

Federal Aviation Administration

## FAA Aerospace Forecast Fiscal Years 2010-2030

U.S. Department of Transportation Federal Aviation Administration Aviation Policy and Plans

## >>> MESSAGE FROM THE ADMINISTRATOR

This year's forecast confirms what we already know: Aviation is a business subject to highly volatile and unpredictable external influences. Whether it is the economy, the global political climate or environmental concerns, our industry is affected at every level. The good news is that aviation has shown time and time again that it can adapt and meet those challenges while continuing to provide safe, efficient transportation. This year's forecast anticipates that these challenges will remain for at least 20 more years. But it also shows our confidence this industry will not only face these challenges head on, but will thrive.

Aviation has been especially hard hit by the turbulence that has rocked our economy. As the economy dipped, airline demand fell sharply. Airlines have tightened their belts, passengers have modified their traveling habits, and our airports have had to adapt. But, economic growth will return along with passengers and increasing operations. We expect to see changes in the industry as it rebounds over the next several years, with international markets growing faster than domestic markets, and large airports growing faster than smaller ones. We also expect the trend toward larger regional jets to continue while most of the smaller regional jets will be retired from the fleet.

For the remainder of 2010, we expect that last year's trends will continue before the industry turns the corner. But we do expect growth in the longer-term. For the short-term, we will continue to see declines in both domestic and international capacity as carriers respond to the impacts of the economic downturn. The airlines will continue to make adjustments to fleets and operations to match changing demand.

Although we find the industry dealing with issues no one would have predicted a decade ago, we also know those issues are here to stay, along with possibly new, unknown challenges. All of us in the industry must learn how to do business in this uncertain world. Factors such as oil price volatility, economic uncertainty, congestion concerns, security demands, and environmental issues are not going away.

This forecast will help the FAA and the aviation industry prepare for the future. In spite of the uncertain world in which we find ourselves, we know that a robust aviation industry is key to economic recovery and future continued growth. We will be ready.

Ballow

Randy Babbitt Administrator

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## >>> FORECAST HIGHLIGHTS 2010-2030

Aviation will continue to grow over the long term, despite current global economic conditions. Since 2000, U.S. airlines have dealt with the impacts of 9/11, the bankruptcy of four network carriers, record high fuel prices, the most serious economic downturn since the Great Depression, and heightened concerns about a pandemic that turned into reality in 2009. In spite of these challenges, the number of passengers traveling continues to grow over the long term, demonstrating the value of air transportation to the public. There has been a slowdown in air travel growth, and the FAA now calls for one billion passengers to be flown in 2023, pushed back from last year's 2021.

The 2010 forecast for commercial aviation calls for lackluster activity in the near term, with a return to growth over the long term. The level of activity and demand in the long term, however, is not expected to snap back to levels published in the previous FAA forecast. The most significant factor preventing recovery to prior forecast levels is the blow to the economy from the Great Recession. The recession led to an erosion of wealth, double-digit unemployment, declining corporate travel budgets, and close-fisted consumers, all of which contributed to a softening of demand for air travel. A bright spot is on the horizon, though. After four straight quarters of decline, the U.S. economy resumed growth in the fourth quarter of 2009, albeit driven by government stimulus packages that are winding down.

System capacity in available seat miles (ASMs) – the overall yardstick for how busy aviation is both domestically and internationally – will drop 1.6 percent this year, after posting a 7.4 percent decrease during 2009, and then grow at an average of 3.6 percent per year through 2030. In the domestic market, capacity drops 1.1 percent in 2010, after posting the largest percentage decline in ASMs (down 8.9 percent in FY 2009) since deregulation of the industry. Domestic mainline carrier capacity will decline 1.6 percent (marking the third straight year of declines). For the regional carriers, domestic capacity will grow 1.9 percent from 2009 levels – resuming growth after shrinking in 2009 for the first time since deregulation. Commercial air carrier domestic revenue passenger miles (RPMs) are forecast to grow 0.4 percent in 2010, and then grow at an average of 3.2 percent per year through 2030; enplanements in 2010 will grow 0.4 percent for the year, and then grow at an average annual rate of 2.5 percent for the remainder of the forecast.

Following previous downturns (e.g. the recessions in 1991 and 2001) carriers stimulated passenger demand by reducing fares sharply. The industry's initial response to the current economic downturn was to modestly cut fares and to better match supply (seats) and demand (passengers). It quickly became apparent that dramatic (not modest) cuts in fares would be the only way to stimulate passenger demand, and carriers responded with multiple sales throughout the year. In addition, to help minimize losses, carriers also reduced flying to hold the line on costs. With no evidence of pent up demand, we do not anticipate a return to previously forecasted passenger levels even when recovery takes hold.

The average size of domestic aircraft is expected to decline by 0.3 seats in FY 2010 to 121.6 seats. Average seats per aircraft for mainline carriers are projected to fall by 0.8 seats as network carriers<sup>1</sup>

<sup>1</sup> Alaska Airlines, American Airlines, Continental Airlines, Delta Airlines, Northwest Airlines, United Airlines, and US Airways (although Delta Airlines and Northwest Airlines merged, the carriers continued to report separate operating results through 2009 since they held separate operating certificates).

continue to reconfigure their domestic fleets. While demand for 70-90 seat aircraft continues to increase, we expect the number of 50 seat regional jets in service to fall, increasing the average regional aircraft size in 2010 by 1.2 seats to 56.2 seats per mile. Passenger trip length in domestic markets will remain relatively flat, decreasing by 0.7 miles.

The downturn in the economy has dampened the near-term prospects for the general aviation industry, but the long-term outlook remains favorable. We see growth in business aviation demand over the long term driven by a growing U.S. and world economy. As the fleet grows, the number of general aviation hours flown is projected to increase an average of 2.5 percent a year through 2030.

The shaky global economy that took hold in the latter part of 2008 is expected to continue its squeeze on air travel demand through 2010. Profitability for U.S. carriers will hinge on the return of demand for corporate air travel, the ability to pass along fare increases to leisure travelers, and a stable environment for fuel prices. To navigate the volatile operating environment, mainline carriers will continue to drive down their costs by better matching flight frequencies and/or aircraft gauge with demand, delaying deliveries of newer aircraft and/or grounding older aircraft, and pressuring regional affiliates to accept lower fees for contract flying. Over the long term, we see a competitive and profitable industry characterized by increasing demand for air travel and air fares growing more slowly than inflation.

## ▷▷▷ REVIEW OF 2009

Each passing month of 2009 saw the light on consumer confidence dim as housing foreclosures climbed, credit tightened, and unemployment surged. This chain of events led to listless demand for air travel during the year as corporate travel budgets were slashed and consumer spending dried up. In 2009<sup>2</sup> system revenue passenger miles (RPMs) decreased 7.1 percent as enplanements fell 7.3 percent. Commercial air carrier domestic enplanements were down 7.3 percent while international enplanements fell 6.6 percent. The system-wide load factor increased 0.2 points to 79.7 percent. Domestic enplanement market share for low-cost and regional carriers grew in 2009 while network and "other" carrier share decreased. Enplanement market share for the network carriers shrank 1.5 points to 47.6 percent while market share for "other" carriers shrank 0.5 points to 1.4 percent. Low cost carrier<sup>3</sup> share rose 0.9 points to 26.6 percent and regional carrier market share rose 1.0 points to 24.4 percent.

System wide real yield dropped 9.8 percent during 2009 as the Great Recession led to reduction in demand for premium travel and carriers executed fare sales throughout the year to stimulate demand for leisure travel. In spite of the economic environment, the commercial air carrier industry posted an operating profit in 2009. Carrier operating losses during the first half of the year were replaced by operating profits during the second half for total operating profits of \$755 million for the year (compared to a \$2.0 billion operating losse posted for 2008). The network carriers reported operating losses for the three of the four quarters to total losses of \$1.7 billion for the year. All six of the network carriers posted losses for the year, while eight out of nine of the low cost carriers posted operating profits. The net loss for U.S. commercial air carriers in 2009 was \$8.1 billion, with the network, low cost, "other" and cargo carriers posting net losses of \$7.6 billion, \$145.6 million, \$296.0 million, and \$331.2 million, respectively. The regional carriers posted a net profit of \$202.3 million.

The market for general aviation products and services declined sharply in 2009. U.S. manufacturer shipments declined for the 2nd year in a row, a whopping 48.5 percent decrease, while billings fell 32.1 percent compared to 2008. Single engine piston aircraft shipments fell 54.6 percent while turbine jet aircraft shipments decreased by 46.2 percent. The decline in shipments and billings seen in the jet fleet was a direct reflection of the downturn in the U.S. and world economy. Along with the fall in shipments and billings, general aviation activity at FAA and contract tower airports fell 11.7 percent in 2009.

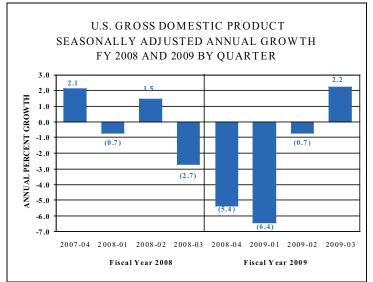
Total operations at FAA and contract towers fell 10.4 percent to their lowest levels since 1982 as activity declined in all user categories. Although the number of flights fell, FAA's workload didn't. As the fleet mix changes with increasing numbers of regional and business jets in the nation's skies, and as carriers consolidate operations in their large hubs, the complexity of activity in the airspace continues to grow, increasing our workload.

<sup>2</sup> All stated years and quarters for U.S. economic and U.S. air carrier traffic and financial data and forecasts are on a fiscal year (FY) basis (October 1 through September 30). All stated years and quarters for international economic and world traffic and financial data are on a calendar year (CY) basis, unless otherwise stated.

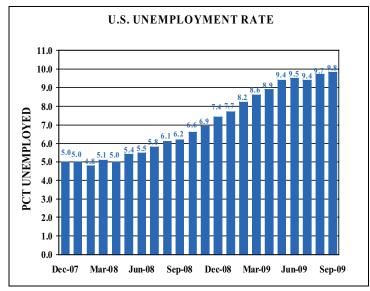
<sup>3</sup> Allegiant Air, AirTran Airways, Frontier Airlines, JetBlue Airways, Southwest Airlines, Spirit Airlines, USA3000, and Virgin America Airlines.

## U.S. ECONOMIC ACTIVITY

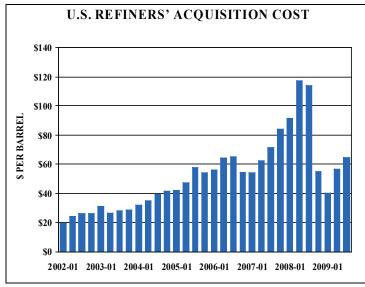
In FY 2009, the U.S. economy experienced the worst recession in the post war era. After growing 1.9 percent in FY 2008, U.S. Gross Domestic Product (GDP) contracted 2.9 percent in fiscal year 2009. The story during the first part of the year was the sharp decline in output that accompanied the financial crisis brought on by the Lehman Bros bankruptcy in September 2008. Real GDP contracted 5.4 percent in the first quarter followed by an even steeper 6.4 percent contraction in the second quarter. As the economic downturn gathered momentum, the new Administration and Congress passed the American Recovery and Reinvestment Act (ARRA) in February 2009. The bill which included a combination of individual tax cuts, investment incentives, aid to people directly hurt by the recession, state fiscal relief, and direct government investment spending was estimated to have a total fiscal impact of \$787 billion. While there has been significant debate about the effectiveness of ARRA, data show that the freefall in economic activity began to temper during the 3Q as output fell by just 0.7 percent. In the 4Q, buoyed by a variety of rebate programs (most notably "cash for clunkers") the U.S. economy grew for first time in five quarters, with output increasing by 2.2 percent.



One of the most obvious impacts of the recession was the rise in the nation's unemployment rate. In December 2007 when the recession began, the unemployment rate was 5.0 percent. As the recession intensified the unemployment rate rose and reached 7.4 percent in December 2008. The rate continued to rise throughout 2009 and stood at 9.8 percent in September 2009. All told from the beginning of the recession through the end of FY 2009, approximately 6.9 million jobs have been lost.



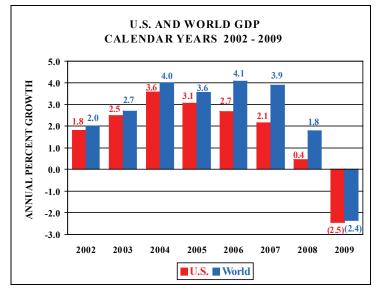
Another impact of the recession was the falling demand for oil and resulting lower oil prices. Oil prices, as measured by the U.S. Refiners' Acquisition Cost, fell by 45.4 percent in FY 2009 to \$55.46. But, as in FY 2008, the average price for the year fails to tell the whole story. Oil prices, which averaged \$98.91 in September 2008, fell rapidly through January 2009, down to \$37.45, then recovered back to \$65.71 by June and remained in the mid \$60 range for the balance of the fiscal year, averaging \$67.74 in September 2009.



The combination of falling demand and falling energy prices resulted in the consumer price index (CPI) declining by 0.3 percent in FY 2009, the first decline in the CPI since 1955. The 0.3 percent fall in the CPI in FY 2009 was 4.7 percentage points lower than in FY 2008.

## WORLD ECONOMIC ACTIVITY

As the world's largest economy, the U.S continues to have a prominent role in world economic growth. The slowdown that began in the U.S. in 2008 spread to all corners of the globe by the end of the year and led to the worst performance in the global economy since the Great Depression. In calendar year 2009, the world economy shrank by an estimated 2.4 percent as the advanced economies (U.S., Western Europe, Japan, Australia, New Zealand, and Canada) contracted 3.3 percent. Most regions saw their economies shrink but data coming out at the end of the year suggested that recovery had begun in most parts of the world with China and the U.S. leading the way.



On a calendar year basis, GDP in Canada contracted at the same rate of the U.S. in 2009, falling 2.5 percent. The combined economies of the Asian and Far East nations grew just 1.2 percent in 2009, down from 3.5 percent a year earlier. This region includes the world's second largest economy, Japan (down 5.3 percent), and the world's most vibrant economy, China (up 8.5 percent). The combined economies of Europe were hit particularly hard by the downturn with the economies of Western Europe shrinking 3.9 percent while the combined economies of Central Europe and the former Soviet Union contracted 6.1 percent. GDP in Latin America fell 2.1 percent with Brazil up just 0.2 percent while Mexico shrank by 7.5 percent as the U.S. recession resulted in sharp economic downturn in Mexico.

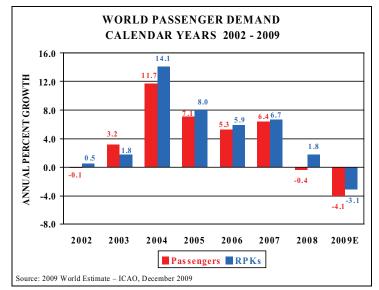
## COMMERCIAL AVIATION

Commercial aviation suffered through a terrible year in 2009. Despite falling jet fuel prices, the downturn in passenger demand as a result of the global recession hurt the industry. Coming off of a year of record losses in 2008, the U.S. industry posted a smaller net loss in 2009, with a similar outcome predicted for foreign carriers. With the U.S., Europe and Japan in recession, global industry net losses for calendar year 2009 are expected to be \$11.0 billion, with large losses in all global regions<sup>4</sup>. Although U.S. airlines had implemented large capacity reductions at the end of 2008, the downturn in demand resulted in a loss of pricing power and fares fell sharply in 2009.

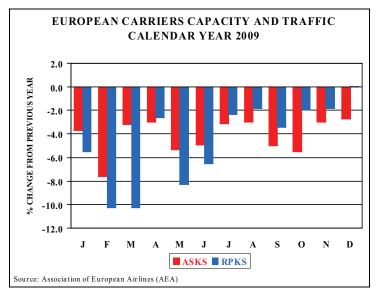
<sup>4</sup> IATA Financial Forecast, December 2009.

#### WORLD TRAVEL DEMAND

Based on data compiled by the International Civil Aviation Organization (ICAO), world air carriers recorded their "worst-ever" performance in CY 2009, reflecting the first contraction of the global economy since the Great Depression of 1929. Although traffic results are not available for full year 2009, ICAO estimates that worldwide RPKs decreased 3.1 percent. In comparison world passenger traffic declined 2.9 percent during 2001<sup>5</sup>.

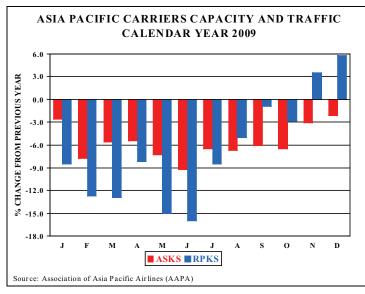


Statistics from the Association of European Airlines (AEA) show that passengers decreased 5.8 percent and RPKs decreased 4.5 percent for CY 2009. Capacity, as measured by available seat kilometers (ASKs), was down 4.2 percent during the same time period. Data available through CY 2009 show that AEA carrier traffic was strongest in the Middle-East (up 6.1 percent), followed by the North Africa (up 4.5 percent), and Sub Saharan Africa regions (up 1.2 percent). Traffic in the North Atlantic region was down 5.6 percent.

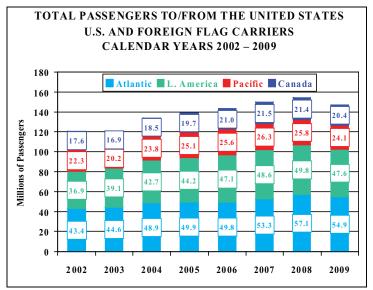


5 ICAO News Release, December 18, 2009.

The Association of Asia Pacific Airlines (AAPA) reported a decrease of 6.5 percent in RPKs on a 6.1 percent decrease in ASKs in CY 2009. Passengers were down 5.7 percent during the same period.

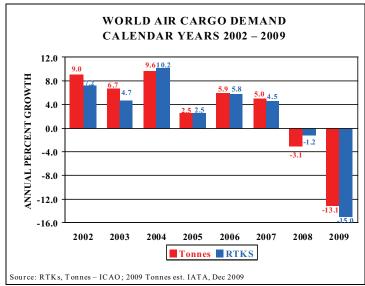


In CY 2009, U.S. and foreign flag carriers will transport an estimated 147.1 million passengers between the United States and the rest of the world, a 4.7 percent decrease from 2008. Year-over-year growth declined in all world markets with the Pacific market posting the largest decline (down 6.4 percent) followed by the Canadian transborder market (down 5.9%), the Latin America market (down 4.3 percent), and the Atlantic market (down 3.9 percent).

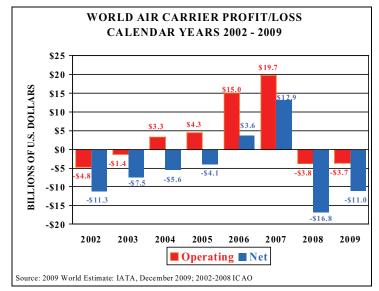


Worldwide air cargo demand plummeted in 2009 as world trade volumes fell due to the global economic downturn.<sup>6</sup> According to ICAO, worldwide freight tonne kilometers fell 15.0 percent in 2009 compared to a drop of 1.2 percent in 2008. AEA member carriers FTK's were down 16.5 percent for the year while AAPA member carriers FTKs were down 11.0 percent for the same period.

<sup>6</sup> ICAO News Release, December 18, 2009.



The International Air Transport Association (IATA) reports world air carriers (including U.S. airlines) are expected to register an operating loss of \$3.7 billion for 2009. Falling yields due to reduced demand combined with an upward trend in fuel prices led to deteriorating financial results for CY 2009, with IATA estimating global airline industry net losses to be \$11.0 billion for the year. Based on financial data compiled by ICAO between 2001 and 2008 world airlines produced cumulative operating profits of \$20.5 billion (with four years out of eight posting gains) and net losses of \$41.8 billion (with two years out of eight posting gains).<sup>7</sup>



7 IATA Financial Forecast, December 2009.

#### U.S. TRAVEL DEMAND

By year end FY 2009, the U.S. commercial aviation industry consisted of 18 scheduled mainline air carriers that use large passenger jets (over 90 seats) and 66 regional carriers that use smaller piston, turboprop, and regional jet aircraft (up to 90 seats) to provide connecting passengers to the larger carriers. Mainline and regional carriers provide domestic and international passenger service between the U.S. and foreign destinations, although regional carrier international service is confined to border markets in Canada, Mexico, and the Caribbean. There were no carriers that either started or ceased operations during 2009; however Republic airlines acquired Midwest Airlines in June 2009 and Frontier Airlines (and its wholly owned subsidiary Lynx Aviation) during August 2009. Twenty-seven all-cargo carriers were providing domestic and/or international air cargo service at the end 2009.

Three distinct trends have occurred over the past several years that are shaping today's commercial air carrier industry: (1) convergence of the network and low cost carrier business models; (2) consolidation of activity at a small percentage of the nation's airports, and (3) a delineation of markets served between mainline and regional carriers.

The narrowing of the percentage share of domestic mainline capacity operated between network and low cost carriers resumed in 2009, signaling a trend toward convergence of their respective business models. After losing share in 2008, partially due to the cessation of operations by two low cost carriers during the year (American Trans Air and Skybus Airlines), low cost carrier share grew 1.5 percentage points in 2009. Since 2000, the share of capacity flown by the low cost carriers has more than doubled, going from 17.0 percent in 2000 to 35.8 percent in 2009.

Activity at over 400 airports offering commercial service in the 48 contiguous states is consolidated at a small percentage of the airports. Analysis of Department of Transportation origin and destination data for the period 2000 through 2008 shows the percent of originating passengers at the 35 Operational Evolution Partnership (OEP) airports as a share of total domestic originating passengers to be stable. During this period the OEP 35 share ranged from a low of 63.1 percent in 2001 to a high of 64.5 percent in 2006 (in 2008 the share was 63.9 percent). Taking a larger sample, looking at the top 100 airports ranked by O&D passengers, these airports share of total domestic originating passengers has ranged from a low of 91.6 percent to a high of 92.1 percent in 2006 (with the share in 2008 at 91.9 percent), highlighting the concentration of passengers in the system.

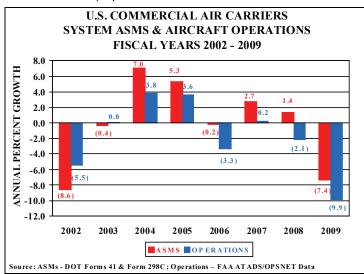
The number of city pairs less than 750 miles apart served by mainline carriers in the contiguous U.S. is shrinking, indicating a concentration of flying by this group of carriers in markets greater than 750 miles. Overall, between 2003 and 2008 the number of city pairs served by mainline carriers increased by 218, going from 3,044 to 3,262. In markets greater than 750 miles apart, city pairs for this carrier group increased by 268 and in markets less than 750 miles city pairs decreased by 50. In 2008, markets greater than 750 miles apart were 59.0 percent of all markets served by mainline carriers, up from a share of 54.4 percent in 2003. In comparison, between 2003 and 2008 the number of city pairs served by regional carriers increased in both distance categories. For distances less than 750 miles, regional carriers flew 182 more markets than in 2003, and for distances greater than 750 miles these carriers flew 380 more markets than in 2003.

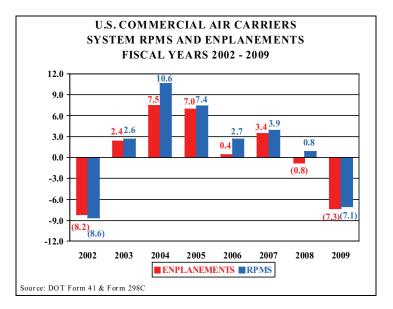
#### **Commercial Air Carriers – Passengers**

The contraction in growth that crept into the final months of fiscal year 2008, intensified in 2009 as U.S. commercial air carriers posted sharp declines in capacity and traffic during the year. System (the sum of domestic plus international) capacity dropped 7.4 percent to 965.5 billion ASMs while RPMs dropped 7.1 percent to 769.7 billion. During the same period system-wide passenger growth declined 7.3 percent.

Two factors attributed toward the decline in demand for air travel during FY 2009. The primary factor reducing demand was the global economic meltdown. The meltdown strained corporate travel budgets and led to double-digit unemployment. Secondary to the economic meltdown was the outbreak of H1N1 flu which resulted in drastically reduced demand to the Latin region (particularly Mexico) during the Spring. In an attempt to stem financial losses, carriers quickly reduced capacity with yield preservation as the goal. These actions were no match for a deepening recession, swelling unemployment lines, and consumer confidence that plummeted to an all-time low in February 2009. For the year, mainline carrier passenger growth contracted 8.2 percent while regional carrier growth dropped 3.9 percent. In the domestic market mainline passengers fell 8.5 percent from 2008 levels (for the sixth time in nine years) while passengers in international markets fell for the first time since 2002 (down 5.6 percent).

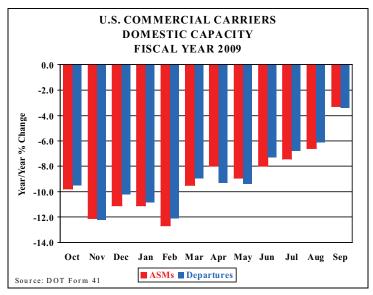
In 2009, system load factor, trip length and seats per aircraft mile climbed. Load factor grew 0.2 points to 79.7 percent, down 0.2 points from the all-time high posted in 2007. For the seventh consecutive year of growth, trip length increased 1.8 miles to 1,093.2 miles. Seats per aircraft mile increased (up 2.0 seats) to 139.8 seats per aircraft mile. In a reversal from recent trends, mainline carriers shifted some larger aircraft traditionally used to fly international routes over to domestic ones, while regional carriers phased out some smaller regional jet (50 seats and below) operations.





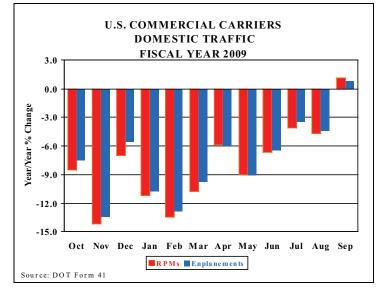
#### Domestic Passenger Markets

Domestic capacity (50 states, Puerto Rico, and the U.S. Virgin Islands) was down 8.9 percent in 2009 for the steepest decline since deregulation in 1978 (the second deepest decline occurred in 2002 after the terror attacks of 9/11, down 6.9 percent). Departures decreased by 8.7 percent after falling 1.9 percent in FY 2008. Year-over-year declines in capacity were posted each month of FY 2009. After hitting double-digit declines in capacity during the first half of the year (down 11.0 in the first and second quarter of 2009) capacity dropped 8.3 percent and 6.0 percent in the third quarter and fourth quarter, respectively. Mainline carrier capacity was down 9.5 percent for the year, while regional carrier capacity was down 5.1 percent. At the end of 2009, domestic ASMs were 5.9 percent below pre-9/11 levels while departures were 14.6 percent below.



Domestic passenger enplanements and RPMs fell at a slower rate than ASMs in 2009. The decline in passenger growth accelerated from the first to the second quarter, going from down 8.1 percent to down

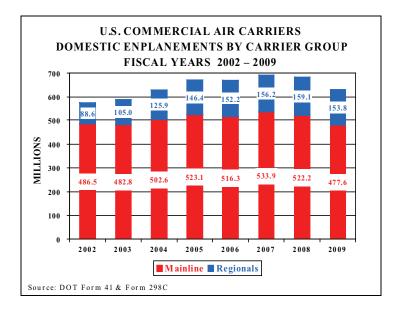
11.0 percent. During the last half of the year, the decline in growth slowed to down 5.0 percent, with September 2009 posting a slight increase of 0.2 percent over the same 2008 period. Mainline carrier enplanements were down 8.5 percent for the year, while regional passengers fell 3.4 percent, marking the first decline in passenger growth for regional passengers during the post-deregulation era.



Similar to passengers, domestic RPMs dropped faster than ASMs with domestic RPMs down 7.7 percent in 2009. After falling dramatically during the first and second quarter of the year, down 9.9 percent and 11.8 percent, respectively, the last half of the year was only down 5.1 percent with September posting year-over-year growth of 0.5 percent. For the year, mainline carrier RPM growth was down 8.2 percent, while regional carrier growth was down 4.3 percent.

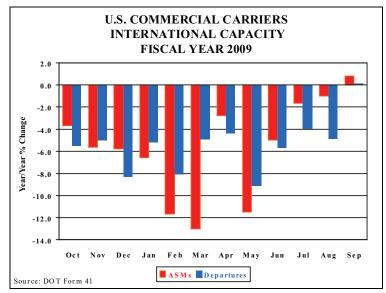
Domestic carrier load factor increased 1.0 points to 80.4 percent, setting an all-time high. Mainline carrier load factor increased 1.1 points to an all time high of 81.3 percent, while regional carrier load factor increased 0.6 points from 2008 to be 74.3 percent.

Since 2000, total domestic capacity has decreased by 5.9 percent. Mainline carriers have shrunk their domestic capacity by 14.4 percent with cutbacks by network carriers more than offsetting the growth of low-cost carriers. Making up the shortfall from network carrier capacity cuts during this time are the regional carriers. This segment of the industry has greatly increased capacity since 2000 (up 146.3 percent). During the same period, mainline carrier RPMs have decreased 2.2 percent, while enplanements have fallen by 14.9 percent. In comparison, regional carrier RPMs and enplanements have increased 207.5 and 93.04 percent, respectively. As a result, mainline carrier domestic capacity share has fallen from 94.7 percent in 2000 to 86.2 percent in 2009, while their share of RPMs has dropped from 95.5 percent to 87.2 percent during the same period. Regional carriers now carry 1 in every 4 passengers, up from 1 in every 7.8 in 2000.

