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AIRLINE YIELD MODEL SIMULATING CURRENT INDUSTRY STANDARD  
YIELD

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Bharath C. Guntur

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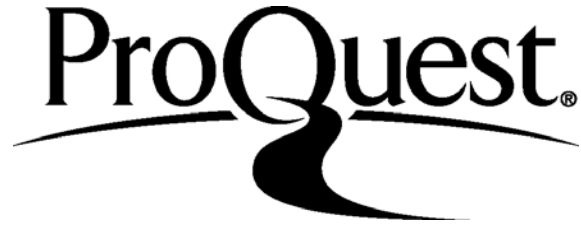
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This thesis is dedicated to my loving parents, Madhava Rao and Siva Rani and my sister, Bhavana Chowdary, who have been supportive all the time throughout my career; without you this wouldn't have been possible.

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## ABSTRACT

Guntur, Bharath C. M.S., Purdue University, May 2013. Airline Yield Model Simulating Current Industry Standard Yield. Major Professor: Denver W. Lopp.

The aviation industry is a capital-intensive market, which depends on huge investments to start and operate an airline company. For airlines to achieve a competitive return on their investments, they depend on developing and maintaining a strong customer base. In order to do so, they implement various strategies to attract customers to improve market share. For airlines to be profitable and sustain competitive markets, various financial factors need to be considered. Among these factors is “yield,” which is the focus of this research project. The project analysis explores the development of a yield model from daily-published airline fares, examines data and determines if a reliable model can be developed which will correlate strongly with the monthly-published domestic airline yield report of the Airlines for America (A4A). Finally, the research seeks to answer the question as to whether or not a model can be used for predicting yield value close to the A4A yield report prior to its release.

## CHAPTER 1. INTRODUCTION

Airlines are one of the most highly utilized modes of transportation in terms of logistics. Airlines have limited inventory per trip. If an aircraft leaves the ground with empty seats, the flight has lost the potential for added revenue, resulting in increased costs. Therefore, airline management attempts to maximize profits per trip by increasing revenue and reducing associated costs by optimizing utilization of the inventory. Yield, quantified as the revenue in cents or dollars per seat mile, is one such measure that helps airlines determine the revenue generated by each paying passenger for each mile flown.

### 1.1 Statement of Purpose

Currently, a common standard used for reference in the airline industry is the Airline for America (A4A) published monthly domestic yield report, (issued approximately the 20<sup>th</sup> of each month). Because ticket fares, the economy, and customer demand are highly volatile on a daily and monthly basis, analyzing yield data published on a daily and monthly basis could possibly assist interested parties gain a more holistic approach to understanding the current and future direction and outlook for airline yields.

Beneficiaries could include airlines, large travel associations and travel managers, credit card businesses, and banks, among others. This could also be very important for stock analysis of airlines and other businesses, as the yield data may reflect current financial results of airlines' monthly revenue potential. This research explores various parameters in developing a yield model based upon United States (U.S.) domestic published daily fares.

### 1.2 Significance

Airlines are huge capital investment businesses and in order to generate revenue, they need to understand the market, schedules, prices, and passenger demand for all routes. Yield is one of the financial factors that measures revenue generated per passenger seat mile. This is determined by dividing the ticket revenue with total passenger miles. If a strong correlation of a monthly yield developed using daily published fares to the A4A report can be determined, it may be possible to design a prediction model for interested parties to obtain a more real time data reference in making financial, operational, or investment decisions.

### 1.3 Scope

This project will involve developing a monthly yield as a foundation in developing a prediction model of A4A yield values at the end of each month prior to A4A publication. The daily yield representation requires collecting a data sample of routes, published daily fares along the sample routes, passenger volume along these routes, and route distances. Once the fare values are tracked using an Excel spreadsheet,

the sample daily yields along the sample routes will be determined. Daily yields for sample routes will be calculated and averaged to obtain the corresponding monthly yield. These monthly data results will be compared with corresponding A4A monthly values to determine a correlation factor. A statistical analysis will be conducted to determine a regression model for predicting A4A monthly yield.

#### 1.4 Research Question

Can a yield model be developed from daily-published airline fares that could simulate current airline industry yield?

#### 1.5 Assumptions

The following assumptions are considered for this model

- Airlines for America yield values will be considered the standard yield value for the airline industry.
- Passenger daily demand is assumed to be the same for each month.

#### 1.6 Limitations

The limitations of this study are:

- The airline routes determined in the yield model are limited to top 250 passenger routes within United States.
- The data is restricted to the top two airlines that hold nearly 70 to 80 percent market share along these routes.

## 1.7 Definitions

*Cost per Available Seat Mile (CASM):* “The average cost of flying an aircraft seat (empty or full) one mile. Often referred to as a ‘unit cost’ measurement. Calculated as Total Operating Expenses/Total Available Seat Miles” (Southwest, 2012, ¶6).

*Revenue Passenger Mile (RPM):* “One paying passenger flown one mile. Often referred to as the airline industry’s measure of ‘traffic’” (Southwest, 2012, ¶14).

*Revenue Passengers Carried:* “The number of Origination and Destination paying passengers” (Southwest, 2012, ¶13).

*Revenue per Available Seat Mile (RASM):* “Total Operating Revenue per seat (empty or full) flown one mile. Often referred to as a ‘unit revenue’ measurement. Calculated as Total Operating Revenues/Available Seat Miles” (Southwest, 2012, ¶12).

*Yield:* “The average amount of revenue received per paying passenger flown one mile. Calculated as Total Operating Revenues/Revenue Passenger Miles” (Southwest, 2012, ¶10).

## 1.8 Abbreviations

*A4A:* Airlines for America

*ATA:* Air Transport Association, Inc.

*ATPCO:* Airline Tariff Publication Company

*BTS:* Bureau of Transportation Statistics

*CASM:* Cost per Available Seat Mile

*FAA:* Federal Aviation Administration

*RASM*: Revenue per Available Seat Mile

*RITA*: Research and Innovative Technology Administration

*RMS*: Revenue Management Systems

*RPM*: Revenue Passenger Mile

*RRPM*: Revenue per Revenue Passenger Mile

### 1.9 Summary

Yield is one of the financial measurements used by airlines and interested parties in analyzing revenue and available inventory in an airline route system. A4A publishes an actual industry standard yield value of US domestic airlines on the 20<sup>th</sup> of every month. This study explores the possibility of developing a monthly yield model, which can be used to predict the monthly A4A yield value with low error, prior to A4A publication.



## CHAPTER 2. LITERATURE REVIEW

### 2.1 Literature Review Approach

This review of literature begins with an introduction to yield, its definition, and its importance for airlines and other parties. This study, *Airline yield model simulating current industry standard yield*, approaches the concept of developing a yield model that generates daily yield data and comparing the model with the A4A yield value. The literature review covers a range of sources and the information gathered from these sources to develop the yield model.

### 2.2 Introduction

In order to stay competitive, many airlines started using financial measurements such as RPM, CASM, and RASM, and yield to understand current and future market demand growth. Each term listed above is an influential variable of revenue management within the airlines. External factors also affect airlines' revenue, including price competition and fuel prices. As stated, yield is one of the influential factors for airline decision making.

Today, most airlines use yield to determine the current market fares for routes and to predict future demand along each route or industry as a whole. Airlines currently use yield information published by the A4A organization (A4A, 2012).

## 2.3 Yield

Yield, according to the Oxford dictionary, in financial terms, “is the amount of money brought in/generated” (2012). It is exactly what it sounds like, but in airline terminology, there is a slight change in the yield definition; it is the average revenue generated by commuting a passenger for one mile. It is expressed in cents per passenger mile or cents per passenger kilometer. In aviation, yield is referred to in many different terms, such as revenue per revenue passenger mile (Vasigh, Fleming, Mackay, 2010), revenue yield per revenue passenger mile (Southwest Airlines, 2012), and revenue per passenger mile (American Airlines, 2012). However, each refers to the common definition of, the average amount of revenue received per passenger flown one mile.

### 2.3.1 Yield Segmentation

Yield can be separated into various classes as categorized by Bureau of Transportation Statistics (2012) listed below:

- **Type:** There are primarily two types of yield in the aviation industry. First is passenger yield, which is expressed in cents per revenue seat mile/kilometer, and generated by carrying revenue passengers. The second type is the cargo yield generate by carrying cargo/freight, expressed in cents per ton mile/ton kilometer. For this research project, the focus is on the U.S. domestic passenger segment of the airlines.
- **Class:** Since there are various classes on board a flight, such as business, first, economy, and economy plus, yield can be separately obtained for each class of fare. For example, airlines designate business and first-class passengers as high

yield passengers, as they pay a premium price for tickets and service aboard a flight. The model developed will cover all the ticket classes for selected routes.

- **Route:** Airlines can individually predict the average yield for a given route. For instance, long-range routes average yield will approach the same yield as short-range flights with more frequencies.
- **Airline:** Airlines as a whole can determine their individual yield along all the routes with all the fare classes as illustrated in the Figure 2.1 below, detailing a bar chart with yield values on the vertical axis and the airlines on the horizontal axis.

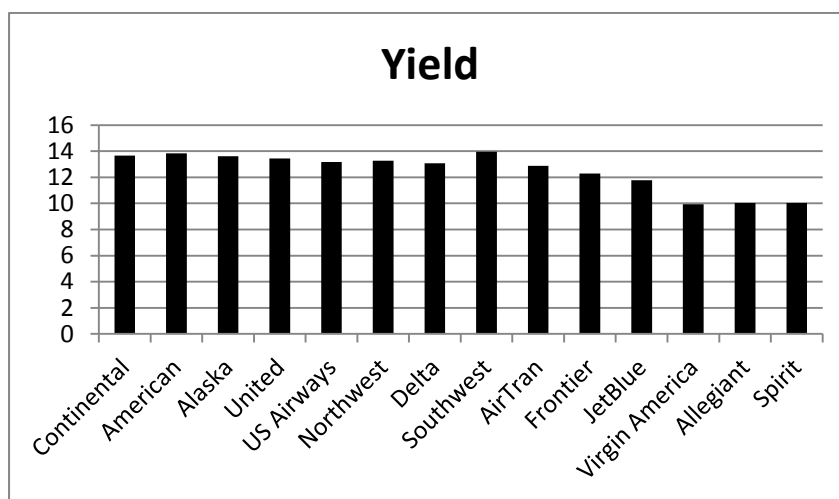


Figure 2.1 United States Airlines' Yield 2008 (data extracted from BTS, 2012).

- **Airlines as a group:** In the United States, airlines have been grouped into various groups such as regional, low-cost, and network carriers, depending on their fare structures, airport origin and destination, and yearly passenger traffic. Table 2.1 illustrates yield data on a quarterly basis for the year 2008.

Table 2.1 *Yield Generated by Domestic Airline Groups in Cents per Seat Mile* (Bureau of Transportation Statistics, 2009).

4Q 2008 Rank	Airline Group	1st Quarter 2008	2nd Quarter 2008	3rd Quarter 2008	4th Quarter 2008
1	Regional	22.4	23.5	21.8	19.4
2	Low-Cost	12.5	12.6	13.0	13.5
3	Network	13.1	13.5	14.0	13.3
	21-Carrier Total	13.6	14.0	14.3	13.7

- Industry as a whole: By combining data from airlines, routes, and classes, the yield can be determined for the airline industry as a whole. Figure 2.2 lists the yield plot between United States domestic airline yield and international yield. For the purpose of this study, only passenger domestic yield is used.

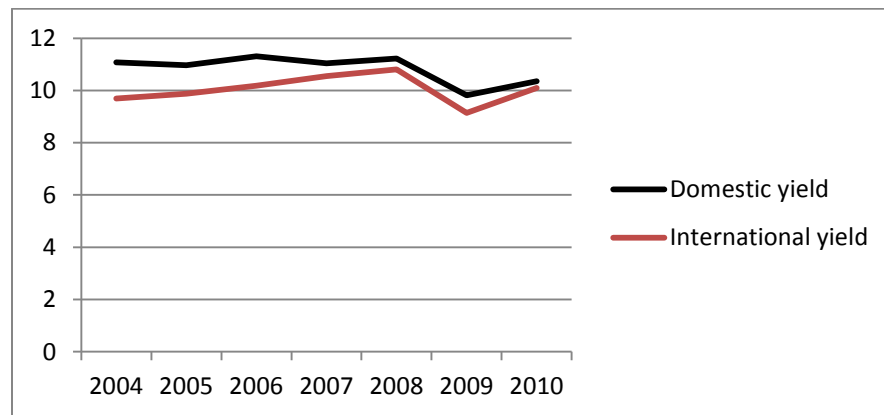


Figure 2.2 United States Domestic Airline Yield vs. International Airline Yield (data extracted from Bureau of Transportation Statistics, 2010).

### 2.3.2 Yield Equation

In simple terms, yield can be calculated by using the Equation 2.1, as defined by Bijan, Ken, & Liam (2010).

$$\text{Yield} = \text{Total Passenger Revenue (R)} / \text{Total Revenue Passenger Miles (RPM)}$$

(Equation 2.1)

Total passenger revenue (R) is the total amount of money generated by flying passengers along a route or with an airline. Total Revenue passenger miles (RPM), as illustrated in Equation 2.2, represents the product of the miles times the number of revenue passengers flown along the route or with the airline, respectively (Bijan, Ken, Liam, 2010).

$$\text{Revenue Passenger Miles (RPM)} = \text{No. of Passengers Flew} * \text{Distance along the Route}$$

(Equation 2.2)

For instance, if an aircraft having a capacity of 100 seats flew a distance of 900 miles with 85 revenue passengers and by operating the flight, RPM is  $85 * 900 = 76,500$ , and the operating revenue reported along this route is \$14,000, then yield is  $R/RPM = 14,000/76,500 = \$0.183/RPM = 18$  cents per passenger mile.

There are various other types of formulas also being utilized by the industry. In his book, *Straight and Level: Airline Financial Economics* (2008), Stephen Holloway calculates yield for a given route as shown in Equation 2.3

$$\text{Yield} = (\text{Operating Revenue}) / \text{Traffic}$$

(Equation. 2.3)

### 2.3.3 Factors Affecting Yield

There are various factors that influence yield characteristics, as mentioned by Stephen Holloway (2008, p 183). They are:

- **Fare Structure:** Since there are different fare classes for a route, yield brings uniformity and gives the average fare for all units sold along a route. The three main fare structures are first class, business and economy. However, in the airline industry, there could be more than eight types of fare structures for a given route.
- **Traffic Mix:** With different fare structures across a cabin, there exist different traffic mixes associated for the price that will influence the yield. There are three different characteristics that affect the traffic mix:
  - **Demand Characteristics:** Business travel vs. pleasure/leisure travel.
  - **Price elastic vs. inelastic situations:** Lower fares for inelastic situations, (i.e., booking a flight two to three months prior). For example, booking a flight at the last minute will result in high prices, as there likely exists increased demand.
  - **Protecting space for last-minute, high-yield passengers:** High-yield customers are mostly business class passengers that are willing to pay a premium price for the ticket.
- **Length of haul:** Distance along the route. The longer the distance between airports, the lower the yield as revenue needs to be spread across a greater RPM in comparison to short haul flights.

- Intensity of competition: Price competition from other airlines will highly influence yield for a given airline. As most customers are leisure travelers, they prefer low-ticket prices, thereby affecting yield for the airline.
- Network design: Hub and spoke vs. point-to-point network of routes. Yield here, is mostly affected by the distance between airports.

The above provides insight in to the makeup of yield and the parameters that affect the yield, in this study cause and effect of the parameters were not analyzed.

#### 2.3.4 Yield and Other Terms

There is a misconception between average fare and yield. Average fare is the average amount of money spent by the passenger along a route, expressed in dollars per passenger, while yield is the average fare per unit of output sold, expressed in cents per passenger mile. By selecting average fare, one can obtain only the average revenue per passenger for a route, and that cannot be compared with another route as distance could vary, or capacity could vary. Yield gives average revenue per passenger mile. This can be easily compared between two different routes, or two different market segments or more on a per distance basis. Average fare values are only affected by the number of passengers and cost of the tickets published by the airlines, while yield values are based on the price of tickets, number of passengers, and the distance between the origin and destination.

On the contrary to yield being important to airlines, author Perry Flint in *Air Transport World* (1995) suggests that airlines should not focus on passenger yield, as they cannot control it, but rather they should consider RASM (Revenue per Available

Seat Mile) which can play a major role in airline profits. Yield can be affected by ticket prices: as ticket prices go up; fewer people fly along the route, and yield values will decrease. The converse is true, for yield with increased ticket fares, RASM will increase. Since there is a restriction in capacity, load factor is the key for profit. Flint states that yield is what people are willing to pay for the fare. This perspective holds that yield mostly likely will change with a change in ticket prices, but will not be affected by increasing or decreasing passenger demand along the routes.

