Union Elevated Railroad:
The Union Loop
Chicago
Cook County
Illinois

HAER No. IL-1

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record
National Park Service
Department of the Interior
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IL-1

UNION ELEVATED RR.
UNION LOOP

Date: 1897

Location: Lake, Wells, Van Buren Sts. and Wabash Ave.
Chicago, Cook Co. IL.

Owned by: Originally; Union Elevated RR.
Present; Chicago Transit Authority

Significance: One of the few Elevated Railways still operating in America. Important to the history of Chicago and its downtown. (the downtown area derived its name from this property. Responsible for uniting the original lines of what is now the Chicago Rapid Transit Authority.

Transmitted by: Dan Clement, 1983 with historical data drawn from the National Register of Historic Places Determination of Eligibility file.

The Chicago Union Loop is an 11,200 linear foot elevated street railway facility. Starting at the inter section of Lake St. and Wells St. it runs south turning east on Van Buren St. At the corner of Van Buren and Wabash it turns to run north on Wabash turning west on Lake St. to terminate back at Wells St. There are nine, passenger stations along the route which is owned and operated by the Chicago Transit Authority.

The conceptual beginning of the Union Loop was in 1894, the year that the Union Elevated Railroad Company was formed. Originally, as the radial elevated rail lines were built to replace the surface trolley lines, each line operated from ~~its~~ own stub-end terminal in the central area of the city. As more elevated lines came into being to serve the growing city population, there came a need to facilitate interline transfers. As transit demand grew, there came a need to eliminate stub-end operations. An elevated loop structure, with two interconnected tracks would permit both.

The Chicago Union Loop Elevated structure is a composite of structural steel and wood. The entire basic framework is steel, built up by the riveting together of plates and angles. The support columns and bents are formed "I" sections and ~~ae~~ are spaced at 30 to 50 foot intervals along the running sections. In Lake Street, Wells Street and Wabash Avenue, the typical cross section is 24 feet. This permits a two lane vehicular cartway under the structure with parking lanes between the columns and the curb. In Van Vuren Street, the structure is 52 feet wide, curb to curb.

The longitudinal members are triangulated trusses, of the same built up composition, and support the track bed of creosoted wooden ties. The track fixation is standard, tie plate and spike, with the ties being placed directly on the flange angles capping the longitudinal members of the structure.

At the passenger stations, the structure widens to accommodate the platforms, stairs, station agent booths and other appurtenances. The typical platform width is eight feet at the extremities and twelve feet at the stairwell entries. Overall station width varies from about 40 to 60 feet.

The primary design principle was function, with little evidence of typical late Victorian Period ornamentation. The stations are not architecturally uniform and reflect the individual company design decisions. Selectively upgraded by the Chicago Transit Authority to improve passenger comfort and safety, fiberglass, plexiglass, aluminum, Monel metal and other modern materials have been used in the remodelings. The original steel frame and wooden decking remain otherwise unchanged.

Construction of the Loop Elevated was essentially completed, in 1897. It took over the structures and stations already in place, e.g. the Lake Street Elevated Lines' facilities to State Street and the South Side Rapid Transit Company's facilities on Wabash Avenue, and completed the circuit, adding sations at the major generators. In 1900, the Northwestern Elevated Railroad began operations from downtown, completing the radial connections. In order to avoid confusion between the lines, stations were subdivided for separate line use and the North and Lake services were operated clockwise around the Loop, while the South and

West Side services operated counterclockwise on the other track. The four transit companies merged in 1911. Under the aegis of the Chicago Railways Trust, transfer fares on the elevated were eliminated and riders could traverse the city from north to south on a single fare. In 1924 the four companies consolidated under the name of the Chicago Rapid Transit Company.

The Chicago system employed different techniques in its operation. In most cites no more than two services would be operated from the same platform. Because of the nature of the loop, as many as seven services would work a platform. Chicago also used[1] the idea of staggered or multiple berthing. Since the trains were relatively short it was possible to see two trains at one platform.

In 1945 the Chicago Transit Authority was formed and on October 1, 1947 took over all property of the Chicago Rapid Transit Company. By that time the State Street Subway had been running for four years and took away much of the traffic of the north side south side service off the Loop. During the late sixties the Loop went through another change. The new Lake Dan Ryan service reversed the direction of the inner track and only used the Lake and Wabash sides of the Loop. As of 1979, only two trains went completely around the loop. Sides were drawn as to the Loops future, with some calling for preservation and restoration, while others called for demolition of the Loop in favor of a more efficient transportation system. Whether it remains or not, the Loop will always be seen as an important part of Chicago's transportation history.

ADDENDUM TO
UNION ELEVATED RAILROAD:
THE UNION LOOP
(Chicago Loop L)
Along Lake Street (200 W. to 50 E.),
Wasbash Street (2000 N. to 400 S.),
Van Buren Street (50 E. to 200 W.),
and Wells Street (400 S. to 200 N.)
City of Chicago
Cook County
Illinois

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Denver, Colorado 80225-0287

HISTORIC AMERICAN ENGINEERING RECORD
UNION ELEVATED RAILROAD: THE UNION LOOP
(Chicago Loop L)

This report is an addendum to a 4 page report previously transmitted to the Library of Congress in 1983.

Location: The Union Elevated Railroad tracking is located within the public right-of-way following a route along Lake Street (200 W. to 50 E.), Wabash St. (2000 N. to 400 S.), Van Buren St. (50 E. to 200 W.), and Wells St. (400 S. to 200 N.)