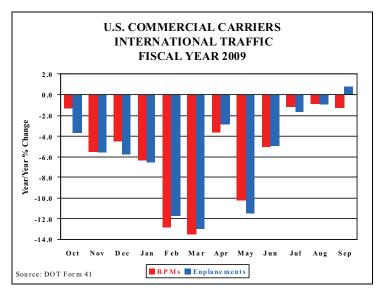


#### International Passenger Markets

Reversing the recent trend of rapid growth by network carriers into international markets, U.S. carriers posted losses in international capacity and traffic in 2009. U.S. carrier ASMs and departures were down 3.5 and 5.4 percent, respectively, in 2009. ASM growth fell slower in the first half of the year (down 2.9 percent) and then accelerated a bit during the second half of the year (down 3.6 percent). ASMs decreased in all world travel regions—down 2.0, 3.0, and 6.7 percent, respectively, in Atlantic, Latin American, and Asia/Pacific markets.



International RPMs were down 5.6 percent and passenger enplanements were down 6.6 percent in 2009, with the growth declining faster in first half of the year (down 7.3 percent for the first half versus down 3.6 percent during the second half for RPMs; down 7.9 percent versus down 3.5 percent for enplanements). The Atlantic market posted the smallest decline, with RPMs down 3.4 percent and enplanements down 4.9 percent. RPMs and enplanements fell 5.9 and 7.0 percent, respectively, in the Latin American market, while RPMs dropped 9.4 percent as enplanements fell 8.7 percent in the Pacific market.



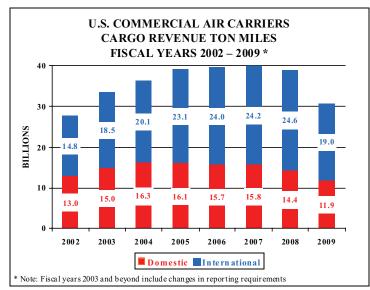
The international load factor dropped 1.7 percentage points in 2009 to be 78.1 percent. Load factor fell in the Latin America market (down 2.5 points to 76.8 percent), the Pacific market (down 2.3 points to 78.3 percent) and in the North Atlantic market (down 1.1 points to 78.9 percent).

In 2009, 47.6 percent of the passengers flying abroad on U.S. flag carriers traveled to the Latin America market. The remaining 51.6 percent of international passengers was split between the Atlantic market (35.3 percent) and the Pacific market (17.1 percent).

#### Commercial Air Carriers – Cargo

Air cargo traffic contains both domestic and international revenue freight/express and mail. The demand for air cargo is a derived demand resulting from economic activity. Cargo moves in the bellies of passenger aircraft and in dedicated all-cargo aircraft, on both scheduled and nonscheduled service.

U.S. air carriers flew 30.8 billion revenue ton miles (RTMs) in 2009, down 21.0 percent from 2008, with domestic cargo RTMs declining by 17.7 percent (11.9 billion) and international RTMs decreasing by 23.0 percent (19.0 billion). The deep declines in domestic and international RTMs reflect many factors including the recession in the U.S. and other world regions, strong price competition from alternative shipping modes, and the global financial crisis.

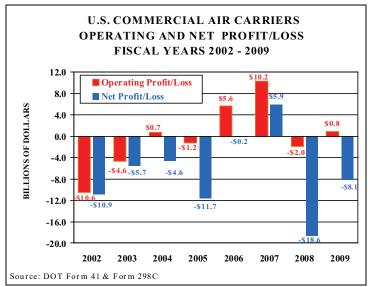


Air cargo RTMs flown by all-cargo carriers was 72.3 percent of total RTMs in 2009, with passenger carriers flying the rest, or 27.7 percent of the total. Total RTMs flown by all-cargo carriers declined 20.0 percent in 2009, from 27.8 billion to 22.3 billion. Total RTMs flown by passenger carriers were 8.5 billion in 2009, 23.5 percent lower than in 2008.

On August 3, 2007, "Recommendations of the 9/11 Commission Act of 2007" was signed into law. Section 1602 of this Act states that air cargo placed on passenger aircraft will receive the same level of screening as passenger-checked baggage. The legislation calls for the establishment of a system by 2010 that will require 100 percent inspection of cargo transported on passenger aircraft. The Transportation Security Administration (TSA) is currently screening 50% of cargo that is transported by a passenger carrier. The law requires screening at the piece level. Because this screening requirement is not supplemented by congressional funding, it is the air cargo industry's responsibility to bear all costs. Therefore, it is anticipated the law will continue to lead to increased cost and time requirements for shipment of cargo on passenger air carriers.

#### U.S. COMMERCIAL AIR CARRIERS 2009 FINANCIAL RESULTS

After posting a record net loss of \$18.6 billion in FY 2008 (primarily due to \$10.0 billion in losses at Delta and Northwest stemming from a reduction in the value of the airlines due to high fuel prices), U.S. commercial air carriers narrowed their losses to \$8.1 billion in FY 2009.



Operating revenues (passenger and cargo) were down 16.1 percent in 2009. The reduction in passenger revenues underscored the necessity of fare sales used to fill aircraft by inducing business and leisure travelers to fly during the economic downturn. The demand for cargo services was adversely affected as consumers and business used slower, less expensive shipping methods or delayed purchases altogether.

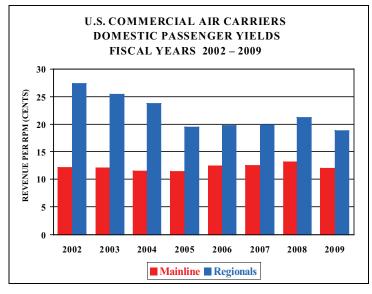
Operating expenses declined 17.4 percent from FY 2008. The reduction in operating expenses during FY 2009 was driven by a 31.8 percent reduction from the record high fuel prices posted for FY 2008, along with savings from lower variables costs due to reduced demand for passenger and cargo services.

In 2009, passenger carriers reported operating losses of \$298 million and net losses of \$7.8 billion, while air cargo carriers reported an operating profit of \$1.1 billion and a net loss of \$331.2 million. Passenger carriers reversed course from FY 2008 to generate an operating profit (\$180.3 million) in the domestic market, while international operations posted their first operating loss since FY 2003 (\$478.3 million). Net losses were reported for passenger carriers in both the domestic (\$5.6 billion) and international market (\$2.2 billion). Cargo carriers had stronger financial results than the passenger carriers. Domestically, cargo carriers posted an operating profit of \$587.3 million and a net loss of \$200.6 million. In international markets, these carriers reported operating profits of \$511.3 million and net losses of \$130.6 million.

The industry's financial deterioration is largely due to the financial performance of the network carriers, which have reported two consecutive years of losses. After posting a net loss of \$19.7 billion in FY 2008, the seven network carriers reported an additional loss of \$7.6 billion in FY 2009. Most of the downturn occurred in domestic markets where the seven carriers accounted for 58.3 percent of capacity and 47.6 percent of passengers transported. Between 2000 and 2008, the domestic operations of these carriers reported combined operating and net losses of \$30.7 and \$52.7 billion, respectively. These losses widened in 2009, with the network carriers reported operating losses of \$1.7 billion and net losses of \$5.3 billion. The nine reporting low-cost carriers reported operating profits of \$765.4 million and net losses of \$183.0 million in FY 2009. During this period, the low cost carriers accounted for 26.3% and 26.6% of domestic capacity and passengers, respectively. Falling demand hindered profits for both carrier groups.

Declining leisure and business travel demand due to the economic downturn and the outbreak of H1N1 virus were responsible for mainline carrier passenger yield eroding throughout the year. Although carriers

responded to the reduction in demand for air travel with drastic capacity cutbacks, heavily discounted fares were necessary to fill aircraft. As a result, domestic mainline carrier passenger yield dropped 8.6 percent in 2009.

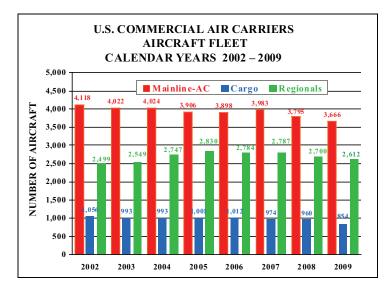


In 2009, regional carriers reported operating profits of \$915.6 million and net profits of \$202.3 million. The fortunes of regional carriers are closely tied to the success of the larger network carriers for whom they provide feed at mainline air carrier hub airports. These carriers are feeling the pinch as their mainline counterparts pass more financial risk for contract flying down to their regional partners. As a result, regional carrier passenger yield fell sharply in FY 2009, down 11.2 percent as high-yield business travelers were either tethered to the office due to limited travel budgets or could "buy down" to less restrictive and less expensive fares when allowed to travel.

#### U.S. COMMERCIAL AIR CARRIERS 2009 AIRCRAFT FLEET

The commercial passenger carrier fleet is undergoing transformation. The mainline carriers are retiring older, less fuel efficient aircraft (e.g. 737-300/400/500 and MD-80) and replacing them with more technologically advanced 737-700/800/900 aircraft. The regional carriers are growing their fleet of 70 to 90 seat regional jet aircraft and reducing their fleet of 50-seat jet aircraft.

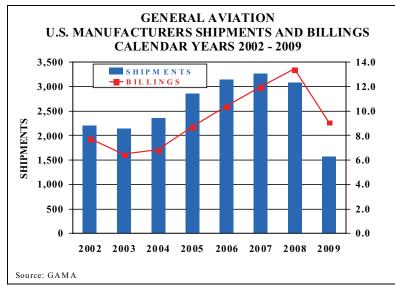
The total number of aircraft in the U.S. commercial fleet (including regional carriers) is estimated at 7,132 for 2009, a decrease of 323 aircraft from 2008. This includes 3,666 mainline air carrier passenger aircraft (over 90 seats), 854 mainline air carrier cargo aircraft, and 2,612 regional carrier aircraft (jets, turboprops, and pistons).



The mainline carriers' passenger jet fleet decreased by 129 aircraft in 2009 as fuel inefficient aircraft continued to be grounded. With the cuts to the fleet, the mainline carrier fleet now stands at 18.3 percent below (822 aircraft) the level it was in 2000. Since reaching a peak of 2,830 aircraft in 2005, the regional fleet has shrunk by 218 aircraft.

## **GENERAL AVIATION**

With the onset of the economic downturn, weakening of the general aviation industry became apparent in 2008. In 2009 the deterioration was even more pronounced with record declines by several measures of activity and double digit declines by most measures. According to numbers released by the General Aviation Manufacturers Association (GAMA), U.S. manufacturers of general aviation aircraft delivered 1587 aircraft in CY 2009, 48.5 percent fewer than in CY 2008. This translates into a second consecutive year of decline in shipments that was preceded by four years of sustained growth. The turbine categories, turbojets and turboprops, were down 46.2 and 19.2 percent, respectively. Overall piston deliveries declined 55.1 percent, with single-engine down 54.6 percent and the much smaller multi-engine category down 64.8 percent. Billings in CY 2009 totaled \$9.1 billion, down 32.1 percent compared with 2008 and the first reported decline since 2003.



General aviation activity at FAA air traffic facilities in 2009 fell dramatically. Operations at combined FAA and contract towers declined 11.7 percent in 2009, one of the largest declines ever reported. General aviation activity at consolidated traffic facilities (FAA TRACONs) fell 10.4 percent, while the number of general aviation aircraft handled at FAA en route centers decreased by 17.7 percent.

The FAA uses estimates of fleet size, hours flown and utilization from the General Aviation and Part 135 Activity Survey (GA Survey) as baseline figures upon which assumed growth rates can be applied. This survey has been conducted annually since 1977. Beginning with the CY 2004 Survey there were significant improvements to the survey methodology. These improvements included conducting 100 percent samples for turboprops and turbojets, all rotorcraft, all aircraft in Alaska and all aircraft operating on-demand under Part 135. In addition, the sample design was revised to stratify by aircraft type (19 categories), FAA region (9 categories), and whether the aircraft was owned by an entity certified to fly Part 135 operations (2 categories). Furthermore, a large fleet reporting form was incorporated to allow owners/operators of multiple aircraft to report aggregate data for their entire fleet on a single form. In 2005 an additional aircraft category (light sport aircraft) was added. The result of these changes was the sample size nearly doubled. Between 2003 and 2005 large changes in both the number of aircraft (turbojets up by 22.8 percent, total rotorcraft up by 33.7 percent) and hours (single-engine piston down by 17.6 percent) in many categories occurred. The results of the 2008 Survey, the latest one available, are consistent with the results of past surveys since 2004. This reinforces our belief that methodological improvements have resulted in superior estimates relative to those in the past and they are used as the basis for our forecast.

Based on the latest FAA assumptions about fleet attrition and aircraft utilization along with GAMA aircraft shipment statistics, the active general aviation fleet is estimated to have increased 0.2 percent in 2009, to 229,149. Despite the increase in the active fleet, general aviation flight hours are estimated to have decreased 10.3 percent in 2009 to 23.3 million.

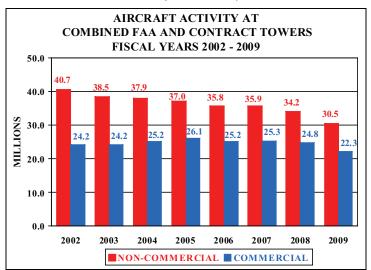
Student pilots are important to general aviation and the aviation industry as a whole. Although in decline for many years now, the economic recession experienced in 2009 seems to have had an especially significant impact on the number of student pilots. In 2009, according to statistics compiled by the FAA's Mike Monroney Aeronautical Center, the number of student pilots decreased by 10.8 percent. This is the fifth consecutive year of decline in this category and the largest decline in recent history. The average age of a U.S. pilot in 2009 was 45.3 years old.

## FAA WORKLOAD

In 2009, FAA facilities experienced the sharpest decline in activity since 1982. Despite lower fuel prices, air traffic activity fell in response to weak demand caused by the recession and the poor financial condition of the industry.

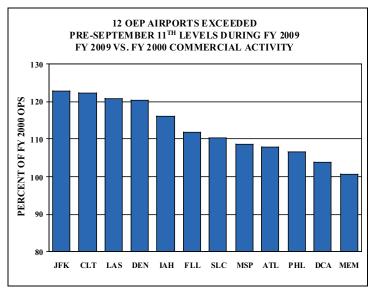
Total activity at combined FAA and contract tower airports was 52.9 million operations in 2009, down 10.4 percent from 2008 and 23.0 percent below the peak activity level recorded in 2000. Commercial activity (the sum of air carrier and commuter/air taxi) at combined FAA and contract towers declined by 9.9 percent in 2009. Air carrier operations were down 6.9 percent while commuter/air taxi operations fell 13.8 percent. Commercial operations in 2009 were 14.3 percent lower than their peak in 2005.

Non-commercial activity (the sum of general aviation and military) at combined FAA and contract towers fell by 10.7 percent in 2009, with general aviation activity (28.0 million) down 11.7 percent and military activity (2.6 million) up 1.1 percent. General aviation activity has declined nine of the past ten years since 1999.

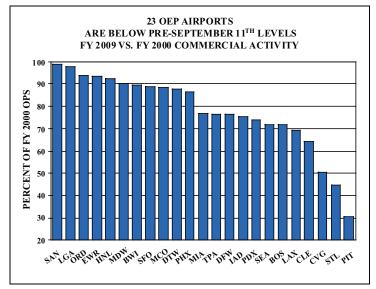


At the end of 2009, non-commercial aircraft activity was 28.6 percent below the activity in 2000.

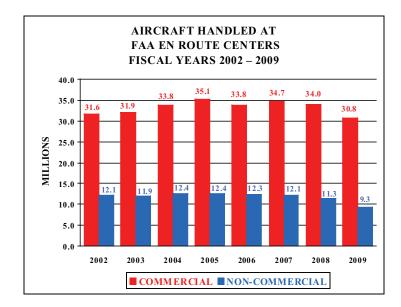
The FAA pays close attention to the trends occurring at the 35 Operational Evolution Partnership (OEP) airports. These airports represent the top 35 airports in the country in terms of passenger activity (except CLE and PIT) and account for about 74 percent of commercial passengers. Although commercial activity at the OEP airports exceeded pre-9/11 peak activity levels in 2005, subsequent industry restructuring has resulted in a drop in combined commercial activity at these airports since. In 2009, commercial activity at the OEP airports fell by 7.9 percent and was 11.2 percent below pre-9/11 activity levels. All of the OEP 35 airports recorded decreases in activity with the largest declines occurring at Cincinnati (down 23.8 percent) and Tampa (down 17.9 percent). As a result, only 12 airports exceeded 2000 peak activity levels during fiscal year 2009, down from 17 in the previous year.



Since 2000 there has been a pronounced shift in demand to low-cost carriers which is reflected in the relative growth of commercial operations across the OEP 35 airports. Commercial operations at New York Kennedy (up 22.7 percent), Charlotte (up 22.3 percent), and Las Vegas (up 20.8 percent), are up the greatest relative to their pre-September 11<sup>th</sup> activity levels. Commercial operations at Pittsburgh (down 69.5 percent) and St. Louis (down 55.5 percent) show the largest declines from pre-9/11 levels. These activity level shifts reflect the impact of the restructuring of the airline industry. American's acquisition of TWA resulted in a consolidation of operations away from TWA's St. Louis hub, while the merger of US Airways and America West has led to a dramatic shrinking of US Airways' operations in Pittsburgh.



In 2009, total activity at FAA en route centers (40.1 million) fell 11.6 percent from the previous year. Commercial activity declined 9.6 percent, with air carrier operations down 6.8 percent and commuter/air taxi operations down 16.0 percent. Non-commercial activity was down 17.8 percent in 2009 as general aviation and military activity fell 17.7 and 18.0 percent, respectively. In 2009, air carrier operations were 11.1 percent below their 2000 activity levels while operations for the general aviation and military user groups were 27.9 and 28.6 percent below their 2000 activity levels, respectively.



# >>>FAA AEROSPACE FORECAST FISCAL YEARS2010 - 2030

Developing forecasts of aviation demand and activity levels continues to be challenging as the aviation industry evolves and prior relationships change. In times of amplified volatility, the process is filled with uncertainty, particularly in the short-term. Even though the highly cyclical U.S. aviation industry went into a downward spiral during 2009, history has shown the demand for air travel is resilient and growth will return. With the start of 2010, the lingering questions are 1) how much economic recovery will be required to jumpstart the industry back to a period of growth, and 2) when will the recovery occur?

By the end of FY 2009, carriers had executed 13 consecutive months of year over year reductions in domestic capacity. The capacity cutbacks were necessary to control costs in the face of plummeting demand for air travel. As the recession deepened carriers instituted fare sales to minimize financial losses. These fare sales led to record high load factors and record declines in yield. The capacity cuts that persisted through 2009 are expected to level off during 2010, with yields expected to turn positive by year end.

Given the current instability in the global economy, there is much uncertainty as to the timing and strength of a recovery in aviation demand. Nevertheless, the FAA has developed a set of assumptions and forecasts consistent with the emerging trends and structural changes currently taking place within the aviation industry. The FAA is confident that these forecasts accurately predict future aviation demand, however due to the large uncertainty of the operating environment the variance around the forecasts is wider than in prior years.

The commercial aviation forecasts and assumptions are developed from econometric models that explain and incorporate emerging trends for the different segments of the industry. In addition the commercial aviation forecasts are considered unconstrained in that they assume there will be sufficient infrastructure to handle the projected levels of activity. These forecasts do not assume further contractions of the industry through bankruptcy, consolidation, or liquidation.

The commercial aviation forecast methodology is a blended one. The starting point for developing the commercial aviation forecasts (air carriers and regionals) is the future schedules published in the Official Airline Guide (OAG). To generate the short-term forecast (two years out) current monthly trends are used in conjunction with published monthly schedules to allow FAA forecasters to develop monthly capacity and demand forecasts for both mainline and regional carriers for fiscal and calendar years 2010-2011. The medium to long-term forecasts (2012-2030) are based on results of econometric models.

The general aviation forecasts rely heavily on discussions with industry experts and the results of the 2008 General Aviation and Part 135 Activity Survey. The assumptions have been updated by FAA analysts to reflect more recent data and developing trends, as well as further information from industry experts.

The FAA also presents the forecasts and assumptions to industry staff and aviation associations, who are asked to comment on the reasonableness of the assumptions and forecasts. Their comments and/or suggestions have been incorporated into the forecasts as appropriate.

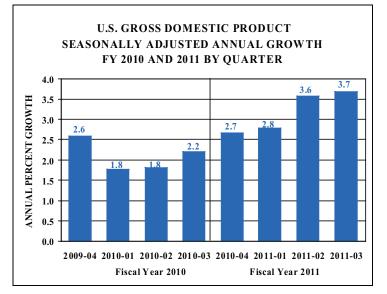
## ECONOMIC FORECASTS

For this year's Aerospace Forecast, the FAA is using economic forecasts developed by Global Insight, Inc. to project domestic aviation demand. Furthermore, the FAA uses world and individual country economic projections provided by Global Insight, Inc. to forecast the demand for international aviation services. Annual historical data and economic forecasts are presented in tabular form in Tables 1 through 4. U.S. economic forecasts are presented on a U.S. government fiscal year (October through September) basis. International forecasts are presented on a calendar year basis.

Data suggest that the bottom of the recession was in June, 2009, and Global Insight expects the pace of the recovery to be slow and not strong enough to halt the decline in jobs until later in 2010. The recovery is not V-shaped, but instead is more W-shaped. It isn't until 2011 that economic growth moves above 3% on a sustained basis.

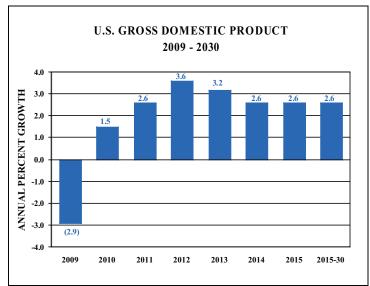
There are a number of key issues surrounding the economy that remain a concern and how these are resolved will determine the future path of the recovery. Among these issues are the size of the federal deficit and taxes, when will the Federal Reserve begin to raise interest rates, when will housing prices begin to recover, and how long will households continue to rein in their spending. The forecast assumes that there will be no additional fiscal stimulus and that the Federal Reserve will continue to keep interest rates at or near zero for most of 2010. The forecast also assumes that the Fed will be able to successfully tighten monetary policy without sending the economy back into recession and that tax rates on both personal income and for corporations will gradually increase from current levels.

Global Insight's economic forecast has the end of the U.S. recession in the 3Q of FY 2009. The recovery that follows is a relatively weak recovery as credit remains tight and consumer spending is sluggish. On a quarter-by-quarter basis for the next two years U.S. economic growth is projected to range from a low of 1.8 percent in 2Q FY 2010 to a high of 3.7 percent in 4Q FY 2011.

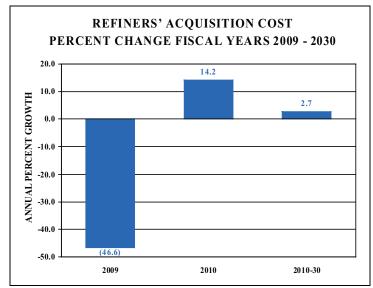


Consumer spending is by far the largest component of the U.S. economy and one of the features of this recession has been the decline in consumer spending. Burdened by high debt and rising unemployment, consumer spending fell in 2009. The recovery in consumer spending is projected to be the weakest of the postwar era, as households struggle to reduce debt burdens and rebuild retirement assets.

In the medium term, between 2011 and 2015, U.S. economic growth is projected to average 3.0 percent per year with rates ranging between 2.6 and 3.6 percent. Consumption growth remains muted as households continue to rebuild their balance sheets and taxes are increased. Beyond 2015 U.S. real GDP growth slows to around 2.6 percent annually for the balance of the forecast period. The long-term stability of the U.S. economic growth is dependent on continued growth in the workforce, the capital stock, and improved productivity. Given the unprecedented amount of both fiscal and monetary support to the economy, a major risk to continued U.S. economic growth is inflation. These inflationary pressures, if unchecked, could force up inflation and bond yields and lessen domestic demand.



Global Insight projects the price of oil, as measured by Refiners' Acquisition Cost, to increase by 14.2 percent after declining by 46.6 percent in 2009. Oil prices are projected to increase steadily to just over \$90 per barrel by 2016 and then increase slightly less than inflation for the balance of the forecast period, reaching \$104.45 per barrel by 2030.

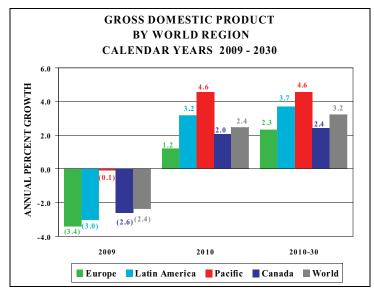


After falling 0.3 percent in FY 2009, the inflation rate (as measured by the CPI) is expected to rise 1.4 percent in 2010 and 1.9 percent in 2011 as the economy recovers and growth accelerates. After 2012 consumer price inflation is projected to remain in a narrow range between 1.7 and 2.0 percent percent a year for the balance of the forecast.

To reflect the uncertainty in the projection of economic growth, the FAA Aerospace Forecast uses high and low economic growth cases along with the base forecast. The high and low economic growth cases are based on Global Insight's September 2009 long range optimistic and pessimistic forecasts. The high economic growth case incorporates higher population growth, capital spending, and productivity relative to the base case. Due to the higher productivity, inflation is lower than in the base case. Real GDP growth in the high case averages 3.2 percent annually compared to real GDP growth of 2.6 percent annually that is contained in the base case. The low economic growth case incorporates lower population growth, capital spending, and lower productivity than the base case. In contrast, in the low economic case, inflation is higher than in the base case due to lower productivity growth. Real GDP growth in the low case averages 1.7 percent annually over the forecast horizon. Further details about the high and low scenarios can be found in Appendix A.

#### WORLD ECONOMY

Worldwide economic activity is estimated by Global Insight to have declined by 2.4 percent in 2009, marking the first contraction in global GDP since the Great Depression. The advanced economies (U.S., Canada, Europe, and Japan) posted declines in output ranging from -1.5 percent to -2.9 percent. The emerging market economies grew 0.8 percent, 4.8 points below what they grew in 2008. Many emerging market economic posted declines in real GDP including Mexico, Taiwan, Russia, Turkey, and Ukraine. In 2010, global economic growth is projected to resume (2.5 percent) as stimulus plans in the U.S. and in China provide the basis for recovery. Recovery in Europe is projected to be more gradual than in the U.S. as the housing market corrections have come later and policy actions are more cautious. Beyond 2010 through the balance of the forecast period, world real GDP is projected to increase an average of 3.2 percent per year.



The Asia/Pacific and Latin America regions will continue to have the world's highest economic growth rates. These regions are expected to see their economic activity grow at annual rates of 4.6 and 3.7 percent a year, respectively, over the forecast period. In Asia, China, with a population of 1.3 billion, is forecast to grow 7.4 percent a year, becoming the world's second largest economy. India, with a population of 1.2 billion, is projected to see its GDP triple in size, growing at an average rate of 6.2 percent a year during the forecast period. In contrast, Japan (currently the world's second largest economy) grows at just 0.9 percent a year over the forecast period as structural impediments and an aging population limit growth. Canadian and European GDP growth is anticipated to rise at more moderate rates of 2.4 and 1.7 percent a year, respectively, over the forecast period.

## AVIATION TRAFFIC AND ACTIVITY FORECASTS

Total traffic and activity forecasts for commercial air carriers (the sum of mainline and regional carriers) are contained in Tables 5 through 9. These tables contain year-to-year historical data and forecasts.

Mainline air carrier traffic and activity forecasts and the forecast assumptions are contained in Tables 10 through 18, 20, and 22. These tables contain year-to-year historical data and forecasts.

Regional carrier forecasts and assumptions are found in Tables 23 through 26. These tables provide year-to-year historical and forecast data.

Table 19 provides year-to-year historical and forecast data for cargo activity. Table 21 provides year-to-year historical and forecast data for the cargo jet fleet.

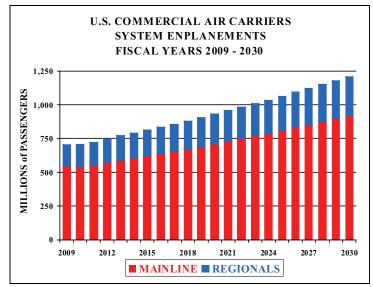
General aviation forecasts are found in Tables 27 through 30. These tables provide year-to-year historical data and forecasts.

Tables 31 through 33 provide forecasts of aircraft activity at FAA and contract facilities.

#### **COMMERCIAL AVIATION FORECASTS**

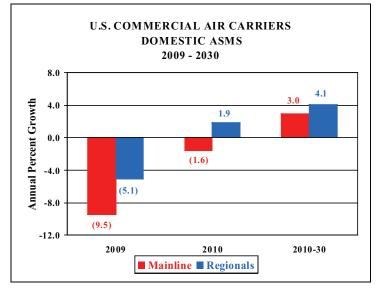
System capacity is projected to shrink 1.6 percent in 2010. In the domestic market, mainline carrier capacity is forecast to shrink for the third consecutive year (down 1.6 percent) while capacity for the regional carriers grows from 2009 levels (up 1.9 percent). In the international sector, capacity is forecast to fall in the Atlantic and Pacific market as growth returns to the Latin market. Mainline carrier system capacity drops 2.0 percent, while regional carrier capacity grows 2.0 percent.

