



Chapter Two: Overview of the Airline Industry

INTRODUCTION

Commercial airline service is vital to the economic well-being of Iowa. Understanding trends and motivations of change in the commercial aviation industry allows commercial service airports in Iowa to better position themselves to respond to an industry that experiences frequent change. The airline industry is a very dynamic industry. There is a certain level of uncertainty associated with the airline industry, so it is important that communities in Iowa have an understanding of the changes that have or are occurring to effectively respond.

This chapter sets the context for examining of air service in Iowa by providing an overview of U.S. commercial airline industry trends. Due to airline industry developments since this report was completed, some of the information may have changed. Within this chapter, airlines are often referred to as major or network, regional, or low cost carriers; descriptions of these classifications follow:

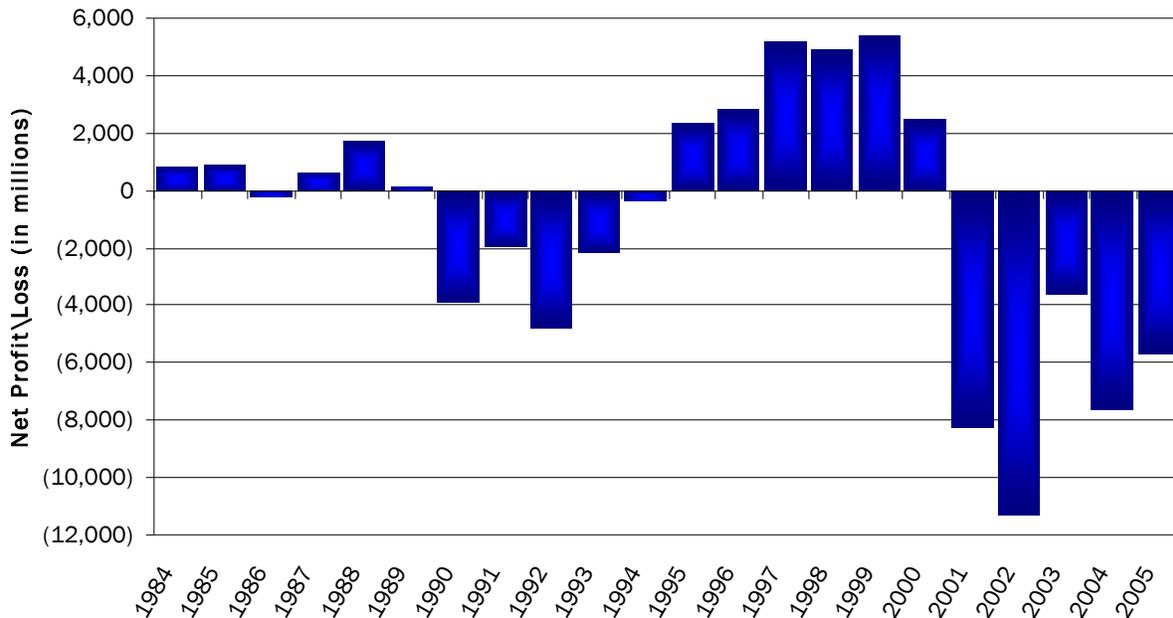
- **Major/Network Carriers** – major name-brand domestic airlines, such as American, Delta, Northwest, United, and US Airways. These airlines typically fly large jet aircraft between hubs and other high-demand destinations. An airline hub is an airport that an airline uses as a transfer point to get passengers to their intended destination. It is part of the hub and spoke model, where travelers moving between airports not served by direct flights change planes en route to their destination.
- **Regional Carriers** – smaller airlines that typically partner with major/network carriers to fly between hubs and smaller, lower-demand cities. Examples include American Eagle, Delta Connection (Atlantic Southeast, Comair), and Northwest Airlink (Mesaba).
- **Low Cost Carriers (LCCs)** – independent carriers with a low cost, low fare business model. These carriers typically forego hub-and-spoke route systems for point-to-point routes, and normally fly only one or two types of larger aircraft. Examples include AirTran, JetBlue, and Southwest.

The financial difficulties of the U.S. passenger air carriers have received a considerable amount of attention since 2001. However, as shown in **Exhibit 2-1**, domestic airlines have experienced several financial downturns dating back to the early 1980s. Historically, the airlines have made the following adjustments to cut costs and increase efficiency:

- Implemented major adjustments to their route structures, concentrating on the most profitable routes.
- Adjusted seating capacity and frequencies to achieve higher load factors.
- Eliminated secondary connecting hubs and introduced point-to-point service in the larger markets.
- Focused on the development of strategic marketing alliances with regional carriers in the U.S. and other airlines abroad.
- Rationalized aircraft fleets that, on average, offered lower operating costs.



**Exhibit 2-1
U.S. Air Carrier Net Profits**



Source: Air Transport Association

In the mid-1990s, service to smaller communities shifted from network carriers to regional carriers with lower labor costs. Shorter haul service to connecting hub airports was turned over to the regional carriers. At this time, the regional carriers provided high-frequency turboprop service to and from their affiliate carrier's connecting hub. In this same time frame, low cost carrier, Southwest, grew into a stronger, dominate carrier in the airline industry. New low cost carriers such as JetBlue and a re-organized AirTran, experienced growth, bringing low cost service to many communities. In the late 1990s, many airlines achieved their highest profits ever.

The profits achieved in the mid- to late 1990s were not enough to sustain the events to come in the early 2000s. Beginning in 2000, a general economic downturn had begun. When coupled with the terrorist attacks of September 11, 2001, a new era of airline industry woes was ushered in. Both business and leisure travelers began seeking cheaper airfares. Increased fuel costs, fewer travelers, and the high airline labor costs began the worst airline industry downturn in history. These events substantially impacted network carriers. At the same time, the new entrant low cost carriers and low cost giant, Southwest, stayed their course, continuing to make money.

In 2001, the airlines collectively lost over \$8 billion, even after accounting for \$5 billion in government stabilization payments. Passenger demand for air travel did not quickly return after 9/11 even though carriers cut fares. The total loss for all U.S. airlines in 2002 topped \$11 billion. The carriers lost approximately \$7.6 billion in 2004 and an additional \$5.7 billion in 2005. By 2006, some improvement in financial experience was noted. For the first time since 2000, the airline industry earned an estimated \$1.1 billion in 2006. Going into 2007, financial conditions have continued to show modest improvement. Delta recently emerged from bankruptcy. At the writing of



this report, only Northwest remained in bankruptcy. Given the number of commercial airports in Iowa that are served by the carrier, this is of concern.

In order to return to profitability, the airlines continue to undertake cost cutting strategies. Many of the high cost traditional hub and spoke carriers (network carriers) have changed the way they do business in order to stay in business. Network airlines have had no choice but to reduce costs, cut capacity, and restructure their business models. Financial losses and personnel layoffs have been experienced by nearly all carriers. Many airlines have been forced to downsize hubs, enter bankruptcy, or merge with other carriers in order to survive. The airlines have sought concessions from employees and have contracted out aircraft maintenance, as well as baggage handling, ticketing, and gate agent duties at airports where activity is limited. The airlines have stopped paying travel agency commissions and are using the Internet to sell their tickets and lower their sales costs.

The airlines have also turned to airports to extract lower costs for landing fees, leases, and ground operation fees. Today, airports must look after the quality of their own air service. Reductions in the airlines' sales forces have left many airports responsible for marketing the service that airlines offer. Airports, trying to maintain or increase passenger activity and improve service have risen to the occasion, but find themselves in a position where they are marketing a product they do not control.

Due to competitive pressure from LCCs, network carriers are changing their business models to more resemble that of the LCCs. This is blurring the lines between the two types of carriers. As the network carriers are reducing their costs, LCCs actually are seeing their costs increase.

This chapter includes a detailed discussion of several trends in the airline industry that have a propensity to influence commercial service in Iowa.



AIRLINE OPERATING COSTS

Between 2000 and 2005, U.S. domestic carriers reported record operating losses. Some of these losses are a result of operating cost structures. This section provides more information to help the reader understand airline operating costs. These costs ultimately impact all of Iowa's air travelers because they have significant bearing on the amount that travelers pay for service.

The US DOT requires that airlines report their costs by categories. Some are reasonably easy to understand while others are ill-defined and subject to varying interpretations by the airlines doing the reporting. Airline operating costs are reported in eight primary categories: flying operations, maintenance, passenger service, aircraft and traffic servicing, promotion and sales, general and administrative, depreciation and amortization, and transport related expenses. **Table 2-1** provides a percentage distribution of the various operating expense categories by airline type.

Table 2-1
DOT Reported Distribution of Airline Operating Costs

Operating expense category	Major / network airline	Low cost airlines	Regional airlines	All airlines
Flying operations	34.9%	45.6%	54.5%	37.3%
Maintenance	8.6%	9.5%	14.9%	10.1%
Passenger service	7.6%	6.3%	4.1%	5.8%
Aircraft and traffic servicing	14.2%	15.7%	13.5%	13.8%
Promotion and sales	7.1%	7.5%	0.6%	5.5%
General and administrative	5.4%	6.3%	7.3%	6.2%
Depreciation and amortization	4.5%	4.3%	5.0%	4.4%
Transport related expenses	17.7%	4.9%	0.0%	16.9%
Total operating expenses	100.0%	100.0%	100.0%	100.0%

Source: APGDat, year ended 6/30/2006

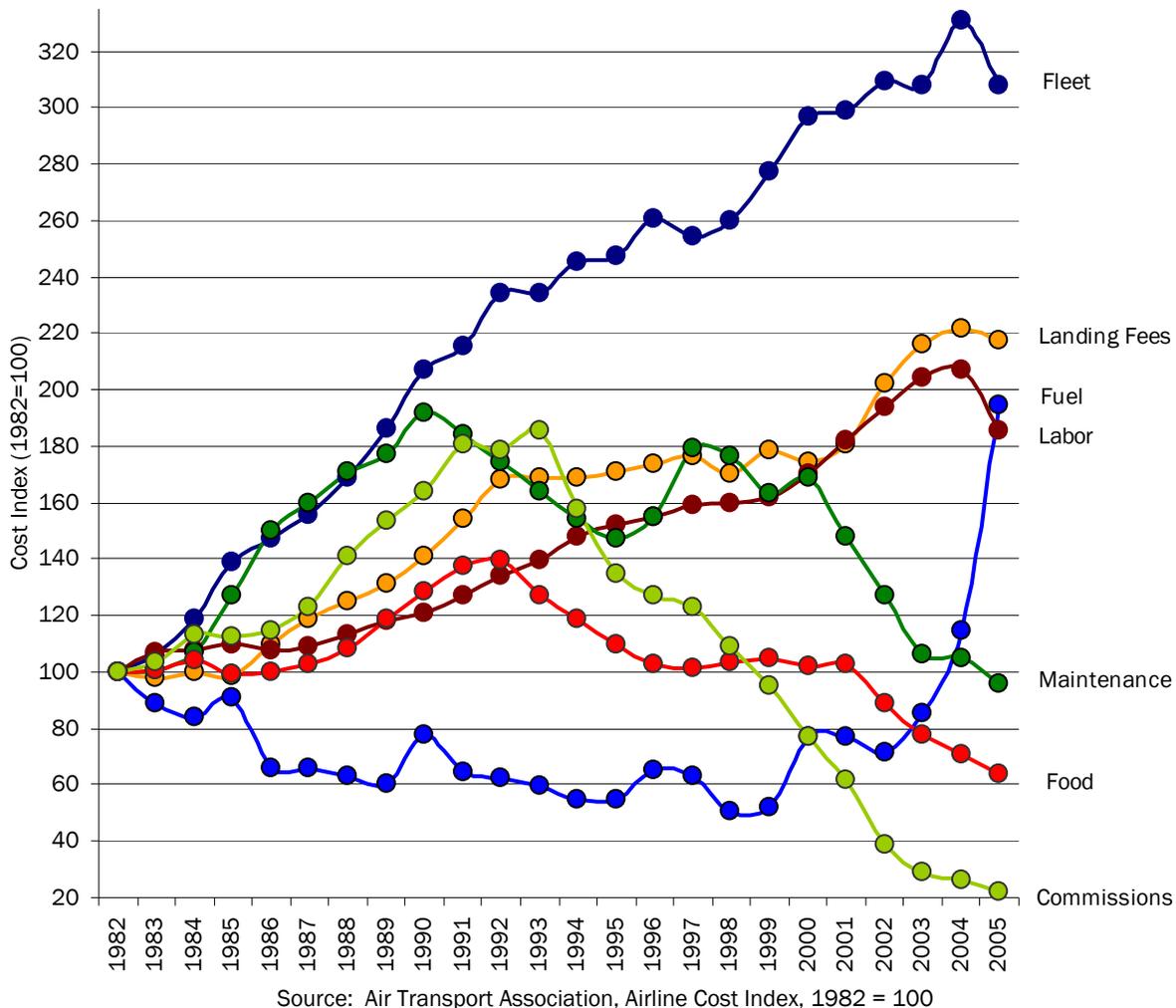
As implied in the information in Table 2-1, there are operating cost differentials between the network, low cost, and regional carriers. Higher operating costs for the network carriers are influenced by connecting hubs they operate. Operating costs for the network carriers are also influenced by the more domestic locations served, a wider variety of aircraft types operated, and international service. Low cost carriers generally serve fewer airports and concentrate their service often times in the largest domestic origination and destination markets; these carriers also tend to operate only one or two types of aircraft which reduces the cost to maintain the aircraft. Some of the costs of the regional airlines are offset by their network partners; therefore it is difficult to compare their costs to the other two carrier types.



