Federal Aviation Administration

FAA Aerospace Forecast

Fiscal Years 2013-2033

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FORECAST HIGHLIGHTS 2013-2033

Since the beginning of the century, the commercial air carrier industry has suffered several major shocks that have led to reduced demand for air travel. These shocks include the terror attacks of September 11, skyrocketing prices for fuel, debt restructuring in Europe and the United States (U.S.), and a global recession. To manage this period of extreme volatility, air carriers have fine-tuned their business models with the aim of minimizing financial losses by lowering operating costs, eliminating unprofitable routes and grounding older, less fuel efficient aircraft. To increase operating revenues, carriers have initiated new services that customers are willing to purchase. Carriers have also started charging separately for services that were historically bundled in the price of a ticket. The capacity discipline exhibited by carriers and their focus on additional revenue streams bolstered the industry to profitability in 2012 for the third consecutive year. Going into the next decade, there is cautious optimism that the industry has been transformed from that of a boom-to-bust cycle to one of sustainable profits.

As the economy recovers from the most serious economic downturn and slow recovery in recent history, aviation will continue to grow over the long run. Fundamentally, demand for aviation is driven by economic activity. As the economy returns to growth, so will aviation. The 2013 FAA forecast calls for U.S. carrier passenger growth over the next 20 years to average 2.2 percent per year, compared to last year's forecast growth of 2.6 percent per year. After another year of slow or no growth this year, growth over the next five years will be slightly higher than the long run rate as we assume the U.S. economy grows at a faster rate. This delayed trajectory represents the downward adjustments of the overall economy, here in the U.S. and abroad, and of the aviation sector response. One of the many factors influencing the delayed recovery is the uncertainty that surrounds the U.S. and European economies. The latter, primarily those belonging to the Euro area, have been hit hard by the pressure for fiscal austerity. Combined with the slow pace of these economies, debt restructuring pulled the European economy into recession in early 2012, where it continues to languish today. This has not helped the pace of U.S. economic growth given the importance of its trade with Europe. Despite this and the ambiguity surrounding its own fiscal imbalances, the U.S. economy has managed to avoid a double dip recession and trudges along the path of slow recovery.

System capacity in available seat miles (ASMs) – the overall yardstick for how busy aviation is both domestically and internationally – is projected to shrink by 0.1 percent this year after posting a 0.1 percent increase in 2012; it will then grow at an average annual rate of 2.9 percent through 2033. In the domestic market, capacity growth hovers around zero for the second year in a row. Domestic capacity is projected to grow at an average annual rate of 2.1 percent for the remainder of the forecast period. Domestic mainline carrier capacity will not increase in 2013 after increasing 0.7 percent in 2012. For the regional carriers, domestic capacity growth is also projected to be flat in 2013 after declining 4.3 percent in 2012. Commercial air carrier domestic revenue passenger miles (RPMs) are forecast to increase 0.7 percent in 2013, and then grow at an average of 2.2 percent per year through 2033; domestic enplanements in 2013 will decrease 0.1 percent, and then grow at an average annual rate of 2.0 percent for the remainder of the forecast.

The average size of domestic aircraft is expected to increase by 0.4 seats in FY 2013 to 124.3 seats. Average seats per aircraft for mainline carriers are projected to stay relatively flat as network carriers[1] 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 2013 by 0.5 seats to 57.7 seats per mile. Passenger trip length in domestic markets will increase by 7.2 miles during the same period.

Although the slow growth of the U.S. economy and the European recession has dampened the near term prospects for general aviation, 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 especially in the turbo jet, turboprop and turbine rotorcraft markets. As the fleet grows, the number of general aviation hours flown is projected to increase an average of 1.5 percent a year through 2033.

