

TWENTY YEARS OF DEREGULATION: 1978 TO 1998

It has been over twenty years since the passage of the Airline Deregulation Act. The Act eliminated restrictions on domestic routes, schedules, and fares. It was believed that the passage of the Act would result in:

- 1) improved service to the travelling public;
- 2) lower fares;
- 3) higher growth in traffic;
- 4) more competition in the industry;
- 5) higher profits for U.S. air carriers; and
- 6) increased activity at FAA facilities.

This report discusses these six areas.

IMPROVED SERVICE TO THE TRAVELLING PUBLIC: MIXED RESULTS

It can be argued that deregulation has afforded the travelling public service equivalent to or better than service provided by airlines prior to deregulation. Since deregulation, the total number of airports receiving air service has remained steady, while consumers have seen an increase in seats available, increased options for purchasing tickets, and the institution of frequent flyer programs. On the other hand, some would argue that full airplanes and busy airports have resulted in less than satisfactory service to the public. (Air fares, the price component of service, are discussed in the next section.)

At the end of 1978, large U.S. certificated airlines served a total of 473 airports in 49 states and the District of Columbia (no service in Delaware). By the end of 1998, however, the number of airports served by large commercial air carriers¹ totaled only 260 (see Appendix A). Only five states had an increase in the number of

¹ An air carrier holding a certificate issued under 49 U.S.C. 41102, as amended, that: (1) Operates aircraft designed to have a maximum passenger capacity of more than 60 seats or a maximum payload capacity of more than 18,000 pounds; or (2) conducts operations where one or both terminals of a flight stage are outside the 50 states of the United States, the District of Columbia, the Commonwealth of Puerto Rico and the U.S. Virgin Islands.

airports serviced by large commercial air carriers over the 20-year period: Florida, Indiana, New Jersey, and New York each gained one airport, while Washington gained two. Maryland, the District of Columbia, and Rhode Island received service to the same number of airports, while the remaining 44 states received service to a smaller number of airports during 1998 compared to 1978.

When deregulation took effect, service by large certificated air carriers to smaller communities decreased as the larger carriers sought more profitable markets. However, the smaller and medium-sized markets did not lose service, as regional and commuter air carriers filled the gap left by the larger carriers exiting markets. Since deregulation, the number of communities receiving service exclusively from regional and commuter carriers has increased from 112 points to 399 points. Overall, the total number of airports receiving scheduled air service has remained steady at approximately 740 airports.

To address the concern of communities losing air service as a result of deregulation, Congress added Section 419 to the Federal Aviation Act, which established the Essential Air Service Program. The Program ensures smaller communities a link to the national air transportation system, with Federal subsidy where necessary. The Program is currently run by the Department of Transportation (DOT). When the program was started, there were 383 points receiving subsidies. As of May 1998, there were 104 communities receiving subsidies, with 26 of the communities located in Alaska.

People flying to and from smaller communities have seen major improvements in the type of aircraft servicing their destinations. During the 1980's, most commuter carriers flew relatively small turboprop aircraft. The late 1990's has seen an increase in the use of large high-speed turboprops and regional jets by regional carriers. The regional jets can carry up to 70 passengers cruise at speeds of over 500 mph, and have a

have a range of at least 800 miles, all significantly greater than earlier turboprop aircraft.

REGIONAL CARRIERS: INTRODUCING REGIONAL JETS

	<i>TURBOPROP</i>	<i>REGIONAL JET</i>	<i>COMMERCIAL JET (DOMESTIC)</i>
<i>SEATS</i>	25	30/50/70	142
<i>RANGE (MILES)</i>	300-400	800-1000	1700-3800
<i>SPEED (MPH)</i>	328	520	530

Since deregulation, regional revenue passenger miles (RPMs) have increased an average annual rate of over 14 percent a year. The transfer of a large number routes from its larger code-sharing partners is, to a large extent, responsible for the industry's high rate of growth. To accommodate this growth, new state-of-the-art turboprop and regional jets are being introduced in large numbers. These new aircraft are larger than the traditional regional/commuter aircraft and are capable of serving long-haul markets and attracting more passengers. Regional carriers are in a position to create their own markets and to compete directly with the larger air carriers.

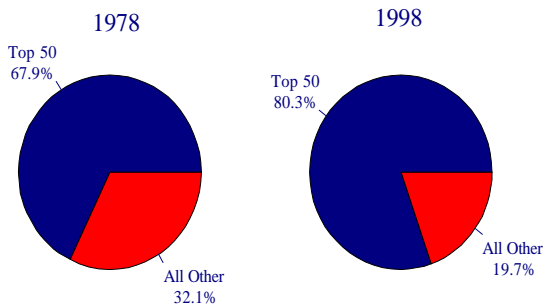
REGIONAL CARRIERS: OPERATIONAL CHANGES

	<u>1978</u>	<u>1998</u>
<i>INCREASING AIRCRAFT SIZE (SEATS)</i>	14.1	28.2
<i>GROWING TRIP LENGTH (MILES)</i>	110.5	241.8
<i>INCREASING LOAD FACTOR (%)</i>	44.5	56.5

As noted earlier, the number of cities serviced by large U.S. air carriers has decreased since deregulation. However, passengers flying from cities still receiving service from large U.S. carriers have more flight options. One reason

for more options is that there are currently 42 scheduled large U.S. air carriers, 12 more than there were in 1978. The increase in flights available to the traveling public has resulted in a 34.5 percent increase in air carrier operations since 1978, with most of the increase occurring at the nation's top 50 airports (see Appendix B).

AIR CARRIER OPERATIONS AT TOP 50 AIRPORTS AS A PERCENT OF SYSTEM AIR CARRIER OPERATIONS



This increase in operations at the top 50 airports (as ranked by air carrier operations) is generally attributed to the rise in the number of hub and spoke networks since deregulation. Prior to deregulation, there were primarily four hub airports for the major carriers: Atlanta, Chicago O'Hare, Denver, and Dallas/Fort Worth. In 1998, there were as many as 26 airports serving as hubs for the major air carriers.

Hubs serve as transfer points for passengers traveling from one region to another on a particular air carrier. Hubbing allows carriers to serve more markets with the same size fleet than possible with point-to-point service, and increases load factors on flights to and from smaller cities. The hub and spoke system provides the traveler the option of staying with one airline for an entire trip.

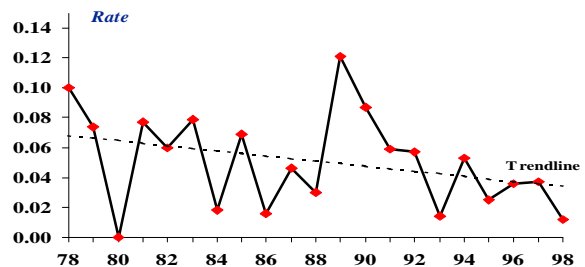
Other points of improved service to the travelling public since deregulation are frequent flier programs, more alternatives for purchasing tickets, improved safety in flight, and "smoke-free" air carriers.

