

**Innovate, Consolidate or Liquidate: Meeting the Challenges of the  
Second Century of Flight**

By

Darryl Jenkins  
Visiting Professor  
Embry-Riddle Aeronautical University  
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## **Introduction**

Starting with the NASDAQ meltdown in 1999 and continuing through the events of 9/11, domestic airlines have undergone a period of significant upheaval, resulting in the most significant changes since deregulation nearly 30 years ago.

The purpose of this discussion paper is to:

- ✓ Examine the continuing changes taking place in the domestic airline industry;
- ✓ Outline additional changes needed to ensure a robust and competitive industry; and
- ✓ Raise questions about implications that these changes will have on long-standing regulatory policy.

This discussion paper serves as an introduction to some of the issues that will be examined at a meeting to be held at the National Press Club in Washington, D.C. on the morning of April 7, 2004.

Information for this meeting can be found at the following Web site:

[http://www.erau.edu/er/events/airline\\_econ\\_seminar.html](http://www.erau.edu/er/events/airline_econ_seminar.html)

Interested parties are also invited to submit papers on these subjects for Web publication and distribution at the April 7 conference.

The discussions in this paper are my thoughts only and do not represent the views of Embry-Riddle Aeronautical University, or the views of other speakers. In addition, my ideas about the domestic industry are mostly based on observations. Discussions that arise from this paper are working hypotheses that need to be verified.

## **Thesis Statement**

***As low-cost carriers (or point-to-point carriers) become the price leaders on more routes, the current pricing system used by the legacy (or network) carriers will have to change. A direct result of this pricing change will be another round of restructuring by the network carriers.***

## **Overview – Innovate, Consolidate or Liquidate**

In order to survive during the second century of flight, network carriers will have three options:

1. Innovate – to change their business practices by lowering costs and adopting a more rational pricing structure.
2. Consolidate – to rationalize capacity or eliminate competitors, thereby increasing yields.
3. Liquidate – history has not been kind to airlines that fail to adapt to meet new challenges.

To innovate, network carriers will need to continue to cut costs. High costs, along with current debt levels, will ultimately force many of the major network carriers to go through Chapter 11 restructuring, which may become the most innovative means to cut costs.

Let me explain why. Over the next three to five years, the only strategy for network carriers to compete is to match prices and lose money. To not compete will be to lose customers, which is not a happy choice for

**“Over the next three to five years, the only strategy for network carriers to compete is to match prices and lose money.”**

any airline executive to face. As a result, the current, very painful, process will continue into the future. Even if there is an economic upturn, it is doubtful that we will ever return to the high fares of the 1990s.

The second choice is consolidation, which has been argued in the industry for years. The argument centers on the elusive economic concept of “economies of scale.” According to proponents of this argument, if the network carriers consolidate, they will be able to lower their costs. Some believe that it is inevitable, necessary, and even desirable. Others hate even the mention of the word. However, it is an option and deserves consideration.

Liquidation is the third option. Even here, the opinions are divided as many consider it a worthwhile means to rein in overcapacity. The employees and management of potential liquidating airlines will find this the most onerous, yet it is the one that hangs over all of the network carriers if they do not innovate.

Each of these three options carry their own public policy issues. Legislators and regulators have historically advocated policy that favored “new entrants” in many cases. The beneficiaries of this policy were the very same low-cost carriers that today are experiencing growth and profits. Many argue today that today’s regulatory playing field must be

leveled, treating the low-cost carriers and network carriers on equal terms.

Policy that relates to issues such as anti-trust, pricing and foreign ownership limits must all be put on the table and examined. Those who advocate these views believe that a lasting policy shift in each of these areas is needed to create a domestic commercial airline industry that is sustainable well into the future.

## **Background – Pricing Issues Drive Many Changes**

In 1998, I wrote a paper on Southwest Airlines in which I predicted that Southwest would become the largest carrier of domestic traffic within five years. Southwest has accomplished this. In that paper, I also discussed the need for network carriers to change their pricing and lower their costs dramatically to compete with Southwest.

**“High walk-up fares by network carriers drive passengers, who are unwilling to pay exorbitant prices, to low-cost competitors.”**

In line with the expansion of Southwest, jetBlue and others, including Air Tran, Frontier, Spirit and a reinvigorated America West are changing the rulebooks for the domestic airline industry. In the next couple of years, I expect even more new entrants to follow the standards set by jetBlue to aggressively enter the domestic market.

A primary growth mechanism of the low-cost carriers is, interestingly enough, the walk-up fares of the network carriers. High walk-up fares by network carriers drive passengers, who are unwilling to pay exorbitant prices, to low-cost competitors.

Furthermore, studies have shown that the cap that low-cost carriers place on fares stimulates additional leisure and business travel.

There are other differences as well. If pricing were the only issue, then the network carriers could compete effectively by simply matching prices. Yet even with matching happening in the marketplace, low-cost carriers continue to increase their market share. Part of this is due to product differentials.

### **Product Differentials Competing at BOS**

With the recent expansion of jetBlue into Boston, American Airlines’ reaction shows how future airline wars could play out:

American ran a promotion in which a passenger gets a free ticket anywhere in their network, simply for taking a flight from Boston to a particular destination. For American, the network is the product.

For the sassy start-ups like Southwest, the product is the trip and the low fare. With jetBlue, the product is an airplane ride, unlike most others the traveler has ever experienced.

During the run-up in the price of walk-up fares of the late 1990s, there was an interesting debate among executives of network carriers. On one side were those who felt that as load factors went up, they were justified in pushing walk up fares as high as possible. While on the other side, there were those who felt that the very high fares allowed the low-cost carriers to pick up traffic that was previously not available.

While I have always believed that 90 percent of the passengers on the network carriers were priced properly, those who paid walk-up fares have always bothered me. What was most bothersome to me (as an airline analyst) was that I considered the excessively high walk-up fares part of a capacity problem. The other part of the pricing problem is what I will refer to as the “Pricing Paradox.”

During periods of peak economic growth, fares were expected to go up, but there had never been a run-up as high as in the late 1990s. As capacity expanded, the only way to fill up the back of the plane was to continue charging very low fares. Load factors did go up to record levels, but this was fueled by business travelers who were paying the highest fares and those paying the most discounted fares. When the downturn came, airlines lost the highest paying fare passengers and were left with overcapacity and very low fares.

