THE GEOGRAPHY OF RAIL PASSENGER SERVICES IN CALIFORNIA AND NEVADA, 1900-1970

I. E. Quastler*

The history of the American passenger train can be traced to the beginnings of common carrier service by rail in 1830. The railroad proved to be generally the most efficient way to move people between cities. Its passenger role grew rapidly, and by the last decades of the nineteenth century it almost monopolized long distance passenger movements.

This important role for the passenger train continued well into the twentieth century. However, even as ridership was increasing during the first two decades, technological developments were taking place that would weaken the demand for travel by rail. In fact, total ridership reached its all-time peak in 1920.¹ Thereafter, except during World War II, the number of riders declined each year for over half a century. By 1970 it appeared that the passenger train (except in commuter services) was on the verge of disappearing from the American scene. Only federal intervention, through the establishment of the National Railroad Passenger Corporation (Amtrak) in 1971, prevented this from happening.

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The purpose of this study is to define and explain the changing geography of rail passenger service in California and Nevada from 1900 until 1970, one year before the advent of Amtrak. During these seven decades the nature and location of rail passenger service changed substantially in response to a variety of forces both within and outside of the industry. The specific approach taken here is to map the location of such service at regular intervals through time, to define changes in the geography of passenger trains between these dates, and to explain these changes in terms of the major variables that affected the demand and supply of rail transportation.

The primary data source on California and Nevada passenger operations was the Official Guide of the Railways (OGR). This monthly publication, which first appeared in 1868, listed essentially all rail passenger services in the United States during the study years. Therefore, it was possible to map the distribution of passenger trains on common carrier railroads in the study area, and to define the changes in service over time. The basic measure of service which can be derived from the OGR is the train-mile, for only the number of scheduled trains on each route was listed. The resulting maps of the frequency of train service are the most accurate representation of service by routes for the study years which can be produced today, for no historical data on ridership are available. Interurban railroads and services are excluded from consideration, for the interurban offered a different type of service and used a different technology than the "steam railroads" considered here.

All rail lines in California and Nevada were classified as either main or branch lines. This facilitated the analysis, for passenger train histories for these types of lines tended to differ radically. Because no precise
definitions of these terms are available, routes classified as main lines are those listed as offering "through service" in the 1944 edition of the Rand McNally Handy Railroad Atlas (except the San Diego and Arizona Eastern Railroad). All other segments were designated as branches.

Service in 1900

In 1900 rail passenger service had been offered for about 45 years in the study area. In the interim the railroad network had expanded to the point where relatively few settled parts of California or Nevada were without at least minimal service. Although freight was undoubtedly the dominant source of income for the industry, the states' companies put much energy into their passenger operations. At this time most passenger trains seem to have been profitable, and they were considered to be both an excellent source of publicity and important to the corporate image. On a few light traffic density lines, passenger trains may have been operated because they were required by the corporate franchise.

Perhaps the outstanding geographic characteristic of rail passenger service in California and Nevada in 1900 was its widespread availability within the network (Figure 1). In that year, 6,624 out of a total of 6,600 route-miles in these states (99.4 percent) had some kind of passenger service (Table I). Of the 36 miles where only freight was handled, the longest was a 16-mile segment between Elwood and Santa Barbara on the new coastal main line between San Francisco and Los Angeles then under construction by the Southern Pacific Railroad (SP). In mid-1900 this segment had apparently been completed recently and freight service was offered; however, it apparently was not yet in proper condition for passenger operations. Even this exception serves to illustrate the near universality of passenger
Figure 1.
Table 1
Changes in California and Nevada Passenger Service, 1900-1970

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<tr>
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<th>1900</th>
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<td>4,668</td>
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<td>Mileage with Passenger Service</td>
<td>6,624</td>
<td>10,077</td>
<td>9,530</td>
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<td>99.4</td>
<td>97.7</td>
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<td>459</td>
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<td>Weekly Branch Line TM's (1,000)</td>
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<td>Average Number of Trains Daily in Each Direction, Main Lines</td>
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<td>4.98</td>
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<td>Average Number of Trains Daily in Each Direction, Branch Lines</td>
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\(^1\) TM = train-miles

Source: Calculated from data in the Official Guide of the Railways.
services on the existing lines. On most routes at least one train was operated in each direction daily, but only tri-weekly service was offered on some lines to small communities in Nevada and eastern California.

