U.S. Department
of Transportation
**Federal Railroad
Administration**

Amtrak Thruway Bus Service and the Private Bus Industry

Report to Congress

Office of Railroad Development **July 1994**

THE SECRETARY OF TRANSPORTATION
WASHINGTON, D.C. 20590

AUG 12 1994

The Honorable Frank R. Lautenberg
Chairman, Subcommittee on Transportation
and Related Agencies
Committee on Appropriations
United States Senate
Washington, D.C. 20510

Dear Mr. Chairman:

The enclosed report is submitted in accordance with the requirements of the House of Representatives Committee on Appropriations report (H.R. Report 190, 103rd Congress, 1st Session) accompanying the Department of Transportation and Related Agencies Appropriations Bill for FY 1994, H.R. 2750. In that report, the Committee requested that the Secretary investigate the nature and extent of the Amtrak bus service and to report back to Congress the effect of said bus service on the nonsubsidized, private sector bus service.

An identical letter has been sent to Chairman Carr.

Sincerely,

Federico Peña

Enclosure

THE SECRETARY OF TRANSPORTATION
WASHINGTON, D.C. 20590

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U.S. House of Representatives
Washington, D.C. 20515

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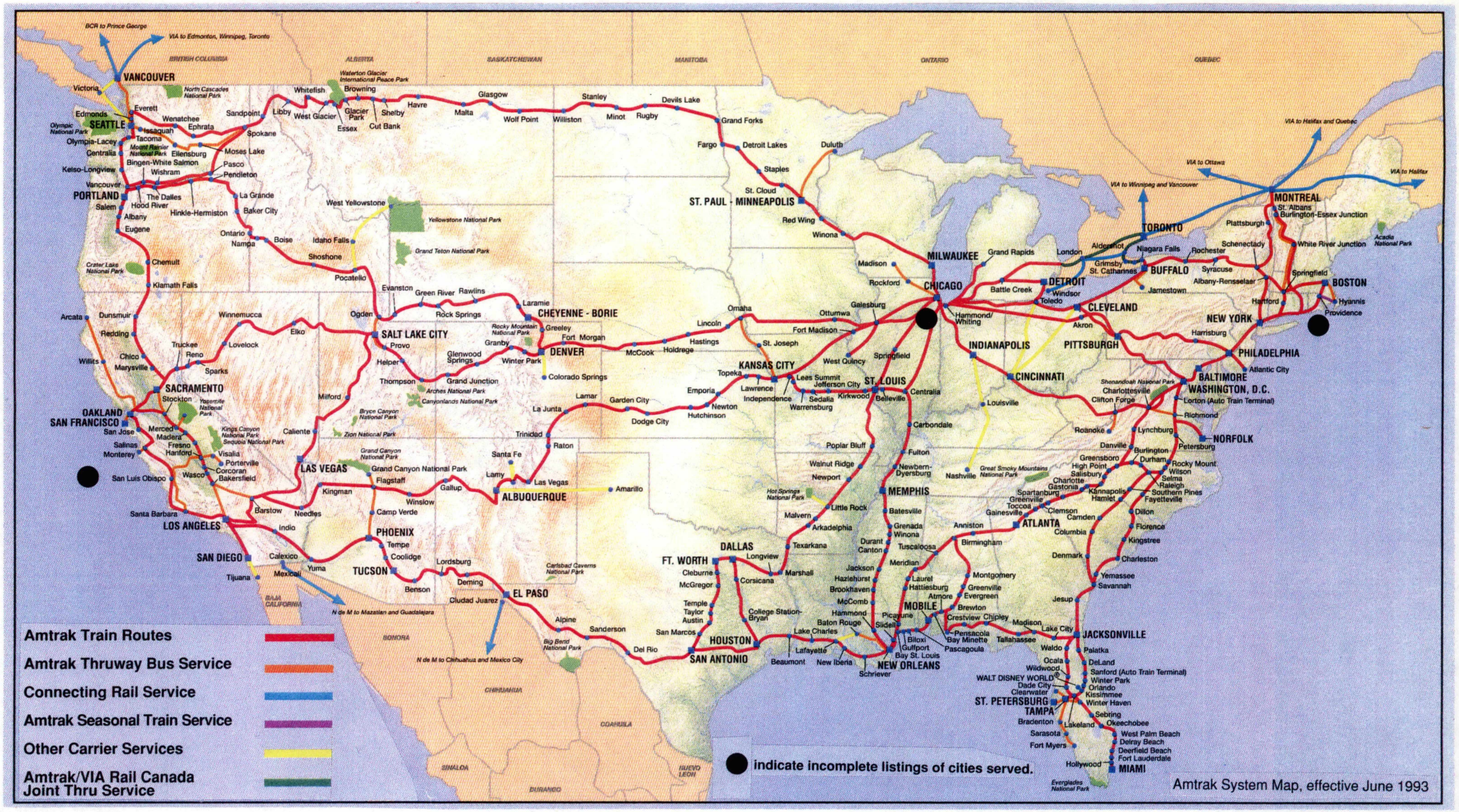
Amtrak's National Rail Passenger System



AMTRAK THRUWAY BUS SERVICE

AND THE PRIVATE BUS INDUSTRY

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EXECUTIVE SUMMARY

At the request of the House of Representatives Committee on Appropriations, this report reviews the nature and extent of Amtrak's thruway feeder bus service and its effect on non-subsidized, private bus service. The "effect" on private bus service is defined as the number of potential passengers and their associated revenues that are "lost" by the private bus industry due to Amtrak's feeder bus operations.

Since incorporation in 1971, Amtrak has used feeder buses to provide access to its nationwide train network, thereby increasing ridership and lowering its need for Federal subsidies. In FY 1992, feeder buses carried 760,980 passengers to or from Amtrak trains in 23 states. Amtrak earned $34 million in revenues on the passengers' combined bus/rail trips.

While Amtrak uses feeder bus services across the Nation, the feeder bus operation in California is by far the largest and most concentrated. It is also the only Amtrak feeder bus service operated at the request of and paid for with state funds. Service in California accounted for 41 percent of all feeder bus passengers in FY 1992.

Outside of California, the effect of the feeder bus service on the private bus industry is insignificant. The study estimated that of the 416,027 Amtrak passengers using feeder buses outside the California-supported bus network, only between 45,000 to 70,000 passengers would have used private bus service if Amtrak service were not available and, as such, can be considered "lost" by the private bus industry due to Amtrak's feeder bus service. This represented less than three-tenths of 1 percent of the estimated 30 million private bus passengers in that non-California market in 1992.

In California, the effect of the state-supported feeder bus service is mixed. An estimated 60,000 to 100,000 passengers or (1.2 to 2.5 percent of the estimated 4 to 5 million bus passengers in California) should be considered "lost" by the private bus companies because of the feeder service. By contrast, it is estimated that 300,000 to 400,000 automobile passenger trips per year have been diverted from California's congested highways by the feeder bus service.

I. PURPOSE AND SCOPE

The House of Representatives Committee on Appropriations, in its report (H.R. Report 190, 103rd Congress 1st session) accompanying the Department of Transportation and Related Agencies Appropriations Act for FY 1994, requested "...the Secretary of Transportation to investigate the nature and extent of the Amtrak bus service and report back to Congress the effect of said bus service on unsubsidized, private sector bus service."