**“The problem with the current pricing structure of the network carriers is that it is not robust.”**

The problem with the current pricing structure of the network carriers is that it is not robust. By robust I mean it does not take much to shift the economic environment from making money to losing money. As I have shown elsewhere<sup>1</sup>, network airlines, on average, have only made money on one or two passengers per flight during the good years. Upon losing these one or two passengers per flight the network carriers also lost the profit. This is not what I consider sustainable in the long term.

## **Pricing and Capacity Issues**

Four points will be made in this section. The first is that pricing problems are related to capacity problems; the second is that simple is better than complex. The third issue is that the current system is not robust and too easily toppled. The fourth is the relationship between revenue and costs. This last issue is what I refer to as the “Pricing Paradox” - an examination of the difference between maximizing revenue and minimizing costs.

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<sup>1</sup> Small Changes Make Big Differences, Discussion paper, George Washington University, 1998.

Since deregulation, the major airlines have used a pricing system referred to as demand pricing. For purposes of this discussion, I will focus on pricing issues, not inventory (or revenue management) issues.

### **Pricing Problems are Related to Capacity**

The pricing of any product is a function of supply and demand. Let's begin our discussion of pricing with supply problems. Supply is usually defined in the airline industry in terms of available seat miles (ASM). Revenue is measured by many different ways. We will use revenue per ASM (RASM) to keep the measurements the same. Economic theory tells us the relationship between these variables.

1. Gross Domestic Product (GDP) is an important factor in determining industry revenue and thus profits; and
2. Overcapacity (supply) results in losses.

Our current situation is that the country is experiencing a strong economic upturn but network carriers are posting no profits. Given the high level of economic activity, and large amount of cost-cutting that has already taken place, it is reasonable to expect that network carriers would be earning money. They are not.

There are a couple of ways to interpret this. The first is that old relationships of supply and demand are no longer valid. This is not plausible. More likely is that the relationships between supply and profits are the same, but the relationships between revenue and the economy have changed.

The relationships between revenue and the economy will be different in the future because people are no longer willing to pay high walk up fares. This is partially due to the presence of low-cost carriers and partially due to structural changes in the economy. I believe this last statement is true because the high fares were a function of irrational exuberance. Absent irrational exuberance, there is little hope of the revenue levels of the late 1990s.

What people will pay for an airline ticket has changed forever, and that is one of the main determinants of the industry's ills. If prices remain depressed, then cost-cutting efforts by network carriers to date are insufficient.

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## **Simple is Better Than Complex**

After deregulation, airline pricing became much more complicated than it was under the very singular fare structure during most of the regulated era. It was discovered that revenue could be enhanced through price differentiation. The product became differentiated by imposing restrictions on the ticket. Over time, pricing became more and more complicated.

A major reason was “building fences” around the highest fare products which translated into using a large number of restrictions on lower fare products to discourage business travelers from buying those fares.

There are two problems with building fences around high fares. The first is as the system becomes more complicated it becomes more difficult to manage and takes more and more people to handle it. If we examine it simply as a management problem, it becomes clear that the complex system is more prone to error. I offer no other support for this proposition other than I consider it intuitively true.

The second problem with complicated systems is that if passengers do not understand it, they are more likely to distrust it. This results in the passenger going to other systems, such as low-cost carriers or the automobile, that are more easily comprehended.

This is one explanation I offer as to why the low-cost carriers are retaining many passengers who used to fly on the network airlines - they understand the simpler system and trust it more.

## **Current Pricing System is not Robust and is Easily Toppled**

During the late 1990s there was a poster on the wall of every United Airlines airport station. It went something like this: “9 percent of customers account for 38 percent of our revenue.”

This is a good news/bad news thing. A small number of your travelers account for the bulk of your revenue. The question then becomes, “What happens when you lose one of them?”

This is the problem with the current system. It does not take much to put your earnings underwater. This is why the majority of the industry (network carriers) is so cyclical in its earnings and Southwest is not.

Every time there is a disruption to the system, network carriers lose vast amounts of money, wiping out all of the earnings they made in a good year. It is either very low earnings or high losses. I will discuss the role of costs later in this paper, but the way in which network carriers price their products is very problematic and is one of the causations of the earnings cycle.

### **Relationship Between Revenue and Costs: The Pricing Paradox**

In this section, I am not going to discuss RASM and CASM relationships, but rather the challenge of maximizing revenue while minimizing costs. The ideal airline will learn to do both. However, the current situation is that airlines choose either to maximize revenue or to minimize costs. Low-cost carriers are continually focused on, and do a very good job of, controlling costs. In contrast, network carriers, until now, have done a good job of maximizing revenue by being focused on this aspect of the business. This is an interesting dichotomy of two totally different philosophies.

**“The question is: can you make more money by raising fares?”**

The theory for revenue maximization is derived from operations research. If we maximize revenue then we can also minimize costs. This is a static theory and fails to account for the fact that as revenues go up (not earnings, but simply revenue), labor will want its share of the increase.

The idea held by labor was that every cost increase could be met with increases in fares. The boom economic years of irrational exuberance actually made the union arguments true. Then it all changed.

What was always really interesting to me was the network airline’s pricing departments’ reaction to Southwest fares. The complaint was always that Southwest left money on the table, which meant that Southwest could raise fares and make more money.

I believe this argument is incorrect. If Southwest did raise their fares, they would not be able to hold their costs constant. The question is: can you make more money by raising fares?

I am reasonably sure you cannot make more money, over a long period of time, by raising

**Hubs Maximize Revenue**  
Network carriers’ schedules are designed to allow the connecting passengers time to connect with little regard to aircraft utilization and the labor force, or the number of gates, etc. required to handle the connecting banks. In good years, total revenue was greater than total costs, generating enough cash to handle the economic down years, but not robust enough to handle the 1990 – 1993 situation and the current crisis.

fares. The reason is when fares go up, costs rise even more. This may seem a tad odd, but I believe it is true.