Present Owner: Chicago Transit Authority

Present Use: Rapid Transportation

Significance: Significant in the history of American industrial archaeology, the Union Elevated Railroad is also important for its association with financier and traction magnate, Charles T. Yerkes and for its role in defining and shaping Chicago's downtown. According to Theodore Anton Sande, author of *Industrial Archeology: A New Look at the American Heritage,* to "the industrial archeologist, the Chicago Loop provides an ideal case study" (1976, 113). Having made its first run in 1897, the Union Elevated Railroad is one of only a few extant examples of transit systems that have remained in continuous operation for nearly a century. A "massive web of riveted steel girders and shining tracks," the Loop Elevated was designed by John Alexander Low Waddell, a Canadian-born engineer who played an important role in the history of American bridge design.

Chicago's earliest elevated line, the South Side Rapid Transit, began operating in 1892, in time to provide rapid transportation to huge crowds of visitors who came to the city for the World's Columbian Exposition.

Within the next few years, two additional elevated lines began running and several extensions were made. At the time, it was commonly believed that the elevated system could only be viable if there were a downtown loop that "would allow passengers to transfer to older transit lines at interchange points" (Cudahy 1979-80, 199).

A financier from Philadelphia, Charles T. Yerkes, who had purchased most of Chicago's existing surface car companies "seized the idea of an elevated loop and acted to realize it" (City of Chicago Sept. 1981, II-2). By circumventing laws, using bribery and other means of fraud, Yerkes succeeded in acquiring the rights-of-way and franchises to build the Loop Elevated between 1894 and 1896. The following year, a train carrying representatives of the Union Elevated Company made the first run around the entire loop. The company did not own any rolling stock, but allowed other companies to use the facility for a fee. Yerkes had achieved his ambition, however, his devious tactics soon caught up with him. In 1899, "when he attempted to secure a no-cost hundred year extension of his streetcar franchise, an angry mob surrounded City Hall during the Council debate and demanded that Yerkes be repudiated" (Cudahy 1979-80, 204). He sold his Chicago holdings, and went on to build the London subway system.

Historically, the Loop Elevated "defined the most prestigious locations for office buildings inside the steel girdle" (City of Chicago Sept. 1981, 3). An earlier system of surface streetcar lines encircled the city's central area, however the prominent visual presence of the elevated helped Chicago's downtown earn its well-known popular nickname, the Loop. Today, the elevated tracking structure is still associated with the definition of the Loop for many Chicagoans.

PART 1. HISTORICAL INFORMATION

A. Physical History

1. Date of Erection: 1896-97

2. Architect: The designer of the Loop Elevated structure and many of the associated stations was John Alexander Low Waddell (1854-1938), Consulting Engineer of Kansas City, Missouri. Born in Port Hope, Ontario, Canada, Waddell received training in engineering from the Rensselaer Polytechnic Institute in Troy, New York in 1875 (Brown 1989,

1). Apparently, Waddell went on to receive a PhD in Engineering. There is some discrepancy in the literature regarding the date and university from which he received the degree, however, he was often referred to as Dr. Waddell.

After having served as a government draftsman on the Canadian Pacific Railway, Waddell worked for a short time as chief engineer of Raymond & Campbell, a firm in Council Bluffs, Iowa that specialized in bridge design. In 1882, he published his first book, *The Designing of Ordinary Iron Highway Bridges*. In the same year, he accepted a teaching position in the Imperial University of Tokyo's Civil Engineering Department. In 1886, Waddell moved to Kansas City, Missouri and the following year, he began working as an engineering consultant and an official agent of the Phoenix Bridge Company of Phoenixville, Pennsylvania. Waddell was "in an excellent position to make the most of the frenzied competition among American railroad companies" and he began specializing in the design of bridges on the new rail routes (Brown 1989, 3-4).

In 1892, Waddell resigned the Phoenix Bridge Company to exclusively devote himself to his private engineering practice. The following year, Waddell built the first of what became his most notable engineering innovation, a vertical lift bridge. Constructed over the south branch of the Chicago River, the South Halsted Street Bridge was the prototype for many other "large-scale, high-clearance lift span" bridges constructed throughout the United States. (Brown 1989, 4). Waddell patented his vertical lift bridge, "preventing other engineers from entering the field during the period" (Missouri Highway and Transportation Dept., May, 1982).

Waddell's work on the Union Elevated Railroad spanned from initial planning in 1894 to construction drawings developed between 1895 and 1897. It is likely Waddell's reputation in engineering made him the obvious choice for the design of the Union Elevated Railroad. The Phoenix Bridge Company, which had previously employed Waddell, was the company responsible for building the Lake Street segment , which was the first part of the Loop Elevated system to be constructed.

Some of Waddell's plans for Union Elevated Railroad stations were apparently modified in 1897, prior to construction. Many of these changes were made by other designers. Waddell was, however, involved in at least one other elevated station in Chicago. This was the Armitage Avenue Station designed by Waddell and architect William R. Gibb in

1900 (Sinkevitch 1993, 183). Although this was not part of the Loop Elevated system, the client was the Northwestern Elevated Company, then owner of the Loop Elevated.

In 1899, Waddell formed a partnership with Ira G. Hedrick. That partnership lasted until 1906. The following year, Waddell formed a partnership with John Lyle Harrington, who had served as an engineer in the office of Waddell and Hedrick since 1901. Waddell & Harrington was dissolved in 1914, however, the successor firm of Howard Needles Tammen & Bergendoff continues to practice engineering in Kansas City to this day (Brown 1989).

