

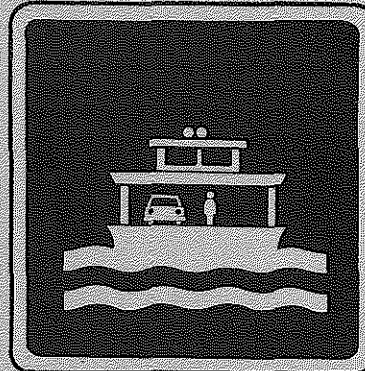
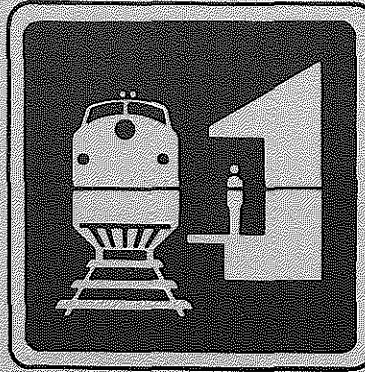
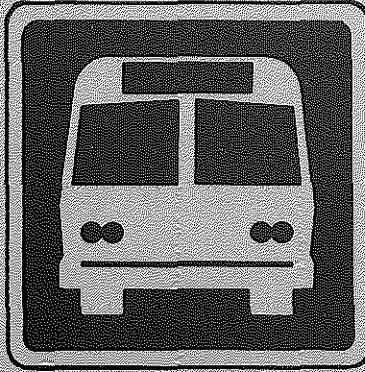
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PUBLIC TRANSPORTATION IN MICHIGAN

Report 8

INVENTORY OF INTERCITY
RAIL PASSENGER TRANSPORTATION
IN MICHIGAN

July 1985



PASSENGER TRANSPORTATION PLANNING SECTION
MICHIGAN DEPARTMENT OF TRANSPORTATION

Report 8

INVENTORY OF INTERCITY
RAIL PASSENGER TRANSPORTATION
IN MICHIGAN

July 1985

Bureau of Transportation Planning
Intercity Transportation Planning Division
Passenger Transportation Planning Section

This report represents the findings and/or professional opinions of the Michigan Department of Transportation staff. Its publication does not represent an official opinion of the State Transportation Commission.

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PART I
INTRODUCTION & SUMMARY



I. INTRODUCTION & SUMMARY

A. INTRODUCTION

The purpose of this report is to present an inventory of intercity rail passenger service in Michigan. Beginning May 1, 1971, Amtrak provided two round trips daily between Detroit and Chicago. This report documents the service from that time. It contains:

- A history of the rail passenger system.
- A map of the existing system.
- Detailed service characteristics.
- Ridership/Revenue trends from 1974 to the present.
- The 1984 trip distribution.
- A user profile.
- A financial profile.

Data for this report was compiled by the Surface Systems Unit, Passenger Transportation Planning Section, Bureau of Transportation Planning in cooperation with the Intercity Division of the Bureau of Urban and Public Transportation.

B. SUMMARY

Intercity rail passenger service in Michigan is provided by the National Railroad Passenger Corporation (Amtrak). Financial assistance for operating and capital programs is provided to Amtrak by the Michigan Department of Transportation. In 1984, nearly one-half million passengers traveled aboard Michigan Amtrak trains. The primary trip purpose was recreation and vacation, accounting for nearly 70 percent of ridership. Business travel accounted for 20 percent of the ridership total. The average trip length for each passenger utilizing these services was 179 miles.

While rail passenger service is comprised of many components, four primary factors must be considered when reviewing progress to date and when planning for the future. These four factors include financing, operational economics, ridership/revenue and infrastructure.

Financing - The financing of Amtrak passenger rail services originates from several sources. The largest source of financing is derived from passengers traveling aboard Amtrak trains. During fiscal year 1984, user revenues provided 58 percent of the financing necessary to operate Amtrak's national rail system, up from 48 percent in fiscal year 1980. Nearly all system expenses not financed through user revenues are funded through federal operating support that is appropriated annually to Amtrak through the Congress. On selected routes individual states also jointly finance needed support with the federal government through Amtrak. Capital financing for improvements to rail passenger service originates from numerous sources. In addition to federal and state capital funding, local governments occasionally contribute capital funds for station development programs. Private freight railways often fund right-of-way improvements that can benefit Amtrak passenger train operations as well as freight train operations which often share a common right-of-way. As Amtrak's revenues and overall financial performance have improved, the need for federal financing of the carrier's costs has decreased. This trend of reducing the need for annual public support to assist in financing operating needs can be expected to continue in the future. Should federal funding for Amtrak be dramatically reduced by Congress over a short time frame, the carrier would be forced to terminate operations over many of its nationwide routes.

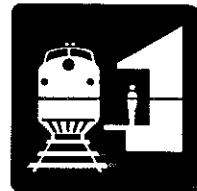
Operational Economics - While emphasis must be placed on maximizing ridership and associated revenue generation, ongoing improvements to the carrier's overall financial performance relies heavily on identifying and implementing methods by which productivity can be improved and operating expenses streamlined. While some achievements have been realized on a national basis in improved labor agreements and other areas, the high expense of train operations must be continually reviewed in order to realize a continually more successful level of overall financial performance. Improved operational productivity and efficiency, coupled with a continuing maximization of revenue generation, does offer the opportunity to further reduce the dependency on needed public funding for operating support.

Ridership/Revenue - Amtrak has followed a marketing strategy that historically emphasizes revenue generation from passengers more strongly than simply ridership expansion. The commercial success or failure of such services is determined not by the actual number of riders using such services, but by the total revenues that are generated from these services. With only a few exceptions, fare levels have been continually increased at a relatively rapid rate to maximize the revenue generated from each user, rather than establishing lower fares that would permit higher ridership growth at the expense of the total revenue performance of such systems. Such a strategy accepts the fact that actual ridership levels are constrained and may prove somewhat static in nature. The impact of such an approach is evident along the Detroit-Chicago corridor as ridership since 1981 has declined by 11.7 percent (393,278 to 347,251), yet revenues generated from this route have grown from \$6,220,000 in FY 1981 to \$7,794,000 in FY 1984.

Continuing emphasis must be placed on marketing programs that permit healthy ridership performance in the future. As important, however, is developing programs which can maximize the potential revenue generation of trains operating over these routes. The maximization of revenue generation, coupled with emphasis on streamlining operating cost efficiencies, are the two performance levels for the system which would reduce its need for public operating support.

Infrastructure Needs - While significant progress has been achieved in improving Amtrak's physical plant, future capital investments will be necessary to provide for a safe, comfortable and commercially successful program of rail passenger service in Michigan. Further capital improvements to track, signal systems, grade crossing protection, rolling stock and terminal facilities can permit these services to offer an enhanced level of transportation service to Michigan travelers, while allowing the rail mode to more fully realize the operational and financial performance levels that are outlined in the Bureau of Transportation Planning's High Speed Technical Report, issued in June 1985. Investments necessary to attain these types of capital improvements need to be pursued from federal, state, local and private sources. Coordination of such multiple funding resources would appear to offer the best opportunity for maximizing potential investment levels.

