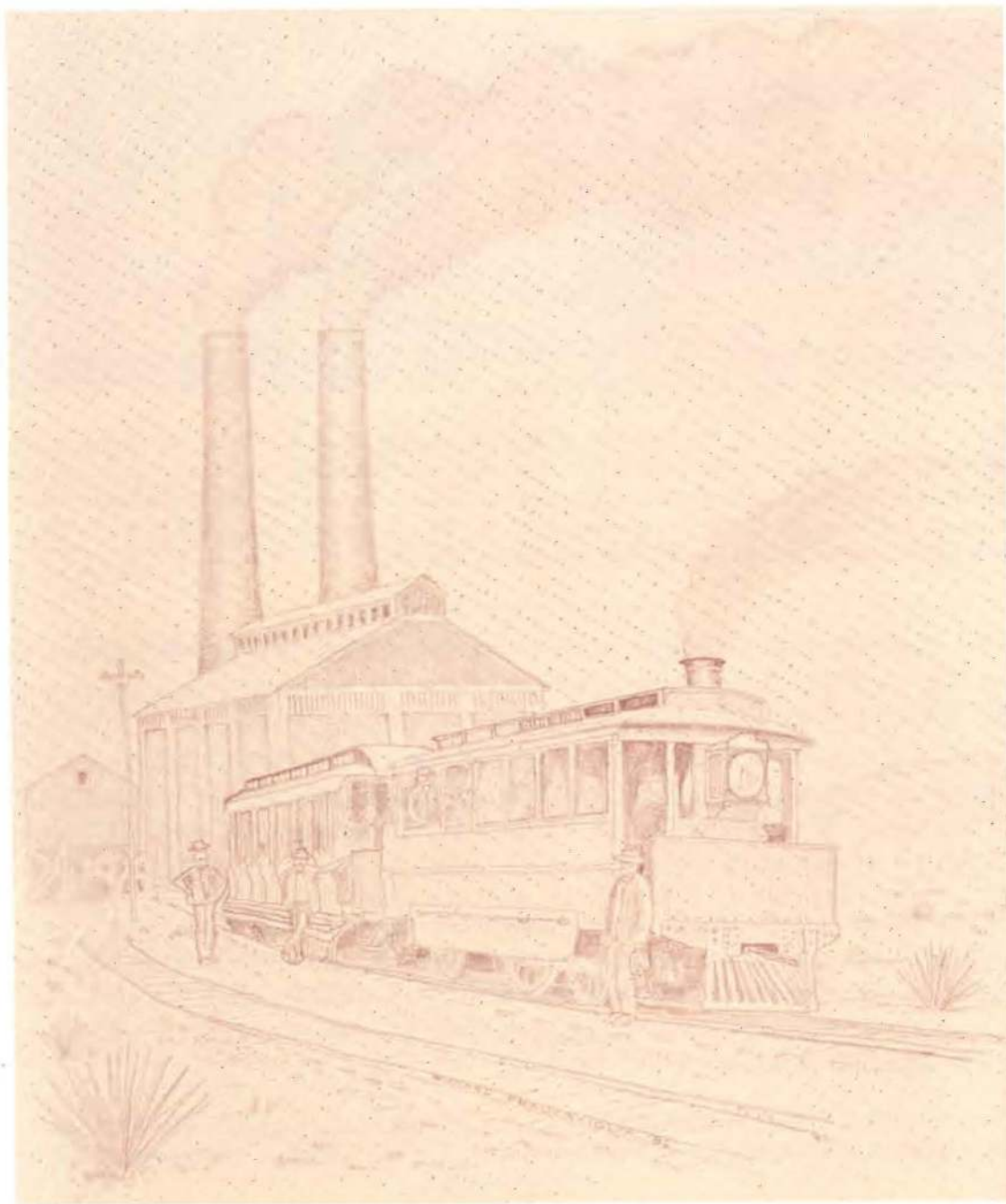


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STREETCARS TO THE SMELTERS: AN HISTORICAL OVERVIEW OF THE DOUGLAS STREET RAILWAYS, 1902-1924

by Richard V. Francaviglia

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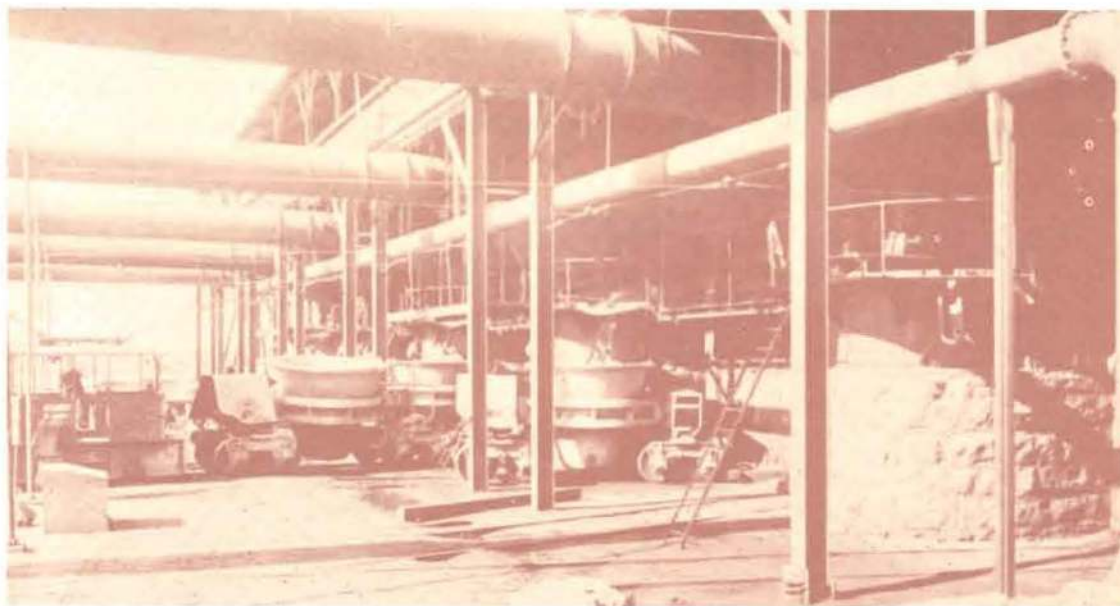


Fig. 1: From its inception, the economy of Douglas was geared to activity at the nearby copper smelters. Concentrated copper ore from the southwest and Mexico was smelted here, and then sent by rail to El Paso, where it was refined. Both smelters had an elaborate network of electrified railway trackage and were reached from the new city by the lines of the Douglas Street Railway. (Photo courtesy University of Arizona Special Collections, Tucson)

ABOUT THE AUTHOR

Dr. Richard Francaviglia, who lived in Bisbee from 1979 to 1984, now serves as Deputy State Historic Preservation Officer at the Ohio Historical Society in Columbus. He has authored numerous books and articles on architecture, mining, and railroad history, including *Railroad Station Planbook*; *Copper Mining and Landscape Evolution*; and *Mining Town Trolleys*. His article entitled "The Upper San Pedro Valley: A Century of Environmental Change in Cochise County" appeared in the summer 1984 issue of *The Cochise Quarterly*.

On the Cover: A Steam Dummy prepares to leave the Copper Queen smelter with an open car of the Douglas Street Railway in tow. The year is 1905, and within a year the line will be electrified. This sketch by author Richard Francaviglia is conjectural, based on photos of steam-powered street railway equipment and the Douglas copper smelters.

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Introduction and Acknowledgements

Of Arizona's five streetcar lines, three (Phoenix, Tucson, Bisbee) have been the subject of books. Two (Prescott and Douglas) await this distinction. Very little has been written about the streetcar system of Douglas, which operated for nearly twenty years in the early twentieth century. Eugene Van Dusen summarized the obscurity of this streetcar line in a 1967 article on Arizona streetcars:

DOUGLAS — Not much is known about this line. It had a line to the suburb of Calumet of about 10 miles. Some of the cars were received used from San Diego as reported in Dodges book on San Diego. The line quit in the 1920s.

Only an occasional reference — usually a single sentence — concerning streetcars is found in written works about Douglas history, but many old timers remember the trolleys. The paucity of information about the Douglas Street Railway — and the existence of people willing to provide reminiscences on the streetcars — led two transit history enthusiasts, Gene Caywood of Tucson and Cirino Scavone of Phoenix, to visit Douglas in search of material in the mid-1970s. What follows is a result of their findings and the enthusiasm and special interest of one of their contacts in Douglas: Roy Manley, a Douglas native, who has had a lifelong interest in the streetcars, gladly shared photographs of, and information about, the line with Caywood and Scavone.

The author's interest in the Douglas streetcars was fueled by the preparation of the short history of the Warren-Bisbee Railway — entitled *Mining Town Trolleys* — which began in 1979. In contrast to the adequate primary source material available for Bisbee streetcar research, it soon became apparent that very large gaps existed in the information on the Douglas line. This scarcity of information led to published requests for assistance in both the Douglas *Daily Dispatch* (3/10/84) and Bisbee's *Brewery Gulch Gazette* (3/29/84), which yielded some new information. This publication, then, is a collaborative effort outlining the street railway's history and serves as a "progress report" on research conducted to date.