Although passenger trains were widespread, the average frequency of service was rather low. In 1900, the typical segment saw only 1.81 trains daily in each direction. This relatively small figure seems to reflect a low level of demand in many rural areas of the two states. This was especially the case for branch lines, where the average daily density was only 1.32 trains each way. Further, it reflects the small populations of California and Nevada, for the states had only about 1.5 million and 42,000 residents, respectively. Even main lines averaged only 2.46 trains daily, a figure lower than for any subsequent study year except 1970.

On the main lines, frequency of service differed considerably by location. At one extreme, both the SP and the Atchison, Topeka and Santa Fe (AT&SF) routes into Los Angeles from the east supported only one train daily in each direction. This probably reflected the early state of the economic development of southern California; at this time even Los Angeles had only 102,000 inhabitants. The SP's transcontinental route into the San Francisco Bay Area and its Los Angeles-Bay Area lines supported three trains daily in each direction. Of the other important main lines, both the SP route from Oakland to Portland and the AT&SF line from Los Angeles to San Diego supported two trains per day. The greatest density of longer and intermediate distance (50-150 miles) main line trains was in the triangular area between Oakland, Sacramento and Stockton, which was served by a total of 15 SP and 3 AT&SF trains per day.

The highest levels of service on both main lines and branch lines were found in the two largest metropolitan
areas of California. In the San Francisco Bay Area, there was already a well established rail commuter service between San Francisco and San Jose by 1900. In Marin County a large commuter traffic had also developed in conjunction with ferry service from Sausalito and Tiburon to San Francisco. On the East Bay, sizable service was provided between Oakland and Avon, with ferry connections to San Francisco.

The Los Angeles area also had a well-developed network of commuter lines linking the various parts of this polynuclear region. In 1900 the electric interurban system was just beginning to be formed, and steam trains played a considerable role in short-haul passenger travel. SP routes radiated from downtown Los Angeles to such places as Pasadena, San Bernardino, Redondo Beach and Santa Ana. An especially dense pattern of services was provided by a number of railroads to cities south and southwest of downtown. Judging from their schedules, these trains principally provided general mobility between the widespread growth centers of the metropolitan areas.

In 1900 even the San Diego area, with only 17,700 people in its central city, had local steam passenger services. Here a number of short line companies provided occasional trains to nearby communities such as Foster, El Cajon, La Mesa, Sweetwater and La Jolla. Some routes were built in conjunction with real estate developments, a pattern repeated in many parts of the nation. As in Los Angeles, few of these trains served as commuter lines.

Period II, 1901-1915

Between 1901 and 1915, the far western rail network and its level of passenger service grew extensively. California and Nevada's route-mileage expanded by approximately 55 percent, increasing from 6,660 to 10,309
miles, and most areas previously without railroads (e.g., southern Nevada, the Imperial Valley and the zone between Ukiah and Humboldt Bay) acquired them. Much of this expansion was in main lines, which increased from 2,853 to 4,668 miles. From north to south, the most significant additions were a new Western Pacific Railroad (WP) route from Salt Lake City to Oakland, the completion of the SP's coastal main line between the San Francisco Bay Area and Los Angeles, and the San Pedro, Los Angeles and Salt Lake Railroad (SL&S, later the Union Pacific) from Los Angeles to Las Vegas and Salt Lake City.

During this period the frequency of rail passenger services increased over three times as fast as the mileage—the 1915 total of 459,000 weekly train-miles was 172.6 percent above the figure for 1900. In 1915 the average line in California and Nevada ran over three trains daily in each direction, compared with less than two trains 15 years earlier. This expansion was concentrated on main lines, where the average segment had almost five trains daily each way, or over twice the level in 1900. As a result, the percentage of all train-miles generated on the main lines increased from 58.3 to about 71 percent. Rail passenger services continued to be widespread within the network; with at least some service on 97.7 percent of the route-miles in 1915.