This report on Amtrak's thruway bus service (1) provides background information on the authorization for and description of its current operation, (2) discusses the various thruway bus services, their funding arrangements, and the markets served, and (3) estimates the possible effects on bus service as provided by the private sector bus industry, with specific emphasis on ridership levels and revenues.

II. BACKGROUND

A. LEGISLATIVE AUTHORITY

The National Railroad Passenger Corporation (Amtrak) was created in 1970 following enactment by Congress of the Rail Passenger Service Act (RPSA) (45 U.S.C. 501 et. seq.). The RPSA defines Amtrak's operating authority and responsibilities. Amtrak operates more than 200 intercity passenger trains every day and serves 520 communities over a 25,000-mile national rail network. In FY 1992, Amtrak carried 21.4 million intercity passengers.

Section 306(j) of the RPSA (45 U.S.C. 546(j)) authorizes Amtrak to establish through routes and joint fares with other intercity passenger carriers. Section 306(j) provides:

> **(j) Intercity through routes and joint fares; cooperation between Corporation and other intercity common carriers of passengers**
>
> (1) The establishment of through routes and joint fares, between the National Railroad Passenger Corporation and other intercity common carriers of passengers by rail and motor carriers of passengers, is consistent with the public interest and the national transportation policy. The Congress encourages the making of such arrangements.

(2) The Corporation may establish through routes and joint fares with any domestic or international motor, air, or water carrier.

B. OVERVIEW OF PRIVATE BUS INDUSTRY

The Interstate Commerce Commission (ICC) reported that in 1992 the majority of the 4,603 passenger bus carriers operating in this country were charter and tour bus companies. The remaining companies provided scheduled, regular route intercity passenger service. Data on the charter and tour operators were scarce and often not suitable for statistical analysis. Therefore, this report focused on the regular route carriers, for which limited data were available.

In 1992, approximately 110 carriers offered intercity regular route passenger service, but only 21 carriers earned more than $5 million in annual revenues. These 21 carriers were required to report to the ICC as Class I carriers.

Class I regular route bus carriers account for the major portion of intercity ridership and revenues by the private sector bus industry.[1] In 1992, the Class I bus operators carried 35 million passengers and earned revenues of $747 million. (For further comparisons, see Table 1.) Furthermore, the Class I bus industry is highly concentrated with 14 of the largest regular route companies contributing 90 percent of all Class I carrier revenues between 1988 and 1992.[2]

For the purpose of this report, Class I bus carriers were used as the representative segment for the private bus industry. First, Class I carriers represent an overwhelming portion of the passengers and revenues generated by the passenger bus industry, and secondly, data on the non-Class I and smaller regional bus companies often were limited or unavailable.

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[1] Intercity regular route passenger bus service (1) operates on a fixed schedule; (2) provides service between two or more cities, and (3) serves the general public. Source: GAO report, "Surface Transportation: Availability of Intercity Bus Service Continues to Decline," GAO/RCED-92-126, June 1992.

[2] The 14 Class I carriers include: Greyhound Lines, Inc., Adirondack Transit Lines, Inc., Carl R. Bieber, Inc., Bonanza Bus Lines, Inc., Capitol Bus Company, Carolina Coach Company, Hudson Transit Lines, Inc., Jefferson Lines, Inc., Kerrville Bus Company, Frank Martz Coach Company, Peter Pan Bus Lines, Inc., Plymouth and Brockton Street Railway Company, Vermont Transit Company, Inc., and Texas New Mexico & Oklahoma Coaches, Inc.

Table 1
1992 Revenue and Ridership Levels by Mode[3]

Selected Modes	Passenger Revenue ($ Millions)	Ridership (Millions)
Amtrak	929	21
Class I Bus Carriers	747	35

C. OVERVIEW OF AMTRAK'S FEEDER BUS SERVICE

Amtrak's feeder bus service uses bus operators to carry Amtrak passengers to and from rail stations to increase access to Amtrak's trains, thereby increasing ridership and revenues. Feeder bus service often accomplishes this by linking off-line population centers not served by rail with Amtrak train service. Some feeder bus services also connect two geographically separated Amtrak train routes. Regardless of the manner in which access is achieved, all Amtrak feeder bus passengers do connect with the Amtrak rail system at some point during their trips. Amtrak neither offers nor pays for any bus-only service which is not connected to its rail service. Moreover, a non-rail passenger can not use an Amtrak contract feeder bus.

Amtrak has operated feeder bus service since its incorporation and is currently operating thruway bus service in 23 states and Canada.[4] Amtrak contracts for these bus services and offers coordinated and guaranteed schedules, through fares and ticketing, and service to and from rail stations. The combination of Amtrak train service and schedule-coordinated feeder bus service acts as an intermodal transportation system for rail passengers under a single marketing banner.

In FY 1992, Amtrak's feeder bus operation carried a total of 760,980 Amtrak passengers and generated a total of $34 million in revenues for Amtrak on the combined rail/bus service.[5] Compared to Amtrak's entire system, the combined bus/rail passengers were

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[3] Class I Bus carrier data represent calendar years. Amtrak's 1992 data are based on its fiscal year ending September 30, 1992. Source: ICC report, "The U.S. Intercity Regular Route Passenger Bus Industry," p.15, Washington, D.C., July 1993.

[4] States include Arizona, California, Florida, Idaho, Illinois, Indiana, Kansas, Louisiana, Massachusetts, Michigan, Minnesota, Missouri, Nebraska, New York, Nevada, Ohio, Texas, Utah, Vermont, Virginia, Washington, Wisconsin, and Wyoming. Buses also operate to Vancouver, Canada.

[5] Feeder bus revenues are revenues earned by Amtrak for the entire trip which includes both the bus and rail segments of each trip.

3.6 percent of Amtrak's 21.4 million passengers and barely 3.7 percent of its $929 million in passenger-related revenues in FY 1992. (For further comparisons, see Table 1.)

Among all the feeder bus operations in the country, the total operation in California, which consists of two major segments, is by far the most extensive. In FY 1992, that state accounted for 68 percent of all of Amtrak's feeder bus passengers and 57 percent of the associated revenues. Its largest segment, the state-supported bus program, alone carried 41 percent of all of Amtrak's feeder bus passengers and generated 28 percent of the associated revenues. The remaining 27 percent of the passengers and 29 percent of the revenues in California were attributable to Amtrak's Oakland to San Francisco, and Yosemite to Merced feeder bus services. The latter two services are not part of the California state-sponsored feeder bus program.

Feeder bus services operating outside of California comprised 32 percent of Amtrak's feeder bus passengers and 43 percent of the associated revenues. Unlike California, feeder bus operations outside of the state, are widely dispersed across the country, and no single operation approaches the concentration and magnitude found in California.

Amtrak's feeder bus service operated for and supported by the state of California tended to be a long-distance bus service, compared to those feeder bus services which operated outside of California's state-supported market, including the San Francisco to Oakland service. Of the 311,627 feeder bus passengers that traveled in the California state-supported market in FY 1992, fewer than 1 percent traveled less than 20 miles by bus, while more than one-half or 57 percent, traveled at least 100 miles or more by bus. In FY 1992, the average bus distance per Amtrak's feeder bus passenger in California's state-supported market was 160 miles.