Labor does not seem to link pay with earnings but rather fares. A pilot can read in the news that transcontinental fares are at all time highs, but this does not necessarily translate to higher earning and as a result, labor believes management hides money.

This is why every fare increase causes costs to go up by even greater amounts. Money is supposedly being hidden and management can raise fares to cover the increased costs.

This is the “Pricing Paradox.” It is the result of the worst labor relationships conceivable.

The notion that Delta pilots should have a United-plus contract, was a function of them viewing themselves as rock stars, which they are not. Management made things worse because finance departments instructed negotiators to drag out talks because of the time value of money, which only made the unions more angry.

Costs continued to rise and are now far beyond what revenue is – and will be – for the network carriers for some time to come. Usually, given the current high levels of GDP, enough traffic at high enough fares would be generated to make money. This is no longer true.

**“Airlines should always avoid the temptation of raising fares above certain levels, even if economic conditions may seem to justify the move.”**

At the end of the day, the sustainable pricing policy may well be to keep fares in line with costs, as paradoxical as it sounds. Airlines should always avoid the temptation of raising fares above certain levels, even if economic conditions may seem to justify the move. The policies of Southwest and others to cap fares is good business for maintaining low-costs.

### **Three Airline Strategies**

For the airline industry to weather the current situation and successfully position a long-term strategy, I believe there are three options.

#### **Bankruptcy as an Innovative Strategy**

Innovation is generally the outcome of a flexible work environment. It is in this area that start-ups rather than network carriers have the

advantage. Ultimately, this will translate into increased productivity – and by this I mean there will be fewer workers.

In response to recent events, network carriers are undergoing a very painful restructuring. In the case of US Airways and United, this involved Chapter 11 bankruptcy restructuring. Both airlines were able to cut their costs. United Airlines will probably exit bankruptcy with costs nearly in line with Continental, which used Chapter 11 twice, resulting in a lean cost structure. Others like American were able to make cuts with the threat of Chapter 11. As a matter of fact, the network carriers with the lowest costs will all have gone through Chapter 11 or been at the brink.

With the continued growth of low-cost carriers, it is doubtful that any of the cuts that network carriers have made will be sufficient. More cost-cutting will be needed.

It is not simply a matter of unit costs, but also the problem of excessive debt levels. Given the current level of debt in the industry and the success of American and United (and to some degree US Airways, though that airline recognizes that its costs must be reduced further in order to remain competitive) in cost cutting, more and more pressure will be put on the other network carriers to also file for Chapter 11 to compete with the reorganized network carriers.

The chart below shows the current debt levels of the network carriers. It is quite certain that this high debt level cannot be maintained given the current earnings record.

### Adjusted Net Debt as Percent of Total Revenues

Airline	2000	2001	2002	2003	2004E	pp change 2004E vs. 2000
Southwest	39%	27%	32%	25%	24%	-14.09
US Airways	86%	103%	166%	97%	88%	2.03
America West	110%	114%	131%	113%	114%	4.07
Alaska	67%	82%	83%	83%	80%	13.03
Midwest Express	42%	50%	46%	56%	60%	17.89
Continental	83%	136%	152%	144%	103%	19.59
Northwest	73%	85%	111%	118%	119%	46.08
American	54%	97%	118%	105%	101%	46.72
Delta	76%	115%	132%	140%	128%	52.66
United	80%	113%	159%	174%	149%	68.76

Source: Vaughn Cordle, company reports, Goldman Sachs Research estimates

Debt is always coming due and I expect at least one network carrier to be on the brink of Chapter 11 very soon.

However, network carriers are not simply competing amongst themselves, but with much more robust low-cost carriers. Pricing will have to change and costs will have to come down. It is not enough to lower your costs to equal those of Continental; Southwest and jetBlue are the main competitors. Chapter 11 may become the new innovation for the domestic industry.

It appears that the current level of restructuring is insufficient and will continue for some time. The pain is just beginning.

### **Consolidation as a Strategy**

There are fewer topics that engender more emotion in this business than consolidation. Although this topic has been constantly discussed since deregulation, I believe that none of those arguing in its favor think it will happen over the next five years.

The current topic of discussion is restructuring and that will be the main topic for some time to come.

After the current round of restructuring is more complete, the forces of consolidation will again rear its head and will need to be discussed. Many will advocate a regulatory policy that will favor consolidation of the industry, not just among U.S. carriers, but on a global scale.

### **Liquidation as a Last Resort**

Liquidation is the third option available to the airline industry.

So far, government regulators have feared this option as much as they fear consolidation. With continual massive bailouts, the current level of capacity is nearly as great as it was during the runaway times of the late 1990s. However, pricing levels remain low.

**“I favor liquidation over bailing out management, or labor unions who refuse to respond to the realities of the marketplace.”**

I favor liquidation over bailing out management or labor unions who refuse to respond to the realities of the marketplace. When Pan Am and Eastern failed, others stepped in and made money on assets that added value, such as the DCA-LGA shuttle or Pan Am’s Heathrow slots. All of this suggests that there is a need to rein in capacity. In the absence of

this, it is highly likely that at least one of the network carriers will liquidate in the near future.

Somewhere there needs to be restraint, and I do not see it happening.

### **Conclusion: Outlook for Future Competition**

If we look at Appendix One, we see the top 420 airports listed along with their traffic counts. A careful examination shows that nearly 90 percent of the traffic is concentrated in the top 80 airports. The other 360 compete for approximately 10 percent of the total traffic.

In essence, we could eliminate these other 360 airports with little disturbance to the system. It would probably be traumatic for those living in these communities, but in the aggregate, the country would be well served.

Two problems emerge from this argument. The first and obvious issue is that small communities' air service problems will continue to increase. There are simply too many airports supporting too few travelers.

The second is that there are only 100 airports with the majority of the traffic. If we break this list down, we find that the top 50 account for 75 percent of the traffic. Of that 50, 20 are big hubs. So there are about 30 spokes with good traffic that are not currently large hubs and they are vulnerable to attack from low-cost carriers.

Of these 30, 20 are on the east coast. The newest crop of start-ups are likely to concentrate on these markets at first.

It may turn out that there are surprises out there like Fort Lauderdale. This was a lazy non-growth airport before Southwest and jetBlue turned their sights on it.