To help the layman better understand airline operating costs, **Exhibit 2-2** shows annual changes since 1982 in operating costs for the airlines. It is not possible to directly relate the cost categories shown in Table 2-1 to the operating cost information reflected on Exhibit 2-2. Each cost category shown in Exhibit 2-2 has its own unique measure, as follows:

- Fleet – cost per seat of aircraft ownership.
- Landing Fees – cost per aircraft ton landed.
- Fuel – cost per gallon.
- Labor – employment cost per employee.
- Maintenance Material – cost per airborne hour.
- Food – cost per revenue passenger mile (RPM).
- Commissions – cost per revenue passenger mile (RPM).

Exhibit 2-2
Changes in Selected Airline Operating Costs
1982-2005





As shown in this exhibit, while maintenance, food and commissions have all generally trended down. Fleet, landing fees, labor, and most recently, fuel have all exhibited increasing cost trends. Reasons for increasing costs in these categories are discussed below.

Fleet

As the airlines acquire newer jet aircraft, including larger regional jets, their average cost per seat is increasing. Several of the network carriers are acquiring new planes, not to expand, but to replace aging aircraft. Of all airline costs, aircraft ownership (fleet) has risen more than any other operating expense category since 1982. To control the costs associated with the aircraft fleet they operate, many network carriers have made sizable fleet reductions and retired aircraft in order to modernize and simplify their fleets. By operating fewer types of aircraft, carriers have simplified aircraft maintenance and costs have fallen simultaneously.

The overall rate of new aircraft orders and options has fallen since the late 1990s. Network carriers currently have an estimated 300 aircraft on order. The vast majority of these planes will be used to replace aging aircraft. Low cost carriers have placed large orders for over 360 aircraft; a much smaller number of these planes will be for fleet replacement. Many will be used to provide increased service on existing routes or to expand route structures. Several carriers have also recently placed orders for new regional jet aircraft, including Northwest which ordered 36 76-seat CRJ 900 aircraft in October 2006. LCC, Frontier ordered 10 Bombardier Q400 aircraft in 2006.

Until recently, most maintenance on aircraft operated by U.S. airlines was done by technicians working directly for the airlines at maintenance facilities located at U.S. airports. The airlines employed certified, licensed mechanics almost exclusively; and work was closely regulated and supervised by the FAA. In the last few years, U.S. airlines, including Delta, Northwest, Alaska, and US Airways, in their search for lower costs, have outsourced much of their maintenance to low cost contractors, many of which are outside the U.S. This helps to explain the drop in maintenance costs shown in Exhibit 2-2. Delta signed a maintenance contract with Air Canada Technical Services of Vancouver to reduce costs in the maintenance category.



Landing Fees and Other Airport-Related Costs

The most easily identified airport costs are landing fees and facility rentals or leases (e.g. ticket counter space, office space, arrival/departure gates and boarding areas, boarding bridges). Landing fees as an operating expense category are reflected in Exhibit 2-2. **Table 2-2** presents information that shows landing fees and rental fees as an estimated percent of total operating costs for the three types of carriers. It is estimated that 9.5 percent of the total airline operating costs are related specifically to airports. However, this percentage often includes other types of rentals resulting in a percentage that is overstated.

Operating expense sub-category	Network airlines	Low Cost airlines	Regional airlines	All airlines
Landing fees	1.8%	2.4%	3.0%	1.9%
Rentals	6.5%	9.9%	14.8%	7.6%
TOTAL AIRPORT COSTS	8.3%	12.3%	17.8%	9.5%
Source: APGDat, year ended 2Q 2006				

While it is difficult to accurately determine what percent of total airline operating costs are attributable to airport costs, various studies/analysis suggest that it is less than 10 percent, with five percent being representative of a low cost airport and 10 percent representing a high cost airport. While airlines are concerned about controlling their operating costs, airport costs are a relatively minor consideration if revenue generation (passengers arriving and departing and average fares paid) is strong. High revenue generation begets increased service which spreads airport rental costs over a larger base thereby lowering airport costs as a percent of total airline operating costs and lowering the airline's cost per enplaned passenger. Airlines have become more sensitive to enplaned passenger costs and frequently make airport to airport comparisons when considering air service opportunities. This is especially true in smaller markets where airport costs are spread over fewer air carriers or are allocated to a single carrier.

When an airline starts to investigate an opportunity to provide new service at an airport, one of the first pieces of information that they often seek is the airport's average cost to the airline for each enplaned passenger. As commercial airports in Iowa seek to maintain and improve their commercial airline service, it is important for them to know their costs per enplaned passenger. Further, it is in the best interest of the airports to keep their costs per enplanement competitive.

Labor

Since the late 1990s, network carriers in particular have faced rising labor costs. Although the percentage of cost represented by this category declined between 2004 and 2005, industry reports indicate that labor expenses averaged 24 percent of the revenue for the carriers in 2005 (the most recent period for which this information is available). Airline labor unions including pilots, flight attendants, mechanics, and others pursued successful contract changes to increase pay and terms, resulting in escalating labor costs in the late 1990s. Average compensation jumped from \$68,000 in the second quarter of 2000 to \$80,500 for the same quarter in 2002. This represented an increase of 18.4 percent; airline profits fell dramatically during the same period. Rising costs in



labor have also forced network carriers to shift short haul routes to regional airlines who have had low labor costs.

Historically, network airlines raised fares to compensate for their labor-related increases. Fare increases by the network airlines resulted in a market share to shift to LCCs. This shift occurred because the average fares of LCCs were sharply below those of the network airlines. To maintain their market share, network carriers have lost their ability to raise airfares to compensate for higher labor costs. All airlines worked or continue working with their unions for wage reductions and work-rule changes. Some airlines have felt more pressure than others to cut labor costs.

In September 2006, the Bureau of Transportation Statistics reported that July 2006 passenger airline employment decreased 5.9 percent versus July 2005. Employment at U.S. network carriers declined 8.1 percent. Employment declines at LCCs and regional airlines were more modest, 2.6 percent and 2.7 percent, respectively. In terms of total employees, American Airlines cut the most employees, with 73,000 cuts. United Airlines and Delta Air Lines followed with 53,000 and 45,000 full-time employees cut.¹ Some of the jobs that have been cut have been outsourced to other providers. Labor cuts by the airlines mean less passenger service. Labor cuts impact the ability of the carriers to market their service as well as their ability to identify and evaluate new service opportunities.

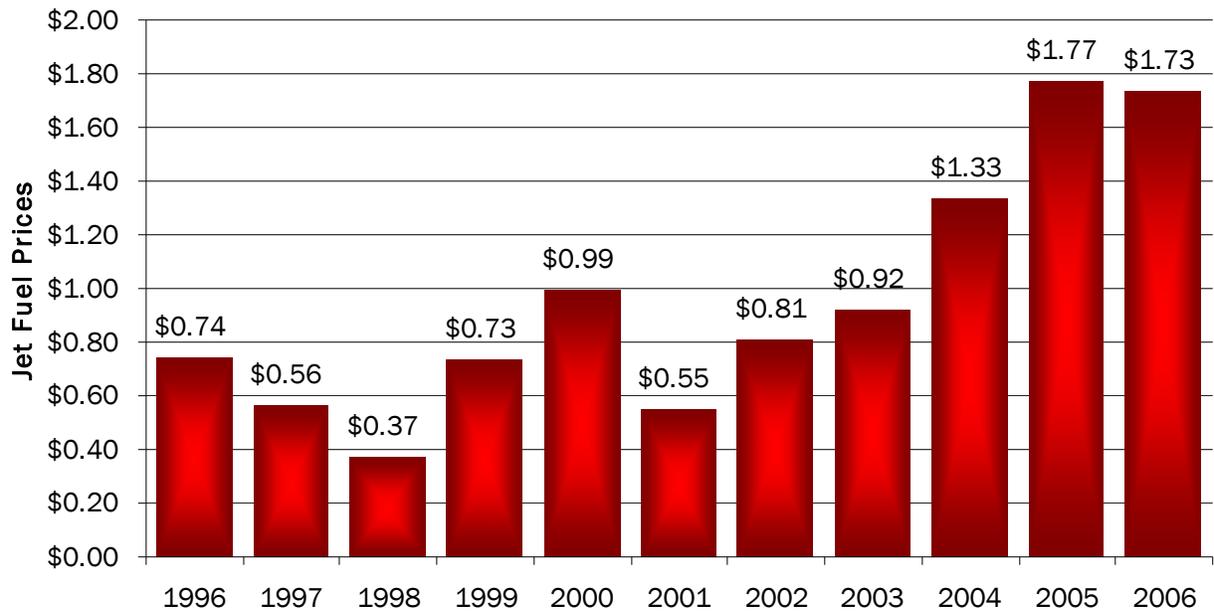
¹ Bureau of Transportation Statistics



Fuel

The price of aviation fuel continues to be an important and uncertain factor affecting operating costs for all airlines. In 2002, nearly 12 percent of all airline revenue was used to pay for jet fuel. In 2004, this percentage jumped to 18 percent due to a 64 percent hike in fuel prices. Fluctuating fuel prices have caused corresponding fluctuations in airline revenue and airfares. U.S. network carriers have not been successful in raising fares to compensate for rising fuel prices. By 2005, the price of jet fuel reached \$1.77 per gallon. As of October 2006, the spot price for a gallon of U.S. jet fuel was \$1.73; a 215 percent increase versus the 2001 price.² Exhibit 2-3 presents a ten year history of airline fuel costs.

Exhibit 2-3
U.S. Jet Fuel Prices to End Users



Source: Economagic

Other Costs

When a passenger purchases an airline ticket, most of the cost of that ticket goes toward covering the airline's operating expenses, plus profit. As discussed in this chapter, in recent years, many of the airlines have operated at a loss. Ticket prices also include various taxes and fees for government services and programs; these programs are generally those associated with the Federal Aviation Administration or the Transportation Security Administration.

² <http://www.economagic.com/em-cgi/data.exe/doeme/jktcuus>



According to the Air Transport Association, between 1992 and 2006 taxes and fees on a \$200 domestic ticket with a single connection increased from 7 percent of the total ticket cost to 26 percent of the total ticket cost. **Table 2-3** provides a brief summary of the various federal aviation taxes and fees imposed dating back to 1972.