Passenger demand shows slight growth in 2010 with system RPMs forecast to grow 0.3 percent (flat for mainline carriers and up 4 percent for regional carriers) as passenger enplanements increase 0.5 percent (down 0.7 percent for mainline carriers and up 4.6 percent for regional carriers). Growth is projected to accelerate in 2011 with system RPMs and passengers increasing 2.6 and 2.1 percent, respectively, on a capacity increase of 2.5 percent. For the overall forecast period, system capacity is projected to increase an average of 3.4 percent a year. Supported by a growing U.S. economy and falling real yields, system RPMs are projected to increase 3.5 percent a year, with regional carriers (4.2 percent a year) growing faster than mainline carriers (3.4 percent a year). System passengers are projected to increase an average of 2.6 percent a year, with regional carriers growing faster than mainline carriers (3.0 versus 2.5 percent a year). By 2030, U.S. commercial air carriers are projected to fly 1.9 trillion ASMs and transport 1.2 billion enplaned passengers a total of 1.6 trillion passenger miles. Planes will remain crowded, with load factor projected to grow moderately during the early years of the forecast period and then tapering during the mid to latter years, growing by 2.7 points over the forecast period to 82.4 percent in 2030. Passenger trip length is also forecast to increase by more than 221 miles over the forecast to 1.314.5 miles (up 10.5 miles annually). The growth in passenger trip length reflects the faster growth in the relatively longer international and domestic trips as compared to shorter-haul flights.



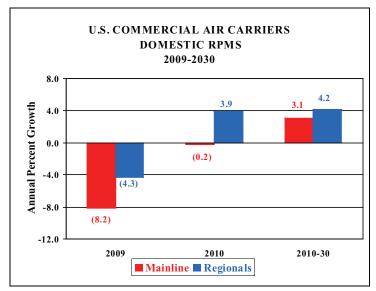
#### **Domestic Markets**

After a dramatic decline during FY 2009, domestic capacity in FY 2010 is projected to fall slightly, down 1.1 percent. Following a record reduction of 9.5 percent in 2009, mainline carrier capacity drops 1.6 percent as these carriers show reluctance to increase capacity in a continuing environment of uncertainty. Regional carriers are slated to grow in FY 2010, up 1.9 percent, after posting their first decline in capacity since deregulation during FY 2009. Domestic commercial carrier capacity recovers modestly in 2011 (up 1.6 percent) with mainline carriers growing slower than regional carriers, 1.4 percent versus 2.6 percent, respectively, and then increases at an average annual rate of 3.2 percent for the balance of the forecast (2011-2030). For the entire forecast period (2009–2030), domestic capacity is projected to increase at an average annual rate of 2.9 percent, just slightly faster than economic growth, with mainline carriers growing slower (2.7 percent per year) than the regional carriers (4.0 percent per year).



The slow pace of the economic recovery in the U.S. inhibits RPM growth during the first year of the forecast (up 0.4 percent), with traffic projected to grow faster in the second half of the year. Mainline carrier RPMs are projected to contract 0.2 percent during 2010, while regional carrier RPMs grow 3.9 percent. By 2011, traffic growth improves with RPMs increasing 1.8 percent as consumer confidence improves and corporate travel budgets increase. Driven by continued economic growth and falling real yields, domestic RPM growth for the remainder of the forecast (2011-2030), averages 3.3 percent per year. For the overall forecast period (2009-2030) domestic RPMs are projected to grow an average of 3.1 percent a year. Mainline carriers are projected to grow more slowly than the regional carriers throughout the forecast period (averaging 2.9 versus 4.2 percent a year, respectively).

Enplanements are forecast to grow 0.4 percent in 2010, following a 7.3 percent decline in 2009. Similar to RPMs, passenger volume is expected to pick up in 2011 with the strengthening economy (up 1.8 percent), and then grow at an average rate of 2.6 percent per year for the period 2011-2030. Over the entire forecast period, domestic enplanements are projected to grow at an average annual rate of 2.4 percent with mainline carriers growing more slowly than regional carriers (2.2 versus 3.0 percent a year, respectively).



In spite of record capacity cutbacks triggered by a steep drop in demand, carriers lost pricing power during 2009, with nominal yield falling 8.9 percent (down 8.6 percent in real terms). Despite continued capacity reductions, lackluster demand will keep fares in check in 2010, resulting in a modest increase in nominal yield of 3.9 percent (2.5 percent in real terms). For the entire forecast period, increases in nominal yields are projected to grow at a rate of 1.1 percent a year, while in real terms they are projected to decline an average of 0.8 percent a year. The decline in real yields over the forecast period assumes competition between carriers and convergence of cost structures between network carriers and their low-cost counterparts. The convergence arises from gains in productivity as network carriers retire fuel inefficient aircraft and hold the line on labor costs while low-cost carriers contend with aging fleets, maturing work forces, and unionization.

Domestic commercial carrier activity (departures) at FAA air traffic facilities is projected to grow more slowly than passenger traffic over the forecast period (1.9 percent per year for departures versus 3.1 percent for RPMs). This reflects increased carrier efficiencies in three operational measures—aircraft size, load factor, and trip length.

Domestic aircraft size<sup>8</sup> increased in 2009 by 1.3 seats to 121.9 seats. The increase was partly driven by a large increase in aircraft size by the regional carriers (up 2.2 seats) and the grounding of older, fuel inefficient aircraft (i.e. MD-80's and 737-300/400/500) by the mainline carriers (up 1.4 seats). The increase in regional aircraft size was caused by the retirement of 50-seat jet aircraft as larger 70-90 seat jet aircraft entered the fleet. Domestic seats per aircraft falls in 2010 (down 0.3 seats) as mainline carriers continue to cut capacity while their regional counterparts grow. Over the course of the forecast, domestic seats per aircraft are projected to gradually increase to 123.6 seats by 2030, an average of 0.1 seats per year.

The FAA's projection of domestic carrier average aircraft size is greatly influenced by carrier fleet plans, publicly known aircraft order books and FAA's expectations of the changing domestic competitive landscape. In the near-term (through 2011), the forecast incorporates several carrier assumptions: 1) mainline carriers desire to constrain ASM capacity growth; 2) network carrier "own metal" service on longer-haul routes; 3) the retirement of older inefficient aircraft (many of which are narrow-body);

8 Defined as seats per mile flown and computed by dividing ASMs by miles flown.

4) the shifting of wide-body and larger narrow-body aircraft to international services, and 5) growing use of 70-90 seat regional jet aircraft.

In the longer-term, network carriers will replace their wide-body and larger narrow-body aircraft in their domestic route networks with smaller, next generation, narrow-body aircraft. In addition, some carriers, such as JetBlue and US Airways, are turning to smaller aircraft, like the 100-seat Embraer 190, to supplement their route structure. The use of smaller narrow-body aircraft allows mainline carriers to better serve their customers by boosting frequency, as well as improve profitability by more closely matching supply (the number of seats) with demand (the number of passengers).

Mainline carrier domestic aircraft size increased in 2009 by 1.4 seats to 151.4 seats, but is projected to fall 0.8 seats in 2010. Domestic aircraft size for mainline carriers is projected to fall to 150.4 seats in 2011 and then gradually increase thereafter for the balance of the forecast. Overall, average aircraft size for the mainline group will increase by only 0.5 seats between 2009 and 2030, going from 151.4 to 151.9.

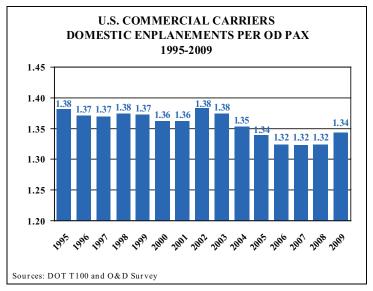
Regional carrier aircraft size flown domestically is projected to grow at a much faster pace than their mainline counterparts. The faster growth in regional aircraft size is stimulated by the wave of 70-90 seat regional jet aircraft that are entering the fleet as well as reductions in the 50 seat and under jet fleet. Regional carriers are better equipped to support operations of their mainline partners by providing capacity that complements market demand. The greater number of the larger 70- and 90-seat regional jets in the fleet coupled with significant 50-seat jet retirements over the next few years increases the average seating capacity of the regional fleet from 55.0 seats in 2009 to 56.8 seats by 2011. Over the course of the forecast, average seats per aircraft for the regional carriers increases by 0.5 seats per year to 65.4 seats in 2030. The changing aircraft fleet mix is narrowing the gap between the size and aircraft types operated by the mainline and regional carriers.

Commercial carrier domestic load factor increased 1.1 points during FY 2009 to an all-time high of 80.4 percent. Pushing load factors to record levels was the mainline carrier group which posted a load factor of 81.3 percent. Load factors for the regional carriers increased 0.6 points to 74.3 percent. In 2010, domestic load factor is forecast to increase 1.2 points to 81.6 percent as mainline and regional carrier load factors rise 1.2 and 1.5 points, respectively. Thereafter, commercial carrier domestic load factor gradually rises to 83.2 percent by 2030.

In 2009 domestic passenger trip length fell 3.4 miles to 870.5 miles, after increasing 3.7 miles in 2008. Passenger trip length is forecast to decline by 0.7 miles in 2010 and by 0.3 miles in 2011 as carriers continue to restructure their networks and realign capacity. After 2011, trip length is projected to steadily increase for the balance of the forecast, reaching 997.2 miles by 2030. The increase in trip length reflects increases in both mainline and regional carrier trip length. Mainline carrier trip length increases as thinner, shorter haul markets are relinquished to regional partners and replaced with flying of longer domestic trips. Regional carrier trip length increases as flying in shorter haul markets is abandoned and/or reduced as more of the larger 70 and 90-seat regional jets penetrate thinner longer-haul markets previously only accessible with mainline equipment.

Another key factor in predicting aviation activity relative to passenger demand is the level of connecting versus non-stop (origin-destination) traffic. However, as the current cycle of U.S. airline industry restructuring unfolds and hub structures change, the impact on local communities and airport activity levels can vary significantly.

The FAA analyzes the ratio of passenger enplanements to origin-destination (O&D) passengers over time to identify changes in connecting versus non-stop traffic. This ratio is an indicator of the tendency of the average passenger to connect during a typical journey. The closer the ratio is to 1.0, the more passengers fly on a point-to-point routing. As the chart below shows, the overall ratio for the U.S. domestic industry varied within a narrow band between 1995 and 2002. After 2002, the ratio trailed downward until the end of 2008. The decline in the ratio during this six year period is characterized by a drop in connectivity by the network carriers and rising passenger share for the low-cost carriers. The uptick in the ratio during 2009 indicates an increase of hubbing by the carriers. The FAA's forecast recognizes the changing pattern of domestic traffic connectivity and these trends are captured in the forecast's passenger enplanement totals.



### **International Markets**

### U.S. and Foreign Flag Carriers

FAA provides forecasts of total international passenger demand (the sum of U.S. and foreign flag carriers) for travel between the United States and three world travel areas--Atlantic, Latin America (including Mexico and the Caribbean), and Asia/Pacific--as well as for U.S./Canadian transborder traffic. These forecasts are based on historical passenger statistics from the United States Immigration and Naturalization Services (INS) and Transport Canada, and on regional world historical data and economic projections from Global Insight, Inc.

Total passenger traffic between the United States and the rest of the world is estimated to total 147.1 million in CY 2009, 4.7 percent lower than in 2008. As the worldwide economy begins to recover from the recession of 2009, international passengers grow 3.3 percent in 2010. As the world economic recovery gains solid footing in 2011, passenger growth is up 5.0 percent. For the balance of the forecast period, stable worldwide economic growth leads international passenger growth to average 4.2 percent a year, and totaling 347.9 million in 2030.

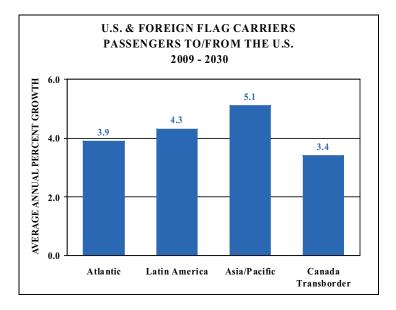
Over the entire forecast period (2009-2030), high economic growth in the Asia-Pacific market drives passenger growth averaging 5.1 percent a year for this region. India, China, and Taiwan (passenger growth of 8.0, 7.9, and 7.8 percent a year, respectively) are forecast to be the fastest growing markets in the region. Growth in the Japan market (the largest and most mature in the region) is projected to be well below the

regional average at 2.4 percent a year.

In the Atlantic region, open skies between the European Union and the United States and increasing non-stop service to Africa and the Middle East helps to fuel passenger growth of 3.9 percent a year over the forecast period. Over the 21-year forecast horizon, average annual passenger growth in the top three Atlantic markets-- the United Kingdom, Germany, and France, is 4.2, 3.6, and 4.1 percent, respectively.

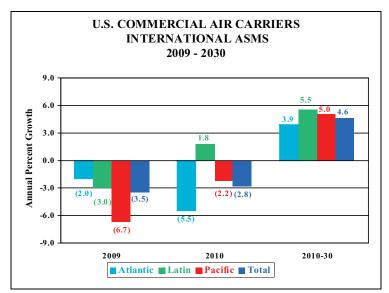
In the Latin America region, passenger growth between 2009 and 2030 is forecast to average 4.3 percent a year. The highest growth is projected for Brazil (average annual growth of 7.0 percent) while the largest market in the region, Mexico, grows at an average of 4.1 percent a year. The slowest rates of growth are projected to occur in the Bahamian and Jamaican markets (averaging growth of 0.5 and 2.6 percent a year, respectively).

Growth in the Canadian transborder market is forecast to be higher than that of the domestic U.S. market (2.4 percent), averaging 3.4 percent a year over the forecast period.

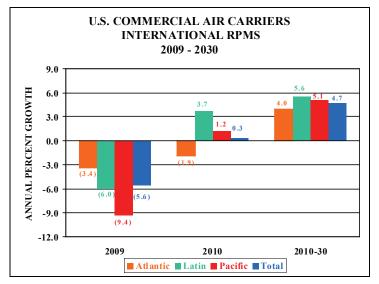


### U.S. Flag Air Carriers

In 2009, international U.S. commercial air carrier capacity fell 3.5 percent from 2008 levels. Capacity falls an additional 2.8 percent in 2010 as carriers further cut capacity due to reduced demand for air travel. In the Atlantic and Pacific markets capacity decreases 5.5 and 2.2 percent, respectively, in 2010. Conversely, capacity in the Latin region during the same period grows 1.8 percent reflecting a rebound from the impact of H1N1 flu virus. With a strong economic recovery in the global economies expected for 2011, international capacity grows modestly at 4.7 percent, and averages 4.6 percent a year for the remainder of the forecast period. Strong growth in the medium to long-term portion of the forecast reflects favorable U.S. and world economic activity.



U.S. commercial air carrier international RPMs fell 5.6 percent in 2009 as enplanements decreased 6.6 percent. RPMs are projected to increase slightly in 2010 (up 0.3 percent), as increases in the Latin and Pacific regions offset a modest decline in the Atlantic region. In 2011, U.S. carrier international RPMs increase 4.7 percent led by growth in the Atlantic market (up 5.2 percent) and followed by growth in the Latin (up 4.6 percent) and Pacific markets (up 3.7 percent). For the balance of the forecast, RPMs increase an average 4.7 percent a year with the fastest growth in the Latin region. A similar pattern is forecast for enplanement growth. International enplanements are projected to increase 0.9 percent in 2010, and then grow 4.0 percent in 2011. Over the balance of the forecast period, enplanements are forecast to increase an average of 4.1 percent a year with the fastest growth in Pacific and Latin markets (up 5.0 and 4.4 percent a year, respectively).



The slower growth in U.S. carrier international passengers over the period 2009-2030 (4.0 percent a year) compared to total international passengers (4.2 percent a year) reflects a small decline in market share for U.S. airlines over the forecast period. Forecasts of international demand assume U.S. and foreign flag carriers will benefit from the favorable economic activity in both the United States and world markets.

International load factor for U.S. commercial carriers was 78.1 percent in 2009. Load factor is expected to increase 2.5 points to be 80.6 percent in 2010 as capacity growth lags traffic growth in all three world markets. International load factor is projected to fall 0.1 points in 2011 and rise slowly for the remainder of the forecast to be 81.1 percent in 2030.

International passenger real yields for mainline carriers were down 12.6 percent in 2009. The largest decrease was in the Atlantic market (down 15.1 percent), followed by the Pacific (down 11.8 percent) and Latin market (down 7.8 percent) reflecting a lack of pricing power by U.S. carriers and the significant fall in demand resulting from the global recession. Buoyed by strengthening demand, international real yields are projected to increase 3.1 percent in 2010 and then increase by 4.7 percent in 2011. For the remainder of the forecast period, real yield decreases an average of 1.0 percent a year. In nominal terms, international yields are forecast to increase 4.6 percent in 2010, increase 6.7 percent in 2011 and then grow at an annual rate of 0.9 percent over the remainder of the forecast. The decline in real yields assumes competitive pressures will hold the line on fare increases. In international markets, this takes the form of expanded open sky agreements and global alliances.

### Commercial Air Carriers – Air Cargo

Historically, air cargo activity tracks with GDP. Additional factors that have affected the growth in air cargo traffic include the global financial crisis, declining real yields, and globalization. Significant structural changes have occurred in the air cargo industry. Among these changes are the following: air cargo security regulations by the FAA and TSA; market maturation of the domestic express market; modal shift from air to other modes (especially truck); increases in air fuel surcharges; growth in international trade from open skies agreements; use of all-cargo carriers (e.g., FedEx) by the U.S. Postal Service to transport mail; and increased use of mail substitutes (e.g., e-mail).

The forecasts of Revenue Ton Miles (RTMs) are based on several assumptions specific to the cargo industry. First, security restrictions on air cargo transportation will remain in place. Second, most of the shift from air to ground transportation has occurred. Finally, long-term cargo activity will be tied to economic growth.

The forecasts of RTMs were based mainly on models that link cargo activity to GDP. Forecasts of domestic cargo RTMs were developed with real U.S. GDP as the primary driver. Projections of international cargo RTMs were based on growth in world GDP, adjusted for inflation. The distribution of RTMs between passenger carriers and all-cargo carriers was forecast based on an analysis of historic trends in shares, changes in industry structure, and market assumptions.

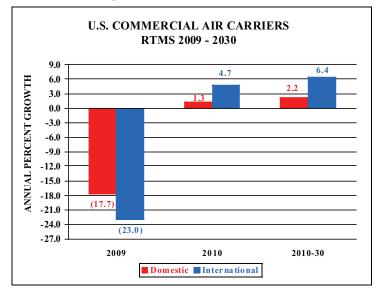
Total RTMs are forecast to grow 3.4 percent in 2010 and again in 2011 by 4.9 percent. For the balance of the forecast period, driven by steady economic growth, total RTMs are forecast to increase at an average

annual rate of 5.1 percent. The forecast of 86.6 billion RTMs in 2030 represents an average annual increase of 5.0 percent over the entire forecast period.

Domestic cargo RTMs are forecast to grow 1.3 percent in 2010 and 2.0 percent in 2011, driven by a slow recovery in the U.S. economy. Between 2011 and 2030, domestic cargo RTMs are forecast to increase at an average annual rate of 2.2 percent. The forecast of 18.5 billion RTMs in 2030 represents an average annual increase of 2.1 percent over the entire forecast period.

The freight/express segment of domestic air cargo is highly correlated with capital spending. Thus, the growth of this segment in the future will be tied to growth in the economy. The mail segment of domestic air cargo will be affected by price and substitution (electronic mail).

The all-cargo carriers have increased their share of domestic cargo RTMs flown from 65.4 percent in 1997 to 86.2 percent in 2009. This is because of significant growth in express service by FedEx and United Parcel Service coupled with a lack of growth of domestic freight/express business for passenger carriers. The all-cargo share is forecast to increase to 90.4 percent by 2030 based on increases in wide-body capacity for all-cargo carriers and security considerations.

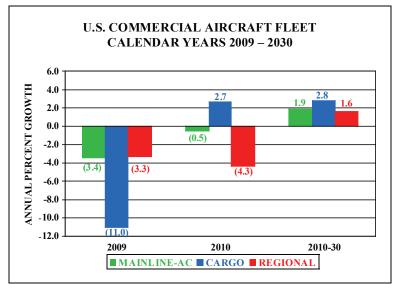


International cargo RTMs are forecasted to rise 4.7 percent in 2010 reflecting a recovery from the global economic downturn and grow 6.6 percent in 2011 as world economic growth rebounds and trade expands. For the balance of the forecast period, international cargo RTMs are forecast to increase an average of 6.3 percent a year based on projected growth in world GDP. The forecast 68.1 billion RTMs in 2030 represents an average annual increase of 6.3 percent over the entire forecast period.

The share of international cargo RTMs flown by all-cargo carriers increased from 63.3 percent in 2008 to 63.6 percent in 2009. Beyond 2009, the all-cargo share of RTMs flown is forecast to increase modestly to 69.9 percent by 2030.

### COMMERCIAL AIRCRAFT FLEET

The number of commercial aircraft is forecast to grow from 7,132 in 2009 to 10,274 in 2030, an average annual growth rate of 1.8 percent or 150 aircraft annually. The commercial fleet will shrink by a net 107 aircraft in 2010 after shrinking by 323 aircraft in 2009 as the dramatic fall off in demand and high fuel prices compelled carriers to prune their fleets. In comparison, the US commercial fleet contracted by 262 aircraft between 2000 and 2003, the last downturn in aviation.



The number of passenger jets in the mainline carrier fleet decreased by 129 aircraft in 2009 and is expected to fall another 17 aircraft in 2010 before increasing in 2011 by 40 aircraft. For the period 2010-2030, the mainline air carrier passenger fleet increases an average of 85 aircraft a year, totaling 5,342 aircraft in 2030. The narrow-body fleet (including E-190's at JetBlue and US Airways) is projected to grow by 60 aircraft annually over the period 2010-2030; the wide-body fleet grows by 25 aircraft a year as the Boeing 787 and Airbus A350's enter the fleet.

The regional carrier passenger fleet is forecast to decrease by 113 aircraft in 2010 as carriers remove large numbers of 50 seat and smaller regional jets. After 2010, the regional carrier fleet is expected to increase by an average of 45 aircraft (1.6 percent) over the remaining years of the forecast period, totaling 3,401 aircraft in 2030. The number of regional jets (90 seats or fewer) at regional carriers is projected to grow from 1,710 in 2009 to 2,441 in 2030, an average annual increase of 1.7 percent. All the growth in regional jets over the forecast period occurs in the larger 70 and 90-seat aircraft. During the forecast period, all regional jets of 50 or less seats are removed from the fleet, reflecting the relaxation of scope clauses. The turboprop/piston fleet is expected to grow from 902 units in 2009 to 960 in 2030. Turboprop/piston aircraft are expected to account for just 28.2 percent of the regional carrier passenger fleet in 2030, down from a 42.4 percent share in 2009.

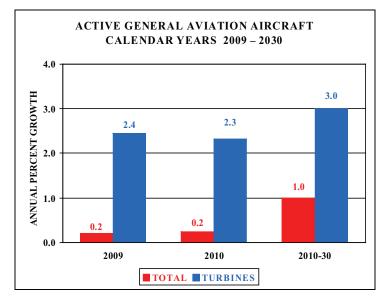
Cargo large jet aircraft are forecast to increase by 55 aircraft over the next 2 years (from 854 to 909 aircraft in 2011), and total 1,531 aircraft in 2030. The narrow-body jet fleet is projected to increase by 10 aircraft a year over the 21-year forecast period as older 757's and 737's are converted to cargo service. The wide-body jet fleet is projected to increase by 22 aircraft yearly.

### **GENERAL AVIATION**

The FAA forecasts the fleet and hours flown for single-engine piston aircraft, multi-engine piston, turboprops, turbojets, piston and turbine powered rotorcraft, light sport, experimental and other (which consists of gliders and lighter than air vehicles). The FAA forecasts "active aircraft,"<sup>9</sup> not total aircraft. The FAA uses estimates of fleet size, hours flown, and utilization from the General Aviation and Part 135 Activity Survey (GA Survey) as baseline figures upon which assumed growth rates can be applied. Beginning with the 2004 GA Survey there were significant improvements to the survey methodology. Coinciding with the changed survey methodology, large changes in many categories were observed, both in the number of aircraft and hours flown. The results of the 2008 GA Survey are consistent with the results of surveys since 2004, reinforcing our belief that the methodological improvements have resulted in superior estimates relative to those in the past. Thus, they are used as the basis for our forecast. Because results from the GA Survey are not published until the following year, the 2008 statistics are the latest available. Figures for 2009 are estimated based on other activity indicators, and the forecasts of activity begin in 2010 and continue through 2030.

The demand for business jet aircraft has grown over the past several years. New product offerings, the introduction of very light jets, and increasing foreign demand have helped to drive this growth. In addition, corporate safety/security concerns for corporate staff, combined with increasing flight delays at some U.S. airports have made fractional, corporate, and on-demand charter flights practical alternatives to travel on commercial flights. Despite the hard impact of the recession felt in the business jet market, the forecast calls for robust growth in the long term outlook and predicts business usage of general aviation aircraft will expand at a faster pace than that for personal/recreational use.

The active general aviation fleet is projected to increase at an average annual rate of 0.9 percent over the 21-year forecast period, growing from an estimated 229,149 in 2009 to 278,723 aircraft by 2030. The more expensive and sophisticated turbine-powered fleet (including rotorcraft) is projected to grow at an average of 3.0 percent a year over the forecast period, with the turbine jet portion increasing at 4.2 percent a year.



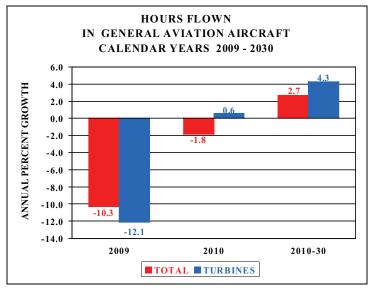
9 An active aircraft is one that flies at least one hour during the year.

With the advent of a relatively inexpensive twin-engine very light jet (VLJ), many questions have arisen as to the future impact they may have. The lower acquisition and operating costs of VLJs were believed to have the potential to revolutionize the business jet market, particularly by being able to sustain a true on-demand air-taxi service. While initial forecasts called for over 400 aircraft to be delivered a year, events such as the recession along with the bankruptcy of Eclipse and DayJet have led us to temper more recent forecasts. The worldwide delivery of VLJs this year has held up relatively well compared to the turbine jet market as a whole, helped in large part by the introduction of Embraer's Phenom 100 to the market. Despite that, the impacts of the recession have led to dampened expectations. The current forecast calls for 440 VLJs to enter the US fleet over the next three years, with an average of 216 aircraft a year for the balance of the forecast period.

The number of active piston-powered aircraft (including rotorcraft) is projected to decrease from the 2008 total of 166,514 through 2017, with declines in both single and multi-engine fixed wing aircraft, but with the smaller category of piston-powered rotorcraft growing. Beyond 2017 active piston-powered aircraft are forecast to increase to 172,613 by 2030. Over the forecast period, the average annual increase in piston-powered aircraft is 0.2 percent. Although piston rotorcraft are projected to increase rapidly at 3.4 percent a year, they are a relatively small part of this segment of general aviation aircraft. Single-engine fixed-wing piston aircraft, which are much more numerous, are projected to grow at a much slower rate (0.2 percent respectively) while multi-engine fixed wing piston aircraft are projected to decline 0.8 percent a year. In addition, it is assumed that VLJs and new light sport aircraft could erode the replacement market for traditional piston aircraft at the high and low ends of the market respectively.

Starting in 2005, a new category of aircraft (previously not included in the FAA's aircraft registry counts) was created: "light sport" aircraft. At the end of 2008 a total of 6,811 active aircraft were estimated to be in this category while the forecast assumes the fleet will increase approximately 825 aircraft per year until 2013. Thereafter the rate of increase in the fleet tapers considerably to about 335 per year. By 2030 a total of 16,311 light sport aircraft are projected to be in the fleet.

The number of general aviation hours flown is projected to increase by 2.5 percent yearly over the forecast period. A large portion of this growth will occur in the short term post recession period, where record low utilization rates experienced in 2009 will return to normal trends, particularly in the turbine jet category. As with previous forecasts, much of the long term increase in hours flown reflects strong growth in the rotorcraft and turbine jet category. Hours flown by turbine aircraft (including rotorcraft) are forecast to increase 4.1 percent yearly over the forecast period, compared with 1.1 percent for piston-powered aircraft. Jet aircraft are forecast to account for most of the increase, with hours flown increasing at an average annual rate of 6.1 percent over the forecast period. The large increases in jet hours result mainly from the increasing size of the business jet fleet, along with measured recovery in utilization rates from recession induced record lows. Rotorcraft hours, relatively immune to the economic downturn when compared to other categories, are projected to grow by 3.0 percent yearly. The light sport aircraft category is expected to see increases in hours flown on average of 5.9 percent a year, which is primarily driven by growth in the fleet.