Yield management is another term, which provides insight into the importance of yield measurement. In the airline industry, yield management is an important concept that is used in relation to yield in obtaining the revenue model for each flight flown. Yield has demand variable in it, while yield management does not generate demand, but it simulates it. The functional aspects of yield management are, according to Page & Connell (2006):

- Market Segmentation;
- Price Management;
- Demand Forecasting;
- Availability and/or capacity management; and
- Reservation/negotiations.

The main function of yield management is that it “determines how much of each product (fare class for each origin/destination) to sell” (Mak, 1992, p.9). By effective implementation of yield management practices, airlines can be successful and can generate maximum revenue by selling the product at the right time for the right price and to the right customer.



Yield is one of the determining variables used in revenue management systems (RMS) by almost all airlines; to make decisions about ticket prices, and to plan for the future depending on the current yield trend. One of the key aspects of the RMS is to generate more revenue for each of the product sold; in airline industry, it is to maximize revenue earned per each seat sold from each flight. This can be achieved by maximizing yield, (i.e., selling seats at the cost of average yield for flight or higher than that). If the tickets are sold at prices that cause yield for that ticket to be lower than the average yield, then the airlines could opt to not sell the ticket and rather fly an empty seat (Holloway, 2008).

### 2.3.5 Yield Forecast

Commercial aviation is one of the important sectors of today's economy. In 2009, commercial aviation contributed about 4.9 percent of Gross Domestic Product (GDP) (Federal Aviation Administration, 2011). Boeing forecasts there will be an increase in passenger demand over the next few years, which will in turn lead to an increase in airline revenue. With an increase in revenue, airline yield would likely increase. The Federal Aviation Administration forecasts that the average yield for fiscal year 2012 will increase by 1.2 percent (March 8, 2012), while IATA predicts there will be a 1.7 percent increase in global passenger yield values, as airlines are maintaining tight capacities onboard the flight (ATW, 2012). An airline organization group called Airlines for America publishes the industry standard for the yield values.

By analyzing the possibility of developing a prediction tool for monthly A4A yield reports, the aviation could have an additional tool in making decision.

## 2.4 Airlines for America

Airlines for America (A4A), previously called Air Transport Association of America, Inc. (ATA), was the first trade organization of America's airlines. The primary goal of this association is to create and support aviation business environment, and to sustain the global airline competition. A4A also provides support that improves aviation safety and security. A4A serves as a platform between the air carriers, the US governmental bodies and few private sectors. There are in all, 16 key departments within the association that serve and address all major aspects of aviation. Nearly, 90 percent of U.S air traffic both passenger and cargo, are transported by A4A affiliated members (2012, 1¶).

Yield is defined by A4A as follows: "Passenger 'yield' is a commonly used metric representing the average fare paid by customers to fly one mile (revenue passenger mile or RPM). It is a key indicator of the price of air travel and is a weighted average expressed in cents" (A4A, 2012, 1¶).

A4A calculates the yield from operating revenue and total revenue passenger miles data provided by its member airlines. The yield value is published on the 20<sup>th</sup> of every month for the previous month data. In this thesis, the plan is to develop a daily yield model from the published fares by the airlines and that could also project the daily trend and future yield values. In order to develop a new yield model in comparison with the A4A published yield Figures, prices values, passenger demand, and distance along the routes information need to be gathered. Price values of routes are gathered from Airline Tariff Publishing Company (ATPCO); passenger demand and distance along routes are gathered from the Bureau of Transportation Statistics (BTS).

## 2.5 Bureau of Transportation Statistics

The Bureau of Transportation Statistics (BTS) was established in 1992 under the Intermodal Surface Transportation Efficiency Act of 1991 as a statistical agency. In 2005, BTS merged with the Research and Innovative Technology Administration (RITA). BTS's role as a statistical agency is as follows (Bureau of Transportation Statistics, 2012, 5¶):

- Is policy-neutral-an objective broker for the facts;
- Covers all of transportation; BTS is cross-modal in nearly everything we do;
- Does independent data collection and analysis, but BTS also serves all the other modes to help them be more effective and efficient;
- Sets standards for transportation data;
- Has special statutory protections (essentially the same as those for Census Bureau and Bureau of Labor Statistics) for the confidentiality of data we collect; and
- Have unique competencies in statistics, economics, information technology, geographic information systems, and transportation.

The data and statistics section on the BTS website covers topics related to aviation with additional modes of transportation statistics. For this study historical airline traffic data (number of passengers on each route) and the route distances were gathered from the BTS website. With nearly 28,000 flight daily across US, a sample of top 250 passenger routes with top two major market share by airlines were selected to develop the monthly yield using BTS data.

## 2.6 Air Tariff Publishing Company

Air Tariff Publishing Company (ATPCO) is solely owned by 16 U.S. and international airlines. ATPCO serves as an electronic clearinghouse for fares and changes posted by the airlines. ATPCO was established in 1940s when fares were regulated by the government. Following airline deregulation in 1978, many airlines started tracking competitive prices for a given route and adjusting their fares accordingly to obtain maximum customer market. “ATPCO serves as the airfare data provider for more than 450 airlines worldwide, which together represent 97 percent of scheduled commercial air travel. With customers on six continents in 165 countries, our airline customers range from large intercontinental network carriers to small regional companies. Fares from all these airlines are sent to another set of our customers, the global distribution systems (such as Sabre, Amadeus, Travelport, and ITA Software) and other computer reservation systems that use our data to issue tickets” (ATPCO, 2012, 2¶).

On an average daily basis ATPCO processes up to nearly 130,000 fare change requests. During busy times it processes up to nearly two million changes (Wensveen, 2011). The top 250 passenger route samples were selected for this study; the fares along these routes from August 2009 through November 2012 were gathered from ATPCO database. Once the data was obtained for the past data, daily fares for the routes are tracked on a daily basis to keep update with information and to develop a yield model.

## 2.7 Summary

In order to develop a new yield model in predicting A4A yield, sample routes, daily fares, passenger demand, and distance along the routes, information needs to be gathered. Daily fares of the routes are gathered from Airline Tariff Publishing Company (ATPCO); sample routes, passenger demand and distance along routes are gathered from the Bureau of Transportation Statistics (BTS).

## CHAPTER 3. METHODOLOGY

### 3.1 Data

To develop a yield model the following information was necessary in determining and updating the predicted airline yield:

- Routes city pairs;
- Passenger traffic along routes;
- Distance between the origin and destination cities along the routes; and
- Daily published fares by the airlines for the routes.

Routes, passenger traffic and distance between the routes are collected from the Bureau of Transportation Statistics (BTS) database, where airlines report their data. Daily-published fares were obtained from the Airline Tariff Publication Company (ATPCO), a company which publishes updated fares from airlines several times a day for each route.

### 3.2 Sampling

Under the Form 41 section on the BTS website, all the routes with passenger traffic and distance between the airports that airlines fly within US domestic and international markets have been recorded. For this project, the routes were restricted to top 250 passenger routes within U.S. domestic.

Initially, once the data had been downloaded from the BTS website, using Excel, duplication of the city pairs were removed from the dataset, as ATPCO tracks all routes as one –way. For example, a flight from Indianapolis International Airport (IND) to Los Angeles International Airport (LAX) would be considered the same as a flight from LAX to IND airport. The passenger traffic along these routes would be added to give total passenger demand along the route segment for each month.

The datasets of the city pairs have been arranged in descending order of the passenger traffic for all the months. The top 250 routes were selected. These 250 routes resembled nearly 26 percent of the total commercial air traffic population throughout the United States. Due to the restrictions with ATPCO, all the 250 routes were simplified into 127 one-way routes.

The selected route city pairs were used in the ATPCO database to obtain information about published fares by the two airlines along these routes from August 2009 through November 2012.

### 3.3 Process

From the sample 127 domestic routes and the published economy fares from the ATPCO database, the determined routes were downloaded. The data involved could range fare changes from single fare to several hundred per route on any given day. So in order to simplify the process, daily average fare was determined for each route. Then passenger information are gathered from the BTS database. Though BTS does not track the passenger on a daily basis, they were reported on monthly basis. In order to get a representative and weighted factor of daily passengers flown on the routes, the total

monthly passenger were averaged evenly across the month depending on the number of days in that month. Once the daily average fares and the daily passenger were determined, the daily revenues were calculated by multiplying the daily average fare and the daily passengers for each route. The daily revenue for all the routes was added to give the total daily revenue across the top 250 sample routes. The total daily passenger miles were determined by multiplying daily passenger along each route with the distance along these each routes, then the daily passenger miles along each are added to give total daily passenger miles. The total daily revenue for the system was then divided by the total daily passenger miles to give daily yield which is the weight average of the distance and the ticket fares. The daily yield values were then averaged on monthly basis to get one single value for each month. The calculated monthly yields were then compared to the industry standard yield published by Airlines for America. The dependent variable was A4A yield values, while the calculated monthly yields from the daily published fares served as the independent variable.

### 3.4 Regression Analysis

After the method to find the monthly yield was developed then regression analysis was performed on the data to best predict the monthly industry standard A4A yield values. As stated above in the literature review, A4A publishes each month data on the 20<sup>th</sup> of the following month. A regression analysis was conducted to simulate the industry yield and used it to predict 20 days beforehand each A4A monthly value.



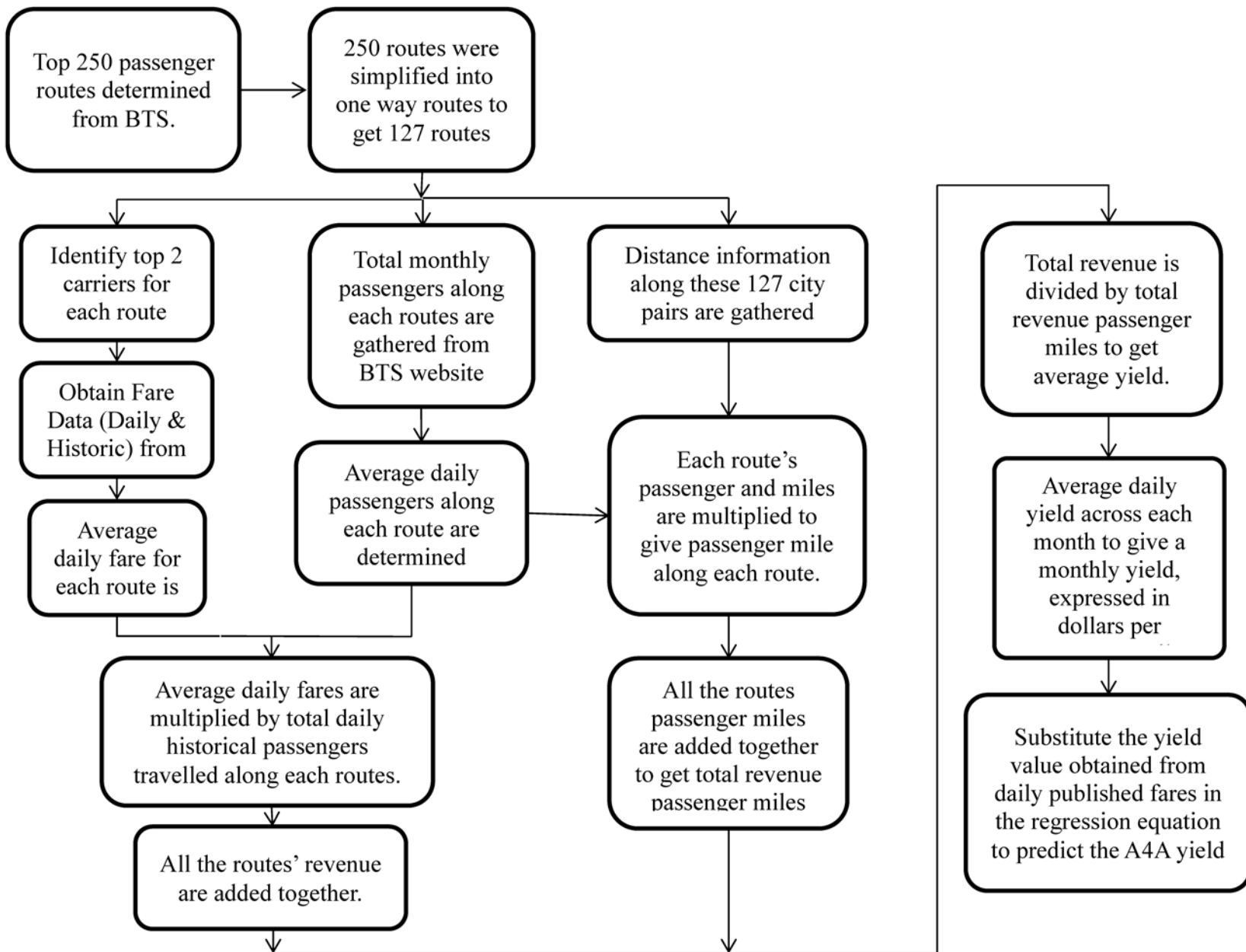


Figure 3.1 Methodology Flow Chart

### 3.5 Summary

This study was in search of developing a model for predicting A4A monthly values. In creating a model, a correlation analysis was performed to analyze the trend between actual A4A yield values and the yield values developed using daily published fares. A best fit regression model was developed to predict a close estimate to the actual A4A by the end of each month.

## CHAPTER 4. RESULTS

In this chapter, the data and the statistical results for the model are presented and discussed. The chapter begins with the basic descriptive statistics of both dependent and independent variables and concludes with the results and tests about the data. Hereon, yield values are expressed in dollars per seat mile.

The monthly yields calculated from the ATPCO daily-published fares by the airlines and the current industry standard A4A yields are represented in the Table 4.1, for the 37 months between August 2009 and August 2012.

Yield (ATPCO): Represent monthly yield values calculated from daily-published fares from ATPCO database expressed in dollars per seat mile.

Yield (A4A): Industry standard monthly yield values as published by A4A expressed in dollars per seat mile.

Table 4.1 *Monthly Yield Values Developed Using Daily Published Fares from ATPCO Database and Industry Standard A4A Yield Values*

Month	Yield (A4A)	Yield (ATPCO)
Aug-09	0.129748	0.147496
Sep-09	0.131146	0.149043
Oct-09	0.134855	0.153527
Nov-09	0.143889	0.158329
Dec-09	0.140871	0.155718
Jan-10	0.139504	0.153732
Feb-10	0.142259	0.156134
Mar-10	0.149276	0.158934

Table 4.1 Continued.

Apr-10	0.149078	0.160983
May-10	0.14423	0.163842
Jun-10	0.151218	0.163736
Jul-10	0.148326	0.161634
Aug-10	0.145057	0.159666
Sep-10	0.141459	0.155092
Oct-10	0.145077	0.157765
Nov-10	0.150843	0.160839
Dec-10	0.146708	0.161243
Jan-11	0.147194	0.16642
Feb-11	0.1559	0.172207
Mar-11	0.165267	0.17178
Apr-11	0.160672	0.166609
May-11	0.158746	0.164342
Jun-11	0.160779	0.163719
Jul-11	0.157229	0.165196
Aug-11	0.158541	0.160757
Sep-11	0.157076	0.158893
Oct-11	0.158549	0.159572
Nov-11	0.165327	0.166325
Dec-11	0.159538	0.167312
Jan-12	0.16023	0.162125
Feb-12	0.1644	0.16863
Mar-12	0.173526	0.171804
Apr-12	0.171296	0.170135
May-12	0.1669	0.168919
Jun-12	0.168654	0.172537
Jul-12	0.161546	0.167709
Aug-12	0.1558	0.164126

The independent variable in the Table 4.1 above is the Yield value obtained from the ATPCO data and the dependent variable is the industry standard A4A yield value.

#### 4.1 Statistical Analysis of the Data

The statistical and graphical summary of the monthly Yield (A4A) and Yield (ATPCO) from the Table 4.1, have been represented in Figure 4.1 and Figure 4.2 respectively. The graphical summary of the data in the Figures 4.1 and 4.2 below, show that Yield (A4A) and Yield (ATPCO) have followed the normal probability with skewness. The Box plots below the normal probability plot illustrates that there were no outliers in each of the datasets.