Frequent flier programs were started by the air carriers to promote customer loyalty. Members of the programs can accrue miles for almost any kind of purchase. Frequent flyer programs have become even more attractive to members with the advent of code-sharing. Code-sharing allows a frequent flyer to redeem miles for free travel on any of the code-sharing partners within a frequent flyer program.

Airline passengers have more ways than ever to purchase their airline tickets. In the past, air travelers primarily purchased their tickets through an airline's reservations system or through a travel agent. Now customers can purchase airline tickets via the Internet. The Internet allows potential customers to search websites for fares, flight times, and equipment type. Air carriers are encouraging its customers to use the Internet by offering discounts and bonus frequent flier miles when purchasing tickets through the Internet.

Also of benefit to the travelling public since deregulation are "safer skies." In 1978 fatal accidents per 100,000 departures was 0.100, in 1997 the rate was 0.037. In 1998 there were no fatalities on U.S. air carriers.

FATAL ACCIDENTS PER 100,000 DEPARTURES



U.S. air travelers can now fly in a smoke-free environment. Smoking is banned by the FAA on all U.S. air carrier domestic flights, and most U.S. flag carriers have banned smoking on their

international flights as well. Also, the newer aircraft have improved filtration systems that significantly reduce the spread of colds and flu.

While one could argue that the traveling public has benefited from improved service since deregulation, there is a belief that customer service is not what it used to be. There are increasing complaints from passengers regarding oversold flights, delays at airports, frequent flyer miles that are hard to redeem, and mishandling of baggage. According to a University of Michigan survey of 33 U.S. institutions, the airline industry was next to last in consumer satisfaction ratings, only ahead of the Internal Revenue Service.

A study by the Inspector General's Office of DOT indicates delays are growing nationwide. The study tracked 2,115 domestic routes to and from the 28 busiest American airports, and found that the gate-to-gate times had increased on 1,544 routes, or 73 percent of the routes.

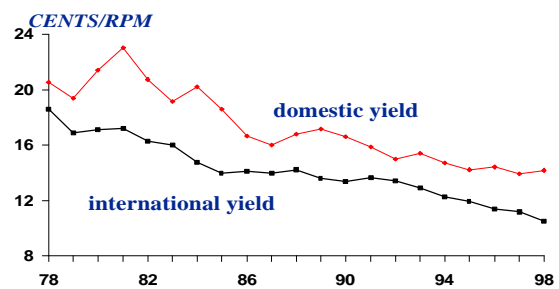
Consumer complaints to the DOT have risen 26 percent above the level of complaints filed in 1997. To help consumers combat alleged abuses by the U.S. airlines, in 1999 several members of Congress proposed legislation for a Passenger Bill of Rights. In general, these bills would require carriers to:

- 1) admit in advance if a flight is overbooked;
- 2) admit when flights are canceled to save money;
- 3) be honest with frequent fliers about limited number of seats available; and
- 4) give passengers who purchase non-refundable tickets a two-day grace period to get money back.

LOWER FARES: MIXED RESULTS

With the increased competition and efficiency brought on by deregulation, real air fares have declined over 30 percent in domestic markets and 43 percent in international markets over the past 20 years, creating a mass market for air travel. Based on Air Transport Association (ATA) surveys, the number of adults who have flown increased from 65 percent in 1979 to 81 percent in 1997.

YIELDS TRENDING DOWN (1998\$)



Lower domestic air fares have resulted from increased industry productivity, growth of low-cost new-entrant carriers, the expansion of Southwest Airlines into new markets, and the development of "two-tier" airlines such as Delta Express, U.S. Airway's Metrojet, and Shuttle by United. Currently, there are at least eight new airlines that have either filed or plan to file applications with the government to begin scheduled domestic passenger-jet operations. It is believed that the recent upswing in the number of new carrier applications can be attributed to a strong U.S. economy, low fuel prices, and relatively high fares in many markets served by the large air carriers. Competition on international routes has also intensified due to expanding global alliances, open-skies agreements, and liberalized bilateral agreements, resulting in lower international airfares.

Another way to look at the cost of air travel is to look at the fares that passengers pay to fly between two cities. Prior to deregulation, it was possible to do this by comparing the published coach and first class fares listed in the Official Airline Guide (OAG). This comparison is not as easy today because a typical flight carries few full-fare passengers, with many passengers paying moderately discounted fares and others paying heavily discounted fares.

Fares between selected city-pairs were compared using the origination and destination (O&D) 10 percent sample data compiled by DOT (see Appendix C). The data are reported to DOT on a quarterly basis by sampling every tenth flight coupon and recording the actual fare paid for that particular flight. The 50 city-pairs chosen for the analysis in Appendix C represent a geographic sampling of both short- and long-haul markets, and travel in and between large, medium, and small hub airports.

Between 1979 and 1998, real fares increased in 16 of the 25 markets under 700 miles in distance. However, during the same time period, real fares declined in 21 of the 25 markets over 800 miles, and in 14 of the 15 city-pairs more than 1,100 miles apart.

Also, since 1978, the average real fare at 24 of the 29 large hubs declined (see Appendix D). The biggest decrease in airfares has been in the western portion of the U.S., with the greatest average annual percent decrease at Phoenix (3.9 percent). The five hub airports where airfares increased were located in the eastern portion of the United States. The largest average annual percent increase occurred at Pittsburgh.

While people flying on excursion fares have experienced much lower airfares since deregulation, full-fare travel, which is often used by the business traveler, can be over four times higher than an excursion fare. Airlines argue

that business travelers pay a premium for added flexibility in travel plans when they purchase a full-fare ticket.

According to a survey by the National Business Travel Association, companies are trying to keep travel budgets under control by using alternative modes of travel and/or methods for conducting business. Methods corporations use to stretch their travel dollars include:

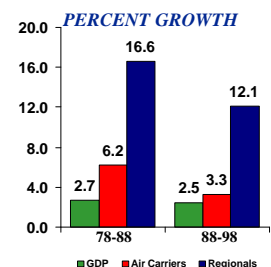
- 1) using corporate or chartered aircraft;
- 2) sending employees to fewer conferences;
- 3) sending fewer employees on trips;
- 4) increasing the use of teleconferencing;
- 5) using alternative airports; and
- 6) encouraging employees to extend travel over a Saturday night.

HIGHER GROWTH IN TRAFFIC

During the period 1978 through 1998, domestic RPMs grew at almost double the rate of the growth of the economy, while regional RPMs grew at over five times the rate.

DOMESTIC ACTIVITY GROWING FASTER THAN THE ECONOMY

- GDP UP 2.6% A YEAR
- AIR CARRIER RPMs UP 4.8%
- REGIONAL RPMs UP 14.3%



Internationally travel has grown at a faster pace than domestic travel. During the period 1978 through 1998, international RPMs have grown at 1.5 times the rate of growth of domestic RPMs.