At the same time, there are start-ups like Independence Air, using smaller jets with higher frequency into both large and medium sized cities. Even with the entrance of Independence and jetBlue, with relaxed pricing structures, small cities will continue to be overlooked for what I consider sane economic reasons.

Being able to serve these uneconomic cities will be a problem that will plague us for some time to come.

The larger cities will continue to experience increased capacity and with it, lower fares. As the number of start-ups increases there will come a point where they will begin bumping into each other.

At a certain point in the future, we will also see a consolidation of the low-cost carriers. That is further down the road, and before it happens, the low-cost carriers will begin invading the fortress hubs. If they concentrate only on originating traffic at the hubs, it will be very hard for network carriers to survive.

This is why the network carriers must continue to transform themselves. The alternative is their own liquidation.

There are other issues to argue and many believe that the network carriers are dinosaurs in need of extinction. I personally do not share that viewpoint and believe the country is better off with many different models and standards. I doubt that Southwest and jetBlue will ever play the role in global aviation that the network carriers currently hold. Until that time comes, the old limping dinosaurs are needed, but they are only needed if they can right their own ships. Undoubtedly, this process will be painful.

## Appendix One

### 2003 Traffic for Top 420 U.S. Airports

Airport	Code	Total Number of Passengers	Percentage of Total Passengers	Cumulative Percentage
Los Angeles Intl C	LAX	13,359,920	3.4487%	3.4500%
McCarran Intl N	LAS	13,257,820	3.4223%	6.8710%
O'Hare Intl I	ORD	12,054,320	3.1116%	9.9826%
Orlando Intl F	MCO	11,178,510	2.8856%	12.8682%
Wm B Hartsfield G	ATL	11,155,830	2.8797%	15.7479%
Sky Harbor Intl A	PHX	10,493,310	2.7087%	18.4566%
La Guardia N	LGA	9,286,170	2.3971%	20.8537%
Dallas/Ft Wor Int T	DFW	8,527,590	2.2013%	23.0550%
Denver Intl C	DEN	8,359,280	2.1578%	25.2128%
Seattle/Tacoma In W	SEA	8,195,410	2.1155%	27.3283%
Newark Intl N	EWL	8,078,940	2.0855%	29.4138%
Fort Laud Intl F	FLL	7,757,990	2.0026%	31.4164%
Logan Intl M	BOS	7,741,930	1.9985%	33.4148%
Baltimore/Wash Intl	BWI	7,227,070	1.8656%	35.2804%
Tampa Intl F	TPA	6,928,290	1.7884%	37.0688%
San Francisco In C	SFO	6,761,460	1.7454%	38.8142%
Lindberg Field C	SAN	6,499,460	1.6777%	40.4920%
St Paul Intl M	MSP	6,264,240	1.6170%	42.1090%
John F Kennedy In N	JFK	6,254,760	1.6146%	43.7236%
Wayne County M	DTW	6,205,090	1.6018%	45.3253%
Philadelphia Intl P	PHL	6,051,600	1.5621%	46.8874%
Metropol Oakland C	OAK	5,809,500	1.4996%	48.3871%
Chicago Midway I	MDW	5,526,660	1.4266%	49.8137%
Honolulu (Intl)	HNL	5,516,440	1.4240%	51.2377%
Ronald Reagan Ntl D	DCA	5,407,000	1.3957%	52.6334%
George Bush Intc T	IAH	5,033,540	1.2993%	53.9328%
Salt Lake Intl U	SLC	4,801,180	1.2394%	55.1721%
Portland	PDX	4,499,990	1.1616%	56.3337%
Lambert-St Louis M	STL	4,445,280	1.1475%	57.4812%
Miami Intl F	MIA	4,432,450	1.1442%	58.6254%
San Jose Mun C	SJC	4,415,240	1.1397%	59.7651%
Moisant Intl L	MSY	4,053,110	1.0463%	60.8114%
Kansas City Intl M	MCI	4,015,490	1.0365%	61.8479%
Dulles Intl D	IAD	4,009,110	1.0349%	62.8828%
Sacramento Metro C	SMF	3,986,850	1.0291%	63.9119%
John Wayne Intl C	SNA	3,814,640	0.9847%	64.8966%
Raleigh/Durham	RDU	3,303,900	0.8529%	65.7495%
Indianapolis	IND	3,178,500	0.8205%	66.5700%
Hopkins Intl O	CLE	3,104,230	0.8013%	67.3713%
SW Florida Reg F	RSW	3,091,830	0.7981%	68.1694%