Special thanks is due electric traction enthusiast John Rossman of New York City who gladly shared his postcards and route-related information on the Douglas streetcars — and who encouraged me to publish this work. The original manuscript was typed by Delanne Mihaltian of Columbus, Ohio. Many others deserve thanks for assistance, including Tom Vaughan and Bill Epler

of Bisbee — who located valuable photographs — and long-time Douglas residents Harriette (Mrs. William E.) Glenn, Helen Bollweg, Lillie Wright, Doug Wright, and John Meeks. Cochise County Historical and Archaeological Society President Winifred Meskus kindly provided the opportunity to assemble “a round table” discussion involving these people, and others without whose assistance this report could not have been written. That streetcar-related meeting which took place on February 28, 1984, marked a watershed of sorts: it rekindled many fond memories of the days when streetcars trundled along the dusty streets of Douglas and ran out to the copper smelters, whose tall stacks symbolized the region’s dependence on copper.

The Setting

Just after the turn of the century, the industrial community of Douglas, Arizona Territory, was conceived and created in the Sulphur Springs Valley. Located at a point where Whitewater Draw crossed the Mexican border, Douglas was chosen as the site for two major copper smelters and as a division point for the newly completed El Paso & Southwestern Railroad whose rails reached the townsite on February 1st, 1901. Available water, ample space, and a developing railroad network reaching the copper deposits of southeastern Arizona and northern Sonora, Mexico, were cited as reasons to relocate copper smelting away from the congested, smoky Bisbee area to the new townsite twenty-five miles distant. The new industrial town (1901) was named after Dr. James Douglas, president of the Copper Queen Consolidated (Phelps Dodge) mining operations in Bisbee.

As in Bisbee, two friendly rivals, the Copper Queen Consolidated and the Calumet and Arizona mining companies, cooperated. Both saw the advantages of shifting smelting operations to the new site. The fledgling town was platted on an orderly, grid-iron pattern of rectangular blocks, and from its earliest days was designed by the copper companies to include cultural amenities such as parks, churches, and substantial homes. The first smelter (Calumet and Arizona) was “blown in” on October 11th, 1902. (Fig. 1)

The Copper Queen Store, which was to become a landmark in Douglas, was begun at this time. The population boomed, and almost overnight more than a thousand residents had located in Douglas in order to work in the smelters or in the businesses which inevitably sprang up to accommodate the needs of the inhabitants. One need, of course, was transportation: the problem of how to get to work at the smelters and to schools, churches, and shopping would be solved by a comprehensive street railway system — the Douglas Street Railway Company.

The Street Railway Charter

The Articles of Incorporation of the Douglas Street Railway Company were ratified on October 11th, 1902 “. . . for the purpose of forming a Railroad Corporation under the laws of the territory of Arizona”, stating that:

The place from which the proposed railroad is to be constructed is the Town of Douglas in Cochise County, Arizona Territory: and the place to which the proposed railroad is to be constructed is to and upon section fifteen, township twenty-four south, range twenty-seven east, G & S.R. meridian, that said railroad is to be wholly within the limits of the said County of Cochise; that the length of said Railroad, as nearly as may be established is two (2) miles within the limits of the said Town of Douglas, and two (2) miles more running from the limits of the said Town of Douglas to and upon said section fifteen, making a total length of about four (4) miles; it being the intention of the Corporation to operate its said lines within and upon the streets of the said Town of Douglas, and from the westerly limits of the said Town of Douglas as far as the said section fifteen. (Article VI)

It is clear from this description that the proposed line was intended to serve both the Town of Douglas and the Copper Queen and C & A Smelters, which were being constructed to the west of town. Of note is that influential Bisbeeites W. H. Brophy, L. C. Shattuck, S. W. French, M. J. Cunningham and S. F. Clawson were joined by S. F. Meguire of Douglas in signing the articles of incorporation. The capital stock of the corporation was fifty thousand dollars (500 shares of stock at \$100 each). Were it not for the foresight and capital of the copper interests, it is doubtful that a community the size of Douglas would have been able to raise the funding to develop a street railway.

Article VII stated that “This corporation is formed for the purpose of constructing, owning, maintaining and operating by steam, electricity or other motive power a street railway upon the streets of the Town of Douglas.” Although the economy and efficiency of electric traction was well known by this time, the charter gave the street railway additional options: Given the time and cost factors involved in the stringing of electric overhead wires, some traction companies operated using animal (horse or mule) traction, steam power, or other more ingenious technologies such as soda or vapor motors (for detailed, readable accounts of these alternatives the reader is referred to Frank Rowsome’s *Trolley Car Treasury* or William D. Middleton’s *Time of the Trolley*.) In order to avoid frightening horses, and to reduce air pollution and noise, some communities simply prohibited steam (or other) power, requiring that street railways use only electricity. The Douglas charter was more permissive.

Although several entrepreneurs in nearby Bisbee were attempting to promote trolley lines in their hilly town at this rather early (1902) date, the topographic and developmental situation in Douglas was more favorable, and the Douglas Street Railway was destined to become southeastern Arizona's first street railway, beginning operations five years ahead of Bisbee. Occasionally one hears or reads that the Douglas streetcar system was narrow gauge, at least as it was built in 1902-1903 (see Jeffrey, 1951, p. 13), but all [remaining] evidence points to a line that was standard gauge from its inception.

The Beginning of Operations: Routes

Several recent written reports, including articles in the *Douglas Daily Dispatch* (1/12/84), and Ervin Bond's local history (1976), state that the Douglas streetcar system was built in 1901, but no evidence has been found to support this claim — which, if true, would mean that construction and operation began *before* the charter was authorized. Jeffrey (1951) notes the street railway was "constructed during 1902 and by February of 1903 it was making regular trips between the smelters (and Douglas)". (p. 13) Consulting the early issues of the local newspaper sheds much light on the line's early construction. The December 27, 1902 issue of the *Douglas Dispatch* provided a summary of developments in the new town, noting that:

Among the many improvements which have been made during the past year perhaps the Douglas Street Railway is one of the most important. This road, almost completed, is three miles in length, and will run from Douglas to the smelters. Rails are now on the ground and will be laid as fast as possible. This road is the property of the Douglas Street Railway Company, S. F. Meguire, secretary.

On January 10th, 1903, the *Douglas Dispatch* reported under a section entitled "March of Progress" that:

The Douglas Street Railway is already constructed from the E.P. & S.W. crossing just above the depot to the bridge, a distance of about a mile and a half. One car and an engine has already arrived and the others have already been shipped.

Progress on the street railway continued rapidly, and on February 7, 1903, the *Douglas Dispatch* proudly reported "Our Street Railway making Regular Trips," after a trial trip was made a week earlier. The *Dispatch* article went on to state that "those who saw the rolling stock glide over the new track to the smelters were greatly surprised that a track could be laid in so short a time, in so substantial a manner." The street railway resulted in "great convenience" for smelter employees, delivering them to work with "good speed". The first trip had provided the street railway's brass and other dignitaries with an opportunity to show off the line, which had cost more than \$35,000 to construct.

There is much disagreement about just where the early streetcars actually ran in Douglas. This situation is exacerbated by the fact that the only known map showing the system is a small scale United States Geological Survey (1:62,500) topographic sheet from 1914. While this map provides our most accurate information, it does not show changes which inevitably occurred in the first ten years of operation. We know, for example, that trackage existed on Railroad Avenue (later called Pan American Highway), but this is not shown on the USGS map. The dearth of maps of Douglas during the early twentieth century leads one to rely on verbal or written descriptions of routes. A careful consulting of early newspaper records enables us to reconstruct the early streetcar routes. The line to the C & A Smelter, which crossed the E.P. & S.W. railroad between 10th and 11th, was the first to be constructed and operated. The *Douglas Dispatch* reported, on February 14, 1903, that the line would soon be extended to the Ord Hotel (10th & G) which advertised "large, airy apartments" and "Sample rooms for commercial men." On May 7th, 1903, it was reported that work would continue, and that the streetcar line would run south to the depot, turn up 10th Street and go two blocks to G, but that construction had been delayed for want of material. Gene Caywood surmises that this delay may have corresponded to the fact that the E.P. & S.W. Railroad was swamped and had to lease three Santa Fe locomotives in 1903 to handle the additional volume of traffic, as reported by railway historian David Myrick in 1975.

A timetable which became effective on May 10, 1903, was published in the *Douglas Dispatch*. This served until November 1st, 1903, when it was superseded by a new timetable, which in turn was reprinted until 1904. The development of the street railway trackage is complicated, and was accomplished in several increments (see section on "Electrification and Improvements") but it is clear that the early operations were oriented only to the smelters, and that only after 1906 did it become a comprehensive urban streetcar system.

Early Equipment: Steam Dummies & Trailers

Time has caught up with those researching early twentieth century history. For example, of the eight "old-timers" who were assembled for the informative and nostalgic round-table session on Douglas streetcars in 1984, none could remember the very earliest years of operation. They had heard about, but had not witnessed, the "Peanut Roaster" which initiated streetcar service in Douglas in 1903. The fifty year anniversary supplement of the *Douglas Dispatch* (1952) contained a rare photo (among the earliest known of the Douglas streetcar line) of the "Peanut Roaster" (Fig. 2). This is the "balky little steam engine" which made the first runs to the smelter (Jeffrey, 1951, p. 13), and which the *Douglas Dispatch* characterized as "the little engine [which] puffed back to town having made a most successful and highly gratifying trip" (February 7, 1903).