The California market enjoyed considerable growth over the recent four-year period. Between FY 1988 and FY 1992 the number of feeder bus passengers grew by 13.5 percent per year from 188,000 passengers in FY 1988 to 311,627 passengers in FY 1992. Most of that growth can be attributed to the opening of new services as the state of California continued to develop an extensive network of connecting feeder bus routes to increase the accessibility of the state-supported train services.

Amtrak's feeder bus service outside of California's state-supported system[6] consists predominantly of short-distance bus

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[6] The "outside of California" market includes two services which operate in California, but which are not part of the California state-supported feeder bus program. These services operate between San Francisco and Oakland, and

services. Of the 416,027 feeder bus passengers that traveled in this market in FY 1992, more than two-thirds or 77 percent traveled less than 100 miles by bus, and more than one-half or 54 percent used the bus for only 20 miles or less. In fact, the average bus distance per Amtrak's feeder bus passenger along the 27 routes outside of California's state-supported market was close to 30 miles.

This market also grew significantly between FY 1988 and FY 1992, although at a lower rate compared to the state-supported feeder bus market in California. Over the four-year period this market grew at an average rate of 10.5 percent per year. A portion of that growth was attributable to the start-up of three new bus services to provide feeder service to and from points where rail service was either rerouted or discontinued.[7] Without these new services, the annual growth rate over the same four-year period was 8.5 percent. These new bus services were predominantly short distance averaging slightly more than 20 miles.

III. AMTRAK'S CURRENT THRUWAY BUS SYSTEM

A. TYPES OF SERVICES AND FUNDING ARRANGEMENTS

Amtrak provides five different types of bus services operated under the Amtrak Thruway banner. These are shown in Table 2. They differ primarily in the type of service schedules offered, the type of passengers, the number and lengths of its routes, and in the funding arrangement between Amtrak and the bus operators.

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between Yosemite and Merced.

[7] The three services include: (1) Borie, WY - Cheyenne, WY (rerouting of the "California Zephyr"); (2) Ogden, UT - Salt Lake City, UT (rerouting of the "Pioneer"); and (3) Waterloo/Garrett, IN - Fort Wayne, IN (rerouting of the "Broadway Limited").

Table 2
Amtrak Feeder Bus System:
Traffic and Revenues for 1992[8]

Types of Services	Number of Passengers	Percent	Rail/Bus Revenues ($000)	Percent
Thruway Dedicated - Charter	356,210	47	$17,952	53
Thruway Dedicated - Bus Funded	5,413	1	455	1
Thruway Nondedicated - Scheduled	54,404	7	3,575	11
California	311,627	41	9,523	28
Interline	33,326	4	2,541	7
Total	760,980	100	$34,046	100

Thruway Dedicated (Chartered)

This Amtrak service provides dedicated feeder bus service to and from an off-line location. It is a dedicated service, as it transports only Amtrak passengers and has the flexibility to adjust to Amtrak's schedule, even in cases when the connecting train operates behind schedule. This service carries only passengers with Amtrak through railroad tickets. In its funding arrangement, Amtrak negotiates a charter contract with a bus carrier for a fixed fee per bus trip, regardless of the number of passengers carried. Amtrak retains all revenues paid by the passenger for travel on the combined rail/bus ticket. The service is offered currently along 13 major routes throughout the country with an average one-way distance of close to 65 miles. In FY 1992, this service carried 356,210 passengers and earned Amtrak close to $18 million in combined rail/bus revenues associated with this service.

Thruway Dedicated (Bus-funded)

Like the charter service, this Amtrak bus service also provides dedicated feeder bus service. It carries only Amtrak passengers with Amtrak through railroad tickets and also has the flexibility to adjust to Amtrak's schedules. Unlike the charter service, it is offered at the risk of the bus operator. In its funding arrangement with Amtrak, the bus operator is paid on a per passenger basis rather than on a per bus basis like the charter.

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[8] Data for the "California" service are based on California Department of Transportation's July to June fiscal year. Data on the remaining services were supplied by Amtrak, which uses an October to September fiscal year.

This service type includes only one route between Omaha, Nebraska and Kansas City, Missouri. This route is significantly longer at 198 miles compared to the average one-way distance of the charters which is 65 miles. In FY 1992, this service accounted for 5,413 passengers, and earned Amtrak close to $.5 million in combined rail/bus revenues.

Thruway Nondedicated (Regularly Scheduled)

This service provides nondedicated bus service which means these buses carry both Amtrak and non-Amtrak passengers. In addition to collecting Amtrak passenger tickets, these bus operators also sell their own bus tickets to non-Amtrak passengers. The bus schedule is determined by the bus company and although it is coordinated with the schedules of Amtrak trains, it does not have the scheduling flexibility enjoyed by the dedicated operators. This service is operated entirely at the bus company's risk. In its marketing arrangement with Amtrak, a per passenger rate for Amtrak passengers carried to and from Amtrak trains is negotiated. Amtrak passenger tickets are collected by the bus company and submitted back to Amtrak for payment. For those passengers, Amtrak pays the bus company on a per passenger basis. This service is offered along 13 major routes throughout the country, with an average daily one-way distance of 122 miles. In FY 1992, this service transported 54,404 passengers and earned Amtrak $3.6 million in revenues.

California Network Supporting 403(b) Trains

The feeder bus network in California differs primarily from other service types in that it is operated at the direction of and on behalf of the State of California. Amtrak hires buses to operate on a designated network to provide feeder bus service to Amtrak's 403(b) state-supported trains.[9]

In providing this service, the operating costs of these buses are borne entirely by the state of California. California's Department of Transportation (Caltrans) contracts with Amtrak, which in turn contracts with bus operators. This type of arrangement is necessary to assure that Amtrak retains the ability to integrate bus service into its scheduling and reservations system. Only through this coordination of schedules, fares, and ticketing is the State of California able

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[9] This section of the Rail Passenger Service Act (45 U.S.C. 563(b)) authorizes Amtrak to operate intercity rail services beyond those included in its "basic system" schedules, when requested by a state or a group of states. Under this section, the state is obligated to pay Amtrak at least 45 percent in the first year, and 65 percent in subsequent years, of the operating losses of the rail service, and 50 percent of the associated capital costs. The remaining shares are paid by Amtrak.

to offer a comprehensive and integrated intermodal passenger service.

Amtrak contracts with seven different feeder bus companies to provide this service.[10] Amtrak collects all revenues for journeys involving the bus links and credits California for revenues the passenger pays for riding the bus. California pays Amtrak for the cost of operating this bus network less the revenues paid by the passengers for riding the bus leg. Although most bus services are chartered and are operated exclusively for Amtrak through-passengers, some routes are operated by regular route intercity bus companies, known as mixed-mode operators. Under the mixed-mode service, the carrier is paid by the passenger but is guaranteed a fixed number of passengers. Mixed-mode operators carry both Amtrak passengers and non-Amtrak passengers and operate on a regular schedule.

These services are offered along 15 major corridors within the state, consisting of 50 bus routes with an average one-way distance of close to 135 miles per route. In FY 1992, this network carried 311,627 passengers, and earned Amtrak $9.5 million in revenues on combined rail/bus trips.