Table 2-3
Federal Aviation Taxes and Fees

Tax/Fee	1972	1992	2002	2006
Passenger Ticket Tax (Domestic only)	8.00%	10.00%	7.50%	7.50%
Passenger Flight Segment Tax (Domestic only)	-	-	\$3.00	\$3.30
Passenger Security Surcharge	-	-	\$2.50	\$2.50
Passenger Facility Charge	-	\$3.00	\$4.50	\$4.50
International Departure Tax	\$3.00	\$6.00	\$13.40	\$14.50
International Arrival Tax	-	-	\$13.40	\$14.50
INS User Fee	-	\$5.00	\$7.00	\$7.00
Customs User Fee	-	\$5.00	\$5.00	\$5.00
APHIS Passenger Fee	-	\$2.00	\$3.10	\$5.00
Cargo Waybill Tax (Domestic only)	5%	6.25%	6.25%	6.25%
Frequent Flyer Tax	-	-	7.50%	7.50%
APHIS Aircraft Fee	-	\$76.75	\$65.25	\$70.25
Jet Fuel Tax (Domestic only)	-	-	4.3¢/gal	4.3¢/gal
LUST Fuel Tax (Domestic only)	-	0.1¢/gal	0.1¢/gal	0.1¢/gal
Air Carrier Security Fee	-	-	Varies	Varies

Source: Air Transport Association

Most of taxes and fees shown in Table 2-3 are applied to programs that improve the nation's airport and airspace system or they are used for new security programs. Passenger Facility Charges (PFCs) apply to enplaning passengers and are used by airports to fund FAA-approved airport improvement projects. Not all airports collect a PFC, these fees are optional. PFCs apply only to revenue passengers. PFCs are assessed on departures from an airport and not on arrivals. No more than two PFCs can be imposed on any one-way ticket and no more than four can be assessed on any round trip. PFCs are not collected from passengers enplaning on a flight to an eligible point on an air carrier that receives subsidy as part of the Essential Air Service (EAS) program.³ Under the Aviation and Transportation Security Act, Congress authorized several additional post-September 11th taxes imposed on both passengers and carriers to fund security screeners, equipment, and other costs of the Transportation Security Administration (TSA). Another fee assessed on U.S. commercial air passengers is the U.S. Domestic Segment Tax. Each passenger is charged \$3.30 per flight segment.

It is worth noting that some of taxes shown in Table 2-3 are actually passed on to the traveler as part of their ticket cost. The resulting higher fares can dampen travel demand. To be profitable, airlines must be flying with almost all of their departing seats full. When travelers decided not to take an airline trip because the ticket price is too high, lower levels of enplaning passengers hinder the ability of the carriers to make money or in some cases even breakeven.

³ ARC Industry Agents' Handbook



AIRLINE PRICING AND YIELDS

The underlying factor in airline pricing is compensatory airfares. Simply, the array of airfares in a market must result in the revenue exceeding the cost of providing the air service. If they don't, despite short term examples to the contrary, the airline may not be able to sustain service to the market. Another factor affecting airfares is the competitive environment. If there is direct competition in the market, airlines will normally charge approximately the same airfare for travel to the same destination. Indirect competition often results from air service at nearby airports. Airlines may or may not recognize this indirect competition and establish airfares that are higher than those at nearby airports but not sufficiently higher that passengers will endure the extra time, inconvenience, and cost of driving to the nearby airport. In the deregulated airline environment, fairness and distance between points are non-factors; fares are based on what the market will bear and on revenue maximization. There are no universal formulas on how airfares are established.

Expectations about what is a reasonable price to pay for air service can be different in the eyes of the carrier compared to those of the passengers. A brief discussion of pricing principles and the direct costs associated with providing air service is useful. There are a number of factors that influence how air service is priced. These can be grouped as either operating or competitive factors. From the air carrier's standpoint, airfares should be set to cover the following:

- Direct costs associated with providing the service. These include the cost of the aircraft (fleet), fuel, maintenance, employees (labor), landing fees and other expenses.
- Indirect costs such as advertising and promotion, commissions, and administration.
- Sufficient return to finance future business development, to replace aircraft, to ride out downturns in the economy, and to provide a decent rate of return to owners and stockholders.

Carriers have historically preferred to operate at airports where they have a dominant market share and can set price. In fact, during the 1980s, many carriers launched strategies to achieve concentration in markets either by developing fortress hubs or swamping a given market with so much service that smaller (marginal) providers in that particular market would drop out. Studies sponsored by the U.S. General Accounting Office (GAO) have confirmed that cities where one carrier dominates tend to be airports where airfares are also high. Minneapolis, Cincinnati, and Charlotte have historically been prime examples. Smaller airports, having only feeder service to network carriers at their connecting hub airports, also often experienced higher airfares. Factors contributing to the price of airline service include the following:

- Number of carriers offering service between two given cities.
- Available capacity versus demand in the market (number of daily departures and seats versus traffic).
- Types of service offered (jet versus turboprop/direct versus connecting).
- Distance to other airports where alternate choices of service are available.
- Presence of a lower cost or low fare carrier at the airport or nearby airports.
- Special promotions and discounts offered by competing carriers.

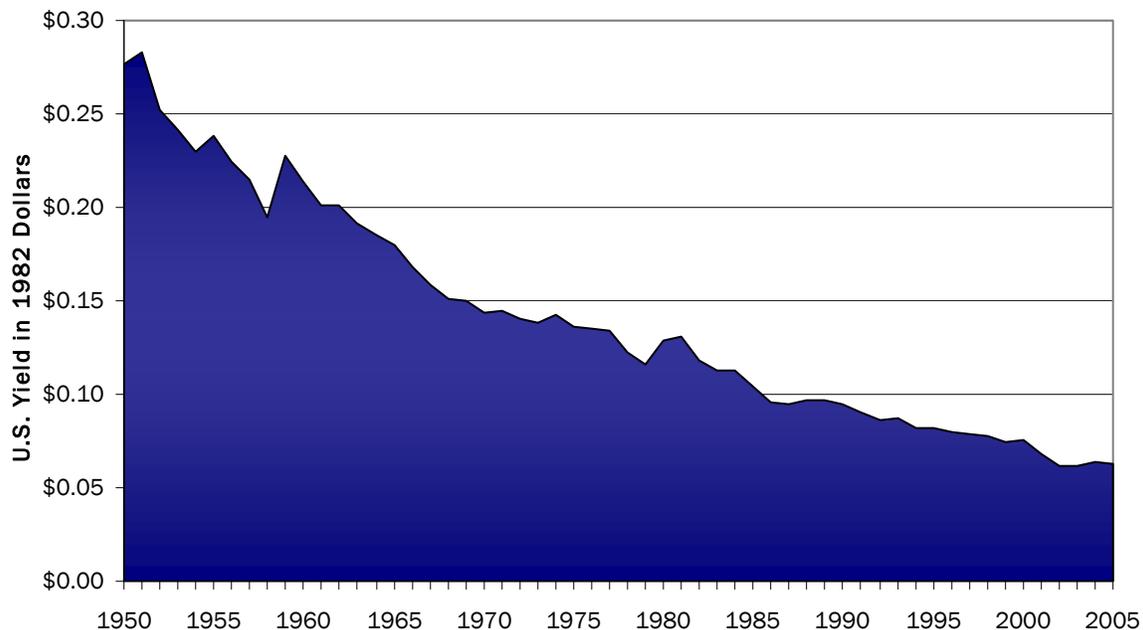


Airline Yields

Though it is a frequently used term, yield is only a minimal factor in determining airfares. Yield is derived by dividing airfare paid by distance traveled, and by itself is meaningless. A yield of 15 cents per mile may be very good if the trip covers 1,200 miles but inadequate if the trip covers 250 miles since the unit cost of air travel decreases by distance. In point-to-point service (i.e. no connections), an acceptable yield varies depending on segment length. In a hub feeder market, an acceptable yield will vary from flight to flight, day to day, and season to season depending on the percent of onboard traffic that is connecting and the mix of connecting destinations (e.g. 200 miles beyond the hub, 700 miles beyond the hub, 1,500 miles beyond the hub).

Competitive pricing has been difficult for the higher-cost network carriers. As **Exhibit 2-4** shows, the downward pressure on domestic passenger yields is nothing short of dramatic. In Exhibit 2-4, yields are expressed as cents per revenue passenger mile. Yields are also adjusted for inflation, using 1982 as the base year. Average yield on domestic routes has declined from a high of 28.3 cents per revenue passenger mile in 1951 to 6.3 cents in 2005. The largest declines occurred prior to airline deregulation in 1978. However, since 1980, average yield has continued to decline.

Exhibit 2-4
U.S. Scheduled Airline Yield
Constant 1982 U.S. dollars



Source: Air Transport Association

In the second quarter of 2006, the network carriers with the highest unit costs were US Airways Group and Continental. Among regional airlines, Comair and American Eagle posted the highest unit costs per mile. Overall, the carriers with the lowest unit costs were low cost carriers JetBlue and Southwest. In terms of overall yields, regional airlines realized the highest average domestic



passenger yield during the second quarter of 2006 at 18.9 cents per revenue passenger-mile (RPM). U.S. network carriers yielded 13.1 cents per RPM, and the RPM realized by LCCs during the second quarter of 2006 was 12.1 cents.⁴

The “real” decline in yield is another reason why the airlines have gone to great lengths to control costs and only operate on the most profitable routes. Competition and revenue maximization considerations prevail. If an airline elects to serve a market, the objective is to generate as much revenue over and above the cost of providing the service as competition and the market’s willingness to pay allow. Each market is unique and each airline’s approach to revenue maximization may differ.

As noted, airline fares are impacted significantly by the division of costs among the total number of passengers that they carry. Airlines try to fill their planes using yield management systems. These are complex computer systems designed to estimate the number of seats on each flight that can be sold at varying costs. The goal is to fill the plane. Related objectives to this goal are to set prices that separate the business passenger (premium fare) from the vacation traveler (discount fare). For airlines operating small aircraft, the goal is to maximize the number of seats sold at a premium fare, since there are not as many seats to be sold. Regional carriers have historically been most interested in catering to the business traveler; they do not usually offer as many discounted seats as larger carriers since they simply do not have as many seats on their aircraft to sell. Commercial airports in Iowa, which are served mainly by regional carriers, often feel the fare impact of this.

Given the inability of network airlines to achieve sustained profitability, network carriers have applied pricing models more in line with those used by the LCCs to guide their operations. Network carriers are struggling to generate adequate revenue; they also suffer from fundamental operating cost and productivity problems versus LCCs. The difference in cost structures between network airlines and LCCs reflect profound variances in aircraft and labor productivity. LCCs generally have higher aircraft utilization because they do not use a hub to route passengers, rather they fly point-to-point. This system minimizes the amount of time airplanes spend on the ground and translates into more block hours flown per airframe. In 2004, LCC JetBlue Airlines realized block hour utilization on its Airbus 320 aircraft that was 46 percent higher compared to network carrier Northwest Airlines. This increased utilization translated into better operating economics; JetBlue’s cost per available seat mile (ASM) was 3.2 cents. Northwest Airlines reported its cost per ASM at 5.1 cents; a cost 60 percent higher compared to JetBlue.⁵

⁴ Bureau of Transportation Statistics

⁵ Massachusetts Institute of Technology, “*The Airline Industry and Current Challenges*,” September 2006.

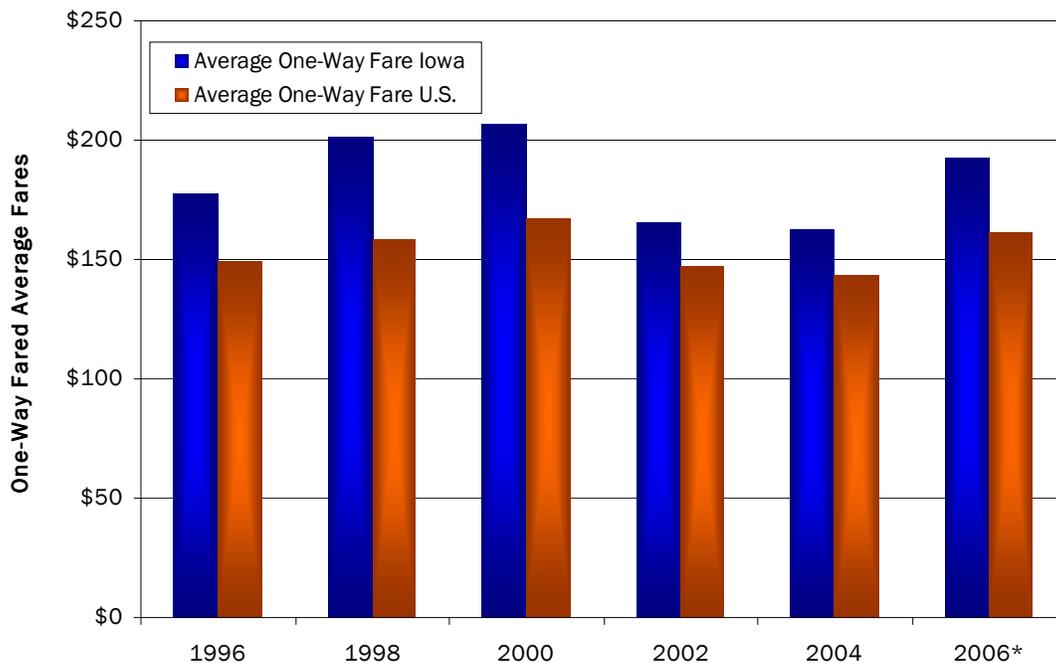


Airfare Comparison in the U.S. and Iowa

Exhibit 2-5 shows how the average one-way fare paid by U.S. and Iowa passengers has shifted over the last ten years. Between 1996 and 2006 the average one-way fare in the U.S. increased 8 percent from \$149 to \$160. Despite the fact that the average one-way airfare increased slightly over the past 10 years, average one-ways did decline nationally between 2000 and 2004. This decline was primarily as a result of competition from low cost carriers and efforts from the network carriers to match fares. More recently, fares have escalated as a result of increased operating costs.