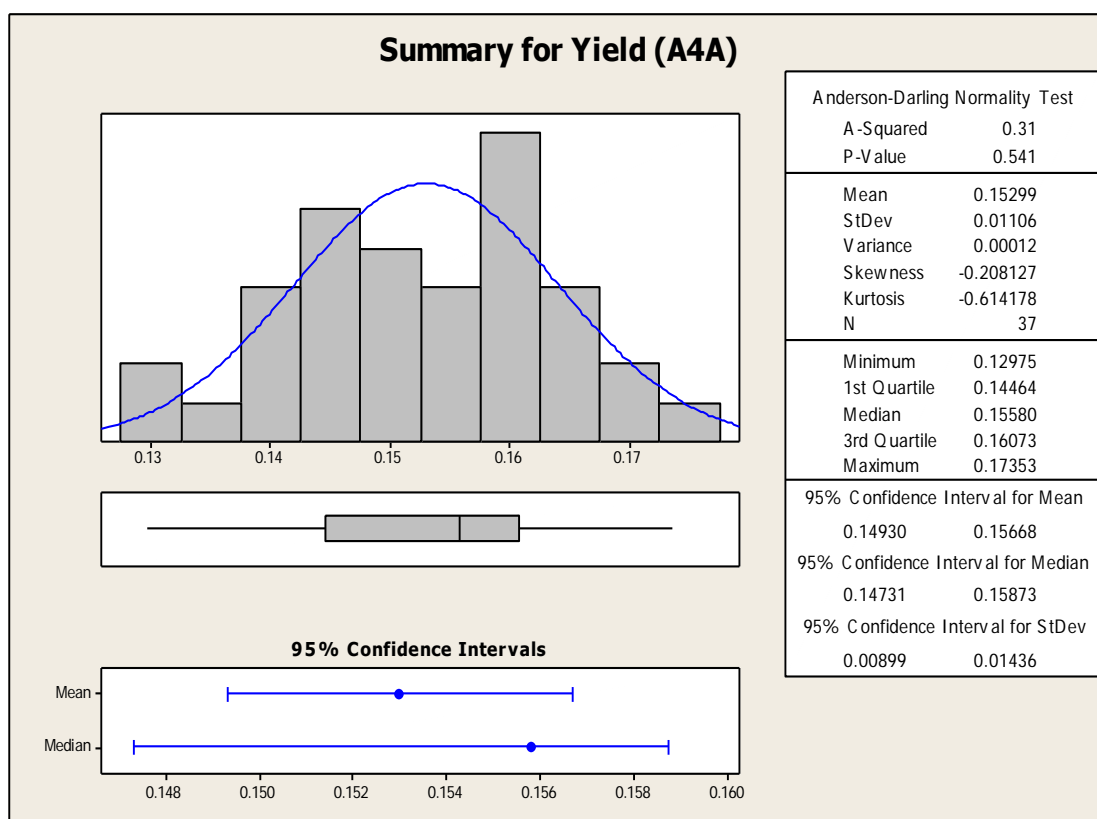
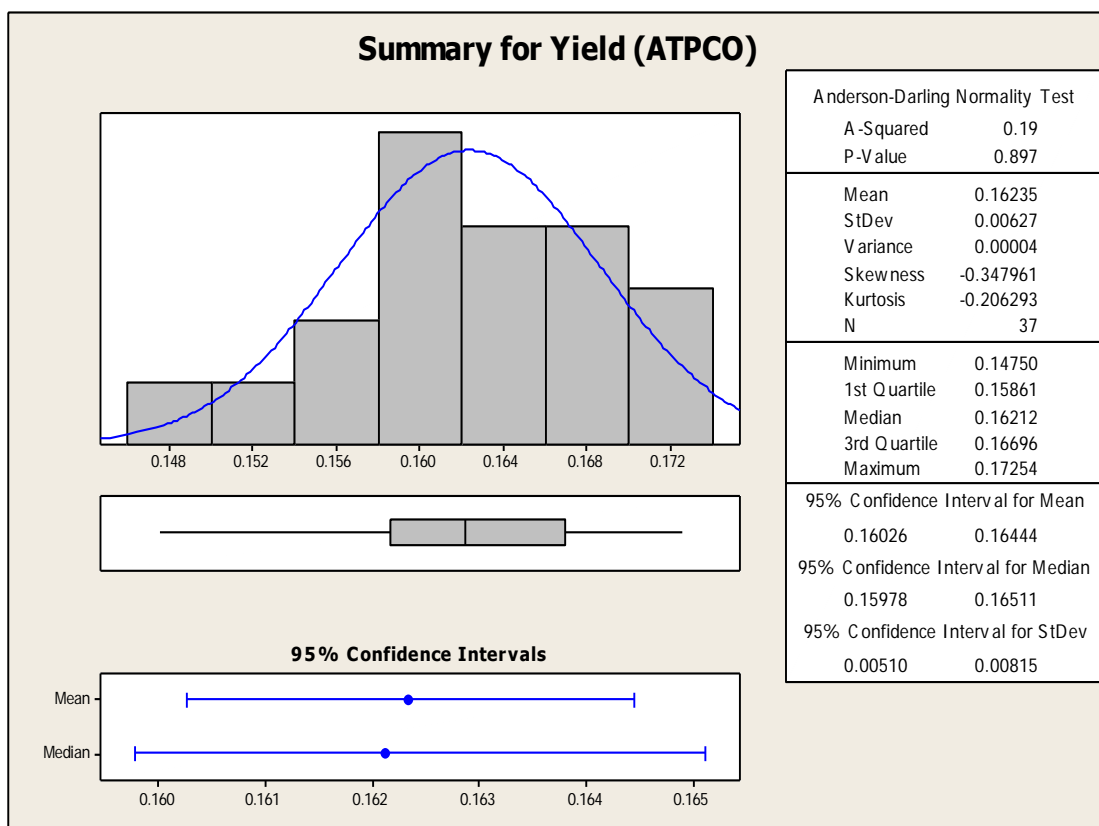


Figure 4.1 Descriptive Statistics of the Industry Standard A4A Yield



*Figure 4.2* Descriptive Statistics of the Monthly Yield Values Developed from ATPCO Daily Published Fares

A Pearson correlation was determined between the Yield(A4A) and Yield (ATPCO) data, and the correlation as noted in the Table 4.2 was 0.878, designating that there was a strong correlation between the dependent and independent variable and was statistically significant with a p-value of zero.

*Table 4.2: Pearson Correlation Between Yield (A4A) and Yield (ATPCO)*

Pearson Correlation between Yield (A4A) and Yield (ATPCO)	0.878
P-Value	0.00

#### 4.2 Regression Analysis

As the correlation had a strong trend, a scatterplot between the dependent and the independent variable was plotted and shown in Figure 4.3. The graph represented that there was a linear trend between the dependent and independent variable. The blue line in the graph demonstrated a regression line which best fits the model between yield (A4A) and Yield (ATPCO).

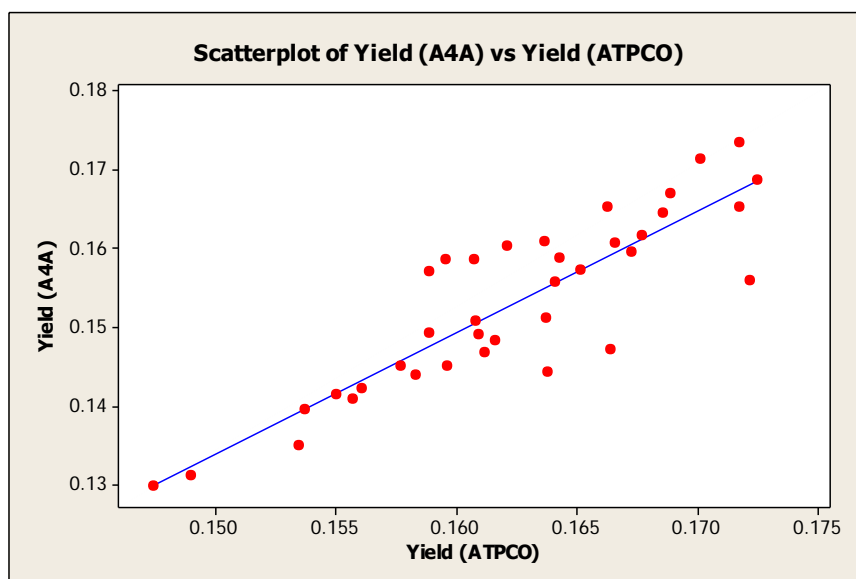


Figure 4.3 Scatterplot of Yield (A4A) vs. Yield (ATPCO) With Regression Line

The blue regression line in the Figure 4.3 was calculated by the regression analysis function in Minitab software, and represented by the Equation 4.1 as noted below.

$$Yield (A4A) = -0.0982 + 1.55 Yield (ATPCO)$$

(Equation 4.1)

As mentioned above, the Minitab software exhibited a set of regression results as noted in Figure 4.4. From the data, “R square,” was calculated which reflects the coefficient of determination, preliminary used for data to measure the proportion of

explained variance to the total variance of Yield (A4A). The R-Square result was 76.40 percent, or 0.7640 if expressed between 0 and 1 (statistical terms), providing a reasonable level of confidence the model would predict the data using the regression equation.

### Regression Analysis: Yield (A4A) versus Yield (ATPCO)

The regression equation is  
Yield (A4A) = - 0.0982 + 1.55 Yield (ATPCO)

Predictor	Coef	SE Coef	T	P
Constant	-0.09823	0.02319	-4.24	0.000
Yield (ATPCO)	1.5474	0.1427	10.84	0.000

S = 0.00537201    R-Sq = 77.1%    R-Sq(adj) = 76.4%

#### Analysis of Variance

Source	DF	SS	MS	F	P
Regression	1	0.0033927	0.0033927	117.56	0.000
Residual Error	35	0.0010100	0.0000289		
Total	36	0.0044027			

Figure 4.4 Regression Analysis of Yield (A4A) and Yield (ATPCO)

On substituting Yield (ATPCO) values from Table 4.1 in the regression equation 4.1, the predicted A4A yield values expressed in dollars per seat mile could be determined. The difference between the actual A4A yield and the predicted A4A yield obtained by using Equation 4.1 provided the residual values shown in Table 4.3. The residuals values ranged from -0.01282 and 0.009412.

Table 4.3 Predicted A4A and Residuals Without Indicator Variable

Month	Predicted A4A Yield	Residual
Aug-09	0.130419	-0.000671
Sep-09	0.132817	-0.001671
Oct-09	0.139767	-0.004912
Nov-09	0.14721	-0.003321
Dec-09	0.143163	-0.002292



Table 4.3 Continued.

Jan-10	0.140085	-0.000581
Feb-10	0.143808	-0.001549
Mar-10	0.148148	0.001128
Apr-10	0.151324	-0.002246
May-10	0.155755	-0.011525
Jun-10	0.155591	-0.004373
Jul-10	0.152333	-0.004007
Aug-10	0.149282	-0.004225
Sep-10	0.142193	-0.000734
Oct-10	0.146336	-0.001259
Nov-10	0.1511	-0.000257
Dec-10	0.151727	-0.005019
Jan-11	0.159751	-0.012557
Feb-11	0.168721	-0.012821
Mar-11	0.168059	-0.002792
Apr-11	0.160044	0.000628
May-11	0.15653	0.002216
Jun-11	0.155564	0.005215
Jul-11	0.157854	-0.000625
Aug-11	0.150973	0.007568
Sep-11	0.148084	0.008992
Oct-11	0.149137	0.009412
Nov-11	0.159604	0.005723
Dec-11	0.161134	-0.001596
Jan-12	0.153094	0.007136
Feb-12	0.163177	0.001223
Mar-12	0.168096	0.00543
Apr-12	0.165509	0.005787
May-12	0.163624	0.003276
Jun-12	0.169232	-0.000578
Jul-12	0.161749	-0.000203
Aug-12	0.156195	-0.000395

Once the residuals were determined, the residual data for Yield (A4A) were plotted as shown in Figure 4.5. The Versus Order plot in the Figure 4.5 plotted the residuals listed in Table 4.3.

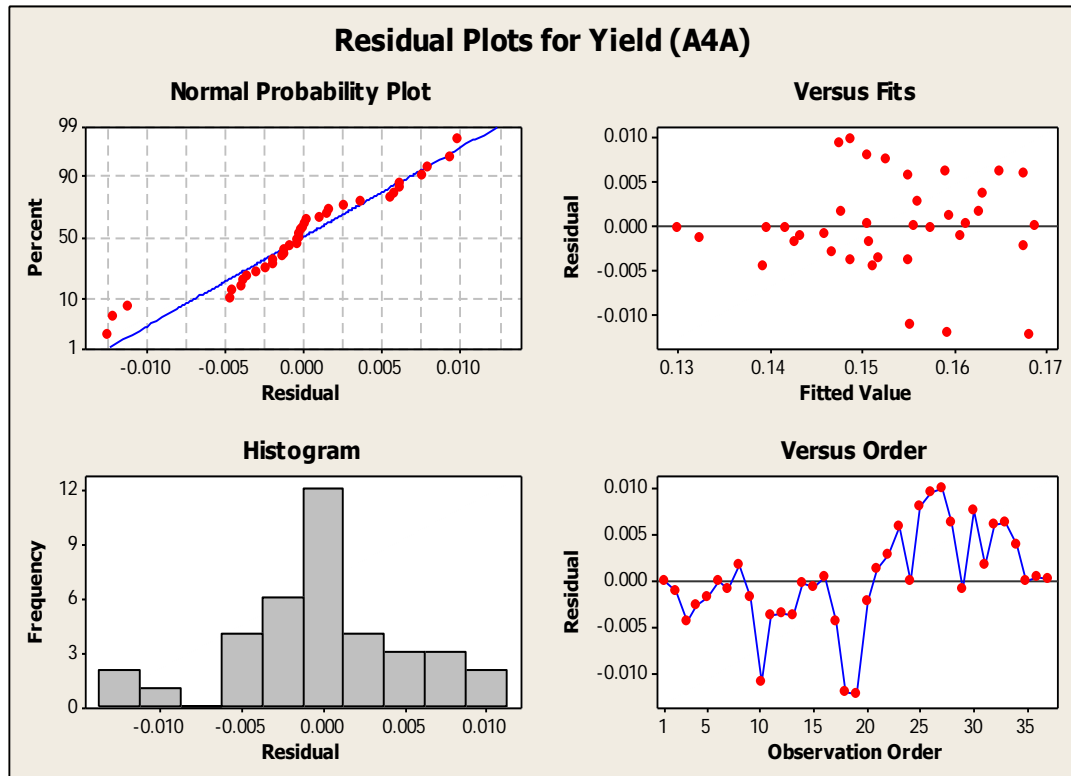


Figure 4.5 Residual Plot Without Indicator Variable

Looking at the versus order plot, there was a shift in the mean, most of the data from the first 20 observations predicted data was over-estimated as compared to the industry standard yield values as published by A4A, and for the balance of the observations was under-estimated. This shift in means suggested additional regression analysis may provide an improved prediction model. In reviewing the data gathered from ATPCO database, it was determined that the fares modified three times each day and do not report the exact count for the number of seats sold at each price. Therefore, an indicator variable was introduced to offset the mean shift. If the real A4A data was higher than \$0.156/seat mile, it was indicated by 1 or else 0. The main role of the Indicator Variable was to reduce the difference between predicted and the Actual A4A values.

Using the indicator variable and the data from Table 4.1, another regression equation was developed and is as noted below in Equation 4.2, and the regression analysis has been shown in Figure 4.6.

$$\text{Yield (A4A)} = -0.0221 + 1.05 \text{ Yield (ATPCO)} + 0.0106 \text{ Indicator}$$

(Equation 4.2)

#### Regression Analysis: Yield (A4A) versus Yield (ATPCO), Indicator

The regression equation is

$$\text{Yield (A4A)} = -0.0221 + 1.05 \text{ Yield (ATPCO)} + 0.0106 \text{ Indicator}$$

Predictor	Coef	SE Coef	T	P
Constant	-0.02213	0.01605	-1.38	0.177
Yield (ATPCO)	1.0486	0.1008	10.40	0.000
Indicator	0.010633	0.001252	8.49	0.000

S = 0.00308534 R-Sq = 92.6% R-Sq(adj) = 92.2%

#### Analysis of Variance

Source	DF	SS	MS	F	P
Regression	2	0.0040791	0.0020395	214.25	0.000
Residual Error	34	0.0003237	0.0000095		
Total	36	0.0044027			

Source	DF	Seq SS
Yield (ATPCO)	1	0.0033927
Indicator	1	0.0006864

Figure 4.6 Regression Analysis of Yield (A4A) and Yield (ATPCO) With Indicator Variable

From the above analysis which used the indicator variable, it can be interpreted that “R square,” coefficient of determination had increased from 0.7640 to 0.9920. 92.20 percent of the time, the predicted variance can be explained by the actual A4A yield variance. On substituting the yield values generated from ATPCO data fares in the regression Equation 4.2, the new predicted values using indicator variable, expressed in

dollars per seat mile, were listed below in Table 4.4 below, along with the residuals. The residuals values ranged from -0.0057 and 0.005568

Table 4.4 *Predicted A4A and Residuals With Indicator Variable*

Observation	Predicted Yield (A4A)	Residuals
1	0.132771	-0.003023
2	0.134395	-0.003249
3	0.139103	-0.004248
4	0.144145	-0.000256
5	0.141404	-0.000533
6	0.139319	0.000185
7	0.141841	0.000418
8	0.144781	0.004495
9	0.146932	0.002146
10	0.149934	-0.005704
11	0.149823	0.001395
12	0.147616	0.00071
13	0.145549	-0.000492
14	0.140747	0.000712
15	0.143553	0.001524
16	0.146781	0.004062
17	0.147205	-0.000497
18	0.152641	-0.005447
19	0.158717	-0.002817
20	0.168869	-0.003602
21	0.163439	-0.002767
22	0.161059	-0.002313
23	0.160405	0.000374
24	0.161956	-0.004727
25	0.157295	0.001246
26	0.155338	0.001738
27	0.156051	0.002498
28	0.163141	0.002186
29	0.164178	-0.00464
30	0.158731	0.001499
31	0.165562	-0.001162
32	0.168894	0.004632
33	0.167142	0.004154

Table 4.4 Continued.