West Palm Beach	PBI	3,087,620	0.7970%	68.9664%
Nashville	BNA	3,058,340	0.7895%	69.7559%
Pittsburgh Intl P	PIT	2,948,270	0.7611%	70.5169%
Ontario Intl C	ONT	2,860,070	0.7383%	71.2552%
Bradley Intl C	BDL	2,832,800	0.7312%	71.9865%
San Antonio Intl T	SAT	2,761,070	0.7127%	72.6992%
Luis Munoz Marin P	SJU	2,756,100	0.7114%	73.4106%
Robert B Mueller T	AUS	2,729,710	0.7046%	74.1153%
Port Columbus Int O	CMH	2,712,230	0.7001%	74.8154%
Hobby Airport T	HOU	2,691,740	0.6948%	75.5102%
Charlotte	CLT	2,542,830	0.6564%	76.1666%
Providence	PVD	2,391,390	0.6173%	76.7839%
Albuquerque Intl N	ABQ	2,342,030	0.6046%	77.3885%
Hollywood-Burbank C	BUR	2,272,860	0.5867%	77.9752%
Milwaukee	MKE	2,257,910	0.5828%	78.5580%
Kahului, Maui	OGG	2,229,480	0.5755%	79.1335%
Jacksonville Intl F	JAX	2,197,610	0.5673%	79.7008%
Love Field T	DAL	2,129,720	0.5498%	80.2506%
Reno	RNO	2,018,190	0.5210%	80.7715%
Cincinnati/N Ktky O	CVG	1,980,040	0.5111%	81.2827%
Buffalo	BUF	1,759,440	0.4542%	81.7368%
Memphis Intl T	MEM	1,721,740	0.4444%	82.1813%
Tucson Intl A	TUS	1,637,940	0.4228%	82.6041%
Manchester	MHT	1,630,420	0.4209%	83.0250%
Eppley Airfield N	OMA	1,611,930	0.4161%	83.4411%
Norfolk Intl V	ORF	1,506,010	0.3888%	83.8298%
Louisville	SDF	1,484,240	0.3831%	84.2129%
Will Rogers World O	OKC	1,364,340	0.3522%	84.5651%
Anchorage Intl A	ANC	1,269,880	0.3278%	84.8929%
Albany	ALB	1,258,960	0.3250%	85.2179%
Long Beach	LGB	1,239,910	0.3201%	85.5380%
Spokane Intl W	GEG	1,218,760	0.3146%	85.8526%
Birmingham	BHM	1,216,770	0.3141%	86.1667%
El Paso Intl T	ELP	1,202,760	0.3105%	86.4771%
Tulsa	TUL	1,174,400	0.3032%	86.7803%
Boise	BOI	1,173,880	0.3030%	87.0833%
Jm Cox Dayton In O	DAY	1,159,480	0.2993%	87.3826%
Lihue, Kauai	LIH	1,108,980	0.2863%	87.6689%
Rochester	ROC	1,096,710	0.2831%	87.9520%
Greensboro/High Pt	GSO	1,087,300	0.2807%	88.2327%
Kona, Hawaii	KOA	1,073,920	0.2772%	88.5099%
Richmond (Intl)	RIC	1,032,890	0.2666%	88.7765%
Little Rock Reg A	LIT	941,800	0.2431%	89.0196%
Colorado Springs	COS	904,200	0.2334%	89.2530%
Islip (MacArthur) N	ISP	893,940	0.2308%	89.4838%
Grand Rapids	GRR	873,650	0.2255%	89.7093%
Syracuse	SYR	816,920	0.2109%	89.9202%
Des Moines	DSM	770,640	0.1989%	90.1191%

Savannah Intl	G	SAV	744,750	0.1922%	90.3114%
Charleston		CHS	737,260	0.1903%	90.5017%
Madison		MSN	702,060	0.1812%	90.6829%
Palm Springs		PSP	665,410	0.1718%	90.8547%
Pensacola Reg	F	PNS	607,300	0.1568%	91.0114%
Knoxville		TYS	590,360	0.1524%	91.1638%
Mid-Continent	K	ICT	586,100	0.1513%	91.3151%
Greenville/Sptbrg	S	GSP	585,390	0.1511%	91.4662%
Harrisburg Intl	P	MDT	578,400	0.1493%	91.6155%
Hilo, Hawaii		ITO	578,200	0.1493%	91.7648%
Sarasota/Bradenton		SRQ	563,520	0.1455%	91.9102%
Jackson		JAN	554,220	0.1431%	92.0533%
Myrtle Beach Intl	S	MYR	540,700	0.1396%	92.1929%
Harry S Truman	V	STT	535,710	0.1383%	92.3312%
Portland		PWM	528,740	0.1365%	92.4677%
Akron/Canton Reg	O	CAK	503,780	0.1300%	92.5977%
Tallahassee		TLH	501,270	0.1294%	92.7271%
Lexington		LEX	487,870	0.1259%	92.8530%
Burlington		BTV	487,500	0.1258%	92.9789%
Lubbock Intl	T	LBB	465,250	0.1201%	93.0990%
Madison County	A	HSV	448,270	0.1157%	93.2147%
Columbia Metro	S	CAE	446,850	0.1153%	93.3300%
Flint		FNT	433,050	0.1118%	93.4418%
Fresno Air Term	C	FAT	423,720	0.1094%	93.5512%
Harlingen		HRL	395,250	0.1020%	93.6532%
Cedar Rapids		CID	394,760	0.1019%	93.7551%
Westchester County		HPN	380,790	0.0983%	93.8534%
Quad-City	I	MLI	374,960	0.0968%	93.9502%
Midland Intl	T	MAF	369,250	0.0953%	94.0455%
South Bend		SBN	367,650	0.0949%	94.1404%
Atlantic Cty Intl	N	ACY	363,240	0.0938%	94.2342%
Northwest Ark Reg	A	XNA	356,750	0.0921%	94.3263%
Gulfport		GPT	356,440	0.0920%	94.4183%
Amarillo		AMA	353,310	0.0912%	94.5095%
Allentown/Bthl/Est		ABE	339,230	0.0876%	94.5971%
Corpus Chris Intl	T	CRP	337,210	0.0870%	94.6841%
Green Bay		GRB	327,800	0.0846%	94.7687%
St Petersburg Int	F	PIE	327,300	0.0845%	94.8532%
Santa Barbara		SBA	323,800	0.0836%	94.9368%
Key West Intl	F	EYW	321,690	0.0830%	95.0198%
Fairbanks Intl	A	FAI	317,990	0.0821%	95.1019%
Baton Rouge		BTR	317,980	0.0821%	95.1840%
Valparaiso (Ft Wal)		VPS	306,210	0.0790%	95.2630%
Patrick Henry Int	V	PHF	301,610	0.0779%	95.3409%
Billings		BIL	293,970	0.0759%	95.4168%
Mobile (Municipal)		MOB	270,620	0.0699%	95.4866%
Toledo		TOL	267,580	0.0691%	95.5557%
Daytona Beach		DAB	266,280	0.0687%	95.6244%

