to create a photomechanical master. This film negative was used for the final enlargement. The letters were crisp and accurate. But they still had to be hand cut as stencils. Car identification numbers on several subway lines—most notably the 1 and the D trains—are still set in Standard, and close examination of them shows flat spots in the curves indicating that they were made from hand-cut stencils. By insisting on silkscreening instead of stenciling, in the *Graphic Standards Manual*, Unimark was trying to avoid defects such as those that had infuriated Vignelli.

What did the Bergen Street Sign Shop workers use as a source for creating their painted and hand-cut stencil versions of Standard? Did they work from proofs of type made in-house or ordered from outside type houses? Or from specimens of type taken from a book? It is very likely that a type house that had Standard in its repertoire in 1966 may have been loath to add Helvetica as well, given the costs involved and the fact that the two faces appear indistinguishable to most people. This would have been especially true for the larger foundry sizes of the face since they would have weighed more and thus cost more—and been less likely to be used by other customers. Similar considerations would have occurred to the sign shop regarding its typesetting capabilities. Even if the shop worked from a book instead, Helvetica would not have been an option since no American type book at the time included it. Ben Rosen's *Type and Typography* (1963), the principal specimen book of the day, had 17 pages of Akzidenz-Grotesk and Standard but the largest size of Standard Medium was 72-point—large by the standards of foundry type but small from the perspective of transportation signage.

The decision to use Standard instead of Helvetica may not have been as disappointing to Noorda as it was to Vignelli. While Vignelli was a strong believer in the virtues of Helvetica, Noorda was not as committed. His custom typeface for the Metropolitana Milanese was born out of dissatisfaction with both types. Although it is usually described as a modified version of Helvetica it can also be seen as a modified version of Akzidenz-Grotesk (Standard). Given how much the New York City subway sign system owes to Noorda's work in Milan it is very likely that the choice of Standard in 1966 was his, and that Vignelli readily acquiesced because Helvetica was, for whatever technical reason, not "available" to the TA—and the sign "system" was more important than the specific face used.

Noorda and Vignelli had an opportunity to change the NYCTA type to Helvetica when Unimark received its second contract, but they stuck with Standard. Presumably, they were more focused on insuring that the signs were properly fabricated and installed than which sans serif was used. Certainly, Vignelli had other opportunities to use Helvetica. In November 1967, the New York City Planning Department hired the New York office of Unimark to create a signage standards manual for all city agencies. To test out the signage, a prototype design for East 53rd Street—home to the Museum of Modern Art, CBS and the Seagram Building—was created. The goal was to coordinate the graphics with the street lighting and furniture—such as bus shelters, telephone booths and benches. At the same time, architect Harry Weese tapped Vignelli to design the graphics for the new Washington Metro. Neither assignment involved Noorda. Both used Helvetica. Unimark showcased all three of these signage projects in the August/September 1969 issue of *Casabella*. The text praised Standard for its legibility—in words taken directly from the NYCTA's *Graphics Standard Manual*, still being developed—but made no mention of Helvetica.

Next: The Fate of the Unimark Sign System...

The Fate of the Unimark System

The Metropolitan Transportation Authority (MTA) was created in March 1968. The new agency replaced the Metropolitan Commuter Transportation Authority (MCTA), which had been formed three years earlier to oversee the commuter railroads, including the Long Island Rail Road (LIRR) and the New York, New Haven and Hartford Railroad. The MTA added the NYCTA, the Manhattan and Bronx Surface Transit Operating Authority (MaBSTOA, a subsidiary of the NYCTA created in 1962 to oversee bus routes), and the Triborough Bridge and Tunnel Authority (TBTA) to the mix. From the moment the MTA was born, the Rockefeller administration began making grandiose plans to modernize and coordinate the transit system. A \$2.6 billion program was announced that February to expand the subway system with a Second Avenue line, a new Bronx line, an extension of one of the Queens lines, and the development of “a novel Transportation Center in the 48th Street area.” (A LIRR spur to JFK Airport was also proposed.) A few months later, the “Fund for Better Subway Stations,” headed by real estate developer Peter Sharp, announced plans to upgrade and beautify stations in conjunction with the TA. On its own the NYCTA had already, a year earlier, set forth a station renovation program with 49th Street as a test station. All of this activity should have boded well for the Unimark signage system.