PART II
SYSTEM DESCRIPTION
AND SERVICE



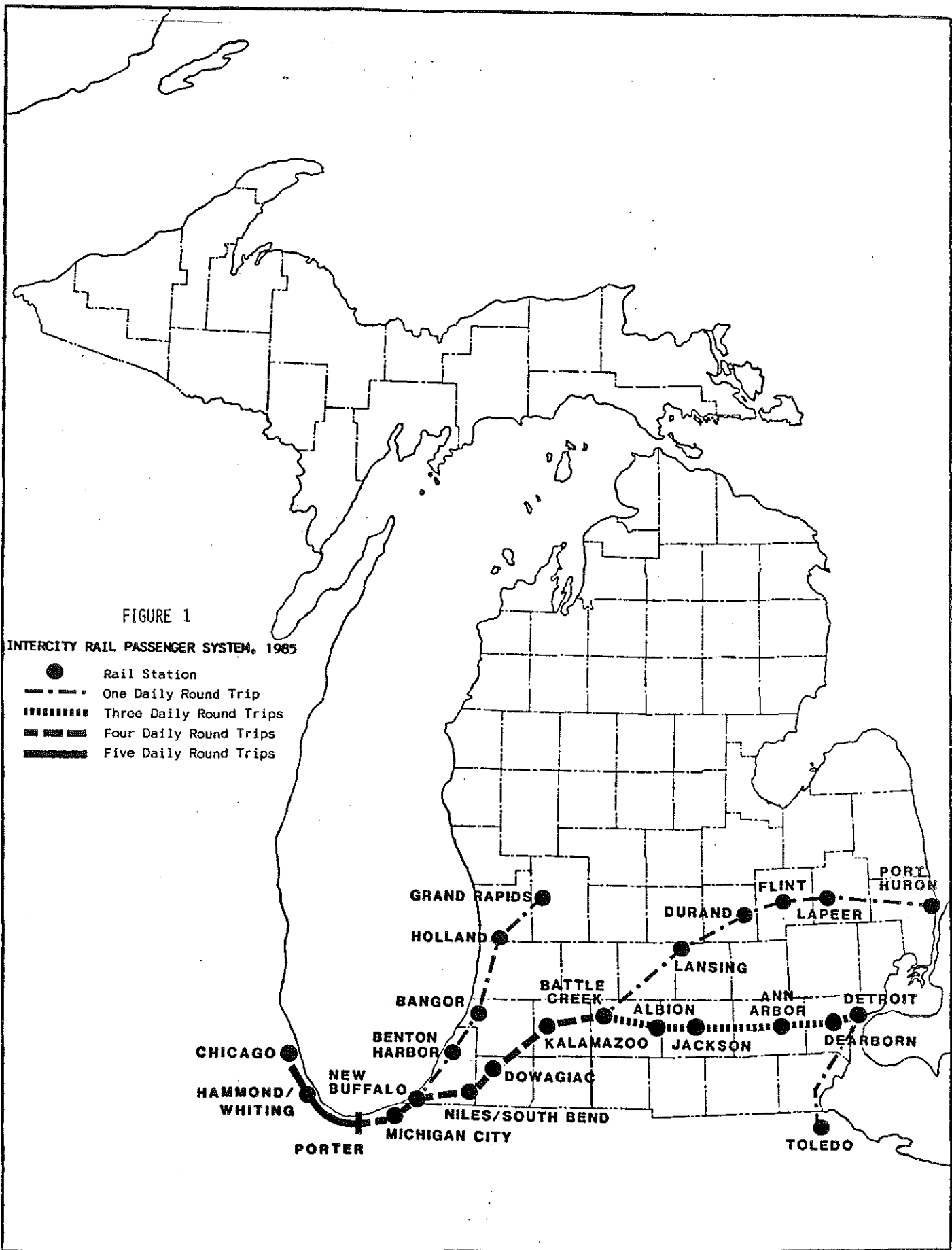
II. SYSTEM DESCRIPTION & SERVICE

A. THE SYSTEM

The intercity rail passenger system serves 20 Michigan communities and includes 626 route miles -- 540 in Michigan and 86 in Indiana, Illinois and Ohio. The out-of-state miles are necessary to provide connections of these trains to Chicago and Toledo. Michigan's rail passenger system is shown on Figure 1. Of the 626 total miles, Amtrak owns 95 miles extending from Kalamazoo to Porter, Indiana over the Detroit-Chicago corridor. The remainder is privately owned by the Grand Trunk Western Railroad, Conrail, and the Chessie System.

The level of rail passenger service is generally defined in terms of daily round trips services over a given route. The highest level of service, three daily round trips, is provided between Detroit and Chicago via Dearborn, Ann Arbor, Jackson, Battle Creek, Kalamazoo and Niles. One of these daily round trip services continues beyond Detroit to Toledo, where train connections are made to and from overnight rail service connecting Michigan points with points throughout the northeast. All other intercity rail passenger routes in the state provide a single daily round trip. The Toronto-Port Huron to Chicago services also use the Detroit-Chicago corridor route between Battle Creek and Chicago, resulting in four daily round trip train services over this particular route segment.

Amtrak's state-assisted "International Limited" passenger train connecting eight Michigan cities with Toronto and Chicago, introduced in October 1982, and the "Pere Marquette" Grand Rapids to Chicago



service, via Holland, Bangor/South Haven, St. Joseph/Benton Harbor and New Buffalo, inaugurated in August 1984, are examples of the impact of the state's cooperation with Amtrak.

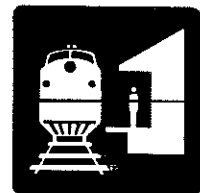
B. SYSTEM HISTORY

Since the inception of Amtrak in 1971, rail passenger services in Michigan have evolved as follows:

- May 1, 1971: Detroit-Chicago service initiated with two round trips daily as part of basic Amtrak nationwide system. These operations serve a total of 6 Michigan communities.
- September 15, 1974: Port Huron-Chicago service introduced as a state assisted 403(b) program. In October 1982, this service was reoriented to permit through service between Chicago, Port Huron and Toronto.
- October 31, 1974: Detroit-Buffalo-New York service was initiated as a state assisted 403(b) service. The state portion of costs was split 50/50 between Michigan and New York State. One daily round trip service. This daytime service was discontinued in January 1979 and was replaced approximately one year later by overnight service between Detroit and New York City via a Toledo connection at no cost to the state of Michigan.
- January 20, 1975: A morning commuter type service was initiated between Jackson and Detroit as a state assisted 403(b) program. In June 1982, the service was modified to originate in Ann Arbor instead of Jackson.
- April 1975: Amtrak introduced a new generation of train equipment on the Detroit-Chicago corridor. This initiated a two year re-equiping program for all Michigan services. By 1977, all older generation train equipment operating in Michigan service had been retired.
- April 25, 1975: A third Detroit-Chicago midday round trip was added to the Amtrak basic system.
- August 1980: Detroit-Toledo service was initiated as part of the Amtrak basic system. This daily round trip service provided connections in Toledo with overnight train service to and from the northeast.

- June 14, 1982: Commuter rail service changed to a.m. train only from Ann Arbor to Detroit, with p.m. passengers returning to Ann Arbor aboard a regularly scheduled intercity train bound for Chicago.
- October 1982: Chicago to Port Huron service is rescheduled in a manner to permit through train service along a 495 mile Chicago-Port Huron-Toronto route. Operations between Port Huron and Toronto are administered by VIA Rail Canada. Between Port Huron and Chicago, the route continues to be administered as a state assisted Amtrak operation.
- January 13, 1984: Commuter rail service a.m. train from Ann Arbor to Detroit discontinued. Planning continues for introduction of multiple frequency commuter rail service along this route segment as part of a regional transport system. Such service would utilize existing Amtrak stations in Ann Arbor and Dearborn and would also share station facilities in Detroit with Amtrak intercity train services, reducing capital costs and improving operating cost efficiencies to the regional operator.
- August 5, 1984: Amtrak state assisted service initiated linking Grand Rapids, Holland, Bangor/South Haven, St. Joseph/Benton Harbor, New Buffalo and Chicago. One daily round trip. The introduction of this service increases the number of Michigan cities being served by intercity rail service to twenty.
- August 1985: Amtrak completes \$40 million capital improvement program to the 95 mile Kalamazoo-Porter, Indiana route segment of the Detroit-Chicago corridor. Upgrading allows for sustained passenger train speeds of 79 mph over this route segment.
- Between 1976 and 1985, major station development programs completed in Dearborn, Ann Arbor, Jackson, Battle Creek, Kalamazoo, Dowagiac and East Lansing. Similar development programs are planned for Grand Rapids, Flint, Detroit and Chicago.