Bozeman	BZN	260,020	0.0671%	95.6916%
Springfield	SGF	257,810	0.0665%	95.7581%
Sioux Falls	FSD	257,640	0.0665%	95.8246%
Fort Wayne	FWA	257,410	0.0664%	95.8911%
Eugene	EUG	246,940	0.0637%	95.9548%
Roanoke	ROA	244,760	0.0632%	96.0180%
Shreveport Reg L	SHV	243,370	0.0628%	96.0808%
Vail/Eagle	EGE	242,530	0.0626%	96.1434%
Mission/McAlln/Edbg	MFE	237,330	0.0613%	96.2047%
Lansing	LAN	234,450	0.0605%	96.2652%
Fargo	FAR	224,010	0.0578%	96.3230%
Appleton	ATW	219,320	0.0566%	96.3796%
Juneau Intl A	JNU	210,750	0.0544%	96.4340%
Missoula	MSO	208,330	0.0538%	96.4878%
Aspen	ASE	208,300	0.0538%	96.5416%
Charleston	CRW	207,850	0.0537%	96.5952%
Kalamazoo	AZO	206,040	0.0532%	96.6484%
Chattanooga	CHA	203,850	0.0526%	96.7011%
Pasco	PSC	200,130	0.0517%	96.7527%
Medford	MFR	197,490	0.0510%	96.8037%
Melbourne	MLB	192,450	0.0497%	96.8534%
Saginaw/By Cty/Mdld	MBS	191,190	0.0494%	96.9027%
Bloomington-Normal	BMI	190,390	0.0491%	96.9519%
Jackson	JAC	188,710	0.0487%	97.0006%
Evansville	EVV	188,680	0.0487%	97.0493%
Dannelly Field A	MGM	188,220	0.0486%	97.0979%
Rapid City Reg S	RAP	184,000	0.0475%	97.1454%
Lincoln	LNK	178,020	0.0460%	97.1913%
Bay Co F	PFN	177,380	0.0458%	97.2371%
Wilmington	ILM	171,970	0.0444%	97.2815%
Asheville/Hndrsnvl	AVL	169,190	0.0437%	97.3252%
Scranton/Wilkes-Bar	AVP	167,890	0.0433%	97.3685%
Bristol/Kngspt/Jn	TRI	166,100	0.0429%	97.4114%
Bangor	BGR	160,650	0.0415%	97.4529%
Monterey Penin C	MRY	159,070	0.0411%	97.4939%
Peoria	PIA	158,940	0.0410%	97.5350%
Traverse City	TVC	153,070	0.0395%	97.5745%
Bush Field G	AGS	146,090	0.0377%	97.6122%
Charlottesville	CHO	144,530	0.0373%	97.6495%
Hayden C	HDN	143,720	0.0371%	97.6866%
Alex Hamilton V	STX	139,980	0.0361%	97.7227%
Central Wisconsin W	CWA	135,280	0.0349%	97.7576%
Kalispell	FCA	132,240	0.0341%	97.7918%
Erie	ERI	128,250	0.0331%	97.8249%
Lafayette	LFT	128,030	0.0330%	97.8579%
Bismarck	BIS	126,920	0.0328%	97.8907%
San Luis Obis Co C	SBP	122,830	0.0317%	97.9224%
Idaho Falls	IDA	121,990	0.0315%	97.9539%

Springfield	SPI	121,670	0.0314%	97.9853%
Bethel	BET	120,840	0.0312%	98.0165%
Rochester	RST	120,410	0.0311%	98.0476%
Grand Junction	GJT	119,070	0.0307%	98.0783%
Newburgh	SWF	117,350	0.0303%	98.1086%
Bend/Redmond	RDM	117,140	0.0302%	98.1388%
Elko	EKO	115,110	0.0297%	98.1686%
Great Falls Intl M	GTF	113,740	0.0294%	98.1979%
Gainesville	GNV	113,370	0.0293%	98.2272%
Binghamton/End/Jn	BGM	112,020	0.0289%	98.2561%
Duluth Intl M	DLH	107,540	0.0278%	98.2839%
La Crosse	LSE	102,810	0.0265%	98.3104%
Fayetteville Mun N	FAY	99,300	0.0256%	98.3360%
State College P	SCE	96,360	0.0249%	98.3609%
A B Won Pat Intl P	GUM	96,230	0.0248%	98.3857%
Monroe	MLU	85,440	0.0221%	98.4078%
Nantucket	ACK	84,690	0.0219%	98.4297%
Alexandria Intl L	AEX	83,100	0.0215%	98.4511%
Arcata Airport C	ACV	82,450	0.0213%	98.4724%
Grand Forks	GFK	82,390	0.0213%	98.4937%
Ketchikan Intl A	KTN	80,980	0.0209%	98.5146%
Killeen (Mun)	ILE	80,730	0.0208%	98.5354%
Meadows Field C	BFL	79,930	0.0206%	98.5560%
Champaign	CMI	78,330	0.0202%	98.5763%
La Plata County C	DRO	77,930	0.0201%	98.5964%
Montrose	MTJ	75,340	0.0194%	98.6158%
Fort Smith	FSM	75,030	0.0194%	98.6352%
Elmira/Corning	ELM	73,270	0.0189%	98.6541%
North Air Term N	VGT	69,550	0.0180%	98.6721%
Bullhead City	IFP	69,090	0.0178%	98.6899%
Helena	HLN	68,340	0.0176%	98.7075%
Kenai	ENA	67,700	0.0175%	98.7250%
Sun Valley/Hly/Ktch	SUN	67,500	0.0174%	98.7424%
Hoolehua, Kaunakak	MKK	67,140	0.0173%	98.7598%
Minot Intl N	MOT	63,730	0.0165%	98.7762%
Ithaca	ITH	62,760	0.0162%	98.7924%
Hilton Head	HHH	62,180	0.0161%	98.8085%
Hyannis	HYA	61,970	0.0160%	98.8245%
Saipan (is), Marian	SPN	61,720	0.0159%	98.8404%
Sanford	SFB	61,240	0.0158%	98.8562%
Simmons Nott N	EWN	60,660	0.0157%	98.8719%
Laredo Intl T	LRD	59,030	0.0152%	98.8871%
Sitka	SIT	57,820	0.0149%	98.9020%
Bellingham	BLI	56,790	0.0147%	98.9167%
College Station	CLL	56,130	0.0145%	98.9312%
Casper	CPR	56,010	0.0145%	98.9456%
Kodiak Metro Area A	ADQ	54,970	0.0142%	98.9598%
Dothan	DHN	54,210	0.0140%	98.9738%