Various Unimark signs c.1970: Canal Street A/C/E (left) and 59th St/Columbus Circle A/B/C/D. (courtesy Joe Testagrose and Dave Pirmann)

Vignelli hoped that the *Graphic Standards Manual* would lead to a more rational implementation of signs within the New York City subway system. But that did not happen, due to two factors: 1) the sheer size of the New York subway system and 2) the financial woes that overtook both the MTA and the city of New York in the early 1970s, culminating in the city's rescue from bankruptcy in 1975. The 1968 “Program for Action” was largely abandoned by the end of 1975. During the gestation of the *Graphic Standards Manual* the NYCTA installed signs on an ad hoc basis and it continued to do so throughout the 1970s. “In many stations,” Paul Goldberger wrote in *The New York Times*, in 1979, “the signs are so confusing that one is tempted to wish they were not there at all—a wish that is, in fact, granted in numerous other stations and on all too many of the subway cars themselves. And the system is so complex that one might feel signs make very little difference—a rider may as easily find his destination by taking a chance as by any sort of careful planning.”

His description is borne out by contemporary photographs that show stations with a mix of Unimark and older signs or without any Unimark signs at all even though it was over a decade since the NYCTA had first hired Vignelli and Noorda to bring order to a chaotic system.

The early 1970s were the years when the subway system was probably at its lowest ebb, along with the city itself. “Dank, overcrowded, underlit and terrifyingly labyrinthian, the New York subway at its best suggests nothing less depressing than a public lavatory; at its worst, it’s a vision of purgatory” was one contemporary description. The early 1970s were also the years when modern graffiti was born. As cars “bombed” on the outside and “tagged” on the inside rolled through the city, the subway woes and the graffiti explosion became intertwined in the public consciousness. “If nothing else,” Patricia Conway wrote in *Print*, “the subway graffiti are a testimony to the monumental failure of TA officials and their design consultants to make the system legible.” She went on to lambaste the transit agency for spending millions of dollars on anti-graffiti efforts rather than on capital improvements such as “repairing inoperative doors, replacing burnt-out lights, securing rickety seats and maintaining or improving directional signs.”

But change was already underway by 1975, when Fred Wilkinson, director of consumer affairs at the TA, convened a committee to devise [a new map](#) for the subway system to replace the one that Massimo Vignelli had designed only four years earlier. While the citizen members of the committee were focused on creating a more geographically accurate map, the agency itself was interested in showing partial-time service on 11 lines. To do this, diamonds were added to the existing circles designating each subway line. John Tauranac, committee chair, also wanted to take the existing system of depicting trains that share the same track with parallel lines and replace them with trunk lines. This posed a color-coding problem—which meant a financial problem as well—that was not solved until Len Ingalls came up with the idea of basing colors on the “flagship” line where multiple lines ran in tandem. Ingalls’ solution meant that there would have to be a change in the color coding of the routes. The [proposed changes in the map](#) had far-reaching ramifications: they meant that the station signage would have to be updated to insure that the two were synchronized.

By 1979—the subway system’s Diamond Jubilee year—the MTA had finally begun to get some Federal financial assistance, and the subway’s prospects were starting to slowly turn around. That summer, in an attempt to encourage more ridership, “an overall program aimed at easing passenger travel around New York City” was introduced. The 1978 MTA annual report—anticipating the program’s inception—described it thusly: “The program includes color-coding of lines by their track routes; new station signage that conforms to the color-code; and a new pocket-sized geographical subway map. In addition, as roll signs are replaced, they will indicate route and destinations, as well as the color-code.” The program—spurred by work the Tauranac committee set in place several years earlier—was expected to take up to 36 months to complete.