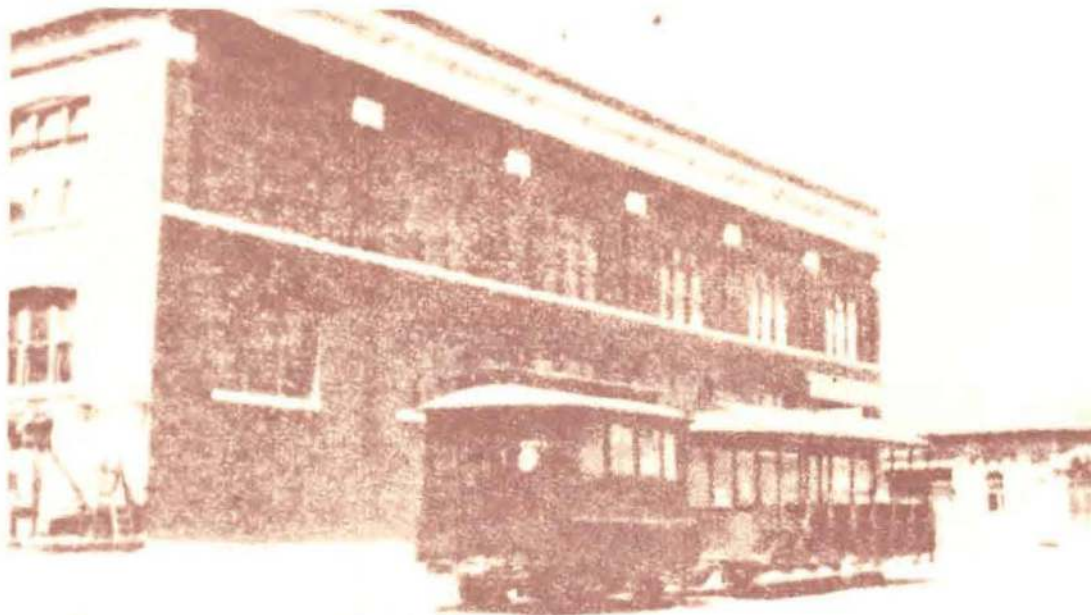


Fig. 2: The only known photograph of the "Peanut Roaster" steam dummy engine which hauled the unpowered open trailer cars during the line's first three years of operation. It is shown in front of the Copper Queen Store which is under construction in this ca. 1904 photograph. (Photo courtesy Douglas Daily Dispatch)

The Peanut Roaster was actually a "steam-dummy," so-called because it was a small steam tank locomotive disguised to look like a streetcar. The purpose behind such subterfuge was to avoid frightening horses: experience had shown that horses, who were often terrified by steam locomotives, could be fooled into thinking this conveyance was just another trolley car. Many steam dummies had panels or skirting designed to hide the locomotive's wheels and side rods — further adding to the impression of electric power. The steam dummy did, more or less, harmonize with early streetcar architecture while providing an alternative to costly overhead wiring construction: during many earlier (1879-1890) town development booms, steam dummies had proven their worth by hauling short passenger trains into new suburban areas and amusement parks (see Gerald Best, *San Bernardino Valley Steam Dummy Lines*; and Russell Olson, *The Electric Railways of Minnesota*).

The steam dummy may have been called the Peanut Roaster either because of its shrill whistle or the shape of the boiler and car body. It is likely that the Peanut Roaster was an 0-4-0T (that is, had four driving wheels, and no leading or trailing wheels to guide it) and may have been purchased second hand — perhaps from a California line which had gone bust or been electrified. A recent issue of the *Douglas Daily Dispatch* (1/12/84) notes that the earliest motive power on the streetcar "... was a little steam locomotive which frequently broke

down” (p. 5). In any event, this steam dummy hauled the railway’s trailer cars (and their loads of passengers) to and from the smelters and along Douglas streets until the electric trolleys arrived. A beautiful panorama photo of the developing Douglas business district in about 1904 shows the street railway’s non-electrified trackage and a trailer car (Fig. 3).



Fig. 3: A section of a panorama photograph of Douglas during its early (ca. 1904) days shows the streetcar line before it was electrified, and a portion of a trailer car normally hauled by the Peanut Roaster steam dummy engine. (Photo from Douglas Drug Collection)

In its May 7, 1903 issue, the *Douglas Dispatch* reported that “there will be additional rolling stock augmenting the present two cars, and two dummy engines which will make one of the finest street car lines in the territory.” It appears that another steam dummy may have arrived by summer, 1903, and that these performed yeoman service until electrification three years later. An article in the August 27, 1906 *Daily International American* notes that the steam dummies burned oil for fuel. These locomotives pulled the occasional bullfight specials to Agua Prieta over the rails of the E.P. & S.W. in 1904.

The Douglas Street Railway’s two trailer cars were no doubt derivatives of the early electric era; they may even have originally served as horsecars. Their architectural design can be traced to the late 1870s. In photos they appear to be four wheel open bobber cars with steps running lengthwise along the car side. One of these cars is shown being pulled by a Peanut Roaster in Fig. 2.

Electrification & Improvements

Electrification was anticipated with enthusiasm by the *Douglas Dispatch*, which as early as its December 23, 1904 issue had prematurely reported “Electric Railway for Douglas — will be installed by the International Land & Improvement Company at once — more track and Double Service.” This issue noted that the street railway’s “directors considered the gasoline motor [which had been contemplated for use in Douglas] to be inferior to electric power and at once decided to install the most modern system of electric propositions (sic) for the Douglas Street Cars.” Earlier that year, the Douglas Street Railway had announced massive expansion plans including opening up of lines on 13th or 14th east to C or D, extensions of the 10th street line east to C or D, a new line to the Copper Queen Smelter going through “Ragtown”. These improvements, formally proposed in the summer of 1904, provided further impetus to electrification, but not much happened for at least a year.

A September 26th, 1905, article in the *Daily International American* entitled “Don’t Bar Progress of Douglas” urged support of plans to electrify the street railway, which was proposing new lines on 16th, B and 4th. This editorial shows that not all Douglas residents supported the electric traction improvement. The editorial must have been effective, because both local papers reported, on October 3rd, 1905, that voters approved the franchise of an electric line by 219 to 192. Under the terms of the franchise, the electric line would be in operation within one year.

Electrification efforts progressed, and by July 27, 1906, it was reported that three new electric cars had arrived in anticipation of the overhead being completed. These had been ordered two months earlier. The local papers reported feverish progress on the overhead construction in July and August of 1906. Work progressed along 16th, B, 4th, and 10th — in that order. Overhead along G Avenue was erected later, while poles were placed along the line to the C & A Smelter by July 25, 1906. Dynamos for the power system had arrived by July 31st, and a decision was made to extend the car line to the new E.P. & S.W. Depot.

On August 13th, one of the new electric street cars was seen being hauled by a steam dummy and the “Y” (wye) trackage at 10th and G was being installed. On August 27th, 1906 — well within the terms of the franchise — final overhead wiring was installed at the Copper Queen Smelter, and Robert Rae was reportedly the first passenger to ride an electric car from the smelter to the E.P. & S.W. crossing in Douglas. The next day, the first electric car ran on G Avenue as overhead wire was finally strung into the heart of the city. By September 15, 1906, the new electric cars were in operation between Douglas and both smelters. Within two weeks (that is, by September 30th) the entire system was electrified, with one car serving the city, and the other car running to the smelters. The era of electric traction had arrived in Douglas.

The Douglas Street Railway obtained its electric power from the power plant at the Copper Queen reduction works, where the street railway installed its own machinery, which, according to a 1908 issue of the *Daily International American*, “. . . has been found more economical and preferable for all concerned”. At first, the power was only 250 volts, but was soon increased to 600. Direct current was utilized by the streetcars, meaning that a substation was needed to step down and convert the electricity provided by the power plant. It is presumed that this substation was located at the smelter, which also reportedly had miles of industrial railway trackage under wire (Myrick, *Railroads of Arizona*, Vol. 1, 1975).

Early Electric Railway Equipment

By 1907, the electric streetcars had become a common sight in Douglas. Figure 4 is one of the best traction photographs ever taken in Arizona Territory, and it shows the popularity of Douglas' electric traction cars. Here, in a posed photograph taken on September 24, 1907, we see a motorized electric traction “passenger car pulling three trailers from Ball Park.” Car #2 was one of three electrics (#1-3) which had arrived in 1906, while the trailers date from an earlier period. The two smaller trailer cars were probably former horse cars dating from the 1880s. These had served as the street railway's first cars during the reign of the steam dummies.



Fig. 4: The classic photograph of the Douglas Street Railway in action shows California style car number 2 hauling three trailer cars. The weather is still warm and passengers are joined by the baseball team for this vignette of Douglas halcyon days. (Photo courtesy Bisbee Mining and Historical Museum)

The lead car (Car #2) in the train is noteworthy for several reasons. First, it symbolizes the electric era's arrival in Douglas: by now the entire line had been electrified with trolley wire having been strung from wooden trolley line poles in the more open areas and suspended from brackets attached to the buildings in the downtown section of the city. In electrified streetcar railways, the car's trolley pole reaches upward to draw current from the wire.