34	0.165865	0.001035
35	0.169664	-0.00101
36	0.164594	-0.003048
37	0.150232	0.005568

A new scatterplot of residuals was plotted with the A4A yield values and was shown in the Figure 4.7.

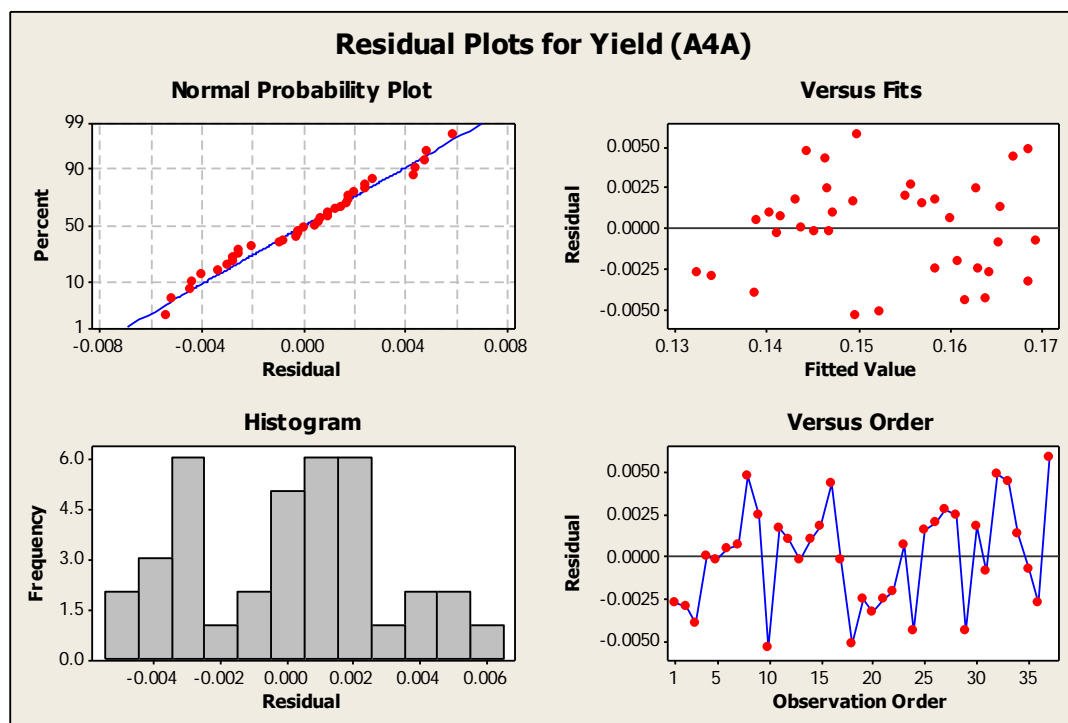


Figure 4.7 Residual Plot With Indicator Variable

Table 4.5 shows the comparison between the regression equation developed with and without the indicator variable.

Table 4.5 *Regression Analysis With and Without Indicator Variable*

	Without Indicator Variable	With Indicator Variable
Regression Equation	Yield (A4A) = -0.0982+1.55 Yield (Model)	Yield (A4A) = - 0.0221 + 1.05 Yield (Model) + 0.0106 Indicator
R-Square	0.7640	0.9220
Range of Residuals	-0.01282 to + 0.009412	-0.0057 to +0.005568

### 4.3 Testing

The regression analysis with the indicator variable was determined to be an improved model over the simple linear regression in predicting the A4A yield values for each month. Once the model was developed using the 37 data points listed in Table 4.1 with the indicator variable, the model was tested on the consecutive next three months from September 2012 through November 2012 while holding the regression equation constant. The results of the prediction for the following months from September 2012 through November 2012 have been listed in Table 4.6 below and were compared with actual A4A published yield values.

Another regression model was developed with changing regression equation keeping dataset constant for 37 months. In this, if a new month was added to the dataset, the first month was removed, keeping the sample size same across the regression equations. The results of changing regression equation for the next three months have been detailed in the Table 4.7.

Table 4.6 Results from Testing the Model With Constant Regression Equation

Month	Regression Equation	Adjusted R-Square	Yield(ATPCO)	Predicted A4A yield	Actual A4A Yield	Residual
September 2012	Yield (A4A) = - 0.0221 + 1.05 Yield (ATPCO) + 0.0106 Indicator	0.9220	0.16953	0.155907	0.1561	0.000193
October 2012	Yield (A4A) = - 0.0221 + 1.05 Yield (ATPCO) + 0.0106 Indicator	0.9220	0.17094	0.167987	0.1644	-0.003587
November 2012	Yield (A4A) = - 0.0221 + 1.05 Yield (ATPCO) + 0.0106 Indicator	0.9220	0.17243	0.169552	0.1651	-0.004452

Table 4.7 Results from Testing the Model With Changing Regression Equation

Month	Regression Equation	Adjusted R- Square	Yield (ATPCO)	Predicted A4A yield	Actual A4A yield	Residual
September 2012	Yield (A4A) = - 0.0221 + 1.05 Yield (ATPCO) + 0.0106 Indicator	0.9220	0.16953	0.155907	0.1561	0.00193
October 2012	Yield (A4A) = - 0.0164 + 1.01 Yield (ATPCO)+ 0.0107 Indicator	0.9140	0.17094	0.166949	0.1644	-0.00255
November 2012	Yield (A4A) = - 0.0048 + 0.943 Yield (ATPCO) + 0.0107 Indicator	0.9050	0.17243	0.168501	0.1651	-0.003402

The results above predicted with constant regression equation and changing regression equation both exhibited a close prediction to the actual A4A yield value for the months of September 2012 through November 2012. The constant regression equation has an increasing error over the course of time and also has a residual value compared to the changing regression equation. This suggests, as new monthly data was added to the constant regression equation; the data on which the regression equation was developed would reduce the impact of actual yield movements for future months. Developing an updated changing regression equation with the recent 37 month data would increase sensitivity of yield movements and provide a more realistic and closer value to the actual A4A yield.

#### 4.4 Summary

With best use of the available information, the regression model developed with a revolving indicator can best predict the industry standard A4A yield values at the end of each month, i.e., 20 days ahead of the A4A publication. A regression equation with changing datasets would assist in a more accurate prediction of the A4A value.



## CHAPTER 5. DISCUSSION AND CONCLUSION

Yield, as stated above in the literature review, is the willingness of a customer to pay for a mile along a route. By using the published fares from ATPCO database, a method was developed using Microsoft Excel software to publish the yield values at the end of each month, which were then correlated within a high confidence rate with the industry standard A4A yield value. The regression analysis from the results section demonstrated a model could be developed which represented the predicted yield value of the A4A yield with an adjusted R-square greater than 0.90.

The current yield model developed using simple linear regression analysis with changing dataset and indicator variable is better serving in close predictions of A4A values. While predicting the A4A yield value at the end of each month, substitute zero and one values individually into the updated regression equation developed from the previous 37 months of data. If the predicted A4A value is less than \$0.156/seat mile in either case, always consider zero as the indicator variable. If in both the cases, the predicted A4A yield value is always greater than \$0.156/seat mile consider value one as the indicator variable.

For the current regression model developed using the indicator parameter, the values zero and one are determined based on the predicted A4A value. For future consideration it is suggested to develop an indicator parameter based on the Yield (ATPCO) values or trends. Another analysis that could be considered for future development is forecasting A4A yield values based on repetitive trends, as shown in Figure 4.7 in the versus order plot.

### 5.1 Conclusion

Yield has been discussed as proportional to the total revenue generated from the route or a system and inversely proportional to the passenger miles (Equation. 2.1). Yield is one of the financial key terms that help airlines determine customers' behavior for a change in airfare along a route. Airlines try to generate maximum revenue per flight on any given route, which can be attained when the yield is at its optimum point for the route. Considering yield as a system, the domestic airline yield, will determine how the airlines are performing, i.e., if there will be an increase or decrease in revenue by looking at the yield trend over the years. Domestic airline yield values could be beneficial in assisting not only the airline companies but also credit card companies and the investors to understand the airline market and future growth.

One goal of this study was to determine models that could simulate industry standard yield values. By using variables, such as the top 250 domestic passenger routes, total monthly passengers flown along these top 250 routes, published fares for these routes from the ATPCO data and the distance along the city pair routes a method was developed using Excel Software to determine monthly yield values. A regression model was developed using the Minitab Software, with the monthly A4A yield values and yield

values developed using the published fares for the routes, to predict the A4A yields. By making the best use of the available information the developed regression model was found to predict the actual A4A yield with an R-square value greater than 0.90.

To address the research question, it has been shown that an alternative model can be developed from daily published fares that could simulate industry standard A4A yield values.

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## APPENDIX



## APPENDIX

## Top 250 passenger routes and distance within domestic U.S

Route	2011	2010	Distance	Airline 1	Airline 2
SFOLAX	1659856	1550297	337	United Air Lines Inc.	Southwest Airlines Co.
LAXSFO	1649263	1546850	337	United Air Lines Inc.	Southwest Airlines Co.
LAXJFK	1525090	1470235	2475	American Airlines Inc.	Delta Air Lines Inc.
JFKLAX	1509707	1441459	2475	American Airlines Inc.	Delta Air Lines Inc.
LGAORD	1326804	1251307	733	Delta Air Lines Inc.	AirTran Airways Corporation
ORDLGA	1306133	1231138	733	Delta Air Lines Inc.	AirTran Airways Corporation
MCOATL	1305106	1324875	403.4776	American Airlines Inc.	United Air Lines Inc.
ATLMCO	1302422	1311135	403.5067	American Airlines Inc.	United Air Lines Inc.
LASLAX	1204680	966697	236	Delta Air Lines Inc.	AirTran Airways Corporation
LAXLAS	1200289	932643	236	United Air Lines Inc.	American Airlines Inc.
LAXORD	1181663	1115519	1745	Delta Air Lines Inc.	AirTran Airways Corporation
ATLFL	1153406	1148246	581	Delta Air Lines Inc.	AirTran Airways Corporation
LGAATL	1141583	1096553	761.5263	Delta Air Lines Inc.	AirTran Airways Corporation
FLLATL	1139730	1142562	581	United Air Lines Inc.	American Airlines Inc.
ATLLGA	1139386	1104686	761.5273	Delta Air Lines Inc.	American Airlines Inc.
ORDLAX	1138681	1084586	1745	United Air Lines Inc.	US Airways
SFOORD	1090157	959186	1846	United Air Lines Inc.	us Airways
DFWLAX	1080976	905245	1235	Delta Air Lines Inc.	American Airlines Inc.
ATLDFW	1071660	1052884	731.5118	Southwest Airlines Co	FRONTIER
LAXDFW	1062667	877996	1235	American Airlines Inc.	Delta Air Lines Inc.
DFWATL	1046203	1025467	731.5504	VIRGIN	Continental
ORDSFO	1031881	926213	1846	American	Delta Air Lines Inc.
DENLAX	1029438	1017232	862	Hawaiian	Delta Air Lines Inc.
SFOJFK	1027754	1012522	2586	Hawaiian	Delta Air Lines Inc.
JFKSFO	1021447	1002067	2586	Mesa	Hawaiian
LAXHNL	998332	1005116	2556	Republic	Continental
HNLLAX	994789	999261	2556	American Airlines Inc.	Delta Air Lines Inc.
LAXDEN	980428	984791	862	Mesa	Hawaiian
DENPHX	975310	953308	602	virgin	Continental

OGGHNL	972295	1006573	100.5714	Southwest Airlines Co	US Airways
PHXDEN	963940	931731	602	American Airlines Inc.	Delta Air Lines Inc.
HNLOGG	955390	979724	100.5422	Continental	Skywest
DENLAS	933286	950422	628.4933	Mesa	SWIFTAIR
ATLLAX	931062	940485	1946.274	Delta Air Lines Inc.	AIR TRAN
ORDDFW	921741	894884	802	Delta Air Lines Inc.	AIR TRAN
TPAATL	919855	928694	406	Delta Air Lines Inc.	AIR TRAN
LAXATL	916624	931025	1946.278	Delta Air Lines Inc.	AIR TRAN
DFWORD	914897	885207	802	United Air Lines Inc.	Continental
LASDEN	910733	903122	628.5068	Continental	Skywest
ATLTPA	905937	937289	406	Continental	American Airlines Inc.
LASSFO	888845	904162	414	Continental	American Airlines Inc.
SFOLAS	855693	889115	414	Continental	Skywest
PHXLAS	846544	837942	255.5294	US Airways Inc	Southwest Airlines Co.
ORDBOS	837711	807710	867	US Airways Inc	Southwest Airlines Co
LASPHX	836042	835491	255.4878	United Air Lines Inc.	FRONTIER
DENSFO	836032	831138	967	American Airlines Inc.	United Air Lines Inc.
BOSORD	829182	811976	867	Delta Air Lines Inc.	AIR TRAN
DCAATL	816178	823645	547	Delta Air Lines Inc.	AIR TRAN
PHXLAX	814027	715374	370	American Airlines Inc.	United Air Lines Inc.
ATLPHL	813845	781239	665.5	Delta Air Lines Inc.	AIR TRAN
ATLDCA	812427	824421	547	United Air Lines Inc.	FRONTIER
CLTATL	804732	760383	226.533	Delta Air Lines Inc.	FRONTIER
ATLCLT	797928	745920	226.5169	Southwest Airlines Co	SWIFTAIR
MSPDEN	796974	767381	680	Southwest Airlines Co	SWIFTAIR
PHLATL	796908	764436	665.5075	Delta Air Lines Inc.	AirTran Airways Corporation
SFODEN	796776	787626	967	Delta Air Lines Inc.	us Airways
DENMSP	792000	736652	680	United Air Lines Inc.	American Airlines Inc.
DALHOU	790432	777923	239	SKYWEST	Southwest Airlines Co
HOUDAL	789299	779279	239	United Air Lines Inc.	American Airlines Inc.
LAXPHX	787035	695478	370	Delta Air Lines Inc.	FRONTIER
ATLMSP	771670	707296	906.5211	Delta Air Lines Inc.	US Airways
DENSEA	767295	718036	1024.012	SPIRIT	JETBLUE
SEADEN	764350	734101	1024.006	SPIRIT	JETBLUE
SLCDEN	763549	763170	390.4723	Southwest Airlines Co	US Airways
SFOSEA	763110	722967	679	American Airlines Inc.	FRONTIER
MSPATL	760244	700016	906.5105	Southwest Airlines Co	United Air Lines Inc.
SEASFO	759929	718110	679	United Air Lines Inc.	American Airlines Inc.
DENDFW	754741	740669	641.0059	United Air Lines Inc.	FRONTIER
DFWDEN	750362	749033	641.006	American Airlines Inc.	FRONTIER
LAXSEA	749389	712941	954	Delta Air Lines Inc.	AirTran Airways Corporation