The real news to most people was the replacement of the controversial Vignelli-designed schematic map with a geographically based one, executed by [Michael Hertz](#) and his staff. However, in light of the problems that occurred during the opening of the Chrystie Street Connection, the intention of color-coding all train roll signs was equally important; and so too was the news about the station signage. The new signs differed markedly from the ones that Unimark had designed in 1966 and codified in 1970. Not only did they have diamonds as well as disks as route markers and new colors for both, but they were black with white type. The

errant black band at the top was replaced by a thin white line, demarcating the (nonexistent) location of the gap between sign and housing—but the typeface was still Standard.



Inverted Unimark-style sign at Prospect Avenue, M/R (c.1974/1975).

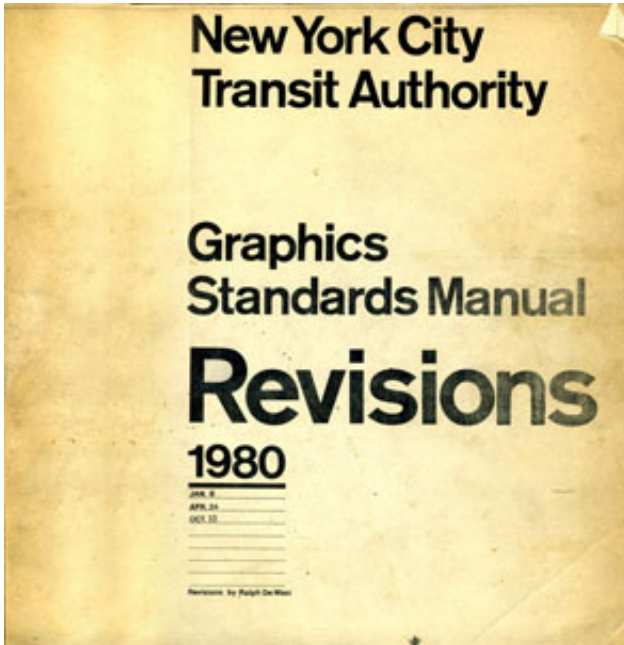
Vignelli attributes the black/white inversion of the signs to TA worries about graffiti, while others chalk it up to concern over simple grime. Although Vignelli's explanation is an attractive one, especially in light of the graffiti explosion that overtook the city and the subway system by 1973, the truth is that the TA made the change to increase the legibility of the signs and first contemplated doing so sometime in 1972. According to Michael Bosniak, then the MTA's graphics manager, Jacques Nevard and Len Ingalls in public affairs requested that the "Transit Authority maintenance shop manufacture prototypes of the 'drop-out' reverse lettering lettering" for installation in three prototype stations in 1972–1973. This decision was made after several visual perception studies came to the attention of Nevard, but "there was a general consensus that the reversed lettering had greater legibility in the bowels of the subway system and it was adopted without any formality."

R. Raleigh D'Adamo, head of the office of inspection and review at the MTA from 1970 to 1975, says that the idea of changing the signs originated with him as an offshoot of a decision to change the background colors of the route designators on the trains. "I triggered it because of my hobby interest in letterpress printing and graphics," D'Adamo says. "I wrote a memo about it and attached a technical article on legibility of texts against different backgrounds. The test itself was done by the TA—I don't recall who was present at the 47–50 Street station, but it could well have been Jacques and Len. A new sign of bullet [route designation circle] against a black background was prepared and installed in the south end of an empty train which was positioned in one of the pocket tracks at the then-57th Street/Sixth Avenue terminal. A regular train was alerted in advance that it would be part of a test. At the proper time, the operations department directed the empty train to leave 57th Street and advance south to 47th Street, and both trains were directed to watch for each other and enter the station together and slowly. The TA team and I stood in mid-platform. At a certain point as both trains slowly entered, they were then directed (by hand signals as I recall) to stop—opposite each other. Hence, the team had the opportunity to observe (as passengers would) both trains as they were entering the station, and then to observe them for a few moments as the two trains were standing still. It took no time at all for all to agree that the sign with the black background was clearly the more legible. It followed

like night and day and without any discussion that I can recall, that all other signage should be against a black background instead of white.” The test that D’Adamo describes may have been one of those that Bosniak recalls, suggesting that these recollections are in accord with one another. Vignelli was never involved in the decision.