Secondly, students of trolley car architecture and design will recognize Car #2 as a product of California electric railway evolution: the five window car ends (the first and fifth windows are beautifully curved) was pioneered in Southern California in the 1890s. The car itself is classified as a "California car" for another, more obvious reason: it is partly closed and partly open; that is, the center section is closed to the weather by windows and wood side paneling, but each end section of the car side is open to the weather. This car style became popular in California by the turn of the century reportedly as a concession to the climate being alternately either warm and sunny or cool and wet, depending on conditions and season. For safety, the sides of this open section of the car have screens or grilles to keep unobservant passengers from meeting the almost certain calamity which would result if they tried to detrain: the car has no side length steps; only stairs at the end platforms.

Of note, too, are the car's link and pin couplers (long outlawed on steam railroad lines) and the fact that #2 shows no evidence of multiple unit operation wiring; that is, car number two would not operate as part of a train of electric streetcars — it would either operate by itself or haul non-powered trailer cars.

All of the above clues point to #2 being designed by, and possibly obtained used from, a Southern California traction line such as the Los Angeles Inter-Urban Railway or the great Pacific Electric system. Its color in the picture appears dark, perhaps red or green, with thin ornate [gold] striping. It has a deck roof so typical of streetcars of this period. The Los Angeles Style California cars of the Douglas Street Railway, complete with their eclipse safety fenders (see Fig. 5), gave Douglas street scenes during the teens a decidedly Southern California look.

Apparently, not all of the street railway's five motorized electric cars on the roster by 1910 were five (end) window California Cars. In 1908, the local newspapers reported that two new cars were purchased from the American Car Company at St. Louis and were on their way to Douglas. A builder's photo of number 5 (Fig. 6) shows a deck-roofed closed car with simple three window ends, and this car probably appears in the often-reproduced photograph taken in 1910 or 1911 on G Avenue (Fig. 7). The postcard entitled "A Busy Day at Douglas, Arizona" (Fig. 8) showing circus parade crowds lining G Avenue is noteworthy in that a more detailed note reads "June 6th 1910 Douglas, Arizona. Dark green streetcar in front of old Gadsden Hotel and Phelps Dodge Mercantile Store . . .".



Fig. 5: California style Douglas streetcar number 1 rumbles north (away from camera) on G Avenue during the teens. Car's architecture (refer to text) and eclipse safety fender imparted a "Southern California" look to the Douglas streetscape at this time. (Photo courtesy Bisbee Mining and Historical Museum, The Cowbells' Collection)



Fig. 6: Builder's photo of Douglas Street Railway car number 5, new at the factory, shows a more conventional (three end window) decked-roofed streetcar. Car's color is dark, perhaps green, with thin gold striping. (Photo courtesy Arizona Historical Foundation, Tempe)



Fig. 7: A frequently reproduced photograph, looking south on G Avenue about 1910 or 1911, shows what may be car number 5 cautiously moving toward some early automobiles and a crowd of their admirers. Photo beautifully shows Douglas' well developed "Main Street" and traction line. The town had blossomed quickly; ten years earlier only desert scrub marked this spot. (Photo courtesy University of Arizona Special Collections, Tucson)



Fig. 8: A busy day (indeed) in Douglas — for the circus has come to town — finds a dark green streetcar in front of the old Gadsden Hotel and PD Mercantile buildings, running north (away from camera) on G Avenue. Note trackage leading toward right (east) on Tenth Street. Except for occasional passing sidings, all Douglas streetcar lines were single track. (Photo courtesy University of Arizona Special Collections, Tucson)

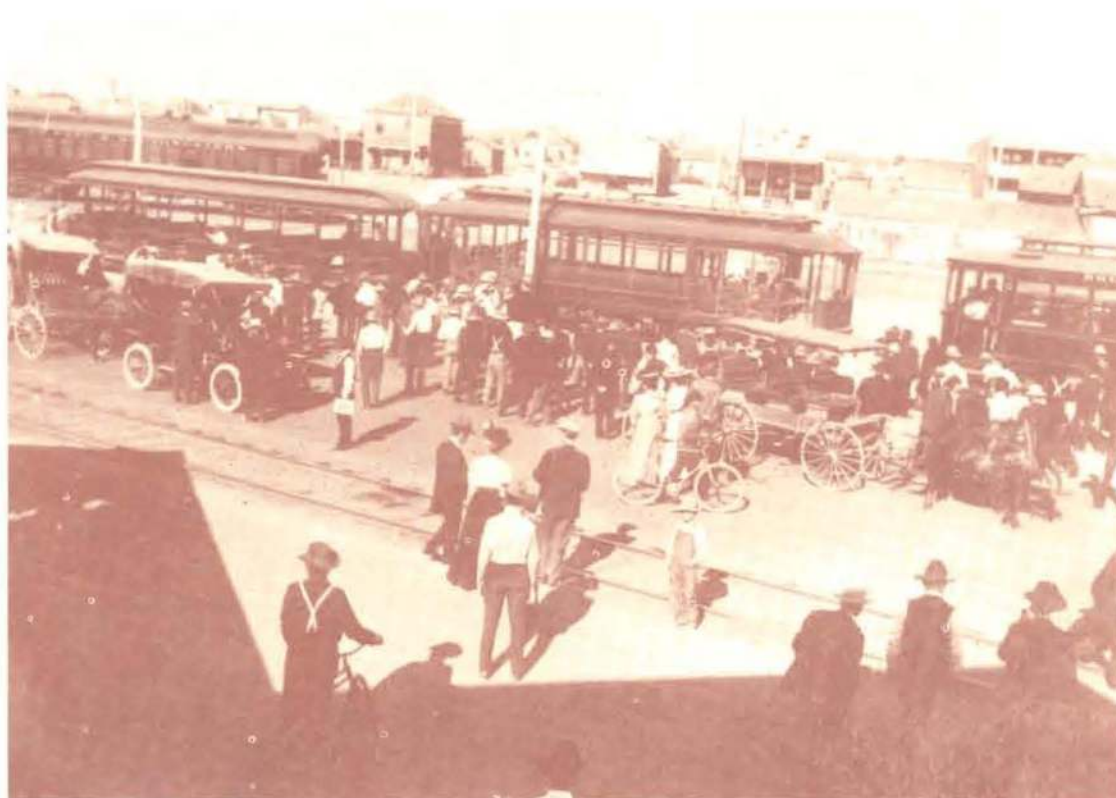
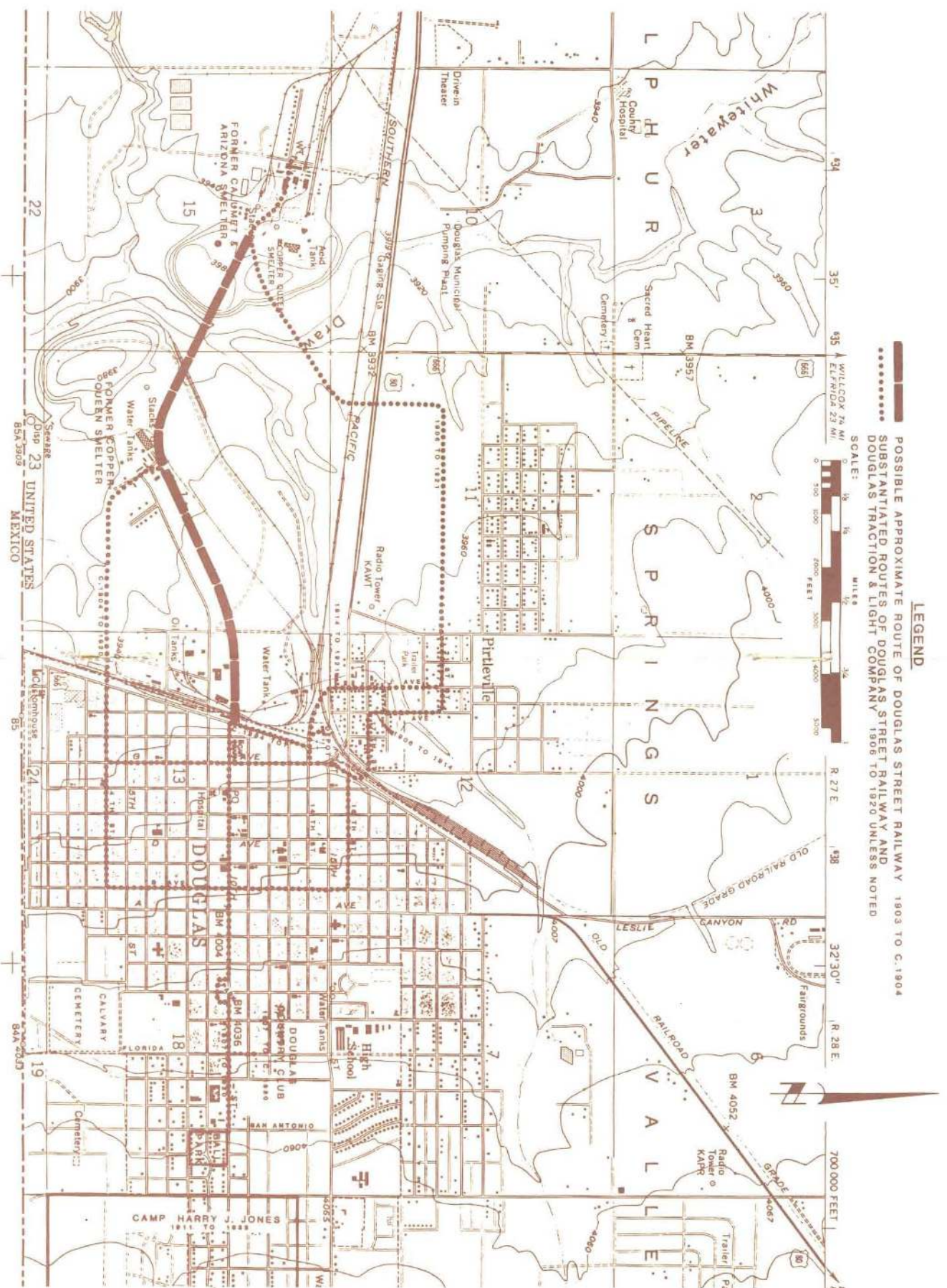


Fig. 9: Train time at the El Paso and Southwestern R.R. Station shows three types of equipment: California style car (center) hauling open trailer car (left), while passengers board a conventional (three end window) trolley at right. Photo dates from about 1916. (Photo courtesy Bisbee Mining and Historical Museum, Brophy Collection)

Of the Douglas Street Railway's early equipment, then, it may be said that both conventional (three window) and California (five window) cars were in operation in 1910. Photos show these cars running side by side, and the depot platform tableau (Fig. 9) is remarkable in that it shows *three* types of Douglas equipment: in the center, a California type car waits with the long open trailer car in tow, while passengers board a newer vintage conventional streetcar (perhaps #5) at the far right of the photograph.