Passengers enplaning at Iowa's commercial service airports have consistently paid more for one-way fares versus the U.S. average. In 1996, the average fare paid by Iowa's outbound passengers was \$177, nearly 19 percent above the U.S. average one-way fare of \$149. In 2006, the average fare paid by Iowa's outbound passengers was more than \$192; the U.S. average was \$160. Average one-way fares from the commercial airports in Iowa continue to be about 20 percent higher than the national average.

Exhibit 2-5
U.S. and Iowa Domestic One-Way Fared Average Fares



Source: US DOT, Origin-Destination Survey
 Note: 2006 reflects year ended June 30, 2006



As noted in Chapter One, the airfares at many Outlying Hub Airports and Border Airports were lower than the average fares paid by passengers originating at commercial airports in Iowa. **Table 2-4** compares airfares and how fares have changed. Average fares from the commercial airports in Iowa are over 20 percent higher than the average fare from nearby Omaha and Moline. Fares from the commercial airports in Iowa are 38 percent higher than those paid by passengers originating at Kansas City and are 11 percent higher versus the average fares paid by passengers originating at Minneapolis. The fare differential between commercial airports in Iowa and the Border and Outlying Hub airports considered in this study are shown in Table 2-4.

Table 2-4
Comparison of Average Fares
Year ended June 30, 2006

Airport	2006 Fared Avg, Fare	% Change 1996-2006
All Airports in Iowa	\$192	+8%
Moline	\$152	-20%
Omaha	\$149	+17%
Chicago- ORD	\$154	-13%
Kansas City	\$139	+16%
Minneapolis	\$173	-18%
U.S. Average	\$160	+8%
Source: US DOT, Origin-Destination Survey		

AIRLINE BANKRUPTCIES, MERGERS, AND ACQUISITIONS

Since 2000 several carriers have ceased to operate, while other have merged or re-organized under bankruptcy protection. Airline bankruptcies, mergers, acquisitions and have altered the landscape of the U.S. commercial airline industry. The commercial airports in Iowa have not been able to avoid the air service changes that have accompanied airline restructuring.



Airline Bankruptcies

Nearly all carriers depended on the government loan guarantees during 2001 to keep them out of bankruptcy. However, after failing to negotiate necessary wage decreases or get other operating costs under control, several carriers had no other choice but to file bankruptcy. As presented in **Table 2-5**, several U.S. air carriers have filed for Chapter 11 bankruptcy protection since 2000. Outcomes from these filings are mixed. Three carriers: Tower Air, Midway Airlines, and Independence Air ceased operations entirely. Several other carriers successfully emerged from Chapter 11 bankruptcy protection and currently provide scheduled air service. One of these carriers, ATA Airlines, now operates under a codeshare agreement with Southwest Airlines. In addition, two carriers that declared bankruptcy were acquired by other carriers. TransWorld Airlines sought Chapter 11 protection in the fourth quarter of 2001; it was acquired by American Airlines. America West acquired US Airways in September of 2005, following multiple bankruptcy filings.

Table 2-5
Bankruptcy History for U.S. Air Carriers

U.S. Air Carrier	Bankruptcy Declaration Date(s)	Outcome
Tower Air	2/29/2000	Ceased Operations
Kitty Hawk (Cargo Carrier)	5/1/2000	Emerged From Bankruptcy
Fine Air Services (Cargo Carrier)	9/27/2000	Emerged From Bankruptcy
Midway Airlines	8/13/2001	Ceased Operations
TransWorld Airlines	11/10/2001	Acquired by American Airlines
US Airways	8/11/2002 and 9/12/2004	Acquired by America West on 9/27/2005
United Airlines	12/9/2002	Emerged From Bankruptcy on 2/1/2006
Hawaiian Airlines	3/21/2003	Emerged From Bankruptcy on 6/2/2005
ATA Airlines	10/26/2004	Emerged From Bankruptcy on 2/28/2006
Delta Airlines	9/14/2005	Emerged From Bankruptcy on 4/30/2007
Northwest Airlines	9/14/2005	Operating Under Chapter 11 Bankruptcy
Mesaba Aviation	10/13/2005	Operating Under Chapter 11 Bankruptcy
Independence Air	11/7/2005	Ceased Operations
Era Aviation	12/28/2005	Operating Under Chapter 11 Bankruptcy

Source: Wikipedia.org

Other carriers emerging from bankruptcy protection include United Airlines and Hawaiian Airlines. United Airlines emerged from bankruptcy in February 2006. Delta emerged from bankruptcy in the spring of 2007. The only network carrier currently operating under Chapter 11 bankruptcy protection is Northwest Airlines.

As indicated in Table 2-5, Northwest filed for bankruptcy protection in September 2005 and currently operates under Chapter 11 bankruptcy protection while they restructure operations. Northwest announced plans to emerge from bankruptcy during the first half of 2007. Northwest's restructuring should be carefully watched by the commercial airports in Iowa especially as it relates to regional carriers who now have codeshare agreements with Northwest. Three of the eight commercial airports in Iowa are totally dependent on service that is now provided by codesharing carriers who operate feeder service to Minneapolis-St. Paul.



Airline Mergers and Acquisitions

Since deregulation, airline mergers and acquisitions have impacted commercial air service. In April 2001, American Airlines purchased Trans World Airlines. In the wake of the TWA merger and roughly concurrent with September 11, American began losing money. TWA's St. Louis hub suffered after the merger due to its proximity to American's much larger hub at Chicago's O'Hare International Airport. As a result, American reduced TWA's St. Louis hub (going from over 800 operations a day to fewer than 300).⁶ The American Airlines acquisition proved vital to sustaining some flights into and out of Iowa.

US Airways began merger talks with United in 1995 after a trans-Atlantic alliance with British Airways collapsed, prompting Britain's biggest airline to sell its 35 percent stake in US Airways. US Airways then initiated a marketing pact with American, linking the airlines' frequent flyer programs. Five years later, in May 2000, United Airlines announced its intent to merge with US Airways for \$4.3 billion in cash.⁷ However, this proposed merger did not materialize. In July 2001, the Department of Justice concluded that the proposal for United Airlines to acquire US Airways would reduce competition, raise fares, and harm consumers on airline routes throughout the United States.

US Airways continued to struggle financially and, in September 2005, the carrier was acquired by America West Holdings Corporation. The newly formed US Airways Group provides service to more destinations than US Airways or America West served as stand-alone entities. For US Airways, combining its operations with America West provided a well-developed U.S. west coast route structure. The second quarter 2006 earnings posted by US Airways Group strongly exceeded analyst expectations. The newly formed entity earned a \$305 million profit. Employees from pilots to baggage handlers are seeking higher wages based on the financial performance of the company. US Airways Group must carefully balance the expectations of its labor force with the company's overall objective of continued profitability. If significant wide-spread concessions are granted to employees, the company places itself at risk for higher operating costs and lower overall profitability.⁸

In November 2006, US Airways Group initiated a hostile takeover bid to purchase Delta Air Lines out of bankruptcy. The total tenured purchase price for the Delta Air Lines was \$8 billion with \$4 billion provided in cash backed by Citigroup and the remaining \$4 billion offered in US Airways company stock. Delta Air Lines formally rejected US Airways' bid and filed a 5-year reorganization plan to emerge from Chapter 11 as an independent carrier.

⁶ http://en.wikipedia.org/wiki/Trans_World_Airlines

⁷ <http://money.cnn.com/2000/05/24/deals/united>

⁸ www.USAToday.com, September 2006.



LOW COST CARRIER EVOLUTION

Low cost carriers have changed the way all airlines currently do business. Every U.S. airport has been impacted by their evolution, including those in Iowa.

Rising Influence of Low Cost Carriers

Southwest Airlines set the standard for providing low cost, low fare service. Within Texas, Southwest built a strong intrastate system of air service prior to airline deregulation in 1978. Southwest went on to establish low fare service at airports throughout the U.S. It has steadily applied its strategy and has been successful in nearly every market. However, it was only when Southwest was the only airline to turn a profit in 1990 that it became the airline to emulate. The entire industry scrutinized Southwest to see what they were doing right. Several key things characterize its operations; they include:

- Select markets only with substantial local traffic that can support high frequency, point-to-point service.
- Select city pairs generally within a 1,000 mile radius, a stage length ideally suited for the Boeing 737, the only aircraft Southwest operates.
- Select airports that are easy to get in and out of without incurring frequent weather or air traffic delays.
- Keep employees happy and labor costs low.

Many carriers have tried to emulate Southwest to one degree or another. Continental, Delta, US Airways, and United at one time each created low cost “carriers within a carrier.” Continental, Delta, US Airways, and United programs have all been abandoned because each of the carriers could not reduce operating costs to effectively compete with Southwest and other LCCs. In 2003, Delta and United again tried to create LCCs. Delta’s Song was once again unable able to compete with Southwest or JetBlue and Song disbanded in July 2006.



The 1990s generated a wave of U.S. independent startups, modeled after Southwest including ValuJet, AirTran, Eastwind, Kiwi, Midway, Nation's Air, Pan Am, Reno, Morris Air, Air South, Spirit, Vanguard, Western Pacific, Pan American Airways, National, and JetBlue. Of these only AirTran, Spirit, and JetBlue survived as independent carriers. **Table 2-6** lists the surviving startups since airline deregulation. The list is extremely short.

**Table 2-6
Surviving Independent Start-Up Carriers**

Carrier	Date Started	Base of Operation
AirTran Airways	1994	Atlanta
Allegiant Air	1997	Las Vegas
America West (Now US Airways Group)	1980	Phoenix
Frontier Airlines	1994	Denver
JetBlue Airways	2000	New York-Kennedy
Midwest Express	1984	Milwaukee
Spirit Airlines	1989	Detroit
Sun Country Airlines	1982	Minneapolis-St. Paul

Source: Wilbur Smith Associates

America West had a tumultuous history, but emerged from Chapter 11 as a solid carrier with an extensive network. This carrier is now part of the US Airways Group. JetBlue is a more recent entrant into the industry. JetBlue pulled through the most recent industry events with a strong financial performance. Of the LCC carriers, JetBlue, AirTran, Southwest, and Frontier show promise for continued expansion, and each have placed orders for additional jet aircraft. JetBlue placed the most aggressive orders, with 65 Airbus A320s and 100 Embraer 190 100-seat regional jets.

Although they too have felt industry woes, LCCs have fared much better financially than the network carriers in recent years. The LCCs are similar to discount brokers in the investment industry; customers receive the same commodity (air service or investment transactions), but with less customer service support. Business models that LCCs operate under often include many of the following components:

- Single passenger class
- Single type of aircraft
- Simple fare scheme
- Unreserved seating
- Utilization of lower cost, less congested secondary airports
- Short flights and fast turnaround times
- Simplified routes, emphasizing point-to-point transit instead of transfers at hubs
- Emphasis on direct sales of tickets, especially over the Internet
- Cross-utilization of employees
- No complimentary in-flight food and beverage service



Of these business model components, advantages gained through labor productivity place LCCs at a distinct advantage versus traditional network carriers. Southwest's total labor expense per available seat mile (ASM) ranked 25 percent below that of Delta Air Lines.⁹

LCCs have lower operating cost structures. They are able to reduce maintenance costs when maintaining a fleet with only one aircraft type. Short-haul flights with fast turnaround times increase aircraft utilization and provide more total cycles on which to generate revenue. Point-to-point flights avoid hubs, minimize aircraft delays and reduce the amount of time required to deplane and enplane passengers. Labor costs are minimized by maximizing employees' time. In the case of flight attendants, these employees perform gate agent functions prior to boarding the flight. This reduces the total number of employees required and, in turn, keeps labor costs at lower levels versus traditional network airlines.