Next: Changing the manual... again

Changing the Manual... Again



NYCTA Graphic Standards Manual Revisions, 1980, by Ralph DeMasi. (courtesy Peter Joseph)

The switchover was codified in 1980 via a revised edition of the 1970 *Graphics Standards Manual*—photocopied at a reduced size and bound with black tape—created by Ralph DeMasi, a staff architect. Changes to the Unimark sign program were made by whiting-out specs and writing in new ones, by adding notes in the margins, by creating new diagrams from old ones (with Standard rendered by hand), and by inserting entirely new pages of artwork. The revised manual was a work-in-progress not a polished document. Among the changes included in it were: an increase in the size of the smallest letters from 1 3/8-inch to 1 1/2-inch; the addition of diamonds to mark part-time trains—those that ran only in the day, at night, on weekends or at rush hour—and new symbols for the new “Train to the Plane,” a train dedicated to serving JFK Airport, and for buses; an expanded color code with ten hues instead of seven; new names for seven of the routes; new artwork for the route designations with larger type; the use of black instead of white for the type in the yellow disks and diamonds; new

turnstile designs; new types of signs (e.g., to indicate escalators); new symbols to mark bathrooms and handicapped access; and map panels for the station platforms. Throughout, there are reminders that “all lettering [is] to be white on black background”; and the thin white stripe is introduced in the section on “typical Column Signage.” Amidst these changes is note number 2 on page 9: “When letter ‘J’ appears in discs or diamonds—use Helvetica Style ‘J.’” This was the first official appearance of Helvetica in the sign system.

Although the decision to change the figure/ground relationship of the signs was made around 1973 and announced publicly in 1979, it took a while for the new signs to be implemented—just as it had taken years for the original Unimark signs to be introduced. Some signs were installed as early as 1978, when the TA began a program of station renovation under the guidance of in-house architect Paul Katz. But when the “We’re Changing” campaign was unveiled in 1979, the accompanying photographs and posters showed white Unimark signs being amended with route decals bearing the new color coding and the new diamonds. These decals had a black background instead of a white or clear one, an indication that they were eventually intended to be used with white on black signs. They were a stopgap measure—the brainchild of Ingalls, who called them “pasties”—to solve the problem of quickly and economically coordinating the introduction of the

new Tauranac–Hertz map with the signage in the stations.



(top row from left) Installing a decal on a Unimark-style sign (MTA 1978 Annual Report); and a sign formerly from the A line (c.1981) using Unimark-style modules (courtesy New York Transit Museum); (bottom row) Sign at Times Square (c.1982), using a mix of inverted Unimark-style modules (photo: John Tauranac); and an unusual variant of the Unimark style, at Hoyt Street 2/3 (c.1979).

The MTA had expected to complete the entire color-coding program in 36 months, but its plans fell woefully short. The Tauranac–Hertz map was issued as promised in 1979, but in 1982 the MTA announced that it had just begun to update the station signage only the year before and that it had not yet begun changing the train scroll signs. It expected to have new signs in 78 stations by the end of the year. The situation with the scroll signs was worse. *The New York Times* reported that they were so out-of-date that the destination signs for the AA train said “Hudson Terminal” (rather than the World Trade Center, which had replaced it over a decade earlier) and for some 7 trains they said the World’s Fair! (Things were even worse than the Times realized—the AA line had been renamed the K.) However, by the end of the 1980s—thanks to an improving economy in New York City and a series of five-year capital programs dedicated to modernizing the stations—the revised Unimark signs managed to finally permeate most of the subway system.