SEALAX	748815	716212	954	SKYWEST	Southwest Airlines Co
PHXSAN	745096	701199	304	United Air Lines Inc.	American Airlines Inc.
LGAFLL	744647	765038	1076	United Air Lines Inc.	American Airlines Inc.
DENSLC	743158	745803	390.4739	FRONTIER	United Air Lines Inc.
SANSFO	740420	763865	447	Delta Air Lines Inc.	AirTran Airways Corporation
ATLDEN	739424	746431	1199	Delta Air Lines Inc.	AirTran Airways Corporation
FLLGGA	736308	766876	1076	Hawaiian	MESA
ANCSEA	732964	692119	1448.49	United Air Lines Inc.	American Airlines Inc.
SEAANC	731394	692391	1448.504	ALASKA	United Air Lines Inc.
JFKMCO	730956	615516	944	Delta Air Lines Inc.	AirTran Airways Corporation
SANPHX	730741	673311	304	Delta Air Lines Inc.	AirTran Airways Corporation
DENATL	729973	738024	1199	Southwest Airlines Co	United Air Lines Inc.
ORDMSP	726183	794036	334	Southwest Airlines Co	USAIRWAYS
MSPOED	725133	783838	334	Alaska Airlines Inc.	United Air Lines Inc.
ATLLAS	722738	727049	1747	Alaska Airlines Inc.	Virgin America
SFOSAN	721476	747916	447	Delta Air Lines Inc.	AirTran Airways Corporation
LASATL	721168	733675	1747	Alaska Airlines Inc.	Virgin America
ATLBOS	716361	739268	946	Delta Air Lines Inc.	AirTran Airways Corporation
BOSATL	716074	730808	946	Delta Air Lines Inc.	AirTran Airways Corporation
DCAORD	714043	759164	612	Hawaiian Airlines Inc.	Mesa Airlines Inc.
MCOJFK	710746	606823	944	Southwest Airlines Co.	US Airways Inc.
HNLLIH	705142	758214	102	Delta Air Lines Inc.	American Airlines Inc.
MCOPHL	702517	720161	861	Alaska Airlines Inc.	Continental Air Lines Inc.
ORDDCA	702130	749525	612	Delta Air Lines Inc.	American Airlines Inc.
BOSDCA	700489	499577	399	Alaska Airlines Inc.	Continental Air Lines Inc.
PHLMCO	700358	716635	861	US Airways Inc.	Southwest Airlines Co.
DFWSFO	693686	511735	1464	US Airways Inc.	Southwest Airlines Co.
DENORD	691698	775368	888	Southwest Airlines Co.	US Airways Inc.
LIHHNL	689788	741833	102	Delta Air Lines Inc.	AirTran Airways Corporation
ATLJAX	688320	698621	270	Delta Air Lines Inc.	AirTran Airways Corporation
PHLORD	686548	687611	678	United Air Lines Inc.	American Airlines Inc.
JAXATL	686146	696904	270	US Airways Inc.	United Air Lines Inc.
BWIATL	685557	674036	576.5398	Delta Air Lines Inc.	AirTran Airways Corporation
ATLBWI	684984	677569	576.5372	United Air Lines Inc.	American Airlines Inc.
ATLMIA	683754	751633	594.5203	Delta Air Lines Inc.	AirTran Airways Corporation
ORDDEN	682642	786639	888	US Airways Inc.	United Air Lines Inc.
DCABOS	681013	489950	399	Continental Air Lines Inc.	JetBlue Airways
SFODFW	680806	511922	1464	United Air Lines Inc.	American Airlines Inc.
MIAATL	680443	740952	594.4563	Continental Air Lines Inc.	JetBlue Airways
EWRMCO	679817	678198	937.5248	JetBlue Airways	American Airlines Inc.
ORDSEA	675937	674187	1721	Delta Air Lines Inc.	American Eagle Airlines Inc.
LAXIAD	673493	705839	2288	Delta Air Lines Inc.	AirTran Airways Corporation

ORDPHL	671728	677940	678	Delta Air Lines Inc.	American Eagle Airlines Inc.
IADLAX	670195	685807	2288	JetBlue Airways	American Airlines Inc.
MCOEWR	667068	670112	937.5192	Hawaiian Airlines Inc.	Mesa Airlines Inc.
ORDATL	666451	648528	606.0045	United Air Lines Inc.	American Airlines Inc.
KOAHNL	666398	637950	163	Delta Air Lines Inc.	AirTran Airways Corporation
ATLORD	663304	642808	606	Continental Air Lines Inc.	United Air Lines Inc.
SEAORD	662097	633842	1721	Hawaiian Airlines Inc.	Mesa Airlines Inc.
HNLKOA	661146	624721	163	US Airways Inc.	American Airlines Inc.
DTWATL	653645	649757	594	US Airways Inc.	American Airlines Inc.
ORDLAS	647468	574267	1514.524	American Airlines Inc.	US Airways Inc.
LASORD	647028	567178	1514.506	United Air Lines Inc.	Virgin America
IAHLAX	646538	571015	1379	American Airlines Inc.	US Airways Inc.
MSPPHX	639814	565387	1276	American Airlines Inc.	Delta Air Lines Inc.
EWROD	634996	637410	719	American Airlines Inc.	US Airways Inc.
ORDPHX	633249	633030	1440	Southwest Airlines Co.	US Airways Inc.
AUSDFW	631498	615167	190	American Airlines Inc.	United Air Lines Inc.
LAXIAH	631292	553503	1379	Delta Air Lines Inc.	AirTran Airways Corporation
PHXSEA	631101	574394	1107	American Airlines Inc.	United Air Lines Inc.
PHXMSP	629283	552362	1276	Southwest Airlines Co.	Frontier Airlines Inc.
ORDEWR	627059	593521	719	Southwest Airlines Co.	US Airways Inc.
PHXORD	625648	626001	1440	United Air Lines Inc.	American Airlines Inc.
IADSFO	624106	620386	2419	Continental Air Lines Inc.	United Air Lines Inc.
ATLDTW	622992	653555	594	Southwest Airlines Co.	AirTran Airways Corporation
JFKMIA	621853	554752	1089.472	American Airlines Inc.	US Airways Inc.
MIAJFK	617688	550000	1089.504	Continental Air Lines Inc.	American Eagle Airlines Inc.
DFWLAS	616792	617148	1055	Southwest Airlines Co.	Frontier Airlines Inc.
LASDFW	615908	620215	1055	Southwest Airlines Co.	AirTran Airways Corporation
SEAPHX	615622	558990	1107	Delta Air Lines Inc.	US Airways Inc.
RDUATL	615390	612975	356	Alaska Airlines Inc.	US Airways Inc.
PHLBOS	614382	464342	280	Delta Air Lines Inc.	AirTran Airways Corporation
DENSAN	614069	605212	853	American Airlines Inc.	Continental Air Lines Inc.
SLCPHX	613289	613713	507	American Airlines Inc.	United Air Lines Inc.
BOSPHL	612982	459978	280	United Air Lines Inc.	Virgin America
SATDFW	611761	612966	247	US Airways Inc.	Delta Air Lines Inc.
DFWPHX	609440	601111	868	Delta Air Lines Inc.	US Airways Inc.
DFWSAT	608995	609773	247	US Airways Inc.	JetBlue Airways
PHXSLC	607119	614237	507	American Airlines Inc.	United Air Lines Inc.
DFWAUS	604200	590010	190	American Airlines Inc.	Virgin America
SANDEN	602722	594183	853	Continental Air Lines Inc.	American Eagle Airlines Inc.
ORDIAH	600497	558432	925	Delta Air Lines Inc.	US Airways Inc.
MSYATL	599724	550426	425	US Airways Inc.	Delta Air Lines Inc.
ATLRDU	595357	593060	356	American Airlines Inc.	US Airways Inc.

ATLMSY	594623	550567	425	Alaska Airlines Inc.	US Airways Inc.
SFOIAD	594368	584566	2419	US Airways Inc.	Mesa Airlines Inc.
ATLPHX	591929	573881	1587	American Airlines Inc.	Virgin America
IAHORD	590704	540850	925	United Air Lines Inc.	Hawaiian Airlines Inc.
PHXDFW	586442	577225	868	American Airlines Inc.	Delta Air Lines Inc.
PHXATL	584995	570208	1587	American Airlines Inc.	Delta Air Lines Inc.
BOSBWI	580950	618273	369.4889	Delta Air Lines Inc.	US Airways Inc.
LGACLT	579244	500060	544	US Airways Inc.	Mesa Airlines Inc.
ORDMIA	579207	591236	1197	Continental Air Lines Inc.	American Eagle Airlines Inc.
MIAORD	578160	592773	1197	Hawaiian Airlines Inc.	Mesa Airlines Inc.
JFKFLL	576460	473949	1069	Delta Air Lines Inc.	Continental Air Lines Inc.
BWIBOS	574581	606377	369.4884	US Airways Inc.	JetBlue Airways
FLLJFK	573890	475279	1069	Continental Air Lines Inc.	United Air Lines Inc.
LASSEA	569724	529274	866.4783	Delta Air Lines Inc.	Continental Air Lines Inc.
CLTDFW	569557	535148	936	Delta Air Lines Inc.	AirTran Airways Corporation
CLTLGA	569151	495986	544	Delta Air Lines Inc.	AirTran Airways Corporation
SEALAS	568606	534521	866.4923	Mesa Airlines	
SFOATL	565770	546388	2139	Horizon Air	Alaska Airlines Inc.
DFWCLT	562869	528331	936	Continental Air Lines Inc.	United Air Lines Inc.
ATLSFO	561263	546385	2139	American Airlines Inc.	Trans States Airlines
MIADFW	560286	560269	1121	American Airlines Inc.	North American Airlines
PBIATL	557930	550889	545	Delta Air Lines Inc.	AirTran Airways Corporation
DFWLGA	554917	557237	1389	Delta Air Lines Inc.	AirTran Airways Corporation
LGADFW	554550	550847	1389	Horizon Air	Alaska Airlines Inc.
HNLITO	554008	586745	216	Continental Air Lines Inc.	United Air Lines Inc.
LASJFK	553649	524939	2248	American Airlines Inc.	United Express
ATLPBI	552674	549650	545	AirTran Airways Corporation	Delta Air Lines Inc.
DFWMIA	552408	560059	1121	American Airlines Inc.	
DENPDX	551309	534160	991.0076	American Airlines Inc.	
EWRIAH	550896	547971	1400	Delta Air Lines Inc.	AirTran Airways Corporation
MCODTW	549650	530922	957	Alaska Airlines Inc.	Southwest Airlines Co.
DTWMCO	549062	528926	957	American Airlines Inc.	Delta Air Lines Inc.
ORDCLT	545819	545352	599	American Airlines Inc.	JetBlue Airways
ITOHNL	542822	576916	216	Continental Air Lines Inc.	ExpressJet Airlines Inc.
JFKLAS	542495	518753	2248	Alaska Airlines Inc.	Southwest Airlines Co.
IAHEWR	539149	539518	1400	US Airways Inc.	American Airlines Inc.
LGAMIA	537791	560912	1096.475	Delta Air Lines Inc.	AirTran Airways Corporation
RSWATL	537584	519672	515	JetBlue Airways	AirTran Airways Corporation
ATLRSW	534757	518035	515	United Air Lines Inc.	Hawaiian Airlines Inc.
IAHDEN	533753	595099	862	American Airlines Inc.	Continental Air Lines Inc.
MIALGA	530118	551151	1096.5	US Airways Inc.	Mesa Airlines Inc./US Airways Inc.
SFOHNL	529565	607088	2399	Delta Air Lines Inc.	JetBlue Airways

HNLSFO	529141	548266	2399	American Airlines Inc.	
MCIDEN	528601	533587	533	US Airways Inc.	American Airlines Inc.
PDXDEN	527422	501533	991.0071	Frontier Airlines Inc.	United Air Lines Inc.
SNAPHX	526399	522555	338	Continental Air Lines Inc.	
PHXSNA	526184	517919	338	Delta Air Lines Inc.	AirTran Airways Corporation
CLTORD	524947	527311	599	Delta Air Lines Inc.	AirTran Airways Corporation
SLCLAS	522528	528875	368	Delta Air Lines Inc.	JetBlue Airways
DENIAH	520713	581835	862	Delta Air Lines Inc.	Southwest Airlines Co.
SJUJFK	516079	522640	1597.508	Southwest Airlines Co.	Frontier Airlines Inc.
LASSLC	513362	518315	368	US Airways Inc.	American Eagle Airlines Inc.
JFKSJU	513064	512962	1597.552	Delta Air Lines Inc.	AirTran Airways Corporation
SEADFW	511262	491591	1660	Southwest Airlines Co.	US Airways Inc.
DENMCI	510441	523811	533	US Airways Inc.	American Eagle Airlines Inc.
SJCLAX	509866	483084	308	Delta Air Lines Inc.	AirTran Airways Corporation
BOSSFO	509691	503207	2704	US Airways Inc.	American Eagle Airlines Inc.
DFWSEA	509572	494145	1660	Southwest Airlines Co.	US Airways Inc.
DCADFW	508759	516220	1192	Delta Air Lines Inc.	Southwest Airlines Co.
SFOBOS	508147	503345	2704	Southwest Airlines Co.	Frontier Airlines Inc.
ATLSLC	507773	510812	1589.549	JetBlue Airways	American Airlines Inc.
SLCATL	507193	517977	1589.526	Delta Air Lines Inc.	
LAXSJC	506141	479923	308	JetBlue Airways	Delta Air Lines Inc.
EWRFLI	505687	486522	1065	American Airlines Inc.	Republic Airlines
MDWDEN	505117	481706	895	American Airlines Inc.	Republic Airlines
PDXSEA	504702	474613	129	United Air Lines Inc.	Southwest Airlines Co.
DFWDCA	504215	516086	1192	JetBlue Airways	Delta Air Lines Inc.
MIALAX	503339	435955	2342	Delta Air Lines Inc.	
SEAMSP	502705	507540	1399	Frontier Airlines Inc.	United Air Lines Inc.
MSPSEA	502137	510348	1399	American Airlines Inc.	AirTran Airways Corporation
LAXMIA	502015	426207	2342	Delta Air Lines Inc.	Alaska Airlines Inc.
IADDEN	500563	521196	1452	Delta Air Lines Inc.	Alaska Airlines Inc.
MCOMIA	498246	427660	192.5401	JetBlue Airways	American Airlines Inc.
PHXSFO	496911	479373	651	American Airlines Inc.	Republic Airlines
SFOPHX	494621	483516	651	United Air Lines Inc.	JetBlue Airways
FLLEWR	493701	480851	1065	United Air Lines Inc.	JetBlue Airways
MIAMCO	491481	426781	192.5922	American Airlines Inc.	Alaska Airlines Inc.
DTWLGA	491326	417643	501.5039	American Airlines Inc.	Alaska Airlines Inc.
SEAPDX	490785	468439	129	United Air Lines Inc.	Southwest Airlines Co.
LGADTW	486968	420389	501.5122	Southwest Airlines Co.	Frontier Airlines Inc.
DENMDW	486920	458927	895	Southwest Airlines Co.	American Eagle Airlines Inc.
MCODFW	481678	528460	984.4655	Southwest Airlines Co.	AirTran Airways Corporation
SEAATL	480487	481743	2182	Southwest Airlines Co.	AirTran Airways Corporation
DFWMCO	480445	526323	984.5231	Southwest Airlines Co.	American Eagle Airlines Inc.