The global economy is facing a prospect of slow growth in 2013 with continued recession in the first part of the year in Europe which has slowed the demand for air travel. Profitability for U.S. carriers will hinge on a stable environment for fuel prices, an increase in demand for corporate air travel, maintaining the ability to pass along fare increases to leisure travelers, and the continual generation of ancillary revenues. To navigate this volatile operating environment, mainline carriers will continue to drive down costs by better matching flight frequencies and/or aircraft gauge with demand, delaying deliveries of newer aircraft and/or grounding older aircraft, along with pressuring regional affiliates to accept lower fees for contract flying. Over the long term, we see a competitive and profitable aviation industry characterized by increasing demand for air travel and airfares growing more slowly than inflation, reflecting over the long term a growing U.S. economy.

[1] Alaska Airlines, American Airlines, United-Continental Airlines, Delta Airlines, and U.S. Airways.

REVIEW OF 2012

Although the year 2012 began with a lot of hope for an economic recovery, it was primarily characterized as a year of full scale uncertainty. Despite the uncertainty in the operating environment, the changes that U.S. carriers have made since the start of the global recession in 2008 helped the industry to make a profit for the third year in a row. Many industry professionals see these changes as providing traction towards profitability, even during future periods of uncertainty. The biggest change that U.S. passenger airlines have made is the shift in focus from increasing market share to one of boosting shareholder return on investment. The U.S. airline industry has become more nimble; that is, adjusting capacity to seize opportunities or contracting in times of economic distress. As a result, it expanded its capacity by 0.1 percent in 2012 while positioning itself for a reduction of 0.1 percent this year in anticipation of the uncertain economic environment. Even during times of economic instability and distress, the industry has found ways to increase revenue. For example, air carriers are charging fees for services that used to be included in airfare (e.g. meal service), as well as for services that were not previously available (e.g. premium boarding and fare lock fees). The impact from these recent initiatives gives reason for optimism as the industry (passenger and cargo carriers combined) posted profits for the third consecutive year in 2012.

Demand for air travel in 2012 grew slowly following a relatively strong 2011 that was highlighted by improving consumer confidence and falling unemployment, despite continuing pressure of debt restructuring in Europe and the U.S. In 2012[2] system revenue passenger miles increased 0.9 percent as enplanements increased 0.8 percent. Commercial air carrier domestic enplanements were up 0.6 percent while international enplanements were up 2.4 percent. The system-wide load factor continued to rise to 82.7 percent (up 0.7 points from 2011). Domestic enplanement market share continued to rise for low-cost carriers in 2012 while network and “other” carrier and regional carrier share decreased. Domestic low cost carrier enplanement share increased by 0.7 points to 29.1 percent while the share of network and “other” carriers fell by 0.2 points to 46.6 percent and regional carrier share dropped by 0.6 points to 24.3 percent.

Capacity restraint by the carriers as helped the system wide real yield to increase by 2.4 percent in 2012. Data for FY 2012 show that the reporting passenger carriers had a combined operating profit of $6.0 billion (compared to a $5.7 billion operating profit for FY2011). The network carriers reported combined operating profits of $4.2 billion while the low cost carriers reported combined operating profits of $1.3 billion, with four out of the five network carriers and seven of the nine low cost carriers posting profits.

The general aviation market showed an improvement especially by robust contributions from the agricultural airplane segment of turboprops and strong growth in the rotorcraft sector. When revised data became available about the agricultural aircraft, the recovery was tracked back to 2011, which continued in calendar year (CY) 2012, which saw deliveries post a 3.3