In 1984 Michael Hertz Associates was hired as “signage consultants to the architecture department of the TA.” Hertz’s work on the 1979 subway map had little bearing on the firm’s selection as the contract was won through a competitive bidding process. The firm prepared a second revision of the 1970 *Graphics Standards Manual* for the NYCTA. The supplement that he and his associate Peter Joseph created was more professional than the DeMasi version, though it too existed only in a photocopied, tape-bound form. The text was entirely typeset as were all the examples of signage. The supplement codified the major



changes of the 1980 revised manual by providing high quality artwork for the new service disks and diamonds, route names and colors, and ancillary symbols. It also included guidelines for door signs and Off Hour Waiting Area signs. Although there was no mention of any change in the official typeface some of the sample illustrations used Helvetica instead of Standard. Whether actual signs were prepared with Helvetica as a result is unclear, but Helveticization was around the corner.



Guidelines for platform edge signs, from the NYCTA Graphic Standards Manual Supplement 1984, Michael Hertz Associates. (courtesy Peter Joseph)

The process for preparing artwork for porcelain enamel signs was more professional by the time Michael Hertz Associates began working on the subway signage than it was when Unimark was first hired. This is Joseph's description of it: "The design, so to speak, consisted of a plan showing sign locations indicated by a number. These numbers corresponded to a schedule with message, sign size and sign type (pan-formed, flat, etc.). The contractor [Michael Hertz Associates] was required to submit full-size shop drawings of each sign to the TA for approval. These shop drawings were in turn sent to a PE [porcelain enamel] manufacturer to produce either stencils or screens... from which the actual signs were fabricated." The Bergen Street Shop was no longer involved in the process.

Next: This Typeface Is Changing Your Life...

This Typeface Is Changing Your Life



Sanitation truck, 1967. Designed by Walter Kacik & Associates. From Print March/April 1968.

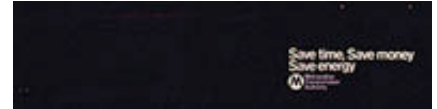
The myth of Helvetica's preeminence began with Leslie Savan's 1976 *Village Voice* article, "This Typeface Is Changing Your Life." Savan tried to explain the sudden pervasiveness of the sans serif typeface in the 1970s, focusing her attention on Vignelli and Lippincott & Margulies. "Since 1967," she wrote, "the MTA has been gradually standardizing its graphics from about a dozen typefaces to a combination of Helvetica and Standard Medium. (The two are almost identical, but the latter was more available to the MTA.)" Savan incorrectly credited the transit agency's "graphic system" to Vignelli and Walter Kacik, making no mention of Noorda or Unimark, and she conflated the TA's signage with the MTA's printed matter.

Savan's confusion was understandable.

In 1973, an inter-agency marketing campaign entitled "MTA Gets You There" was launched by the MTA to boost ridership. The various printed materials—posters, brochures, maps, timetables—were intended to have a coordinated design, yet some used Standard and others Helvetica. The most prominent of the latter was the controversial and now iconic 1972 subway map designed by Vignelli. When asked recently why he had used Helvetica for the map when Standard was the typeface of the sign system,



Vignelli replied that he simply “forgot” to do so. Given his devotion to Helvetica at the time, his answer has the ring of truth to it—especially since he set the explanatory text of the 1970 *Graphics Standards Manual* in it!