Gr Canyon Natl Pk A	GCN	53,830	0.0139%	98.9877%
Yuma	YUM	53,660	0.0139%	99.0016%
Columbus Metro G	CSG	52,620	0.0136%	99.0151%
Brownsville	BRO	52,460	0.0135%	99.0287%
Yakima	YKM	52,230	0.0135%	99.0422%
Lanai City, Lanai	LNK	50,020	0.0129%	99.0551%
Kotzebue	OTZ	48,720	0.0126%	99.0677%
Lewiston	LWS	48,020	0.0124%	99.0800%
Nome	OME	47,220	0.0122%	99.0922%
Pocatello	PIH	46,790	0.0121%	99.1043%
Redding	RDD	46,680	0.0120%	99.1164%
Tyler	TYR	46,110	0.0119%	99.1283%
Marquette Co M	MQT	43,820	0.0113%	99.1396%
Carlsbad	CLD	42,790	0.0110%	99.1506%
St George	SGU	42,770	0.0110%	99.1617%
Gunnison	GUC	42,500	0.0110%	99.1726%
Kapalua, Maui	JHM	41,730	0.0108%	99.1834%
Butte	BTM	39,990	0.0103%	99.1937%
Lynchburg	LYH	39,740	0.0103%	99.2040%
Waco Municipal T	ACT	39,610	0.0102%	99.2142%
Aguadilla	BQN	39,440	0.0102%	99.2244%
Salisbury	SBY	39,360	0.0102%	99.2346%
Jacksonville	OAJ	39,080	0.0101%	99.2446%
Dubuque	DBQ	39,000	0.0101%	99.2547%
Abilene Municipal T	ABI	38,600	0.0100%	99.2647%
Beaumont	BPT	37,910	0.0098%	99.2745%
Wenatchee	EAT	37,540	0.0097%	99.2841%
Ellington Field T	EFD	37,100	0.0096%	99.2937%
Lake Charles Mun L	LCH	37,050	0.0096%	99.3033%
Florence	FLO	36,940	0.0095%	99.3128%
Ashland/Huntington	HTS	36,630	0.0095%	99.3223%
Twin Falls	TWF	36,500	0.0094%	99.3317%
San Angelo	SJT	36,080	0.0093%	99.3410%
Sioux City	SUX	35,810	0.0092%	99.3503%
Glynco Jetport G	BQK	35,290	0.0091%	99.3594%
Lawton	LAW	35,170	0.0091%	99.3684%
Wichita Falls (AFB)	SPS	32,900	0.0085%	99.3769%
Golden Tri Reg M	GTR	31,680	0.0082%	99.3851%
Wiley Post A	BRW	31,150	0.0080%	99.3932%
Greenville	PGV	30,410	0.0078%	99.4010%
Flagstaff	FLG	30,210	0.0078%	99.4088%
Albany	ABY	30,160	0.0078%	99.4166%
Santa Maria Pub C	SMX	29,240	0.0075%	99.4241%
Dillingham	DLG	29,110	0.0075%	99.4317%
Muskegon	MKG	29,100	0.0075%	99.4392%
Paducah	PAH	28,440	0.0073%	99.4465%
Dutch Harbor	DUT	28,020	0.0072%	99.4537%
Waterloo	ALO	27,830	0.0072%	99.4609%

Valdosta Reg	G	VLD	27,700	0.0072%	99.4681%
Pago Pago (is), AS		PPG	26,930	0.0070%	99.4750%
Homer		HOM	26,750	0.0069%	99.4819%
North Bend		OTH	26,530	0.0068%	99.4888%
Klamath Falls		LMT	26,170	0.0068%	99.4955%
Williamsport		IPT	26,050	0.0067%	99.5023%
Walla Walla		ALW	26,030	0.0067%	99.5090%
Lewis B Wilson In G		MCN	25,550	0.0066%	99.5156%
Rhineland		RHI	25,360	0.0065%	99.5221%
Portsmouth (AFB)		PSM	24,770	0.0064%	99.5285%
Rota (is), Mariana		ROP	24,730	0.0064%	99.5349%
Farmington		FMN	24,440	0.0063%	99.5412%
Trenton		TTN	24,150	0.0062%	99.5474%
Bemidji	M	BJI	23,200	0.0060%	99.5534%
Pellston		PLN	23,170	0.0060%	99.5594%
Aberdeen		ABR	22,730	0.0059%	99.5653%
King Salmon		AKN	22,630	0.0058%	99.5711%
Pullman/Moscow		PUW	22,300	0.0058%	99.5769%
Texarkana		TXK	22,110	0.0057%	99.5826%
Hancock		CMX	21,800	0.0056%	99.5882%
Columbia Reg	M	COU	21,580	0.0056%	99.5938%
Longview/Klgr/Gldw		GGG	21,160	0.0055%	99.5992%
Port Angeles		CLM	20,290	0.0052%	99.6045%
Bedford		BED	19,610	0.0051%	99.6095%
Martha's Vineyard		MVY	19,260	0.0050%	99.6145%
Oxnard/Ventura		OXR	18,990	0.0049%	99.6194%
Stockton		SCK	18,970	0.0049%	99.6243%
St Cloud		STC	17,950	0.0046%	99.6289%
Eau Claire		EAU	17,630	0.0046%	99.6335%
Meridian		MEI	17,470	0.0045%	99.6380%
Cody/Yellowstone		COD	17,460	0.0045%	99.6425%
Hagerstown		HGR	17,210	0.0044%	99.6470%
Mayaguez		MAZ	16,760	0.0043%	99.6513%
Aniak		ANI	16,480	0.0043%	99.6555%
Tupelo		TUP	16,100	0.0042%	99.6597%
Valdez		VDZ	15,760	0.0041%	99.6638%
Galena		GAL	15,530	0.0040%	99.6678%
Telluride		TEX	15,530	0.0040%	99.6718%
International Falls		INL	14,880	0.0038%	99.6756%
Reading		RDG	14,440	0.0037%	99.6793%
Presque Isle		PQI	14,040	0.0036%	99.6830%
New Haven		HVN	13,910	0.0036%	99.6866%
Mudhole Smith	A	CDV	13,750	0.0035%	99.6901%
Waterfront SPB	A	WFB	13,700	0.0035%	99.6937%
Naples		APF	13,670	0.0035%	99.6972%
Deadhorse/Prudhoe A		SCC	13,630	0.0035%	99.7007%
Chico		CIC	13,610	0.0035%	99.7042%
Petersburg		PSG	13,550	0.0035%	99.7077%