In early 1992, some feeder bus routes were converted to include designated-open door service in selected markets in California. While these routes still provided feeder service to Amtrak trains, all bus passengers were not required to travel at least part of the way by Amtrak train. Revenues from the bus-only passengers are not paid to Amtrak.

Interline

Finally, the interline service represents an additional variation of a joint rail/bus service, but little cooperation exists between participating carriers and Amtrak to provide a "seamless" intermodal service. Schedules for the bus and rail portions are not coordinated and usually are set independently of each other. Trips loosely are connected through the promotion and sharing of some schedules. For these reasons, Amtrak does not consider it a true feeder bus service, although some of these bus routes are listed in Amtrak's schedules. For the listed bus routes, Amtrak and the private bus company sign a marketing agreement whereby Amtrak sells tickets to passengers based on the bus company's published fare for travel to off-line points using regular bus schedules. Amtrak receives a 20 percent commission from such

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[10] The seven California bus operators include All West Coachlines, Amador Stage Lines, Amtravel International, Antelope Valley Bus, Orange Belt Stages, Peninsula Charter Lines, and Via Adventures.

transactions.[11] Since detailed origin-to-destination data are not complete for this service, only a fraction of those passengers who have received their bus reservations through Amtrak's ticketing and reservation system are identified by Amtrak. For those trips, Amtrak estimated that 33,326 passengers paying $2.5 million in revenues used this service in FY 1992.

B. THRUWAY AGREEMENTS

Selection Criteria and Agreement Types

When selecting new bus feeder services or eliminating existing ones, Amtrak considers a number of factors. Important considerations include whether the proposed feeder bus service connects with a train and station with sufficient capacity and staffing to accommodate the added traffic. The travel time of the proposed bus route is also an important determinant, because the longer the bus trip, the more unattractive the route will be from a marketing perspective. However, the overriding criterion for selection is profitability. All existing Amtrak bus routes break even or are profitable to Amtrak on a segment basis, or make a positive contribution to Amtrak's cash flow on an incremental basis. For example, California thruway bus routes break even on a segment basis. Bus passenger volume and revenues, including state payments, are sufficient to offset the cost of operating the bus. Furthermore, all nondedicated thruway bus routes not only break even but also turn a profit for Amtrak on a segment basis. For those operations the bus operator assumes most of the financial risk, and receives payment from Amtrak on a per passenger basis.

On the other hand, among the dedicated feeder bus services, all are profitable on an incremental basis. The total trip revenues earned by Amtrak are sufficient to cover train costs plus the cost of operating the bus. All bus services, whether newly proposed or already in existence, must satisfy this cash flow test, or face elimination from consideration, including actual termination of existing services.

Amtrak employs two primary methods in setting up a thruway bus route. Under the first method, the charter contract, Amtrak contracts to purchase a charter bus service. The charter service offers little risk to the bus operator because of the fixed-fee formula Amtrak uses to pay the charter operator. The bus operator is assured a negotiated rate per trip, regardless of the number of passengers carried. As a result, interest among the prospective candidates to operate this service is usually high. In all but a few cases, several bus operators strive to obtain the charter and are selected through a competitive bidding

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[11] The 20 percent commission is computed on the value of the bus fare.

process. In fact, the charter service in 1992, which was almost exclusively competitively bid, included more than 90 percent of Amtrak's total feeder bus passengers in that year, excluding interline. Any bus operator can participate in this process. The lowest bidder meeting contract specification will win the contract. The contract establishes schedules, rates, and service requirements.

Under the second method a marketing agreement is negotiated for noncharter, nondedicated operations. Generally, regularly scheduled carriers are the companies most interested in this type of arrangement, since Amtrak feeder bus passengers represent added business to a common carrier operation already in existence. A marketing agreement usually creates a "ticket lift" operation, whereby bus operators collect tickets and receive payments on a per passenger basis, thereby shifting the financial risk to the bus operator. In most cases competitive bidding is not possible because insufficient interest exists to run the service, and Amtrak negotiates with only a single prospective operator. Nevertheless, competitive forces do play a role in the negotiations, particularly through the market forces that determine Amtrak's overall rail fares. The parties also negotiate a number of issues that will define the nature of the actual service. These agreements define the level of rates, ticketing procedures, service standards, the coordination of scheduling, and reservation systems, as well as rail station access.

Assuming sufficient interest exists among prospective bus companies to bid on and operate the service, all bus companies, large or small are allowed to bid on a charter or marketing agreement for a feeder service. The selected company must meet service standards and specifications called for by Amtrak, and by the state as in the case of California.

Charter contracts and marketing agreements with Amtrak offer a number of benefits to participating bus operators. The most important of these is exposure to Amtrak's national passenger market. Participating bus operators obtain access to Amtrak's distribution system of 30,000 travel agents around the country, as well as automated access to all major airline reservation systems. Supported by Amtrak's national marketing effort, bus operators also are able to attract additional passengers to their routes, who otherwise would not have used the local bus. Even carriers already operating a scheduled service or expanding to a new route are able to spread their total operating expenses over a larger passenger base, thus increasing profits. Finally, all of Amtrak's station and ticketing services are available to bus operators.

Fares

Most fares for Amtrak thruway services are set and published by Amtrak as a single through ticket rate, which includes both the rail and bus portion of the trip. An Amtrak feeder bus passenger is sold a ticket based on a single through fare. The exception to this rule is the interline trip, which consists of two separate and independent fares and tickets, one for the rail trip, the other for the bus portion of the trip.

In general, Amtrak fares are set by market conditions to maximize revenues. That is, the fares are set for the entire trip and thereby reflect the market forces which determine Amtrak's overall rail fares. In this way, fare levels are set by competitive market conditions and provide a safeguard against unfair pricing and operating practices. As a result, Amtrak through fares are usually equal or slightly lower than the combination of the Amtrak and private bus company fares.

Tickets are issued and sold only by Amtrak agents. At locations where Amtrak does not have a stop or terminal, boarding passengers will usually receive their tickets from the local travel agent. Thruway bus companies do not issue tickets for travel on Amtrak trains. In some cases the bus company has a direct affiliation with an Airline Reporting Corporation (ARC) travel agency, which can issue Amtrak tickets.

Guaranteed Connections and Terminal Access

The availability of guaranteed connections is a key factor in the successful marketing of Amtrak's thruway service. The uncertainty of making timely connections and the possibility of encountering significant delays is one of the reasons that more passengers do not consider arranging their own intermodal trips. Passengers in today's intercity travel markets expect reasonable on-time performance. For intermodal passengers, the distance between arrival and departure locations within a city or town is crucial to making smooth intermodal connections. A bus terminal in one part of the city without direct access to the rail terminal may not be a competitive intermodal connection.

Amtrak's thruway bus operators not only have direct access to Amtrak trains and facilities, but also coordinate their schedules to provide reasonable connecting times with Amtrak trains. In fact, thruway buses serve more as an extension of the Amtrak system rather than as a separate carrier representing another mode. For example, in the event of significant delays by Amtrak trains, most thruway bus operators, particularly the smaller companies, have operating flexibility to adjust their operations and schedules in order to connect with the train once it arrives.