Perhaps the outstanding trend of the 1901-1915 period was the great increase in the number of long distance passenger trains, particularly on the transcontinental routes into Los Angeles. By 1915 the SL&S route into that city was served by three trains daily in each direction. The AT&SF had increased from one to five trains daily (plus one from Arizona to Los Angeles via the Parker branch), while the SP had increased from one to four (with some additional shorter distance trains). Such dramatic increases
FREQUENCY OF PASSENGER TRAIN SERVICE, 1915
CALIFORNIA AND NEVADA

FREQUENCY OF SERVICE

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<tr>
<td>120-133</td>
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<td>134+</td>
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PASSENGER SERVICE PROVIDED, BUT FREQUENCY NOT SPECIFIED
* THESE FIGURES ONLY APPROXIMATE THE LEVEL OF DAILY SERVICE

Figure 2.
no doubt were a reflection of the considerable growth of southern California. In addition, they imply a large increase in discretionary income since 1900. Finally, the opening of two major expositions in California in 1915 (in San Diego and San Francisco) led to the operation of a few additional trains.\textsuperscript{12}

Service also increased impressively on several other main lines to Los Angeles. The number of trains operating to San Diego grew from two to five in each direction daily. The total frequency of service between the San Francisco Bay Area and Los Angeles also grew substantially. Since 1900 the SP's coastal main line between these places had been completed, and three trains per day operated over its entire length. With four trains via the Central Valley, this meant that seven trains now connected the two major California metropolitan areas versus only three in 1900.

Service on the original transcontinental route to Oakland also experienced large increases. The newly completed WP operated three trains daily, and the parallel SP line had four, more than doubling total service on this route since 1900. On the SP line north to Oregon, the frequency in 1915 was double that 15 years earlier. One of these trains operated over a new main line north of Weed into Oregon via Klamath Falls. The AT&SF's transcontinental service between Barstow and the Bay Area also grew from one to four trains a day in each direction. Both the SP and AT&SF also operated several additional trains on the main lines from the East Bay to major cities in the San Joaquin Valley.

By 1915 there were some major changes in the 1900 patterns of short distance "steam railroad" passenger services within California's two largest metropolises. Such services had declined sharply around Los Angeles as the Pacific Electric (PE) interurban lines, better suited
to serving short distance passenger trips, assumed an increasing transportation role. In its expansion the PE had even absorbed a number of former steam railroads. On the other hand, the number of intermediate distance trains from Los Angeles to such points as Riverside, Santa Barbara and San Bernardino had increased.

In contrast to the situation around Los Angeles, between 1901 and 1915 the number of short-distance trains increased in the San Francisco Bay Area. A major new suburban service had developed between San Francisco (via ferry), Oakland, and Stonehurst station south of downtown Oakland. In 1915 this route was served by three daily trains, five trains that operated daily except Sundays, and five more trains on Sunday-only schedules. During this period commuter service also increased considerably between San Francisco and San Jose (additional trains ran only as far as Mayfield and Redwood City), and from Oakland northwest to Port Costa. On the other hand, steam-powered commuter operations declined in Marin County; as in Los Angeles, the main cause of this decline was the introduction of electrified interurban trains.\(^{13}\)

Over intermediate distances, the frequency of service between the Bay Area and Sacramento increased sharply. The SP Railroad connected these cities over three routes, the most direct of which (via Davis) ran ten trains per day. Additional trains were operated over more circuitous lines through Tracy via Altamont Pass (Niles Canyon) or Avon. On the Altamont Pass route, the SP services were supplemented by WP trains.

Two other areas had high-frequency, short distance trains at this time. In and around Ely, Nevada, a commuter service for miners was operated by the Nevada Northern Railroad (NN). There were also two lines with short-distance steam trains around San Diego, extending from the
central city to Foster and Sweetwater over the San Diego and Southeastern Railway (SD&SE). As in 1900, relatively few SD&SE trains had schedules that suggested they were used for the journey to work.

Period III, 1916-1930

Between 1916 and 1930 the two-state rail network remained relatively stable, with both new construction (north of Wells, Nevada and northwest of Alturas, California) and some track abandonment (notably in the mining zones of southern Nevada and eastern California). The total route mileage therefore increased by only 40 miles.

During this period a number of important new forces emerged that decreased the demand for travel by rail. Most prominent was the rapid rise in travel by bus and private automobile, particularly the latter. With increased average incomes, low car prices, and economic prosperity, in the 1920's the United States moved rapidly toward becoming a motorized nation. At the same time the network of paved rural roads was expanding. The impact of these changes was a decline in patronage of passenger trains after 1920.