Throughout his career, Waddell designed dozens of structures in the United States and abroad. In addition to Waddell's patented design for the vertical lift bridge, his recognized engineering innovations include the use of nickel-steel in bridge construction. For this latter work, "Waddell was awarded the Normal Medal from the American Society of Civil Engineers for his contributions to the engineering sciences" (Miszczuk 1976). In addition to Chicago's Union Elevated Railroad, Waddell is recognized for contributing to Boston's elevated system.

A number of Waddell's structures are listed in the National Register of Historic Places, including the Union Elevated Railroad. Among others are the Fratt Bridge in Kansas City, Missouri, and the Detroit Bridge in Cleveland, Ohio. Other notable bridges designed by Waddell are the reinforced concrete Arroyo-Seco Bridge in Passadena California; the cantilevered Quebec Bridge over the St. Lawrence River in Canada; and a vertical lift bridge over the Don River at Rostov, Russia (Miszczuk 1976).

Waddell published a number of text books in addition to *Designing Ordinary Bridges* (Brown 1989). Among them are *De Pontbus: A Pocket-Book for Bridge Engineers* (1898); *Bridge Engineering* (1916) and the *Economics of Bridgework* (1921) (Miszczuk 1976).

In 1920, Waddell moved his headquarters to New York and established branch offices in several foreign countries so he could best facilitate what had become an extensive international practice. John Alexander Low Waddell died in New York City on March 3, 1938. During the time of his death he had been serving as supervising designer for the 1939 New York World's Fair (Miszczuk 1976).

3. Original and Subsequent Owners: The original owner of Chicago's Union Elevated Railroad was Charles T. Yerkes. With the intent to develop an elevated tracking system that would encircle downtown, Yerkes purchased the Lake Street Elevated Railroad in 1894, and received permission from the City Council on October 1 of that year to extend the line east to Wabash Ave. (Cudahy 1979-80, 200). On November 22, 1894, the Union Elevated Railroad Company was formed with Charles T. Yerkes as "the controlling spirit of the corporation" (*The Economist* 1896, 31).

In 1895, Yerkes acquired a franchise for the Union Elevated Railroad Company from the City Council, allowing extension of the tracking south on the public right-of-way along Wabash Ave. Also in that year, another company owned by Yerkes, the Northwestern Elevated Company, acquired a franchise to build tracking on the public right-of-way along Fifth Ave. (now Wells St.) This gave Yerkes "three legs of the loop" (City of Chicago Sept. 1981, II-2). To obtain the fourth section and complete the circle, he formed the Union Consolidated Railroad, which obtained a franchise to build tracking over Van Buren Street on June 30, 1896.

Yerkes was known for using unethical and illegal methods in his business dealings. In 1899, after finding himself "not only politically blockaded but socially ostracized as well," Yerkes sold all of his Chicago traction interest for nearly $20,000,000 and moved away (Malone 1936, 611). The purchasers were Peter A. B. Widener and William L. Elkins, the "Philadelphia traction kings," who had previously provided Yerkes with the loan for his first street car company in Chicago (ibid., 610).

In 1901, the Union Elevated Railroad came under the ownership of the Northwestern Elevated Railroad (Chicago Rapid Transit Company, 1925, 16). In 1911, the company was brought under one management with three other existing elevated companies to provide "better coordinate service around the Loop" (City of Chicago Sept. 1981, II-3). Composed of the Northwestern Elevated Railroad, the South Side Elevated Railroad Company, the Chicago and Oak Park Elevated Railroad Company and the Metropolitan West Side Railway Company, this voluntary association was known as the Chicago Elevated Railways Collateral Trust (Chicago Rapid Transit Company, 1926, 23). Millions of dollars in loans were secured by the Chicago Elevated Railways Collateral from the Commonwealth Edison Company for improvements to accommodate unified service. Unable to meet the interest payment on the new loans, the voluntary association defaulted, and Commonwealth Edison assumed ownership of the four

elevated companies (Cudahy 1982, 49).

Samuel Insull, who had begun as Thomas Edison's personal secretary, had risen in the company's ranks to become President of the Commonwealth Edison Company. When Commonwealth Edison assumed possession of the Chicago Elevated Railways Collateral Trust's elevated companies in 1911, Insull became the principal stockholder of all four companies (ibid.). In 1924, the four companies were formally unified into the Chicago Rapid Transit Company. Samuel Insull continued serving as Chairman of the Board to the Chicago Rapid Transit Company (Chicago Rapid Transit Company 1925, 3).

The Chicago Rapid Transit Company suffered financial difficulties during the Great Depression, and went into receivership in 1932. During the years that followed, it was increasingly evident that it was necessary for all of Chicago's mass transit companies to be publicly owned. After years of studies and reports, the Illinois State Legislature passed an act in April of 1945 authorizing the creation of a public mass transportation agency for metropolitan Chicago (Cudahy 1982, 64). After approval by public referendum and the financial and legal dealings necessary to transfer the Chicago Rapid Transit Company and the Chicago Surface Lines, a new public owner, the Chicago Transit Authority was established in 1947. The elevated as well as the city's bus and subway service has remained under continuous ownership and operation since then.

4. Builder, contractor, suppliers: The Loop Elevated structure was built by the following firms:

Wells Street Segment : Union Bridge Co., New York, NY., and Elmira Bridge Co., Elmira, NY. (CTA Archives, Engineering Dept., reviewed by J. Sniderman July 1, 1994).