Joplin	JLN	13,470	0.0035%	99.7112%
Brainerd	BRD	13,160	0.0034%	99.7146%
Cheyenne Mun W	CYS	13,070	0.0034%	99.7180%
Santa Fe	SAF	12,830	0.0033%	99.7213%
Decatur	DEC	12,730	0.0033%	99.7246%
Modesto	MOD	12,230	0.0032%	99.7277%
Peach Springs A	DQR	12,030	0.0031%	99.7308%
Mason City	MCW	12,010	0.0031%	99.7339%
Pierre	PIR	11,900	0.0031%	99.7370%
Cedar City	CDC	11,550	0.0030%	99.7400%
Chippewa Co Intl M	CIU	11,470	0.0030%	99.7429%
Gillette	GCC	11,080	0.0029%	99.7458%
Port Hueneme (NAS)	NTD	11,010	0.0028%	99.7486%
Parkersburg/Mariet	PKB	10,830	0.0028%	99.7514%
Laurel/Hattiesburg	PIB	10,350	0.0027%	99.7541%
Inyokern	IYK	10,200	0.0026%	99.7567%
Marion	MWA	10,140	0.0026%	99.7594%
Latrobe	LBE	9,870	0.0025%	99.7619%
Crescent City	CEC	9,600	0.0025%	99.7644%
Koror, Palau Is	ROR	9,560	0.0025%	99.7668%
Morgantown	MGW	9,050	0.0023%	99.7692%
St Marys	KSM	9,010	0.0023%	99.7715%
Johnstown	JST	8,870	0.0023%	99.7738%
Clarksburg	CKB	8,700	0.0022%	99.7760%
Lafayette	LAF	8,700	0.0022%	99.7783%
New Bedford/FI Ri	EWB	8,600	0.0022%	99.7805%
Victoria	VCT	8,500	0.0022%	99.7827%
Quincy	UIN	8,370	0.0022%	99.7849%
Alpena	APN	8,360	0.0022%	99.7870%
Greenville	GLH	8,250	0.0021%	99.7891%
Pendleton	PDT	8,220	0.0021%	99.7913%
Escanaba	ESC	8,020	0.0021%	99.7933%
El Centro	IPL	7,930	0.0020%	99.7954%
Roswell	ROW	7,910	0.0020%	99.7974%
Hoonah	HNH	7,870	0.0020%	99.7995%
Riverton	RIW	7,870	0.0020%	99.8015%
Hibbing/Chisholm	HIB	7,860	0.0020%	99.8035%
Metlakatla SPB	MTM	7,760	0.0020%	99.8055%
New London/Groton	GON	7,710	0.0020%	99.8075%
Unalakleet	UNK	7,710	0.0020%	99.8095%
Jamestown	JHW	7,560	0.0020%	99.8115%
Rock Springs	RKS	7,500	0.0019%	99.8134%
Bar Harbor	BHB	7,490	0.0019%	99.8153%
Cape Girardeau	CGI	7,480	0.0019%	99.8173%
Fort Yukon	FYU	7,440	0.0019%	99.8192%
Burlington	BRL	7,380	0.0019%	99.8211%
Yakutat	YAK	7,300	0.0019%	99.8230%
Merced	MCE	7,270	0.0019%	99.8248%

Wrangell SPB	WRG	7,230	0.0019%	99.8267%
Sheridan	SHR	7,180	0.0019%	99.8286%
Skagway	SGY	7,090	0.0018%	99.8304%
Kodiak Municipal A	KDK	6,970	0.0018%	99.8322%
Athens	AHN	6,880	0.0018%	99.8340%
Fort Dodge	FOD	6,760	0.0017%	99.8357%
Lake Havasu City	HII	6,760	0.0017%	99.8375%
Scottsbluff	BFF	6,720	0.0017%	99.8392%
DuBois	DUJ	6,710	0.0017%	99.8409%
Teterboro	TEB	6,710	0.0017%	99.8427%
Haines Municipal A	HNS	6,660	0.0017%	99.8444%
Laramie	LAR	6,510	0.0017%	99.8461%
Emmonak	EMK	6,350	0.0016%	99.8477%
Merrill Field A	MRI	6,180	0.0016%	99.8493%
Lewisburg	LWB	6,170	0.0016%	99.8509%
Manhattan	MHK	6,160	0.0016%	99.8525%
Mountain Village	MOU	6,140	0.0016%	99.8541%
Cold Bay	CDB	6,030	0.0016%	99.8556%
Watertown	ATY	5,970	0.0015%	99.8572%
Staunton	SHD	5,970	0.0015%	99.8587%
Fort Leonard Wood	TBN	5,670	0.0015%	99.8602%
Lebanon	LEB	5,650	0.0015%	99.8616%
Grand Rapids	GPZ	5,580	0.0014%	99.8631%
Kipnuk SPB	KPN	5,510	0.0014%	99.8645%
Boeing Field Intl W	BFI	5,500	0.0014%	99.8659%
Garden City	GCK	5,480	0.0014%	99.8673%
Owensboro	OWB	5,420	0.0014%	99.8687%
Selawik	WLK	5,350	0.0014%	99.8701%
Hooper Bay	HPB	5,330	0.0014%	99.8715%
Altoona	AOO	5,280	0.0014%	99.8728%
Tau (is), Am Samoa	TAV	5,280	0.0014%	99.8742%
Cortez	CEZ	5,050	0.0013%	99.8755%
Iliamna	ILI	5,010	0.0013%	99.8768%
Provincetown	PVC	4,940	0.0013%	99.8781%
Iron Mountain	IMT	4,840	0.0012%	99.8793%
Friday Harbor	FRD	4,830	0.0012%	99.8806%
Chevak	VAK	4,790	0.0012%	99.8818%
Nulato	NUL	4,680	0.0012%	99.8830%
Muscle Shl/FI/Sh/Tu	MSL	4,650	0.0012%	99.8842%
Pilot Station	PQS	4,650	0.0012%	99.8854%
Noorvik	ORV	4,630	0.0012%	99.8866%
Hays	HYS	4,570	0.0012%	99.8878%