CLTMCO	480309	479561	468	Continental Air Lines Inc.	JetBlue Airways
CLTBOS	479504	493812	728	Delta Air Lines Inc.	AirTran Airways Corporation
BOSCLT	476188	487545	728	US Airways Inc.	JetBlue Airways
MCOBWI	475967	493262	787	US Airways Inc.	Southwest Airlines Co.
ATLSEA	475543	473475	2182	US Airways Inc.	Southwest Airlines Co.
ATLMEM	473976	445044	332	Horizon Air	SkyWest Airlines Inc.
BWICLT	472920	456832	361	Continental Air Lines Inc.	JetBlue Airways
BWIMCO	472181	495925	787	US Airways Inc.	JetBlue Airways
EWRCCLT	472079	491672	529	Delta Air Lines Inc.	AirTran Airways Corporation
DENIAD	472043	505821	1452	Horizon Air	SkyWest Airlines Inc.
ATLSAT	471889	470739	874	US Airways Inc.	AirTran Airways Corporation
MCOCLT	469100	471288	468	Delta Air Lines Inc.	AirTran Airways Corporation

## Top 127 one way passenger routes and distance within domestic U.S.

Route	2011	2010	DISTANCE	Airline 1	Airline 2
LAXSFO	3309119	3097147	337	United Air Lines Inc.	Southwest Airlines Co.
LAXNYC	3034797	2911694	2475	American Airlines Inc.	Delta Air Lines Inc.
CHINYC	2632937	2482445	733	American Airlines Inc.	United Air Lines Inc.
ATLORL	2607528	2636010	403	Delta Air Lines Inc.	AirTran Airways Corporation
LASLAX	2404969	1899340	236	United Air Lines Inc.	US Airways Inc.
CHILAX	2320344	2200105	1745	United Air Lines Inc.	American Airlines Inc.
ATLFL	2293136	2290808	581	Delta Air Lines Inc.	AirTran Airways Corporation
ATLNYC	2280969	2201239	762	Delta Air Lines Inc.	AirTran Airways Corporation
DFWLAX	2143643	1783241	1235	American Airlines Inc.	Delta Air Lines Inc.
CHISFO	2122038	1885399	1846	Virgin America	Continental Air Lines Inc.
ATLDFW	2117863	2078351	732	Delta Air Lines Inc.	American Airlines Inc.
NYCSFO	2049201	2014589	2586	American Airlines Inc.	Delta Air Lines Inc.
DENLAX	2009866	2002023	862	Southwest Airlines Co.	Frontier Airlines Inc.
HNLLAX	1993121	2004377	2556	Hawaiian Airlines Inc.	Delta Air Lines Inc.
DENPHX	1939250	1885039	602	Southwest Airlines Co.	US Airways Inc.
HNLOGG	1927685	1986297	101	Mesa Airlines Inc.	Hawaiian Airlines Inc.
ATLLAX	1847686	1871510	1946	Delta Air Lines Inc.	AirTran Airways Corporation
DENLAS	1844019	1853544	629	Continental Air Lines Inc.	SkyWest Airlines Inc.
CHIDFW	1836638	1780091	802	Continental Air Lines Inc.	American Airlines Inc.
ATLTPA	1825792	1865983	406	Delta Air Lines Inc.	AirTran Airways Corporation
LASSFO	1744538	1793277	414	Continental Air Lines Inc.	SkyWest Airlines Inc.
LASPHX	1682586	1673433	256	US Airways Inc.	Southwest Airlines Co.
BOSCHI	1666893	1619686	867	American Airlines Inc.	United Air Lines Inc.
DENSFO	1632808	1618764	967	United Air Lines Inc.	Frontier Airlines Inc.
ATLWAS	1628605	1648066	547	Delta Air Lines Inc.	AirTran Airways Corporation
ATLPHL	1610753	1545675	666	Delta Air Lines Inc.	AirTran Airways Corporation
ATLCLT	1602660	1506303	227	Delta Air Lines Inc.	US Airways Inc.
LAXPHX	1601062	1410852	370	Southwest Airlines Co.	US Airways Inc.
DENMSP	1588974	1504033	680	Delta Air Lines Inc.	Frontier Airlines Inc.
DALHOU	1579731	1557202	239	Southwest Airlines Co.	SwiftAir
ATLMSP	1531914	1407312	907	Delta Air Lines Inc.	AirTran Airways Corporation
DENSEA	1531645	1452137	1024	United Air Lines Inc.	Frontier Airlines Inc.
SEASFO	1523039	1441077	679	Alaska Airlines Inc.	United Air Lines Inc.
DENSLC	1506707	1508973	390	Skywest Airlines	Southwest Airlines Co.
DENDFW	1505103	1489702	641	American Airlines Inc.	Frontier Airlines Inc.
LAXSEA	1498204	1429153	954	Alaska Airlines Inc.	Virgin America
FLLNYC	1480955	1531914	1076	Spirit Airlines	JetBlue Airways
PHXSAN	1475837	1374510	304	Southwest Airlines Co.	US Airways Inc.
ATLDEN	1469397	1484455	1199	Delta Air Lines Inc.	AirTran Airways Corporation
ANCSEA	1464358	1384510	1448	Alaska Airlines Inc.	Continental Air Lines Inc.



SANSFO	1461896	1511781	447	Southwest Airlines Co.	United Air Lines Inc.
CHIMSP	1451316	1577874	334	United Air Lines Inc.	American Airlines Inc.
ATLLAS	1443906	1460724	1747	Delta Air Lines Inc.	AirTran Airways Corporation
NYCORL	1441702	1222339	944	JetBlue Airways	American Airlines Inc.
ATLBOS	1432435	1470076	946	Delta Air Lines Inc.	AirTran Airways Corporation
CHIWAS	1416173	1508689	612	United Air Lines Inc.	American Airlines Inc.
ORLPHL	1402875	1436796	861	US Airways Inc.	Southwest Airlines Co.
HNLLIH	1394930	1500047	102	Hawaiian Airlines Inc.	Mesa Airlines Inc.
BOSWAS	1381502	989527	399	US Airways Inc.	JetBlue Airways
DFWSFO	1374492	1023657	1464	American Airlines Inc.	Virgin America
ATLJAX	1374466	1395525	270	Delta Air Lines Inc.	AirTran Airways Corporation
CHIDEN	1374340	1562007	888	United Air Lines Inc.	American Airlines Inc.
ATLBWI	1370541	1351605	577	Delta Air Lines Inc.	AirTran Airways Corporation
ATLMIA	1364197	1492585	594	Delta Air Lines Inc.	American Airlines Inc.
CHIPHL	1358276	1365551	678	US Airways Inc.	United Air Lines Inc.
EWORL	1346885	1348310	938	Continental Air Lines Inc.	JetBlue Airways
LAXWAS	1343688	1391646	2288	United Air Lines Inc.	American Airlines Inc.
CHISEA	1338034	1308029	1721	United Air Lines Inc.	American Airlines Inc.
ATLCHI	1329755	1291336	606	Delta Air Lines Inc.	American Eagle Airlines Inc.
HNLKOA	1327544	1262671	163	Hawaiian Airlines Inc.	Mesa Airlines Inc. Airlines Inc.
CHILAS	1294496	1141445	1515	American Airlines Inc.	United Air Lines Inc.
HOULAX	1277830	1124518	1379	Continental Air Lines Inc.	American Eagle Airlines Inc.
ATLDTT	1276637	1303312	594	Delta Air Lines Inc.	AirTran Airways Corporation
MSPPHX	1269097	1117749	1276	Delta Air Lines Inc.	US Airways Inc.
CHIEWR	1262055	1230931	719	Continental Air Lines Inc.	United Air Lines Inc.
CHIPHX	1258897	1259031	1440	US Airways Inc.	American Airlines Inc.
PHXSEA	1246723	1133384	1107	Alaska Airlines Inc.	US Airways Inc.
MIANYC	1239541	1104752	1089	American Airlines Inc.	Delta Air Lines Inc.
AUSDFW	1235698	1205177	190	American Airlines Inc.	Delta Air Lines Inc.
DFWLAS	1232700	1237363	1055	American Airlines Inc.	US Airways Inc.
BOSPHL	1227364	924320	280	US Airways Inc.	Southwest Airlines Co.
DFWSAT	1220756	1222739	247	American Airlines Inc.	US Airways Inc.
PHXSLC	1220408	1227950	507	Southwest Airlines Co.	US Airways Inc.
SFOWAS	1218474	1204952	2419	United Air Lines Inc.	Virgin America
DENSAN	1216791	1199395	853	Southwest Airlines Co.	Frontier Airlines Inc.
ATLRDU	1210747	1206035	356	Delta Air Lines Inc.	AirTran Airways Corporation
DFWPHX	1195882	1178336	868	American Airlines Inc.	US Airways Inc.
ATLMSY	1194347	1100993	425	Delta Air Lines Inc.	AirTran Airways Corporation
CHIHOU	1191201	1099282	925	Continental Air Lines Inc.	American Eagle Airlines Inc.
ATLPHX	1176924	1144089	1587	Delta Air Lines Inc.	US Airways Inc.
CHIMIA	1157367	1184009	1197	American Airlines Inc.	United Air Lines Inc.
BOSBWI	1155531	1224650	369	Southwest Airlines Co.	AirTran Airways Corporation

FLLNYC	1150350	949228	1069	Spirit Airlines	JetBlue Airways
CLTNYC	1148395	996046	544	US Airways Inc.	American Eagle Airlines Inc.
LASSEA	1138330	1063795	866	Alaska Airlines Inc.	Southwest Airlines Co.
CLTDFW	1132426	1063479	936	US Airways Inc.	American Airlines Inc.
ATLSFO	1127033	1092773	2139	Delta Air Lines Inc.	AirTran Airways Corporation
DFWMIA	1112694	1120328	1121	American Airlines Inc.	
ATLPBI	1110604	1100539	545	Delta Air Lines Inc.	AirTran Airways Corporation
DFWNYC	1109467	1108084	1389	American Airlines Inc.	Delta Air Lines Inc.
DTTORL	1098712	1059848	957	Delta Air Lines Inc.	AirTran Airways Corporation
HNLITO	1096830	1163661	216	Hawaiian Airlines Inc.	Mesa Airlines Inc. Airlines Inc.
LASNYC	1096144	1043692	2248	Delta Air Lines Inc.	JetBlue Airways
EWRHOU	1090045	1087489	1400	Continental Air Lines Inc.	ExpressJet Airlines Inc.
DENPDX	1078731	1035693	991	Frontier Airlines Inc.	United Air Lines Inc.
ATLRSW	1072341	1037707	515	Delta Air Lines Inc.	AirTran Airways Corporation
CHICLT	1070766	1072663	599	US Airways Inc.	Mesa Airlines Inc. /US Airways Inc.
MIANYC	1067909	1112063	1096	American Airlines Inc.	Delta Air Lines Inc.
HNLSFO	1058706	1155354	2399	United Air Lines Inc.	Hawaiian Airlines Inc.
DENHOU	1054466	1176934	862	Continental Air Lines Inc.	United Air Lines Inc.
PHXSNA	1052583	1040474	338	Southwest Airlines Co.	US Airways Inc.
DENMCI	1039042	1057398	533	Southwest Airlines Co.	Frontier Airlines Inc.
LASSLC	1035890	1047190	368	Delta Air Lines Inc.	Southwest Airlines Co.
NYCSJU	1029143	1035602	1598	JetBlue Airways	American Airlines Inc.
DFWSEA	1020834	985736	1660	American Airlines Inc.	Alaska Airlines Inc.
BOSSFO	1017838	1006552	2704	United Air Lines Inc.	JetBlue Airways
LAXSJC	1016007	963007	308	Southwest Airlines Co.	American Eagle Airlines Inc.
ATLSLC	1014966	1028789	1590	Delta Air Lines Inc.	
DFWWAS	1012974	1032306	1192	American Airlines Inc.	Republic Airlines
LAXMIA	1005354	862162	2342	American Airlines Inc.	Delta Air Lines Inc.
MSPSEA	1004842	1017888	1399	Delta Air Lines Inc.	Alaska Airlines Inc.
EWRFULL	999388	967373	1065	Continental Air Lines Inc.	JetBlue Airways
PDXSEA	995487	943052	129	Horizon Air	SkyWest Airlines Inc.
DENMDW	992037	940633	895	Southwest Airlines Co.	Frontier Airlines Inc.
PHXSFO	991532	962889	651	US Airways Inc.	Southwest Airlines Co.
MIAORL	989727	854441	193	American Airlines Inc.	Delta Air Lines Inc.
DTTNYC	978294	838032	502	Delta Air Lines Inc.	American Airlines Inc.
DENWAS	972606	1027017	1452	United Air Lines Inc.	Southwest Airlines Co.
DFWORL	962123	1054783	984	American Airlines Inc.	AirTran Airways Corporation
ATLSEA	956030	955218	2182	Delta Air Lines Inc.	AirTran Airways Corporation
BOSCLT	955692	981357	728	US Airways Inc.	JetBlue Airways
CLTORL	949409	950849	468	AirTran Airways Corporation	Delta Air Lines Inc.
BWIORL	948148	989187	787	Southwest Airlines Co.	AirTran Airways Corporation
ATLMEM	473976	445044	332	AirTran Airways Corporation	Delta Air Lines Inc.

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BWICLT	472920	456832	361	US Airways Inc.	AirTran Airways Corporation
CLTEWR	472079	491672	529	US Airways Inc.	Mesa Airlines Inc. Airlines Inc.
ATLSAT	471889	470739	874	Delta Air Lines Inc.	AirTran Airways Corporation

### Passenger Travel along the top 127 one way routes for each month of the year 2010

Route	Jan-10	Feb-10	Mar-10	Apr-10	May-10	Jun-10	Jul-10	Aug-10	Sep-10	Oct-10	Nov-10	Dec-10
LAXSFO	222058	200090	235443	236318	244678	271249	275898	281700	265604	303176	284425	276508
LAXNYC	227201	181838	234051	234453	240280	246992	267601	273261	250387	260300	247944	247386
CHINYC	143273	133691	181359	192044	201563	232247	244054	255552	231578	242052	228336	196696
ATLORL	219195	196918	239972	215878	215074	227832	231867	218954	206676	234429	214011	215204
LASLAX	151395	141190	163627	152378	164399	158886	162234	170585	156732	169235	156669	152010
CHILAX	155667	143724	178990	182245	192166	202716	207381	209835	185857	199934	172791	168799
ATLFLI	198349	178531	217860	191175	194068	187806	191656	180752	169141	193078	191820	196572
ATLNYC	137511	131871	175916	179897	188761	192837	210158	221577	187907	197565	192988	184251
DFWLAX	136596	115889	143358	144761	149000	158555	168448	166252	140890	152869	143191	163432
CHISFO	117979	110807	143638	163019	178399	180110	182349	181163	160170	170525	151518	145722
ATLDFW	145667	130099	164416	167593	179924	195476	200068	181698	167934	189782	178329	177365
NYCSFO	145948	126043	158793	166729	179363	184205	188806	188951	174339	180878	163040	157494
DENLAX	146325	134180	169166	155621	168121	184207	193220	193805	156739	169840	161709	169090
HNLLAX	145228	125748	153108	158275	167611	188782	211183	213375	156934	167312	150128	166693
DENPHX	155979	153034	195576	161392	161836	153682	146605	134177	141303	159180	160229	162046
HNLOGG	161963	161966	172930	159492	164020	174063	190074	180959	149651	159187	153559	158433
ATLLAX	138784	124535	157014	162137	159487	165365	170446	170906	153112	161501	151334	156889
DENLAS	132211	140666	173945	159357	170152	161666	159188	158429	153058	165780	142816	136276
CHIDFW	123916	114270	146661	146336	148933	160465	172233	163537	152349	163220	146634	141537
ATLTPA	136096	137225	180422	161055	157396	158840	158970	153910	149869	167371	155050	149779
LASSFO	141533	131556	151418	151681	155344	155633	154504	157458	148213	158059	148612	139266
LASPHX	135382	138703	169759	148679	147734	130821	128546	129475	130766	147492	133947	132129
BOSCHI	95007	96021	121449	132152	144022	149492	166183	170059	144603	157396	131231	112071
DENSFO	110440	106127	132947	132134	145003	147518	147868	151819	136923	144244	133682	130059
ATLWAS	65189	50234	76092	78942	76068	78435	83721	83041	73923	78632	74700	70931
ATLPHL	109390	90897	127495	127342	133487	136153	140893	144119	130907	141747	138391	124854
ATLCLT	114407	103471	124951	128565	125697	131826	143301	134867	125418	128214	121881	123705
LAXPHX	115805	104553	127013	120369	123007	118400	127999	124251	105138	113246	111072	119999
DENMSP	108718	102528	129261	113870	119066	140882	155339	151346	128095	126900	111545	116483
DALHOU	111334	112873	139787	133292	132427	140345	134994	130410	124945	139314	129248	128233
ATLMSP	109376	103009	127352	114186	117492	124177	126524	122587	112924	122246	113419	114020
DENSEA	96465	90463	106062	108162	124798	138893	152218	150917	129855	119143	115131	120030
SEASFO	102557	100461	120762	114295	116227	127137	130565	137422	124152	120176	118874	128449
DENSLC	124880	116711	145472	124820	126445	135152	137404	134747	119457	120735	107170	115980
DENDFW	115897	105528	125615	113267	119778	136568	145309	139215	123628	127856	112879	124162
LAXSEA	106886	100377	119002	114511	115989	128293	137169	139679	119260	114245	114845	118897
FLINYC	133569	116425	147559	142915	130433	109870	128771	136336	114555	122335	124582	124564
PHXSAN	107648	104339	120789	117714	109045	112070	126410	120352	109860	115958	113313	117012
ATLDEN	113504	101048	129628	121199	126509	141217	145724	135642	121212	124169	109153	115450