Lake Street Segment: Phoenix Bridge Co, Phoenixville, PA. (City of Chicago Sept. 1981, II-3).

Wabash Street and Van Buren Street Segments: Pencord Iron Works, Pencord, PA (City of Chicago Sept. 1981, II-3).

5. Original plans and construction: A full set of original plans and construction drawings dated between August of 1894 and January of 1897 and signed by John Alexander Low Waddell are on microfilm in the archives of the Chicago Transit Authority (CTA Archives, Engineering

Dept. reviewed by J. Sniderman July 1, 1994). These include plans for the complete tracking structure and most, if not all of the original ten stations (There are more than one hundred original signed drawings). Waddell's drawings of 1894 have the client's name titled as Union Consolidated Elevated Railway, and some of them are titled Lake Street Elevated Railway Extension. All of his other drawings, which are dated between 1895 and January of 1897, are titled Northwestern and Union Elevated Railroad, Chicago, Illinois).

There is another smaller set of drawings dated between February and April of 1897 that do not include Waddell's name. Most of these drawings bear the name of A.M. Hedley, Consulting Architect of Chicago. Others have no name on the title block but have an approval signature of Charles Weston, Chief Engineer. All of them have the client's name titled as Union Elevated Railroad. Although it cannot clearly be documented, it appears that most of these 1897 drawings (which do not have Waddell's name) were used to modify and simplify Waddell's plans prior to the construction of stations in 1897 (CTA Archives, Engineering Dept. reviewed by J. Sniderman July 1, 1994).

In most cases, the Hedley plans show designs that are distinctly similar to those by Waddell of only a few years earlier. In fact, it is quite possible that Hedley began with a set of drawings traced from Waddell's originals. It seems apparent that the Union Elevated Railroad Company was re-thinking circulation and ticketing methods prior to the construction of stations, and Hedley served as consulting architect to make those changes. Hedley's drawings place the ticket booth in the upper level and provide an open-air lower level cross-over, while Waddell's drawings show an enclosed lower level area with ticket and cross-over functions. Many of Hedley's drawings show a simplified version of the ornamentation shown on Waddell's drawings, however, there are also some late 1896 drawing of Waddell's in which he had already simplified ornamentation (CTA Archives, Engineering Dept. reviewed by J. Sniderman July 1, 1994).

Little is known about Alfred M. Hedley, however, he may have been a relative of Frank Hedley, who was the Lake Street General Manager at the time (Cudahy 1982, 27). Alfred M. Hedley's name appears in the Lakeside City Directory of 1897, but does not reappear in subsequent years (Lakeside City Directory 1897).

6. Alterations and additions: The Loop Elevated has undergone numerous alterations over the years, however, changes to the overall appearance and

character of the tracking structure have been few. There have been numerous minor structural changes to girders, beams, columns, etc. Below is a chronological list of the more extensive alterations to the Loop Elevated. (This does not include a detailed account of all station changes and alterations.)

1903 Platform extension were added to the stations (City of Chicago Sept. 1981, II-4).

1912-13 Various changes to allow for through-routing and unified service with free transfer between lines. This included structural changes at intersections, platform extensions and exit stair modifications, erection of transfer bridges and canopies etc. (City of Chicago Sept. 1981, II-4; CTA Archives, Engineering Dept. reviewed by J. Sniderman July 1, 1994).

1916 Windows were added at some stations for windbreaks (CTA Archives, Engineering Dept. reviewed by J. Sniderman July 1, 1994)

1925-27 Columns along Wabash Ave. were moved to accommodate street widening and improved traffic flow. Platform extensions were also made, particularly at Wells St. where the extension created a continuous platform (City of Chicago Sept. 1981, II-4; Chicago Rapid Transit Company, 1924, 1926, 1928).

1930 Transfer bridge constructed at Quincy Street station (Chicago Rapid Transit Company, 1931).

c. 1935 Platform extensions were made at Van Buren Street creating on continuous platform (City of Chicago Sept. 1981, II-4).

1958 Connection of the old west side line to the Loop at Van Buren St. and Wells St. were removed (City of Chicago Sept. 1981, II-4).

c. 1960 Continuous platform running along Wells St. was removed (City of Chicago Sept. 1981, II-4).

1965 Platforms at Lake St. and Wabash St. were shortened (City of Chicago Sept. 1981, II-4).

1967 Both station houses at Adams St./Wabash Ave. were demolished, and east side station houses at Randolph St./Wabash Ave. and Madison St./Wabash Ave. were demolished. The west side station house at Randolph St. /Wabash Ave. was completely remodeled. South facade of Lake St./ State St. station was completely remodeled. Escalators with fiberglass enclosure replaced original stairs at Lake St./State St. station. Corrugated fiberglass windbreaks were added in place of multi-paned glass in all of the stations. (City of Chicago Sept. 1981, I1-4).

1975 The Van Buren St./Dearborn St. stations and the Van Buren St./ State St. stations were demolished and the continuous platform at Van Buren St. was removed (City of Chicago Sept. 1981, II-4).

B. Historical Context:

In 1848, Chicago's first locomotive train, the Pioneer, made its inaugural run (Bach and Wolfson 1986). Within the following two decades, railroads were built linking Chicago to the Mississippi River on the west, and New York and Philadelphia on the east. Along with the construction of the Illinois and Michigan Canal, the railroad boom transformed the city into one of the largest centers for the transportation of agricultural products, lumber, and other goods in the world (Mayer and Wade 1969, 44). This contributed to the growth of Chicago's population and the need for a city-wide transit system; however, it was several years before cable car and electric railway systems came about.