Former Delta Air Lines CEO Leo Mullin indicated that the top five percent of routes in terms of passenger volumes accounts for 75 percent of the revenue for all airlines. The LCCs have entered all of these markets and the higher cost network carriers must lower their fares to compete in order to support their hubbing operations and maintain their market share. Network carriers still rely on some fliers to pay a premium for the right to earn frequent-flier miles, upgrade to first class, and to have membership privileges in their airport lounge. The hard part for the network airlines is figuring out the price at which fliers decide the added perks are worth it. Delta estimates that passengers may be willing to pay 10 to 15 percent more for these benefits.

Looking ahead, LCCs are placing more orders for new aircraft versus their network airline counterparts. These new aircraft deliveries will raise ownership expenses and, in turn, create higher fixed operating costs for LCCs. As a group, these carriers are also experiencing lower yields due to higher fuel prices. With oil prices near twenty-year highs, LCCs offering steeply discounted fares will simply earn less as operating expenses climb. Both Southwest and JetBlue use fuel hedging as a tool to manage operating expenses. Fuel hedging enables carriers to set their operating expense budgets with a prearranged maximum fuel cost. This strategy is used as an insurance policy to protect against large price increases in the cost of jet fuel. On the downside, it is possible that a carrier will actually pay more than the market rate under a fuel hedging agreement. During 2005, Southwest saved \$892 million in fuel expenses with hedging. It is worth noting that industry records show that operating cost differentials between the network carriers and the LCCs are narrowing. Fuel hedges for some LCCs are expiring; this will further narrow the gap.

Impact of LCCs on Commercial Airports in Iowa

Two of the commercial airports in Iowa are served by LCC, Allegiant Air. In June 2003, Allegiant initiated service to Iowa by entering the Des Moines market and providing nonstop service to Las Vegas. This carrier operates a business model with three specific underpinnings: all travel is ticketless, all fares are one-way, and a Saturday stay is never required. Allegiant Air expanded its service in Iowa with new service from Cedar Rapids (Eastern Iowa Airport) to Las Vegas in June 2004. In May 2005, Allegiant offered additional service to Des Moines with new scheduled service to Orlando Sanford Airport. In December 2005, Allegiant Air made a similar expansion in the Cedar Rapids market with new service to Orlando Sanford Airport and began service to Phoenix Mesa

⁹ Massachusetts Institute of Technology, "The Airline Industry and Current Challenges," September 2006.



Gateway in October 2007. Frontier began serving Iowa in October 2007 as well when they began nonstop service between Sioux Gateway and Denver International Airport.

LCCs Frontier Airlines and Southwest Airlines operate at Border Airport Eppley Airfield in Omaha, Nebraska. Frontier provides service to Denver on CRJ 700 and Airbus 319 aircraft. Southwest provides nonstop service to Chicago-Midway and Lambert International Airport in St. Louis. At Quad City International Airport in Moline, AirTran offers daily 3 daily nonstop flights to Atlanta and one daily flight to Orlando. At Sioux Falls Regional, Allegiant Air operates scheduled service to Las Vegas and Orlando-Sanford. Rochester International Airport in Minnesota and La Crosse Municipal Airport in Wisconsin do not have scheduled air service on any LCCs.

Nationwide, there is extensive documentation concerning the ability of airports with low cost carrier service to attract passengers from the market area of other airports without such service. The impact of low cost carrier service is different depending upon whether the passenger is traveling for business or leisure. Several studies by larger airports with low fare carrier service have found that leisure travelers will drive three hours or more to initiate their travel on a LCC. While these same phenomena also impacts business travelers, these travelers typically put a higher value on their time. Hence the radius for drawing business travelers to an airport having low cost carrier service is not nearly as large.

Subsequent portions of this report will help to quantify the number of Iowa travelers that leave the market area of their local or closest airport to begin their travel from a more distant airport. While low cost service is not the only reason for passenger diversion from one airport to another, it is certainly a leading cause. Air travelers in the counties in western Iowa are attracted by low cost carrier service provided by Southwest and Frontier at Omaha. Travelers from areas in eastern Iowa are attracted by service to Atlanta and Orlando provided by low cost carrier Air Tran at Quad City International Airport

Should a low cost carrier offer significant service at Minneapolis, there would be some impact on air travelers in Iowa. At this point, there is a considerable amount of industry speculation that Southwest may begin operations at Minneapolis-St. Paul International. With more recent service initiated at Philadelphia and Denver International airports, Minneapolis-St. Paul International fits into the new expansion model for Southwest.

Notable levels of low cost carrier service at an airport have the propensity to drive all fares at that airport down; even those offered by network carriers that operate at the airport. As network carriers seek to maintain their market share, they will often lower their fares to compete. Fare competition has been one of the contributing factors to airline losses discussed in this chapter. Fare competition can have a negative impact on the carriers themselves, but the consumer benefits. This report will help to quantify the number of commercial air travelers in Iowa that may be leaving markets in part because of LCC service now available at other airports.



aircraft. Varying aircraft types means more expensive maintenance, large and expensive parts inventories, and redundant crew training facilities.

The excessive expense associated with the hub-and-spoke model took its toll on network carriers during the recent industry downturn.

There are eight scheduled carriers that are currently serving commercial airports in Iowa (this number was effective as of the spring of 2007). A summary of these airlines' connecting hub and focus cities is presented in **Table 2-7**. Table 2-7 shows the eight airlines that currently provide scheduled service to one or more of the commercial airports in Iowa. All connecting hub and/or focus cities are shown in this table for the eight carriers. It is important to note that Iowa does not have service to all of these hubs and/or focus cities. The complete listing of connecting hubs and focus cities is provided for informational purposes. While Iowa air travelers do not have non-stop service to all of these hubs or focus cities, by traveling on airlines that now serve Iowa to hubs or focus cities that do have service, the additional hub/focus city destinations can be reached.

**Table 2-7
Hub and Focus City Airports Served By Scheduled Air Carriers Operating
at Commercial Service Airports in Iowa**

Marketing Carrier	Operating Carrier	Hub Airport Codes	Hub Airports	Focus City Codes	Focus City Airports
Allegiant Air				LAS SFB	McCarran** Orlando Sanford**
American	(American Connection and American Eagle)	DFW* ORD* MIA STL* SJU	Dallas-Fort Worth** Chicago- O'Hare** Miami Lambert Saint Louis** Luis Munoz Marin	LGA LAX BOS JFK	La Guardia** Los Angeles Logan International John F. Kennedy
Continental	Continental Express	IAH EWR CLE GUM	George Bush Intercontinental** Newark Liberty Cleveland Hopkins Guam		
Delta	Delta Connection (Comair and ASA)	ATL* CVG* SLC* JFK	Hartsfield-Jackson Atlanta** Cincinnati/No.Kentucky** Salt Lake City** John F. Kennedy	BOS MCO LGA LAX	Logan International Orlando La Guardia Los Angeles
Midwest Airlines	Midwest Connect	MKE	General Mitchell**	MCI	Kansas City
Northwest	Northwest Airlink (Pinnacle and Mesaba)	DTW MSP MEM NRT AMS	Detroit ** Minneapolis-St. Paul** Memphis** Narita Amsterdam Schiphol	IND HNL	Indianapolis Honolulu



Table 2-7 continued
Hub and Focus City Airports Served By Scheduled Air Carriers Operating
at Commercial Service Airports in Iowa

Marketing Carrier	Operating Carrier	Hub Airport Codes	Hub Airports	Focus City Codes	Focus City Airports
United	United Express (Sky West and Mesa)	ORD DEN SFO IAD LAX	Chicago- O'Hare** Denver** San Francisco Washington Dulles Los Angeles	NRT	Narita International
US Airways	(America West Express)	CLT PHL PHX LAS	Charlotte/Douglas Philadelphia Phoenix Sky Harbor** McCarran	PIT LGA DCA BOS	Pittsburgh La Guardia Reagan Washington Logan International
Source: www.wikipedia.org					
Note: **Hub and Focus City airports with nonstop service provided by respective carriers to/from airports in Iowa					



Table 2-8 shows each of the commercial service airports in Iowa. In addition, current nonstop service to connecting hubs and/or focus cities provided by the eight carriers that now serve one or more of the commercial airports is summarized in this table. With Iowa's central location in the U.S., Iowa benefits from its proximity to a variety of connecting hubs and focus cities. As shown, current service provides Iowa travelers with options to the north, south, east and west. Most of this service is to and from Des Moines International Airport and The Eastern Iowa Airport, the two largest airports commercial airports in Iowa.

**Table 2-8
Nonstop Destinations Served From Iowa**

Hub or Focus City	Des Moines	Cedar Rapids	Burlington	Dubuque	Ft. Dodge	Mason City	Sioux City	Waterloo
Atlanta	X	X						
Chicago	X	X		X				
Cincinnati	X	X						
Cleveland	X							
Dallas/Ft. Worth	X	X						
Denver	X	X					X	
Detroit	X	X						
Houston	X							
Kansas City			X					
Las Vegas	X	X						
Los Angeles	X							
Memphis	X							
Milwaukee	X							
Minneapolis	X	X			X	X	X	X
New York	X							
Orlando (Sanford)	X	X						
Phoenix	X	X						
Salt Lake City	X							
St. Louis	X	X	X					
Washington, D.C.	X							
Source: Official Airline Guide								

As will be discussed in a subsequent section, most regional carriers who provide connecting service to smaller markets throughout the U.S. have been and are continuing to shift to larger regional jets. These jets seat 70 or more passengers. When the connecting hubs were first developed, most of connecting/feeder service by the regional/commuter carriers was provided on smaller turboprop aircraft. These turboprop aircraft typically had seating capacities ranging from 19 to 30 seats. These planes were well suited to smaller markets similar to several of those in Iowa. As the regional carriers migrate to larger regional jets, the ability of smaller communities to support these larger aircraft is an issue.



MAJOR/NETWORK CARRIERS AND REGIONAL PARTNER RELATIONSHIPS

Major/network carrier and regional airline partnerships normally involve regional airline service operating under a code share (codesharing). Codesharing is a marketing practice in which two airlines share the same two-letter code used to identify carriers in computer reservation systems. Aircraft paint schemes are coordinated and aircraft are parked at adjacent gates. Likewise, “through” fares are published encompassing both airlines, and reservations, ticketing, check-in, and baggage handling are seamless. Passengers perceive they are traveling on a single airline. Most service in Iowa is provided by codeshare partners, making codeshare relationships important. The success of this service depends on strong relationships at connecting hubs.

Changes in codeshare partnerships may occur as contracts expire or are voided in bankruptcy proceedings. As part of their cost control efforts, network carriers are asking regional airline partners to “bid” on providing codeshare flying. Since much of the commercial airline service in Iowa is provided by code sharing regional carriers, any changes in current agreements, hub downsizing or hub closure could have noted impacts on current commercial airline service. Since one of eight carriers serving commercial airports in Iowa, Northwest, is in bankruptcy, the outcome of the proceedings should be carefully monitored for any potential impacts on current airline service.

Codeshares involve two types of carriers: the “operating” carrier and the “marketing” carrier. The operating carrier is the airline using its aircraft to fly a route. The marketing carrier is the partner carrier that sells space on the operating carrier’s flights. By using codeshare agreements, airlines are able to offer a more robust network of service points. Expanded service enables larger network carriers to indirectly serve smaller cities with lower overall demand. For instance, Northwest is able to provide service to Waterloo, Iowa from its Minneapolis/St. Paul hub via a code share arrangement with Mesaba. In this example, Northwest is the marketing carrier and Mesaba is the operating carrier. Codesharing can positively impact an airline’s profitability as it earns revenue from ticket sales made on flights operated by codeshare partners. Each airline participating in a codeshare arrangement sets its own prices. This independent pricing is encouraged to maintain a competitive pricing environment.¹⁰ Airlines benefit from codeshare arrangements through lower operating costs achieved through shared resources. Consumers can benefit from codesharing through joint fares and expanded service networks. Since nearly all service is provided by regional carriers, all commercial airports in Iowa are impacted by the code share agreements between marketing and operating carriers.