**PART III
SYSTEM USE AND
USER PROFILE**



III. SYSTEM USE & USER PROFILE

A. SYSTEM USE

1. Ridership Trends

Intercity rail passenger service in Michigan operates along three primary routes: Chicago-Detroit-Toledo, Chicago-Port Huron-Toronto, and Chicago-Grand Rapids. Historical ridership will be presented from 1974 to 1985.

On the Chicago-Detroit-Toledo route, annual ridership (see Table 1) increased from 236,616 in 1974 to 347,251 in 1984, an *10yr* overall increase of 46.8 percent. Peak ridership during the 11 year time period occurred in 1979 and 1981, with 388,300 and 393,278 passengers, respectively. Influencing these peak periods were energy difficulties that motivated many travelers to seek alternatives to auto travel. As the energy climate stabilized, normal travel habits and practices were resumed. Other factors that impact demand include weather conditions and the regional economy. Such factors not only impact rail service, but tend to influence ridership levels in all modes of passenger transport.

Annual ridership on the Chicago-Port Huron-Toronto route (see Table 2) has increased an overall 26.8 percent, from 86,953 in 1975 to 110,232 annual riders in 1984. During this same period, the annual revenues generated from these riders increased from \$854,004 in 1975 to \$2,673,033 in 1984. Highlighting the emphasis on revenue generation, in 1975 the average revenue per passenger totaled \$9.82 compared to the 1984 average revenue per passenger of \$24.25. Peak ridership along this route occurred in 1983 with

TABLE 1

INTERCITY RAIL PASSENGER TRANSPORTATION
CHICAGO - DETROIT - TOLEDO
RIDERSHIP

| YEAR | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | TOTAL |
|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|
| 1974 | 17,288 | 16,780 | 21,870 | 22,988 | 20,075 | 20,787 | 22,737 | 24,049 | 13,941 | 14,860 | 17,903 | 23,338 | 236,816 |
| 1975 | 17,838 | 14,911 | 18,191 | 29,957 | 32,890 | 39,551 | 41,238 | 41,386 | 23,944 | 26,605 | 32,672 | 30,799 | 349,982 |
| 1976 | 28,281 | 26,123 | 27,298 | 35,784 | 36,059 | 34,246 | 36,441 | 35,922 | 24,610 | 27,193 | 27,128 | 30,459 | 369,542 |
| 1977 | 23,800 | 20,713 | 23,836 | 31,692 | 35,704 | 32,136 | 33,840 | 31,627 | 21,128 | 22,815 | 26,909 | 29,205 | 333,405 |
| 1978 | 25,051 | 23,479 | 29,980 | 28,430 | 32,487 | 31,364 | 28,972 | 31,296 | 21,807 | 25,330 | 30,755 | 33,489 | 342,440 |
| 1979 | 26,548 | 23,981 | 27,704 | 37,978 | 39,990 | 40,641 | 40,626 | 42,253 | 26,853 | 25,286 | 27,685 | 28,755 | 388,300 |
| 1980 | 24,068 | 25,394 | 28,701 | 33,076 | 34,647 | 35,201 | 38,147 | 41,026 | 27,493 | 29,293 | 31,703 | 34,220 | 382,957 |
| 1981 | 29,142 | 28,623 | 31,883 | 39,453 | 36,505 | 35,401 | 37,507 | 38,743 | 25,449 | 26,167 | 30,846 | 33,539 | 393,278 |
| 1982 | 31,151 | 26,425 | 27,675 | 32,053 | 30,598 | 30,403 | 33,898 | 34,645 | 23,324 | 26,142 | 28,622 | 31,862 | 356,796 |
| 1983 | 24,467 | 23,423 | 26,798 | 33,885 | 35,382 | 27,593 | 27,848 | 27,863 | 26,240 | 28,300 | 35,139 | 37,879 | 354,817 |
| 1984 | 25,122 | 23,094 | 28,497 | 31,525 | 34,419 | 35,289 | 34,637 | 32,900 | 21,947 | 22,607 | 27,335 | 29,879 | 347,251 |
| 1985 | 22,943 | 21,074 | 25,690 | 31,893 | 38,289 | 37,115 | | | | | | | 177,004 |

Notes: a - Third daily round trip added between Detroit and Chicago on April 25, 1975.
b - Service between Detroit and Toledo initiated August, 1980.

TABLE 2

INTERCITY RAIL PASSENGER TRANSPORTATION
CHICAGO - PORT HURON - (TORONTO)
RIDERSHIP

| YEAR | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | TOTAL |
|------|-------|-------|-------|--------|--------|--------|--------|--------|-------|-------|-------|--------|---------|
| 1974 | | | | | | | | | 2,296 | 5,480 | 6,521 | 8,793 | 23,090 |
| 1975 | 5,933 | 5,848 | 7,423 | 7,107 | 8,742 | 8,320 | 8,024 | 9,375 | 5,108 | 5,705 | 7,242 | 8,326 | 86,953 |
| 1976 | 6,300 | 5,167 | 5,831 | 8,076 | 9,125 | 8,889 | 8,480 | 8,989 | 5,258 | 7,169 | 7,176 | 8,869 | 89,327 |
| 1977 | 4,879 | 5,082 | 6,588 | 9,174 | 10,595 | 8,973 | 8,912 | 8,879 | 5,104 | 5,950 | 6,682 | 9,097 | 89,895 |
| 1978 | 6,135 | 5,557 | 8,026 | 7,959 | 9,270 | 9,689 | 8,257 | 9,328 | 6,011 | 6,520 | 8,495 | 9,498 | 94,725 |
| 1979 | 6,598 | 5,491 | 7,644 | 10,816 | 11,063 | 11,008 | 11,961 | 11,745 | 8,163 | 6,585 | 8,360 | 9,152 | 108,586 |
| 1980 | 7,448 | 6,533 | 8,455 | 10,012 | 9,846 | 9,683 | 10,773 | 12,642 | 7,507 | 8,764 | 8,871 | 10,567 | 111,121 |
| 1981 | 8,280 | 7,437 | 9,226 | 11,032 | 10,697 | 9,923 | 10,587 | 11,189 | 6,676 | 7,523 | 9,454 | 10,973 | 112,977 |
| 1982 | 8,651 | 7,287 | 8,015 | 9,176 | 9,219 | 9,011 | 9,621 | 9,908 | 5,234 | 6,663 | 7,382 | 9,185 | 89,332 |
| 1983 | 7,699 | 7,097 | 8,790 | 10,567 | 10,974 | 10,396 | 12,440 | 13,085 | 8,115 | 8,558 | 9,477 | 10,436 | 117,634 |
| 1984 | 7,065 | 6,668 | 9,190 | 9,835 | 9,372 | 10,223 | 11,521 | 13,009 | 8,578 | 7,638 | 8,143 | 8,990 | 110,232 |
| 1985 | 7,013 | 7,007 | 8,582 | 9,562 | 10,568 | 12,085 | | | | | | | 54,817 |

Notes: a - Service initiated on September 15, 1974.
b - Inauguration of International Ltd. (Chicago-Port Huron-Toronto) on October 31, 1982.

the introduction of through service to and from Toronto with 117,634 passengers. Ridership during the first six months of 1985 totaled 54,817 as compared to 52,353 during the same six month period in 1984, showing an increase of approximately 5 percent.