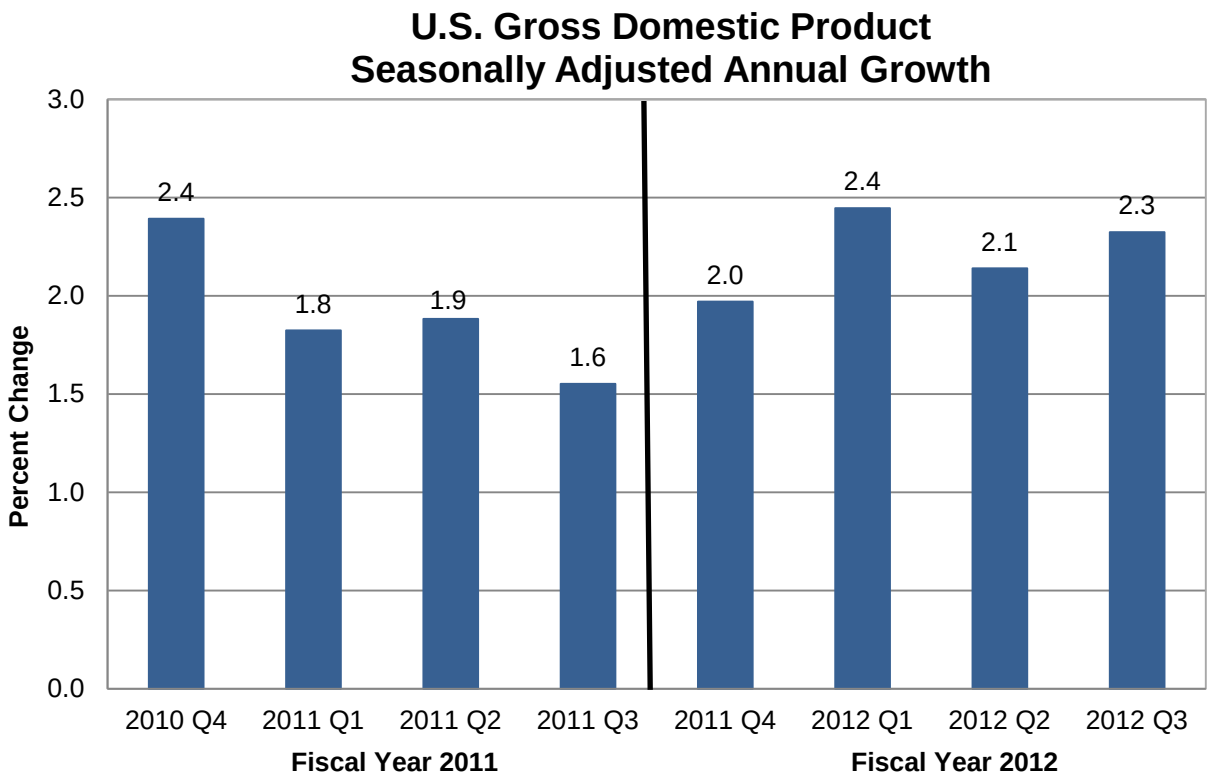
[2] All stated years and quarters for U.S. economic and U.S. air carrier traffic and financial data and forecasts are on a fiscal year (FY) basis (October 1 through September 30). All stated years and quarters for international economic and world traffic and financial data are on a calendar year (CY)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

percent increase. The new data revealed the U.S. manufacturer shipments in fact increased by 9.8 percent in 2011, while U.S. billings initially increased by 5.0 percent in 2011, but recorded a decline of 3.0 percent in 2012. Single engine piston shipments recovered from their negative trend to a 0.9 percent increase over the previous year. However, due to declines in the multi-engine category, total piston aircraft shipments by U.S. manufacturers were relatively flat, with an estimated increase of 0.3 percent. Turbine aircraft shipments (turboprop and business jets) by U.S. manufacturers increased by 6.2 percent in CY 2012 compared to CY 2011. Turboprop shipments, which increased by 16.2 percent in 2012 accounted for the growth in turbine shipments, as there was a 4.7 percent decline in shipments of business jets, which had ceased the previous declining trend in turbine aircraft shipments in 2011. This was a reflection of the fragile nature of the economic recovery, even though there are promising technological developments for the future the pace of the decline has slowed. General aviation activity at FAA and contract tower airports was in line with the shipments with an increase of 0.6 percent in 2012, driven by local operations.