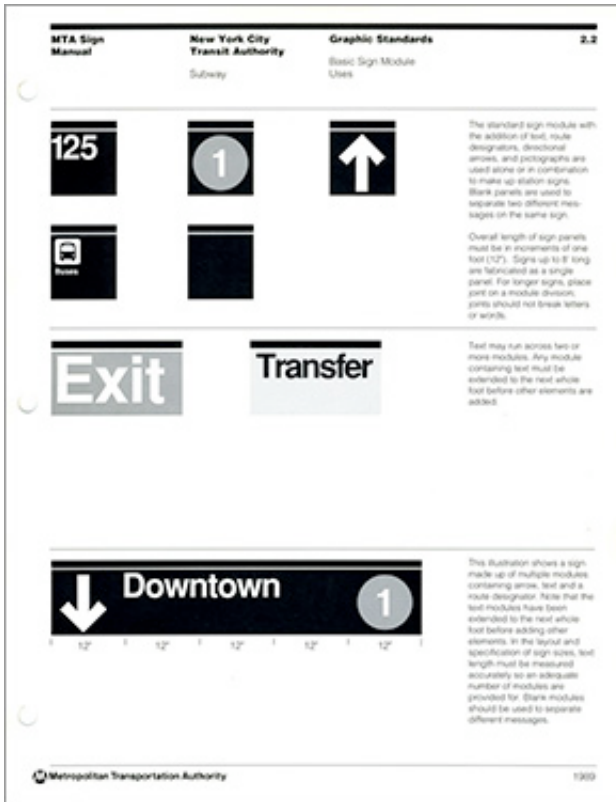
1973 MTA poster by Howard York, set in Standard.
(courtesy Howard York)

When Vignelli designed the subway map he was no longer a member of Unimark International. He had left the firm the year before to establish Vignelli Associates, in partnership with his wife, Lella. In designing the map Vignelli did not have to worry about using any of the TA’s in-house departments as Unimark had to do with the sign system. The artwork was created by his staff as a mechanical with type set by a type house of his own choosing. There were no reasons, technical or otherwise, not to use Helvetica. The transit agency did not complain because they had been using Helvetica here and there for various printed items since 1967. The “MTA Gets You There” campaign was only one instance of their mix-and-match sensibility.

The subway map has led many—both within and without the design professions—to assume that Vignelli designed the NYCTA signage system on his own and that it used Helvetica. For example, interior designer Stanley Abercrombie, in an essay accompanying the 1977–1978 Cooper-Hewitt Museum exhibition “Subways,” credited the signage to Vignelli and praised his use of a “clear, smart Helvetica face.” Similarly, the website of the Design Museum in London, gushing over Helvetica, declares: “From the beautifully implemented New York Subway signage system by Vignelli to its usage on the lowly generic EXIT sign, the flexibility of the typeface seems to have no boundaries.” Most astonishing of all, the authors of *Subway Style*—published by the New York Transit Museum of the Metropolitan Transportation Authority—insist that the manual states the typeface for the signs is to be “exclusively Helvetica.”

Helvetica finally became the official typeface for the New York City subway system signage in December 1989, when the MTA Marketing & Corporate Communications Division, the department in charge of its graphic standards, issued a new manual. The manual was prepared by Michael Hertz Associates at the request of Doris Halle. In the introduction to the *MTA Sign Manual New York City Transit Authority Long Island Rail Road Metro-North Commuter Railroad*, Richard Kiley, MTA chairman, called it “a first step toward the goal of unified, high-quality MTA-wide signs.” It marked the first attempt by the MTA to establish a set of consistent graphic standards for all of its constituent agencies. Although it did not go into detail, it claimed to incorporate most of the 1970 *Graphics Standards Manual* “as well as modifications made over the years. It fine-tunes some proven precedents.”

The 1989 *MTA Manual* ratified the “modifications” made in the 1980 and 1984 interim revisions to the 1970 *Graphics Standards Manual*. Thus, Noorda’s modular system no longer existed as physical components but only as graphical units. Signs were allowed to be a wider variety of lengths and there was a wider variety of fabrication options, including silkscreened vinyl adhesive backing for updates to the porcelain enamel signs. The thickness and position of the white stripe was officially defined. The colored disks from 1984 were modified to take into account the addition to the system of the 9, H, Z, 1/9 and J/Z trains. Diamonds were still in existence. The 1980 sizes of type were kept. But the typeface was no longer Standard Medium—with a few exceptions.