The commuter oriented rail service (see Appendix A) declined rapidly after 1979, to a level that required service discontinuance. Passenger counts steadily increased from 58,952 in 1975 to a peak of 96,573 in 1979. By 1983 ridership along this commuter route had declined to only 29,387. Annual ridership aboard this service experienced a 50 percent decline from service inception in 1975 to the time of its discontinuance.

Failure of this service may be attributed to the following factors:

- Inherent transit/commuter inefficiency of operating only during "rush hour" periods of about 4 hours per day.
- Use in commuter oriented service of only one round trip per day. This results in an inability of the commuter service to meet the total market travel needs due to variations in hours of work; i.e., 7:30 a.m. to 4:30 p.m., 8:00 a.m. to 5:00 p.m. 9:00 a.m. to 5:00 p.m., etc.
- A severe slump in the southeast Michigan economy which resulted in significant loss of employment, with a resulting reduction of overall commuter traffic in and out of the city of Detroit.
- Unattractive and inconvenient Detroit station location, outside of the central business district.
- Rail traveler diversion to vanpool programs that offered commuter oriented travel along a parallel route at nearly 50 percent lower fare than the commuter rail service.
- Ongoing program of fare escalation by Amtrak for this and all other rail services.

- Reduction in gasoline prices that caused a slight shift away from public transportation use back to auto use.

Service between Detroit, Buffalo and New York City operated for six years via a routing across southern Ontario. From 1975 to 1978, the four full years of service, annual ridership experienced a net decline of 14.1 percent. The lengthy daytime scheduling of this service, offering no connecting services in either Detroit or New York City, contributed to the poor performance of this route. The overnight service with a routing via Toledo provided for accessibility to and from this service not only from Detroit, but also from all other Michigan cities located along the Detroit-Chicago corridor. In the northeast, the overnight service operated directly to both New York city and Boston, with additional train connections available at both of these locations.

The Chicago-Grand Rapids service ridership (see Table 3), totaled approximately 68,000 for its first full year of service. While ridership along this route has been somewhat higher than originally expected, revenue generation of this service has substantially exceeded initial projections. In operation for only one year, more experience will be necessary before it will be possible to more accurately assess the overall success, or lack of success, for this particular route.

Figure 2 displays a composite view of intercity rail passenger ridership in Michigan from 1974 to 1984.

TABLE 3

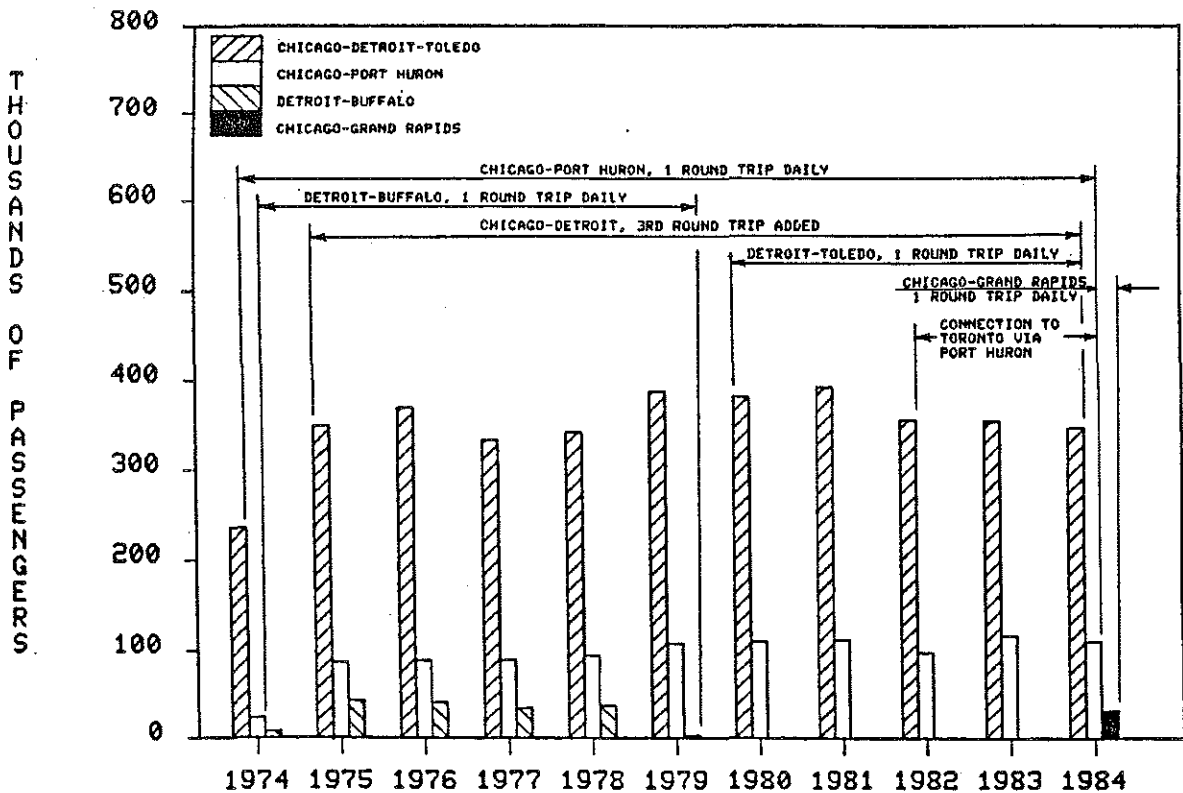
INTERCITY RAIL PASSENGER TRANSPORTATION
CHICAGO - GRAND RAPIDS
RIDERSHIP

| YEAR | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | TOTAL |
|------|-------|-------|-------|-------|-------|-------|-----|-------|-------|-------|-------|-------|--------|
| 1974 | | | | | | | | | | | | | |
| 1975 | | | | | | | | | | | | | |
| 1976 | | | | | | | | | | | | | |
| 1977 | | | | | | | | | | | | | |
| 1978 | | | | | | | | | | | | | |
| 1979 | | | | | | | | | | | | | |
| 1980 | | | | | | | | | | | | | |
| 1981 | | | | | | | | | | | | | |
| 1982 | | | | | | | | | | | | | |
| 1983 | | | | | | | | | | | | | |
| 1984 | | | | | | | | 6,892 | 5,169 | 5,245 | 6,657 | 7,991 | 31,754 |
| 1985 | 4,530 | 3,525 | 4,065 | 5,585 | 6,042 | 5,826 | | | | | | | 29,573 |

Note: Service began August 5, 1984.

FIGURE 2

RAIL PASSENGER RIDERSHIP TRENDS, 1974-84



2. 1984 Trip Distribution

For 1984, there were 1,254 average daily trips over the state's rail passenger system. The average trip distance was 179 miles in length. Trips between Chicago and cities in Michigan accounted for the largest submarket, with 397 trips per day. Of note, four Michigan cities -- Detroit, Dearborn, Ann Arbor and Kalamazoo -- experienced average daily trips in excess of 100. On the other hand, smaller communities with low service frequency levels, including Albion, Lapeer, Durand and Dowagiac, experienced less than 10 daily trips. See Tables 4, 5 and 6.