Before the early 1880s, nearly all of Chicago's street railways "were operated by animal power," except for a few "suburban steam dummy lines (Weber 1936, 21). In 1882, the cable car system that had been introduced in San Francisco nine years earlier, arrived in Chicago. Within the next several years, eighty-two miles of these lines were constructed in Chicago, "making it the largest cable car system in the world" (Duis 1983, 2). The electric street car, an innovation developed in 1887, was introduced to the city in 1890. The initial line, which was known as the Calumet Electric Street Railway Company, included "the first overhead trolley system in the city" (Weber 1936, 21). There were several advantages to the new technology. The installation of electric railways was less expensive than cable cars and individual cars could be connected to provide a row of trains during rush hour. Within the next several years, many additional electric

railway companies began operating in Chicago and the surrounding suburbs.

During the mid 1880s, owners of several local streetcar companies began efforts to bring the new elevated railway system that had been developed in New York to Chicago, as they believed that it was inevitable that the elevated would eventually replace streetcars (Cudahy 1979-80, 194). The idea of creating an elevated system had been discussed as early as 1825 (ibid.) It was not until 1868 that Connecticut-born inventor Charles T. Harvey opened what is believed to be the "first elevated line in the world" (Hood 1993, 49). Initially this consisted of a one-half mile stretch of tracking in lower Manhatten. In 1870, the system was extended throughout Manhattan in 1870, and by 1885, it was extended into Brooklyn. The earliest New York elevated line had cable propulsion. Within the next several years, this was replaced by a steam locomotive system (Hood 1993, 49-50).

Although elevated lines were more costly to construct than horse or cable railways, "they could carry more passengers faster and more conveniently in crowded urban areas where traffic clogged the routes of surface travel" (Cudahy 1979-80, 194) . Many of Chicago's streetcar owners began competing to build the city's first elevated and formed new companies to do so in the late 1880s. Legal restrictions, political issues, and the high cost of building such a system, however, delayed its introduction in Chicago for several more years.

Efforts in 1892 to prepare for Chicago's World's Columbian Exposition spurred the completion of the city's first elevated line. Built by the South Side Rapid Transit Company, this line extended from Congress Street to 39th Street, when it began running in 1892. The following year, it was extended to 63rd Street, in time to bring large crowds of visitors to Jackson Park for the World's Fair. Modeled after the New York Elevated, the South Side Elevated utilized steam "dummies" (Chicago Rapid Transit Company 1925, 15).

One major difference between the New York precedent and the new Chicago line was that "the elevated lines in Manhattan and Brooklyn ran on structures built largely over public streets," however, Chicago's South Side Elevated extended along "corridor-like alleys behind and between rows of buildings" (Cudahy 1979-80, 197). Because the South Side Elevated was constructed in this way, it became familiarly known as the "Alley L" (Chicago Transit Authority, reprint 1940,1). The reason that this line was constructed along alleys was that Chicago elevated companies were required to comply with the Adams Law, and an Illinois Statute requiring that approval signatures be obtained from the owners of property along every mile of a proposed route. Paying owners for signatures had become a common practice. Elevated companies, however, soon learned "that it cost less

to acquire alley rights-of-way than to pay for approval signatures for street construction, and that the costs of the former were more predictable" (Cudahy 1979-80, 197).

The second elevated line in Chicago, the Lake Street Elevated, began operating in 1893. Linking the west side to downtown at Madison Street, this elevated did not extend along alleys, but was built directly over a major east-west thoroughfare, Lake Street. It was commonly believed that this was because the original franchise for the Lake Street Elevated Company was held by a notorious racketeer, Mike McDonald. It was rumored that McDonald, who was often called King Mike controlled two-thirds of the City Council. Apparently the "council relaxed its normal requirements for approval signatures" for him (Cudahy 1979-80, 198). The Lake Street line was extended by an additional six miles to the west in 1894. The next elevated line in Chicago, the Metropolitan West Side Elevated began operating in 1895. It was the "first rapid transit system in the United States to use electricity on a scale beyond a simple streetcar installation" (Cudahy 1979-80, 201). It linked the near northwest and west sides to downtown at Franklin Street.

All three of these elevated lines terminated at a different parts of the edge of downtown, but none of them ran into or through the Loop. The idea of creating a quadrangle of tracking that would provide access to all of downtown and allow passengers to transfer at interchanges had been discussed for several years. In fact, a surface loop of street car lines already existed. Although some of the transit company owners were interested in creating an elevated loop, the possibility of creating such structure downtown seemed unlikely because of the Adams Law. "The cost of downtown real estate effectively precluded any thought of an Alley L in the business district, and the need to obtain approval signatures for building elevated lines over thriving downtown street put the elevated companies in a very difficult position" (Cudahy 1979-80, 197). Without some type of unification for the individual lines and stations at regular intervals throughout downtown, however, the future financial stability of the elevated companies was extremely questionable.