Basic sign module uses (left) from the 1989 MTA Sign Manual (courtesy Peter Joseph); and typographic alphabet (right) from MTA Graphic Standards: Signage (1988) (courtesy Michael Hertz).

The choice of typeface now reflected the complete MTA transportation system rather than the New York City subway by itself. The manual was an MTA product and not an NYCTA one. Helvetica Medium (with Helvetica Medium Italic) was chosen as the standard typeface for the NYCTA (including MABSTOA and Staten Island Rapid Transit); Helvetica Medium and Helvetica Medium Condensed for the LIRR; and Helvetica Medium Italic for Metro-North. There was no mention made of replacing older signs. Standard remained as part of the old artwork for the roll designators, though a diagram was included for making new discs—with Helvetica—for future line designations (such as the current V and W trains). Helvetica Medium Italic was added to describe the hours of operation for specific trains. The manual cautioned that “any other form of Helvetica (e.g., condensed, regular, etc.) or other typefaces, are never to be used as a substitute for Helvetica Medium or Helvetica Medium Italic.” This may have been a reference to the use in the early 1980s of Helvetica Medium Condensed on some column porcelain enamel signs.

Next: Goodbye Standard, Hello Helvetica...

Goodbye Standard, Hello Helvetica

Why did the MTA abandon Standard? At the time Helvetica’s popularity was on the wane, as its widespread use since the early 1970s had induced boredom and a backlash. Postmodernism had effectively exposed the subjective nature of the Modernist notion of neutral, rational and universal design and, in doing so, had undercut the principal reasons that many designers had given for choosing Helvetica over all other faces.

The MTA's embrace of Helvetica may have been out of step with the times, but it had some compelling reasons for doing so. One is that the new standards were intended to unify the MTA's operations. Some of its commuter rail lines were already using Helvetica for their signage. The industrial design firm Peter Muller-Munk Associates of Pittsburgh—designers of the NYCTA's two-toned M logo in 1968—had introduced it to the Long Island Railroad (LIRR) in 1969. By the early 1980s the New Haven line was sporting white signs with red bands at the top and Helvetica. And by at least 1987 the Hudson and Harlem lines of Metro-North had white signs with green bands set in Helvetica Medium Italic. The heritage of these commuter lines was reflected in the 1989 *MTA Manual's* color-coding decisions: blue for LIRR and the Harlem and Pascack Valley lines of Metro-North; green for the Hudson line of Metro-North; red for the New Haven line of Metro-North; and orange for the Port Jervis line of Metro-North. The colored bands are all descendants of the black band the NYCTA errantly created in 1966.



Green-striped sign at Philipse Manor station, Metro-North Hudson line. (courtesy [Joe Testagrose](#) and [Dave Pirmann](#))

A second reason is that by the end of the 1980s most MTA buses were using LED displays, which rendered the whole Standard/Helvetica debate moot. (A similar situation is now occurring with the newest subway cars that have LED displays instead of disks and roll-ups for route designations.) Since 1972, the Manhattan and Bronx Surface Transit Operating Authority (MABSTOA), a subsidiary of the NYCTA, had used Standard for the route designations on the front of its buses. The signs were originally white letters on a black background but at some point they changed to white letters on a combined blue and red background—blue for the number/letter code and name and red for the route description. Several of the 1970s-era buses continued to operate into the early 1990s, but from 1980 on they were increasingly supplanted by boxy Grumman-Flexible and sleek GM RTS buses with LED displays.