Evolution of Regional Airlines

Over the last 25 years, the nature of the regional airline industry has changed. Regional airlines have experienced change in their mission and affiliations with major carriers. Their traditional role of serving smaller communities (thinner markets) has also changed. Now that these carriers are operating larger aircraft, their higher unit costs stemming from the use of smaller aircraft is also changing.

¹⁰ USA Today, “*The Anomalies of Code Share*,” January 2006.



Regional air carriers have historically engaged in several distinct missions. Prior to airline deregulation, these air carriers were referred to as “commuters.” As their name suggested, these carriers offered short haul air service within a fairly limited geographic region, usually from small cities to a metropolitan area, usually in a linear service pattern. Their route structure was shaped by federal regulation, small aircraft with limited range, and frequently by mail contracts, which provided a consistent flow of revenue.

Following airline deregulation, the field was wide open. The larger regional carriers went on to operate bigger aircraft and expanded service beyond their original market areas. Among the most notable regional airlines at this time were Piedmont Aviation, Allegheny, and North Central. Between 1978 and 1986 there was unprecedented expansion of commuter airlines. Heavy investment was made to support the growth of expansive regional route systems. Airlines such as Wings West, Simmons, Britt, Metro, and Air Wisconsin provided the major/network carriers with a substantial amount of connecting traffic at their larger connecting airports.

In the late 1980s, realizing the potential to deliver substantial amounts of traffic to their systems, the network carriers began to build their hub and spoke systems and entered into codeshare agreements with regional carriers. Through codeshare agreements, regional airlines are recognized in computer reservations systems as part of the network airline's system. Customers purchasing airline tickets see only one airline in the system, providing service to their final destination, whether they live in a large or small city. Beyond that basic definition, codeshare agreements can vary as much in their specifics as one airline does from another. Some agreements stipulate complete or partial ownership of the regional carrier by the network carrier, while others are marketing agreements without ownership. These partnerships have had varying levels of success. The regional airlines that operate today perform a critical function in the airline industry. They bring local and connecting passengers from “thin markets” into hub airports. This feed is important to the network carriers who depend on this traffic to support their hub and spoke model. It is also important to the smaller communities who cannot support service on the largest aircraft operated by network carriers.



With the advent of the regional jet aircraft in the mid-1990s, the nature of the regional carriers shifted again. The popularity and flexibility of the regional jet led to some of the most profitable years for regional carriers. Noticing this, major carriers including Delta, Northwest, and Continental, purchased some of their partners. **Table 2-9** presents the current major and regional carrier partnerships.

Table 2-9
2005 Major and Regional Carrier Partnerships

Major Carrier	Regional Partners	
	Wholly-Owned Subsidiaries	Affiliates
Alaska	Horizon	Big Sky
American	American Eagle** Executive	Chautauqua Regions Air** Trans States**
ATA		Southwest
Continental Express	ExpressJet**	Colgan Air CommutAir CapeAir Gulfstream
Delta Connection	Comair**	Atlantic Southeast** SkyWest** Chautauqua
Frontier		Horizon Great Lakes
Midwest Connect	SkyWay**	
Northwest Airlink	Pinnacle**	Mesaba**
United Express		Chautauqua Colgan Air GoJet Airlines Mesa Airlines** Republic Airlines Shuttle America** SkyWest Airlines** Trans States Airlines
US Airways Group ¹ US Airways Express	Piedmont PSA Republic Airlines ²	America West Express Air Midwest Chautauqua Colgan Air Mesa**
Source: Airline websites		
Notes: 1.) America West Airlines merged with US Airways in September 2005. 2.) Republic Airlines is a recently formed division of US Airways that will operate regional jet aircraft. **Regional carriers serving airports in Iowa		



The regional carrier contracts are often on a "cost plus" basis; the network carrier pays the regional a straight fee for each flight (regardless of how many passengers are on it or how much a ticket costs) plus a fixed profit margin. The per-flight fees can range from \$1,500 to \$2,500 depending on the airline and the type of aircraft. One benefit of being a regional airline attached to a network carrier is that it provides a guaranteed income. A regional carrier's earnings are much less volatile under a cost plus agreement. Under this type of agreement, the network carrier has control over routes, frequency, and fares.

Under a prorate agreement (or revenue share), the regional partner shares the revenue made on passengers connecting to network partner instead of being guaranteed a certain amount to fly the route. Under this type of agreement, the regional partner plays a role in setting fares on local routes and scheduling flights.

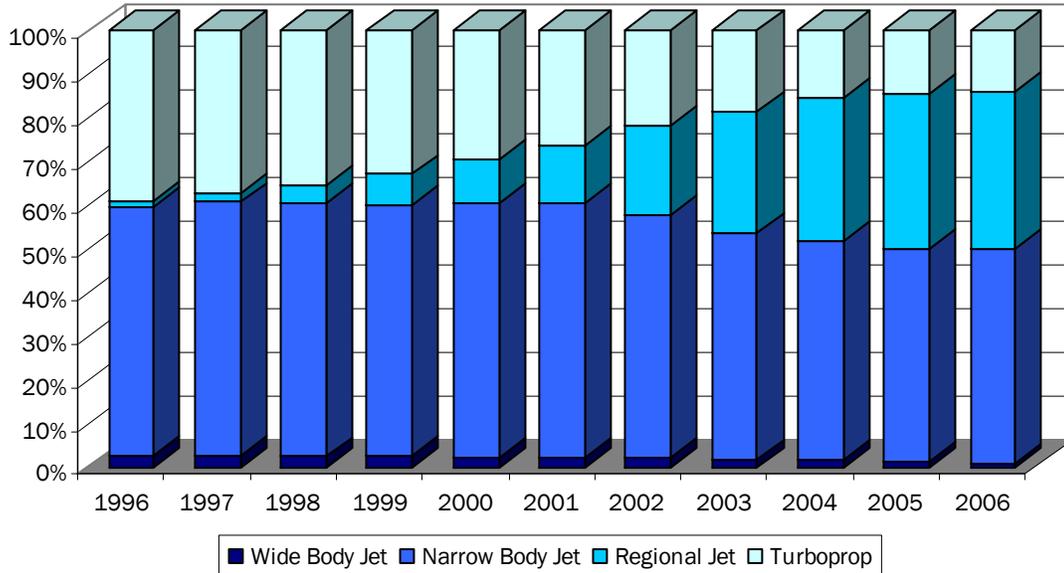
As the major airlines strived to cut operating costs, they increasingly have been turning to regional partners to take over short-haul routes. Beyond deploying appropriately sized aircraft, regional carriers have a better cost structure to handle many connecting flights more cost effectively than the major/network carriers. While the majors have assigned many shorter routes to regional carriers, these same carriers have been renegotiating their agreements to pay lower fees in order to cut costs. Without financial support from their codesharing partners, some regional airlines may not be able to operate. Network carriers will be examining the cost/benefit of connecting traffic that their regional partners carry. Future financial performance for network carriers will almost certainly have a major bearing on the regional carriers.

Historic Trend Toward and Regional Jets and Smaller Jets

Comair, the commuter partner of Delta Air Lines, put the first regional jet into U.S. service in June 1993. As shown in **Exhibit 2-7**, regional jets accounted for two percent of all U.S. flights in August 1997, operated by seven airlines. By August 2000, 12 airlines were operating regional jets flying 10 percent of all U.S. flights. Over 33 percent of all scheduled flights in the U.S. in 2004 were flown using regional jet equipment. Today, regional jets account for a significant portion of the traffic at most key airline hubs. American Airlines and Delta have both transferred a large portion of their scheduled routes to regional partners in an effort to reduce operating costs. By September 2006, regional jets gained three additional points of market share and accounted for 36 percent of all scheduled U.S. flights.



Exhibit 2-7
Fleet Composition of U.S. Scheduled Departures
(for the month of August)



Source: Official Airline Guide

Smaller planes provide a better alignment of capacity for passenger demand on lower-volume routes. In general, this right-sizing of aircraft with demand usually translates into lower operating costs. In terms of capital expenditures, new regional jets retail for around \$24 million. Compared to turboprop aircraft, regional jets are able to fly longer stage lengths and reach destinations faster. Hence, small cities across the U.S. now enjoy better airline service because regional jets provide long-distance capabilities that enable access to more airline connecting hubs.¹¹ At times, regional jets are assigned to point to point routes and these flights actually bypass the hubs. These measures help mainline carriers shield their market share from heightened competition from LCCs.

The continued growth in regional jet use is expected to influence an increase in the average seating capacity for regional airlines. The average regional aircraft held 18 passengers in 1986. By 1996, average seats per aircraft for the regional airlines increased to 25. In 2004, aircraft used by regional airlines averaged 38 seats. The FAA expects an increase to an average of 50 seats by 2014.

The regional jet has been the fastest growing aircraft segment. According to UBS Investment Research, regional airline capacity increased 21 percent per year on average between 2001 and 2006. The character of regional jet flying is now shifting toward even larger 70-, 90-, and 100-seat regional jets. JetBlue is taking delivery of the 100-seat Embraer 190. These larger regional jets offer more comfortable seating for longer flights. Few if any carriers are ordering 50-seat or 32-seat regional jets. Carriers are opting for larger regional jets that will be placed on routes that are typically served by smaller mainline jets such as Boeing 737s and A320s.

¹¹ <http://www.mitreaasd.org>



Growth in the regional jet fleet is not expected to continue at double digit levels. There are several factors that account for this: market saturation and poor financial health among the network carriers. Scope clauses are another element impacting future growth for regional jets; in their agreements with their codesharing regional partners, some network carriers limit the number of regional jets the regional carrier can operate. The concept behind such clauses is to control the regional partner and limit its potential to become a competitor. Increased fuel prices have also cut into the operating cost savings realized by deploying regional jets. With fewer seats and reduced revenue per passenger, regional jets actually distribute higher operating costs over fewer passengers. As part of its financial restructuring, Delta Air Lines has returned 30 of the regional jets it previously leased.

Airlines require higher load factors to break even on regional jets than on turboprop aircraft because of higher operating costs. Higher operating costs and increased load factor requirements tend to limit the feasibility of regional jet service to the smallest markets. Smaller markets may find it increasingly difficult to gain access to hubs, as carriers continue to replace their turboprop routes with regional jets. There are only a handful of airports in the U.S. served by only a single carrier whose service is provided exclusively by that carrier using regional jets.

According to the Regional Air Service Initiative (RASI)¹², only 85 percent of the cities served by RJs have more than 100,000 people living in their MSA. The regional jets' operational and economic characteristics are a good match for midsize, high load factor markets. In June 2006, regional jet aircraft operated at 230 airports in the continental U.S.

Regional Airlines in Iowa

Extremely important to Iowa is the change in regional airline fleets. There are no smaller turboprop aircraft with advanced technology on the drawing board. Virtually all new regional jet aircraft being manufactured are 70-seats or larger. There is a large, albeit older, fleet of 50-seat regional jets available, but higher per seat costs have reduced their popularity. Some markets may lose frequency as larger regional jet aircraft are substituted for smaller aircraft. Some markets may not have sufficient demand to support the larger aircraft that many of the regional carriers are trending toward.

It worth noting that the number of 19-seat and 30-seat aircraft still being flown by regional carriers is declining at a current rate of about 10 percent per year. Mesaba (Northwest codeshare carrier) has indicated that they do not plan to replace their 30-seat aircraft. Commercial airports in Iowa need to monitor this trend. With only one carrier, six of the commercial service airports in Iowa are served by smaller aircraft. If aircraft with smaller seating capacities continue to disappear from the operating fleet of the regional airlines, it may lead to reduced service frequencies at some airports in Iowa. In the worst case scenario, commercial air service could be at risk.

¹² The Regional Air Service Initiative (RASI) was formed by a group of regional aircraft manufacturers and suppliers to inform the public about regional airlines and the regional jet aircraft, as well as the role the aircraft play in the aviation industry.



AIRLINE ROUTE PLANNING

As this chapter has portrayed, the commercial airline industry is quite complex, and it changes frequently. One of the primary objectives of this study is to help the commercial airports in Iowa determine how they can best position themselves to maintain and/or improve their levels of commercial airline service. To that end, this section provides an overview of some of the factors that airline route planners consider when they are evaluating an airport for new or improved service. Later in this report, information on actions related to air service retention or improvement that are deemed appropriate for each of the eight commercial airports in Iowa will be provided.