All of the cars which ever operated on the Douglas Street Railway system were double-enders; that is, they could be run in either direction and did not need to be turned at the end of the line. The motorman simply reversed the trolley pole by swinging its end round to the other end of the car (or, in the case of a trolley car with two trolley poles, tying down one and lifting the other) in order to resume operation in the opposite direction. While this was being done, car seats would be reversed in preparation for the return trip — usually by the conductor. Old-timers note that all Douglas streetcar lines ended in "stub" terminals (that is, they remember no wyes or loops at the ends of the streetcar lines), though the end of the line at Sportsman's Park in the early (pre-1910) days may have been a loop.

Map of Douglas showing streetcar routes. Trackage shown is based on USGS 1914 topographic map, photographic evidence, and written description of routes from earlier period. (Map by Gene Caywood, 1986)



Douglas Street Car Routes: A Synopsis

Ultimately, no location in the city was more than four blocks from a car line. The Douglas Street Railway in effect looped the city, running on G Avenue (which, despite its prosaic designation, was to become the “Main Street” of Douglas), along 16th Street, B Avenue and 4th Street. The important commercial-residential 10th Street was not forgotten: a line ran much of its length — from the depot (later YMCA) location at Railroad Avenue all the way east to Sportsman’s Park (the line was later extended out to Camp Harry J. Jones at the east end of 10th Street).

Thus, cars of the Douglas Street Railway connected the business or commercial streets (especially G Avenue and 10th Street) with the several sections of Douglas: the 4th Street line served the “Sonoran” (Mexican-American) section of town while the other lines connected the more prosperous residential areas to the north.

The 4th Street line continued westward across the railroad tracks and on to the Copper Queen Smelter. On the north end of town, the 16th Street line ran out to the Calumet and Arizona smelter. Some old-timers noted that the line may have originally been more direct than the line shown on the 1914 map. (They felt that it paralleled the main railroad line along today’s 15th Street, or U.S. 80.) By 1914, however, the line is shown running up North J Avenue (the “Boneyville” section of town) and serving the community of Pirtleville on its way to the C & A Smelter. This line to the C & A Smelter was about 3.5 miles in length. Whereas most sources state that Calumet was nine miles from Douglas, it is suspected that this figure refers to the *total* trackage of the Douglas Street Railway. In 1907-1908, a half mile of track on the way to the Copper Queen Smelter was reportedly improved, the existing 35 pound (per yard) rail being replaced with heavier 60 pound rail.

Given the proximity of this line to the Mexican border, it is somewhat surprising that the cars never ran closer than four blocks from it. Whereas early (1904) plans announced in the local papers called for a line to Agua Prieta which would use gasoline powered streetcars, we can assume that Douglas and its Mexican counterpart were never connected by streetcar. We do know that an occasional special “streetcar” run was made by Douglas Street Railway Company equipment to the bull fights in Agua Prieta over the El Paso & Southwestern Railroad’s right of way in 1904.

Basing his research on a detailed 1908 issue of the *Daily International American*, Caywood summarized the routes of the Douglas system by noting that there were really three lines; those to the smelters, the B Avenue (loop) line, and the 10th Street line to the Sportsman’s Park. At the peak of service, headways varied from about 30 minutes on the B Avenue (loop) and the smelters, with 15 minute headways to the Sportsman’s Park when traffic volume demanded.

Street Railway Buildings

A few of Douglas' older residents recall the street railway's car barn, which was located in the block bounded by 10th and 11th Streets, and G and H Avenues — site of today's large parking lot behind the Phelps Dodge Mercantile. It has been described as a long, narrow structure, probably red in color, with wooden sides. The Sanborn Fire Insurance Atlas Maps clearly show the outline of this building, about 28 x 102 feet. It is labelled the "Douglas Traction and Light Co.'s Street Car barn" on the July 1914 Douglas Atlas Map (p. 11). It was located about 50 feet from H Avenue and it fronted on the north side of an alley which ran east-west between H and G Avenues. Although the map shows no tracks, it can be assumed that this was a single track car barn which could only hold one full length and two short bobber type trolley cars. Most of the Douglas Street Railway's equipment apparently was kept out of doors, and the car barn was used only for repairs. Sanborn atlas maps imply the structure existed from about January 1905 until the later 1920s.

Old-timers also recalled a trolley shelter or station at the Calumet and Arizona (C & A) Smelter. In 1984, it was described as being a large shed with a roof — but with sides open to the weather; it had two benches which were situated back to back and may be the structure illustrated in Figure 11. No other stations were noted, but the strong summer sunshine and occasional rainy cold snaps of winter would have made them appreciated by streetcar riders.

Reorganization

By 1910, the population of Douglas had reached 6,437. In 1911, the Douglas Street Railway and the Douglas Improvement Company (which had the city's electric franchise) were sold to the same interests and reorganized into Douglas Traction and Light Company. The DT & L Co. was incorporated on December 13, 1911, and its charter became effective on New Year's Day of 1912. During this same year, Arizona became a state, and the DT & L Co. was still reported as connecting both the Copper Queen, and Calumet and Arizona (C & A) Smelters on ten miles of track. The DT & L Co. apparently continued to use the five motorized passenger cars and the three trailers which had served during the Territorial period of operations.

The DT & L Co. charter proposed that the company would "... purchase or otherwise acquire, construct, equip, lease, maintain and operate by electricity, or any mechanical power, street railways, for the transportation of passengers, mail, express, merchandise, or other freight in the Territory of Arizona . . .". The charter also permitted the company to purchase and operate power plants, power lines, and pipelines for the generation of electrical and other power, and the sale of gas and electricity for illumination, heat, power and all other uses . . .". Capital stock was stated to be one million dollars, divided into 100,000 shares valued at \$10 each. The company was headquartered in a false-front

wooden building on 10th Street (Fig. 10). Upon the facade of this building large letters proclaimed “DOUGLAS TRACTION AND LIGHT COMPANY — House Wiring — Electrical Supplies.”



Fig. 10: The Douglas Traction and Light Company (1912-1925) was headquartered in the false fronted building (second from left) located on Tenth Street. Note streetcar track (and badly rutted pavement around it) and trolley wire in this ca. 1920 photo. Streetcar system's days are numbered as suspension of service in 1920 resulted from increased automobile ownership, declining ridership and rising maintenance costs. (Photo from Roy Manley Collection)

The War Years - “New” Equipment

World War I brought about a high demand for copper, and a resulting boom in the industry. Traffic volume increased accordingly. The war coincided with the Mexican Revolution, and the border town of Douglas was host to American troops patrolling and protecting the frontier. The years 1914-1918 were hectic indeed, as troops were stationed at the new Camp Harry J. Jones at the eastern edge of Douglas. This camp was served by the DT & L Co. trolleys, and many old-time Douglas residents can still remember the khaki-clad troops and the tension which filled the air as Pancho Villa's troops raided the border towns.

During the 1913-1916 period, the DT & L Company roster was increased as three used cars joined the fleet. It is reported that another motorized passenger car (Number 7 ?) was purchased used from the Prescott and Mt. Union Railway. The March 17, 1915 issue of the *Prescott-Journal-Miner* reported the transaction. This car was soon joined by two of the more distinctive trolleys which ran in Arizona: in 1916, the DT & L Co. acquired a pair of California-style passenger cars from the San Diego Electric Railway. Originally built in 1910, they were numbered 89 and 90. The DT & L Co. cars apparently kept their light (yellow) paint schemes and numbers (though Caywood speculates the company may have intended to drop the last digit from each number — resulting in cars 8 & 9 — which would have kept the company's sequential numbering system intact). Information about these cars is available in *Rails of the Silver Gate*, and photographs have been located at the San Diego Historical Society. The cars were double truck forty footers and each could seat 44 passengers. Figure 11 shows what appears to be car #89 at a stop near the C & A Smelter, while a downtown vignette shows #90 about 1917 or '18 in a parade setting (Fig. 12). Although photographs of the cars in San Diego in 1910 show them to have long steps only along the open sections of the car, these later photos of the cars #89 and #90 in and around Douglas show skirting running the full length of the cars. These cars were remembered by old-timers as being a tannish-yellow color. Photographs show car #89 as having only one trolley pole, while #90 appears to have two. These "San Diego" trolleys, and the other cars on the roster, handled the crowds of smelter workers as they reported to work for the 7 a.m., 3 p.m. and 11 p.m. shifts. Office workers at the company headquarters also rode the cars to and from Douglas during the daytime shifts. School teachers reportedly had free passes on the system.