B. USER PROFILE

Data has been collected in several surveys for Michigan rail passengers. Items requested included age, sex, occupation, autos per household, household income, use frequency and trip purpose.

- Over 90 percent (see Figure 3) were between the age of 19 to 64.
- Nearly 60 percent (see Figure 4) were female.
- Half were employed with 21 percent listed as students (see Figure 5).
- Most passengers had at least one automobile available to them, with approximately 20 percent not having access to an automobile (see Figure 6).
- Slightly more than half had a household income (in 1980 dollars) of \$19,999 or under (see Figure 7).
- All passengers indicated they did not ride the train on a daily basis.
- The average traveler used rail for relatively lengthy trips averaging 179 miles. Very little short distance (50 to 100 miles) travel is experienced.

TABLE 4

1984 RAIL PASSENGER TRIP TABLE
 COMPOSITE
 (AVERAGE DAILY TRIPS)

| *ORIGIN* | ***** DESTINATION ***** | | | | | | | | | | | | | | | | | | | TOTAL |
|----------|-------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|-------|
| | TOL | DET | DER | YPS | ARB | JXN | ALI | PTH | LPE | FLN | DRD | LNS | BTL | KAL | DOA | NLS | MCI | HMI | CHI | |
| TOL | 0 | 16 | 3 | 0 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 29 |
| DET | 14 | 0 | 1 | 1 | 11 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 8 | 0 | 3 | 1 | 3 | 73 | 121 |
| DER | 4 | 0 | 0 | 0 | 31 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 14 | 0 | 4 | 1 | 2 | 51 | 114 |
| YPS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| ARB | 4 | 10 | 29 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 13 | 0 | 5 | 1 | 2 | 72 | 141 |
| JXN | 1 | 4 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 0 | 2 | 0 | 0 | 17 | 33 |
| ALI | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| PTH | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 12 | 4 | 17 | 4 | 7 | 0 | 3 | 0 | 1 | 34 | 85 | |
| LPE | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 2 | 7 | |
| FLN | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 2 | 0 | 1 | 15 | 33 | |
| DRD | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6 |
| LNS | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 1 | 1 | 0 | 0 | 1 | 2 | 0 | 3 | 0 | 1 | 17 | 43 | |
| BTL | 1 | 3 | 5 | 0 | 2 | 2 | 3 | 0 | 1 | 0 | 1 | 0 | 6 | 0 | 1 | 0 | 0 | 27 | 52 | |
| KAL | 3 | 8 | 14 | 0 | 13 | 2 | 7 | 1 | 2 | 1 | 2 | 6 | 0 | 0 | 4 | 0 | 1 | 60 | 124 | |
| DOA | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | |
| NLS | 0 | 3 | 4 | 0 | 5 | 2 | 2 | 1 | 2 | 0 | 3 | 1 | 5 | 0 | 0 | 0 | 0 | 1 | 19 | 48 |
| MCI | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5 |
| HMI | 0 | 3 | 1 | 0 | 2 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 14 |
| CHI | 1 | 75 | 48 | 0 | 71 | 16 | 33 | 2 | 17 | 2 | 18 | 27 | 60 | 3 | 18 | 2 | 3 | 0 | 397 | |
| TOTAL | 28 | 123 | 108 | 1 | 142 | 30 | 81 | 8 | 36 | 7 | 43 | 55 | 126 | 3 | 46 | 5 | 15 | 396 | 1254 | |

TABLE 5

1984 RAIL PASSENGER TRIP TABLE
 CHICAGO-DETROIT-TOLEDO
 (AVERAGE DAILY TRIPS)

| *ORIGIN* | ***** DESTINATION ***** | | | | | | | | | | | DOA | NLS | MCI | HMI | CHI | TOTAL |
|----------|-------------------------|-----|-----|-----|-----|-----|-----|-----|-----|---|----|-----|-----|-----|-----|-----|-------|
| | TOL | DET | DER | YPS | ARB | JXN | ALI | BTL | KAL | | | | | | | | |
| TOL | 0 | 16 | 3 | 0 | 4 | 1 | 0 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 29 | | |
| DET | 14 | 0 | 1 | 1 | 11 | 3 | 0 | 3 | 8 | 0 | 3 | 1 | 3 | 73 | 121 | | |
| DER | 4 | 0 | 0 | 0 | 31 | 2 | 0 | 5 | 14 | 0 | 4 | 1 | 2 | 51 | 114 | | |
| YPS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| ARB | 4 | 10 | 29 | 0 | 0 | 2 | 0 | 3 | 13 | 0 | 5 | 1 | 2 | 72 | 141 | | |
| JXN | 1 | 4 | 2 | 0 | 2 | 0 | 0 | 2 | 3 | 0 | 2 | 0 | 0 | 17 | 33 | | |
| ALI | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | | |
| BTL | 1 | 3 | 5 | 0 | 2 | 2 | 0 | 0 | 5 | 0 | 1 | 0 | 0 | 25 | 44 | | |
| KAL | 3 | 8 | 14 | 0 | 13 | 2 | 0 | 5 | 0 | 0 | 3 | 0 | 1 | 54 | 103 | | |
| DOA | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | | |
| NLS | 0 | 3 | 4 | 0 | 5 | 2 | 0 | 1 | 4 | 0 | 0 | 0 | 1 | 17 | 37 | | |
| MCI | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 5 | | |
| HMI | 0 | 3 | 1 | 0 | 2 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 3 | 11 | | |
| CHI | 1 | 75 | 48 | 0 | 71 | 16 | 1 | 24 | 52 | 3 | 18 | 2 | 3 | 0 | 312 | | |
| TOTAL | 28 | 123 | 108 | 1 | 142 | 30 | 1 | 45 | 104 | 3 | 34 | 5 | 12 | 316 | 952 | | |

TABLE 6
1984 RAIL PASSENGER TRIP TABLE
CHICAGO-PORT HURON
(AVERAGE DAILY TRIPS)

| *ORIGIN* | ***** DESTINATION ***** | | | | | | | | | | TOTAL |
|----------|-------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|
| | PTH | LPE | FLN | DRD | LNS | BTL | KAL | NLS | HMI | CHI | |
| PTH | 0 | 3 | 12 | 4 | 17 | 4 | 7 | 3 | 1 | 34 | 85 |
| LPE | 2 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 2 | 7 |
| FLN | 12 | 0 | 0 | 0 | 0 | 1 | 2 | 2 | 1 | 15 | 33 |
| DRD | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 6 |
| LNS | 17 | 1 | 1 | 0 | 0 | 1 | 2 | 3 | 1 | 17 | 43 |
| BTL | 3 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 2 | 8 |
| KAL | 7 | 1 | 2 | 1 | 2 | 1 | 0 | 1 | 0 | 6 | 21 |
| NLS | 2 | 1 | 2 | 0 | 3 | 0 | 1 | 0 | 0 | 2 | 11 |
| HMI | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 3 |
| CHI | 33 | 2 | 17 | 2 | 18 | 3 | 8 | 2 | 0 | 0 | 85 |
| TOTAL | 81 | 8 | 36 | 7 | 43 | 10 | 22 | 12 | 3 | 80 | 302 |