C. MARKETS SERVED

Amtrak uses thruway bus operations to serve various types of markets. These operations provide:

-- access to major metropolitan areas;
-- a link to former rail markets;
-- service to cities with relatively low traffic volume;
-- access to existing bus markets; and
-- service at the request of a state.

Access to Metropolitan Area Markets

An important use of thruway bus service is gaining access to metropolitan areas that would be prohibitively expensive to serve directly by rail. The predominant characteristics of these markets are high population densities coupled with relatively short bus distances. Table 3 lists the 5 routes that operate in this market. In FY 1992, these 5 routes accounted for 273,778 Amtrak passengers who paid Amtrak $13.6 million in revenues for their total rail/bus trips. These amounts are equivalent to 36 percent of all feeder bus passengers, including interline, and 40 percent of all feeder bus/rail revenues. Within this market, approximately 85 percent of the total number of passengers and revenues are attributable to two metropolitan areas, San Francisco, California, and St. Petersburg/Clearwater, near Tampa, Florida.

Table 3
Ridership Levels, Revenues, and Service Type in FY 1992
For Metropolitan Area Market

Route	Number of Passengers	Rail/Bus Revenues ($000)	Mileage*/	Service Type
Oakland, CA - San Francisco, CA	205,809	$ 9,717	10	Dedicated - Charter
Borie, WY - Cheyenne, WY	3,803	208	10	Dedicated - Charter
Tampa, FL - St. Petersburg, FL - Treasure Island, FL	16,068	1,146	22	Dedicated - Charter
Tampa, FL - Clearwater, FL - Clearwater Beach, FL	11,575	929	25	Dedicated - Charter
Newport News, VA - Norfolk, VA	36,523	1,575	41	Dedicated - Charter
Total	273,778	$13,575		

*/ Represents aggregate route mileage and includes all route segments.

Linking Former Rail Markets

Amtrak offers feeder service to major points where rail service was discontinued because of the rerouting of trains. In FY 1992, this feeder bus market accounted for 26,761 passengers who paid Amtrak $1.1 million in revenues on the combined rail and bus trip, as shown in Table 4. For example, the routes between Waterloo/Garrett and Fort Wayne, Indiana, represent current bus service replacing a former rail segment.[12] These routes were served by both the "Capitol Limited" and the "Broadway Limited" along the former Pennsylvania Railroad via Cleveland, until rail service was rerouted via Youngstown, Ohio. Buses were introduced to maintain service in the Fort Wayne market. In FY 1992, these routes accounted for 13,587 passengers who paid Amtrak more than $.5 million in revenues on the entire rail/bus trip.

Similarly, Amtrak's "Hilltopper," "Mountaineer," and the "Cardinal" provided direct rail service to Richmond and Central Virginia. When two of these trains were discontinued, the Amtrak feeder bus service then provided a direct connection from Richmond, Virginia, to the West.

Ogden to Salt Lake City, Utah, bus service became necessary when the "Pioneer" was rerouted via Wyoming in order to improve the on-time performance of the "California Zephyr." The bus connection maintained service in the Salt Lake City market, which is a major destination for passengers from Oregon and Idaho.

Table 4
Ridership Levels, Revenues, and Service Type in FY 1992
For Former Rail Markets[13]

Route	Number of Passengers	Rail/Bus Revenues ($000)	Mileage */	Service Type
Waterloo/Garrett, IN - Fort Wayne, IN	13,587	$ 538	20	Dedicated - Charter
Charlottesville, VA - Richmond, VA	4,848	292	69	Dedicated - Charter
Ogden, UT - Salt Lake City, UT	8,326	280	36	Dedicated - Charter
Total	26,761	$1,110		

*/ Represents aggregate route mileage and includes all route segments.

12 This market consists of two separate routes: (1) Waterloo, Indiana, to Fort Wayne, Indiana, and (2) Garrett, Indiana, to Fort Wayne, Indiana.

13 Data are not available for a fourth route which operates between Galesburg and Springfield, Illinois.

Service to Low Volume Markets

Amtrak's feeder buses also provide service extensions to major cities where traffic volume is not sufficient to warrant direct rail service. Also, these markets are characterized by short to medium feeder bus distances. Amtrak's exclusive use of charter bus operations make feeder bus service a cost efficient service alternative in this market. An important advantage of the chartered bus service is its flexible schedules. For example, in cases when Amtrak trains are late, bus operators often are asked to wait at the station until arrival. This flexibility is an important advantage of charter operators. Regularly scheduled operations would have difficulties matching this kind of flexibility. In FY 1992, 55,671 feeder bus passengers were transported in these markets and paid Amtrak close to $3.3 million in total revenues on their entire rail/bus trip, as shown in Table 5.

Table 5
Ridership Levels, Revenues and Service Type in FY 1992
For Low Volume Markets

Route	Number of Passengers	Rail/Bus Revenues ($000)	Mileage */	Service Type
St. Petersburg, FL - Tampa, FL - Winter Haven, FL	10,397	$ 357	66	Dedicated - Charter
Sarasota, FL - Ft. Meyers, FL - Bradenton, FL - Tampa, FL	16,995	1,547	126	Dedicated - Charter
Springfield, MA - Northhampton, MA - Brattleboro, VT - Bellows Falls, VT - White River Jct., VT - Montpelier, Vt - Waterbury, Vt - Burlington, VT	13,616	575	236	Dedicated - Charter
Roanoke, VA - Clifton Forge, VA	2,888	184	45	Dedicated - Charter
Toledo, OH - Detroit, MI - Dearborn, MI - Ann Arbor, MI - East Lansing, MI	11,775	604	149	Dedicated - Charter
Total	55,671	$3,267		

*/ Represents aggregate route mileage and includes all route segments.

Expanding Existing Bus Markets

Not all feeder bus services are the result of Amtrak's marketing efforts. Some feeder bus services are initiated by private bus carriers as a profitable addition to their existing traffic. Most of these bus companies operate regularly scheduled non-dedicated service. However, as shown in Table 6, one operator offers dedicated service between Omaha, Nebraska, and Kansas City, Missouri. The remaining feeder bus services are operated by private bus operators with their own schedules, which have added the Amtrak passengers to their pre-existing operations in that market. In these markets, schedules are coordinated more easily than in the metropolitan and former rail markets, particularly since there is only one train per day, and several bus trips to the final destination. In FY 1992, these markets contributed 59,817 passengers and earned Amtrak $4 million in added revenues on the entire rail/bus trips, as shown in Table 6.