Post War Modernization

In 1919, the DT & L Co. purchased its last streetcar (Fig. 13). Car number 10 was a four wheel Birney "Safety Car", so called because it was a type adapted from a design by Charles O. Birney, engineer in charge of car design on several street railway properties in Texas, Washington, and elsewhere (Middleton, *Time of the Trolley*, pp. 122-123). The Birney Safety Cars had a "dead man's" control which required the operator to depress a special foot pedal when the car was in operation; if the pedal was released for any reason, the car would come to an automatic stop.

But it was economy which attracted the Douglas Traction & Light Company to the Birney design. Low operating and maintenance costs resulted from the Birney car's light-weight metal body construction, and the car was designed for one-man operation — a design akin to that of today's busses. By the late teens, street railways had begun to do away with costly two man crews, and the DT & L Co. adopted this practice in an effort to keep up with rising track maintenance costs and loss of traffic brought on by the automobile and depressed copper prices.

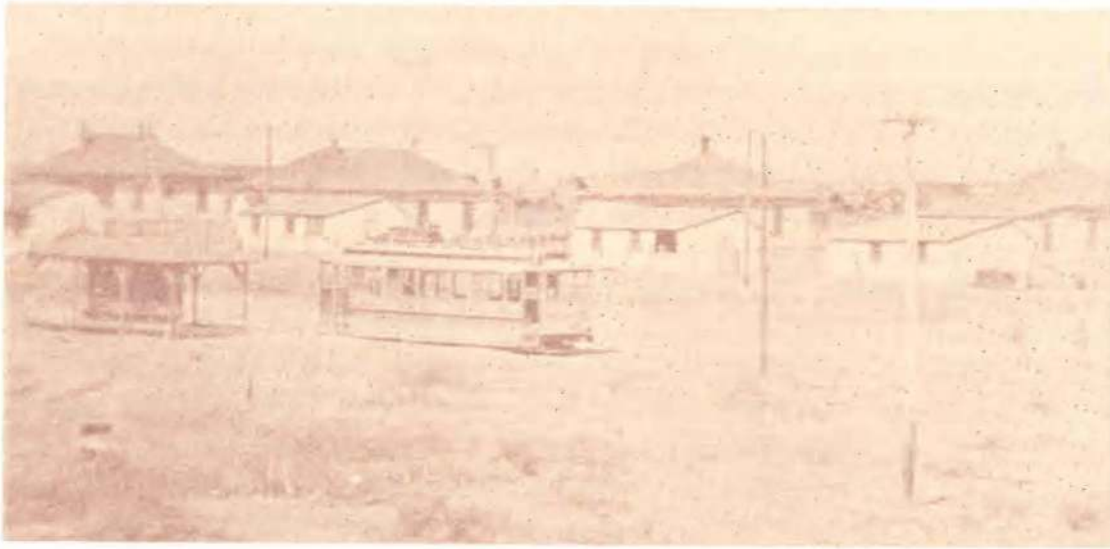


Fig. 11: A rare photograph of what appears to be San Diego car number 89 at the C & A Smelter Station, circa 1918. Both San Diego cars retained their former numbers (and paint jobs). Station is described by the old-timers in the text. Note the (mining) company town style houses and desolate look of this area. (Photo from Roy Manley Collection)

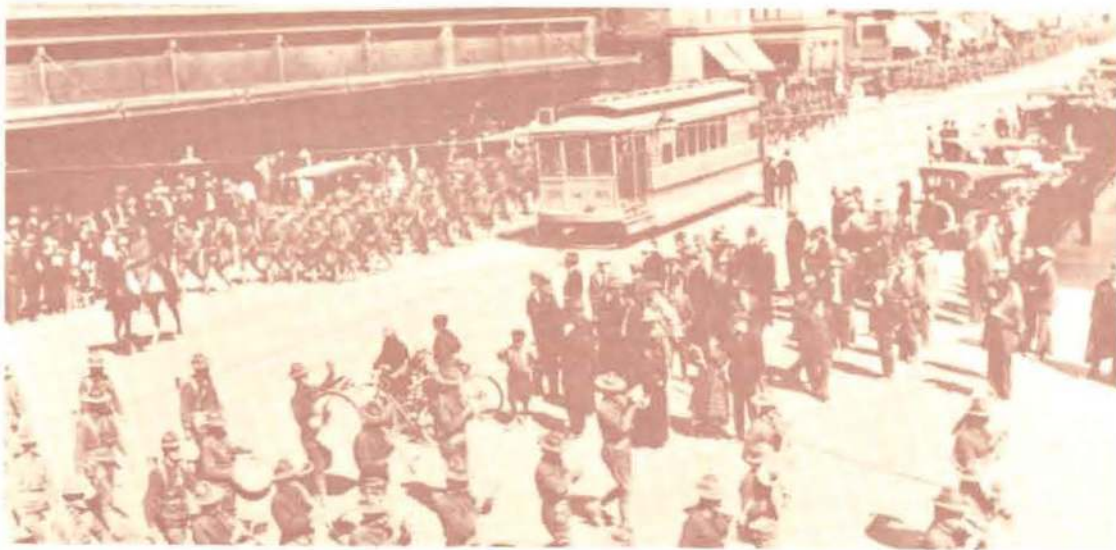


Fig. 12: Car number 90 running down G Avenue in about 1917 or 1918 shares the right of way with a parade. Originally from San Diego, the California style car has skirting or steps running the full car length and is moving away from the camera in this picture. (Photo from Gene Caywood Collection)

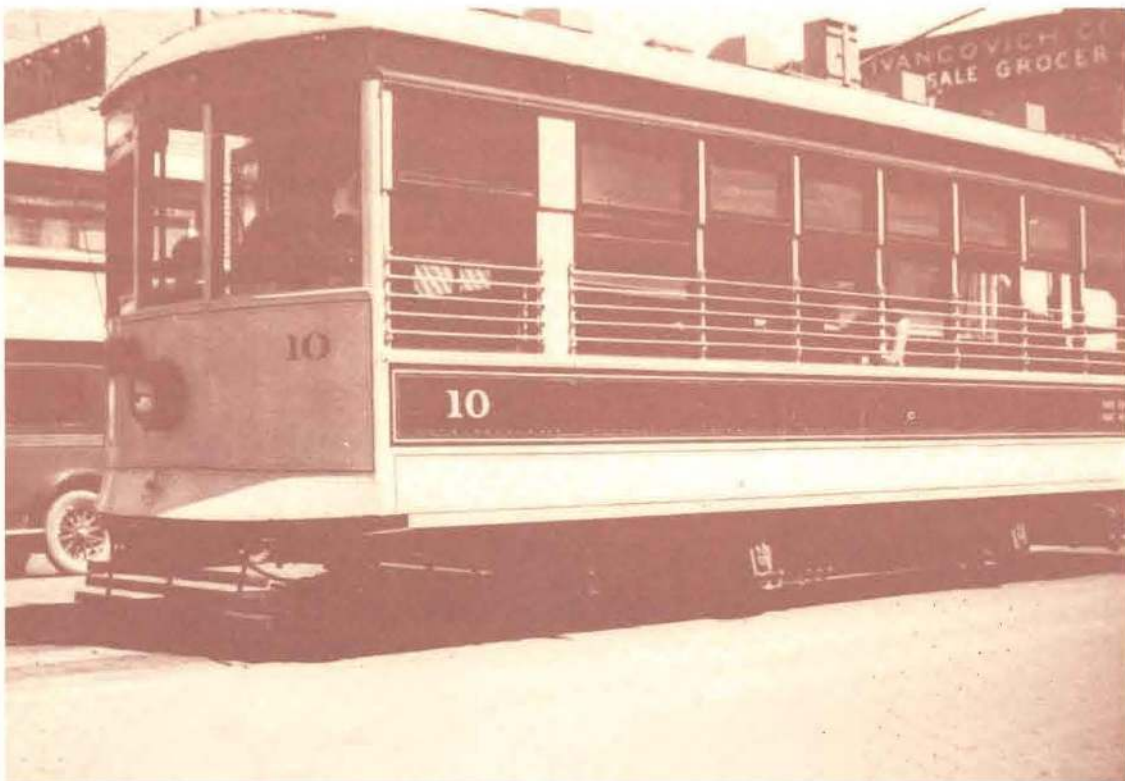


Fig. 13: Car number 10, a Birney "safety car", was built by the American Car Co. plant in St. Louis in 1919. Such cars were popular with street railways hoping to reduce maintenance and labor costs. Upon closing of the Douglas streetcar line, car #10 went to Tucson, where it is shown here in the later 1920s. (Photo from Walter Ficher Collection)

Aesthetically, the Birney cars were part of an early attempt to simplify and streamline streetcar architecture: the days of the heavy wooden cars were numbered. What the Birney cars achieved in economy, however, their light weight, small motors, and four wheel rigid truck assembly lost in speed and comfort: Birneys were notoriously underpowered, slow, and rough-riding. Like most Birneys, car number 10 was about twenty-eight feet long and could seat thirty passengers. It was one of about 4,000 Birney cars built up to that time, and had been a product of the American Car Company in St. Louis. Although a paper by Allison Chandler states that car #10 was "one of a fleet of 30-passenger Birney Safety Trolley Cars acquired by the Douglas Traction & Light Co. in 1919," no evidence has been found that more than one Birney car, number 10, ever served Douglas.