The number of active general aviation pilots (excluding air transport pilots) is projected to be 501,875 in 2030, an increase of over 52,000 (up 0.5 percent yearly) over the forecast period. Commercial pilots are projected to increase from 125,738 in 2009 to 139,100 in 2030, an average annual increase of 0.5 percent. The number of student pilots is forecast to increase at an average annual rate of 0.8 percent over the forecast period, growing from 72,280 in 2009 to 86,050 in 2030. In addition, FAA is projecting that by the end of the forecast period a total of 14,100 sport pilots will be certified. As of December 31, 2009, the number of sport pilot certificates issued was 3,248 reflecting a steady increase in this new "entry level" pilot certificate that was only created in 2005. The number of private pilots is projected to grow at an average yearly rate of 0.2% over the forecast period to total 219,050 in 2030.

### FAA WORKLOAD FORECASTS FAA and Contract Towers

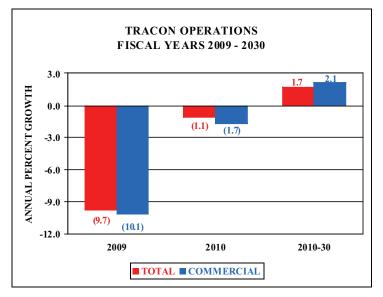
Activity at the 508 FAA (264) and contract towers (244) totaled 52.9 million operations in 2009, down 10.4 percent from 2008. Activity is projected to decrease 2.7 percent in 2010, with declines in both commercial and non-commercial operations. Growth in activity resumes in 2011 (0.8 percent) led by increases in non-commercial activity (up 1.1 percent). For the balance of the forecast, activity grows at an average rate of 1.6 percent per year, reaching 69.6 million operations in 2030.

Most of the growth over the forecast period results from increased commercial aircraft activity (up 1.7 percent annually). Air carrier activity is projected to shrink 2.4 percent in 2010 as carriers continue to cut capacity as the unemployment rate continues to rise. In 2011, air carrier activity is projected to increase 0.7 percent as airline capacity begins to rebound, and grows an average of 2.3 percent per year over the forecast period. Commuter/air taxi operations are forecasted to fall 1.9 percent in 2010 then remain flat in 2011. For the balance of the forecast period, commuter/air taxi operations are projected to increase 1.6 percent per year.

General aviation activity fell 11.7 percent in 2009 with steep declines in both itinerant (down 11.2 percent) and local (down 12.2 percent) activity. Activity is projected to fall again in 2010 (down 3.1 percent) reflecting the residual impact of the 2009 recession and then rise modestly in 2011 and 2012 (up 1.2

percent both years) as falling unemployment promotes the growth of flight hours and operations despite slightly higher oil prices. For the entire forecast period, general aviation activity at towered airports is projected to increase an average of 1.1 percent a year, to 35.1 million operations in 2030. General aviation activity at combined FAA/contract towers grows in line with the modest increase forecasted for general aviation piston hours already cited. Most operations at the smaller towers are in piston aircraft, while those at the largest airports tend to be turbine operations. Military activity rose 1.1 percent in 2009.

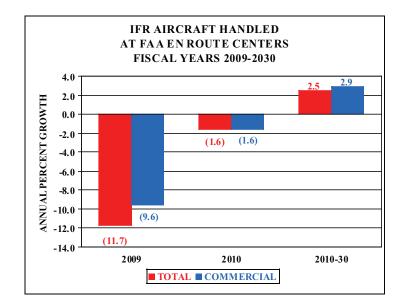
Operations<sup>10</sup> at FAA TRACONs (Terminal Radar Approach Control) fell 9.7 percent in 2009, the fifth year in a row. They are projected to decline again in 2010 (down 1.1 percent) as the effects of the recession continue to be felt with decreases in both commercial and non-commercial activity. TRACON operations are forecast to rise 1.0 percent in 2011 before increasing at an average annual rate of 1.7 percent for the balance of the forecast. For the entire forecast period, TRACON operations grow an average of 1.5 percent per year, totaling 54.4 million in 2030.



### **En Route Centers**

The number of IFR aircraft handled at FAA en route traffic control centers decreased 11.6 percent to 40.1 million in 2009, with all user groups posting declines in activity. Activity at en route centers is forecast to decrease by 1.6 percent in 2010 in the wake of decreased commercial and general aviation activity. Growth in en-route activity resumes in 2011 (up 1.4 percent) led by increases in air carrier activity. After 2011, through the balance of the forecast period, en route activity increases 2.5 percent annually, reaching 64.1 million aircraft handled in 2030. Over the entire forecast period, commercial activity is projected to increase at an average annual rate of 2.7 percent, reflecting increases in the commercial fleet and aircraft stage lengths. During the same period, general aviation activity is projected to grow 0.7 percent per year, reflecting modest growth in business aviation. Military activity is held constant at the 2009 activity level throughout the forecast period.

<sup>10</sup> TRACON operations consist of itinerant IFR and VFR arrivals and departures at all airports in the domain of the TRACON as well as IFR and VFR overflights.



### DDD UNMANNED AIRCRAFT SYSTEMS

International industry development, growth, and investment over the past several years have allowed Unmanned Aircraft Systems (UAS) to evolve from remotely piloted vehicles with limited capabilities to semi and fully autonomous systems for commercial applications. There are some 100 U.S. companies, academic institutions, and government organizations developing over 300 UAS designs. Currently, the U.S. government uses unmanned aircraft for military combat, surveillance, and reconnaissance.

The UAS term is used because it includes the entire system (aircraft, data links, control station and other elements). UAS's also vary widely in size, shape, and capabilities. Some unmanned aircraft weigh 1,900 pounds and can remain aloft for 30 hours or more, because there is no need for them to land to change pilots. Some are 6 inches long. Others can perform dangerous missions without risking loss of life.

In its broadest context, there are three major market segments: military, civil government, and commercial. While market drivers and dynamics among these segments differ significantly, they share common objectives: to provide a service that cannot be accomplished by manned aircraft and/or to perform an existing manned operation at a lower cost. Because of increased interest and activity, UAS have the potential to become a major part of the commercial aerospace industry within the United States.

Federal agencies are planning to increase their use of UAS's. State and local governments envision using UAS's to aid in law enforcement and firefighting. Potential commercial uses are also possible, for example, in real estate photography or pipeline inspection. UAS's could perform some manned aircraft missions with less noise and fewer emissions.

Because the industry is in its infancy, forecasts of the number of units are relatively few and have considerable variation. Recent work by RTCA, Inc., has identified the drivers and impediments to future growth in the aforementioned three market segments and has included forecasts of the number of UAS units by market segment. The forecasts generally assumed that 1)commercial activities would not begin until 2018; 2) no significant technological or extraordinary demand would accelerate the introduction of UAS's; 3) costs of UAS systems would decline as the technology matures and as the scale of operations increases. Currently, the majority of UAS systems are operated by the military and have little impact on the NAS. However as the technology matures, increasing numbers of units will be operated by civil and commercial users, and could have greater impacts on the NAS. However the volume of units is relatively small – approximately 15,000 units by 2020 and 30,000 units by 2030.

### DDD COMMERCIAL SPACE TRANSPORTATION

The Federal Aviation Administration's (FAA) Office of Commercial Space Transportation (AST) licenses and regulates U.S. commercial space launch activity including launch vehicles and non-federal launch sites authorized by Executive Order 12465 and 49 US Code, Subtitle IX, Chapter 701 (formerly the *Commercial Space Launch Act*). Title 49 and the Executive Order also direct the Department of Transportation (carried out by the FAA) to encourage, facilitate, and promote commercial launches. AST's mission is to license and regulate commercial launch and reentry operations and non-federal launch sites to protect public health and safety, the safety of property, and the national security and foreign policy interests of the United States.

### OVERVIEW

Commercial space transportation generally consists of the launch of satellites into orbit for either commercial or government customers by private, non-government entities, called launch services providers. Commercial space transportation also covers suborbital launches, where a payload or vehicle is launched on a trajectory that briefly goes into space but returns to Earth rather than going into orbit, as well as the reentry of objects from space to Earth.

The FAA licenses several expendable vehicles used for commercial orbital launches. The most active include the Pegasus and Taurus, two small vehicles built and operated by Orbital Sciences Corporation (OSC); the Delta IV, a heavy-class vehicle and the Delta II, a medium-class vehicle, both built by United Launch Alliance (ULA), a joint venture between Boeing and Lockheed Martin, and marketed by Boeing Launch Services (BLS); the Zenit-3SL, a heavy-class vehicle built by the Ukrainian company KB Yuzhnoye for the multinational Sea Launch venture; the Atlas V, a heavy-class vehicle built by ULA and marketed by Lockheed Martin Commercial Launch Services (LMCLS), and the Falcon 1, a small launch vehicle built and operated by SpaceX. Commercial vehicles under development include the heavy-class Falcon 9 vehicle by SpaceX and the medium-class Taurus II by OSC. From 1989 through the end of 2009, DOT/FAA has licensed 200 orbital and suborbital commercial launches.

Experimental Permits, for suborbital reusable vehicle development and test flights, were first granted by FAA in 2006 to Blue Origin and Armadillo Aerospace. Some permits have been granted for vehicles participating in the Lunar Lander Challenge, a competition to demonstrate technologies potentially applicable to both future lunar spacecraft and commercial suborbital vehicles, with \$2 million in prizes offered by NASA's Centennial Challenges program.

Six commercial spaceports, located in Alaska, California (Vandenberg Air Force Base and Mojave Air and Space Port), New Mexico, Oklahoma, and Virginia, currently have FAA launch site operator licenses. Several other commercial spaceports around the United States are under development.

### **REVIEW OF 2009**

There were five FAA-licensed launches, all orbital, in 2009, down from 11 in 2008. BLS performed two launches, one Delta II launch of the WorldView 2 earth observation satellite, and a Delta IV launch of a meteorological satellite. Sea Launch conducted one Zenit-3SL launch of a commercial communications

satellite. There was one Falcon 1 launch which orbited a Malaysian earth observation satellite. LMCLS performed one Atlas V launch of a commercial communications satellite. There were no suborbital permit flights during 2009.

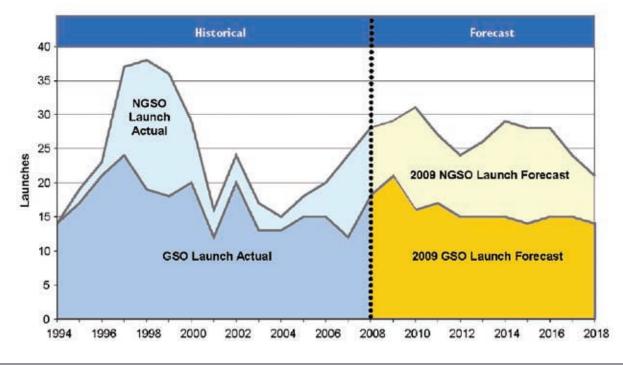
	FAA Licensed and Permit	tted Launches, 2008-2010	
	2008	2009	2010 Forecast
Licensed Launches	11	5	4-7
Permitted Launches	5	0	2-4

Worldwide there were 24 orbital commercial launches in 2009, compared to 28 in 2008. In addition to the five FAA-licensed launches, Europe performed five commercial launches of its Ariane 5, Russia conducted ten launches of various vehicles, and Land Launch, a joint venture of Sea Launch and Space International Services, performed three launches of the Zenit-3SLB. There were 78 total worldwide commercial, civil, and military launches in 2009, with commercial launches representing about 30 percent of the total. For more details, see the Year in Review report available online at:

http://www.faa.gov/about/office\_org/headquarters\_offices/ast/reports\_studies/year\_review/.

### **GLOBAL FORECAST**

In May 2009, the FAA and the Commercial Space Transportation Advisory Committee (COMSTAC) published their annual global forecast for commercial launch demand, the 2009 Commercial Space Transportation Forecasts. The report forecasts an average of 26.7 commercial orbital launches per year of geosynchronous orbit (GSO) and non-geosynchronous orbit (NGSO) payloads through 2018. That annual average includes 15.7 launches of medium-to-heavy vehicles to deploy GSO satellites, 8.3 launches of medium-to-heavy vehicles to NGSO, and 2.7 launches to NGSO by small vehicles.



Commercial GSO launches are used for communications satellites with masses ranging from 2,000 to over 6,000 kilograms; satellite masses have tended to grow over time although there is still interest in smaller satellites. Demand for commercial NGSO launches spans a number of markets, including commercial remote sensing, science and technology demonstration missions (often for nations without an indigenous launch capability), and the replenishment and replacement of low Earth orbit communications satellite systems first launched in the late 1990s.

The GSO and NGSO forecasts are not a prediction of what will actually be launched but instead represent the expected demand for launch services, based on a variety of inputs. The complete forecast report is available at: http://www.faa.gov/about/office\_org/headquarters\_offices/ast/reports\_studies/forecasts/.

### ▷▷▷ RISKS TO THE FORECAST

The FAA is "cautiously optimistic" that its current outlook for aviation demand and activity can be achieved. However, this year's forecast is driven, at least in the short-term, by a number of factors including security and pandemic illnesses, as well as the strength of the economic recovery and the weakened financial health of the commercial aviation industry. As the attempted bombing of a Northwest airliner on Christmas Day 2009 reminds us, terrorism remains among the greatest risks to achieving the forecast. Because of aviation's high visibility and global reach, concerns remain about international terrorism. Any terrorist incident aimed at aviation would have an immediate and significant impact on the demand for aviation services.

During 2009 there was much discussion about the possible impacts of the H1N1 or swine flu virus. As of January 2010 there had not been a widespread serious outbreak of the virus in the U.S. However, events in Mexico during the spring of 2009 provide some evidence of the damaging impacts that such an event could inflict. When a severe outbreak of the H1N1 virus broke out in Mexico, authorities quickly moved to place severe limits on aviation. Airlines responded by slashing capacity in the face of falling demand, and not until well after the restrictions and warnings on travel were lifted did carriers begin to cautiously restore service to the region.

Although oil prices were considerably lower in 2009 than they were for much of 2008, there is still considerable uncertainty as to the level of oil prices once economic growth resumes. FAA's baseline forecast (based on Global Insight's Oct 2009 forecast) calls for steady increases in oil prices after 2009. The increases are relatively modest, with the price of oil only exceeding \$100/barrel after 2025. Some forecasters are calling for a much sharper increase in the price of oil. The U.S. Energy Information Administration (EIA) in its 2010 Annual Energy Outlook is projecting oil prices to exceed \$100/barrel by 2015-2016. While lower oil prices give consumers an impetus for additional spending, including air travel, and increases the chances for industry profitability, higher oil prices could lead to further shifts in consumer expenditures away from aviation, dampening a recovery in air transport demand. Furthermore, higher oil prices, especially in the near term, could wipe out any chance of industry profitability, continue to pressure airline costs, delay balance sheet improvement and discourage expansion plans or new orders for aircraft as carriers focus on maintaining and increasing cash balances.

Recent data suggests that the global economy has begun to grow again, but the data also indicate that the growth is concentrated in a relatively few countries. As a result, the ensuing economic recovery may not be a balanced one and there is considerable doubt about the strength and sustainability of the expansion. The baseline forecast assumes that growth in the U.S. and China will be significantly higher than in the other large economies – Japan and the European Union. Doubts remain over the strength of demand in both Japan and in the European Union as these areas continue to be constrained by structural economic problems, institutional constraints, and the authorities' reluctance to take decisive action. Furthermore the steps that were taken to turn the global economy around may prove to be excessive, since the resulting surge in liquidity growth seems to be inflating asset bubbles and exacerbate existing global imbalances. Once the global economy recovers from the current downturn, there could be an increasing risk from asset bubbles and macroeconomic imbalances, which could end up in a deeper, more prolonged, and less manageable recession and financial crisis. The current forecasts assume strong passenger growth for travel between the United States and other world regions. Any slowing of global economic activity could seriously inhibit the growth in world passenger demand.

The outlook for further consolidation via mergers and acquisition (M&A) appears to be rather limited. Although there is still talk in the industry about the benefits of consolidation, aside from Delta/Northwest merger and the Continental/United alliance there appears to be little scope for further mergers in the US airline industry. Continued tightness in the credit markets has reduced the ability of the industry to finance additional mergers. However, US airlines are exploring other options including global alliances. Many of the major carriers in the US are members of global alliances that operate with some measure of anti-trust immunity from the US DOT. While anti-trust immunity may provide flexibility to airline operators across borders, it may create an anti-competitive environment in the marketplace. These market consolidating vehicles, particularly the anti-trust immunity provisions, may invite increased regulatory scrutiny. If such oversights are launched in the future, this will complicate the evolving structure of the airline industry and may impact demand via new regulations.

The forecast assumes the addition of sizable numbers of regional jets into the fleet of regional carriers. However, the regional carriers' future is closely linked to those of the larger network carriers. As demand continues to slowly recover, increased financial pressures on regional operators have appeared. Furthermore, if a large network carrier should cease to exist (because of financial difficulties or merger), certain regional carriers could find themselves either saddled with excess capacity or lack of sufficient capacity, or lack of feed traffic. The experience of the Delta and Northwest bankruptcies saw opportunities for regional flying substantially reduced.

Business and corporate aviation witnessed a significant downturn in 2009. The length of the slow down and the terms of a recovery are largely based upon the future prospects of economic growth and corporate profits. Future uncertainty in these leading indicators could pose a risk to the forecast, but the risk is not limited to these factors. Public perception of business and corporate aviation, potential environmental regulations and taxes, along with increased security measures placed on business jets, will place downward pressure on the forecast.

Other factors, such as new and more efficient product offerings and increased competition from new entrant manufacturers, serve to broaden the potential of the industry. Estimates show that a record number of new business jet deliveries are overseas and, with the potential of loosening regulations on the use of airspace in foreign countries, the scenario for business jet manufacturers looks all the more promising. Raising the amount of security restrictions, and subsequent travel hassles placed on airline passengers, could make corporate jet travel increasingly appealing. A combination of some of these favorable factors may reach a tipping point, leading to a large on-demand air taxi industry. Although acknowledging the possibility of such an outcome, given recent trends and the large amount uncertainty, the FAA takes a more conservative view on the future prospects of such an industry.

The mix of aircraft operating at most large hubs is also expected to become increasingly complex over the forecast period. The expected increases in the numbers of regional jets and business jets will increase the complexities of the national airspace system and make the FAA's job more challenging. The increased complexity of the mix of aircraft serves to compound the increases in workload strictly due to the increasing demand for aviation services projected over the forecast period.

Although activity at most U.S. airports fell in 2009, delays remained at historically high levels at many U.S. airports and at four airports (ATL, CLT, DEN, and PHL) delays reached record levels. As demand recovers and workload increases, congestion and delays could become a critical limit to growth over the forecast period. FAA's forecasts of both demand and workload are unconstrained in that they assume that there will be sufficient infrastructure to handle the projected levels of activity. Should the infrastructure be

inadequate and result in even more congestion and delays, it is likely that the forecasts of both demand and workload would not be achieved. The Department of Transportation and the FAA are examining a number of options to manage congestion, but the specific measures to be implemented and therefore their impact are unknown at this time.

There are concerns that aviation's impact on the environment could potentially restrict the ability of the aviation sector to grow to meet national economic and mobility needs. Airport expansion or new construction is often a contentious issue because of noise, air quality, and water quality concerns. Concerns about the climate impacts of aviation emissions are also growing. Although aviation currently accounts for 2 to 3 percent of climate change impacts, greenhouse emissions from the sector are expected to grow unless aggressively mitigated with new technology, renewable fuels, operational improvements and market measures. Market measures intended to control emissions, e.g., various emissions trading systems and charges being discussed, would add significant costs to the aviation sector that could effectively reduce available funds for needed investments in new technology. Energy concerns are also rising, driven by spikes in fuel prices, supply and security issues, and the concerns about fossil fuel contributions to global climate change. Lack of progress on improving the environmental and energy outlook for the future fleet can drive more restrictions via standards or operating limitations on the fleet in service, which in turn can depress growth By contrast, breakthroughs in quieter, cleaner aircraft technologies and renewable fuels could reduce environmental and energy constraints on the forecast.

### APPENDIX A ALTERNATIVE FORECAST SCENARIOS

Uncertainty abounds in all industries, but especially in the commercial air travel industry. Increasingly, the FAA has been requested to provide alternative scenarios to their baseline forecasts. These requests come from policy makers, private industry, associations, and consultants. This year, the FAA has responded to its customers, fully understanding that more information, not less, will help stakeholders to better prepare for the future.

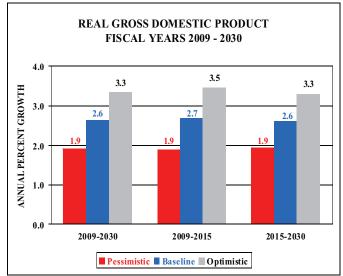
To create the baseline forecast, economic assumptions for both U.S. and international regions from Global Insight's October 2009 forecast were used to generate enplanements, mainline real yield, and nominal yield. The baseline forecast of passenger trip length (an input variable used to forecast mainline real yield) was derived from recent historical trends and analyst judgment. To develop the alternative scenarios, assumptions from the optimistic and pessimistic scenarios contained in the September 2009 edition of Global Insight's U.S. long range forecast were used. Inputs from these scenarios were substituted for the baseline scenario inputs to create a "high" and "low" traffic, capacity, and yield forecast. The baseline forecast trip length was adjusted in the optimistic and pessimistic scenarios based on the movement of oil prices in Global Insight's alternative forecasts relative to the baseline forecast.

International passengers and traffic are primarily determined by GDP Thus, the baseline forecast of GDP for both the U.S. and international regions is modified using the optimistic and pessimistic forecasts of GDP described above in order to create a high and low case.

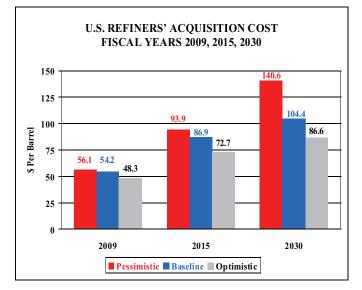
### SCENARIO ASSUMPTIONS

FAA's baseline forecast assumes that the economy recovers from the current downturn and suffers no major mishaps such as large oil price shocks, swings in macroeconomic policy, or financial meltdowns. In the alternative scenarios, the economy is postulated to proceed smoothly as well, however at a different pace than projected under the baseline forecast. Projections for economic growth in Global Insight's alternative scenarios are rooted in demographics. In Global Insight's optimistic forecast scenario, population grows more rapidly than in the baseline due to higher net immigration. The reverse is true for the pessimistic forecast; population grows more slowly than the baseline forecast due to slower net immigration.

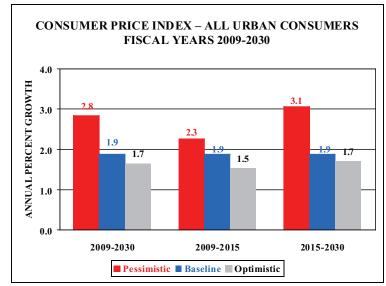
FAA's high case forecast uses Global Insight's optimistic forecast. The optimistic forecast is characterized by lower inflation and faster growth in the labor force and capital stock than in the baseline forecast. In this scenario productivity growth is higher and potential output climbs more rapidly, with GDP (used as an input variable to the FAA's base, high and low forecasts of enplanements) growing about 0.7 percentage points quicker per year than the baseline forecast. Conversely, FAA's low case forecast is based on Global Insight's pessimistic scenario. In the low case forecast, inflation runs higher and the labor force and capital stock growth run lower than in the baseline. As a result, the U.S. economy grows 0.7 percentage points slower per year than in the baseline due to slower productivity and lower potential output growth.



The level of oil prices are determinants in the supply of and demand for air travel and have a direct impact on the profitability of the industry. In all three forecast scenarios prices remain high by historical standards. In the baseline forecast, oil prices rise as the world economy recovers from the recession, but are kept in check as technological improvements act as a counterbalance to rising prices. In the baseline, the refiners acquisition cost (RAC) of oil almost doubles between 2009 and 2030, rising from \$54 to \$104 per barrel. In the high case, RAC increases at a slower pace landing at \$87 per barrel at the end of the forecast period. The high case is characterized by availability of energy and gains in technology which help to temper prices compared to the baseline. In the low case forecast, scarcity of oil and lower productivity gains create upward pressure in oil prices. In this scenario, RAC rises to \$141 by 2030.



The price of energy is one of the critical drivers in the growth of consumer prices over the forecast period. In the high case forecast the consumer price index (CPI) grows at an average rate of 1.7 percent per year (compared to growth of 1.9 percent annually in the baseline) as energy prices, wages, and import prices grow more slowly than in the baseline. In the low case forecast the opposite assumptions hold with energy prices, wages and import prices rising more rapidly compared to the baseline. In the low case, CPI grows an average of 2.8 percent annually over the forecast period.

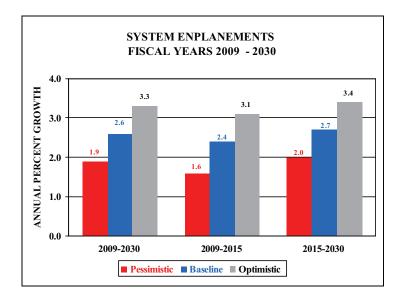


The baseline passenger trip length forecast is predicated upon analyst judgment and recent trip length trends. Carrier behavior as a result of volatile fuel prices during 2008 was the basis for adjusting trip length in the alternative forecasts. During 2008, high fuel costs made flying of some longer haul routes cost prohibitive (thus unprofitable), resulting in lower trip length compared to prior years. Since the FAA's low case forecast is depicted by higher fuel prices relative to the baseline forecast, it is assumed that trip length rises at a slower pace than in the baseline forecast. In FAA's high forecast, fuel prices are lower than projected in the baseline, pushing trip length up as lower fuel prices make flying longer-haul routes more affordable.

### ALTERNATIVE FORECASTS

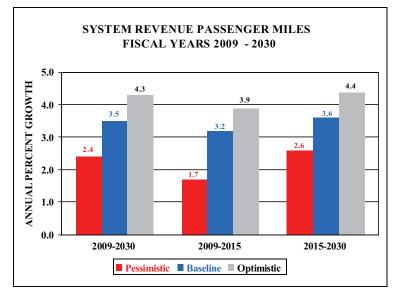
### Passengers

In the baseline forecast, system passengers are forecast to grow at an average annual rate of 2.6 percent per year over the forecast horizon (with domestic and international passengers up 2.4 and 4.0 percent, respectively), notching one billion passengers in the year 2023. In the high case, passengers grow at a quicker pace, averaging 3.3 percent per year (up 3.1 percent domestically and 4.8 percent internationally). This scenario is marked by a more favorable business environment, lower inflation, and lower fuel prices which make the price of flying more affordable to business and leisure travelers. In the high case, one billion passengers are forecast for 2021, two years earlier than predicted in the baseline forecast. The low case is characterized by increased costs of capital resulting from higher interest rates, weakened consumer confidence brought on by rising unemployment, and higher inflation. In this scenario passengers grow an average of 1.9 percent per year (domestic up 1.8 percent and international up 2.8 percent). In the low case, one billion passengers are reached in 2028, five years behind the baseline forecast.



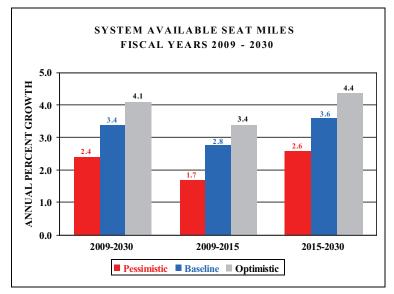
### **Revenue Passenger Miles**

The forecast of RPMs is produced by multiplying assumptions for trip length in each forecast scenario by passengers from the same scenario. Thus, the assumptions used to create the trip length and passenger forecasts drive RPM growth. In the baseline forecast, system RPMs grow at an average annual rate of 3.5 percent per year, with domestic RPMs up 3.1 percent annually and international RPMs up 4.4 percent annually. In the high case, a more optimistic economic environment drives RPMs higher than the baseline, with growth averaging 4.3 percent per year (domestic and international RPMs up 3.9 and 5.2 percent, respectively). In the low case, a more pessimistic economic environment slows RPM growth to an average of 2.5 percent annually (up 2.2 percent domestically and up 3.2 percent internationally).



### Available Seat Miles

The available seat miles (capacity) forecast is developed by multiplying revenue passenger miles by load factor. In the base case, system capacity is forecast to increase an average of 3.4 percent annually over the 21-year forecast horizon (with average growth of 2.9 percent domestically and 4.3 percent internationally). In the high case, capacity grows at a faster clip than in the baseline forecast, averaging growth of 4.1 percent annually (up 3.7 percent domestically and up 5.0 percent internationally). Carriers increase capacity compared to the baseline forecast to accommodate increased travel demand brought about by a more favorable economic environment. In the low case, demand for air travel is lower than in the baseline, thus system capacity grows at a slower pace of 2.4 percent annually (domestic up 2.1 percent annually and international up 3.0 percent annually).



### Load Factor

System load factors over the 21-year forecast period are relatively the same for all three forecast scenarios, rising from 79.7 percent in 2009 to 82.5 percent in 2030. In all three scenarios it is assumed that carriers will keep load factors on the high side by actively managing capacity (seats) to more precisely meet demand (passengers). The domestic load factor slowly grows from 80.4 percent to 83.2 percent over the forecast horizon, while the international load factor grows from 78.1 to just over 81.0 percent during the same period.