Table 6
Ridership Levels, Revenues and Service Type in FY 1992
For Expanding Existing Bus Markets

Route	Number of Passengers	Rail/Bus Revenues ($000)	Mileage */	Service Type
Omaha, NE - St. Joseph, MO - Kansas City, MO	5,413	455	198	Dedicated - bus funded
New Orleans, LA - Baton Rouge, LA	610	45	80	Regularly Scheduled
Minneapolis, MN - Duluth, MN			154	
Battle Creek, MI - East Lansing, MI/Flint, MI/Lapeer, MI/Port Huron, MI	6,287	132	159	Regularly Scheduled
Kalamazoo, MI - Grand Rapids, MI			52	
Boston, MA - Hyannis, MA	2,308	81	81	Regularly Scheduled
Buffalo, NY - Fredonia, NY/Dunkirk, NY/ Jamestown, NY	634	20	63	Regularly Scheduled
Chicago, IL - Rockford, IL/Beloit, WI/Janesville, WI/Madison, WI	7,639	565	140	Regularly Scheduled
Flagstaff, AZ - Williams, AZ - Grand Canyon, AZ	8,013	785	79	Regularly Scheduled
Flagstaff, AZ - Camp Verde, AZ - Phoenix, AZ			146	
Seattle, WA - Everett, WA/Vancouver, BC	24,510	1,716	144	Regularly Scheduled
Seattle, WA - Ellensburg, WA/Moses Lake, WA/Spokane,WA	346	28	292	Regularly Scheduled
Spokane, WA - Pullman, WA/Moscow, ID/Lewiston, WA			117	
Yosemite, CA - Merced, CA	4,057	203	82	Regularly Scheduled
Total	59,817	$4,030		

*/ Represents aggregate route mileage and includes all route segments.

California's State-Sponsored Service Markets

The bus network in California was developed specifically at the request of the state to improve the revenue performance of Amtrak's three state-supported 403(b) trains.[14] California's

[14] California's state law requires state-supported rail operations to recover annually at least 55 percent of their operating costs from fare box revenues, by the third year of operation, or lose state funding.

403(b) trains include: (1) the "San Diegans" which operate between San Diego and Los Angeles, with some service to Santa Barbara,[15] (2) the "San Joaquins" which operate four daily round trip trains between Oakland and Bakersfield via Stockton, and (3) the "Capitols" which operate three daily round trip trains between San Jose and Roseville, via Oakland and Sacramento. These services are provided in addition to Amtrak's "basic system" trains, which also operate in California.[16]

In FY 1992, Amtrak's feeder bus network transported 311,627 passengers to California's 403(b) trains, equal to 41 percent of Amtrak's total feeder bus passengers. These passengers paid $9,523,000 in revenues, equal to 28 percent of the total revenues paid by Amtrak feeder bus passengers for their entire rail/bus trips.

Amtrak's California bus network provides feeder service to Amtrak's 403(b) trains along 15 corridors. Caltrans estimates that among the 15 corridors, 6 corridors account for more than 80 percent of the total California thruway bus ridership. Two of the six heavily traveled corridors are in northern California terminating at Martinez and Sacramento, while the remaining four are concentrated around the Los Angeles to Bakersfield axis.

The six corridors provide service in the following areas: (1) the Los Angeles Basin corridor #1, which operates between Bakersfield and the Los Angeles Basin and serves primarily as a "San Joaquins" connection. It has been estimated that this corridor contributes close to 40 percent of all the California 403(b) feeder bus ridership within the 15 corridors; (2) the Sacramento Valley corridor #3, which provides connecting bus service to the "Capitols" trains at Stockton. This corridor carries about 16 percent of California's 403(b) feeder bus

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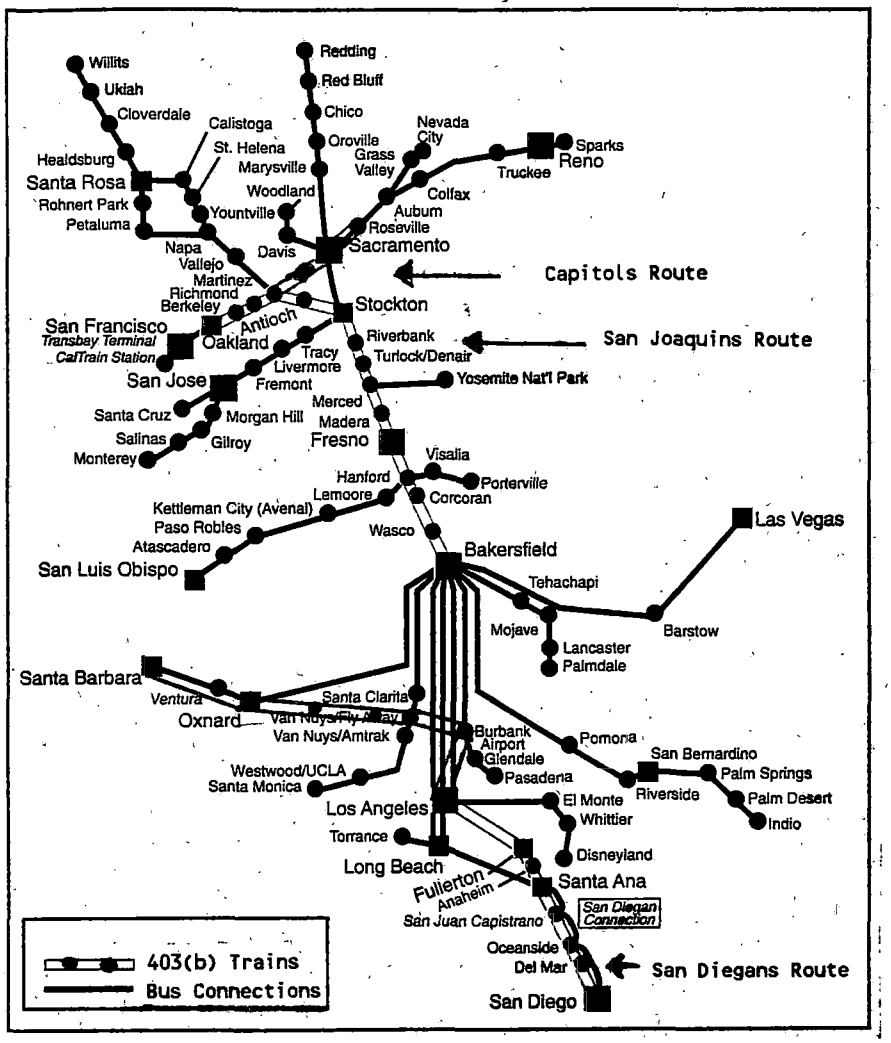
[15] The "San Diegans" operate daily three regular trains and six 403(b) trains.

[16] Amtrak's "basic system" trains include the following: "Coast Starlight," "California Zephyr," "Sunset Limited," "Desert Wind," and "Southwest Chief."

California's State-supported Trains and Connecting Bus Routes



ridership; (3) the South Coast corridor #4, which links several cities in southern California including Santa Barbara, Ventura, Oxnard and Glendale with the "San Diegans" at Los Angeles, and carries an estimated 10 percent of the California feeder bus market; (4) the Inland Empire-Coachella Valley corridor #19, which connects with the "San Joaquins" at Bakersfield for access to Pomona, Riverside and San Bernardino. Ridership along this corridor is 6 percent of the total; (5) the Central Coast corridor #17 serves principally as a feeder from San Luis Obispo to the "San Diegans" at Santa Barbara, with an estimated 6 percent of California's ridership; and (6) the North Bay-Redwood Empire corridor #7, which provides a bus connector from off-line cities in northern California like Willits, Santa Rosa and Napa to the "San Joaquins" at Martinez. The estimated traffic is close to 6 percent for this corridor.

Finally, most of the remaining corridors are concentrated around the Stockton - Bakersfield route, and primarily support the "San Joaquins" from various locations, including Porterville, Barstow, Las Vegas, and San Jose. The remaining corridors feed into the "Capitols" from Reno, Monterey, San Jose, and San Francisco.