The year 1919 also witnessed some other changes. It is reported that power was now purchased from the Copper Queen Consolidated Mining Company, and the condition may have indicated that the DT & L Co. was retrenching — or at any rate reconsidering its role as a power producer.

On February 19th, 1919, bad luck caught up with the DT & L Co. at the E.P. & S.W. crossing, where one of its streetcars unsuccessfully contested the right of way with a switch engine. Motorman J. D. Moberly was seriously injured, and to quote the Douglas *Daily International* of that date, the equipment fared no better “. . . about a third of the street car was taken off and the valve gear of the locomotive was smashed,” resulting in its having to be towed back to the roundhouse by another locomotive. The streetcar, whose number was not noted, was probably damaged beyond repair in the encounter.

The End of the Line

By 1920, drops in ridership due to slow downs at the smelter, a cessation of military build-ups along the border (manifested in the reduction of troops at Camp Harry J. Jones), and increases in private automobile ownership had taken their toll on the street railway. It is presumed, too, that competitive jitneys (privately operated “bus” companies) may have also had an adverse effect on the DT & L Company.

The company announced plan to terminate streetcar service on May 15, 1920. On May 10th, the company posted a “Notice to our Patrons and the Public” in the Douglas *Daily International*, noting that “there has been \$250,000.00 invested in street car facilities in this community . . . but the conditions have come that clearly indicate that the operation of the streetcars is no longer a convenience to a sufficient number of people of the community to justify further endeavor in running them.” This was followed the next day by an article in the Douglas *Daily Dispatch* stating that “the company sustained a loss of \$12,000 in 1918 when conditions at the smelters and army camp were as good as they ever had been, and in 1919 a loss of \$18,000 was shown.”

Despite this dismal news, the discontinuation of service was not permitted until a hearing could be held and a ruling made. On May 16, 1920 it was reported by the DT & L Company, that “The Arizona Corporation Commission, having issued an order that the application of this company to discontinue its streetcar service, will be heard by the commission on May 24th, the streetcars will continue to operate till further notice.” The decision was delayed until June 16th, when it was announced in the Douglas *Daily Dispatch* that the service had been suspended, but that “. . . operation may be undertaken again later.” It is ironic that the June 23rd issue of that same paper announced a new bus line to Camp Harry J. Jones “. . . in view of the fact that the street car system has been discontinued . . .” The year 1920, in effect, marked the end of operations for the Douglas streetcars.

In the early 1920s, the streetcar system’s fate remained in limbo. Any restoration of suspended service depended on improved conditions. Despite occasional improvements and intermittent optimism, the early 1920s marked worsening prospects for restoration of street railway services by the DT & L

Company. Like most street railways, the company faced the prospect of continually increasing maintenance costs to rehabilitate its older equipment. Most of the railway's track work was two decades old and the overhead wiring was nearing the twenty year mark, as well. The company never re-established street railway operations, and the 1921 to 1924 issues of the *Electric Railway Bulletin* list the Douglas Traction and Light Company as one "whose entire traction property has been dismantled or permanently abandoned and not likely to resume operation."

The fate of most of the older streetcars is unknown, but we do know that the five-year-old Birney car (car number 10) was sold to the Tucson Rapid Transit System in 1924, where it operated for more than six years and became the very last car to close out streetcar service in that city on December 31, 1930. In 1925, the DT & L Co. was sold to the Arizona Edison Company, which in turn merged with the Arizona Light and Power Company to form the Arizona Public Service Company — APS — in 1952 (Bond, 1976).

Vestiges of the Douglas Streetcar Lines

Whereas all the Douglas streetcars have long vanished, a few remnants of the line could still be seen in 1984 — more than 60 years after the last streetcar stopped running.

The only remaining visible section of streetcar track in Douglas can be found crossing the sidewalk at the north edge of 10th Street, between G and H Avenues, across from today's City Hall. This curving section of track (Fig. 14) served the car barn, and may have been installed as early as 1905. Recent (ca. 1982) repairs (surfacing) to 10th Street had obliterated the continuation of this section of track; and as of 1984, only the section crossing the sidewalk remained visible.



Fig. 14: Last vestige of streetcar track in Douglas is to be found along Tenth Street (between G and H Avenues) where traction line spur to car barn cut across sidewalk. View looks north. (1984 photo by Richard Francaviglia)

Farther east on 10th Street, the perceptive eye can still detect the telltale ruts of streetcar trackage under the pavement in a few places, especially at the location of a passing siding between A and Bonita Avenues (Fig. 15). While most of the streetcar rails were reportedly removed for scrap, some of Douglas' streetcar trackage undoubtedly remains buried beneath several inches of asphalt. One occasionally hears talk that this track could once again serve a resurrected streetcar system, but the prospect is not likely until the tourism and economy of Douglas improve.

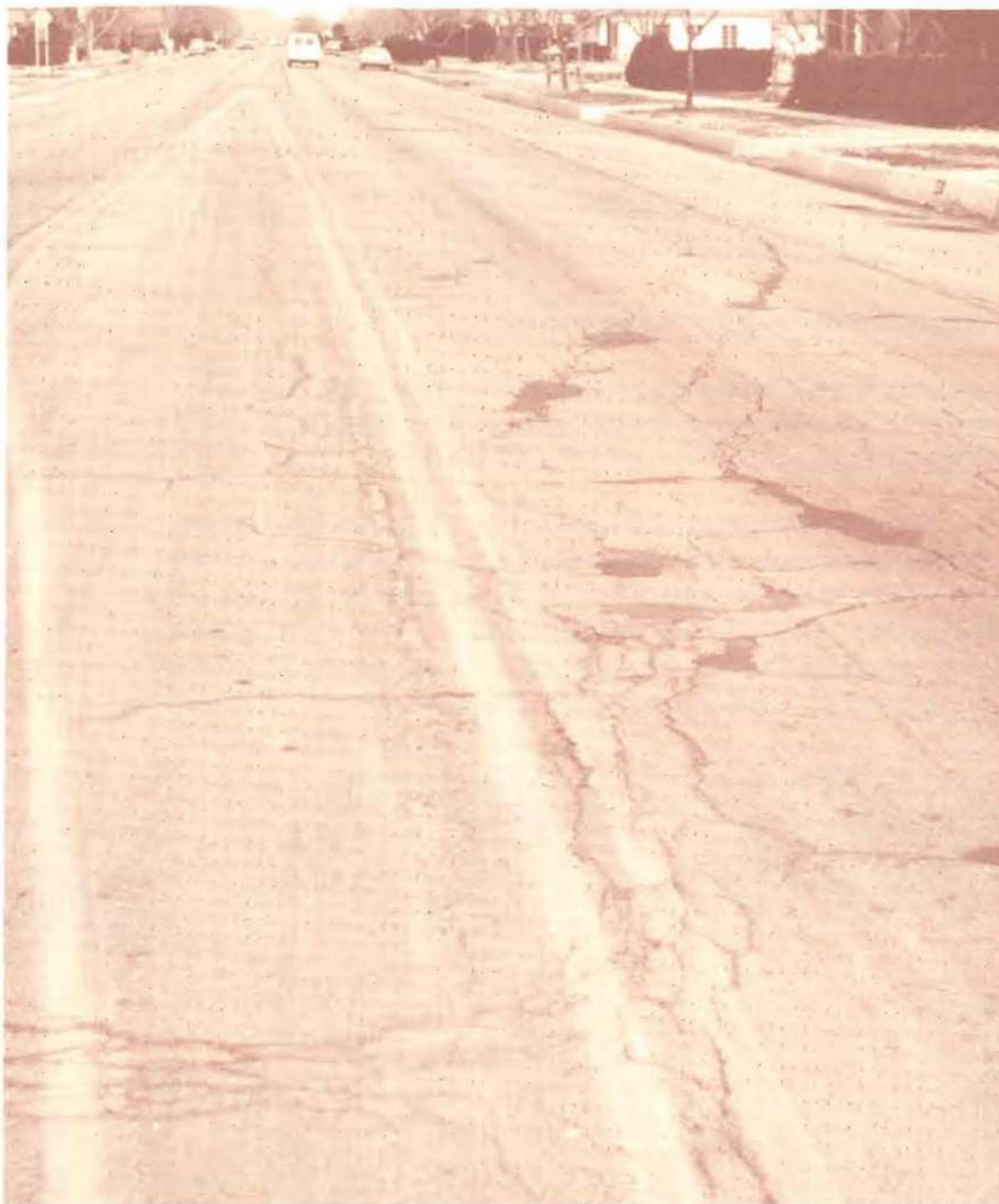


Fig. 15: It takes a good eye to detect the telltale ruts which indicate streetcar trackage under today's multiple layers of asphalt pavement. View looking east along 10th Street marks telltale location of short passing siding. (1984 photo by Richard Francaviglia)

One of the most striking remnants of the streetcar system may be found where the line crossed the draw near Pirtleville. Here North J Avenue ends at the stark masonry bridge abutments on the streetcar bridge across the creekbed (Fig. 16), and one can see the notches where the streetcar tracks entered the long-vanished wooden trestle which carried the electric cars over the creek. Today, at this forlorn spot, one can eerily reflect on experiences related by old-timers such as Ruth Elliott — who still (in 1984) remembered the thrill she had as a girl in 1915 when the electric cars rumbled out over the abyss onto the wooden trestle upon which the trolleys made a “hollow” sound as they crossed. The creek, usually dry, was sometimes swollen with muddy floodwaters, and this added to the excitement.