The man who managed to overcome the legal, political and financial obstacles associated with developing the Loop Elevated system was Charles T. Yerkes, Jr. Extremely enterprising and ambitious, Yerkes' methods were manipulative, devious, and quite often illegal. His career was a "phenomenon of Chicago life which interested a young man then serving as a newspaper reporter" (Hayes 1944, 240). That young man, Theodore Dreiser, who went on to become a highly successful novelist, immortalized Charles T. Yerkes, and his corrupt business practices, in three works of fiction, *The Financier*, *The Titan* , and *The*

Stoic. The "character of Frank Algernon Cowperwood, the principal figure" in all three famous novels was so closely "modeled on Yerkes that in the absence of a true biography," the Dreiser trilogy can serve "for those who would like to learn more about the real-life traction magnate" (Cudahy 1979-80, 204-05).

Born in Philadelphia in 1837, Yerkes was the son of the President of the Kensington National Bank (Malone 1936, 610). At the age of seventeen he began clerking at a brokerage firm, and four years later, he started his own brokerage office. By the time he was twenty-four, Yerkes had his own bank. He was ruined, however, in the "Panic of 1871 and then imprisoned for failure to give 'preference' to the City of Philadelphia over other creditors during the collapse" (Cudahy 1982, 17-18). Yerkes was pardoned after spending seven months in jail.

After prison, Yerkes faced "a hostile and gossipy world," but "managed somehow to reestablish himself financially" (Malone 1936, 610). Although he became a major investor in railway companies and was quite successful, he was shunned by Philadelphia society, particularly due to a scandalous divorce. Yerkes, and his second wife, Mary Adelaide Moore, moved to Chicago in 1882. With the financial backing of Philadelphia traction kings, Peter A.B. Widener and William L. Elkins, Yerkes began purchasing many of Chicago's existing streetcar companies.

In 1894, Yerkes acquired the Lake Street Elevated Company, which he perceived as a "potential threat to his West Chicago Street Railroad" (Cudahy 1982, 16-17). Yerkes had hoped to establish a "system of streetcar feeders to connect Lake Street elevated stations with the various West Side neighborhoods adjacent to the lines" (Cudahy 1979-80, 199). It was increasingly obvious, however, that none of Chicago's existing elevated lines would remain financially stable without better access to and through downtown. Yerkes thus set out to develop the Loop Elevated.

Aware that it would be too expensive to secure the rights-of-way for downtown alleys, Yerkes began the process of gaining approvals from property owners. He did not announce his intention to build the Loop Elevated structure. Rather, "he quietly proceeded to create one section at a time," by requesting approvals for making extensions to his existing lines (Cudahy 1979-80, 200).

He first requested approval to extend the Lake Street Elevated eastwardly to Wabash Ave. Yerkes then requested approval for the extension of the Northwestern Elevated Company, for which the city had given him a franchise in 1894. Even though that line had not yet been constructed, Yerkes was able to secure permission to build an extension to the line along Fifth Ave., a

thoroughfare now known as Wells Street. There was opposition from owners of property on Fifth Ave., however, Yerkes secured enough signatures by paying owners for them. By "dealing and politicking" Yerkes gained a franchise for the Wabash Ave. stretch (Cudahy 1982, 20). Yerkes formed the Union Elevated Company and "by now he made no pretense about his ultimate objective" (Cudahy 1979-80, 200).

The fourth and final stretch of the Loop Elevated, between Wabash Ave. and Fifth Ave. over Van Buren Street presented the most difficulty. Property owners along this half mile area "were dead set on squashing Yerkes as well as his proposed L" (Cudahy 1982, 21). Yerkes knew, however, that the Adams Law only required the signatures of a majority of owners along each mile. To realize this final stretch, he formed a new company, the Union Consolidated Elevated Company. Under the auspices of this company, Yerkes received a majority of approvals by seeking out only the signatures of property owners west of Fifth Ave., an area that was not directly affected by the construction. Final approval from the City Council was given to Yerkes on June 30, 1896. By that point "work was already underway on the previously approved Wabash, Fifth Avenue and Lake Street segments" (Cudahy 1982, 21).

On Labor Day of 1897, the first run around the entire circumference of the Loop Elevated took place. The following month, the three elevated companies that were already operating in Chicago negotiated leases to use the Union Elevated Railroad. By mid-October of 1897, the three lines ran along the Loop simultaneously. The Lake Street Elevated and the Metropolitan West Side Elevated ran clockwise on outside tracks, and the South Side Elevated ran counter-clockwise on an inside track. A fourth line, the Northwestern Elevated was also meant to run counter-clockwise on an inside track. This was the Northwestern Elevated Company. It was no where near completion, however, when the Loop Elevated opened for business in October of 1897.

The Northwestern Elevated Company was one of the two lines owned by Charles T. Yerkes which he had received extensions for, in order to establish the Loop Elevated. Yerkes and his Philadelphia syndicate had actually received a franchise for the Northwestern Elevated from the city as early as 1894. Construction of the line was "halted in 1896 for want of sufficient capital, while strikes and shortages of materials necessitated two extensions of the municipal franchise for building the elevated road" (Cudahy 1979-80, 203-04). The final franchise was due to expire on the first day of 1900.

On December 31, 1899, the Northwestern Elevated Company announced that the line was finished. It was then the common procedure for the elevated to go

through a final inspection by the city's Public Works Department. The Public Works Commissioner's assistants found the new elevated line to be substandard in many respects. "Portions of the structure lacked the proper number of rivets, and only three of the fourteen stations were ready for use" (Cudahy 1979-80, 204). On New Year's Day of 1900, all work on the Northwestern Elevated and use of its passenger trains were halted.