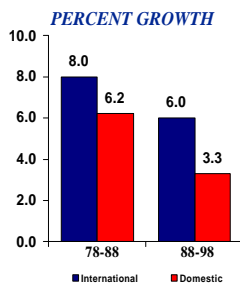
The expansion of international markets can be attributed to growing world economies, open-skies agreements, liberalized bilateral agreements, and international alliances which have reduced real fares and expanded the number of international markets served.

The world travel region benefiting most from the liberalized international environment is the Asia/Pacific market. This market has seen RPM growth average 9.7 percent a year, this despite a 7.3 percent drop in 1998 due to economic problems in the region and pilot's strike at Northwest Airlines.

INTERNATIONAL ACTIVITY GROWING FASTER THAN DOMESTIC DEMAND

- **INTERNATIONAL RPMs UP 7.0% A YEAR**
- **ATLANTIC UP 7.0%**
- **LATIN AMERICA UP 5.8%***
- **PACIFIC UP 9.7%**

*ESTIMATED FOR THE PERIOD 81-98 DUE TO A CHANGE IN THE HISTORICAL DATA



A MORE COMPETITIVE AIRLINE INDUSTRY: MIXED RESULTS

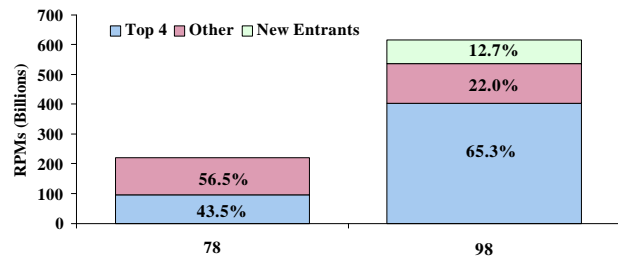
Since deregulation, the air carrier industry has witnessed the entry (and exit) of many low-fare carriers, as well as a proliferation of code-sharing agreements and alliances between

partner airlines. In spite of the changes brought on by deregulation, it is a small percentage of carriers that are gaining market share.

There are more scheduled U.S. passenger carriers, and more convenient travel options available to most travelers today than was the case 20 years ago. In 1978, there were 30 scheduled passenger airlines classified by the Civil Aeronautics Board as Trunks (11), Local Service (8), Regional (2), Alaskan (5), Hawaiian (2), and Other (2). After deregulation, the number of scheduled U.S. carriers peaked at 49 in 1985. At the end of 1998, there were 42 large scheduled certificated air carriers.

Even though there are more large scheduled certificated air carriers now than there were in 1978, the four largest majors (carriers with operating revenues exceeding \$1 billion) significantly increased their share of total system RPMs. Scheduled RPMs for the four carriers expanded from 43.5 percent in 1978 to 65.3 percent in 1998. Carriers in existence prior to deregulation (other than the four largest majors) accounted for 22 percent of system RPMs, while new entrants (including Southwest Airlines) accounted for 12.7 percent of the total.

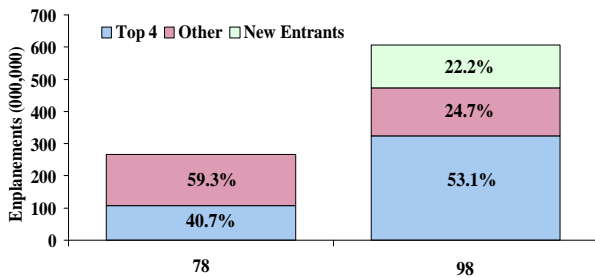
TOP FOUR MAJORS SCHEDULED RPMs



Since deregulation, the top four largest carriers have increased their percentage of total system enplanements from 40.7 percent to 53.1 percent. Other carriers in existence prior to deregulation

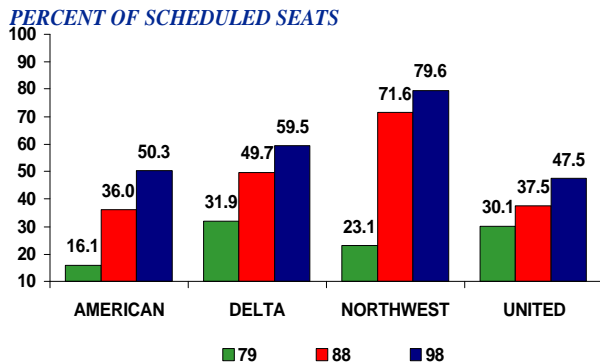
accounted for almost 25 percent of system enplanements in 1998, while new entrants accounted for 22.2 percent.

TOP FOUR MAJORS ENPLANEMENTS



As the four largest majors have been increasing their percentage of system RPMs and enplanements, they have also been increasing their percentage of scheduled seats at core hubs.

LARGE CARRIERS EXPAND DOMINANCE AT CORE HUBS



With large carriers expanding their dominance at core hubs, there are complaints by start-up carriers that entrenched carriers are participating in anti-competitive behavior. Some of the complaints by start-up carriers include:

- 1) established carriers increase capacity and lower fares below marginal costs to drive out start-ups;

- 2) established carriers are unwilling to sell or lease underutilized slots;
- 3) established carriers refuse to sublease airport facilities such as gates and counters;
- 4) corporations sign exclusive contracts with established carriers;
- 5) established carriers increase frequent flyer points when new carriers enter markets;
- 6) established carriers increase travel agency commissions for agents booking away from start-up carriers.

In order to increase competition, DOT and FAA are pursuing policies that would shield small, start-up airlines from unfair predatory practices by large dominant carriers. Also there is a proposal to lift the slot rules at Chicago O'Hare, New York LaGuardia, New York Kennedy, and Reagan Washington National.

In spite of the problems noted above, low-cost carriers continue to enter the industry. These new entrants ensure competition, and encourage less efficient carriers to reduce costs and fares.

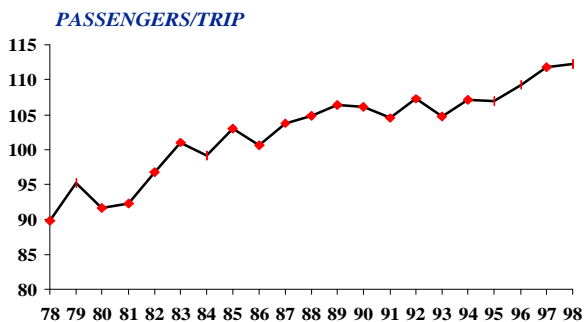
During 1998, unit costs for U.S. air carriers averaged 9.56 cents, while Southwest's, considered one of the most efficient carriers in the industry, was only 7.35 cents. Airlines are searching for ways to become more competitive by lowering costs and looking to their labor forces for work rule changes, wage concessions, and other means to increase productivity.