ANCSEA	99457	82563	106876	95462	125256	131846	146759	133261	121638	113770	107781	119841
SANSFO	116271	103999	122272	121615	122854	125934	133777	139402	129036	135962	135997	124662
CHIMSP	116277	110774	150552	139677	140701	142039	144828	144235	131139	133162	116182	108308
ATLLAS	110523	104476	127495	125189	126798	126328	130921	127408	122318	134051	115691	109526
NYCORL	81281	75001	95902	94813	98624	97872	120160	120423	96822	107800	116012	117629
ATLBOS	93875	90730	112639	124791	141327	136832	137929	143597	125120	135994	118578	108664
CHIWAS	43981	39314	56772	56263	57614	61269	59094	59629	48445	53142	49674	48312
ORLPHL	107237	95250	142910	135992	122677	115845	126361	128852	93735	119443	124091	124403
HNLLIH	118663	115525	129096	119144	124122	133404	148807	138047	115171	124959	116362	116747
BOSWAS	49464	44185	61026	69606	85777	88487	84642	89458	77079	85361	65512	59653
DFWSFO	73499	66565	84029	84676	84809	87691	90979	89320	85951	96664	85365	94109
ATLJAX	98036	96916	128108	124187	116433	125777	123667	115900	110136	122765	119019	114581
CHIDEN	106704	106451	134835	126496	134140	144427	159568	154381	131725	133424	114737	115119
ATLBWI	93064	73690	112248	120425	121518	124639	126039	122265	109473	120672	117325	110247
ATLMIA	127960	115296	142342	135891	138016	130460	127476	120292	111971	115629	112952	114300
CHIPHL	89172	77168	113867	115959	121875	126113	125290	130072	118794	126099	117994	103148
EWORL	98225	96477	133606	136103	109204	103758	129631	127601	93070	110262	110682	99691
LAXWAS	106867	79739	116749	118171	122139	127441	129824	129863	109462	119429	116338	115624
CHISEA	82488	81821	101479	107769	118770	124663	135594	132089	112153	110499	99189	101515
ATLCHI	93443	88666	119279	113166	111669	107159	109753	107492	108229	119712	110239	102529
HNLKOA	103275	98836	109803	98435	96641	104427	117556	114385	93675	107458	110340	107840
CHILAS	85686	80984	95772	98364	104784	97021	98440	101703	103002	109202	90490	75997
HOULAX	81860	68682	84195	83674	90808	113691	124528	116864	81776	87909	84720	105811
ATLDDT	84680	90294	113126	113750	107944	112822	119587	119164	104145	116328	108600	112872
MSPPHX	95287	100848	128856	94126	83882	81246	78314	79371	85042	95540	94701	100536
CHIEWR	77386	68686	92533	101912	113317	123829	123541	127688	110170	112350	99296	80223
CHIPHX	95922	96913	126221	114129	114090	104165	104277	99144	95189	107134	105099	96748
PHXSEA	82488	83350	107719	98151	96090	93772	101841	98316	89477	89484	91229	101467
MIANYC	94554	77628	100333	99504	100162	91975	100936	102478	77909	85921	89439	91224
AUSDFW	93543	83272	109322	97871	103976	106185	108293	100580	95463	104870	101334	100468
DFWLAS	96367	90148	108090	105542	111245	107795	109476	105806	99269	110355	97560	95710
BOSPHL	41934	41284	54912	62197	62641	66679	97893	106155	98435	111564	96613	81788
DFWSAT	93868	86208	114091	108204	104550	108334	107357	98462	93590	106658	102021	99396
PHXSLC	107101	102116	120744	103505	97444	104777	105251	100742	89624	99143	95823	101680
SFOWAS	83968	68151	93159	99813	103422	107829	109987	122363	106957	114200	98100	97003
DENSAN	86612	82278	102694	95454	98048	107132	114091	114738	101044	107251	97756	92297
ATLRDU	81460	75867	96589	102561	103740	109236	112651	105864	103037	113796	103676	97558
DFWPHX	98513	87929	111008	98911	100135	101914	99856	88342	87701	97850	98989	107188
ATLMSY	78590	77387	93822	101365	100040	91998	91630	77988	86829	111607	103359	86378
CHIHOU	76214	74542	90781	88042	89509	96844	101042	98212	89862	98049	95869	100316
ATLPHX	93095	84352	105718	100638	99546	99620	102493	92757	85948	94729	93899	91294
CHIMIA	100515	94741	113598	105810	107011	99829	97188	92870	79597	95258	95715	101877

BOSBWI	82557	63913	96456	109096	113706	112508	114514	118823	102241	121097	100956	88783
CLTNYC	70113	60847	75130	76410	82256	79465	80919	88412	93265	97389	96828	95012
LASSEA	67208	68168	90376	94243	96821	95658	99252	101873	92019	84818	83369	89990
CLTDFW	68260	62914	77825	79378	91950	101428	102471	99301	92124	99718	94715	93395
ATLSFO	67906	58890	73756	78748	94095	115000	120006	118600	99826	100124	82368	83454
DFWMIA	92462	81401	96723	95247	99070	102165	102219	93224	78591	89274	90672	99280
ATLPBI	90553	85404	111122	98547	88381	87569	87951	82828	79003	94345	99479	95357
DFWNYC	78404	67644	94197	92801	95388	99669	98501	104560	91910	96165	95070	93775
DTTORL	87357	89155	108368	93720	82073	81166	86617	87316	69836	88228	88962	97050
HNLITO	94872	88755	102321	92122	99629	101714	109218	101670	88963	94003	90949	99445
LASNYC	75159	67843	78830	83544	95210	94308	100803	104514	92014	98072	80580	72815
EWRHOU	77904	69190	89848	89454	98112	96656	98670	100807	85534	96217	93330	91767
DENPDX	66329	62004	79236	75873	89306	99053	105953	106516	91373	88208	83951	87891
ATLRSW	90596	88204	106746	93538	90451	82788	81495	72101	71947	91742	87171	80928
CHICLT	73184	71239	89541	86059	92857	99774	100176	98093	89462	97979	89019	85280
MIANYC	94554	77628	100333	99504	100162	91975	100936	102478	77909	85921	89439	91224
HNLFO	131932	74874	91339	89330	89047	100083	105568	104772	91850	96051	87889	92619
DENHOU	92959	89350	106750	89011	93887	110917	116911	109598	92230	95965	85107	94249
PHXSNA	82799	76277	90347	85390	85483	87904	89724	92530	83462	89882	86705	89971
DENMCI	75257	70468	89083	79168	86818	99824	104247	97840	90019	92100	86510	86064
LASSLC	88921	84502	97642	86129	84637	88423	89174	89294	82338	91126	78320	86684
NYCSJU	84382	69820	85827	82372	89075	97643	108783	104376	72305	73896	78184	88939
DFWSEA	65656	61919	73395	76925	84841	92039	100675	99788	84514	83000	79588	83396
BOSSFO	71037	64487	78730	81206	86119	92789	96602	98085	87688	96290	80661	72858
LAXSJC	65849	63428	74473	76460	79132	83998	83217	84019	85771	93598	85985	87077
ATLSLC	86353	79156	95262	84749	86959	86450	89594	88175	82447	86746	79163	83735
DFWWAS	34101	27683	42745	40915	41717	45850	47113	46678	41392	47734	43759	45369
LAXMIA	74947	65629	76380	77573	76930	74951	73378	70625	57857	64791	71057	78044
MSPSEA	60635	54416	75002	76065	79387	108133	125362	119574	87145	80147	71900	80122
EWRFLI	88602	82857	105092	93020	71057	71969	77273	79040	56951	71694	86969	82849
PDXSEA	67593	66007	77645	73841	74029	85063	87264	86777	81121	80476	79133	84103
DENMDW	64253	61485	79608	71684	74137	90263	96683	94823	78950	80081	72852	75814
PHXSFO	68700	64296	88243	81132	81828	81264	83785	83228	76543	88062	83683	82125
MIAORL	78446	67375	69725	70498	69548	66547	72410	69337	69125	75389	68788	77253
DTTNYC	47058	41971	58781	65314	78038	77226	80899	87121	76125	79002	73609	72888
DENWAS	74255	54483	83918	75842	79641	90152	99156	103766	94280	100327	83412	87785
DFWORL	85274	76406	90904	87125	89698	100690	103939	87742	72807	87449	84075	88674
ATLSEA	58298	55324	65538	64877	77964	104971	113649	113381	101554	75734	58524	65404
BOSCLT	62584	67492	75906	78627	88015	86654	96075	96786	84660	87035	78979	78544
CLTORL	78672	76110	84230	77966	76073	76029	74543	80079	74200	90430	79548	82969
BWIORL	82716	60582	96178	94109	82837	85252	91696	85068	65946	82565	82092	80146
ATLMEM	54280	54055	72520	68811	78807	85603	83912	77523	75820	84287	75267	73294

BWICLT	60515	51485	72602	74114	79264	84730	85942	85886	75922	80925	78130	75110
CLTEWR	68668	62355	80388	86294	90465	91742	86369	92049	80453	82580	79764	76946
ATLSAT	63392	60383	85237	84677	80141	84502	84305	74112	70511	82964	79539	77315

## Passenger Travel along the top 127 one way routes for each month of the year 2011

Route	Jan-10	Feb-10	Mar-10	Apr-10	May-10	Jun-10	Jul-10	Aug-10	Sep-10	Oct-10	Nov-10	Dec-10
LAXSFO	235838	225577	256333	257932	291499	289238	305404	302730	285977	292097	285368	281126
LAXNYC	223798	203717	242468	245796	267776	269477	279084	270511	261545	273838	252504	244283
CHINYC	163480	155286	207722	216244	229571	234554	229468	234747	241937	254936	245762	219230
ATLORL	195921	200218	234458	213767	220035	226318	230642	221921	208126	232725	217291	206106
LASLAX	171875	157001	174540	181519	212575	210293	234094	236292	218471	228703	196299	183307
CHILAX	155735	135023	175560	184719	201301	213633	223950	227518	205637	211519	188961	196788
ATLFL	186372	186858	219347	198130	194907	185234	191851	180742	171169	193727	190377	194422
ATLNYC	141740	143968	184721	192688	214225	205770	221092	210710	185250	197998	193124	189683
DFWLAX	149592	134064	167213	171730	175809	203464	215224	204068	172086	186256	178227	185910
CHISFO	134564	112356	142221	142792	169791	216796	217537	226040	198497	202565	181010	177869
ATLDFW	152318	141535	175605	173084	193594	205885	210976	190049	176014	193450	170262	135091
NYCSFO	147751	133713	170742	170631	186343	182219	181176	174198	181903	188293	168577	163655
DENLAX	156585	138792	167176	164207	178893	180002	186124	184418	156086	170628	162631	164324
HNLLAX	151812	134217	161717	155422	171184	191339	198173	191007	157271	158994	151243	170742
DENPHX	161128	158905	202596	165307	171694	151641	150300	145470	143909	160207	162109	165984
HNLOGG	155392	154409	167173	154609	164133	164856	182119	173378	145964	153465	153720	158467
ATLLAX	139067	128771	151844	152436	159020	165654	176680	174994	145540	153870	153081	146729
DENLAS	143538	137329	169918	157604	164902	154733	154511	156045	155840	167752	145497	136350
CHIDFW	127759	112174	146018	140764	141140	160809	168956	170166	166800	179246	160547	162259
ATLTPA	125405	130333	178636	151393	152715	157983	161856	155122	143173	160806	155114	153256
LASSFO	138061	128007	133024	138981	156573	154449	156990	160990	157791	157453	134369	127850
LASPHX	143094	130862	151648	139929	150073	142175	136982	135203	135532	150918	133691	132479
BOSCHI	95225	87593	121395	135022	145619	156976	165449	168666	161614	172119	141579	115636
DENSFO	119065	110035	126528	130939	143429	148310	151826	156882	135908	141164	137065	131657
ATLWAS	57725	57176	72834	76425	82898	79698	86009	82194	69016	75563	71285	60790
ATLPHL	103138	100546	127771	129703	149140	146536	148681	150605	139779	145897	142183	126774
ATLCLT	106316	106417	125258	123762	136015	146420	155175	149946	135654	143503	134282	139912
LAXPHX	116106	103173	135316	132446	141882	143152	149797	145559	125466	134575	133556	140034
DENMSP	115171	106443	135692	121370	133504	149518	162079	164438	133110	128891	116671	122087
DALHOU	125971	107160	138772	124498	138164	140408	132729	134248	131863	140059	135382	130477
ATLMSP	117035	115107	143317	127681	130173	134518	140100	139764	119119	125296	120258	119546
DENSEA	105965	94752	118380	118305	129607	143278	158891	160558	132727	122546	120064	126572
SEASFO	104679	105482	125953	117533	125976	133123	138912	148578	132936	122347	126949	140571
DENSLC	125057	114379	133698	119434	126845	130212	132889	140070	122062	126254	115686	120121
DENDFW	111869	101090	123123	112596	122449	140666	147783	143296	128709	127768	121280	124474
LAXSEA	99344	100083	128864	120107	132421	139600	145631	149088	124833	116880	119355	121998
FLLYNYC	128128	117599	139256	124376	129791	119564	136096	125808	104407	116467	113408	126055
PHXSAN	112622	104818	121818	123524	127355	132975	140984	135567	117547	120499	120461	117667
ATLDEN	105612	106860	126232	109059	125004	137635	148534	138651	122572	122855	110918	115465



ANCSEA	100814	86537	113559	93287	130115	155717	167732	148944	135696	110907	107902	113148
SANSFO	108736	102415	110823	115132	121977	125787	129549	131640	126620	127812	130612	130793
CHIMSP	97847	89810	126165	113361	124700	139094	136885	143806	131135	135806	115096	97611
ATLLAS	108577	101749	132765	120694	130037	125877	125751	124249	124475	132577	112368	104787
NYCORL	107716	101538	137551	129792	127907	121253	148660	137323	95212	108718	113923	112109
ATLBOS	92697	87177	115278	122176	135978	132116	139108	136313	121955	130767	117058	101812
CHIWAS	42489	34887	52094	48854	51355	55656	57657	55661	45921	49864	48662	45817
ORLPHL	110139	110295	151398	141994	119575	102752	113372	111108	93097	111743	118984	118418
HNLLIH	110899	109362	122815	110167	115571	120934	134245	123835	111163	111311	110649	113979
BOSWAS	50302	49521	60282	66701	69049	68252	73303	69950	53865	58343	52924	46643
DFWSFO	87103	82527	102425	108757	114494	125690	131966	128560	124208	130489	118985	119288
ATLJAX	93301	98631	125561	118052	123063	124622	125331	112749	105586	121066	117929	108575
CHIDEN	102703	92100	117768	110005	119522	132055	135391	134346	111295	112034	100906	106215
ATLBWI	86216	79161	107465	117407	127292	129637	134742	128394	114886	121517	115553	108271
ATLMIA	103961	103709	120662	116484	120649	109356	114944	110225	100526	118555	120395	124731
CHIPHL	93284	81593	117348	112002	119340	125905	125371	125512	119945	127325	112747	97904
EWORL	97139	98856	132025	139650	114298	107656	119457	115695	92217	107040	113174	109678
LAXWAS	100201	93605	110701	108277	117787	121038	124681	124739	107431	110435	108715	116078
CHISEA	86228	74332	104085	113844	121835	128562	135463	137439	118773	115754	101268	100451
ATLCHI	87255	82954	113385	113776	121254	122462	123890	120968	110930	123523	110831	98527
HNLKOA	110095	107942	114481	100363	106874	109796	125025	119222	108073	106044	107393	112236
CHILAS	87033	80975	115242	112693	121991	111721	121868	120560	123693	123479	93641	81600
HOULAX	81856	65988	84841	99990	106462	131346	152467	135265	95781	103045	102691	118098
ATLDDT	93625	92379	111298	102242	115066	113777	119239	118536	101705	108195	98910	101665
MSPPHX	107385	104868	142652	107581	107986	104320	103528	95023	91636	103390	98605	102123
CHIEWR	69954	64916	96345	109369	125281	133546	128127	121878	106680	110539	101344	94076
CHIPHX	98813	92581	130153	110655	112992	98649	100972	100058	98509	107795	105260	102460
PHXSEA	92676	85201	117508	112484	107331	107797	112197	111029	97735	94514	101896	106355
MIANYC	95660	88657	106844	103203	106919	96715	112230	110044	102677	105456	108409	102727
AUSDFW	87389	80119	106195	100594	105010	110151	109691	104143	103890	110979	108708	108829
DFWLAS	99613	82263	96868	90619	109972	113400	123230	113801	104676	111523	99348	87387
BOSPHL	76216	78150	103031	104801	103716	105545	109726	112048	107697	120361	111769	94304
DFWSAT	91770	82410	110730	105256	101761	109944	110734	106037	101903	108027	97072	95112
PHXSLC	105411	101107	116636	100271	98752	105942	107530	101419	88075	95325	96451	103489
SFOWAS	78584	77620	97140	99373	110162	112667	112360	111874	104718	112420	97926	103630
DENSAN	92746	90178	105936	97917	102001	102742	110713	114728	102063	105426	96765	95576
ATLRDU	81067	80176	97647	98012	111064	108856	111486	108457	100574	112915	105340	95153
DFWPHX	106270	92376	117955	99446	100941	101869	100196	90096	90009	101287	99012	96425
ATLMSY	77519	83298	101817	104639	113534	107025	100799	90085	93031	116612	105803	100185
CHIHOU	81385	71787	105968	97951	104354	109484	115498	107149	93744	103336	100074	100471
ATLPHX	86458	83554	106324	97972	109657	108727	109193	98686	89030	98049	95327	93947
CHIMIA	99343	91576	112616	101870	99933	99843	100468	93350	81298	85379	89646	102045