As efforts were being made to finish the Northwestern Elevated in 1899, Yerkes was also busy trying to obtain a one-hundred-year no-cost extension to his street car franchises. During the City Council's discussions on the matter "a shouting mob surrounded City Hall demanding that Yerkes be repudiated" (Cudahy 1982, 37). Although it was believed that Yerkes had spent more than a million dollars to bribe city officials to support him on this matter, he was voted down. Yerkes found that he was popularly despised and that he had lost his political stronghold. "Opposed by powerful financiers who considered his business methods dangerous and regarded him as a menace to stable finance, he sold his holdings to his friends Widener and Elkins in 1899" (Malone 1936, 611).

Yerkes returned to New York with fifteen million dollars in cash. The following year, he moved to England and built three of London's major subway lines. In spite of his many great successes, Charles T. Yerkes was near bankruptcy when he died in 1905 (Malone 1936, 611).

Throughout the years since the Loop Elevated was initially constructed in 1897, there were frequent criticisms about the structure's appearance, obstruction of light, and the sound. "Some complained that the elevated created a kind of Chinese Wall that damaged property outside; others thought the massive steel structures awkward and ugly, obstructing ground traffic and shutting out the sun and daylight" and most found the noisy squealing and rumbling unpleasant (Mayer and Wade 19 , 214). Over the years, there were many studies to investigate ways of improving and upgrading the Loop elevated, and from time to time there were discussions about its potential demolition. In spite of such criticisms, the Loop Elevated spurred "extraordinary economic growth" (Mayer and Wade 19 , 210).

The location of a business or store in relation to the Loop Elevated became an important factor in its success or failure. The Loop Elevated "defined the core of Chicago's central business district and identified the desirable and prestigious locations" (Mayer and Wade 19 , 214). Pedways were occasionally built by Loop stores to provide attractive and convenient connections with the elevated for shoppers. One example was a pedestrian bridge structure designed by Louis Sullivan, linking the Schlesinger and Mayer Store to the Union Elevated Railroad (files of Tim Samuelson, Commission on Chicago Landmarks, reviewed by

Sniderman June 29,1994). This beautifully ornamented structure with glass roof was constructed in 1897, the year that the Loop Elevated first opened. The pedway was demolished in recent years.

The Loop Elevated, has been in continual operation for nearly a century. Although it has undergone various changes and alterations over the years, its form and overall appearance have remained constant. Today, as in previous years, the Loop Elevated structure continues to define the heart of downtown for most Chicagoans.

PART II. ARCHITECTURAL INFORMATION

A. General Information:

1. Engineering Character: The Union Elevated Railroad system is of engineering merit based on four criteria. First, the system is of merit in the history of American industrial archaeology. Second, it is of merit for its association with financier and traction magnate, Charles T. Yerkes. Third, it is of merit for its role in defining and shaping Chicago's downtown. Fourth, the system is of merit as one of the only few extant examples of transit systems that have remained in operation for nearly a century.

2. Condition of Fabric: Excellent

3. Summary Description: The Loop Elevated system is elevated over the street by steel buttressing girders. The system is divided into two portions, the substructure and superstructures. The substructure consists of a foundation, tress elevations, transverse sections and a structural system. The superstructures are the numerous stations that are supported by the substructure.

   The Loop Elevated continues to operate after nearly a century. Although, the system has undergone various changes and alterations over the years, its form and overall appearance have remained constant (see alterations and additions section for discussion). Today, as in previous years, the Loop Elevated structure continues to define the heart of downtown. Most importantly, the Loop Elevated system continues to provide train service to the people of Chicago. In particular, the system allows passengers to transfer to other transit lines at individual station interchange points. In general, the integrity of the Loop Elevated system remains intact.

B. Description of Substructure:

1. Overall Dimensions: The Union Elevated Railroad tracking is located with in the public right-of-way following a route along Lake Street (200 W. to 50 E.), Wabash Street (2000 N. to 400 S.), Van Buren Street (50 E. to 200 W.), and Wells Street (400 S. to 200 N.).

2. Foundation: The structural system is rooted in the street below the Union Elevated Railroad system and is surrounded by asphalt.

3. Structural System: The Union Elevated Railroad system is supported by a buttressing girder system. This buttressing girder system in part consists of vertical I-sections that are rooted into the street below and are surrounded by asphalt. These vertical I-sections measure 1'3" x 1'4 1/2". The vertical I-sections directly support closely spaced flat I-beams. These closely spaced flat I-beams in turn form part of the inverted truss elevation. Specifically, the elevated tracks are superimposed on the tress elevations which in turn is supported by the vertical I-sections. Additionally, the numerous stations are suspended, or supported and extended out from the buttressing system.

C. Site and Surroundings:

1. General Setting and Orientation: The Union Elevated Railroad system is located in the heart of downtown Chicago and contributes to the definition of the loop area. The system is surrounded by office buildings, restaurants, parking facilities, residential and commercial establishments.

PART III. SOURCES OF INFORMATION

A. Architectural Drawings and Photographs:

Chicago Transit Authority Archives, Engineering Dept., drawings on microfilm made available by CTA staff member Clifford Hayes, reviewed by J. Sniderman July 1, 1994.

Chicago Transit Authority Library, photographs and reports made available by CTA staff member Violette Brown, reviewed by J. Sniderman July 1, 1994.

Commission on Chicago Landmarks, photographs and photo-reproduction of drawing entitled "Elevation of Bridge Connecting Premises of Schlesinger and Mayer at 141 Van Buren with Union Loop R.R." in the files of CCL staff

member, Tim Samuelson reviewed by Sniderman June 29,1994.