FIGURE 3

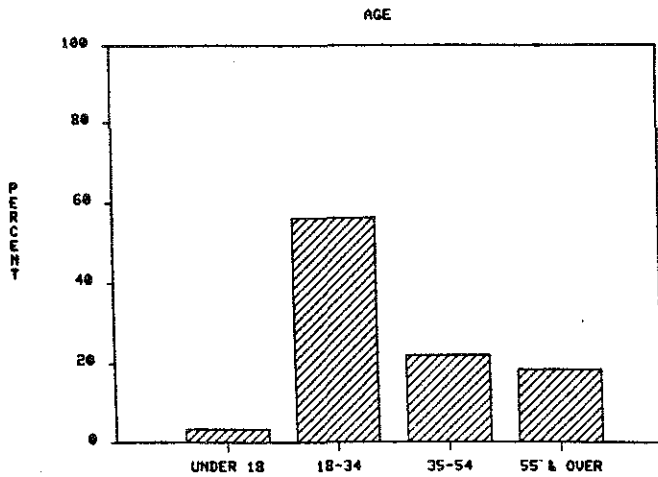


FIGURE 4

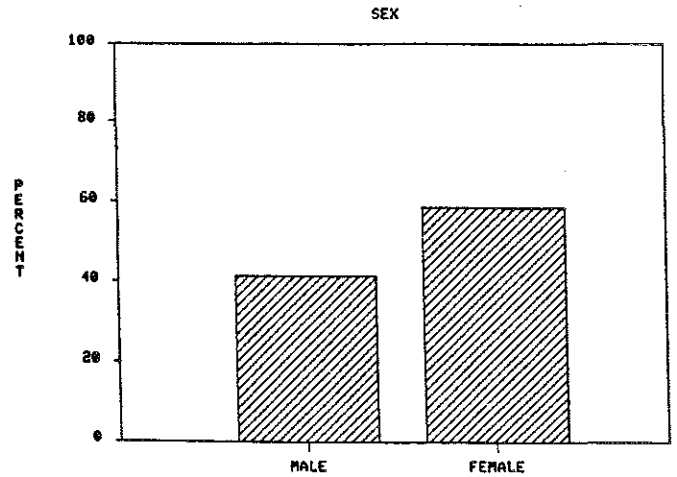


FIGURE 5

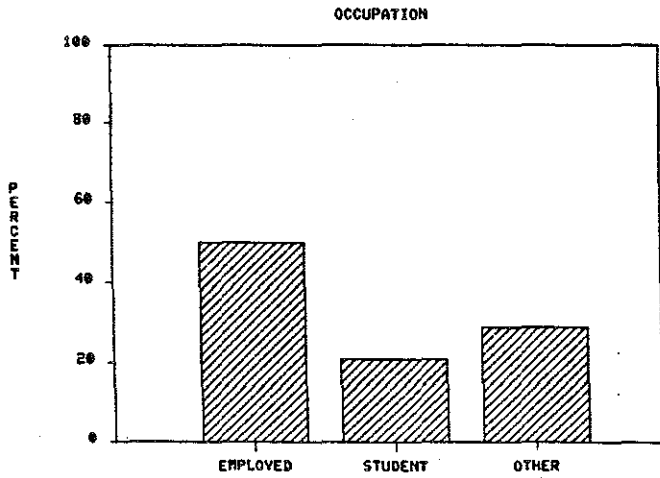


FIGURE 6

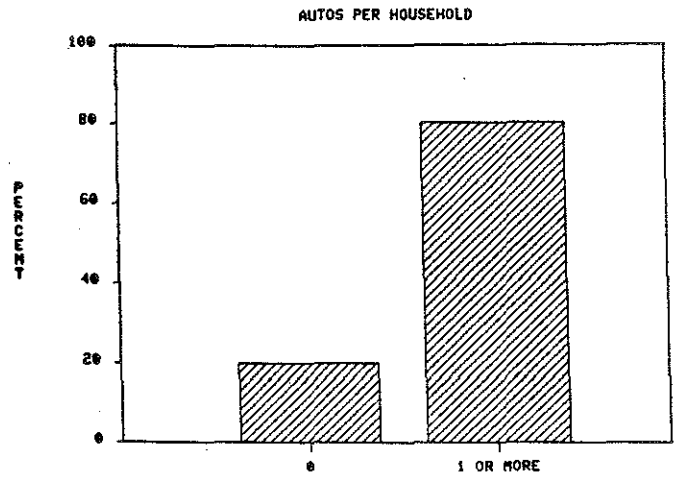


FIGURE 7
HOUSEHOLD INCOME

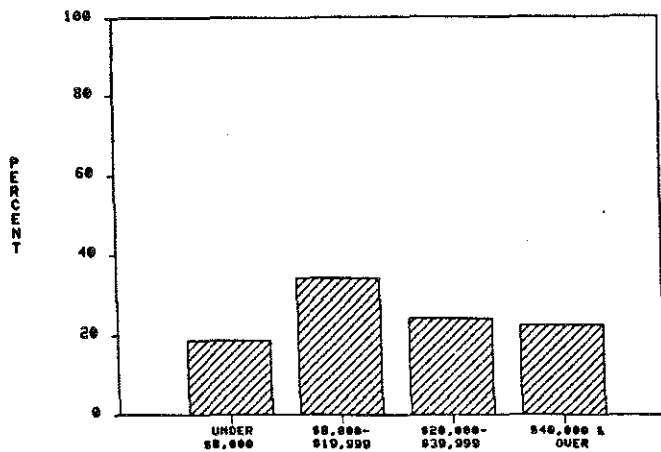
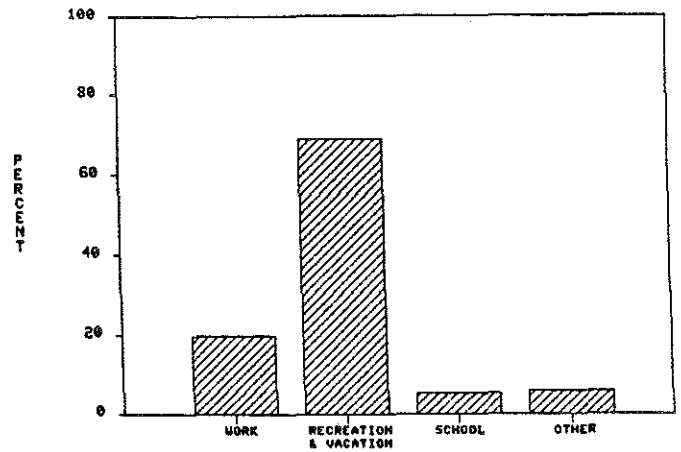


FIGURE 8
TRIP PURPOSE



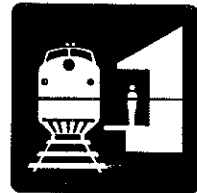
- Nearly 70 percent of all passengers rode these trains for recreation and vacation (non-business) purposes, while 20 percent took the train for work purposes. Existing speed and frequency levels appear not yet sufficient to successfully attract large levels of business travel. (see Figure 8).

*where's 10%
School & other*

The sources used in generating this user profile were:

- (1) A Survey of Amtrak Users in Michigan. MDSHT, UPTRAN, 1975.
- (2) A Survey of Amtrak Users in Michigan. MDSHT, survey updates conducted by State-sponsored Passenger Service Aide Program, 1977 and 1980.
- (3) Passenger Survey. Michigan Passenger Foundation, 1980.