Initially the greatest impact of the rising use of cars and buses was on branch line passenger trains. It was here that rail service was slowest and most infrequent, and therefore most susceptible to new competition. Buses could offer a far greater frequency of service over the same route, for the equipment unit was better suited to the level of demand. The private automobile offered the possibility of an infinite frequency, something that no form of public transportation could hope to match. As a result, many former branch line customers began to use highway transportation, apparently sometimes as a more convenient way to gain access to long distance passenger trains. Further, branch services (and short distance trains in general) were
FREQUENCY OF PASSENGER TRAIN SERVICE, 1930
CALIFORNIA AND NEVADA

FREQUENCY OF SERVICE
TRAINS PER WEEK
BOTH DIRECTIONS
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0
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1-11
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12-13
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14-21
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22-35
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36-49
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50-63
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64-77
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78-91
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92-105
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106-119
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120-133
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134+
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PASSENGER SERVICE PROVIDED, BUT
FREQUENCY NOT SPECIFIED
*THESE FIGURES ONLY APPROXIMATE
THE LEVEL OF DAILY SERVICE

Figure 3.
relatively expensive to operate, and rail managers sometimes took the opportunity either to reduce the level of branch line operations or to abandon them altogether. The reduction of service tended further to weaken the demand for such trains. As a result, total branch line train-miles declined by 37.8 percent between 1916 and 1930.

The changes in branch line service were unevenly distributed. On a number of segments (e.g., the Northwestern Pacific (NWP) to Eureka) frequency actually increased after 1915. Typically, however, the number of trains on secondary lines declined from two or three to only one train daily each way, or even to less than daily service. On the average, the level of branch line service declined from 1.69 trains daily in each direction in 1915 to 1.04 fifteen years later.

The decrease of branch line service was not duplicated on the main lines, for the car and bus were not yet serious competitors for long-distance movements. In fact, total train-miles on such lines increased by 3.4 percent. This small increase was not enough to offset the rapid decline in branch line services, so that total train-miles declined by nine percent. Because of these changes, the increasing concentration of services on the main lines of the 1900-1915 period continued. By 1930 fully 80 percent of the total train-miles were generated on main lines. Clearly, the branch line passenger train was playing a rapidly decreasing role in intercity travel.

The average level of service on the main lines increased from almost five to 5.15 trains daily in each direction during this period. The largest increases occurred on two SP routes: on the coastal main line from San Francisco to Los Angeles the frequency changed from three to six trains per day, and on the southern trans-continental route it rose from four to six. On the AT&SF,
the number of trains on the Needles-Los Angeles route increased from five to seven trains daily. In contrast, service between Oakland and Barstow was only half as high in 1930 as it had been in 1915; it is quite possible that the circuitry of this railroad's line from Chicago to the Bay Area (via Barstow) compared with SP's direct route may have been a factor in this decline.

The basic strengths and weaknesses of competitive routes may also help account for changes in main line services in northern California and Nevada. On the central transcontinental route into the Bay Area, the number of trains operating remained stable at seven. However, the location of these services changed as the SP's longer route gained at the expense of the WP. By 1930 service between the Bay Area and Oregon had increased by one train daily; now most trains took the interior route to Portland via Klamath Falls. In addition to four Los Angeles-San Francisco trains via the Central Valley, the SP operated four trains from the Bay Area to Fresno (via Los Banos or Modesto). Finally, the earlier dense corridor services between Sacramento and Oakland remained, both on the direct line to the northeast and on the two longer routes via Tracy.

With the exception of the San Francisco-San Jose commuter corridor, short distance steam services continued to decline drastically in the face of automobile, bus and interurban competition. By 1930 such services had disappeared completely around San Diego, and they had declined almost as sharply around Los Angeles and Ely. In Los Angeles, many lines now only had freight services, and almost all local trains on the main lines had disappeared. Even the East Bay commuter trains had largely been abandoned by 1930, to some degree replaced by interurbans. As in 1915, some shorter distance trains remained outside the areas served by the interurbans. In contrast, the San
Francisco-San Jose commuter service of the SP continued to increase, reflecting both that area's growth as a prestigious suburb of San Francisco and the lack of effective interurban competition.