BOSBWI	70237	68287	93891	106950	115958	110410	115381	109036	96027	101181	89037	79136
CLTNYC	81125	78028	93065	95199	105357	99449	104352	97191	92292	98866	99931	103540
LASSEA	79520	75177	99577	98941	101529	98548	103357	107017	98594	99792	87745	88533
CLTDFW	84793	77960	95543	90289	99198	105289	105301	96107	90496	97001	93568	96881
ATLSFO	69444	63875	79432	85880	106265	113169	124722	119480	101761	101404	82838	78763
DFWMIA	97692	85910	96920	92761	94978	100048	102216	90469	78125	84951	90373	98251
ATLPBI	88737	92435	111896	101372	95675	87288	89609	83452	78266	91391	95979	94504
DFWNYC	76239	69507	90417	87902	96747	96431	96501	99862	94976	94403	100992	105490
DTTORL	90350	87037	107176	104634	91521	87372	93311	88608	75215	93883	89397	90208
HNLITO	90676	87796	99126	84676	99357	92419	99245	93278	83101	87097	85199	94860
LASNYC	80098	73965	88305	94864	110645	96886	97285	98146	99493	99097	80917	76443
EWRHOU	82166	69907	92785	94063	101162	98348	107517	94643	83719	86292	87940	91503
DENPDX	70297	64871	82553	81204	93758	101357	108057	113371	92893	90204	89707	90459
ATLRSW	81241	88562	112588	94618	97940	85845	89582	80862	76581	90287	92350	81885
CHICLT	77777	71224	92268	86609	91820	96129	98990	94895	84338	93472	92392	90852
MIANYC	95660	88657	106844	103203	106919	96715	112230	110044	102677	105456	108409	102727
HNLSFO	82674	77111	93662	88158	90400	100202	106630	100557	82793	81799	73430	81290
DENHOU	83403	73723	95984	81307	88536	90733	98041	93652	85003	88306	84523	91255
PHXSNA	83180	77902	93380	85375	88590	92514	94543	97577	85231	85620	84255	84416
DENMCI	66626	64644	85469	80426	95442	95544	100753	101541	91218	91310	85342	80727
LASSLC	92262	86695	101074	92765	87247	86629	86993	88819	81768	83859	71873	75906
NYCSJU	89698	78072	90739	81539	78443	86174	109088	96453	64002	70862	83919	100154
DFWSEA	71008	66155	83758	85636	84219	97065	106374	101809	85199	82618	74818	82175
BOSSFO	65339	58284	74921	76224	94309	98926	101540	98623	88761	91512	82294	87105
LAXSJC	78276	73837	86768	85882	90243	90377	92465	88414	78572	83680	83265	84228
ATLSLC	80829	81432	96456	77590	82636	86896	91585	93311	85803	82945	74628	80855
DFWWAS	36766	33760	43582	39768	40632	47921	49454	48162	43040	44274	42346	40931
LAXMIA	77005	67516	73081	85502	89003	91583	97545	92356	75474	81792	81810	92687
MSPSEA	62867	52599	65748	66949	79576	107417	122801	117396	90021	83311	76493	79664
EWRFLI	85270	82241	105390	103475	74526	75125	78837	75100	60019	77000	90601	91804
PDXSEA	74646	69590	85067	80367	82952	88319	89477	95036	81944	79392	82618	86079
DENMDW	69315	60806	84215	78045	88814	98034	104069	99410	81811	77412	72866	77240
PHXSFO	79626	72891	92213	86723	86176	84330	85967	81261	74368	78952	83204	85821
MIAORL	86049	72374	78967	82107	81236	81235	87680	82132	79276	86297	82664	89710
DTTNYC	60432	55058	72294	76230	83518	86725	92799	92604	90702	94678	86856	86398
DENWAS	75799	69085	80746	76083	82001	92740	93711	92219	80078	81949	71291	76904
DFWORL	80268	72922	87179	78554	78820	84322	87555	74328	74770	84740	80396	78269
ATLSEA	57310	54122	65295	69101	76713	100739	116008	115179	96301	78317	66117	60828
BOSCLT	69952	67240	80879	81469	86429	82599	86819	83733	76285	81643	79974	78670
CLTORL	79521	77992	89940	80394	82581	71530	74365	72018	67655	83136	84244	86033
BWIORL	73322	69326	91022	89799	92347	86187	93551	81156	63899	75849	67914	63776
ATLMEM	63361	64549	78641	76781	89118	85362	86901	80948	78913	84841	76115	76977

BWICLT	66366	64592	76879	73718	85418	85141	86729	82058	76192	81828	79443	79023
CLTEWR	65906	67747	77903	79031	86634	79974	84646	81341	77582	79616	81054	77498
ATLSAT	63988	62896	83574	76279	84130	91104	92394	81401	67667	77477	76537	74877

### Passenger Travel along the top 127 one way routes for each month of the year 2012

Route	Jan-12	Feb12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12
LAXSFO	270453	259779	291767	297692	287572	295582	307902	330028	302712	313960	287939
LAXNYC	243501	229633	263446	268191	270602	276466	287577	301922	269284	260535	243439
CHINYC	219323	205846	254151	270327	283298	278887	276200	294634	278466	275585	241403
ATLORL	203958	209929	228135	226276	225552	222924	225012	222392	207970	230315	220150
LASLAX	186865	182046	187403	194545	197535	195623	200034	199043	186686	196762	176574
CHILAX	180610	179200	204473	196951	207857	219360	223083	230050	199623	207192	188671
ATLFLI	194384	193768	213724	199646	202275	206577	211778	194897	176312	199646	195772
ATLNYC	193262	190235	234397	243351	263214	254122	275511	278958	232329	227391	227675
DFWLAX	171466	167456	198092	191068	206515	204036	213411	204880	173036	172730	172151
CHISFO	171911	163419	187755	184472	203153	210367	221176	218581	175565	193026	164505
ATLDFW	122962	121646	148104	139687	149650	159794	157244	146850	128501	147474	140674
NYCSFO	155854	151862	180408	192387	201774	207105	211670	218949	188341	182064	167975
DENLAX	149750	141857	168870	153274	163046	162827	170705	171462	146260	154958	150602
HNLAX	160904	143583	177933	159180	177564	192328	207216	207100	158241	170252	162137
DENPHX	160243	163762	194291	169441	164633	137768	140450	140884	135539	162053	158108
HNLOGG	167052	159299	169692	157765	167685	178314	183264	181059	154930	164377	171407
ATLLAX	136285	125740	146838	141631	148958	164545	177319	177684	150243	156924	152781
DENLAS	136311	134406	160478	151062	173606	158298	150241	153188	157807	173089	153779
CHIDFW	150048	140863	162371	159425	168579	174358	185061	182547	155313	167567	150289
ATLTPA	147459	147526	171733	168185	166185	167939	165130	162149	153328	175972	161028
LASSFO	143129	127370	132276	142371	149849	150579	156496	163929	154355	161228	142189
LASPHX	135865	140094	151655	139950	146164	128412	127913	126117	127474	145419	128983
BOSCHI	109237	112850	137729	154381	172717	179300	174077	176949	155261	152105	135189
DENSFO	120447	115455	133676	127215	138342	147529	153668	158389	144399	152607	143537
ATLWAS	59164	55595	67885	72481	80992	64315	62891	63811	54130	56269	56116
ATLPHL	118689	112791	140103	140746	149088	150313	149716	151646	136720	141099	141175
ATLCLT	134180	128351	143390	133055	139460	151136	156590	159861	152169	163094	154999
LAXPHX	129627	117570	144119	133816	142706	147401	153424	143898	126185	141452	140668
DENMSP	111196	106765	129506	115315	125708	143763	153729	158329	127409	133609	114554
DALHOU	122686	129672	142411	132410	142754	145412	137845	140803	130528	141598	127907
ATLMSP	122049	117441	129152	119145	123740	129550	131335	137051	122799	130040	119836
DENSEA	107385	100739	113553	116034	131703	146617	164922	169732	141476	133147	126383
SEASFO	113421	121968	136582	132514	134254	142782	148196	156996	136837	128722	121295
DENSLC	120194	113886	125541	118223	123450	122517	125814	133778	119517	125660	114889
DENDFW	115205	110990	123088	108518	137509	159820	165672	160351	134795	145387	137491
LAXSEA	102175	107428	128729	120299	123164	126848	134690	134768	118372	110457	106962
FLLNYC	217939	205406	252428	218253	197903	188301	207896	228406	171757	170613	200109
PHXSAN	109631	107390	130034	120705	124665	129256	140291	135668	110837	123739	115330
ATLDEN	101361	102691	134122	121606	135076	143516	155131	147114	126243	136946	123121

ANCSEA	96117	86353	110674	96037	127492	158848	177611	161393	130985	106006	100285
SANSFO	113331	115034	124371	126266	124237	128952	136400	149263	129939	128076	125530
CHIMSP	96107	99014	119788	123207	129570	155936	157969	169242	149174	157121	135146
ATLLAS	103272	101840	120873	115206	131372	119532	120852	117649	116316	138210	125883
NYCORL	150343	149919	202888	205080	206909	192414	224839	232274	153086	163505	178987
ATLBOS	95888	93446	113944	123961	128531	130258	138777	143818	122570	131141	118094
CHIWAS	37824	34613	47945	45521	50004	53903	51931	53169	43838	44617	42812
ORLPHL	104644	110015	139729	130561	115647	108124	107763	109378	89028	103285	114371
HNLLIH	109209	113603	119748	107714	115507	124317	131799	128828	107226	109740	110765
BOSWAS	44851	43597	51579	57015	57561	52034	50783	52448	46603	48420	47792
DFWSFO	110686	105631	125213	123888	135808	135330	136435	135831	120745	126022	115192
ATLJAX	96354	101871	126881	122670	124797	128797	127205	122329	108396	121482	116864
CHIDEN	96823	97704	112682	104067	115895	124440	127596	128963	114878	116036	106548
ATLBWI	96778	103278	131783	142297	151669	165595	159787	158123	126953	136063	142491
ATLMIA	123513	111630	128773	124365	122378	119153	119074	112381	100161	115946	117837
CHIPHL	97627	94833	112428	114154	117046	119833	119460	124514	115008	114025	114350
EWORL	98871	99644	127747	129990	107350	108597	119581	121573	85285	95287	105497
LAXWAS	100630	94263	111480	106046	111924	114067	119475	119864	98618	98525	94248
CHISEA	78924	72048	95301	114253	117705	125346	130060	134907	119530	113223	95645
ATLCHI	98260	96475	124445	120930	123890	126504	119620	118064	109464	123140	112998
HNLKOA	114594	109301	117848	105332	111476	120212	129477	132271	104663	115501	114708
CHILAS	85057	93986	124968	121312	122489	101256	100762	100761	110305	114435	84054
HOULAX	26340	23619	27042	24001	26109	28036	31642	30962	25194	26968	28638
ATLDDT	95870	98314	107827	108519	120217	117779	122061	122571	102455	111833	107663
MSPPHX	105674	107461	145898	105186	99958	102364	100633	96593	83972	99177	93998
CHIEWR	85023	80754	94349	101139	107937	126094	119081	122757	101165	98433	95031
CHIPHX	95292	95769	117923	101930	102184	99103	95106	87579	93312	108456	103988
PHXSEA	91042	97681	128181	111184	106555	108299	112268	108418	91624	97262	100718
MIANYC	196304	172301	203074	212972	209828	191738	206775	204869	174314	174762	187784
AUSDWV	97354	94623	112860	106036	121841	116672	113257	112240	93410	107157	102718
DFWLAS	90777	86127	100811	83995	96769	95763	96023	94389	102799	113964	103138
BOSPHL	98871	82069	81842	82259	86656	80715	79151	79844	75223	84386	85058
DFWSAT	92722	94188	110255	102920	114316	114181	107636	107290	91131	106640	105329
PHXSLC	108778	108302	116650	97360	93072	98296	101547	105525	92172	100901	91521
SFOWAS	87267	88663	106738	108953	113324	121587	114567	114322	99946	101006	95919
DENSAN	89646	85230	98469	93018	94845	96430	102982	107585	95175	99559	95990
ATLRDU	90499	89888	106622	103196	109760	118097	114407	114776	104176	120816	115221
DFWPHX	98796	103549	121774	99245	105344	94588	92940	86909	87565	96350	98437
ATLMSY	97547	101990	116414	117315	121994	115676	117085	93914	102876	130692	121143
CHIHOU	0	0	0	0	0	0	51	0	64	0	163
ATLPHX	89602	84111	105973	98038	106976	110875	111001	102222	87803	107215	107837
CHIMIA	102773	98932	119388	97634	93502	96083	95156	85130	69045	84795	86865

BOSBWI	68565	74428	91598	101329	105813	105536	104849	101581	83461	82402	86007
CLTNYC	132921	124741	143734	151522	160170	151384	167437	178425	169703	163208	158933
LASSEA	74841	79030	96556	99515	102847	101979	106255	102121	91859	93575	84552
CLTDFW	93106	85086	93280	87378	97615	103631	102930	102592	90953	104157	99850
ATLSFO	72478	65109	79165	81399	93154	111280	117680	110816	93431	102465	88921
DFWMIA	97607	91582	101991	92686	97035	99305	101571	94011	83296	90563	91117
ATLPBI	90443	87616	111166	99344	96191	89592	87509	86881	77228	92767	95807
DFWNYC	93048	90620	120468	124109	138316	132437	136520	144201	114755	117000	120126
DTTORL	87863	95107	108432	99457	87848	89422	93441	87002	70481	86658	90245
HNLITO	89156	87080	95162	88190	95587	94364	101590	96223	82103	90676	88504
LASNYC	86155	74665	84243	90695	102613	94397	95202	105055	98026	94426	70338
EWRHOU	9004	7715	11820	11460	12075	13659	14806	13994	10679	10408	14336
DENPDX	74302	67599	78893	81725	92390	97495	103871	113856	95715	97755	82521
ATLRSW	90617	93972	124126	103455	101795	84967	83750	78034	76894	88254	90078
CHICLT	86373	83015	97950	97962	103171	108845	105996	108025	96173	106843	100438
MIANYC	196304	172301	203074	212972	209828	191738	206775	204869	174314	174762	187784
HNLSFO	78843	77712	93458	83464	87407	90229	93011	93740	76049	79856	75287
DENHOU	38708	37021	41453	38431	38818	41654	37202	31768	26901	29859	28690
PHXSNA	83596	77078	90092	85030	88579	91868	99913	101912	84138	90042	87001
DENMCI	77108	73882	84290	79709	91579	90753	94123	94991	84938	91924	80224
LASSLC	78198	77038	89787	83795	81338	83293	85985	81548	70742	76992	71422
NYCSJU	97662	90156	116766	118400	111201	120561	138815	125603	82721	83029	97792
DFWSEA	68087	63838	76528	75836	85167	96083	106230	102847	87335	81249	79298
BOSSFO	73007	72402	92280	91933	95902	100913	107286	116442	95140	93431	85166
LAXSJC	78039	73757	83297	83609	85646	86592	89370	88941	80490	83673	85844
ATLSLC	84514	80682	90933	83877	86006	90964	93626	92263	82573	83413	77454
DFWWAS	33732	32092	42848	42658	46142	44696	45370	39628	30394	30737	36186
LAXMIA	92597	81859	93107	97693	95349	96184	100924	90500	72262	79841	87298
MSPSEA	56391	51491	62460	70333	86831	105896	116065	116409	90426	82948	76713
EWRFULL	92702	90660	109607	108722	74007	73354	82030	79634	58529	65440	87143
PDXSEA	75250	76961	84126	82618	83334	85349	88862	91271	79321	81704	82212
DENMDW	60335	57719	74155	71407	85722	91878	96350	98213	79338	82085	72322
PHXSFO	78648	71934	92903	80619	84189	89716	92704	89111	78469	89418	82580
MIAORL	99257	87246	85241	86333	83840	82057	89741	83240	83346	85209	78852
DTTNYC	83446	77240	92661	98391	102464	106897	109742	118294	101747	98792	93329
DENWAS	69843	63893	76119	68880	76160	86919	87111	89135	77028	73913	72250
DFWORL	76404	81927	94522	79200	85783	86847	85741	80291	74585	87041	85062
ATLSEA	58524	56758	66079	66930	72407	92711	105142	101216	87018	71367	72811
BOSCLT	76576	74768	88663	88273	90374	83859	87757	91151	78788	84442	89136
CLTORL	87646	86013	95281	88936	85830	78990	78731	78953	68978	83745	79226
BWIORL	68845	68379	84365	84655	75753	81915	81023	80334	58189	67717	77029
ATLMEM	71946	73320	80804	77671	86229	88929	90348	87859	85438	87818	82010

BWICLT	75728	73996	86567	85651	91217	89226	88473	91185	82294	80106	85382
CLTEWR	73085	68045	76429	80542	84908	81134	88457	93133	85699	82215	83379
ATLSAT	68956	64343	83793	78497	82748	95218	94390	85118	69478	79792	81029