B. Bibliography:

A History of the Yerkes System of Street Railways (from the Earliest Organization of the Horse Railway to the Present Development of Cable, Electric and Elevated Railway of the North and West Districts) Chicago, 1897.

Bach, Ira J. and Susan Wolfson. *A Guide to Chicago's Train Stations Past and Present.* Athens, Ohio: Ohio University Press, 1986.

Brown, Kathi Ann. *Diversity by Design: Celebrating Seventy-Five Years of Howard Needles Tammen & Bergendoff 1914-1989,* Kansas City: HNTB, 1989.

"Chicago Elevated Terminal Railway Ordinance," as passed by the City Council of the City of Chicago, November 5, 1891 and approved by His Honor the Mayor, November 9, 1891, and accepted by the Chicago Elevated Terminal Railway Company, November 9, 1891, by its President, Joseph T. Torrence and attested by its corporate seal.

Chicago Rapid Transit Company. Annual Reports for the years 1924, 1925, 1926,1928, 1929, 1931, 1933, 1934.

Chicago Transit Authority. "The Story of the Chicago Rapid Transit Lines: The "L" System." *37th Anniversary Year Book of Division 308,* Elevated Railway Employees, reprinted May 1, 1940.

City of Chicago. "The Chicago Union Loop Elevated Structure: Reasons for Not Listing on the National Register of Historic Places" Submitted to the Illinois Historic Sites Advisory Council, October 13, 1976.

City of Chicago and Chicago Transit Authority. *Master Plan for the Loop Elevated: Rehabilitation and Historic Preservation.* Sept. 1981.

Clement, Dan. HAER IL-1 "Written Historical and Descriptive Data for the Union Elevated Railroad." Historic American Engineering Record, U.S. Dept. of the Interior. 1983.

Commission on Chicago Landmarks. Historic Resources Survey. Individual Resource Forms for Randolph/Wells St. Station, La Salle/ Van Buren St. Station, Quincy/Wells St. Station and Madison/ Wells St. Station, August, 1990.

Cudahy, Brian J. "Chicago's Early Elevated Lines and the Construction of the Union Loop," *Chicago History,* Vol. VIII,Winter 1979-80, pp. 194-205.

Cudahy, Brian J. *Destination Loop: The Story of Rapid Transit Railroading In and Around Chicago.* Brattleboro, VT.: The Stephen Green Press, 1982.

Duis, Perry. "Whose City? Part Two," *Chicago History,* Vol. XII, no. 2, 1983.

The Economist. Street Railway Supplement. 1896.

Hayes, Dorsha B. *Chicago: Crossroads of American Enterprise.* A Cities of American Biography. New York: Julian Messner Inc., Publishers, 1944.

Hirsch, Susan E. and Robert I. Goler. *A City Comes of Age: Chicago in the 1890s.* Chicago: Chicago Historical Society, 1990.

Hood, Clifton. *722 Miles: The Building of the Subways and how they Transformed New York*, New York: Simon & Schuster, 1993.

The Inter-Ocean. "Lease of Loop is Signed: Elevated Trains will Soon be Running Down Town, Vol. XXVI. No. 193, Chicago, Sunday, October 8, 1897.

The Lakeside Annual Directory for the City of Chicago. Chicago, Illinois: The Chicago Directory Company, 1897, 1898.

Malone, Dumas, ed. *Dictionary of American Biography*, Vol. XX, New York: Charles Scribner's Sons, 1936.

Mayer, Harold M. and Wade, Richard C. *Chicago: Growth of a Metropolis.* Chicago: University of Chicago Press, 1969.

Missouri Highway and Transportation Department, "Written Historical and Descriptive Data for the Armour, Swift, Burlington Bridge (A.S.B.); Winner Bridge; Missouri River Bridge; Fratt Bridge; North Kansas City Bridge," Historic American Engineering Record, U.S. Dept. of the Interior, May, 1982

Miszczuk, Edward J. "Fratt Bridge; Armour-Swift-Burlington Bridge," National Register of Historic Places nomination form, National Park Service, U.S. Dept. of the Interior, 1976.

Platt, Harold L. "Samuel Insull and the Electric City," *Chicago History*, Vol. XV, No. 1, Spring 1986, pp. 20-35.

Sande, Theodore Anton. *Industrial Archeology: A New Look at the American Heritage.* Battleboro, Vermont: The Stephen Greene Press, 1976.

Sinkevitch, Alice. *AIA Guide to Chicago.* San Diego: Harcourt Brace & Co., 1993.

Weber, Harry P. *An Outline History of Chicago Traction,* (compiled for Chicago Railways Co. and Walter J. Cummings and Guy A. Richardson, Its Receivers and Chicago City Railway Co., Calumet & South Chicago Railway Co., and Edward E. Brown and Harvey B. Fleming, Their Receivers). Chicago, 1936.

Weese, Harry. "Chicago Loop Elevated," National Register of Historic Places nomination form. National Park Service, U.S. Dept. of the Interior, 1978.

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PART IV. PROJECT INFORMATION:

This project was undertaken by the City of Chicago as it fulfilled Section 106 compliance requirements for a project that will affect the Union Elevated Railroad system. The City of Chicago contracted Archaeological Research, Inc. for the HAER documentation. Key project personnel included Julia Sniderman, historical researcher, Dr. John Vogel, historical consultant, Tom Yanul, photographer, Nancy Phillips and Karen Poulson, staff researchers and David Keene, principal investigator.