One way Southwest has managed to keep unit costs lower is by having a fleet of only Boeing 737 aircraft. Other carriers are now looking to reduce the different types of aircraft that are in their fleet. By having a more homogenous aircraft fleet, costs associated with maintenance, training, inventories, and scheduling are simplified. Other methods airlines use to cut

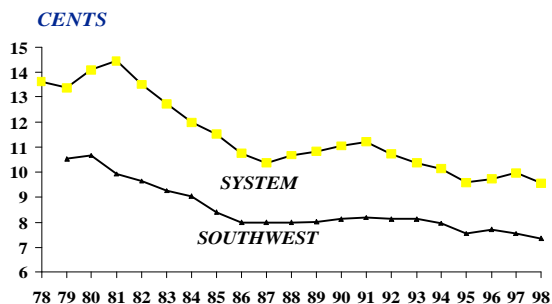
costs include route realignments, reducing service, and withdrawing from unprofitable hubs.

Since 1978, commercial air carriers have been increasing productivity and reducing operating costs per available seat mile (unit cost), adjusted for inflation. Productivity, measured by passengers per trip, increased 1.1 percent a year since deregulation, while unit costs declined 1.8 percent. It appears that air carriers have had some success at reducing unit costs. In 1979 system unit costs were about 35 percent above Southwest's. In 1998 system unit costs dropped to 30 percent above Southwest's.

INCREASING OUTPUT



FALLING UNIT COSTS (98\$)



Along with deregulation of domestic air transportation, the U.S. has sought to open international markets through open-skies agreements, liberalized bilateral agreements, and international alliances. Open skies agreements

permit unrestricted air service between and beyond the other's territory. Open-skies eliminate restrictions on how often carriers can fly, the kind of aircraft they can use, and the prices they can charge. In alliances, partners coordinate customer services and benefits with easier transfers and combined frequent-flyer programs. Eventually, alliances will seek to reap economic benefits from joint engineering services and equipment purchasing, including aircraft. It is argued that these efficiencies will lead to lower fares. Others argue that alliances will stifle competition, resulting in less flights and higher fares.

Other policies that may be pursued in the future by DOT to enhance competition include:

- 1) modifying cabotage constraints - which prohibit foreign airlines from carrying commercial passengers between cities in another nation's territory;
- 2) modifying seventh freedom rights - which prohibit airlines from establishing a base in another nation and servicing a third country; and
- 3) increasing foreign investment in U.S. air carriers from the current 25 percent to 49 percent.

HIGHER PROFITS FOR U.S. AIRLINES

During the 20 years since deregulation U.S. air carriers have managed over \$38 billion in operating profits, and over \$6.5 billion in net profits, with the last five years being the most prosperous with over \$30.9 billion in operating profits and \$14.6 in net profits.

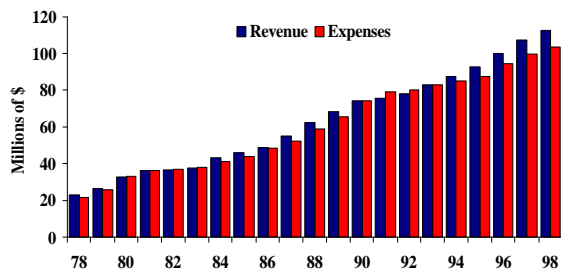
From 1979 through 1983, the first five years of deregulation, the U.S. air carrier industry

incurred operating losses over \$1 billion. One reason for the losses was a lack of management experience competing in an unregulated market. Other factors during this period that made it difficult for carriers to be profitable were recessions in 1980 and 1982, and increasing oil prices.

From 1984 through 1988, the air carrier industry started to see relief from industry losses. During this time, operating profits were over \$10.3 billion and net profits over \$3.2 billion. The profits were attributed to a stronger U.S. economy. Operating revenues and expenses grew at an average annual rate of 8.6 and 7.6 percent, respectively.

The slower growth in operating expenses during this period (compared to an average annual rate of 14.6 percent during the period 1979-1983) was a result of increasing productivity, wage concessions from airline employees, and declining fuel costs.

U.S. AIR CARRIER OPERATING REVENUES AND EXPENSES

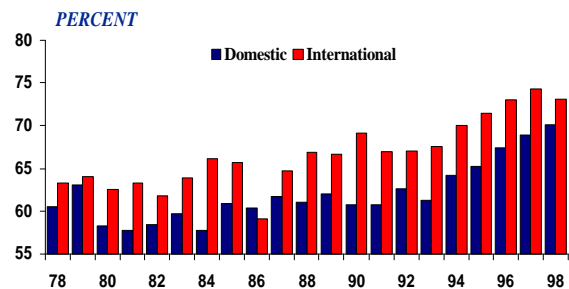


The industry experienced difficult times again during the 1989 to 1993 period. Operating losses were over \$2.1 billion, and net losses were almost \$10.5 billion. The Gulf War occurred during this period, and the threat of terrorism caused passenger travel to decline. Also contributing to the losses was a downturn in both U.S. and world economies, and rising jet fuel prices.

Finally, in 1994 the commercial aviation industry returned to profitability again. The strong growth is from several factors, including a U.S. economy that has been growing well into its eighth year. Other contributors to operating profits were an increase in worldwide traffic demand, declining fuel prices, and high load factors.

The historically high load factors being experienced by the industry today are attributed to the use of yield management. Today's technology allows carriers to maintain large data bases which include information on flights, bookings, and impacts of seat-selling discounts. The information allows airlines to predict demand and manage capacity. Yield management systems are largely responsible for U.S. carriers increasing load factors by almost 10 percentage points domestically and internationally since deregulation began.

AIR CARRIER LOAD FACTORS REACH ALL-TIME HIGHS



While the Internet is a relatively new channel for air carriers to market airline tickets, it has the potential to reduce airline costs associated with distributing tickets, thus increasing profits for the air carriers. When carriers can sell tickets via the Internet, they avoid the commissions usually paid to travel agents.

As more people become owners of home computers and subscribers to Internet services, the more opportunities airlines have to sell

tickets via the Internet. All major carriers have web sites for travelers to purchase tickets on-line. The major air carriers are encouraging this method of distributing tickets by offering consumers frequent flier mileage bonuses, and cash discounts for purchasing tickets on-line.

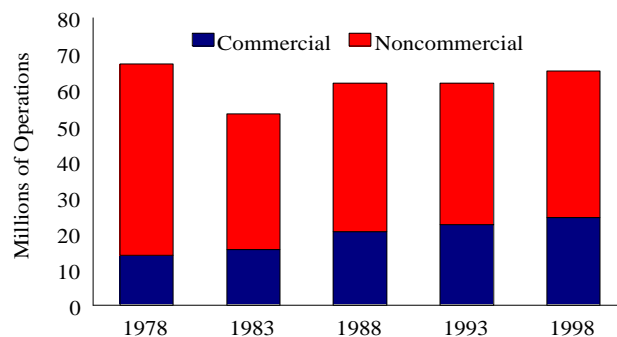
FAA WORKLOAD

Two of the basic measures of workload at FAA facilities are aircraft operations (takeoffs and landings) at FAA and contract towered airports and aircraft handled (departures and overs) at FAA air route traffic control centers. Over the 20 years since deregulation, total operations at FAA/contract towers have declined from 67.2 to 65.3 million (down 0.1 percent annually). On the other hand, the number of aircraft handled at FAA en route centers has increased from 28.1 to 43.2 million (up 2.2 percent annually).