### Yield

In the baseline forecast, nominal system yield increases 1.1 percent annually, going from 12.5 cents in 2009 to 15.9 cents in 2030. On a domestic basis, yield in the baseline forecast rises from 12.8 cents in 2009 to 16.1 cents in 2030, while international yield rises from 11.8 cents to 15.6 cents. System yield rises more

slowly in the high case, up 0.7 percent annually to be 14.5 cents at the end of the forecast period (domestic and international yield increase to 14.7 cents and 13.9 cents, respectively). The slower growth in yield in the high case is due to advancements in technology, gains in productivity, more favorable fuel prices, and lower inflation. Increased competition is also assumed in this scenario. In the domestic market fares are driven lower than baseline levels due to increased market overlap between low cost and legacy carriers. In the international market, increased competition from growing liberalization puts downward pressure on fares. In the low case, nominal yields rise more rapidly than in the baseline, growing an average of 2.3 percent annually, reaching 20.3 cents by 2030 (21.0 cents domestically and 19.0 cents internationally). This scenario reflects higher inflation than in the baseline, forcing carriers to increase fares in order to cover the higher costs of fuel, labor, and capital.

### Passenger Trip Length

Over the 21-year forecast horizon, baseline system passenger trip length is assumed to grow an average of 10.5 miles per year. In the high case, passenger trip length grows 1.0 mile faster per year than in the base case at 11.5 miles per year. In the high case, fuel prices are lower than in the baseline which allows carriers to operate longer-haul routes more profitably. Conversely, the low forecast is characterized by fuel prices that are higher than the baseline forecast. Higher fuel costs makes flying longer-haul routes less affordable to the carriers; hence passenger trip length trails the baseline forecast by 3.0 miles per year, growing an average of 7.5 miles per year.

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## FAA FORECAST ECONOMIC ASSUMPTIONS\*

## FISCAL YEARS 2010-2030

		HISTORICAL		FORECAST	CAST		PERCENT	PERCENT AVERAGE ANNUAL GROWTH	ANNUAL G	ROWTH
VARIABLE	SCENARIO	2009	2010	2015	2020	2030	09-10	09-15	10-20	09-30
Economic Assumptions Real Gross Domestic Product (BIL 05\$)	Pessimistic Baseline Optimistic	12,972 12,996 13,003	12,936 13,189 13,386	14,511 15,233 15,936	16,206 17,392 18,655	19,298 22,382 25,886	-0.3% 1.5% 2.9%	1.9% 2.7% 3.4%	2.3% 2.8% 3.4%	1.9% 2.6% 3.3%
Refiners Acquisition Cost - Average - \$ Per Barrel	Pessimistic Baseline Optimistic	56.1 54.2 48.3	67.5 61.9 40.6	93.9 86.9 72.7	103.7 92.8 89.0	140.6 104.4 86.6	20.4% 14.2% -15.9%	9.0% 8.2% 7.0%	4.4% 4.1% 8.2%	4.5% 3.2% 2.8%
Real Personal Consumption Expenditures - (BIL 05\$)	Pessimistic Baseline Optimistic	9,190 9,212 9,214	9,156 9,319 9,449	9,876 10,466 10,996	10,960 11,850 12,805	13,019 15,194 18,128	-0.4% 1.2% 2.6%	1.2% 2.1% 3.0%	1.8% 2.4% 3.1%	1.7% 2.4% 3.3%
Consumer Price Index All Urban, 1982-84 = 1.0	Pessimistic Baseline Optimistic	2.14 2.13 2.13	2.16 2.17 2.14	2.45 2.39 2.33	2.80 2.62 2.56	3.84 3.16 3.01	1.2% 1.4% 0.3%	2.3% 1.9% 1.5%	2.6% 1.9% 1.8%	2.8% 1.9% 1.7%
Real Disposable Income (BIL 05\$)	Pessimistic Baseline Optimistic	9,923 9,949 9,978	9,807 10,002 10,207	10,719 11,292 11,827	12,470 13,162 14,111	15,216 16,942 19,616	-1.2% 0.5% 2.3%	1.3% 2.1% 2.9%	2.4% 2.8% 3.3%	2.1% 2.6% 3.3%
Civilian Unemployment Rate (%)	Pessimistic Baseline Optimistic	8.5 8.5 8.4	10.5 10.0 9.5	7.9 7.4 7.0	5.8 5.6 5.2	5.5 5.2 4.8	2.0 1.5 1.1	-0.1 -0.2 -0.2	-0.5 -0.4 -0.4	-0.1 -0.2 -0.2

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# FAA FORECAST OF DOMESTIC AVIATION ACTIVITY

### FISCAL YEARS 2010-2030

		HISTORICAL		FORECAST	CAST		PERCENI	PERCENT AVERAGE ANNUAL GROWTH	ANNUAL G	ROWTH
VARIABLE	SCENARIO	2009	2010	2015	2020	2030	09-10	09-15	10-20	10-30
<u>Domestic</u> <u>Aviation Activity</u> Available Seat Miles (BIL)	Pessimistic Baseline Optimistic	683.8 683.8 683.8 683.8	665.8 676.2 686.9	749.2 788.5 828.7	849.3 926.5 997.2	1,048.8 1,253.6 1,460.2	-2.6% -1.1% 0.4%	1.5% 2.4% 3.3%	2.5% 3.2% 3.8%	2.1% 2.9% 3.7%
Revenue Passenger Miles (BIL)	Pessimistic Baseline Optimistic	549.5 549.5 549.5	543.0 551.5 560.2	617.8 650.3 683.6	703.7 767.8 826.7	872.2 1,042.6 1,215.0	-1.2% 0.4% 1.9%	2.0% 2.8% 3.7%	2.6% 3.4% 4.0%	2.2% 3.1% 3.9%
Enplanements (MIL)	Pessimistic Baseline Optimistic	631.3 631.3 631.3	624.6 634.1 642.6	692.4 723.1 753.9	768.1 821.4 876.0	908.3 1,045.6 1,195.8	-1.1% 0.4% 1.8%	1.6% 2.3% 3.0%	2.1% 2.6% 3.1%	1.7% 2.4% 3.1%
Miles Flown (MIL)	Pessimistic Baseline Optimistic	5,608.7 5,608.7 5,608.7	5,475.9 5,562.7 5,648.8	6,149.8 6,476.1 6,802.4	6,949.8 7,581.2 8,160.3	8,482.8 10,139.4 11,810.7	-2.4% -0.8% 0.7%	1.5% 2.4% 3.3%	2.4% 3.1% 3.7%	2.0% 2.9% 3.6%
Departures (000s)	Pessimistic Baseline Optimistic	9,084.6 9,084.6 9,084.6	8,827.1 8,952.2 9,091.5	9,543.9 9,897.7 10,385.3	10,363.0 10,990.1 11,795.5	11,834.0 13,487.0 15,512.7	-2.8% -1.5% 0.1%	0.8% 1.4% 2.3%	1.6% 2.1% 2.6%	1.3% 1.9% 2.6%
Nominal Passenger Yield (cents)	Pessimistic Baseline Optimistic	12.84 12.84 12.84	13.34 13.34 13.10	14.79 14.18 13.52	16.38 14.73 13.99	20.95 16.08 14.72	3.9% 3.9% 2.0%	2.4% 1.7% 0.9%	2.1% 1.0% 0.7%	2.4% 1.1% 0.7%

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# FAA FORECAST OF INTERNATIONAL AVIATION ACTIVITY

### FISCAL YEARS 2010-2030

		HISTORICAL		FORECAST	CAST		PERCENT	PERCENT AVERAGE ANNUAL GROWTH	ANNUAL G	ROWTH
VARIABLE	SUEINARIO	2009	2010	2015	2020	2030	09-10	09-15	10-20	10-30
International Aviation Activity Available Seat Miles (BIL)	Pessimistic Baseline Optimistic	281.7 281.7 281.7	269.1 274.0 275.1	316.1 347.3 353.0	380.2 436.8 456.1	523.6 675.6 787.6	-4.5% -2.8% -2.3%	1.9% 3.5% 3.8%	3.5% 4.8% 5.2%	3.0% 4.3% 5.0%
Revenue Passenger Miles (BIL)	Pessimistic Baseline Optimistic	220.1 220.1 220.1	216.9 220.7 221.7	255.4 280.5 285.3	307.9 353.2 369.3	425.5 547.9 639.8	-1.5% 0.3% 0.7%	2.5% 4.1% 4.4%	3.6% 4.8% 5.2%	3.2% 5.2% %5.2%
Enplanements (MIL)	Pessimistic Baseline Optimistic	72.7 72.7 72.7	72.2 73.4 74.3	82.8 90.6 93.1	97.4 111.1 117.4	129.4 164.5 193.2	-0.7% 0.9% 2.2%	2.2% 3.7% 4.2%	3.0% 4.2% 4.7%	2.8% 4.0% 4.8%
Miles Flown (MIL)	Pessimistic Baseline Optimistic	1,298.7 1,298.7 1,298.7	1,244.0 1,266.1 1,271.7	1,443.4 1,585.8 1,611.2	1,715.9 1,968.8 2,056.4	2,317.8 2,985.1 3,479.2	-4.2% -2.5% -2.1%	1.8% 3.4% 3.7%	3.3% 4.5% 4.9%	2.8% 4.0% 8%
Departures (000s)	Pessimistic Baseline Optimistic	550.9 550.9 550.9	534.4 543.0 549.7	595.3 648.7 666.9	679.5 771.8 814.9	860.2 1,088.2 1,274.2	-3.0% -1.4% -0.2%	1.3% 2.8% 3.2%	2.4% 3.6% 4.0%	2.1% 3.3% 4.1%
Nominal Passenger Yield (cents)	Pessimistic Baseline Optimistic	11.81 11.81 11.81	12.34 12.34 11.40	13.98 13.66 12.47	15.27 14.27 13.01	19.01 15.55 13.93	4.5% 4.5% -3.5%	2.9% 2.5% 0.9%	2.2% 1.5% 1.3%	2.3% 1.3% 0.8%

### >>> APPENDIX B FAA FORECAST ACCURACY

Forecasts, by their nature, have a degree of uncertainty incorporated in them. They involve not only statistical analyses and various scientific methods, but also judgment, and reliance on industry knowledge and the forecaster's experience to incorporate industry trends not yet reflected in recent results. The FAA's annual Aerospace Forecast is no exception. Given the volatile nature of the U.S. airline industry, it is not surprising that each year's forecast would contain a certain degree of forecast variance. Therefore, FAA forecasters have tried to build forecast models that give a consistent and predictable pattern of results. Analysts relying on the forecasts produced by the models would then be able to adjust for the predictable variance from actual results.

The table below presents an analysis of the variance from historical results for five key forecast metrics during the FY 2003–FY 2009 forecast period. Although this brief period has experienced industry upheaval, FAA's forecast methodology remained consistent during this time. For these reasons, inclusion of prior periods in an analysis of forecast variance might lead to inconclusive, or inaccurate, implications about the accuracy of FAA's current forecast methodology.

The table contains the mean absolute percent errors for the projected values versus the eventual results for U.S. carriers' domestic operations. Each metric has five values showing the relative forecast variance by the number of years in advance the preparation of the forecast took place. For example, the 3 Years column for ASM shows the mean absolute percent error was 8.9 percent for ASM forecasts prepared 3 years in advance. For the period under examination, preparation of the forecasts for FY 2006, FY 2007, FY 2008 and FY 2009 occurred in FY 2004, FY 2005, FY 2006, and FY 2007 respectively.<sup>11</sup>

### U.S. AIR CARRIERS DOMESTIC SCHEDULED PASSENGER OPERATIONS FORECAST EVALUATION

	Mea	n Absolute Percer	nt Error (Combine	d FY 2003 - FY 2	009)
Forecast		(Foreca	st Variance from	Actual)	
Variable		Forecast Pe	rformed Years Pri	or to Actual	
	1 Year	2 Years	3 Years	4 Years	5 Years
ASMs	0.7%	5.8%	8.9%	12.6%	16.5%
RPMs	1.6%	4.7%	5.6%	7.5%	7.9%
Pax Enplanement	1.1%	3.7%	5.9%	7.9%	10.7%
Mainline Pax Yield	3.4%	7.5%	11.4%	14.0%	14.4%
IFR Aircraft Handled	3.0%	6.9%	7.8%	9.3%	10.8%

Presenting forecast variances from actual data in such a manner simplifies a review of longer-term trends. Typically, one would expect the variances to decrease as the forecast year is closer to the year the forecast

<sup>11</sup> It should be noted that the first forecasted year for each respective fiscal year is that very same year. Therefore, FY 2003's first forecasted year is FY 2003, and the third forecasted year is FY 2005. This also means that the 5 Years column in the table above consists of only two observation points, while the 4 Years column is based upon three observations.

is prepared. Presenting forecast variances in this way allows an examination of changes in the relative variances by time horizon, signaling when dramatic shifts in accuracy occur.

Examination of the forecast variances reveals several items. First, all the metrics examined, show declining variances as the forecast time horizon decreases, as expected. The largest variances were found in the forecasts of ASMs and Yield, the two variables most directly affected by carrier business decisions. However, for both of these variables the largest declines in variance occur between Year 3 and Year 1. Second, the FAA's forecast model produces relatively small variances for both of the passenger traffic metrics, Enplanements and RPMs, with none of the forecast variances exceeding 11.0 percent for any forecast time horizon examined. Third, the relative divergence in forecast variances between RPMs and ASMs suggests errors in forecasting load factor.

The examination of the forecast variances over time suggests two primary implications. First, added focus on load factor might improve the model. Currently, load factor is calculated by dividing the forecast RPMs by forecast ASMs. The large difference between the RPM forecast variance and ASM forecast variance beyond Year 2, indicates a relatively large variance in the forecast of load factor, one of the critical elements in converting passenger demand into aviation activity. However, the difference between the RPM forecast variance and ASM forecast variance narrows as the time horizon shortens, suggesting that the near term load factor forecasts are coming closer to the mark. All other things being equal, large variances in forecasts of load factor will lead to large variances in the long-term forecasts of aviation activity, as can been seen in the variances of the IFR aircraft handled forecasts.

Furthermore, ASMs are becoming increasingly difficult to forecast beyond a relatively short time horizon, as carriers often react to changing market conditions. The relatively large variances in the ASM forecasts suggest that carriers have reacted by permanently removing capacity. Such capacity reductions can be identified in the short term by using advance schedule information. However, FAA's longer-term forecasts rely on anticipated aircraft deliveries and retirements as well as historic relationships between economic activity and capacity deployed. Given the volatile nature of many of the factors that may influence longer term ASM forecasts, a simpler approach, such as RPMs divided by load factor, may improve the long run accuracy of the ASM forecasts.

### >>> APPENDIX C ACKNOWLEDGEMENTS

This document was prepared by the Forecasts and Performance Analysis Division (APO-100), Office of Aviation Policy and Plans, under the direction of Mr. Roger D. Schaufele, Jr. The following individuals were responsible for individual subject areas:

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### FORECAST TABLES

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## **U.S. SHORT-TERM ECONOMIC FORECASTS**

ECONOMIC		FISCAL Y	FISCAL YEAR 2010			FISCAL Y	FISCAL YEAR 2011	
VARIABLE	1ST. QTR.	2ND QTR.	1ST. QTR. 2ND QTR. 3RD QTR.	4TH QTR.	1ST QTR.	2ND QTR.	3RD QTR.	4TH QTR.
Real GDP								
(Billions of 2005\$)	13,097.9	13,155.3	13,214.5	13,286.6	13,374.6	13,466.7	13,585.4	13,708.8
Seasonally Adjusted Annual Rate	2.6%	1.8%	1.8%	2.2%	2.7%	2.8%	3.6%	3.7%
Refiners' Acquisition Cost - Average								
(Dollars)	66.54	61.63	60.68	63.52	66.37	69.21	72.05	74.90
Seasonally Adjusted Annual Rate	12.2%	-26.4%	-6.0%	20.1%	19.1%	18.3%	17.5%	16.7%
Consumer Price Index <sup>1</sup>								
(1982-84 equals 100)	216.4	216.2	216.7	217.8	218.9	220.2	221.6	223.0
Seasonally Adjusted Annual Rate	2.1%	-0.3%	1.0%	2.0%	2.0%	2.5%	2.5%	2.6%

Source: Global Insight, October 2009.

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## **U.S. LONG-TERM ECONOMIC FORECASTS**

FISCAL YEAR	GROSS DOMESTIC PRODUCT (Billions 2005\$)	CONSUMER PRICE INDEX (1982-84=100)	REFINERS' ACQUISITION COST AVERAGE (Dollars per barrel)
<u>Historical</u> 2000	11,145.9	170.74	26.70
2005 2006 2007 2009 2009	12,553.8 12,898.3 13,171.4 13,374.5 12,995.9	193.48 200.62 205.30 214.42 213.78	47.20 59.94 60.59 101.52 54.22
<u>Forecast</u> 2010	13,188.6	216.75	61.92
2011 2012 2013 2015 2015	13,533.9 14,024.1 14,469.8 14,852.6 15,233.2	220.93 225.74 239.95 238.86	69.25 76.47 80.21 83.34 86.90
2016 2017 2018 2019 2020	15,612.1 15,995.2 16,414.8 16,876.8 17,391.6	243.61 248.36 253.16 257.90 262.39	90.75 93.02 94.74 94.50
2021 2022 2023 2024 2025	17,858.1 18,318.4 18,794.2 19,272.8 19,783.0	266.95 271.60 276.34 281.42 286.72	90.82 89.58 88.42 89.70 91.79
2026 2023 2028 2029 2039 2030	20,300.2 20,802.1 21,317.6 21,832.4 22,381.6	292.14 297.76 303.45 309.45 315.71	93.77 95.70 98.45 101.47 104.45
<u>Avg Annual Growth</u> 2000-09 2009-10 2010-20 2009-30	1.7% 1.5% 2.6%	2.5% 1.4% 1.9%	8.2% 14.2% 3.2%

Source: 2009-2030; Global Insight, US Economic Outlook, October 2009. Extrapolated to 2030.

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**INTERNATIONAL GDP FORECASTS BY TRAVEL REGION** 

		GR( (In E	GROSS DOMESTIC PRODUCT (In Billions of 2005 U.S. Dollars)	UCT lars)	
CALENDAR YEAR	CANADA	EUROPE/ AFRICA/ MIDDLE EAST	LATIN AMERICA/ MEXICO	JAPAN/PACIFIC BASIN/CHINA/OTHER ASIA/AUSTRALIA/ N. ZEALAND	MORLD
<u>Historical</u> 2000	1,000.2	15,280.3	2,162.7	8,837.1	39,702.4
2005 2006 2008 2008 2009E	1,134.1 1,166.5 1,196.0 1,200.9 1,170.2	17,061.5 17,709.7 18,291.9 18,541.8 17,910.5	2,454.0 2,587.0 2,726.9 2,833.2 2,759.6	10,743.3 11,327.3 12,014.0 12,379.0 12,384.7	45,612.1 47,468.3 49,310.9 50,186.1 49,040.5
<u>Forecast</u> 2010	1,195.4	18,144.7	2,848.8	12,966.2	50,286.6
2011 2012 2013 2015	1,236.6 1,280.8 1,321.7 1,359.2 1,393.7	18,513.8 18,978.4 19,492.9 20,035.1 20,550.8	2,972.2 3,101.9 3,356.3 3,482.3	13,579.7 14,284.6 15,069.3 15,903.4 16,760.8	51,897.7 53,835.8 55,806.2 57,817.1 59,821.8
2016 2017 2018 2019 2020	1,427.0 1,459.8 1,493.4 1,527.5 1,560.2	21,063.7 21,576.6 22,094.9 22,623.6 23,156.3	3,611.5 3,744.7 3,881.0 4,022.4 4,166.4	17,599.5 18,425.1 19,266.7 20,130.3 21,011.6	61,808.9 63,793.8 65,845.8 67,986.4 70,188.6
2021 2022 2023 2024 2025	1,593.1 1,625.6 1,659.7 1,693.7 1,728.3	23,690.7 24,223.8 24,762.8 25,314.7 25,873.7	4,315.1 4,667.9 4,625.8 4,788.1 4,956.2	21,923.0 22,852.1 23,812.9 24,819.3 25,866.8	72,376.5 74,595.3 76,877.7 79,236.8 81,684.4
2026 2027 2028 2029 2030	1,764.3 1,800.6 1,839.7 1,878.8 1,918.4	26,442.0 27,018.5 27,604.9 28,198.4 28,803.2	5,130.1 5,308.4 5,491.8 5,681.1 5,876.3	26,938.7 28,054.7 29,192.3 30,358.4 31,551.9	84,164.7 86,696.8 89,281.2 91,915.8 94,639.4
<u>Avg Annual Growth</u> 2000-09 2009-10 2010-20 2009-30	1.8% 2.1% 2.4%	1.8% 1.3% 2.5%	2.7% 3.2% 3.7%	3.8% 4.7% 4.9%	2.4% 3.5% 3.2%

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# **INTERNATIONAL GDP FORECASTS – SELECTED AREAS/COUNTRIES**

	CHINA	1,420.5	2,244.1 2,504.4 3,083.5 3,333.3	3,669.5	3,990.4 4,332.9 4,724.8 5,156.6 5,610.2	6,069.7 6,544.0 7,043.3 7,565.3 8,109.7	8,687.0 9,279.0 9,897.1 10,548.4 11,228.2	11,923.6 12,652.0 13,389.4 14,142.8 14,916.0	9.9% 10.1% 8.3% 7.4%
CT ars)	JAPAN	4,272.2	4,556.7 4,649.4 4,755.6 4,722.6 4,447.7	4,495.9	4,562.4 4,6552.2 4,764.5 4,878.3 4,985.1	5,060.6 5,104.3 5,139.8 5,130.2 5,196.5	5,218.2 5,238.1 5,257.2 5,294.4	5,312.6 5,331.6 5,352.1 5,389.7 5,389.7	0.4% 1.1% 1.5% 0.9%
GROSS DOMESTIC PRODUCT (In Billions of 2005 U.S. Dollars)	UNITED KINGDOM	2,014.8	2,279.3 2,344.3 2,414.3 2,411.5 2,311.5	2,335.1	2,371.6 2,428.1 2,493.4 2,564.5 2,630.4	2,693.8 2,756.6 2,820.8 2,885.7 2,951.4	3,017.6 3,082.1 3,147.2 3,212.6 3,277.8	3,345.7 3,416.0 3,487.0 3,558.1 3,631.8	1.5% 1.0% 2.2%
GRO (In Bi	EUROZONE	9,380.0	10,116.3 10,430.9 10,714.3 10,773.6 10,346.0	10,435.1	10,577.6 10,758.7 10,976.8 11,208.4 11,412.5	11,615.6 11,816.2 12,014.4 12,219.5 12,420.7	12,623.2 12,823.3 13,025.0 13,232.6 13,440.8	13,651.1 13,862.1 14,075.0 14,287.4 14,500.8	1.1% 0.9% 1.8%
	NORTH AMERICA (NAFTA)	13,001.7	14,621.6 15,035.4 15,372.5 15,448.2 15,019.7	15,346.5	15,806.2 16,383.8 16,873.5 17,326.1 17,768.2	18,211.5 18,662.9 19,155.6 19,699.2 20,272.8	20,796.5 21,325.7 21,870.3 22,421.5 23,008.1	23,592.0 24,167.7 24,758.6 25,353.7 25,992.5	2.2% 2.2% 2.6%
	CALENDAR YEAR	<u>Historical</u> 2000	2005 2006 2007 2008 2009E	<u>Forecast</u> 2010	2011 2012 2013 2014 2015	2016 2017 2018 2019 2020	2021 2022 2023 2024 2025	2026 2027 2028 2029 2030	<u>Avg Annual Growth</u> 2000-09 2009-10 2010-20 2009-30

Source: Global Insight, October 2009.

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#### U.S. COMMERCIAL AIR CARRIERS<sup>1</sup> TOTAL SCHEDULED U.S. PASSENGER TRAFFIC

	M			<u> </u>		O.M.O.	44-00	<del>۲</del> 0 0 0 0	
S (Billions)	SYSTEM	694.6	770.4 790.9 821.7 828.5 769.7	772.2	792.5 828.2 863.2 896.7 930.8	964.9 999.7 1,037.0 1,077.3 1,120.9	1,162.4 1,204.4 1,248.1 1,292.8 1,340.2	1,388.1 1,436.2 1,486.0 1,536.8 1,590.6	1.1% 0.3% 3.8%
REVENUE PASSENGER MILES (Billions)	INTERNATIONAL	181.8	197.2 208.5 221.2 233.1 220.1	220.7	231.0 242.7 254.9 267.6 280.5	293.8 307.3 321.6 353.2	369.6 386.4 423.8 411.2	461.1 481.6 522.8 524.8 547.9	2.1% 0.3% 4.8%
REVENUE	DOMESTIC	512.8	573.2 582.4 600.5 595.3 549.5	551.5	561.5 585.5 608.3 629.1 650.3	671.1 692.4 715.4 740.4 767.8	792.9 818.1 874.2 899.0	927.0 954.7 983.2 1,012.1	0.8% 3.4% 3.1%
AENTS (Millions)	SYSTEM	697.6	737.0 740.0 765.3 759.1 704.0	707.4	722.0 747.3 771.1 792.4 813.7	834.9 856.3 879.6 932.6	958.2 983.7 1,010.1 1,036.7 1,064.9	1,093.5 1,121.5 1,150.3 1,179.3 1,210.0	0.1% 0.5% 2.8% 2.8%
REVENUE PASSENGER ENPLANEMENTS (Millions)	INTERNATIONAL	56.4	67.4 71.6 75.3 77.8 72.7	73.4	76.3 79.7 88.3.2 90.6	94.3 98.1 102.2 116.5	115.7 120.5 130.3 135.6	141.1 146.7 152.4 168.3	2.9% 0.9% 4.0%
REVENUE PAS	DOMESTIC	641.2	669.5 668.4 690.1 631.3 631.3	634.1	645.7 667.7 687.8 705.5 723.1	740.6 758.2 777.4 798.3 821.4	842.5 863.3 884.7 929.3	952.4 974.9 997.9 1,021.0	-0.2% 0.4% 2.6%
FISCAL	YEAR	<u>Historical</u> * 2000	2005 2006 2007 2008 2008	<u>Forecast</u> 2010	2011 2012 2013 2014 2015	2016 2017 2018 2019 2020	2021 2022 2023 2024 2025	2026 2027 2028 2029 2030	<u>Avg Annual Growth</u> 2000-09 2009-10 2010-20 2009-30

\* Source: Forms 41 and 298-C, U.S. Department of Transportation.

1 Sum of U.S. Mainline and Regional Air Carriers.

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# U.S. COMMERCIAL AIR CARRIERS<sup>1</sup> SCHEDULED PASSENGER CAPACITY, TRAFFIC, AND LOAD FACTORS

		DOMESTIC			INTERNATIONAL			SVSTEM	
FISCAL YEAR	ASMs (BIL)	RPMs (BIL)	% LOAD FACTOR	ASMs (BIL)	RPMs (BIL)	% LOAD FACTOR	ASMs (BIL)	RPMs (BIL)	% LOAD FACTOR
<u>Historical</u> * 2000	726.6	512.8	70.6	239.3	181.8	76.0	965.9	694.6	71.9
2005 2006 2008 2008 2009 E	755.2 740.2 752.5 683.8	573.2 582.4 600.5 595.3 549.5	75.9 78.7 79.8 79.3 80.4	248.5 261.3 275.9 291.9 281.7	197.2 208.5 221.2 233.1 220.1	79.4 79.8 79.9 79.9	1,003.6 1,001.5 1,028.4 1,042.4 965.5	770.4 790.9 821.7 769.7	76.8 79.0 79.5 79.5
<u>Forecast</u> 2010	676.2	551.5	81.6	274.0	220.7	80.6	950.2	772.2	81.3
2011 2012 2013 2015 2015	686.7 714.1 740.2 764.0 788.5	561.5 585.5 608.3 629.1 650.3	81.8 82.0 82.3 82.3 82.5	286.9 301.2 316.1 331.7 347.6	231.0 242.7 254.9 267.6 280.5	80.5 80.6 80.6 80.7 80.7	973.7 1,015.2 1,056.3 1,095.8 1,136.1	792.5 828.2 863.2 896.7 930.8	81.6 81.6 81.7 81.8 81.9
2016 2017 2018 2019 2020	812.7 837.6 864.6 894.1 926.5	671.1 692.4 715.4 740.4 767.8	82.6 82.7 82.7 82.8 82.9	363.9 380.5 398.0 416.8 436.8	293.8 307.3 321.6 336.9 353.2	80.8 80.8 80.8 80.8 90.08	1,176.6 1,218.1 1,262.6 1,363.3	964.9 999.7 1,037.0 1,077.3 1,120.9	82.0 82.1 82.2 82.2 82.2 8
2021 2022 2023 2024 2025	956.3 986.1 1,017.2 1,048.8 1,082.5	792.9 818.1 844.2 870.8 899.0	82.9 83.0 83.0 83.1 83.1	456.9 477.6 499.0 521.2 544.7	369.6 386.4 403.8 422.0 441.2	80.9 80.9 81.0 81.0	1,413.2 1,463.7 1,516.2 1,570.1 1,627.2	1,162.4 1,204.4 1,248.1 1,292.8 1,340.2	82.3 822.3 822.3 822.3 822.3 822.3
2026 2027 2028 2028 2029 2030	1,115.8 1,148.7 1,182.7 1,217.1 1,253.6	927.0 954.7 983.2 1,012.1 1,042.6	83.1 83.1 83.2 83.2 83.2	569.1 594.3 620.3 647.2 675.6	461.1 481.6 522.8 524.8	81.0 81.0 81.1 81.1 1.18	1,684.9 1,743.0 1,803.0 1,864.3 1,929.2	1,388.1 1,436.2 1,486.0 1,536.8 1,590.6	82.4 82.4 82.4 82.4 82.4 82.4
<u>Avg Annual Growth</u> 2000-09 2009-10 2010-20 2009-30	-0.7% -1.1% 2.9%	0.8% 0.4% 3.1%		1.8% -2.8% 4.3%	2.1% 0.3% 4.4%		0.0% -1.6% 3.7% 3.4%	1.1% 0.3% 3.5%	

\* Source: Forms 41 and 298-C, U.S. Department of Transportation. 1 Sum of U.S. Mainline and Regional Air Carriers.