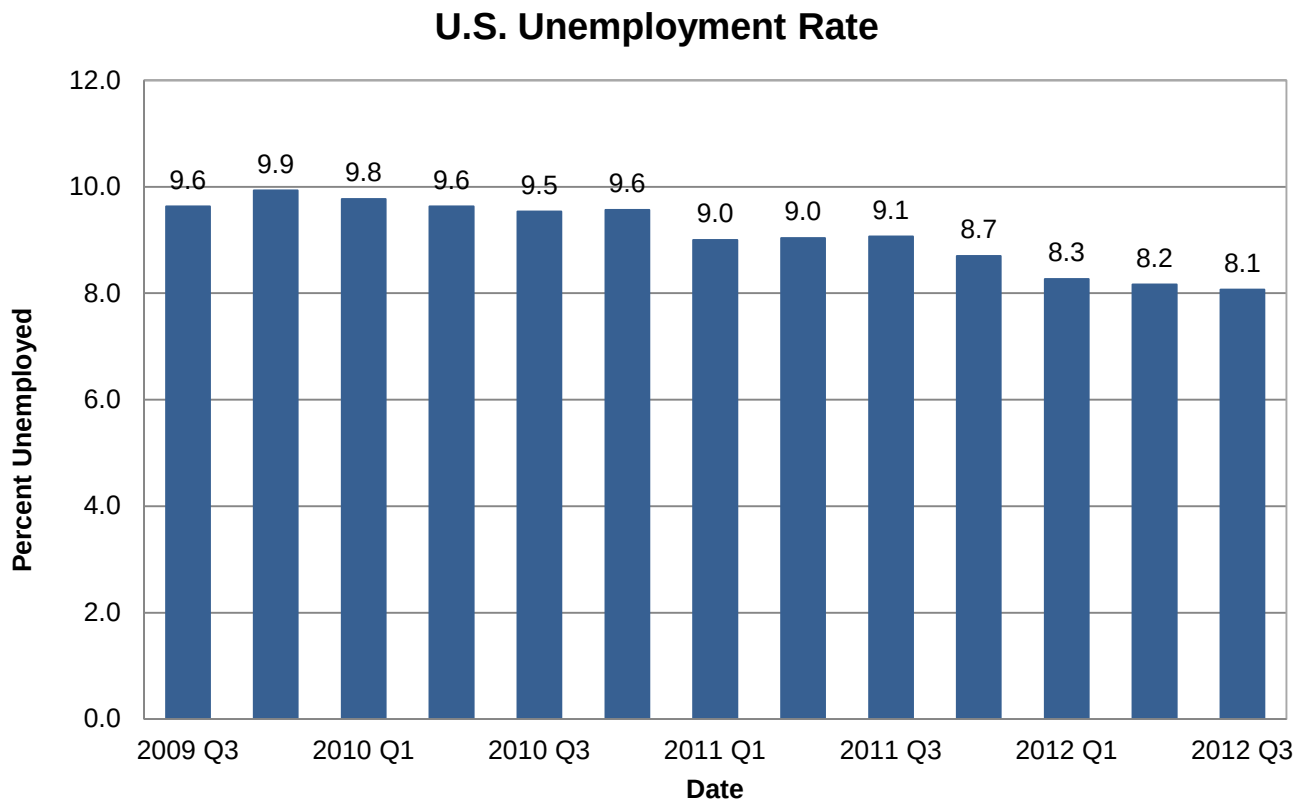
Total operations at FAA and contract towers decreased for the 5th consecutive year, falling 0.3 percent, as activity declines in the air taxi and military categories offset increases in air carrier and general aviation activity. Large hub facilities saw activity fall by 0.8 percent, while medium hubs posted a 3.8 percent decline. Activity at small and non-hub airports rose by 0.5 percent, the first increase in activity since FY 2007. Although the overall number of flights fell, FAA's workload did not. With increasing numbers of regional and business jets in the nation's skies, fleet mix changes, and carriers consolidating operations in their large hubs, we expect increased activity growth which has the potential to increase controller workload.