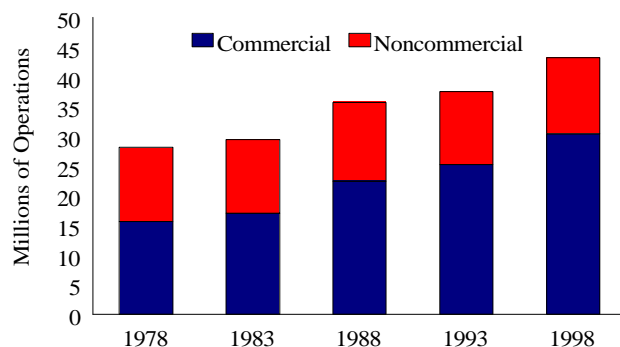
The major reason for the decline in activity at FAA/contract towers is that noncommercial operations (general aviation and military--62.6 percent of total activity in 1998) declined by 1.3 percent annually. Noncommercial aircraft handled (29.6 percent of total activity in 1998) at FAA en route centers increased by only 0.1 percent annually over the same time period.

All of the growth in activity at FAA facilities over the past 20 years is due to commercial aviation. During this period, commercial activity has increased by 2.9 percent annually at FAA/contract towers and by 3.4 percent annually at FAA en route centers. These increases are considerably less than the growth experienced in commercial air passenger travel since deregulation, and reflect the efficiencies achieved by commercial air carriers and regionals/commuters through the operation of larger aircraft and the achievement of significantly higher load factors.

**OPERATIONS AT
FAA AND CONTRACT TOWERS**



**AIRCRAFT HANDLED AT
FAA EN ROUTE CENTERS**



Source: FAA Air Traffic Control facilities

Regional/commuter airlines were the fastest growing segment among the commercial carriers, with activity increasing at average annual rates of 5.1 percent at FAA/contract towers and 6.8 percent at en route centers. This was more than twice the rate of growth achieved by the larger air carriers who grew at annual growth rates of 1.8 percent at FAA/contract towers and 2.7 percent at en route centers over the same time period. However, activity growth by regionals/commuters has slowed significantly and, in fact, these carriers have been outgained by the larger air carriers over the past 5 years--2.5 versus 0.7 percent at FAA/contract towers and 4.1 versus 2.9 percent at en route centers. This is due to two diverging trends among the two commercial carrier groups.

The recent deployment of large high-speed turboprops and regional jets into the regionals/

commuters fleets has resulted in relatively large increases in both average aircraft size and load factors over the past several years. This has led to significantly slower growth in aircraft activity relative to passenger demand. While the larger air carriers have also recorded large increases in load factor over the past several years, the larger air carriers appear to be reaching maximum levels in terms of both load factor and aircraft size.

Consequently, future growth in air carrier aircraft activity will more closely approximate the growth in passenger demand. On the other hand, the expected delivery of large numbers of regional jets into the regional/commuter fleets leaves considerable room for efficiency improvements in both load factor and aircraft size. Therefore, future capacity increases should be well below those forecast for passenger demand.

These trends are expected to continue well into the 21st century. As such, commercial activity can be expected to mirror the rates of growth achieved over the past 20 years, although the majority of the growth is expected to come from the larger air carriers. Commercial activity is also expected to continue to be the driving force behind the growth of activity at FAA air traffic facilities. However, unlike the past 20 years, commercial growth, in combination with a resurgence in general aviation and military activity, is likely to seriously tax the capacity of the current air traffic control system.

SUMMARY

When the Airline Deregulation Act was passed, it was envisioned that the travelling public and the air carrier industry would both benefit. Twenty years have since passed and, for the most part, it appears that the Act has accomplished its intended purpose.

Since deregulation of the industry, the number of airports served by large commercial air carriers declined by over 45 percent, which on the surface, may appear to show a degradation of overall service. However, the number of points served by large air carriers and/or regional carriers has remained steady at approximately 740. Also, following deregulation, the large air carriers developed hub and spoke networks, and began codesharing with regional carriers. Although this system offers less direct flights, the traveling public has benefited since it has greatly expanded the number of flights and destinations for people flying from medium and small hubs.

On average, real airfares declined over 30 percent in the domestic market and 43 percent in the international market during the past 20 years, creating a mass market for travel. ATA surveys showed that the number of adults who have flown increased from 65 percent in 1979 to 81 percent in 1997. However, not all travelers have benefited.

Although the average airfare has declined, there is a wide variance in fare levels and changes, depending upon the market served, intensity of competition, length of passenger stay, and time of ticket purchase. For example, although excursion fares have been declining, full-fare travel, which is often used by the business traveler, can be over four times higher than an excursion fare. An analysis of 25 markets under 700 miles showed that since 1978, real fares increased in 16 of the 25 markets. Real airfares also showed increases during the period at the following large hub airports: Pittsburgh, Cincinnati, Reagan Washington National, Charlotte, and New York LaGuardia.

Lower domestic airfares have resulted from increased industry productivity, growth of new-entrant carriers, the expansion of Southwest Airlines into new markets, and the development of "two-tier" airlines such as Delta Express, U.S. Airway's Metrojet, and Shuttle by

United. Competition on international routes has also intensified due to expanding global alliances, open-skies agreements, and liberalized bilateral agreements, resulting in lower international airfares.

Although there are 12 more scheduled large certificated passenger carriers in 1998 than there were in 1978, the four largest carriers have increased their percentage of the total system RPMs from 43 percent in 1978 to 65 percent in 1998. Additionally, the four largest carriers all significantly increased their share of scheduled seats at their core hubs. The concern over the growing market power of the large carriers has prompted DOT to consider policies for shielding small, start-up airlines from unfair predatory practices.

U.S. carriers are becoming more profitable. Between 1978 and 1998 cumulative industry operating profits totaled over \$38 billion, with \$30 billion accumulated in the last five years. The major factors that contributed to the robust growth in profits since 1994 were a strong economy, low inflation, low interest rates, declining fuel prices, and high load factors. System load factors increased from 65.7 percent in 1994 to 70.9 percent in 1998.

Finally, 20 years of deregulation has resulted in more people flying than ever before. With the increase in flights to accommodate travelers, the FAA workload has increased substantially. Projections of continued growth at FAA facilities will require additional investments in the airport and airway systems.