*Period IV, 1931-1940*

Because the railroad is a high fixed cost form of transportation, rail managers have a difficult time adjusting costs to falling demand. As a result, the Great Depression affected this mode with particular force, and many companies soon went bankrupt. During this decade the railroads came increasingly under pressure to eliminate uneconomic activities. Among the first operations to come under careful scrutiny were branch and short-distance passenger trains. Such trains had continued to experience sharp drops in ridership after 1930, not only because of the diversion of passengers to buses and cars but also because of the lower demand that came with decreased incomes. The great economic pressures of the time led to abandonment of both money-losing passenger trains and more than 450 miles of track. By 1940, when a major economic upturn was beginning, these Great Depression pressures had exerted a considerable influence on the geography of rail passenger services in California and Nevada.

Between 1930 and 1940 the total railroad passenger service of the study area (in train-miles per week) declined by 17 percent. Predictably, the decline was more pronounced on branch than on main lines, where total service decreased by only 5.7 percent. Because of the severe economic pressures on branch line trains, many secondary routes lost all passenger services. By 1940, freight-only trackage in California and Nevada totaled close to 3,000 miles, versus less than a third that figure ten years earlier. Further, this change does not consider the
FREQUENCY OF PASSENGER TRAIN SERVICE, 1940
CALIFORNIA AND NEVADA

FREQUENCY OF SERVICE
TRAINS PER WEEK WITH DIRECTIONS

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PASSENGER SERVICE PROVIDED; FREQUENCY NOT SPECIFIED
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Figure 4.
additional service that was lost when segments were totally abandoned. Because of the massive withdrawal of passenger trains, several parts of the study area (particularly the Central Valley and northeastern California) had concentrations of freight-only lines.

On the other hand, the long-distance passenger train weathered the Great Depression rather well. This stability was probably due primarily to the lack of effective long distance intermodal competition, although the strength of established habits and major marketing efforts by railroads may also have been involved. During the decade, service on the AT&SF's transcontinental line to Los Angeles actually increased by one train daily in each direction, as did its service on the line between the Bay Area and the Central Valley. In general, stability also characterized the SP's main lines; the biggest change was the loss of two interstate trains on the southern transcontinental route. On the other hand, the WP's long distance service declined further after 1930, so that only one train per day was being operated over the main line to Salt Lake City. The WP also operated a daily round trip between Oakland and Reno. Since 1930 this railroad and the Great Northern (GN) jointly had constructed the "inside gateway" route from the WP main line in eastern California northward into Oregon via Bieber. Significantly, this late addition to the network never saw more than temporary and mixed (passenger-freight) train service, and even this was only offered sporadically.

Except between San Francisco and San Jose, by 1940 intrametropolitan passenger operations had disappeared. The San Jose commuter service was maintained at approximately a steady level during this decade. In 1940, the density of passenger trains on this route considerably exceeded that of any other line in the study area.
Period V, 1941-1950

The demand for rail passenger service varied greatly between 1941 and 1950. During World War II passenger travel increased rapidly, both because of great numbers of military travelers and because of decreased use of cars and buses because of gasoline and tire rationing. Ridership peaked in 1944, the last full year of the war, and declined rapidly thereafter. The primary cause of the decline was the revival of highway transportation, but the rise of air transportation also began to effect the passenger train.

By 1950, these developments had led to a substantial decline in rail passenger services in California and Nevada. During the decade total train-miles decreased by 19.1 percent and, because of the increased effectiveness of long distance competition by air and highway, main line service declined almost as rapidly (15.3 percent). The slower relative decline of main line trains meant that the concentration of passenger services on these routes continued. In 1950, 94.8 percent of the train-miles in the two states was generated on main lines, and few branches saw passenger trains of any kind. In fact, branch line service was restricted largely to those routes that were most like main lines, such as the San Diego and Arizona Eastern (SD&AE) between San Diego and El Centro, the SP between Tracy and Fresno via Los Banos, and the NWP between San Rafael and Eureka. By 1950 over 4,000 miles of track in the two states (44 percent of the total) saw only freight service.