A brief listing of the California corridors and the number of routes within each rail corridor, average mileage, and average daily frequencies is found in Table 7.

Table 7
Feeder Bus Corridors To California's
403(b) Rail Service in FY 1992

Corridor No.[17]	Major Corridors	Number of Passengers	No. of Routes	Avg. Miles Per Route	Avg. Daily Round Trips Per Route
1	Los Angeles Basin	121,387	8	168	3
2	Tulare County	6,368	2	41	4
3	Sacramento Valley	49,787	5	153	2
4	South Coast Supplemental	30,419	4	110	2
6	South Bay	12,560	2	81	8
7	North Bay/Redwood Empire	17,755	9	135	1
9	Barstow - Las Vegas	6,647	1	284	2
10	Bakersfield - Santa Barbara	9,180	1	156	4
12	Bakersfield - Antelope Valley	3,607	2	109	2
14	Antelope Valley - Glendale	5,254	1	74	4
17	Central Coast	18,224	2	131	2
18	Central Coast Valley	2,657	1	123	2
19	Inland Empire/Coachella Valley	18,681	4	200	2
20	High Sierra	5,553	6	102	2
21	Monterey Bay	3,548	2	83	3
	Total	311,627	50		

[17] Represent Caltrans corridor number designations.

IV. POTENTIAL EFFECTS ON BUS INDUSTRY

Several approaches were considered to estimate the effects of Amtrak's feeder bus program on bus service as provided by the private bus industry. The principal obstacle to estimating the effects was the lack of reliable data on that industry. Providing the data for in-depth analysis of this complex topic was not possible under the time limits imposed by the Committee's request. Thus, this report used a more general approach.

A. APPROACH

For the purpose of this study, the "effect" on private bus service of Amtrak's thruway bus service was defined as the reduction in potential ridership and revenues on regular route buses resulting from the presence of Amtrak bus service and, therefore, the joint rail/bus service.[18] This effect was determined by estimating what would happen to regular route bus industry ridership and revenues in the absence of the feeder bus service. It should be noted, however, that this report focused on the effect on the bus industry, and did not measure the effect on individual bus carriers. It is possible that some bus companies are affected more than others as a result of Amtrak's feeder bus operation.

Also this approach assumed that, in the absence of the Amtrak feeder bus service, no rail trips would be taken to or from points now served by the feeder bus. In practice, some rail trips would continue with passengers making their own access arrangements. The net effect was that the estimate of business losses by the private bus industry due to the feeder bus service tended to be overstated.

The study used modal choice decisions, as reflected in two surveys, to provide important clues about what would happen to ridership in the absence of the feeder bus service.[19] The two surveys were conducted by Amtrak on board its trains and included the identification of modal preferences of riders in the absence of the Amtrak service. Those preference statistics were used to estimate the number of Amtrak passengers that would use bus for their entire trip, if Amtrak rail were not available.

This approach rests on the assumption that Amtrak feeder bus passengers are rail passengers. The feeder bus system serves as an extension to the Amtrak rail system rather than as a separate carrier representing another mode. These passengers are rail

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[18] For the purpose of estimating "effects," Amtrak's interline service has been excluded from the analysis. This service is assumed to continue regardless of whether Amtrak's remaining feeder bus services continue or not.

[19] Source: Amtrak Passenger Assessment Survey, Summer 1992.

passengers that travel by bus for the access segment of their trip. This assumption is reinforced by the fact that Amtrak feeder bus passengers have demonstrated their rail preference over other modes by purchasing an Amtrak through ticket with a bus connection.

Because of the unique characteristics of California state-supported feeder bus service the national feeder bus markets were divided into two major market segments to improve the accuracy of the estimates. These two markets are (1) routes outside of California state-supported market, and (2) routes in the California state-supported market. These two markets differ significantly, but primarily in terms of concentration of service, length of rail and bus segments of each trip, level of state involvement, and the number and characteristics of the routes.

B. THE EFFECTS ON MARKETS OUTSIDE OF CALIFORNIA[20]

Outside of California, the effect of Amtrak thruway bus on the private bus industry was found to be insignificant. First, in this market, the number of passengers that use Amtrak feeder bus service was small relative to the annual ridership of the private bus industry, as are the associated revenues. In addition, these passengers are widely dispersed across the country. Second, only a small portion of these passengers would likely divert to travel by bus if Amtrak's feeder bus service were not available.

Number of Amtrak Bus Passengers

In 1992, 760,980 Amtrak passengers used the thruway bus service. Of these Amtrak passengers, 416,027 traveled on joint Amtrak train/bus service not supported by California. These passengers contributed $22 million in revenues to Amtrak. This travel occurred in over 20 states, spreading the passengers thinly across the United States. This wide dispersion of passengers lowers the possibility of substantial impact on any one bus company.

In 1992, outside of California, approximately 30 million passengers traveled by regularly scheduled service and generated close to $657 million in revenues. The total number of feeder bus passengers corresponded to about 1.4 percent of the total number of private bus passengers traveling outside of California, while the revenues paid Amtrak for these joint rail/bus trips was close to 3.3 percent.

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[20] The "outside of California" market consists of all routes which are not part of the California state-supported network and includes two routes which operate in California.

Estimated Effect on Private Bus Companies

In this market, most of Amtrak's feeder bus passengers travel long distances by train and travel by Amtrak bus for short to medium distances to a station closer to their origin or destination. In 1992, two-thirds of these passengers traveled an average of 35 miles by feeder bus from or to an Amtrak train station. Passengers on eight Amtrak long-distance trains are the principal users of these feeder bus services. These routes average 1,890 miles and 37 hours for an end-to-end trip. For example, from New York City to Clearwater Beach, Florida, the Amtrak feeder passengers would travel by train over 1,200 miles to Tampa, Florida, and connect with an Amtrak feeder bus to travel the remaining 25 miles to Clearwater Beach, Florida.

Amtrak's latest survey of its passengers was in 1992. The survey questioned Amtrak passengers concerning their modal choice decisions for trips if Amtrak were not available. Of the long distance passengers surveyed, an average of 53 percent of these rail passengers would switch to air, an average of about 27 percent opted to travel by automobile, and only 6.9 to 11.0 percents chose bus as shown in Table 8.

Table 8
Mode Choices of Amtrak Long Distance Train Passengers[21]

MODE	SUMMER PASSENGERS (percent)	WINTER PASSENGERS (percent)
Air	51.6	53.7
Auto	25.0	28.8
Bus	11.0	6.9
Other	0.9	1.1
Wouldn't Travel	11.5	9.5
Total	100.0	100.0

Since most Amtrak bus passengers outside of California travel on long distance trains, the survey results for long distance passengers were used to estimate modal choices by passengers. However, because survey results included all long distance rail passengers of which feeder bus passengers are a subset, it was estimated that the number of Amtrak train/bus passengers who would use private buses in the absence of Amtrak service could be greater than the survey suggests. Feeder bus passengers were assumed to

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[21] Long distance train passengers travel more than 600 miles or 12 hours by rail.

exhibit a greater propensity to use private bus transportation as an alternative to rail transportation compared to all-rail passengers. It was estimated that some 45,000 to 70,000 joint Amtrak passengers might travel their complete trip by bus, if no Amtrak service were available. These results suggest that at most 70,000 passengers, less than three-tenths of 1 percent of the current total bus industry ridership, would divert to bus in the absence of train service. Therefore, only a small number of passengers and related revenues are lost by Amtrak feeder bus service to the private bus industry because of the thruway feeder service.