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## U.S. COMMERCIAL AIR CARRIERS<sup>1</sup> TOTAL SCHEDULED U.S. INTERNATIONAL PASSENGER TRAFFIC

	REVEN	REVENUE PASSENC	SENGER ENPLANEMENTS	VEMENTS		REVENUE PASSENGER MILES	ENGER MIL	ES
FISCAL YEAR	ATLANTIC	LATIN AMERICA	PACIFIC	TOTAL INTERNATIONAL	ATLANTIC	LATIN AMERICA	PACIFIC	TOTAL INTERNATIONAL
	(Mil)	(Mil)	(Mil)	(Mil)	(Bil)	(Bil)	(Bil)	(Bil)
<u>Historical*</u> 2000	20.9	24.3	11.2	56.4	87.1	36.3	58.4	181.8
2005 2006 2007 2009 2009 8	21.6 22.5 24.1 26.0 24.7	32.5 35.2 35.2 35.3 35.3	13.2 13.6 12.0 12.0	67.4 71.6 75.3 77.8 72.7	89.5 93.9 102.2 112.7	48.6 53.6 57.7 56.5 56.5	59.2 61.1 60.4 54.7	197.2 208.5 221.2 233.1 220.1
<u>Forecast</u> 2010	24.1	37.1	12.1	73.4	106.8	58.5	55.4	220.7
2011 2012 2013 2015 2015	25.3 26.3 28.3 28.3 28.3 28.3 28.3 28.3 28.3 28	38.5 420.2 45.9 45.8	12.5 13.2 15.5 15.5	76.3 79.7 86.9 90.6	112.4 117.7 122.9 128.1	61.2 64.6 68.3 72.3 76.3	57.4 60.3 63.6 67.3 71.2	231.0 242.7 254.9 280.5
2016 2017 2018 2019 2020	332.2 332.3 34.6 4.6	47.7 49.7 51.8 56.6	16.3 17.2 1900	94.3 98.1 102.2 106.5	138.0 143.1 154.6 154.6	80.5 84.8 94.3 99.3 90.8	75.2 79.4 883.6 88.0 92.4	293.8 307.3 321.6 353.9 53.2
2021 2022 2023 2024 2025	35.8 36.9 39.4 40.7	59.1 61.7 64.3 69.9	20.9 21.9 22.9 23.9 25.1	115.7 120.5 125.3 135.6	167.0 173.2 186.2 193.1	105.6 111.5 117.7 124.1 130.9	97.0 101.7 106.6 111.7 1.711	369.6 386.4 422.0 41.2
2026 2027 2028 2028 2029 2039	42.0 43.3 44.6 46.0 47.5	72.9 75.9 82.2 85.6	26.2 27.5 28.7 30.1 31.4	141.1 146.7 152.4 158.3 164.5	200.2 207.4 214.7 222.2 230.2	138.1 145.5 153.1 161.1 169.6	122.8 128.7 135.0 141.4 148.1	461.1 481.6 502.8 524.8 547.9
<u>Avg Annual Growth</u> 2000-09 2009-10 2010-20 2009-30	1.9% -2.5% 3.1%	4.4% 3.3% 4.2%	0.8% 0.7% 5.1% 4.7%	2.9% 0.9% 4.0%	2.5% -1.9% 3.6%	5.0% 3.7% 5.5%	-0.7% 1.2% 5.3% 4.9%	2.1% 0.3% 4.8%

<sup>\*</sup> Source: Forms 41 and 298-C, U.S. Department of Transportation. 1 Sum of U.S. Mainline and Regional Air Carriers.

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## U.S. AND FOREIGN FLAG CARRIERS TOTAL PASSENGER TRAFFIC TO/FROM THE UNITED STATES

TOTAL PASSENGERS BY WORLD TRAVEL AREA (Millions)	ATLANTIC LATIN AMERICA PACIFIC U.S./CANADA TOTAL	53.0         40.8         26.0         20.8         140.6	44.2     25.1     19.7       47.1     25.6     21.0       48.6     26.3     21.5       49.8     25.8     21.4	24.1 25.1	59.4     51.6     26.8     21.8     159.6       62.6     54.3     28.9     22.8     168.6       65.6     56.8     30.9     23.7     177.0       68.6     59.3     32.9     24.6     185.4       71.4     61.9     34.9     25.4     193.6	74.2         64.5         36.8         26.2         201.8           77.1         67.3         38.6         27.0         210.0           80.2         70.2         40.5         27.9         218.8           83.5         73.3         42.5         28.9         228.2           86.9         76.6         44.5         29.9         238.0	90.1         79.9         46.6         30.9         247.6           93.4         83.3         48.7         31.9         257.3           96.7         86.9         50.9         32.9         257.3           96.7         86.9         50.9         32.9         267.4           100.1         90.5         53.2         33.9         267.4           103.7         94.5         55.6         35.0         288.7	107.3         98.5         58.0         36.1         299.9           110.9         102.6         60.6         37.2         311.3           114.5         106.9         63.2         38.4         323.1           118.3         111.4         65.9         39.6         335.1           122.2         116.1         68.8         40.8         347.9	0.4% -0.8% -0.2% 0.5% 0.5%
	ATLANTIC	53.0	49.9 49.8 53.3 57.1	54.9 56.8	59.4 62.6 65.6 68.6 71.4	74.2 77.1 80.2 88.9	90.1 93.4 96.7 100.1	107.3 110.9 118.3 122.2	0.4%

\* Sources: Atlantic, Pacific, and Latin America, INS Form I-92, U.S. Department of Commerce; U.S./Canada Transborder, Transport Canada.

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# U.S. COMMERCIAL AIR CARRIERS FORECAST ASSUMPTIONS <sup>1</sup> SEATS PER AIRCRAFT AND PASSENGER TRIP LENGTH

Н	SYSTEM (Miles)	995.7	1,045.4 1,068.8 1,073.7 1,091.4 1,093.2	1,091.6	1,097.7 1,108.2 1,119.5 1,131.7 1,144.0	1,155.7 1,167.4 1,179.0 1,190.6 1,202.0	1,213.1 1,224.4 1,235.6 1,247.0 1,258.5	1,269.4 1,280.6 1,291.8 1,303.2
TRIP LENGT	(S)							
AVERAGE PASSENGER TRIP LENGTH	INT'L. (Miles)	3,223.2	2,924.6 2,911.5 2,939.3 2,994.9 3,027.3	3,008.5	3,028.7 3,046.0 3,062.9 3,080.5 3,097.9	3,114.8 3,131.3 3,147.3 3,163.0 3,178.0	3,192.9 3,207.6 3,227.4 3,237.4 3,252.6	3,267.9 3,283.5 3,299.3 3,315.1
AVERAGE	DOMESTIC (Miles)	799.8	856.2 871.4 870.2 873.9 870.5	869.8	869.5 877.0 884.4 891.7 899.3	906.3 913.2 920.3 927.4 934.7	941.1 947.6 954.2 960.8	973.4 979.3 985.2 991.2
CRAFT	SYSTEM (Seats)	145.0	135.3 135.7 136.6 137.8 137.8	139.1	139.7 140.0 140.3 140.6	141.3 141.6 142.0 142.4	143.2 143.6 144.0 144.7	145.2 145.7 146.1
GE SEATS PER AIRCRAFT	INT'L. (Seats)	230.6	217.1 215.0 215.9 217.2 216.9	216.4	217.0 217.5 218.1 218.6 219.2	219.8 220.4 221.9 221.9	222.3 222.7 223.2 223.6 224.1	224.5 225.0 225.9
AVERAGE	DOMESTIC (Seats)	129.3	120.4 120.1 120.6 121.9	121.6	121.6 121.7 121.7 121.7	121.8 121.9 122.1 122.2	122.4 122.5 122.6 122.8 122.8	123.0 123.2 123.3
	HISCAL YEAR	<u>Historical</u> * 2000	2005 2006 2007 2008 2008	<u>Forecast</u> 2010	2011 2012 2013 2014 2015	2016 2017 2018 2019 2020	2021 2022 2023 2024 2025	2026 2027 2028 2029

\* Source: Forms 41 and 298-C, U.S. Department of Transportation.

1 Sum of U.S. Mainline and Regional Air Carriers.

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#### U. S. MAINLINE AIR CARRIERS SCHEDULED PASSENGER TRAFFIC

FISCAL YEAR	REVENUE	REVENUE PASSENGER ENPLANEMENTS (Millions)	JEMENTS	REVE	REVENUE PASSENGER MILES (Billions)	LES
	DOMESTIC	INTERNATIONAL	SYSTEM	DOMESTIC	INTERNATIONAL	SYSTEM
<u>Historical*</u> 2000	561.5	53.3	614.8	490.0	181.0	670.9
2005 2006	523.1 516.0	64.2 68.1	587.3 584.4	509.6 513 0	195.8 206 8	705.4
2007	533.9	71.9	605.7	529.9	219.5	749.4
2008 2009E	522.2 477.6	74.3 70.2	596.5 547.7	522.0 479.4	231.3 218.8	753.3 698.2
<u>Forecast</u> 2010	473.3	70.7	544.0	478.6	219.4	697.9
2011 2012	479.5 495.7	73.5 76.8	553.0 572 5	485.8 505 0	229.6 241 2	715.4 747 1
2013 2014	522 6	80.3 83.8	590.4 606.4	524.6 541 4	253.3 266.0	777.9 807.4
2015	535.1	87.4	622.6	558.6	278.8	837.4
2016 2017 2017	547.6 560.1	91.1 94.9	638.7 655.0 030 r	575.6 592.8 644.5	292.0 305.5	867.6 898.3
2019 2020 2020	575.7 588.6 605.1	90.0 103.0 107.5	672.3 691.7 712.7	631.8 631.8 654.1	319.7 334.9 351.1	905.2 1,005.2
2021 2023	620.0 634 6	112.1 118.7	732.0	674.5 604 8	367.5 384.2	1,041.9 1 070 0
2023	649.6	121.4	771.1	716.0	401.6	1,117.5
2025	680.7	131.5	812.2	760.0	438.7	1,198.7
2026 2027	696.8 712 <u>.</u> 3	136.8 142.3	833.6 854.6	782.6 804 <u>.</u> 9	458.5 478.9	1,241.1 1.283.8
2028 2029	728.2 744.1	147.9	876.2 897.8	827.8 850.9	500.1 522.0	1,327.9
2030	760.9	159.8	920.7	875.4	545.0	1,420.4
<u>Avg Annual Growth</u> 2000-09	-1.8%	3.1%	-1.3%	-0.2%	2.1%	0.4%
2009-10	-0.9%	0.8%	-0.7%	-0.2%	0.2%	0.0%
2009-30	2.2%	4.0%	2.5%	3.2% 2.9%	4.6%	3.7% 3.4%

<sup>\*</sup> Source: Form 41, U.S. Department of Transportation.

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## SCHEDULED PASSENGER CAPACITY, TRAFFIC, AND LOAD FACTORS **U.S. MAINLINE AIR CARRIERS**

		DOMESTIC		N	INTERNATIONAI			SYSTEM	
PISCAL YEAR	ASMs (BIL)	RPMs (BIL)	% LOAD FACTOR	ASMs (BIL)	RPMs (BIL)	% LOAD FACTOR	ASMs (BIL)	RPMs (BIL)	% LOAD FACTOR
<u>Historical</u> * 2000	688.3	490.0	71.2	238.0	181.0	76.0	926.2	6.079	72.4
2005 2006 2007 2008 2009E	665.1 648.7 659.0 651.0 589.4	509.6 513.9 529.9 522.0 479.4	76.6 79.2 80.4 81.3	246.3 258.9 273.4 289.3 279.9	195.8 206.8 219.5 231.3 218.8	79.5 79.9 79.9 78.2	911.4 907.6 932.4 869.2	705.4 720.7 749.4 753.3 698.2	77.4 79.4 80.4 80.1 80.3
<u>Forecast</u> 2010	579.9	478.6	82.5	272.0	219.4	80.6	852.0	697.9	81.9
2011 2012 2013 2015 2015	588.0 610.3 631.1 649.8 669.1	485.8 505.9 524.6 541.4 558.6	88888 832.0 833.1 833.1 833.1	284.9 299.0 314.0 329.5 345.3	229.6 241.2 266.0 278.8	80.6 80.6 7.08 8.08	872.9 909.3 945.0 979.3 1,014.4	715.4 747.1 777.9 807.4 837.4	82.0 82.2 82.3 82.4 82.4
2016 2017 2018 2019 2020	688.4 708.1 729.6 753.1 779.0	575.6 592.8 611.5 631.8 654.1	83.6 83.7 83.3 83.9 84.0	361.5 378.0 395.5 414.2 434.1	292.0 305.5 319.7 331.9 331.1	8.8.8.6.0 8.0.0 8.0.0 8.0.0 8.0 8.0 8.0 8.0 8.0	1,049.9 1,086.2 1,125.1 1,213.1	867.6 898.3 931.2 966.8 1,005.2	82.6 82.7 82.8 82.8 82.8
2021 2022 2023 2024 2025	802.6 826.3 851.0 875.9 902.4	674.5 694.8 716.0 737.4 760.0	84.0 84.1 84.2 84.2 84.2	454.1 474.7 496.0 518.2 541.6	367.5 384.2 419.6 438.7	80.9 80.9 81.0 81.0	1,256.8 1,301.0 1,347.0 1,394.1 1,444.0	1,041.9 1,079.0 1,117.5 1,157.0 1,198.7	82.9 82.9 83.0 83.0 83.0
2026 2027 2028 2029 2030	928.8 954.8 981.6 1,008.7 1,037.3	782.6 804.9 827.8 850.9 875.4	84.3 84.3 84.3 84.4 84.4	565.9 590.9 616.9 643.6 671.9	458.5 478.9 500.1 522.0 545.0	81.0 81.1 1.18 1.18 1.18 1.18	1,494.7 1,545.7 1,598.5 1,652.3 1,709.2	1,241.1 1,283.8 1,327.9 1,372.9 1,420.4	83.0 83.1 83.1 83.1 83.1 83.1
<u>Avg Annual Growth</u> 2000-09 2009-10 2010-20 2009-30	-1.7% -1.6% 3.0% 2.7%	-0.2% 3.2% 2.9%		1.8% -2.8% 4.3%	2.1% 0.2% 4.4%		-0.7% -2.0% 3.3%	0.4% 0.0% 3.7% 3.4%	

\* Source: Form 41, U.S. Department of Transportation.

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## U.S. MAINLINE AIR CARRIERS SCHEDULED INTERNATIONAL PASSENGER ENPLANEMENTS

FISCAL		REVENUE PASSENGER ENPLANEMENTS (MIL)	ENPLANEMENTS (MIL)	
YEAR	ATLANTIC	LATIN AMERICA	PACIFIC	TOTAL
<u>Historical*</u> 2000	20.9	21.2	11.2	53.3
2005 2006 2007 2008 2009E	21.6 22.5 24.1 24.7	29.3 31.7 35.1 33.4	13.2 13.6 13.6 12.0	64.2 68.1 71.9 70.2
<u>Forecast</u> 2010	24.1	34.5	12.1	70.7
2011 2012 2013 2014 2015	25.3 26.3 27.3 28.3 29.3	35.7 37.3 39.1 40.9	12.5 13.2 14.6 15.5	73.5 76.8 80.3 83.8 87.4
2016 2017 2018 2019 2020	30.2 31.2 32.3 33.4 34.6	44.5 46.4 58.6 53.0	16.3 17.2 18.1 19.0	91.1 94.9 98.8 103.0 107.5
2021 2022 2023 2024 2025	35.8 36.9 38.1 39.4 40.7	55.4 57.9 60.4 63.0 65.8	20.9 21.9 22.9 23.1	112.1 116.7 121.4 126.3 131.5
2026 2027 2028 2029 2030	42.0 43.3 44.6 46.0 47.5	68.6 71.6 74.6 80.9	26.2 27.5 28.7 30.1 31.4	136.8 142.3 147.9 153.7 159.8
Avg Annual Growth 2000-09 2009-10 2010-20 2009-30	1.9% -2.5% 3.1%	5.2% 3.2% 4.4%	0.8% 0.7% 5.1% 4.7%	3.1% 0.8% 4.3%

\* Source: Form 41, U.S. Department of Transportation. Note: Detail may not add to total because of rounding. **TABLE 13** 

**U.S. MAINLINE AIR CARRIERS** 

## SCHEDULED PASSENGER CAPACITY, TRAFFIC, AND LOAD FACTORS **BY INTERNATIONAL TRAVEL REGIONS**

		ATI ANTIC	C		ATIN AMFRICA	ICA		PACIFIC		INTE	INTERNATIONA	A
YEAR	ASMs (BIL)	RPMs (BIL)	% LOAD FACTOR									
<u>Historical*</u> 2000	109.9	87.1	79.2	51.4	35.5	69.0	76.6	58.4	76.2	238.0	181.0	76.0
2005 2006 2008 2008 2009E	108.6 115.8 126.6 141.0 138.2	89.5 93.9 102.2 112.7 108.9	82.4 81.1 80.7 80.0 78.9	65.4 69.4 72.7 73.4 71.8	47.2 51.9 58.2 55.2	72.2 74.9 76.9 76.8	72.3 73.7 74.1 74.9 69.9	59.2 61.1 61.4 60.4 54.7	81.8 82.8 82.9 80.6 78.3	246.3 258.9 273.4 289.3 279.9	195.8 206.8 219.5 231.3 218.8	79.5 79.9 80.3 79.9 78.2
<u>Forecast</u> 2010	130.6	106.8	81.8	73.1	57.2	78.2	68.3	55.4	81.0	272.0	219.4	80.6
2011 2012 2013 2014 2015	137.6 144.1 150.3 156.5 162.5	112.4 117.7 122.9 128.1 133.0	81.7 81.7 81.8 81.8 81.8	76.2 80.4 85.1 85.0 95.0	59.8 63.1 66.8 70.6 74.6	78.4 78.5 78.5 78.6 78.6	71.0 74.6 78.6 83.0 87.8	57.4 60.3 63.6 67.3 71.2	80.9 80.9 81.0 81.0	284.9 299.0 314.0 329.5 345.3	229.6 241.2 253.3 266.0 278.8	80.6 80.6 80.7 80.7 80.8
2016 2017 2018 2019 2020	168.5 174.6 181.2 188.4 196.0	138.0 143.1 148.6 154.6 160.9	81.9 82.0 82.1 82.1 82.1	100.2 105.6 111.3 117.6 124.5	78.7 83.0 87.5 92.4 97.8	78.6 78.6 78.6 78.6 78.6	92.8 97.8 103.0 108.3 113.7	75.2 79.4 83.6 88.0 92.4	81.1 81.2 81.2 81.3 81.3	361.5 378.0 395.5 414.2 434.1	292.0 305.5 319.7 334.9 351.1	80.8 80.8 80.9 90.0 90.0 90.0
2021 2022 2023 2024 2025	203.3 210.7 218.3 226.2 234.5	167.0 173.2 179.6 186.2 193.1	82.2 82.2 82.3 82.3 82.3	131.7 139.1 146.9 155.0 163.5	103.4 109.3 115.4 121.7 128.5	78.6 78.6 78.6 78.6 78.6	119.2 124.9 130.9 137.1 143.6	97.0 101.7 106.6 111.7 117.1	81.3 81.5 81.5 81.5 81.5	454.1 474.7 496.0 518.2 541.6	367.5 384.2 401.6 419.6 438.7	80.9 80.9 81.0 81.0 81.0
2026 2027 2028 2029 2030	242.9 251.4 260.2 269.1 278.7	200.2 207.4 214.7 222.2 230.2	82.4 82.5 82.6 82.6 82.6	172.5 181.8 191.5 201.5 212.1	135.5 142.8 150.4 158.3 166.7	78.6 78.6 78.6 78.6 78.6	150.5 157.7 165.2 173.0 181.1	122.8 128.7 135.0 141.4 148.1	81.6 81.7 81.7 81.8 81.8	565.9 590.9 616.9 643.6 671.9	458.5 478.9 500.1 522.0 545.0	81.0 81.1 81.1 81.1 1.18 81.1
<u>Avg Annual Growth</u> 2000-09 2009-10 2010-20 2009-30	2.6% -5.5% 3.4%	2.5% -1.9% 3.6%		3.8% 1.7% 5.3%	5.0% 3.6% 5.5%		-1.0% -2.2% 5.2% 4.6%	-0.7% 1.2% 5.3% 4.9%		1.8% -2.8% 4.3%	2.1% 0.2% 4.8%	

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### U.S. MAINLINE AIR CARRIER FORECAST ASSUMPTIONS SEATS PER AIRCRAFT MILE

		INTERNATIONAL	TIONAL		
DOMESTIC	ATLANTIC	LATIN AMERICA	PACIFIC	TOTAL	SYSTEM
(Seats)	(Seats)	(Seats)	(Seats)	(Seats)	(Seats)
148.8	233.7	179.5	307.8	236.6	164.5
150.4	230.8	175.5	278.7	223.4	165.0
150.5	229.4	175.2	274.4	221.4	165.7
150.6	229.2	176.2	279.6	222.3	166.3
150.0 151.4	229.2 230.0	177.8 172.0	280.6 285.4	223.4 221.5	166.9 168.6
150.6	230.5	172.5	286.2	221.3	167.7
150.4	231.0	173.0	286.9	221.9	168.1
150.5 150.6	231.5	173.5	287.7 288.4	222.3 222.8	168.4 168.7
150.7	232.5	174.5	289.2	223.3	169.2
150.8	233.0	175.0	289.9	223.8	169.6
150.9	233.5	175.5	290.7	224.3	170.0
151.0 151.0	234.0 234.5	176.0	291.4	224.8 225.2	170.5 170.8
151.1	235.0	177.0	292.9	225.6	171.1
151.1	235.5	177.5	293.7	226.0	171.4
151.2	236.0	178.0	294.4	226.4	171.9
151.2	236.5	178.5	295.2	226.7	172.2
151.3 151 4	237.0	179.0	295.9	227.1	172.5
151.4	238.0	180.0	297.4	227.9	173.2
151.5	238.5	180.5	298.2	228.3	173.6
151.0 151.6	239.U 230 F	181.0 181 F	298.9	228.1	1/4.0
151.7	240.0	182.0	300.4	229.5	174.8
151.9	240 S	1 RO F	301 0		175 0

<sup>\*</sup> Source: Form 41, U.S. Department of Transportation.

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## U.S. MAINLINE AIR CARRIER FORECAST ASSUMPTIONS

**AVERAGE PASSENGER TRIP LENGTH** 

			INTERNATIONAL	TIONAL		
FISCAL YFAR	DOMESTIC	ATLANTIC	LATIN AMERICA	PACIFIC	TOTAL	SYSTEM
	(Miles)	(Miles)	(Miles)	(Miles)	(Miles)	(Miles)
<u>Historical*</u> 2000	872.6	4,168.1	1,675.2	5,219.9	3,397.3	1,091.4
2005	974.1	4,133.1	1,611.1	4,466.1	3,051.2	1,201.1
2006	995.5	4,175.4	1,637.0	4,390.4	3,037.0	1,233.4
2007	992.7	4,247.8	1,634.3	4,515.1	3,054.2	1,237.3
2008 2009E	999.7 1,003.8	4,332.7 4,402.4	1,654.8 1,652.3	4,583.5 4,550.0	3,111.0 3,118.8	1,262.8 1,274.7
<u>Forecast</u> 2010	1,011.0	4,427.0	1,658.7	4,571.7	3,102.5	1,282.9
2011	1,013.1	4,448.5	1,673.9	4,579.0	3,122.8	1,293.6
2012	1,020.7	4,474.9	1,689.5	4,585.9	3,139.6	1,305.0
2013 2014	1,028.3 1,036.1	4,499.4 4,522.2	1,727.8	4,592.2 4,598.0	3,155.8 3,172.7	1,317.5 1,331.4
2015	1,043.8	4,544.1	1,747.7	4,603.7	3,189.1	1,345.1
2016	1,051.1	4,564.6	1,767.3	4,609.6	3,205.1	1,358.4
2017	1,058.5	4,584.6	1,786.7	4,615.8	3,220.7	1,371.6
2019	1,000.9	4,004.0	1,825.6	4,629,1	3,250.8	1,304.7
2020	1,080.9	4,647.4	1,846.0	4,636.1	3,265.2	1,410.5
2021	1,087.9	4,669.3	1,867.4	4,643.3	3,279.3	1,423.4
2022	1,095.0	4,689.9	1,888.9	4,650.6	3,293.2	1,436.3
2023	1,102.1	4,710.2	1,910.1	4,658.0	3,307.2	1,449.4
2024	1,109.2	4,730.6	1,931.4	4,665.4	3,321.6	1,462.5
2025	1,116.5	4,751.0	1,952.6	4,672.8	3,336.1	1,475.8
2026	1,123.2	4,771.7	1,974.2	4,680.2	3,350.8	1,488.9
2027	1,129.9	4,792.1	1,995.9	4,687.6	3,365.7	1,502.2
2028	1,136.7	4,812.1	2,017.5	4,695.0	3,380.7	1,515.6
2029 2030	1,143.5 1 150 4	4,832.1 4 852 1	2,039.1 2,060.6	4,702.5	3,395.9 3 411 1	1,529.1

\* Source: Form 41, U.S. Department of Transportation.