As had been true earlier, the decline in main line services was unevenly distributed. On the SP's two San Francisco-Los Angeles routes, for example, service via the Central Valley remained constant, while on the coastal route (with fewer large intermediate cities) it declined by two trains per day. On the SP and AT&SF between the Bay
FREQUENCY OF PASSENGER TRAIN SERVICE, 1950
CALIFORNIA AND NEVADA

Figure 5.
Area and major San Joaquin Valley cities the level of service generally declined by one train per day. The same rate of decline also applied to the route from Oakland to Oregon. In contrast, long distance service on the WP increased with the inauguration in 1949 of the famous California Zephyr between Chicago and Oakland. The San Jose commuter line and the SP route from Oakland to Davis continued to have the highest passenger train densities in the study area; although in both cases this service had declined somewhat since 1940.

Of the main routes into Los Angeles from the south and east, the frequency on the AT&SF's transcontinental line via Needles decreased most sharply (from eight to six trains per day), while service on the Union Pacific (UP) and SP routes remained the same. In a slight reversal of this trend, the number of trains between Los Angeles and San Diego increased from four to five per day, as both cities experienced considerable population growth. Overall, the average main line in 1950 still had a relatively high level of passenger service (4.11 trains per day each way).

Period VI, 1951-1960

In general, the trends evident between 1940 and 1950 continued to 1960, but at an accelerated pace. During this period national income, car ownership, and the mileage of limited access intercity roads increased greatly, with a parallel decrease in the demand for rail passenger services. In addition, the airline industry began to play a large role in intercity common carrier travel. Traffic diversion to air was reinforced by the introduction of turbojet aircraft late in the period, for this innovation provided both greater speed and lower unit operating costs. The decline in the number of passengers, coupled with increasing costs of operations, led to a peak loss of about $723 million on
Figure 6.
passenger trains by the industry in 1957.16 Faced with enormous operating losses and a rapid decline in patronage, in the second half of the decade the industry moved to eliminate many money-losing services. This trend was accelerated in 1958 when the Interstate Commerce Commission liberalized its policies on allowing the withdrawal of passenger trains.17

Given these unfavorable trends, the total number of train-miles declined by about 33 percent. The rate of decline was somewhat larger for main lines than branches. The decreases in service were remarkably evenly distributed over the main lines; on most, there was one less train in 1960 than there had been in 1950. The two prominent exceptions were on the AT&SF main line between Needles and Los Angeles, where service declined from six to four trains per day, and between Los Angeles and San Diego, where service increased again. Elsewhere in 1960, most main lines saw two or three trains daily each way. The average total number of trains daily on California and Nevada main lines declined from 4.11 in 1950 to 2.74 ten years later.

On branch lines, by 1960 passenger service existed only on a few lines that constituted unusual cases. The important Tracy-Los Banos-Fresno route, retained one train. On the NWP, the Interstate Commerce Commission had been reluctant to approve abandonment because the trains served some relatively isolated communities. The heaviest branch line service actually was found on the short California Western Railroad (CW) between Willits and Ft. Bragg, but this was largely operated as a tourist attraction. In 1960, 4,216 miles of track in the study area had no passenger service.

As in earlier years, the highest passenger train frequency was on the commuter route between San Francisco and San Jose. This line averaged 28 trains in each
direction per day, but most service was actually concentrated on weekdays. Despite the high passenger counts, the SP lost money on this operation.

Period VII, 1961-1970

During the 1960's rail passenger service in the United States experienced another sharp decline. As before 1960, the main causes of the decline on the demand side were increasing competition from highways (particularly with the growth of the Interstate Highway System) and great expansion of air services. In California air competition was intensified by the emergence of an efficient and inexpensive intrastate airline. On the supply side, rail passenger service continued to become more expensive to operate vis-a-vis its main competitors, particularly because it is so labor-intensive. As a result, the level of rail passenger service declined by over 60 percent on both the main and branch lines. This decline was so drastic that by 1970 the service on many main lines amounted to little more than tokenism.

During the 1960's the SP management held a strongly anti-passenger train philosophy; its goal was to consolidate all main line traffic into a single train whenever possible. Therefore, by 1970 almost all SP main lines had only one or fewer trains daily in each direction. Only tri-weekly service was provided on two major routes (Oakland-Portland and Oakland-Chicago); the same would soon apply to the southern transcontinental route. Even on the more passenger-oriented Santa Fe, service had declined substantially. In 1970 only one train was operated daily between Richmond and Barstow, and only two trains ran between Los Angeles and Needles on the line to Chicago. The highest frequency of AT&SF service, between Los Angeles and San Diego, was only half as many trains (three) in 1970 as
FREQUENCY OF PASSENGER TRAIN SERVICE, 1970
CALIFORNIA AND NEVADA

Figure 7.
a decade earlier. During this decade, the WP became the first major carrier in the study area to eliminate all passenger trains. Overall, in 1970 the average main line had only 1.1 trains daily in each direction.