APPENDIX A

NUMBER OF AIRPORTS SERVED BY LARGE U.S. COMMERCIAL AIRLINES

<u>State</u>	<u>1978</u>	<u>1988</u>	<u>1998</u>	<u>1978 minus 1998</u>
Alabama	9	4	4	(5)
Alaska	79	25	24	(55)
Arizona	5	4	3	(2)
Arkansas	6	2	3	(3)
California	25	25	18	(7)
Colorado	12	9	11	(1)
Connecticut	2	1	1	(1)
Delaware	0	0	0	0
District of Columbia	1	1	1	0
Florida	15	18	16	1
Georgia	8	4	4	(4)
Hawaii	8	7	7	(1)
Idaho	5	6	3	(2)
Illinois	13	10	8	(5)
Indiana	4	4	5	1
Iowa	9	4	7	(2)
Kansas	12	1	3	(9)
Kentucky	4	2	2	(2)
Louisiana	7	5	5	(2)
Maine	6	2	2	(4)
Maryland	1	2	1	0
Massachusetts	6	2	2	(4)
Michigan	20	8	8	(12)
Minnesota	11	3	3	(8)
Mississippi	9	2	2	(7)
Missouri	9	7	3	(6)
Montana	8	7	7	(1)
Nebraska	13	2	3	(10)
Nevada	4	2	3	(1)
New Hampshire	3	1	1	(2)
New Jersey	2	2	3	1
New Mexico	9	2	1	(8)
New York	12	13	13	1
North Carolina	12	7	6	(6)
North Dakota	7	4	4	(3)
Ohio	8	7	7	(1)
Oklahoma	6	3	2	(4)
Oregon	8	8	4	(4)
Pennsylvania	8	6	6	(2)
Rhode Island	1	1	1	0

APPENDIX A (Con't.)

NUMBER OF AIRPORTS SERVED BY LARGE U.S. COMMERCIAL AIRLINES

<u>State</u>	<u>1978</u>	<u>1988</u>	<u>1998</u>	<u>1978 minus 1998</u>
South Carolina	5	5	4	(1)
South Dakota	9	4	2	(7)
Tennessee	7	5	5	(2)
Texas	20	14	18	(2)
Utah	2	1	1	(1)
Vermont	2	1	1	(1)
Virginia	10	7	5	(5)
Washington	4	12	6	2
West Virginia	8	5	2	(6)
Wisconsin	10	9	7	(3)
Wyoming	9	8	2	(7)
Total Served	473	294	260	(213)

Source: 1978, 1988 - Airport Activity Statistics of Certificated Route Air Carriers
1998: OAG

APPENDIX B

AIR CARRIER OPERATIONS AT U.S. HUB AIRPORTS FISCAL YEARS 1978, 1988, AND 1998

<u>Airport</u>	<u>Code</u>	<u>1978</u>	<u>1988</u>	<u>1998</u>	<u>Average Annual % Change</u>		
					<u>78-88</u>	<u>88-98</u>	<u>78-98</u>
1. Chicago O'Hare	ORD	598,304	631,037	745,549	0.5	1.7	1.1
2. Atlanta	ATL	484,630	562,698	627,288	1.5	1.1	1.3
3. Dallas/Fort Worth	DFW	311,494	490,327	601,274	4.6	2.1	3.3
4. Los Angeles	LAX	375,924	435,751	529,208	1.5	2.0	1.7
5. Cincinnati	CVG	76,226	141,316	367,609	6.4	10.0	8.2
6. Phoenix	PHX	99,540	268,236	367,046	10.4	3.2	6.7
7. St. Louis	STL	190,269	285,710	359,166	4.1	2.3	3.2
8. Houston Intercontinental	IAH	160,705	205,969	342,303	2.5	5.2	3.9
9. Newark	EWR	133,304	282,488	340,421	7.8	1.9	4.8
10. Denver	DEN	268,586	374,614	338,955	3.4	(1.0)	1.2
11. Detroit	DTW	162,776	250,445	336,457	4.4	3.0	3.7
12. San Francisco	SFO	265,720	321,420	334,354	1.9	0.4	1.2
13. Miami	MIA	245,472	254,597	302,534	0.4	1.7	1.1
14. Minneapolis/St. Paul	MSP	127,036	214,025	297,502	5.4	3.3	4.3
15. Las Vegas	LAS	112,891	177,700	296,633	4.6	5.3	4.9
16. Philadelphia	PHL	145,662	195,506	264,424	3.0	3.1	3.0
17. Charlotte	CLT	67,982	213,291	260,941	12.1	2.0	7.0
18. Boston	BOS	217,752	246,423	250,630	1.2	0.2	0.7
19. La Guardia	LGA	268,032	269,154	245,791	0.0	(0.9)	(0.4)
20. Pittsburgh	PIT	195,022	256,627	240,467	2.8	(0.6)	1.1
21. John F. Kennedy	JFK	277,332	221,615	227,509	(2.2)	0.3	(1.0)
22. Seattle	SEA	117,744	175,746	216,636	4.1	2.1	3.1
23. Memphis	MEM	140,557	211,732	188,975	4.2	(1.1)	1.5
24. Salt Lake City	SLC	75,222	145,781	188,676	6.8	2.6	4.7
25. Orlando	MCO	83,690	188,024	185,375	8.4	(0.1)	4.1
26. Honolulu	HNL	117,663	187,445	183,856	4.8	(0.2)	2.3
27. National	DCA	208,417	190,609	172,383	(0.9)	(1.0)	(0.9)
28. Baltimore/Washington	BWI	74,410	151,209	160,932	7.3	0.6	3.9
29. Oakland	OAK	46,990	81,209	160,456	5.6	7.0	6.3
30. Cleveland	CLE	131,193	137,490	152,117	0.5	1.0	0.7
31. San Diego	SAN	82,955	133,408	149,825	4.9	1.2	3.0
32. Midway	MDW	2,000	112,213	134,917	49.6	1.9	23.4
33. Kansas City	MCI	123,000	138,710	134,671	1.2	(0.3)	0.5
34. San Jose	SJC	59,469	101,295	130,517	5.5	2.6	4.0
35. Houston Hobby	HOU	27,863	117,720	122,422	15.5	0.4	7.7

APPENDIX B (Con't.)