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## **U.S. MAINLINE AIR CARRIER FORECAST ASSUMPTIONS**

#### **PASSENGER YIELDS**

			REVENUE PER PASSENGER MILE	SSENGER MILE		
FISCAL	DOME	STIC	INTERNATIONAL	TIONAL	SYSTEM	EM
YEAR	CURRENT \$ (Cents)	FY 2009 \$ (Cents)	CURRENT \$ (Cents)	FY 2009 \$ (Cents)	CURRENT \$ (Cents)	FY 2009 \$ (Cents)
<u>Historical*</u> 2000	14.03	17.56	10.46	13.09	13.06	16.36
2005 2006 2008 2008 2009E	11.45 12.36 13.09 11.96	12.65 13.17 12.96 11.96	10.87 11.63 12.45 11.69	12.01 12.40 13.38 11.69	11.29 12.15 13.19 11.88	12.47 12.95 13.15 11.88
<u>Forecast</u> 2010	12.32	12.15	12.22	12.05	12.29	12.12
2011 2012 2013 2015 2015	12:69 12:81 12:98 13:07	12.27 12.13 11.99 11.70	13.04 13.19 13.55 13.55	12.62 12.49 12.24 12.24 2.12	12:80 13:03 13:23 13:23 13:23	12.38 12.25 11.97 11.84
2016 2017 2018 2019 2020	13.18 13.29 13.50 13.58	11.57 11.44 11.31 11.06	13.68 13.80 14.05 14.15	12.00 11.88 11.65 11.53	13.35 13.47 13.58 13.69 13.78	11.72 11.59 11.47 11.35 11.23
2021 2022 2023 2024 2025	13.67 13.76 13.86 13.97 14.08	10.95 10.83 10.72 10.61	14.26 14.37 14.60 14.73	11.42 11.31 11.20 10.98	13.88 14.08 14.20 14.20	11.11 11.00 10.89 10.78 10.68
2026 2027 2028 2029 2030	14.21 14.35 14.63 14.78	10.40 10.30 10.10 10.01	14.86 15.13 15.28 15.43	10.87 10.76 10.66 10.55	14.45 14.59 14.73 15.03	10.57 10.47 10.37 10.28 10.18
<u>Avg Annual Growth</u> 2000-09 2009-10 2010-20 2009-30	-1.8% 3.0% 1.0%	-4.2% 1.6% -0.9%	1.2% 4.6% 1.3%	-1.3% 3.1% -0.4%	-1.1% 3.5% 1.1%	-3.5% 2.1% -0.8%

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### U.S. MAINLINE AIR CARRIER FORECAST ASSUMPTIONS INTERNATIONAL PASSENGER YIELDS BY REGION

				REVENUE PER P	PASSENGER MILE	E	TOTAL INTERNATIONAL	
-	CURRENT \$	FY 2009 \$	CURRENT \$	FY 2009 \$	CURRENT \$	FY 2009 \$	CURRENT \$	FY 2009 \$
	(Cents)	(Cents)	(Cents)	(Cents)	(Cents)	(Cents)	(Cents)	(Cents)
	9.73	12.18	13.00	16.28	66.6	12.51	10.46	13.09
	10.75 11.64 12.46 13.29	11.88 12.40 12.97 13.25 11.25	12.16 12.68 13.37 14.19	13.44 13.52 13.92 14.15	10.04 10.73 11.61 12.73	11.09 11.43 12.09 11.20	10.87 11.63 12.45 13.42 11.69	12.01 12.40 12.97 13.38 11.69
	12.10	11.93	13.35	13.17	11.30	11.14	12.22	12.05
	12.95 13.10 13.21 13.33 13.33	12.53 12.40 12.16 12.04	14.03 14.19 14.31 14.44	13.57 13.44 13.30 13.17 13.17	12.18 12.32 12.54 12.54	11.79 11.67 11.55 11.44 11.32	13.04 13.19 13.30 13.42 13.55	12.62 12.49 12.24 12.24
	13.58 13.70 13.95 14.05	11.92 11.80 11.68 11.56	14.71 14.85 14.98 15.11	12.91 12.78 12.65 12.53	12.77 12.89 13.01 13.12	11.21 11.10 10.99 10.88	13.68 13.80 13.93 14.05	12.00 11.88 11.76 11.65 11.53
	14.15 14.25 14.47 14.60	11.33 11.22 11.11 10.00	15.33 15.54 15.68 15.68	12.28 12.15 12.03 11.91	13.31 13.41 13.51 13.62 13.74	10.66 10.55 10.34 10.24	14.26 14.37 14.47 14.60	11.42 11.31 11.20 11.09 10.98
	14.73 14.96 15.19 15.29	10.78 10.67 10.56 10.46	15.95 16.10 16.24 16.56	11.67 11.56 11.44 11.33	13.85 13.98 14.10 14.24	10.14 10.04 9.84 9.74	14.86 14.99 15.13 15.28	10.87 10.76 10.66 10.55
<u>Avg</u> Annual Growth 2000-09 2009-10 2010-20 2009-30	1.6% 7.6% 1.5%	-0.9% 6.1% -0.4%	0.0% 2.3% 1.3%	-2.4% 0.9% -0.6%	1.3% 0.9% 1.6%	-1.2% -0.5% -0.3%	1.2% 4.6% 1.5% 1.3%	-1.3% 3.1% -0.5%

1 Mainline Air Carrier Only \* Source: Form 41, U.S. Department of Transportation.

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## **U.S. MAINLINE AIR CARRIER FORECAST ASSUMPTIONS**

#### **JET FUEL PRICES**

		ESTIC				
	CURRENT \$	FY 2009 \$	CURRENT \$	FY 2009 \$	CURRENT \$	FY 2009 \$
	(Cents)	(Cents)	(Cents)	(Cents)	(Cents)	(Cents)
	71.49	89.51	79.35	99.35	73.57	92.11
	149.39 194.69 292.56 202.31	165.06 207.46 202.19 291.69 202.31	157.26 204.69 203.31 314.57 208.41	173.76 218.12 211.70 313.64 208.41	151.58 197.72 299.67 204.44	167.48 210.70 205.13 298.78 204.44
	212.19	209.28	228.15	225.02	217.35	214.36
	225.90 247.43 261.42 272.36 283.88	218.59 234.32 243.04 248.42 254.07	242.90 266.05 281.09 305.24	235.04 251.95 267.11 267.11 273.19	231.39 253.45 267.78 278.98 290.78	223.91 240.02 248.95 254.46 260.25
	296.30 304.66 310.81 311.31 306.96	260.02 262.24 262.46 258.06 250.09	318.59 327.58 334.20 334.74 330.05	279.58 281.97 282.21 277.47 268.90	303.50 312.06 318.37 318.88 314.42	266.34 268.61 268.84 264.33 264.33
	300.81 296.35 292.44 295.10 301.17	240.90 233.27 226.24 224.17 224.55	323.44 318.65 314.45 317.30 323.82	259.02 250.81 243.26 241.04 241.44	308.12 303.55 299.55 302.27 308.49	246.75 238.93 231.74 229.62 230.01
	307.57 313.89 322.37 322.37 332.00 341.73	225.07 225.36 227.11 229.36 231.40	330.71 337.50 346.63 356.97 367.44	242.01 242.32 244.20 246.61 248.81	315.04 321.51 330.21 340.06 350.03	230.54 230.84 232.63 232.63 234.93 237.02
Avg Annual Growth 2000-09 2009-10 2010-20 2009-30	12.3% 4.9% 3.8% 2.5%	9.5% 3.4% 0.6%	11.3% 9.5% 3.8% 2.7%	8.6% 8.0% 0.8% 0.8%	12.0% 6.3% 2.6%	9.3% 4.9% 1.8% 0.7%

<sup>\*</sup> Source: Form 41, U.S. Department of Transportation.

TABLE 19

#### U.S. COMMERCIAL AIR CARRIERS AIR CARGO REVENUE TON MILES<sup>1</sup>

FISCAL	ALL-CAR	ALL-CARGO CARRIER RTMS (Millions)	RTMS	PASSENGER (M	GER CARRIER (Millions)	RTMS		TOTAL RTMS (Millions)	
YEAR	DOMESTIC	INT'L.	TOTAL	DOMESTIC	INT'L.	TOTAL	DOMESTIC	INT'L.	TOTAL
<u>Historical*</u> 2000	10,283.5	7,573.1	17,856.6	4,415.2	7,784.6	12,199.9	14,698.7	15,357.8	30,056.5
2005 2006 2007 2008 2009E	13,007.9 12,481.2 12,795.2 12,257.7 10,219.7	14,581.2 15,475.2 16,164.4 15,587.4 12,058.1	27,589.0 27,956.4 28,959.6 27,845.1 22,277.8	3,081.7 3,229.4 3,022.8 2,152.9 1,640.2	8,547.7 8,483.5 8,050.0 9,027.0 6,907.1	11,629.5 11,712.8 11,072.8 11,179.9 8,547.4	16,089.6 15,710.5 15,818.0 14,410.5 11,860.0	23,128.9 23,958.7 24,214.4 24,614.4 18,965.3	39,218.5 39,669.2 40,032.4 39,025.0 30,825.2
Forecast 2010	10,372.1	12,688.8	23,060.9	1,636.8	7,174.7	8,811.5	12,008.9	19,863.5	31,872.4
2011 2012 2013 2015	10,607.4 10,932.6 11,231.8 11,493.4 11,754.8	13,590.2 14,6350.2 15,737.2 16,910.6 18,128.5	24,197.6 25,567.5 26,969.0 28,404.0 29,883.3	1,645.6 1,666.9 1,682.8 1,691.6 1,699.2	7,585.0 8,662.0 8,556.1 9,073.7 9,599.4	9,230.5 9,728.9 10,238.9 10,765.3 11,298.6	12,253.0 12,599.5 12,914.5 13,185.1 13,454.0	21,175.2 22,596.9 24,293.3 25,984.3 27,727.8	33,428.2 35,296.4 37,207.8 39,169.3 41,181.9
2016 2017 2018 2019 2020	12,016.2 12,570.2 12,570.2 12,886.7 13,237.5	19,390.3 20,706.6 22,118.8 23,634.1 25,270.6	31,406.5 32,987.9 34,689.0 36,520.8 38,508.0	1,705.6 1,711.3 1,719.0 1,729.0	10,132.1 10,676.5 11,252.9 11,863.2 12,514.4	11,837.7 12,387.8 12,971.9 13,592.2 14,256.5	13,721.8 13,992.6 14,289.2 14,615.7 14,979.6	29,522.3 31,383.2 33,371.7 35,497.3 37,785.0	43,244.2 45,375.8 47,660.9 50,113.0 52,764.5
2021 2022 2023 2025	13,559.5 13,878.9 14,209.4 14,542.9 14,897.8	26,980.8 28,769.2 30,665.0 32,693.0 34,865.8	40,540.3 42,648.1 44,874.3 47,235.9 49,763.6	1,749.9 1,755.8 1,761.6 1,766.3 1,772.0	13,181.2 13,864.4 14,577.0 15,328.4 16,122.5	14,931.0 15,620.2 16,338.5 17,094.7 17,894.5	15,309.3 15,634.7 15,971.0 16,669.8	40,162.0 42,633.6 45,241.9 48,021.4 50,988.3	55,471.3 58,268.3 61,212.9 64,330.6 67,658.1
2026 2027 2028 2029 2030	15,258.6 15,611.1 15,973.7 16,337.3 16,724.3	37,144.6 39,559.2 42,095.3 44,775.2 47,615.7	52,403.2 55,170.3 58,068.9 61,112.5 64,340.0	1,776.8 1,779.0 1,780.8 1,781.0 1,782.2	16,939.0 17,789.6 18,665.8 19,575.5 20,523.5	18,715.8 19,568.6 20,446.6 21,356.5 22,305.7	17,035.4 17,390.1 17,754.4 18,118.3 18,506.5	54,083.6 57,348.8 60,761.1 64,350.7 68,139.2	71,118.9 74,738.9 78,515.5 82,469.0 86,645.7
<u>Avg Annual Growth</u> 2000-09 2009-10 2009-30 2009-30	-0.1% 2.5% 2.4%	5.3% 5.2% 6.8%	2.5% 3.5% 5.3%	-10.4% -0.2% 0.6% 0.4%	-1.3% 3.9% 5.3%	-3.9% 3.1% 4.9%	-2.4% 1.3% 2.1%	2.4% 6.6% 6.3%	0.3% 3.4% 5.2%

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#### U.S. MAINLINE AIR CARRIERS PASSENGER JET AIRCRAFT

CALENDAR		LARGE NARRC	ROWBODY			LARGE WIDEBODY	JEBODY		LARGE	REGIONAL	TOTAL
YEAR	2 ENGINE	3 ENGINE	4 ENGINE	TOTAL	2 ENGINE	3 ENGINE	4 ENGINE	TOTAL	JETS	JETS	JETS
<u>Historical</u> 2000	3,364	385	0	3,749	424	169	120	713	4,462	26	4,488
2005 2006 2007 2008 2009E	3,308 3,302 3,354 3,170 3,040	37 26 10 9	000	3,345 3,328 3,383 3,181 3,050	466 463 477 470 466	29 10 9 23	5 49 44 0 44 7	549 531 536 523 516	3,894 3,859 3,919 3,704 3,566	12 39 64 100	3,906 3,898 3,983 3,795 3,666
<u>Forecast</u> 2010	3,003	Ø	<del></del>	3,013	477	10	40	527	3,540	109	3,649
2011 2012 2013 2014 2015	3,022 3,075 3,160 3,186 3,259	80 M 00 M 4	00	3,031 3,083 3,167 3,191 3,263	484 490 517 533	00804	40 40 38 00 00 00 00 00 00 00 00 00 00 00 00 00	534 540 565 579 606	3,565 3,623 3,732 3,770 3,869	124 134 166 182	3,689 3,757 3,878 3,936 4,051
2016 2017 2018 2019 2020	3,310 3,372 3,457 3,537 3,580	4 00 0	00000	3,314 3,375 3,458 3,538 3,580	578 604 622 648 676	N O O O O	28 8 8 8 4	608 622 630 654 680	3,922 3,997 4,088 4,192 4,260	192 196 201 198	4,114 4,193 4,289 4,398 4,458
2021 2022 2023 2024 2025	3,589 3,670 3,706 3,798 3,798	00000	00000	3,589 3,670 3,706 3,798 3,822	705 745 773 804 840	00000	N0000	707 745 773 804 840	4,296 4,415 4,479 4,602 4,662	198 203 208 208	4,494 4,618 4,682 4,810 4,870
2026 2027 2028 2029 2030	3,858 3,914 3,972 4,034 4,093	00000	00000	3,858 3,914 3,972 4,033 4,093	873 912 945 990 1,026	00000	00000	873 912 945 990 1,026	4,731 4,826 4,917 5,024 5,119	213 213 218 218 223	4,944 5,039 5,135 5,242 5,342
<u>Avg Annual Growth</u> 2000-09 2010-20 2009-30	-1.1% -1.2% 1.8%	-34.1% 0.0% -100.0% -100.0%	NA 0.0% -100.0% -100.0%	-2.3% -1.2% 1.7%	1.1% 2.4% 3.5% 3.8%	-27.0% 0.0% -100.0% -100.0%	-11.5% 0.0% -20.6%	-3.5% 2.1% 3.3%	-2.5% -0.7% 1.9% 1.7%	16.1% 9.0% 6.2% 3.9%	-2.2% -0.5% 1.8%

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#### U.S. MAINLINE AIR CARRIERS CARGO JET AIRCRAFT

	IUIAL	1,064	1,001 1,012 974 960 854	877	909 934 955 978 1,005	1,033 1,064 1,093 1,124 1,155	1,186 1,216 1,249 1,280 1,322	1,364 1,406 1,447 1,490 1,531	-2.4% 2.7% 2.8%
		- -			, 0,0,0,0, <u>,</u>				ο νοίοιοί νοίοι
	TOTAL	390	514 552 575 588 556	574	601 622 639 659 682	711 737 755 755 794	814 833 854 874 900	925 951 976 1,002	4.0% 3.2% 3.3%
DEBODY	4 ENGINE	89	75 80 97 91	88	0 0 0 0 0 0 0 0 0 1	100 104 111	118 121 125 132	135 139 146 146	3.3% -3.3% 2.6% 2.4%
LARGE WIDEBODY	3 ENGINE	158	193 208 213 215 206	207	213 218 226 226 230	234 235 233 233 233 233	233 227 217 207	187 177 167 157 152	3.0% 0.5% 1.2% -1.4%
	2 ENGINE	164	246 264 276 276 259	279	297 311 321 354	377 398 413 431 447	463 485 512 571	603 635 667 699 726	5.2% 7.7% 4.8% 5.0%
	TOTAL	674	487 460 372 298	303	308 312 316 323	322 327 338 349 361	372 383 395 406 422	439 455 471 504	-8.7% 1.7% 1.8% 2.5%
GE NARROWBODY	4 ENGINE	176	90 78 33 33	32	30 28 21 17	N0000	00000	00000	-17.0% -3.0% -100.0% -100.0%
LARGE NARF	3 ENGINE	332	233 220 162 143	107	107 104 86 82	36 0 5 1 5 5 6 0 7 5 5 6 0 7 5 6 0 7 5 6 0 7 5 6 0 7 5 6 0 7 5 6 0 7 5 7 6 0 7 5 7 6 0 7 5 7 6 0 7 7 5 7 6 0 7 7 7 7 7 8 9 7 7 7 8 9 7 7 7 9 8 9 7 7 7 7	00000	00000	-11.8% 0.0% -100.0% -100.0%
	2 ENGINE	166	164 162 162 158	164	171 180 236 259	279 302 323 344	372 383 395 422	439 455 471 488 504	-0.5% 3.8% 8.2% 5.7%
CALENDAR	YEAR	<u>Historical</u> 2000	2005 2006 2007 2008 2009E	<u>Forecast</u> 2010	2011 2012 2013 2015 2015	2016 2017 2018 2019 2020	2021 2022 2023 2024 2025	2026 2027 2028 2029 2030	<u>Avg Annual Growth</u> 2000-09 2009-10 2010-20 2009-30

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# TOTAL JET FUEL AND AVIATION GASOLINE FUEL CONSUMPTION

## U.S. CIVIL AVIATION AIRCRAFT (Millions of Gallons)

TOTAI	FUEL	CONSUMED	21,350	21,180 21,241 21,344 21,424 18,836	18,286	18,691 19,401 20,086 21,040	21,504 21,969 22,458 22,994 23,578	24,107 24,627 25,166 25,709 26,282	26,846 27,401 27,965 28,535 29,132	-1.4% -2.9% 2.6% 2.1%
ШN	-VECE	IUIAL	335	297 285 276 250 227	222	235 237 237 235 235	233 233 234 235 235	239 240 246 250	254 258 263 267 271	-4.2% -2.2% 0.6%
AVIATION GASOLINE	GENERAL	AVIATION	333	295 274 228 225	220	533 532 533 533 533 533 533 533 533 533	231 231 233 233 233 235 235	237 238 240 248	252 256 265 265 265	-4.2% -2.3% 0.6% 0.8%
AVIAT	AIR	CARRIER	2	~ ~ ~ ~ ~ ~ ~	7	N N N N N	N N N N N	N N N N N	<u>ର ର ର ର ର</u>	0.0% 0.0% 0.0% 0.0%
	IVTOT	IUIAL	21,015	20,883 20,955 21,069 21,174 18,609	18,063	18,456 19,164 19,848 20,327 20,806	21,272 21,736 22,225 22,759 23,341	23,868 24,387 24,923 25,464 26,032	26,592 27,143 27,703 28,268 28,268	-1.3% -2.9% 2.6%
	GENERAL	AVIATION	972	1,527 1,643 1,706 1,364	1,356	1,567 1,807 2,1046 2,195	2,270 2,342 2,407 2,548 2,548	2,621 2,623 2,770 2,849 2,928	3,008 3,090 3,174 3,263 3,354	3.8% -0.6% 6.5% 4.4%
JET FUEL	ßſ	TOTAL	20,043	19,356 19,313 19,583 19,468 17,244	16,707	16,889 17,357 17,357 17,302 18,207 18,611	19,002 19,394 20,283 20,792	21,247 21,694 22,153 22,615 23,104	23,585 24,053 24,529 25,004 25,507	-1.7% -3.1% 2.2% 1.9%
	S. AIR CARRIERS	INT'L.	5,297	5,378 5,851 6,045 6,289 5,767	5,525	5,700 5,895 6,303 6,507	6,711 6,914 7,325 7,590	7,823 8,055 8,532 8,533 8,786	9,045 9,304 9,569 9,836 10,115	0.9% -4.2% 3.2% 2.7%
	U.S.	DOMESTIC	14,746	13,978 13,461 13,538 13,179 11,478	11,182	11,189 11,462 11,705 11,904 12,104	12,291 12,480 12,693 12,931 13,202	13,425 13,639 13,861 14,081 14,318	14,540 14,748 15,168 15,392	-2.7% -2.6% 1.7% 1.4%
	FISCAL		<u>Historical</u> * 2000	2005 2006 2008 2008 2009E 2009E	<u>Forecast</u> 2010	2011 2012 2013 2014 2015	2016 2017 2018 2019 2020	2021 2022 2023 2024 2025	2026 2027 2028 2029 2030	<u>Avg Annual Growth</u> 2000-09 2010-20 2010-20 2009-30

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- B -	AVERAGE SEATS PER AIRC	AIRCRAFT MILE	AVERAGE P/	AVERAGE PASSENGER TRIP LENGTH	P LENGTH	REVENUE PER PASSENGER MILE**	Je per Er Mile**
S)	INT'L. (Seats/Mile)	SYSTEM (Seats/Mile)	DOMESTIC (Miles)	INT'L. (Miles)	SYSTEM (Miles)	CURRENT \$ (Cents)	2009\$ (Cents)
	41.8	38.5	286.5	260.0	285.5	30.28	37.92
	52.2 52.2 54.0	48.7 49.4 50.0	434.7 450.4 451.5	434.2 467.2 518.1	434.7 450.7 452.9	19.67 19.88 20.18	21.73 21.18 21.01
	53.4 52.8	52.9 55.0	460.8 456.5	532.7 511.3	457.4	21.44	21.38 19.04
	53.1	56.2	453.8	516.3	454.8	20.23	19.95
-, -, -, -, -, -,	53.4 53.7 54.0 54.3 54.3	56.7 57.2 57.2 58.1 58.5	455.2 462.9 471.3 479.5 487.9	521.3 526.3 531.3 541.3	456.3 463.9 472.2 480.4 488.8	20.76 20.90 21.05 21.14	20.09 19.79 19.20 18.92
ດມດມດ	54.9 55.2 55.5 55.8 56.1	58.9 59.2 60.2 7	495.2 502.7 510.2 517.8 525.6	546.3 551.3 566.3 566.3	496.0 503.4 510.9 526.3	21.25 21.36 21.46 21.55 21.55	18.65 18.38 18.12 17.86 17.61
ດ່ດ່ດ່ດີດັ	56.4 56.7 57.0 57.3 57.6	61.2 61.2 62.2 63.0 63.0	532.2 538.8 545.6 552.4 559.3	571.3 576.3 581.3 586.3 591.3	532.8 539.4 556.1 552.9 559.8	21.69 21.78 21.86 21.96 22.07	17.37 17.14 16.91 16.68
ເນ ເນ ເນ ເນ ເນ	57.9 58.2 58.5 58.8 59.1	63.5 64.4 64.8 65.3	564.9 570.5 576.2 582.0 587.8	596.3 601.3 606.3 611.3 616.3	565.4 571.0 576.7 582.5 588.3	22.27 22.48 22.69 22.92 23.16	16.30 16.14 15.99 15.68 15.68
						-5.0% 6.3% 0.7% 0.9%	-7 .4% 4.8% -1.2%

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\* Source: Form 41 and 298C, U.S. Department of Transportation.

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### **U.S. REGIONAL CARRIERS**

## SCHEDULED PASSENGER TRAFFIC (In Millions)

EISCAL		REVENUE PASSENGERS	RS	REVE	REVENUE PASSENGER MILES	AIL ES
YEAR	DOMESTIC	INTERNATIONAL	SYSTEM	DOMESTIC	INTERNATIONAL	SYSTEM
<u>Historical</u> * 2000	7.67	3.1	82.8	22,825	814	23,639
2005 2006 2008 2009 2009 8	146.4 152.2 156.2 153.8 153.8	0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0	149.7 155.7 159.6 162.6 156.3	63,654 68,532 70,528 73,305 70,188	1,417 1,634 1,772 1,867	65,071 70,166 72,300 75,172 71,492
Forecast 2010	160.8	2.7	163.4	72,953	1,377	74,330
2011 2012 2013 2015 2015	166.2 172.0 177.7 182.9 188.0	0 0 0 0 0 0 0 7 7	168.9 174.8 180.6 191.1	75,641 79,596 83,732 87,725 91,717	1,437 1,502 1,566 1,688	77,078 81,098 85,298 89,353 93,406
2016 2017 2019 2020	193.0 198.1 203.7 216.3	0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,	196.2 201.4 207.0 213.1 219.9	95,577 99,578 103,900 108,574 113,692	1,750 1,880 1,953 2,033	97,327 101,390 105,780 110,527 115,725
2021 2022 2023 2024 2025	222.5 228.7 235.1 241.6 248.6	0.0 8.0 1.0 1.0 1.0 1.0	226.2 232.5 239.0 245.6 252.7	118,417 123,233 128,266 133,462 139,025	2,109 2,187 2,358 2,339	120,526 125,420 130,534 135,812 141,464
2026 2027 2028 2029 2030	255.6 262.6 269.7 276.9 284.6	4 4 4 2 4 4 5 7 - 7	259.9 266.9 274.2 281.5 289.3	144,398 149,803 155,417 161,163 167,265	2,529 2,713 2,910 2,910	146,928 152,423 158,130 163,972 170,175
Avg Annual Growth 2000-09 2009-10 2010-20 2009-30	7.6% 4.6% 3.0%	-2.2% 4.6% 3.0%	7.3% 4.6% 3.0% 3.0%	13.3% 3.9% 4.5%	5.4% 5.6% 3.9%	13.1% 4.0% 4.5%

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## **U.S. REGIONAL CARRIERS**

# SCHEDULED PASSENGER CAPACITY, TRAFFIC, AND LOAD FACTORS

		DOMESTIC		NI	INTERNATIONAL			SYSTEM	
YEAR	ASMs (MIL)	RPMs (MIL)	% LOAD FACTOR	ASMs (MIL)	RPMs (MIL)	% LOAD FACTOR	ASMs (MIL)	RPMs (MIL)	% LOAD FACTOR
<u>Historical*</u> 2000	38,332	22,825	59.5	1,338	814	60.8	39,670	23,639	59.6
2005 2006 2008 2008 2009B	90,028 91,458 93,452 99,469 94,421	63,654 68,532 70,528 73,305 70,188	70.7 74.9 75.5 73.7 74.3	2,213 2,387 2,550 1,873	1,417 1,634 1,772 1,867 1,304	64.0 685.5 70.9 60.9 60.9	92,240 93,845 96,002 102,101 96,294	65,071 70,166 72,300 75,172 71,492	70.5 74.8 75.3 73.6 74.2
<u>Forecast</u> 2010	96,258	72,953	75.8	1,964	1,377	70.1	98,222	74,330	75.7
2011 2012 2013 2014 2015	98,734 103,810 109,120 114,242 119,361	75,641 79,596 83,732 87,725 91,717	76.6 76.7 76.7 76.8 76.8	2,035 2,111 2,187 2,257 2,325	1,437 1,502 1,566 1,628 1,688	70.6 71.1 72.1 72.6	100,769 105,922 111,306 116,499 121,686	77,078 81,098 85,298 89,353 93,406	76.5 76.6 76.7 76.7 76.8
2016 2017 2018 2019 2020	124,307 129,435 134,979 140,979 147,553	95,577 99,578 103,900 108,574 113,692	76.9 76.9 77.0 77.0	2,392 2,461 2,536 2,617 2,705	1,750 1,881 1,953 2,033	73.1 73.6 74.1 74.6 75.1	126,699 131,896 137,515 143,596 150,259	97,327 101,390 105,780 110,527 115,725	76.8 76.9 77.0 77.0
2021 2022 2023 2024 2025	153,615 159,793 166,253 172,920 180,062	118,417 123,233 128,266 133,462 139,025	77.1 77.2 77.2 77.2	2,789 2,873 2,959 3,048 3,142	2,109 2,187 2,268 2,351 2,439	75.6 76.1 76.6 77.1	156,404 162,666 169,212 175,967 183,204	120,526 125,420 130,534 135,812 141,464	77.1 77.1 77.1 77.2 77.2
2026 2027 2028 2029 2030	186,957 193,890 201,093 208,466 216,296	144,398 149,803 155,417 161,163 167,265	77.3 77.3 77.3 77.3	3,248 3,353 3,562 3,572 3,572	2,529 2,620 2,713 2,809 2,910	77.9 78.1 78.4 78.6 78.6	190,205 197,243 204,555 212,038 219,993	146,928 152,423 158,130 163,972 175,175	77.2 77.3 77.3 77.3
<u>Avg Annual Growth</u> 2000-09 2009-10 2010-20 2009-30	10.5% 1.9% 4.4%	13.3% 3.9% 4.2%		3.3% 3.3% 3.3%	5.4% 5.6% 3.9%		10.4% 2.0% 4.0%	13.1% 4.0% 4.2%	

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### U.S. REGIONAL CARRIERS

**PASSENGER AIRCRAFT** 

	10 TO 19	20 TO 30	31 T	TO 40 SEATS			OVER 40 SEATS	NTS	TC	TOTAL FLEET	
<u> </u>		SEATS	PROP	JET	TOTAL	PROP	JET**	TOTAL	NON JET	ЭЕ	TOTAL
	470	262	474	74	548	155	496	651	1,704	570	2,274
~ ~ ~ ~ /	449 453 453 451 466	99 88 68 65	253 224 228 180 153	9 8 8 8 8 9 8 8 9 8 8 9 8 9 8 9 8 9 8 9	351 320 326 159	81 87 101 121 115	1,630 1,632 1,656 1,730 1,704	1,711 1,719 1,757 1,851 1,819	1,102 1,056 1,033 927 902	1,728 1,728 1,754 1,773 1,773	2,830 2,784 2,787 2,700 2,612
V	454	65	145	0	145	129	1,603	1,732	896	1,603	2,499
10110	444 393 418 391 391	65 65 65 64	138 103 121 104	00000	138 103 113 104	143 156 169 183 197	1,669 1,705 1,743 1,748 1,723	1,812 1,861 1,912 1,931	893 820 875 867 857	1,669 1,705 1,743 1,748 1,723	2,562 2,525 2,618 2,615 2,580
0,0,0,0,0	376 363 347 346 346	6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	95 87 77 77	00000	95 87 77 77	209 235 250 265	1,704 1,708 1,706 1,706 1,766	1,913 1,930 1,941 1,972 2,031	844 835 821 834 849	1,704 1,708 1,706 1,706 1,766	2,548 2,543 2,527 2,556 2,556
0,0,0,0,0,0	343 341 341 338 337	62 62 61 61	77 77 77 77	00000	22222	276 292 306 334	1,787 1,852 1,912 1,976 2,060	2,063 2,144 2,218 2,296 2,394	855 868 891 903	1,787 1,852 1,912 1,976 2,060	2,642 2,720 2,794 2,867 2,963
0.00.00.00.00	334 332 331 331 330	2 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	22 27 27 27 27	00000	22222	345 358 373 388 403	2,125 2,200 2,280 2,360 2,441	2,470 2,558 2,653 2,748 2,748	909 919 932 947	2,125 2,200 2,280 2,360 2,441	3,034 3,119 3,212 3,207 3,401
- 4 4 -	-0.1% -2.6% -1.6%	-14.3% 0.0% -0.3% -0.5%	-11.8% -5.2% -6.1% -3.2%	-24.4% N/A N/A -99.9%	-12.8% -8.8% -6.1% -3.4%	-3.3% 12.2% 7.5% 6.2%	14.7% -5.9% 1.0%	12.1% -4.8% 1.6% 2.2%	-6.8% -0.7% 0.3%	13.0% -6.3% 1.0%	1.6% -4.3% 0.5% 1.3%