In 1984, Roy Manley’s persistent search for vestiges of the Douglas Streetcar line paid off; pieces of curved cement curbing in the vicinity of 10th and 11th Streets and Florida Avenue appear to mark the location of the long-vanished Sportsman’s Park. A more recent (ca. late 1930s) subdivision continuation of the grid pattern of Douglas streets has apparently almost completely obliterated the earlier curvilinear pattern of the trolley line. Only small stretches of the old curbing remain in the areas between the city street and private property, a sort of no man’s land that escaped paving and modern landscaping. Looking at this curbing today (Fig. 17) and comparing it to the curbing shown in the 1907 photo taken at Sportsman’s Park during the halcyon days (Fig. 4) reveals that this may be a vestige of the days when Douglas was in its youth and the trolleys were the latest in transportation technology.



Fig. 16: When this 1984 view of the remnants of Douglas streetcar line bridge over a tributary of White Water Draw was taken, more than sixty years had passed since the traction cars crossed the creek bed on a wooden trestle. Only bridge abutments remain. View looks north toward Pirtleville. (Photo by Richard Francaviglia)

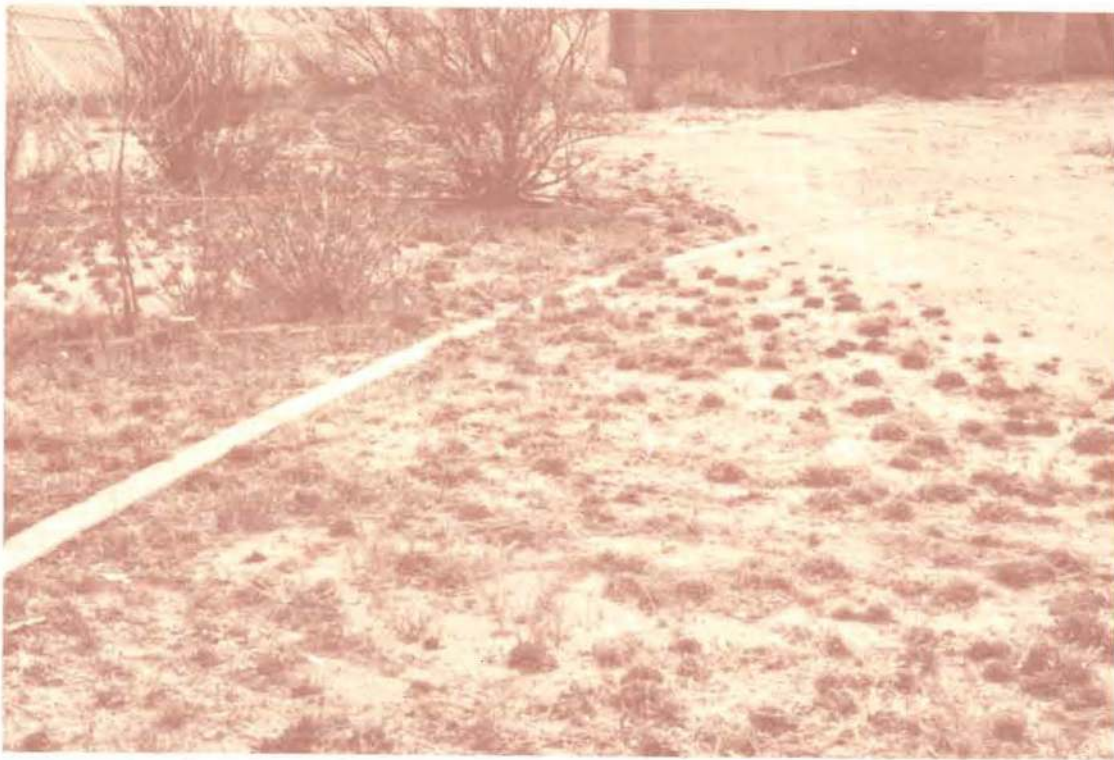


Fig. 17: The curving curbing shown in the 1984 photograph appears to mark the long abandoned site of Sportsman's Park. Compare with Fig. 4. (Photo by Richard Francaviglia)

Epilogue

Overall, the Douglas Street Railway System had seen remarkably diverse equipment — especially for a line that only had about a dozen streetcars during its history. Few lines this size could have boasted the variety seen on Douglas streets: the steam dummies, former open horse cars, graceful five window California cars, the more mundane but nevertheless California style San Diego cars, the conventional (Brill) design deck roofed streetcars, and a Birney! This, coupled with the variety of color-schemes (old-timers remember red, green, and light yellow) enables Douglas to rival most urban, longer lived streetcar systems for variety.

The passing of the streetcars in 1920 did not mark the end of transit in Douglas; rather, the Douglas Street Railway and DT & L Co. were succeeded by sporadic jitney and bus operations which lasted into the 1970s. Of the early jitney companies rather little is known. A photograph of Douglas (ca. 1950) shows a bus running along G Avenue where once the fabled streetcars had rumbled. Busses — the more prosaic side of transit history — should also be researched and reported on before those who remember them are gone.

This study of the Douglas streetcars concludes with seven recommendations:

- * Further research into newspapers — including a complete reading of the Douglas *Daily Dispatch* from 1902 to 1924 is needed.
- * Discovery of Douglas Street Railway and DT & L Co. corporate records and annual reports should be a high priority for Douglas historians.
- * Locating early maps of the Street Railway System will answer technical questions (rail buffs may wish to record the location of all passing tracks, sidings, and turnouts). Sanborn Atlas maps of the period do not show the streetcar tracks, and a search of the City of Douglas map collection, the University of Arizona map collection, and contact with Phelps Dodge Corporation in Phoenix failed to produce any early maps showing the streetcar lines.
- * A search of streetcar manufacturers' records (and rail-fan compiled rosters) may yield information on construction dates and specifications of equipment.
- * Locating early photographs (about half of the known photos of the Douglas streetcars are reproduced here) should be pursued: family albums and extensive post card collections are liable to yield many more photos.
- * Additional discussions with old-timers, both in Douglas and Tucson/Phoenix, should begin immediately. Those relatives of streetcar system employees should be contacted. Such "oral history" is invaluable.
- * Additional "industrial archaeology" should be conducted: although the streetcar lines have been "walked" by amateur researchers, a careful search, especially in the E. 10th Street area, and along the lines to the smelters, might turn up valuable information. Such research should only be conducted after permission has been obtained from land owners along the former streetcar routes.

GLOSSARY

Bobber	A four wheel car having a rigidly mounted frame (or truck).
Clerestory	A type of railroad or streetcar roof having a raised section, running lengthwise, along the sides of which are small windows for ventilation and light.
Deck	A clerestory (q.v.) car roof in which the raised portion runs only to the end of the passenger section of the car and does not extend out over the platforms to the car ends.
Double Truck	A railroad or trolley car having two independently swiveling trucks, one at each end of the car.
Eclipse Fender	A metal, grill-like device which extends or protrudes from the front of a trolley car; designed to rescue or scoop up pedestrians who may have fallen in front of, or been struck by, the car — thus preventing their being run over by the car's wheels. Originally patented as the Eclipse Safety Fender, it could be raised when not in use or when the car was traveling in the opposite direction.
Horse Car	A streetcar, most often of the bobber car design (q.v.), which is pulled by either horse or mule power.
Narrow Gauge	Railroad track in which the rails are spaced more closely than 4'8½" (standard gauge), usually 3 feet (36 inches).
Overhead	The wiring required to deliver electric current to a trolley car; usually strung between wooden poles, such wire consisted of woven copper strands.
Single Truck	A railroad or trolley car having only one four wheel truck (see bobber).
Standard Gauge	Railroad track in which the rails are 4'8½" apart, so-called because it is the most prevalent railway gauge in the U.S and Europe.
Stub	(Or stub end terminal) Where a railroad line ends simply in a terminated section of track (i.e., having no provision for turning trains or streetcars).
Substation	A building or facility at which high voltage alternating electric current is stepped down (reduced) to lower voltage and converted (rectified) into direct current for uses such as home electrification and/or street railway power supply.
Tank Locomotive	A small steam locomotive which has no tender (or "coal car"). Both the fuel and water supplies are kept in bins or tanks which are mounted on the locomotive. Such engines were used on short runs, such as switching or suburban services because of their limited fuel and water supplies.
Trailer	An unpowered streetcar which must be pulled by a powered car or locomotive.
Trolley Pole	The long, metal rod which extends upward from the roof of a trolley car, and which makes contact with the overhead trolley wire. Can be pulled down closer to car's roof when not in use.
Truck	The assembly under a railroad car upon which the axles and wheels are mounted.
Wye	A track configuration, roughly Y or actually triangular in shape, wherein a train may be turned around by running through three switch tracks connected by curved tracks, or "legs" of the wyes.

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