AIR CARRIER OPERATIONS AT U.S. HUB AIRPORTS FISCAL YEARS 1978, 1988, AND 1998

	<u>Airport</u>	<u>Code</u>	<u>1978</u>	<u>1988</u>	<u>1998</u>	<u>Average Annual % Change</u>		
						<u>78-88</u>	<u>88-98</u>	<u>78-98</u>
36.	Tampa	TPA	127,988	135,851	121,823	0.6	(1.1)	(0.2)
37.	Fort Lauderdale	FLL	84,370	97,202	113,363	1.4	1.5	1.5
38.	Anchorage	ANC	61,099	87,205	113,094	3.6	2.6	3.1
39.	New Orleans	MSY	102,422	94,980	109,197	(0.8)	1.4	0.3
40.	Nashville	BNA	63,456	111,163	109,152	5.8	(0.2)	2.7
41.	Raleigh/Durham	RDU	33,749	125,826	103,310	14.1	(2.0)	5.8
42.	Dallas	DAL	34,985	77,829	99,209	8.3	2.5	5.3
43.	Portland	PDX	81,271	97,373	95,926	1.8	(0.1)	0.8
44.	Ontario	ONT	31,881	80,309	95,294	9.7	1.7	5.6
45.	Indianapolis	IND	78,326	93,714	92,050	1.8	(0.2)	0.8
46.	Dulles	IAD	55,175	152,614	91,908	10.7	(4.9)	2.6
47.	Louisville	SDF	57,487	90,452	86,581	4.6	(0.4)	2.1
48.	Reno	RNO	34,574	50,066	85,916	3.8	5.5	4.7
49.	Milwaukee	MKE	72,634	57,163	85,158	(2.4)	4.1	0.8
50.	Columbus	CMH	56,487	61,533	84,170	0.9	3.2	2.0
	Air Carrier Operations at Top 50		7,051,736	9,784,820	11,443,970	3.3	1.6	2.5
	System Air Carrier Operations		10,603,473	12,866,604	14,257,939	2.0	1.0	1.5

Source: FAA Air Traffic Activity

APPENDIX C

AVERAGE FARE BETWEEN SELECTED CITY PAIRS 1ST QUARTER 1979, 1988, 1998

City-Pair	Mileage	1Q 1979		1Q 1988		1Q 1998		Average Annual % Change in 1998\$		
		Current \$	1998\$	Current \$	1998\$	Current \$	1998\$	79-88	88-98	79-98
ATL-BHM	134	30	67	76	104	153	153	5.0%	3.9%	4.4%
DAY-DTW	166	33	74	83	114	201	201	4.9	6.5	5.4
DCA-LGA	214	38	85	75	103	115	115	2.1	1.2	1.6
IND-STL	229	38	85	151	208	63	63	10.4	(12.4)	(1.6)
DCA-GSO	248	40	90	112	154	173	173	6.2	1.3	3.5
ATL-PNS	272	40	90	92	126	144	144	3.9	1.5	2.5
IAH-MSY	303	40	90	135	186	83	83	8.4	(8.6)	(0.4)
BDL-DCA	313	44	99	88	121	134	134	2.3	1.1	1.6
CLT-JAX	329	50	112	138	190	199	199	6.0	0.5	3.1
LAX-SFO	337	26	58	73	100	73	73	6.2	(3.5)	1.2
LAS-SLC	368	51	115	59	81	59	59	(3.8)	(3.5)	(3.4)
LAX-PHX	370	47	106	33	45	51	51	(9.0)	1.3	(3.8)
IAH-OKC	395	54	121	145	199	99	99	5.7	(7.5)	(1.1)
BOS-DCA	399	54	121	138	190	190	190	5.1	0.0	2.4
ABQ-SLC	492	80	180	112	154	99	99	(1.7)	(4.8)	(3.1)
CVG-DSM	505	62	139	195	268	168	168	7.6	(5.1)	1.0
BWI-IND	515	62	139	112	154	121	121	1.1	(2.6)	(0.7)
ATL-PIT	526	64	144	143	197	216	216	3.5	1.1	2.2
ATL-PBI	545	60	135	149	205	105	105	4.8	(7.2)	(1.3)
ATL-MIA	595	67	150	126	173	177	177	1.6	0.2	0.9
BOS-RDU	612	75	168	141	194	193	193	1.6	(0.0)	0.7
MKE-TUL	631	74	166	154	212	253	253	2.7	2.0	2.2
MEM-PIT	652	79	177	184	253	251	251	4.0	(0.1)	1.8
MIA-MSY	674	73	164	147	202	164	164	2.4	(2.3)	0.0
BNA-PHL	675	73	164	162	223	210	210	3.5	(0.7)	1.3
MCO-PHL	861	68	153	110	151	133	133	(0.1)	(1.4)	(0.7)
LGA-STL	888	92	207	206	283	291	291	3.6	0.3	1.8
HLN-MSP	913	101	227	174	239	235	235	0.6	(0.2)	0.2
BWI-FLL	925	83	186	121	166	105	105	(1.3)	(5.0)	(3.0)
CLE-TPA	927	70	157	113	155	123	123	(0.1)	(2.6)	(1.3)
DEN-PDX	992	87	195	151	208	150	150	0.7	(3.5)	(1.4)
IAH-PHL	1324	96	216	169	232	194	194	0.8	(2.0)	(0.6)
MCI-PHL	1039	99	222	186	256	296	296	1.6	1.6	1.5
BOI-OMA	1048	93	209	168	231	143	143	1.1	(5.2)	(2.0)
LGA-MIA	1097	91	204	124	170	162	162	(2.0)	(0.6)	(1.2)

APPENDIX C (Con't.)

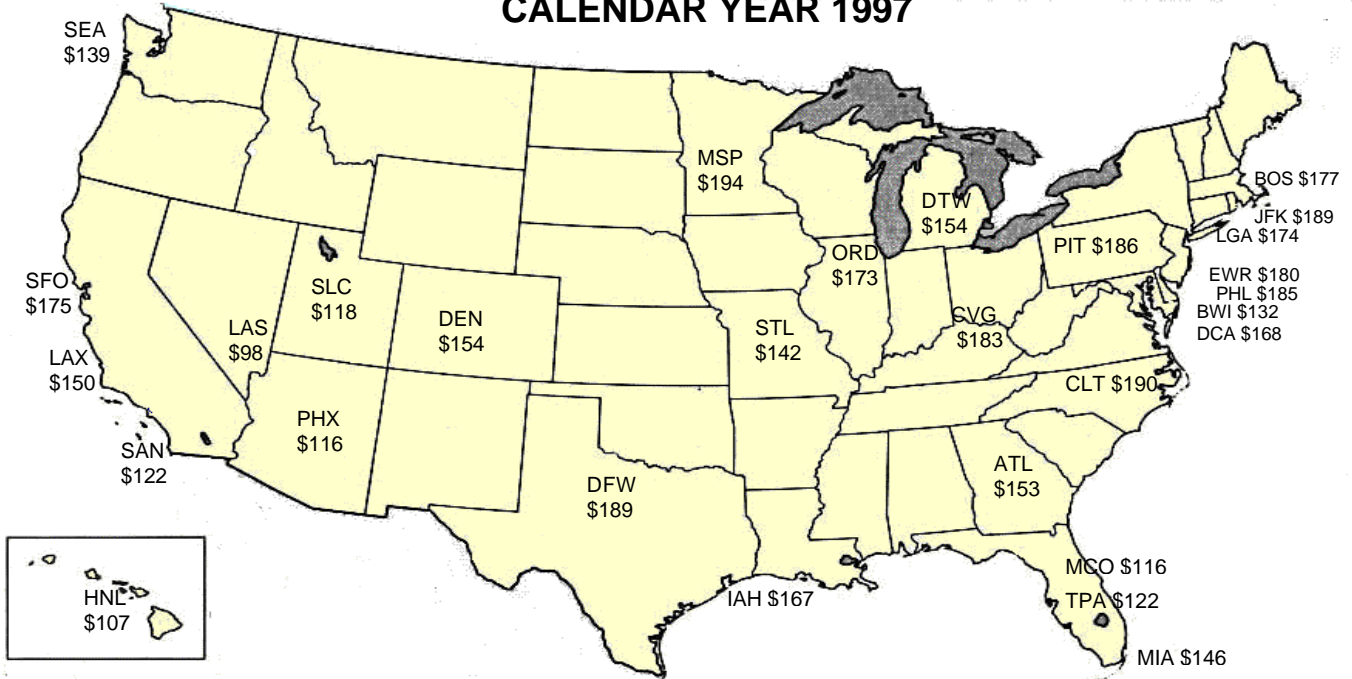
AVERAGE FARE BETWEEN SELECTED CITY PAIRS 1ST QUARTER 1979, 1988, 1998