U.S. commercial air service providers review their pricing and revenue management policies to ensure their operating plans are optimal. According to Sabre Airline Solutions, most airlines set their operating schedules 45 to 60 days in advance and base their planning assumptions on average, historical demand. Unfortunately, market dynamics are such that it is nearly impossible to provide seating capacity that exactly matches passenger demand. For most carriers, revenue management and schedule planning functions are segregated in two separate departments. Airlines are consistently striving to improve their profitability and competitive advantage through strategies that balance operational efficiency, revenue maximization, cost effectiveness and market position. In order to secure a competitive advantage relative to industry peers, airlines must constantly review new markets and opportunities, while monitoring current market shares.¹³

With rising fuel prices, air carriers are evaluating their operating fleet mix and replacing older, less fuel efficient aircraft with newer more fuel efficient planes. The one downside to this strategy is that the positive savings from fuel expense is offset by an increase in aircraft ownership cost as airlines take on new capital assets. It does not appear that the traditional business models employed by many U.S. commercial service carriers will guide the airlines toward sustained profitability. The importance of right-sizing air networks to produce high load factors and, in turn, cover variable operating costs continues to remain at the forefront of air network management strategies.

Airlines are generally free to enter and exit airports at will in the deregulated airline environment. Decisions are made about entering new markets and moving equipment to different routes based on several factors. Through discussions with airline personnel, including airline route planners, the most important factors considered related to new service are the availability of aircraft equipment and the rate of return that could be expected on that equipment when flying a selected route. Airlines look for several key components when analyzing a community for potential service; these components include:

- Population
- Business and industrial activity
- Historical air travel statistics

Anticipated growth in these factors is also considered. Each community can influence airline predictions to a degree, but the right combination of these factors must exist in order for a community to be considered by airline route planners. The number of passengers required to make airline service economically self-sustaining depends on many things, but is generally considered to

¹³ Sabre Airline Solutions



be a factor of the cost of providing the service with a specific aircraft type versus the revenue from the service. The amount of revenue generated by passengers through fares is linked to the number of passengers that can be accommodated on the airplane. The key to comparing costs, however, is more importantly looked at in terms of the cost per seat to carry each passenger.

Evaluation of Air Service Markets

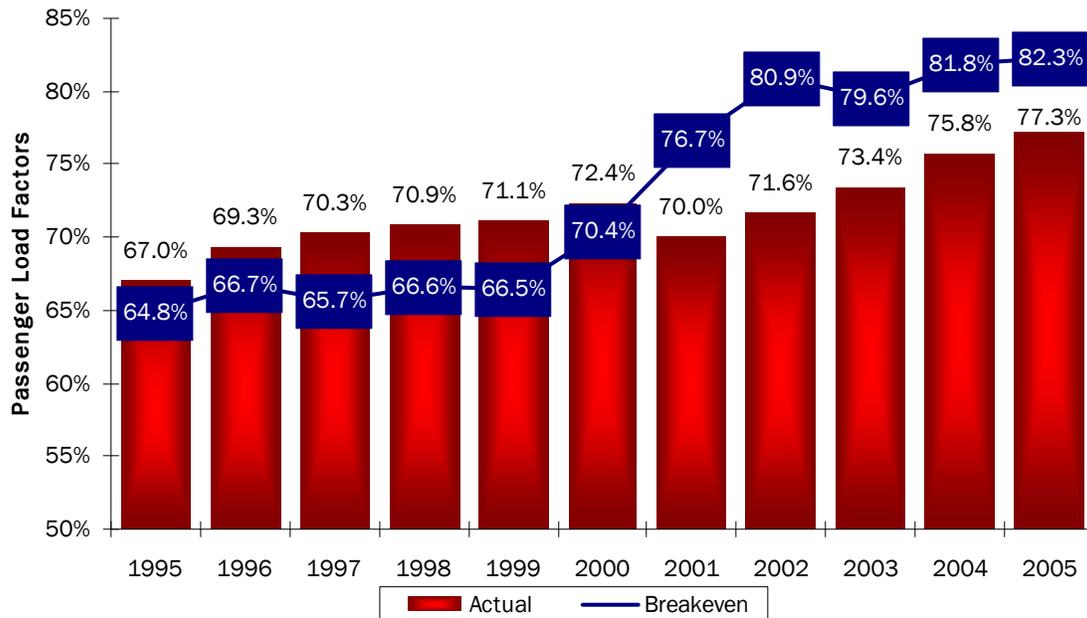
Airline planners have two primary concerns in evaluating air service opportunities: the airport's air service readiness and capability and the level of air travel demand. Airline planners evaluate air travel demand by considering current air service, demographics, and air service competition. Historical air travel data, reported by airlines to the US DOT, provide an indication of how the market has responded to existing or historic air service. While virtually all markets have a demand for air service, it is an expensive means of transportation. Therefore, the issue becomes the level of demand that exists and the price that can be charged that is compensatory to the airlines. The price air travelers will pay for air service depends on how they value their time savings and convenience. This places business travel in the spotlight since speed and convenience generally have the greatest value to these travelers. Airline planners also consider population, population growth, and disposable income. Other factors are the proximity of neighboring airports, the amount of service these airports receive, and whether these airports are served by a low cost carrier. All of these issues affect the demand for air service and whether a community will use new or expanded air service.

Every airline has what is referred to as a break-even load factor. This factor is the percentage of the seats the airline has in service that it must sell at a given yield, or price level, to cover its costs. Since revenue and costs vary from one airline to another, so does the break-even load factor. Escalating costs push up the break-even load factor, while increasing ticket prices can have just the opposite effect, pushing it lower. It is estimated that with the current price of fuel, the major/national airlines need load factors in the 80 percent range to break even. Airlines typically operate on small margins. The sale of just one or two more seats on each flight can mean the difference between profit and loss. A higher percentage of filled seats does not necessarily mean the airlines make money.

As shown in **Exhibit 2-8**, the breakeven passenger load factors for the network carriers are at record highs. In the late 1990s, their breakeven load factor was about 66 percent. As depicted in the graph, the actual load factors were around 70 to 71 percent during the same period. This translated to profits for the airlines during the late 1990s. However, by 2001, the gap between the actual and breakeven load factors widened. Low airfares coupled with higher airline costs mean more seats need to be filled to avoid losses. By 2002, the breakeven load factor reached 81 percent and the actual load factor was just 72 percent, reflecting the losses incurred by the airlines. United Airlines had one of the highest breakeven load factors, reaching 98.1 percent in the fourth quarter of 2002. In the first quarter of 2005, the industry wide breakeven load factor of (83.2 percent) was the highest recorded. The actual load factor by major U.S. carriers has remained between 71 and 75 percent since 2002. During 2006, passenger load factors reached 78.8 percent for the first six months of the year. Second quarter 2006 earnings among U.S. passenger airlines showed the highest profit margins realized since 2000, 7.9 percent on average.



Exhibit 2-8
Actual and Breakeven Load Factors of Major U.S. Carriers



Source: Air Transport Association.

With increased seating capacities comes a higher break-even load factor in order for service to be profitable. **Table 2-10** presents a listing of the typical route economics associated with various types of aircraft, based on aircraft size and market load factors.

Table 2-10
Typical Route Economics for Operating Airline Service

Aircraft Size (Seats)	Load Factor Required	Minimum Number of Daily Roundtrips	Required Number of Annual Enplanements
126 (Jet)	80+%	2 to 3	75,000 to 150,000
50 (Regional Jet)	70+%	2 to 3	26,000 to 38,000
37 (Dash 8 Turboprop)	70+%	3	28,000+
32 (Saab 340, Dornier 328)	70+%	3	25,000+
19 (Jetstream, Beechcraft)	75%+	3	16,000+

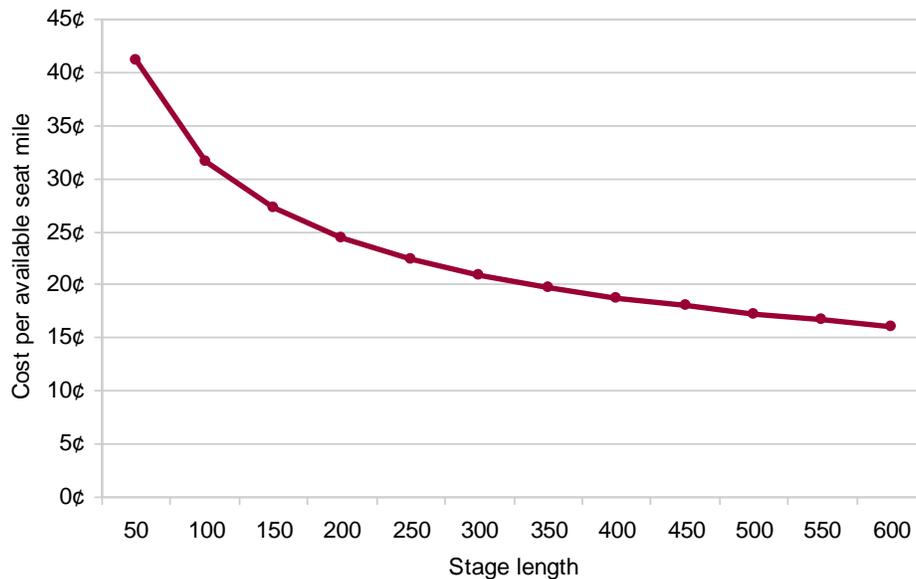
Source: Wilbur Smith Associates

The cost of operating a regional jet roundtrip to a point in Iowa varies by distance, by airline, and hub. For example, the estimated cost of Northwest Airlink operating one daily Canadair Regional Jet 200 (50 seats) flight between Minneapolis/St. Paul and Cedar Rapids, a 219-mile flight segment, is \$4,600 per roundtrip or \$1,679,000 annually. Due to the short distance and use of regional jet equipment, this is relatively high cost service. At a 70 percent load factor (35 passengers) inbound and outbound, Northwest Airlink would need to realize revenue of \$66 per passenger onboard as a



local fare or share of a connect fare to breakeven. If the load factor was only 60 percent, \$77 per passenger onboard would be needed to breakeven. **Exhibit 2-9** shows the relationship between the costs of operating aircraft versus the stage length. Shorter haul service is more expensive to provide.

Exhibit 2-9
Generic Aircraft Operating Cost Variation by Distance



Source: APGDat

Information presented in this section will be considered as recommendations for maintaining and improving commercial airline service at the commercial airports in Iowa are developed later in this report.

REGULATORY PROGRAMS

Vision 100, the Century of Aviation Reauthorization Act, reauthorized federal aviation programs through fiscal year 2007. This bill set spending levels for Airport Improvement Plan (AIP), Essential Air Service (EAS), Small Community Air Service Development Program (SCASDP), and other programs. Both EAS and SCASDP have been and are important to the commercial airports in Iowa. The scheduled commercial airline service at three of the eight commercial airports in Iowa is supported with funding from EAS. Several of the airports have also been awarded grants from SCASDP which have been used to help either maintain or improve commercial airline service.

Essential Air Service (EAS)

Following the deregulation of the airline industry in 1978, it became apparent that small communities could be at risk of losing commercial airline service. The EAS program was established



to insure at least a minimal level of scheduled airline service to those communities. In order for an airport to be eligible for EAS, the airport must have received scheduled commercial passenger service as of October 1978 and may not be closer than 70 miles to a medium- or large-hub airport (Chicago, Minneapolis, Kansas City, Milwaukee, Omaha, or St. Louis). Subsidy requirements per passenger enplaned must be less than \$200 unless the airport is more than 210 highway miles from the nearest medium- or large-hub airport. Burlington, Fort Dodge, and Mason City currently receive EAS.

The original intent of the EAS program was to maintain air service until such time that demand grows and the subsidy is no longer be needed. In reality, for most communities, once they start to receive the subsidy, it is needed on a permanent basis. As noted, the amount of funding needed to support EAS and the number of communities participating in the program is growing. There are fundamental problems with the program. Service is minimal and often insufficient to capture existing demand. Fare levels, left at the discretion of the air service provider, are frequently high. Effective code share arrangements are only one of the factors USDOT considers in selecting the air service provider. When code shares are absent, this increases the cost of air travel and reduces connecting convenience and the general attractiveness of the service. These shortcomings can result in reduced use of air service at the airport involved, increasing the per passenger subsidy needed to support even the most minimal levels of scheduled service.