**PART IV
SYSTEM COSTS
AND REVENUES**



IV. SYSTEM COSTS & REVENUES

A. SYSTEM COSTS

Under the Rail Passenger Service Act of 1970, as amended, Amtrak is solely responsible for the operating costs of the Chicago-Detroit-Toledo service (see Table 7). Operation of the Chicago-Port Huron and Chicago-Grand Rapids services are financed by joint agreements between the state and Amtrak. The state is currently funding 65 percent of the "short-term avoidable" operating deficits of these two services. In addition to operating costs, the state contributes about 50 percent of the capital costs for the routes.

In 1984, the Chicago-Detroit-Toledo service accumulated total operating expenses of \$11.8 million. This amounts to \$18 per train mile. Train miles equal the number of trains over a route times the distance of the route. The Chicago-Port Huron service (see Table 8) cost \$4.0 million to operate for the same period. Similar to the Chicago-Detroit-Toledo service, it cost \$17 per train mile. Since the Chicago-Grand Rapids train did not begin revenue service until August 5, 1984, an annual revenue figure is not available. However, the latter service is estimated to cost \$15 per train mile. Below is a summary of the unit cost for each service.

| | <u>Chicago-Detroit</u> | <u>Chicago-Grand Rapids</u> | <u>Chicago-Port Huron</u> |
|-----------------|------------------------|-----------------------------|---------------------------|
| Cost/Train Mile | \$18 | \$15 | \$17 |

TABLE 7
REVENUES & COSTS (FY 1984)¹
 Chicago-Detroit-Toledo

| <u>REVENUES</u> | | |
|--------------------------|------------------|--------------|
| Total Revenues | \$7,794,000 | 100 % |
| <u>EXPENSES</u> | | |
| Labor ² | \$5,353,000 | 45.4% |
| Fuel ³ | 823,000 | 7.0% |
| Maintenance ⁴ | 3,155,000 | 26.8% |
| Supplies ⁵ | 694,000 | 5.9% |
| Marketing ⁶ | 471,000 | 4.0% |
| Other ⁷ | <u>1,281,000</u> | <u>10.9%</u> |
| Total Expenses | \$11,777,000 | 100 % |

- Notes: 1/ These cost figures exclude train depreciation.
- 2/ Labor includes train and engine crew, on-board services (labor), station services, crew base, reservations, and revenue accounting.
- 3/ Fuel consists of train fuel and power.
- 4/ Maintenance consists of equipment, right-of-way, and other railroad maintenance.
- 5/ Supplies include on-board services (supplies).
- 6/ Marketing consists of sales and marketing and information services.
- 7/ Other includes rolling stock rentals, per wheel charge, performance incentive payment, commissary, insurance, and accounting and administration.

Source: MDOT, Bureau of Urban and Public Transportation, Intercity Division.

TABLE 8

REVENUES & COSTS (FY 1984)¹

International Train (Chicago-Port Huron)

REVENUES

| | | |
|-----------------------|-------------|------------|
| Fares | \$2,523,135 | 92.1% |
| Food & Beverage | 214,983 | 7.9% |
| Mail, Express & Other | <u>-0-</u> | <u>0 %</u> |
| Total Revenues | \$2,738,118 | 100 % |

EXPENSES

| | | |
|--------------------------|----------------|--------------|
| Labor ² | \$1,661,872 | 41.3% |
| Fuel ³ | 311,249 | 7.7% |
| Maintenance ⁴ | 1,406,743 | 35.0% |
| Supplies ⁵ | 142,068 | 3.5% |
| Marketing ⁶ | 77,359 | 1.9% |
| Other ⁷ | <u>421,479</u> | <u>10.6%</u> |
| Total Expenses | \$4,020,770 | 100 % |

- Notes: 1/ These cost figures exclude train depreciation.
- 2/ Labor includes train engine crew, on-board services (labor), station services, crew base, reservations, and revenue accounting.
- 3/ Fuel consists of train fuel and power.
- 4/ Maintenance consists of equipment, right-of-way, and other railroad maintenance.
- 5/ Supplies include on-board services (supplies).
- 6/ Marketing consists of sales and marketing and information services.
- 7/ Other includes rolling stock rentals, per wheel charge, performance incentive payment, commissary, insurance, and accounting and administration.

Source: MDOT, Bureau of Urban and Public Transportation, Intercity Passenger Division (based on those rail passenger services receiving State operating assistance).

B. SYSTEM REVENUES

During 1984, the International Train (Chicago-Port Huron) generated revenues equal to \$2.7 million or 68 percent of total expenses. For the same period, the Chicago-Detroit-Toledo trains collected fares totalling \$7.8 million or 66 percent of total expenses. These revenues are well over Amtrak's mandated revenue to cost ratio of 50 percent.

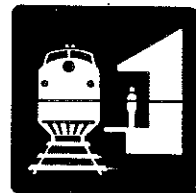
The revenue to cost ratio is a good indicator of how efficiently the rail passenger services are being operated. It is the percentage of the total operating expenses covered by total revenues (fares, food and beverage, mail, package express and miscellaneous). As the ratio increases, the amount of required federal and state subsidy decreases. Amtrak has taken an initiative to quickly reduce federal subsidy, while continuously improving the quality of service.

Revenue increases have resulted from a number of efforts. These include (1) fare increases, with selected discounts; (2) mail and package express delivery; (3) real estate transactions; and (4) a revenue enhancement program (use of support services and resources to earn extra revenues). In addition, market campaigns are being conducted to improve the service's public image. These efforts are resulting in increased passenger volumes and revenues.

Below is a summary of revenue factors. The revenues are derived from a base fare of \$18:

| | <u>Chicago- Detroit</u> | <u>Chicago- Grand Rapids</u> | <u>Chicago- Port Huron</u> |
|--------------------|-----------------------------|----------------------------------|--------------------------------|
| Revenue/Train Mile | \$11 | \$11 | \$9 |

APPENDICES



APPENDIX A

INTERCITY RAIL PASSENGER TRANSPORTATION JACKSON/ANN ARBOR COMMUTER RAIL RIDERSHIP

| YEAR | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | TOTAL |
|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| 1974 | | | | | | | | | | | | | |
| 1975 | 2,111 | 4,456 | 4,755 | 4,745 | 4,675 | 5,148 | 5,190 | 4,588 | 5,752 | 6,404 | 5,369 | 5,759 | 58,952 |
| 1976 | 6,363 | 5,300 | 6,394 | 5,482 | 4,789 | 4,800 | 5,043 | 5,238 | 4,522 | 5,527 | 4,937 | 6,769 | 65,144 |
| 1977 | 5,783 | 6,268 | 7,113 | 6,333 | 7,397 | 7,664 | 6,358 | 6,831 | 7,207 | 7,303 | 7,542 | 6,674 | 82,473 |
| 1978 | 7,528 | 7,929 | 8,090 | 7,170 | 7,326 | 7,945 | 6,905 | 6,405 | 6,207 | 7,580 | 7,782 | 6,833 | 87,700 |
| 1979 | 8,101 | 7,435 | 8,002 | 7,750 | 8,671 | 8,532 | 8,878 | 9,139 | 6,923 | 8,940 | 7,644 | 6,560 | 96,573 |
| 1980 | 8,863 | 8,185 | 8,371 | 8,741 | 7,440 | 7,772 | 6,254 | 5,918 | 6,637 | 7,206 | 5,557 | 5,665 | 88,609 |
| 1981 | 6,573 | 5,971 | 6,549 | 6,354 | 4,426 | 4,184 | 4,107 | 3,386 | 2,907 | 3,647 | 3,555 | 3,728 | 55,385 |
| 1982 | 4,140 | 4,151 | 4,319 | 3,503 | 2,982 | 2,157 | 1,837 | 1,234 | 1,903 | 2,160 | 2,201 | 1,641 | 32,228 |
| 1983 | 2,389 | 2,302 | 2,193 | 1,796 | 1,957 | 2,124 | 1,527 | 2,560 | 2,767 | 3,179 | 3,193 | 3,400 | 29,387 |
| 1984 | 979 | | | | | | | | | | | | 979 |
| 1985 | | | | | | | | | | | | | |

Notes: a - Service initiated on January 20, 1975. Operated only on weekdays and no holidays.
b - Jackson - Detroit service modified to Ann Arbor - Detroit on June 14, 1982.
c - Ann Arbor - Detroit service discontinued on January 13, 1984.