<u>City-Pair</u>	<u>Mileage</u>	<u>1Q 1979</u>		<u>1Q 1988</u>		<u>1Q 1998</u>		<u>Average Annual % Change in 1998\$</u>		
		<u>Current \$</u>	<u>1998\$</u>	<u>Current \$</u>	<u>1998\$</u>	<u>Current \$</u>	<u>1998\$</u>	<u>79-88</u>	<u>88-98</u>	<u>79-98</u>
SLC-STL	1156	110	247	153	210	109	109	(1.8)	(7.0)	(4.2)
DFW-LAX	1235	102	229	174	239	294	294	0.5	2.3	1.3
BOS-MIA	1258	98	220	141	194	157	157	(1.4)	(2.3)	(1.8)
MCI-SAN	1333	109	245	101	139	121	121	(6.1)	(1.5)	(3.6)
MSP-LAX	1536	117	263	160	220	217	217	(2.0)	(0.2)	(1.0)
ORD-SEA	1721	133	299	183	252	253	253	(1.9)	0.1	(0.9)
ORD-PDX	1739	138	310	180	247	262	262	(2.5)	0.6	(0.9)
ORD-LAX	1745	112	251	215	296	225	225	1.8	(3.0)	(0.6)
BOS-DEN	1754	124	278	194	267	215	215	(0.5)	(2.4)	(1.4)
CLT-LAX	2125	156	350	219	301	269	269	(1.7)	(1.2)	(1.4)
PIT-SEA	2135	169	379	198	272	262	262	(3.6)	(0.4)	(1.9)
ATL-SEA	2182	181	406	216	297	277	277	(3.4)	(0.8)	(2.0)
IAD-SFO	2419	190	427	236	324	409	409	(3.0)	2.6	(0.2)
JFK-LAX	2475	179	402	224	308	306	306	(2.9)	(0.1)	(1.4)
BOS-SEA	2496	194	436	207	285	311	311	(4.6)	1.0	(1.8)

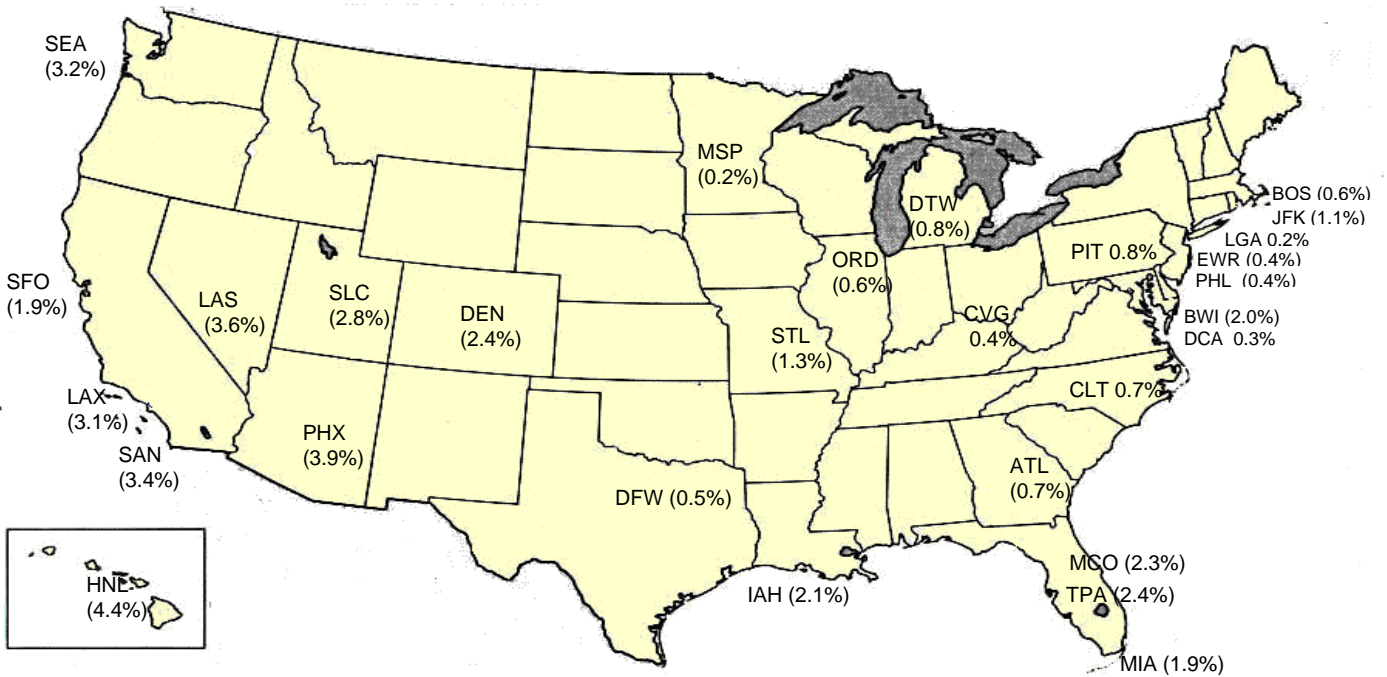
Source: Data Base Products O&D Data

APPENDIX D

AVERAGE FARE AT LARGE HUB AIRPORTS CALENDAR YEAR 1997



AVERAGE ANNUAL % CHANGE IN AVERAGE AIRFARE AT LARGE HUB AIRPORTS - 1978 TO 1997



APPENDIX D

AVERAGE ANNUAL % CHANGE IN SCHEDULED ENPLANEMENTS BY STATE - 1978 TO 1997