C. THE EFFECTS ON CALIFORNIA MARKETS

Inside California, the effects on ridership was estimated to be small, but greater than outside of California. The shorter rail distances relative to the total rail/bus trip, and the higher preferences expressed by Amtrak's short distance passengers for bus as an alternative, point to a more significant effect compared to the markets in the rest of the country.

Number of Amtrak Bus Passengers

In FY 1992, 311,627 Amtrak rail/bus passengers moved within Caltrans' corridors and paid Amtrak $9,523,000 in revenues. The total number of passengers represents more than 40 percent of the total feeder passengers in the country. The fact that these passengers are in a single state, although the most populous state, demonstrates the high concentration of the California market.

These passengers use almost exclusively the three state-supported 403 (b) routes, which Amtrak provides in the state in addition to its "basic system" train service. These trains are primarily short distance and operate exclusively within the State of California. In FY 1992, these three routes carried 2.4 million Amtrak passengers.

Although precise information on private bus ridership in California was not available, of the 35 million passengers who traveled on Class I buses in 1992, between 4 to 5 million were estimated to have travelled in California. The primary Class I carrier in California was Greyhound, offering competitive bus service in close to 80 percent of California's intercity rail passenger markets. Amtrak passengers using the feeder bus service in California represent 6 to 8 percent of the size of the California bus market.

Estimated Effect on Private Bus Industry

Trips on California's state-supported intercity rail routes are short. In FY 1992, the average distance per rider on the three California trains was 96 miles, about one half the 178 miles average for Amtrak's short-distance trains throughout its overall system, as shown in Table 9.

Table 9
Average Rail Distance per Passenger Traveling in FY 1992

SERVICE TYPE	AVERAGE DISTANCE (miles)
San Diegans	82
Capitols	89
San Joaquins	147
Average	96
Short-distance on Amtrak System	178

Secondly, in addition to the shorter rail distances, the bus feeder routes which provide access to California's three state-supported trains comprise a larger portion of the total rail/bus trip. For example, the most heavily utilized feeder bus route to the "San Diegans" is Bakersfield to Los Angeles which is close to 100 miles. The most heavily traveled rail segments are 130 miles from Los Angeles south to San Diego, and 130 miles from Los Angeles north to Santa Barbara. Thus, the feeder bus route is close to 50 percent of the total trip. In fact, this is not the exception in this state, and similar examples exist for the "San Joaquins" and "Capitols" trains. Outside of California, a typical 150-mile bus trip feeding into a long-distance rail trip of 700 miles is a less significant portion of the total trip.

The importance of distances and trip times in the modal choice decision was demonstrated in a recent survey conducted by Amtrak of its short distance passengers. The Amtrak survey questioned Amtrak passengers concerning their modal choice decisions for short distance trips if the Amtrak rail option were not available. Nearly 52 percent of these passengers would switch to automobile, 21 percent opted to travel by air, and 16 percent chose bus as shown in Table 10. When comparing responses by long- and short-distance passengers, the bus alternative becomes more desirable as the rail trip times and distances become shorter: 6.9 to 11.0 percents for long distance travel and 16 percent for short-distance travel. But also, as distances become shorter, the automobile becomes by far the preferred choice when Amtrak rail service was not available.

Table 10
Mode Choices of Amtrak
Short Distance Passengers[22]

MODE	SUMMER PASSENGERS (Percent)	WINTER PASSENGERS (Percent)
Air	21.0	21.1
Auto	52.0	51.3
Bus	16.0	16.1
Other	4.6	5.1
Wouldn't Travel	6.4	6.4
Total	100.0	100.0

It was estimated that the number of Amtrak train/bus passengers in California who would use private buses in the absence of Amtrak's feeder network would be even greater than the survey suggests. Not only are rail distances shorter compared to the Amtrak's "short-distance" passengers, but feeder bus distances in California also make up a greater portion of the entire trip. Both of these characteristics found in California suggest a greater preference is likely to exist for buses than indicated in the survey. As a result, it was estimated that between 20 and 30 percent of the California state-supported market, or between 60,000 and 100,000 passengers were lost to the private bus industry because of the thruway feeder bus service. That represents about 1.2 to 2.5 percent of the estimated 1992 ridership of the private bus industry in California.

Impacts on California Business and Environment

Currently seven bus operators provide service and benefit from these operations. Although several of the seven companies, particularly the larger and more financially sound companies, surely would continue and perhaps gain some of the added bus traffic, Caltrans reports that at least three of the seven companies are able to stay in business because of Amtrak's feeder bus operation.

Finally, surveys also revealed that a high proportion of rail travelers would use private automobile if rail were not available. Based on Amtrak's survey results, at least 50 percent of the joint Amtrak/bus riders would use auto if the Amtrak bus service were eliminated. Moreover, Caltrans estimated that it would be required to shut down two of the three 403(b) routes. The shutdown of the

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[22] Short distance passengers travel less than 12 hours and less than 600 miles.

two routes and the high preference for the private automobile by Amtrak passengers, would increase auto usage in California. An estimated 300,000 to 400,000 automobile trips per year are kept off California's already congested highways due to Amtrak's feeder bus service.

V. CONCLUSIONS

Since incorporation in 1971, Amtrak has used thruway bus service, also known as feeder bus service, to increase access to its nationwide train network. Amtrak uses this thruway bus network in 23 states, and in FY 1992 it provided 760,980 passengers access to its trains. These passengers paid Amtrak a total of $34 million in revenues.

The thruway bus network operates in several different markets. These markets range from major metropolitan areas not directly served by the national network, to markets in California where feeder bus service is provided at the request of the state and is financed by the state. The feeder bus operation funded by California is by far the largest in any state. California sponsored buses accounted for 41 percent of Amtrak's FY 1992 passengers using the feeder bus service and 28 percent of the revenues paid Amtrak for these joint rail/bus trips.

Outside of California, the net effect of Amtrak's thruway bus feeder service on the private bus industry is insignificant. Recent surveys of Amtrak passengers indicated that most of these 416,027 passengers would switch to air and automobile and that only a small fraction would choose bus, if Amtrak were not available. It is estimated that private bus companies have "lost" between 45,000 and 70,000 passengers to Amtrak because of the feeder bus service. However, this number of passengers accounts for less than three-tenths of 1 percent of the approximately 30 million private bus riders in 1992.

The effects of the feeder bus service on the private bus industry in California are mixed. Because of the greater magnitude of California's state-supported feeder bus operation compared to that for private buses, and the short rail distances which characterize California's markets, the effects are estimated to be greater than outside of California. In California, it can be argued that privately scheduled bus carriers "lost" an estimated 60,000 to 100,000 passengers to Amtrak in 1992 because of the thruway feeder service, approximately 1.2 to 2.5 percent of the estimated private bus passengers in California in that year.

Additional effects also occur in California. It is estimated that several of the seven feeder bus operators in California remain in business due to the thruway bus service. Further impacts include 300,000 to 400,000 additional automobile trips annually are kept off the state's already congested highways.