On the branches, a few unusual cases continued to account for some operations. The greatest density again was found on the CW between Willits and Ft. Bragg, where four trains were operated daily. Between Willits and Eureka, the NWP continued to operate a tri-weekly self-contained diesel railcar. The SP also operated a daily service from San Francisco to Monterey, but this train ran on a branch only for a few miles. In 1970, but 44 percent of the mileage in the two states had passenger service of any kind; over 5,000 route-miles were freight-only.

Summary and Conclusions

Between 1900 and 1970 the geography of passenger train services in California and Nevada changed greatly in response to forces both internal and external to the industry. Because of the differential impact of these forces, the changes were distributed unevenly both through time and space. With few exceptions, services on branch lines declined earlier and at a faster rate than on main lines. As early as the 1916-1930 period, branch line train-miles declined by 37.8 percent. By 1970 the branch line passenger train had almost disappeared. The same rapid decline characterized intrametropolitan services (except between San Francisco and San Jose), which were displaced by inter-urbs, buses and private automobiles.

The main line train encountered serious intermodal competition much later than its branch line counterpart. Main line train-miles continued to increase until 1930, and on one line there was an increase as late as 1960. Higher frequencies were particularly common on the main lines to
Los Angeles, as that metropolitan area grew rapidly. Main line services began to decrease rapidly after 1950, but in only one period (1951-1960) did they decline at a greater rate than branch line operations. Overall, between 1900 and 1970 there was an almost continuous tendency toward concentration on the main line for rail passenger services. By 1970 main line trains accounted for almost 96 percent of total train-miles generated in California and Nevada.

With a long history of decline, by 1970 it had become clear that the non-commuter passenger train was in danger of becoming extinct (except for some tourist operations). On some major routes, even the nominal service still being provided was threatened with imminent abandonment. It had become clear that without government intervention, the intercity passenger train would disappear. This fact was soon translated into political action by a small number of vocal advocates of passenger trains. On May 1, 1971, a government-sponsored corporation (Amtrak) began to operate most intercity services, and a new era for the American passenger train had begun.

NOTES


4 In California the functions of the interurbans did not differ as greatly from their steam railroad counterparts as was the case in most of the rest of the country.
Rand McNally & Company, Handy Railroad Atlas of the United States (Chicago: Rand McNally & Company, 1944), p. 2. The exclusion of the San Diego and Arizona Eastern was based on the judgment that it was considerably less important than the other main lines. The Rand McNally map included the following lines: (1) The WP and SP railroads from the Utah border to Oakland; (2) the SP from the Oregon border to Oakland, both via Sacramento and via Willows; (3) the SP Central Valley route from Oakland (via Antioch or Niles Canyon) and Sacramento to Los Angeles via Modesto, and the coastal line from San Francisco and Oakland to Los Angeles; (4) the AT&SF lines from Needles to Los Angeles and Oakland via Barstow; (5) the AT&SF line from Los Angeles to San Diego, and (6) the Union Pacific route from the Nevada-Utah border to Los Angeles.


Although passenger operations usually showed a favorable ratio of costs to revenue in this era (see various issues of the Commercial and Financial Chronicle for the year 1900), others have argued that these trains were more expensive than has been admitted and that they were usually unprofitable. For such a view, see John A. Droge, Passenger Terminals and Trains (Milwaukee: Kalmbach Publishing Co., 1969), pp. 1-6.


Robert M. Fogelson, The Fragmented Metropolis: Los Angeles, 1850-1930 (Cambridge, Mass.: Harvard University Press, 1967), p. 67. A winter schedule at this time would perhaps have shown more service, for southern California was still primarily a winter resort area.


In Marin County, the former steam lines were electrified on sections of the Northwestern Pacific Railroad.

This increase may have been attributable to the AT&SF's introduction in the late 1930's of San Francisco-Los Angeles passenger service, where the Los Angeles to Bakersfield link was on a bus.


Ibid., pp. 97-154.


This problem is exacerbated by union regulations that require crew changes at regular distance intervals, rather than based on hours of service.