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ACTIVE GENERAL AVIATION AND AIR TAXI AIRCRAFT

			FIXED WING	UNG.												
AS OF		PISTON		5	TURBINE		ĕ	ROTORCRAFT		EXPERI-	SPORT		GENERAL	TOTAI	TOTAI	
DEC. 31	SINGLE	MULTI- ENGINE	TOTAL	TURBO PROP	TURBO	TOTAL	PISTON	TURBINE	TOTAL	MENTAL	AIRCRAFT	OTHER	AVIATION	PISTONS	TURBINES	
<u>Historica</u> l* 2000	149,422	21,091	170,513	5,762	7,001	12,763	2,680	4,470	7,150	20,407	NA	6,700	217,533	173,193	17,233	
2005 2006 2007 2009 2009 2009 E	148,102 145,033 147,571 145,497 144,745	19,504 18,708 19,335 17,519 17,351	167,606 163,741 166,906 166,906 163,016 162,096	7,942 8,063 9,514 8,907 9,010	9,823 10,379 10,385 11,042 11,418	17,765 18,442 19,899 19,949 20,428	3,039 3,264 2,769 3,498 3,666	5,689 5,895 6,798 6,378 6,540	8,728 9,159 9,567 9,876 10,206	23,627 23,047 23,228 23,364 23,435	170 1,273 6,066 6,811 7,311	6,454 6,277 5,940 5,652 5,673	224,350 221,939 231,606 228,668 229,149	170,645 167,005 169,675 166,514 166,514	23,454 24,337 26,697 26,327 26,968	
<u>Forecast</u> 2010	144,104	17,177	161,281	9,100	11,779	20,879	3,830	6,715	10,545	23,605	7,711	5,679	229,699	165,111	27,594	
2011 2012 2013 2013 2015	143,502 142,996 142,581 142,240 141,955	17,041 16,916 16,791 16,656 16,520	160,543 159,912 159,372 158,896 158,475	9,214 9,349 9,500 9,650 9,799	12,184 12,657 13,217 13,227 14,466	21,398 22,006 22,718 23,477 23,477 24,265	4,005 4,180 4,360 4,550 4,755	6,920 7,125 7,335 7,555 7,795	10,925 11,305 11,695 12,105 12,550	24,320 25,030 25,680 26,325 26,965	8,711 9,711 10,611 11,111 11,611	5,684 5,677 5,670 5,663 5,663	231,581 233,642 235,746 237,577 239,522	164,548 164,092 163,732 163,446 163,230	28,318 29,131 30,053 31,032 32,060	
2016 2017 2018 2019 2020	141,748 141,613 141,594 141,727 142,052	16,384 16,241 16,098 15,955 15,815	158,132 157,854 157,692 157,682 157,867	9,943 10,085 10,227 10,370 10,370	15,122 15,798 16,486 17,191 17,925	25,065 25,883 26,713 27,561 28,442	4,945 5,125 5,290 5,455 5,625	8,015 8,225 8,415 8,605 8,800	12,960 13,350 13,705 14,060 14,425	27,550 28,125 28,695 29,260 29,770	12,011 12,411 12,711 13,011 13,311	5,650 5,644 5,637 5,631 5,625	241,369 243,267 245,153 245,153 245,40	163,077 162,979 162,982 162,982 163,137 163,492	33,080 34,108 35,128 36,166 37,242	
2021 2022 2023 2024 2025	142,550 143,084 143,696 144,438 145,323	15,681 15,552 15,424 15,299 15,176	158,231 158,636 159,120 159,737 160,499	10,665 10,812 10,959 11,108 11,259	18,691 19,487 20,315 21,175 22,069	29,357 30,299 31,274 32,283 33,328	5,795 5,970 6,145 6,320 6,495	9,000 9,200 9,400 9,800	14,795 15,170 15,545 15,920 16,295	30,275 30,775 31,270 31,760 32,245	13,611 13,911 14,211 14,511 14,811	5,618 5,612 5,606 5,600 5,594	251,888 254,404 257,026 259,812 262,772	164,026 164,606 165,265 166,057 166,994	38,357 39,499 40,674 41,883 43,128	
2026 2027 2028 2028 2029 2030	146,143 147,078 148,139 149,319 150,646	15,059 14,941 14,827 14,711 14,597	161,202 162,019 162,966 164,030 165,243	11,411 11,564 11,717 11,870 12,023	22,996 23,957 24,952 25,979 27,035	34,407 35,520 36,669 37,849 39,059	6,670 6,845 7,020 7,195 7,370	10,005 10,210 10,415 10,620 10,825	16,675 17,055 17,435 17,815 18,195	32,675 33,100 33,520 33,935 34,350	15,111 15,411 15,711 16,011 16,311	5,588 5,582 5,576 5,571 5,565	265,658 268,688 271,877 275,210 278,723	167,872 168,864 169,986 171,225 172,613	44,412 45,730 47,084 48,469 49,884	
<u>Avg Annual Growth</u> 2000-09 2009-10 2010-20 2009-30	-0.4% -0.4% -0.1% 0.2%	-2.1% -1.0% -0.8%	-0.6% -0.5% -0.2% 0.1%	5.1% 1.0% 1.5% 1.4%	5.6% 3.2% 4.3%	5.4% 2.2% 3.1%	3.5% 4.5% 3.9% 3.4%	4.3% 2.7% 2.7% 2.4%	4.0% 3.3% 3.2% 2.8%	1.5% 0.7% 2.3% 1.8%	N/A 5.5% 3.9%	-1.8% 0.1% -0.1%	0.6% 0.2% 0.8% 0.9%	-0.5% -0.4% 0.2%	5.1% 2.3% 3.0%	i

FAA Aerospace Forecast Fiscal Years 2010–2030

\* Source: 2000-2008, FAA General Aviation and Air Taxi Activity (and Avionics) Surveys. Note: An active aircraft is one that has a current registration and was flown at least one hour during the calendar year.

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# ACTIVE GENERAL AVIATION AND AIR TAXI HOURS FLOWN

(In Thousands)

	TOTAL TURBINES	6,402	8,365 8,767 9,141 8,527 7,499	7,547	8,400 9,273 10,162 10,541 10,934	11,326 11,704 12,064 12,452 12,846	13,240 13,657 14,092 14,530 14,971	15,428 15,907 16,402 16,922 17,454	1.8% 0.6% 5.5% 4.1%
	TOTAL PISTONS	22,019	17,094 17,443 16,962 15,825 14,277	13,835	14,602 14,774 14,868 14,745 14,735	14,643 14,701 14,802 14,951 15,107	15,345 15,486 15,687 15,965 16,312	16,669 17,046 17,425 17,776 18,131	-4.7% -3.1% 0.9% 1.1%
TOTAL	general Aviation Hours	30,102	27,078 27,705 27,852 26,009 23,330	22,921	24,681 25,889 27,027 27,418 27,913	28,284 28,791 29,320 29,926 30,543	31,244 31,870 32,575 33,362 34,222	35,107 36,034 36,980 37,925 38,886	-2.8% -1.8% 2.9%
	OTHER	374	271 211 215 209 208	208	209 210 211 212	213 214 215 216	217 218 219 219 220	221 222 223 224 225	-6.3% -0.4% 0.4% 0.4%
	SPORT AIRCRAFT	NA	9 66 260 214	332	382 435 484 517 551	582 613 641 669 698	728 759 791 824 857	892 928 965 1,003 1,043	N/A 5.5% 7.7% 5.9%
	experi- Mental	1,307	1,340 1,218 1,275 1,155 1,031	1,000	1,088 1,198 1,303 1,403 1,480	1,520 1,560 1,599 1,639 1,676	1,713 1,750 1,787 1,787 1,824 1,862	1,896 1,930 1,965 1,999 2,034	-2.6% -3.0% 3.3%
	TOTAL	2,191	3,116 3,446 3,245 3,222 3,065	3,096	3,216 3,336 3,461 3,591 3,733	3,866 3,995 4,114 4,234 4,358	4,485 4,614 4,743 4,874 5,006	5,140 5,276 5,413 5,551 5,690	3.5% 3.5% 3.0%
ROTORCRAFT	TURBINE	1,661	2,438 2,528 2,541 2,541 2,356	2,371	2,455 2,541 2,628 2,721 2,821	2,915 3,007 3,092 3,177 3,265	3,356 3,448 3,541 3,634 3,728	3,825 3,923 4,022 4,122 4,222	4.0% 3.3% 2.8%
Ĕ	PISTON	530	678 918 704 751 709	726	761 796 832 871 912	951 988 1,022 1,093	1,128 1,165 1,203 1,240 1,277	1,315 1,353 1,391 1,429 1,468	3.3% 2.4% 3.5%
	TOTAL	4,741	5,927 6,240 6,600 6,057 5,143	5,176	5,945 6,733 7,533 7,821 8,113	8,411 8,697 8,973 9,275 9,581	9,884 10,209 10,551 10,896 11,243	11,603 11,984 12,380 12,800 13,232	0.9% 0.7% 6.4% 4.6%
JINIOOI IT	TURBO	2,755	3,767 4,077 3,938 3,600 2,902	2,904	3,487 4,196 5,170 5,425	5,697 5,957 6,197 6,463 6,739	7,021 7,311 7,616 7,933 8,257	8,588 8,930 9,283 9,662 10,051	0.6% 0.1% 8.8% 6.1%
MING	TURBO PROP	1,986	2,160 2,162 2,661 2,457 2,241	2,272	2,458 2,537 2,609 2,688 2,688	2,714 2,740 2,776 2,812 2,842	2,863 2,898 2,935 2,963 2,986	3,015 3,054 3,097 3,138 3,180	1.4% 1.4% 2.3%
FIXED WING	TOTAL	21,489	16,416 16,525 16,257 15,074 13,568	13,109	13,842 13,978 14,036 13,875 13,823	13,692 13,713 13,779 13,894 14,014	14,217 14,321 14,484 14,725 15,034	15,354 15,693 16,034 16,034 16,663	-5.0% -3.4% 0.7%
	MULTI- ENGINE	3,400	2,677 2,550 2,686 2,328 2,132	2,105	2,137 2,122 2,071 2,019 1,985	1,946 1,924 1,911 1,900 1,887	1,867 1,862 1,871 1,883 1,900	1,928 1,953 1,988 2,027 2,051	-5.1% -1.3% -0.2%
	SINGLE	18,089	13,739 13,976 13,571 12,746 11,436	11,004	11,705 11,856 11,965 11,855 11,839	11,747 11,788 11,868 11,994 12,127	12,350 12,459 12,613 12,842 13,134	13,426 13,739 14,046 14,613	-5.0% -3.8% 1.0%
	CALENDAR YEAR	<u>Historica</u> l* 2000	2005 2006 2008 2009 2009	<u>Forecast</u> 2010	2011 2012 2013 2015 2015	2016 2017 2018 2019 2020	2021 2023 2023 2025	2026 2023 2023 2029 2029 2039	Avg Annual Growth 2000-09 2009-10 2010-20 2009-30

FAA Aerospace Forecast Fiscal Years 2010–2030

\* Source: 2000-2008, FAA General Aviation and Air Taxi Surveys. Note: An active aircraft is one that has a current registration and was flown at least one hour during the previous calendar year.

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## ACTIVE PILOTS BY TYPE OF CERTIFICATE

AS OF DEC. 31	STUDENTS	RECREA- TIONAL	SPORT PILOT	PRIVATE	COMMERCIAL	AIRLINE TRANSPORT	ROTOR- CRAFT ONLY	GLIDER ONLY	TOTAL PILOTS	TOTAL LESS AT PILOTS	INSTRUMENT RATED PILOTS <sup>1</sup>
<u>Historical</u> * 2000	93,064	340	NA	251,561	121,858	141,596	7,775	9,387	625,581	483,985	311,944
2005 2006 2008 2009E 2009E	87,213 84,866 84,339 80,989 72,280	278 239 252 234	134 939 2,031 2,623 3,248	228,619 219,233 211,096 222,596 211,619	120,614 117,610 115,127 124,746 125,738	141,992 141,935 143,953 146,838 144,600	9,518 10,690 12,290 14,647 15,298	21,369 21,597 21,274 21,055 21,268	609,737 597,109 590,349 613,746 594,285	467,745 455,174 446,396 466,908 449,685	311,500 309,333 309,865 325,247 323,495
<u>Forecast</u> 2010	70,700	235	4,060	206,400	124,950	142,650	15,380	21,270	585,645	442,995	322,300
2011 2012 2013 2014 2015	69,050 71,400 73,150 73,850 74,300	235 235 235 235 235 235	4,872 5,846 6,150 6,500 6,850	202,000 200,500 200,550 200,550 201,000 201,600	125,150 123,900 119,850 119,750 119,650	142,750 142,800 143,750 145,100 145,750	15,540 16,250 17,010 17,700 18,300	21,350 21,380 21,410 21,440 21,470	580,947 582,311 582,105 582,105 588,155	438,197 439,511 438,355 440,475 442,405	321,100 322,800 324,500 326,200 327,900
2016 2017 2018 2019 2020	74,700 74,950 75,350 75,500 75,800	235 235 235 235 235 235	7,200 7,600 8,000 8,400 8,850	202,250 202,850 203,500 204,050 204,600	121,250 122,650 123,650 124,550 125,450	146,700 147,300 148,200 149,100 150,300	18,860 19,420 19,880 20,240 20,400	21,510 21,540 21,570 21,600 21,630	592,705 596,545 600,385 603,675 607,265	446,005 449,245 452,185 454,575 456,965	329,600 332,100 334,600 337,200 339,800
2021 2022 2023 2024 2025	76,200 76,800 77,400 78,100 79,000	235 235 235 235 235 235	9,250 9,700 10,150 10,650 11,150	205,200 205,950 206,800 207,800 209,000	126,300 127,300 128,400 129,600 130,900	151,250 151,900 153,450 154,550 156,050	20,390 20,270 20,140 20,010 20,060	21,670 21,700 21,730 21,760 21,800	610,495 613,855 618,305 622,705 628,195	459,245 461,955 464,855 468,155 472,145	343,200 346,700 350,200 353,800 357,400
2026 2023 2028 2029 2030	80,100 81,400 82,850 84,450 86,050	235 235 235 235 235	11,700 12,250 12,850 13,450 14,100	210,450 212,200 214,250 216,550 219,050	132,350 133,850 135,450 137,200 139,100	157,350 158,550 160,000 161,400 162,900	20,210 20,420 20,670 21,380	21,830 21,860 21,890 21,930 21,960	634,225 640,765 648,195 656,215 664,775	476,875 482,215 488,195 494,815 501,875	361,000 364,700 368,400 372,100 375,900
<u>Avg Annual Growth</u> 2000-09 2009-10 2010-20 2009-30	-2.8% -2.2% 0.7% 0.8%	-4.1% 0.4% 0.0% 0.0%	N/A 25.0% 8.1% 7.2%	-1.9% -2.5% 0.2%	0.3% -0.6% 0.0% 0.5%	0.2% -1.3% 0.5% 0.6%	7.8% 0.5% 2.9% 1.6%	9.5% 0.0% 0.2% 2%	-0.6% -1.5% 0.4% 0.5%	-0.8% -1.5% 0.3% 0.5%	0.4% -0.4% 0.5% 0.7%

FAA Aerospace Forecast Fiscal Years 2010–2030

1 Instrument rated pilots should not be added to other categories in deriving total. Note: An active pilot is a person with a pilot certificate and a valid medical certificate.

\* Source: FAA U.S. Civil Airmen Statistics.

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## GENERAL AVIATION AIRCRAFT FUEL CONSUMPTION (In Millions of Gallons)

		FIXED WING	WING						IVTOT		
CALENDAR	-SIA	PISTON	TUR	TURBINE	ROIOF	HUIUKCHAFI			IOIAL		UMED
YEAR	SINGLE	MULTI- ENGINE	TURBO- PROP	TURBO- JET	PISTON	TURBINE	MEN IAL/ OTHER	INOAS	AVGAS	JET FUEL	TOTAL
<u>Historical</u> 2000	200.8	108.4	176.3	736.7	8.4	59.0	15.2	NA	332.8	972.0	1,304.8
2005 2006 2007 2008 2009E	173.1 164.9 157.6 143.0 129.0	89.7 79.9 83.0 69.5 64.0	196.1 190.1 205.2 230.4 210.2	1,181.3 1,303.9 1,148.0 1,313.2 1,014.1	14.6 16.7 9.3 10.7 10.7	149.2 148.6 132.4 162.1 140.0	17.7 21.6 22.6 23.3 20.7	0.0 1.1 6 5 7 1.5 0.0	295.0 283.4 273.6 248.1 225.3	1,526.7 1,642.6 1,485.6 1,705.7 1,364.3	1,821.7 1,926.0 1,759.2 1,953.8 1,589.6
<u>Forecast</u> 2010	124.7	63.5	211.0	1,004.6	10.3	140.2	20.1	1.6	220.2	1,355.8	1,576.0
2011 2012 2013 2014 2015	133.3 133.7 133.6 131.0 129.5	64.8 63.7 61.5 59.4 57.8	228.2 235.6 239.8 243.6 247.2	1,194.4 1,422.8 1,653.2 1,718.4 1,784.9	10.8 11.3 12.3 12.3	144.4 148.7 153.1 157.7 162.7	21.9 24.0 28.1 28.1 29.4	2.5 2.3 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5 2.5	232.6 234.7 235.2 233.2 232.2	1,567.1 1,807.1 2,046.1 2,119.7 2,194.8	1,799.7 2,041.8 2,281.3 2,352.9 2,427.0
2016 2017 2018 2019 2020	127.9 127.7 127.9 128.6 129.4	56.3 55.5 54.8 53.6 53.6	247.0 249.4 252.6 253.3 256.1	1,855.8 1,920.9 1,978.3 2,042.8 2,108.7	13.4 13.9 14.3 15.3	167.3 171.7 175.6 179.6 183.6	30.2 31.0 32.5 33.2	3.3.2.2.8 3.1.1.9 3.1.1.2.8	230.6 231.0 231.8 233.2 234.7	2,270.1 2,342.0 2,406.6 2,475.7 2,548.4	2,500.7 2,573.0 2,638.3 2,783.1 2,783.1
2021 2022 2023 2024 2025	131.1 131.6 132.6 134.3 136.7	52.7 52.3 52.3 52.4 52.6	258.0 258.5 261.8 264.3 266.4	2,174.9 2,242.0 2,312.2 2,384.4 2,456.9	15.8 16.3 16.8 17.3 17.3	187.8 192.0 196.1 200.3 204.5	33.9 34.5 35.2 35.9 36.7	0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.	237.0 238.1 240.5 243.7 247.7	2,620.6 2,692.5 2,770.2 2,849.0 2,927.8	2,857.6 2,930.7 3,010.7 3,092.8 3,175.5
2026 2027 2028 2029 2030	139.0 141.5 144.0 146.1 148.3	53.1 53.5 55.0 55.0	268.9 272.4 276.3 279.9 283.7	2,530.0 2,604.5 2,680.1 2,761.9 2,844.3	18.3 19.4 19.9 20.5	208.8 213.0 217.3 221.6 225.8	37.4 38.0 38.7 39.4 40.1	4444 4.449 8.408	251.9 256.2 260.7 265.0 269.0	3,007.7 3,089.9 3,173.7 3,263.4 3,353.8	3,259.6 3,346.1 3,434.4 3,528.4 3,622.8
<u>Avg Annual Growth</u> 2000-09 2009-10 2010-20 2009-30	-4.8% -3.3% 0.4% 0.7%	-5.7% -0.8% -1.7% -0.7%	2.0% 0.4% 2.0% 1.4%	3.6% -0.9% 7.7% 5.0%	2.1% 2.4% 3.4%	10.1% 0.1% 2.3%	3.5% -3.0% 3.2%	N/A 3.4% 7.3% 5.5%	-4.2% -2.3% 0.6% 0.8%	3.8% -0.6% 6.5% 4.4%	2.2% -0.9% 4.0%

FAA Aerospace Forecast Fiscal Years 2010–2030

Note: Detail may not add to total because of independent rounding.

Source: FAA APO Estimates.

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# TOTAL COMBINED AIRCRAFT OPERATIONS AT AIRPORTS

# WITH FAA AND CONTRACT TRAFFIC CONTROL SERVICE (In Thousands)

FISCAL	AIR	AIR TAXI/	GENE	GENERAL AVIATION	NOI	Ž	MILITARY			NUMBER	NUMBER OF TOWERS
YEAR	CARRIER	COMMUTER	ITINERANT	LOCAL	TOTAL	ITINERANT	LOCAL	TOTAL	TOTAL	FAA	CONTRACT
<u>Historical</u> * 2000	15,158.7	10,760.5	22,844.1	17,034.4	39,878.5	1,439.8	1,448.2	2,888.0	68,685.7	266	192
2005 2006 2007 2008 2009E	13,533.6 13,256.3 13,611.2 13,779.1 12,831.3	12,550.5 11,967.6 11,667.3 11,028.9 9,510.4	19,303.2 18,707.1 18,575.2 17,521.3 15,554.5	14,843.6 14,365.4 14,556.8 14,146.7 12,419.9	34,146.8 33,072.5 33,132.0 31,668.0 27,974.4	1,414.5 1,358.4 1,313.9 1,283.7 1,294.0	1,449.1 1,417.4 1,405.7 1,217.7 1,262.5	2,863.6 2,775.8 2,719.6 2,501.4 2,556.5	63,094.5 61,072.2 61,130.0 58,977.4 52,872.6	264 263 264 264 264	229 231 235 244
<u>Forecast</u> 2010	12,519.5	9,326.0	14,982.3	12,114.9	27,097.2	1,278.0	1,238.6	2,516.6	51,459.3	264	244
2011 2012 2013 2014 2015	12,611.5 12,915.9 13,246.6 13,552.9 13,858.7	9,329.4 9,441.2 9,546.6 9,643.0 9,727.0	15,167.4 15,356.1 15,547.7 15,741.7 15,947.5	12,265.4 12,418.3 12,572.5 12,727.3 12,885.9	27,432.7 27,774.5 28,120.2 28,469.1 28,833.4	1,278.0 1,278.0 1,278.0 1,278.0 1,278.0	1,238.6 1,238.6 1,238.6 1,238.6 1,238.6	2,516.6 2,516.6 2,516.6 2,516.6 2,516.6	51,890.3 52,648.2 53,430.1 54,181.6 54,935.7	264 264 264 264	2 2 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4
2016 2017 2018 2019 2020	14,162.6 14,470.8 14,803.6 15,167.5 15,562.9	9,831.9 9,942.4 10,059.4 10,183.0 10,327.8	16,155.6 16,366.9 16,581.9 16,799.7 17,020.9	13,046.7 13,208.6 13,372.5 13,538.9 13,708.0	29,202.3 29,575.5 29,954.4 30,338.6 30,728.9	1,278.0 1,278.0 1,278.0 1,278.0 1,278.0	1,238.6 1,238.6 1,238.6 1,238.6 1,238.6	2,516.6 2,516.6 2,516.6 2,516.6 2,516.6	55,713.4 56,505.4 57,334.0 58,205.7 59,136.2	264 264 264 264	244 244 2444 2444
2021 2022 2023 2024 2025	15,932.7 16,303.5 16,681.6 17,058.8 17,457.8	10,478.4 10,638.9 10,810.6 11,202.2	17,245.2 17,473.1 17,704.5 17,939.4 18,177.9	13,879.2 14,052.6 14,241.0 14,432.4 14,627.1	31,124.4 31,525.7 31,945.4 32,371.8 32,805.0	1,278.0 1,278.0 1,278.0 1,278.0 1,278.0	1,238.6 1,238.6 1,238.6 1,238.6 1,238.6	2,516.6 2,516.6 2,516.6 2,516.6 2,516.6	60,052.1 60,984.7 61,954.2 62,941.1 63,981.6	264 264 264 264	244 244 2444 2444
2026 2027 2028 2029 2030	17,861.9 18,252.7 18,658.9 19,063.3 19,481.9	11,427.8 11,670.4 11,931.4 12,212.3 12,514.7	18,420.1 18,666.1 18,915.8 19,169.5 19,427.1	14,823.4 15,023.1 15,224.5 15,429.3 15,637.5	33,243.5 33,689.1 34,140.3 34,598.8 35,064.5	1,278.0 1,278.0 1,278.0 1,278.0 1,278.0	1,238.6 1,238.6 1,238.6 1,238.6 1,238.6	2,516.6 2,516.6 2,516.6 2,516.6 2,516.6 2,516.6	65,049.8 66,128.8 67,247.2 68,390.9 69,577.7	264 264 264 264	244 244 244 244
<u>Avg Annual Growth</u> 2000-09 2009-10 2010-20 2009-30	-1.8% -2.4% 2.2% 2.0%	-1.4% -1.9% 1.0%	-4.2% -3.7% 1.3%	-3.4% -2.5% 1.2%	-3.9% -3.1% 1.3%	-1.2% -1.2% 0.0% -0.1%	-1.5% -1.9% 0.0% -0.1%	-1.3% -1.6% 0.0% -0.1%	-2.9% -2.7% 1.4%		

\* Source: FAA Air Traffic Activity.

FISCAL YEAR	AIR CARRIER	AIR TAXI/ COMMUTER	GENERAL AVIATION	MILITARY	TOTAL
<u>Historical</u> * 2000	16,395.0	11,197.7	20,799.2	3,466.9	51,858.8
2005	14,123.4	12,751.1	17,388.9	2,798.7	47,062.1
2007	13,963.3 14.366.0	12,035.7 11.675.8	17,005.3 16.747.4	2,669.9	45.288.0
2008	14,438.8	11,043.1	15,756.5	2,398.8	43,637.2
2009E	13,295.7	9,604.8	14,110.3	2,385.8	39,402.0
<u>Forecast</u> 2010	13,131.2	9,372.3	14,074.9	2,383.4	38,961.8
2011	13,366.0	9,375.7	14,230.3	2,383.4	39,355.4
2013	14,160.4	9,586.1	14,559.0	2,383.4	40,020.2
2014 2015	14,515.8 14,876.9	9,679.4 9,760.8	14,726.6 14,901.7	2,383.4 2,383.4	41,305.2 41,922.8
2016 2017	15,237.7 15,605.8	9,862.3 9,969.2	15,078.7 15,258.3	2,383.4 2,383.4	42,562.1 43,216.7
2018 2019	16,006.5 16,447.2	10,082.3 10,201.9	15,441.0 15,626.1	2,383.4 2,383.4	43,913.3 44,658.5
2020	16,924.0	10,341.8	15,813.9	2,383.4	45,463.1
2021	17,361.2 17 807 6	10,487.2 10.642 1	16,004.3 16,197 7	2,383.4 2.383.4	46,236.0 47 030.8
2023	18,263.3	10,807.7	16,393.9	2,383.4	47,848.3
2025	16,7 16.5 19,207.8	11,185.2	16,795.2	2,303.4 2,383.4	40,003.9 49,571.6
2026 2027	19,699.6 20 175 8	11,402.4 11 635 8	17,000.3 17 208 6	2,383.4 2,383.4	50,485.7 51 403 5
2028	20,676.3 21,173.7	11,886.7 12.156.6	17,420.0 17.634.5	2,383.4	52,366.4 53.348.1
2030	21,692.7	12,446.8	17,852.3	2,383.4	54,375.3
<u>Avg Annual Growth</u> 2000-09	-2.3%	-1.7%	-4.2%	-4.1%	-3.0%
2009-10 2010-20 2009-30	-1.2% 2.6% 2.4%	-2.4% 1.0% 1.2%	-0.3% 1.2% 1 1%	-0.1% 0.0%	-1.1% 1.6%

**TABLE 32** 

TOTAL TRACON OPERATIONS (In Thousands)

\* Source: FAA Air Traffic Activity.

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### AT FAA AIR ROUTE TRAFFIC CONTROL CENTERS (In Thousands) **IFR AIRCRAFT HANDLED**

			IFR AIRCRAFT HANDLED		
FISCAL YEAR	AIR CARRIER	AIR TAXI/ COMMUTER	GENERAL AVIATION	MILITARY	TOTAL
<u>Historical</u> * 2000	24,987.0	8,100.9	8,744.3	4,192.5	46,024.8
2005 2006 2007 2008 2009E	25,004.6 24,394.5 25,006.2 23,847.3 22,216.7	10,053.9 9,436.7 9,652.9 10,174.1 8,543.9	8,367.7 8,197.0 8,294.3 7,664.7 6,305.8	4,052.0 4,149.7 3,803.3 3,648.8 2,991.7	47,478.1 46,177.8 46,756.7 45,334.9 40,058.1
<u>Forecast</u> 2010	22,051.3	8,222.7	6,138.2	2,991.1	39,403.2
2011 2012 2013 2014 2015	22,542.5 23,400.4 24,288.0 25,135.6 25,999.9	8,245.5 8,360.0 8,482.6 8,601.3 8,601.3 8,694.4	6,194.0 6,251.2 6,308.3 6,365.1 6,423.6	2, 991.1 2, 991.1 2, 991.1 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1	39,973.1 41,002.6 42,069.9 43,093.1 44,108.9
2016 2017 2018 2019 2020	26,867.2 27,757.1 28,721.5 29,757.4 30,855.7	8,802.1 8,921.3 9,151.6 9,270.4	6,481.9 6,540.5 6,599.5 6,658.7 6,718.3	2, 991.1 2, 991.1 2, 991.1 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1	45,142.3 46,209.9 47,350.2 48,558.8 49,835.4
2021 2022 2023 2024 2025	31,927.4 33,014.8 34,130.2 35,264.1 36,482.2	9,402.3 9,543.8 9,689.7 9,843.4 10,009.2	6,778.3 6,838.8 6,899.8 6,957.2 7,023.4	2,991.1 2,991.1 2,991.1 2,991.1 1,1	51,099.0 52,388.4 53,710.8 55,055.8 56,505.8
2026 2027 2028 2029 2030	37,700.4 38,918.5 40,185.9 41,476.3 42,819.8	10,184.5 10,370.3 10,563.0 10,767.3 10,982.6	7,086.1 7,149.4 7,273.4 7,343.2 7,343.2	2,991.1 2,991.1 2,991.1 2,991.1 1.1	57,962.1 59,429.2 60,953.3 62,512.6 64,136.7
Avg Annual Growth 2000-09 2009-10 2010-20 2009-30	-1.3% -0.7% 3.2%	0.6% -3.8% 1.2%	-3.6% -2.7% 0.9% 0.7%	-3.7% 0.0% 0.0% 0.0%	-1.5% -1.6% 2.4%

\* Source: FAA Air Traffic Activity.