INTERCITY RAIL PASSENGER TRANSPORTATION DETROIT - BUFFALO RIDERSHIP

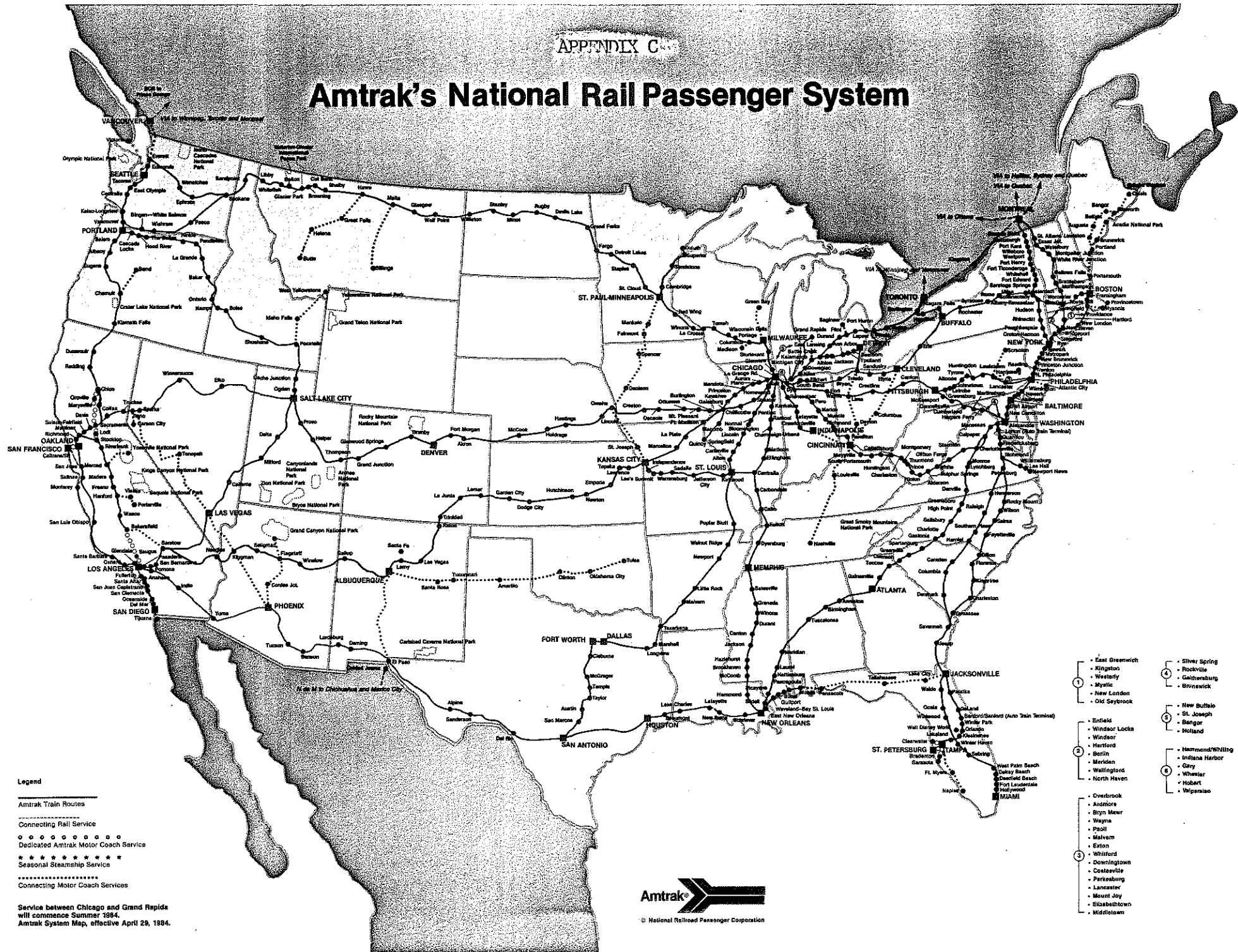
| YEAR | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | TOTAL |
|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| 1974 | | | | | | | | | | | 2,923 | 4,576 | 7,499 |
| 1975 | 3,370 | 2,084 | 2,931 | 2,475 | 2,796 | 3,858 | 5,492 | 6,476 | 2,864 | 2,416 | 3,520 | 5,138 | 43,400 |
| 1976 | 3,017 | 2,271 | 2,477 | 3,913 | 2,961 | 3,271 | 5,162 | 5,823 | 2,495 | 2,471 | 3,335 | 4,436 | 41,432 |
| 1977 | 2,437 | 1,067 | 2,460 | 3,771 | 3,329 | 3,154 | 2,527 | 5,356 | 2,746 | 2,015 | 1,685 | 3,954 | 34,501 |
| 1978 | 1,379 | 1,998 | 2,760 | 2,694 | 2,924 | 3,350 | 4,835 | 5,289 | 2,963 | 1,778 | 2,767 | 4,542 | 37,277 |
| 1979 | 3,051 | | | | | | | | | | | | 3,051 |
| 1980 | | | | | | | | | | | | | |
| 1981 | | | | | | | | | | | | | |
| 1982 | | | | | | | | | | | | | |
| 1983 | | | | | | | | | | | | | |
| 1984 | | | | | | | | | | | | | |
| 1985 | | | | | | | | | | | | | |

Notes: a - Service began November 1, 1974.
b - Service terminated on January 31, 1979.



APPENDIX B
Dearborn Amtrak Station

Amtrak's National Rail Passenger System



-30-

- Legend**
- Amtrak Train Routes
 - Connecting Rail Service
 - Dedicated Amtrak Motor Coach Service
 - Seasonal Steamship Service
 - Connecting Motor Coach Services

Service between Chicago and Grand Rapids will commence Summer 1984. Amtrak System Map, effective April 29, 1984.

- 1 East Greenwich
- 1 Kirtlington
- 1 Westerly
- 1 Mystic
- 1 New London
- 1 Old Saybrook
- 2 Entfield
- 2 Windsor Locks
- 2 Wadsworth
- 2 Hartford
- 2 Berlin
- 2 Meriden
- 2 Wallingford
- 2 North Haven
- 3 Overbrook
- 3 Andover
- 3 Bryn Mawr
- 3 Wayne
- 3 Pottsville
- 3 Malvern
- 3 Exton
- 3 Whitford
- 3 Downingtown
- 3 Coatesville
- 3 Pottersburg
- 3 Lancaster
- 3 Mount Joy
- 3 Elizabethtown
- 3 Middletown
- 4 Silver Spring
- 4 Rockville
- 4 Gaithersburg
- 4 Brnoeswick
- 5 New Buffalo
- 5 St. Joseph
- 5 Bangor
- 5 Holland
- 6 Hammond/Whiting
- 6 Indiana Harbor
- 6 Gary
- 6 Wheeler
- 6 Hobart
- 6 Valparaiso



APPENDIX D
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