Another issue clouding the future of EAS is the diminishing availability of smaller aircraft to serve EAS markets. The number of carriers bidding to provide EAS service is declining as a result. Proposed reauthorization includes changes for EAS. Key among those changes is limiting funding to \$50 million. Since this amount of annual funding would not be sufficient to provide subsidies to all communities currently participating in EAS, communities would be ranked in order of their “isolation” for the ability to receive funding. While it’s too early to know with any certainty if and how EAS will change, many of the changes that are being considered at this time could have an adverse impact on the three commercial airports in Iowa that are in the EAS program.

Under Public Law 100-223, carriers participating in the EAS programs are required to provide:

- Service to a hub airport, defined as an FAA-designated medium- or large-hub airport
- Service with no more than one intermediate stop to the hub
- Service with aircraft having at least 15 passenger seats at communities that averaged more than 11 passenger enplanements a day in any calendar year from 1976-1986
- Under certain circumstances, service with pressurized aircraft
- Flights at reasonable times taking into account the needs of passengers with connecting flights

Based on current standards, the USDOT strives to provide three round-trips per day to EAS communities on at least 19-seat aircraft. This scheduled service connects EAS communities to a major hub airport and provides the opportunity for passengers boarding a flight in a small EAS community to connect with the U.S. national air network.

All three of the commercial airports in Iowa that have EAS (Burlington, Fort Dodge and Mason City) all recently had grants awarded to carriers to provide service for two years. Current service and



subsidies will be discussed in each airport's individual action plan. When those plans are prepared, updated information on any changes to EAS will also be provided.

Small Community Air Service Development Program (SCASDP)

The SCASDP was created in 2001 as a part of the Wendell H. Ford Aviation Investment and Reform Act for the 21st Century. It was authorized to fund up to 40 air service development grants per year for airports classified as small-hub, non-hub, or non-primary. Although initial legislation authorized funding from 2001 through 2005, money for the program was not realized until 2002. In 2003, new legislation re-authorized the program through 2008. From 2002 through 2005, \$20 million annually was appropriated by Congress for the program. In 2006, funding for the program was halved to \$10 million. Continued funding in the future is dependent on governmental budget decisions.

The Small Community Air Service Development Program provides grant-in-aid financial assistance to small communities seeking to improve their air service. The primary objective of the program is to secure enhancements to air service that will be responsive to a community's transportation needs and whose benefits can be expected to continue on after the initial investment is made. In the spring of 2000, the Wendell H. Ford Aviation Investment and Reform Act was signed into law. This Act established a new program designed to help smaller communities to enhance their air service. Per the Vision 100-Century of Aviation Reauthorization Act, this program is authorized through fiscal year 2008. The Small Community Air Service Development Program provides a maximum of 40 grants each year. There is no specified limit on the amount of grant money awarded to recipient airports. In fact, individual airport grants have ranged between a low of \$20,000 to a high of \$1.6 million. Each state is limited to a maximum of four grants in a given year. The Small Community Program provides considerable flexibility in how funds can be used to implement a community's grant proposal. Once distributed, grant money can be used to fund advertising or promotional activities aimed at improving the air service to the community. In addition, grant funds can also be spent on new studies designed to measure air service deficiencies or to measure air traffic loss of diversion to other neighboring communities. Furthermore, grants awarded under the Small Community Air Service Development Program can be used to provide financial incentives, including subsidy or revenue guarantees, to air carriers in conjunction with their provision of air service or the fare levels charged, or to ground service providers in providing access to air transportation services.

Several airports in Iowa have received US DOT Small Community Air Service Development grants to address and improve local air service. The following airports have been the recipients of grants:

- **The Eastern Iowa Airport:** In 2006, Eastern Iowa Airport received a \$200,000 Small Community Air Service Development grant award and offered an accompanying local match of \$120,000. The stated goals of this grant application are to provide additional routes, upgrade existing aircraft, and to support improved air service with dedicated marketing funds. The airport is targeting new service from Trans States Airlines.
- **Sioux Gateway Airport:** In 2004, Sioux City received a grant for \$609,800. The grant was originally to be used for a revenue guarantee for SkyWest service to Salt Lake City. However, when Delta entered bankruptcy, the carrier could not commit to beginning service at Sioux City and part of the grant expired. Some of the grant funds were used for the purchase of ground handling equipment and a local frequent flyer reward program.



- **Waterloo Regional Airport:** Waterloo Regional Airport also received a grant in 2004 for \$550,000 to market the airport and encourage new regional jet service. A local public-private partnership contributed an additional \$100,000 to the program in funds and services. To date, most of the grant funds have been put towards local marketing efforts.
- **Dubuque Regional Airport:** In 2003, Dubuque received \$610,000 in federal grant funds. The grant focused on marketing and retention of the existing air service market. Retention efforts focused on airport/air service marketing and the creation of a frequent user program. The community supported the program through the development of a \$250,000 travel bank. The funds in the travel bank were used to support an additional flight on American Eagle service. The program also included a fuel rebate for American Eagle. The program has ended and American Eagle has maintained the additional service at Dubuque.
- **Mason City Municipal Airport:** In 2002, Mason City was the recipient of a \$600,000 grant. The business community supported the grant to add one additional daily flight on Mesaba to Minneapolis with \$250,000 in local seat guarantee funds. However the grant was terminated when the community could not get a commitment from Northwest and Mesaba to provide additional service.

Given the desire to reduce the federal budget and based on current reauthorization language, there is some possibility that this program will be discontinued. However, the SCASDP program, as it currently exists, could be a source for needed incentives.

CHANGES IN BUSINESS-RELATED AIR TRAVEL

Business travelers are usually high yielding passengers for the airlines; these travelers have specific time constraints. Businesses use both commercial and general aviation to enhance employee productivity and efficiency. In total, 1,300 general aviation aircraft are registered to Iowa corporations.¹⁴ In order to optimize their valuable time, businesses want to move from origin to destination with minimal delays. In light of cramped quarters spurred by higher aircraft load factors on commercial aircraft and longer security and check-in times at some commercial airports, some business travelers are seeking alternatives to scheduled commercial airline travel.

Beginning in 2001, changes in the consumer behavior patterns of business travelers negatively impacted U.S. air carriers. Several changes in business traveler behavior cited by the Massachusetts Institute of Technology include:

- Decelerating U.S. economic growth beginning in 2001 led to lower levels of business travel air service demand.
- New security measures for airports enacted after September 11 added to travel time for business travelers; the amount of time spent in an airport prior to flight boarding increased.
- A reduction in overall air network capacity resulting from carriers' need to reduce overall operating costs lead to the elimination or reduction in flights between cities that can be reached in a 4 to 5 hour drive.

¹⁴ Iowa Department of Transportation, Office of Aviation



Business travelers are now more likely to bypass aviation altogether and drive between origin and destination for trips 500 miles or less.¹⁵ Between 2000 and 2005, passenger traffic in short-haul markets declined 13 percent, compared to a 15 percent increase in long haul markets. During the second quarter of 2006, business travelers paid more for one-way fares than they had at any time since 2001.

In 2000, the Iowa Department of Transportation published a *Committee on Air Service Report to the General Assembly* detailing the most critical air service issues throughout the State. As part of this report, the increasing importance of fractional general aviation ownership programs as an alternative to commercial airline travel was documented.

In the past, business travelers often relied on commercial aviation to move from origin to destination faster than otherwise possible via surface transport. In today's environment, many air carriers are reducing operating costs in part by scaling back air service offerings. This creates an obstacle for business travelers who need to meet with customers in smaller markets or in cities less than 500 miles away.

General aviation has always had a role in supporting business travel. General aviation includes private pilots using their own aircraft for business trips, fractional aircraft ownership, air taxis, business charters of all types, and corporate aircraft including business jets. Many times general aviation is used as a result of the lack of satisfactory scheduled air service.

There are several specific advantages that general aviation offers business travelers. One significant advantage is a more robust airport network. Business travelers using general aviation can reach points not served by commercial airlines by using general aviation airports. At commercial airports, business travelers must check-in prior to their flight, check baggage, and proceed through security screening before boarding. General aviation activity has grown nearly seven percent nationwide since 2001. Business aviation is particularly appealing for companies who need to conduct multiple site visits in one day. By using general aviation these companies reduce travel time by avoiding flight check-in, security screening, and connecting flights to reach multiple locations.¹⁶

Access to general aviation has become increasingly affordable in recent years through fractional ownership programs. In 2005, Aviation International News reported that the average price for a pre-owned Hawker 400XP was just more than \$5.3 million. NetJets, a company selling fractional aircraft ownership, offers fractional shares on Hawker 400XP aircraft starting at \$406,250. Fractional ownership programs provide 50 flight hours per year; agreements are initially written as five-year contracts through NetJets. Fractional ownership providers such as NetJets offer arrangements from in-flight catering to ground transportation.¹⁷

Costs associated with using general aviation for business travel may be reduced by the advent of Very Light Jet (VLJ) aircraft. The VLJ aircraft will seat approximately five to seven people and can fly over 1,000 miles at speeds approaching 460 miles per hour. As of December 2006, only VLJ aircraft built by Eclipse Aviation and Cessna Aircraft Company have received FAA certification. Aircraft costs range from \$1.5 million for the Eclipse aircraft to \$2.6 million for the Cessna aircraft. The FAA

¹⁵ Business Travel Coalition and Federal Reserve Bank of San Francisco.

¹⁶ Abc7news.com, "Aviation Battle Over Rise In Corporate Jet Travel," September 2006.

¹⁷ www.NetJets.com



Aerospace Forecast for fiscal years 2006 through 2017 projects that there will be 100 VLJs flying in their first year of operation, with the number of VLJs growing by 400 to 500 per year thereafter and reaching nearly 5,000 by 2017. Projections by the General Aviation Manufacturer's Association are similar, projecting the addition of between 350 and 500 VLJs a year. The cost for using VLJ service is anticipated to range from \$1 to \$3 per mile traveled.

Since these aircraft have just been certified, predicting their impact is speculative, but it is unlikely that they will significantly affect scheduled commercial air service. Rather than general aviation business travel significantly affecting scheduled commercial air service, the reverse is true. Deteriorating scheduled air service may provide stimulus for general aviation business travel.

Depending on their destination, a business traveler seeking direct service from an airport may not be able to fly nonstop. Instead, the traveler may have to fly to a nearby hub, deplane, and enplane onto a different connecting flight to reach their destination. In some cases multiple connections may be needed. In order to bypass the commercial passenger airline system, business travelers may increasingly use general aviation in order to fulfill selected air travel needs. It is not anticipated, however, that increased use of general aviation for business travel will erode the passenger base at the commercial airports in Iowa.

SUMMARY

As this chapter has demonstrated, commercial airlines in the U.S. have experienced escalating costs that have resulted in a general contraction in the industry, airline bankruptcies, and fewer opportunities for new airline service. In order just to breakeven, carriers have cut capacity, increased fares, and hoped to increase their average load factors for each departing flight. Most network carriers that were forced to declare bankruptcy have now re-organized and have emerged from bankruptcy. At the writing of this report, Northwest is the only network carrier that remains in bankruptcy. While needing to increase fares to cover increased operating costs, there has been corresponding pressure on the network carriers to actually lower their fares to maintain their market shares in light of increased penetration by LCCs into many markets. While the commercial airports in Iowa have limited low cost carrier service, LCCs are offering service at several Border Airports included in this study.

Many of the network carriers are re-visiting their hub and spoke operations and are re-evaluating the relationships that they have with regional partners who feed their hubs. Commercial airline service at the airports in Iowa is extremely dependent on the hub and spoke system and on the relationships that regional carriers who serve the airports in the State have with their network partners. Changes in the hub and spoke system and/or current partnerships both have the propensity to impact the State's current and future air service.

An objective of this study is to provide information to the commercial airports in Iowa concerning viable strategies for maintaining and/or improving commercial airline service. Later portions of this study will review information that airline route planners consider when evaluating service options. To attract new airline service and in some cases to support existing service, the commercial airports in Iowa have relied on the small community air service development program and on essential air service.



While business travelers may increasingly use general aviation for their air travel, it does not appear that this increased use presents any near term threat to passenger levels at the commercial airports in Iowa.

Information presented in this chapter provides an educational resource for those who will review this report and those who may be active on the local level in air service retention and recruitment. This chapter will be used to support subsequent portions of the analysis presented in the remaining chapters of this report.