A third reason is that technological changes in typesetting and graphic design were overtaking the MTA Marketing & Communications Division. By the end of the 1980s the full effects of the desktop publishing

revolution—touched off in 1984 by the conjunction of the Apple Macintosh, Apple LaserWriter, Adobe PostScript page description language and Aldus PageMaker software—had begun to be felt in the graphic design community. The typesetting choices faced by Unimark in 1966 had increased. The 1989 *MTA Manual* listed the following equipment: digital type (Linotronic), phototype (Compugraphic and typesetter), tape-based lettering systems (Kroy and Merlin), computer-driven letter- and stencil-cutting systems (Gerber Signmaker), vinyl self-adhesive letters (from various manufacturers) and fabricated or cut-out letters in plastic and other materials. The only typeface that was available on all of these systems and methods was Helvetica. Furthermore, Standard had virtually “disappeared.” It was still listed in the VGC Typositor library but not in specimen books from Compugraphic, Linotype or Adobe. They offered either Berthold Akzidenz-Grotesk—the true identity of Standard—or a revised version called AG Old Face. The mix-and-match mentality of the mid-1960s was no longer an option. Helvetica was the logical choice.

Helvetica actually appeared on signs in the subway system at least a few months prior to the release of the 1989 *MTA Sign Manual*. In October of that year, when the long-delayed 63rd Street tunnel was finally opened, its three new stations—63rd Street/Lexington Avenue, Roosevelt Island and 21st Street/Queensbridge—all sported 1968-designed interiors and Helvetica signage.



71 Forest Hills sign set in Standard (left) and 71 Continental Avenue sign set in Helvetica (middle), on the E/F/G/R/V. Elmhurst Avenue G/R/V stop features a mix of mosaic, enamel and post-Unimark signs.

Siegel+Gale rebranded the MTA in 1994, replacing the two-toned M logo with the letters “MTA” rendered in perspective within a circle. “A unifying identity system embracing subways, buses, commuter trains, and bridges was needed to facilitate employment of the MetroCard, an electronic payment card that replaced tokens, transfers, and exact change,” according to partner Alan Siegel. The new logo accompanied the development and introduction of the MetroCard. The electronic farecard—first used on buses in 1994 and then extended to the entire transportation system in 1995—forced the Marketing & Communications Division to revise its signage manual once again and to expand its design guidelines beyond



A page from the 1995 MTA Sign Manual (left) and cover (right). (courtesy Peter Joseph)

signage to all forms of communication. Michael Hertz Associates was hired to handle the signage manual, while the *Service Identity Manual* was done in-house. The latter included not only the MetroCards but stationery, maps, kiosks, booths and vehicles. Lock-ups for the new logo in combination with the existing logos for each of the MTA's sub-units (e.g., Staten Island Railway, Bridges and Tunnels) were created using Helvetica Medium and Helvetica Medium Italic. But for printed material the typographic options were opened up to include other weights of Helvetica as well as Times Roman. Most likely, the ready availability of Helvetica and Times Roman as core fonts on PCs was the prime factor in this decision. Dull—but easy to administer.

Conclusion

The sign system that Noorda and Vignelli first proposed to the NYCTA in 1966 has proved remarkably resilient. It endures today despite a number of severe changes that make one wonder if it can even be attributed to them and Unimark anymore. Their modular system survives but only as graphic units rather than physical components. The black stripe, mistakenly created by the sign shop but then integrated into the 1970 standards manual, exists in a variety of colors and iterations. The black-on-white color scheme is now reversed. The colored disks are still used—some with the original artwork—but the colors themselves have changed. Finally, Standard Medium has given way to Helvetica Medium—or more accurately to Neue Helvetica 65. Yet, not only is the Unimark DNA still in evidence but it has served as the basis for a much broader transportation system identity.

So, the answer to whether or not Helvetica is the typeface of the New York City subway system is that it is—but that it was not.



The way it was (and still is): ITC Bookman used at the Broad Street J/M/Z (post-1995) and a recent construction sign at 59th Street/Columbus Circle set in Arial condensed.

About the Author: Paul Shaw is a calligrapher and typographer working in New York City. In his more than 20 professional years as a lettering designer, he has created custom lettering and logos for many leading companies, including Avon, Lord & Taylor, Rolex, Clairol and Estée Lauder. Shaw has taught calligraphy and typography at New York's Parsons the New School for Design for more than a decade and conducted workshops in New York and Italy. His work has been exhibited throughout the United States and Europe.