U.S. ECONOMIC ACTIVITY

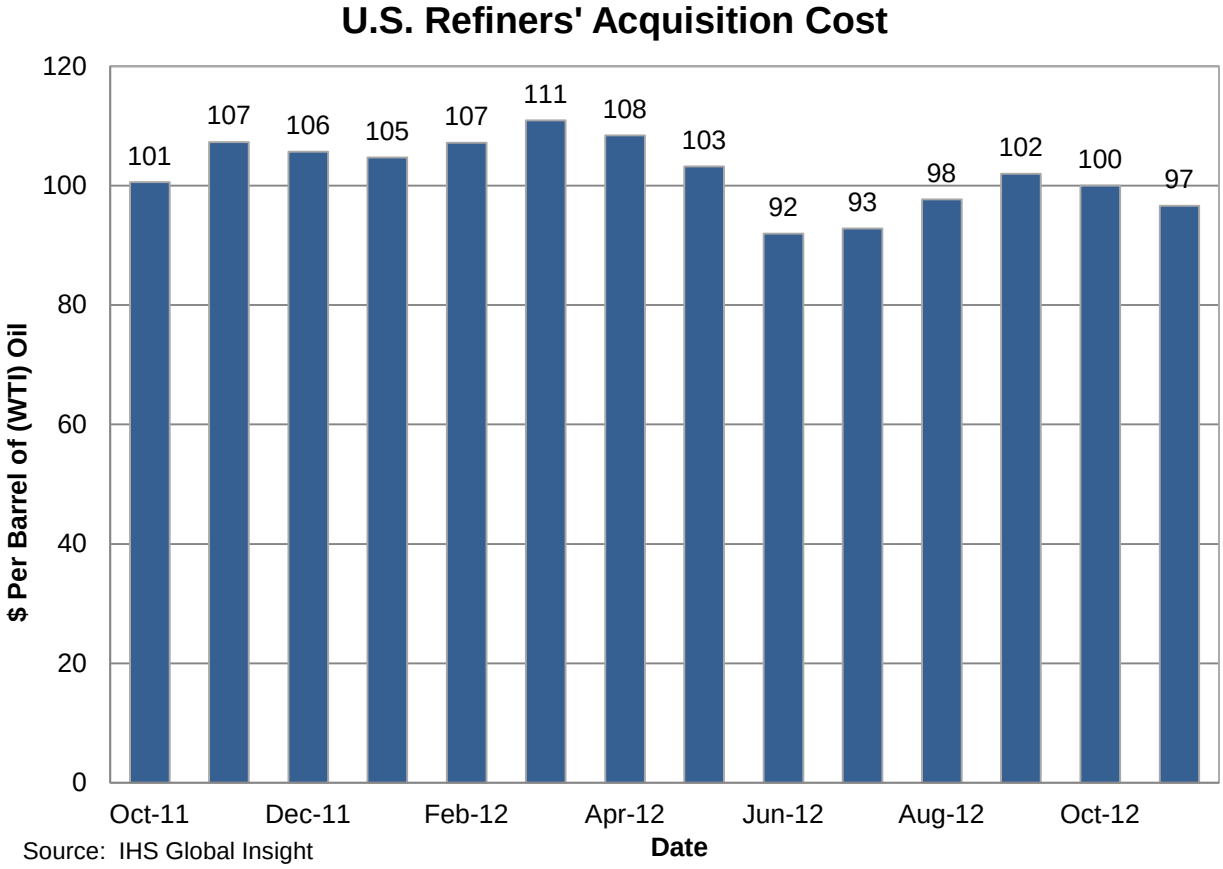
Following an unprecedented fiscal stimulus (i.e., American Recovery and Reinvestment Act or ARRA) of over $800 billion that took place in 2009, with over half of it being spent during 2010, the U.S. economy was left to its own fundamentals in 2011 and 2012. The economy grew at an average annual rate of 1.8 percent in fiscal year (FY) 2011 and 2.2 percent in FY 2012. Given the uncertainty that characterized 2012, the economic growth that occurred without a contraction or double-dip recession was reassuring. While the economy appeared to be picking up steam in the end of FY 2011, growth slowed in the first half of the year before softening further in the 4th quarter as uncertainty over the "fiscal cliff" coupled with the impacts from Hurricane Sandy reduced demand. Despite the slow growth there were some favorable signs in the data as the housing market appeared to be finally turning around and the labor market gained traction.



One of the most obvious impacts of the recession has been reflected in the nation's unemployment rate. When the recession began in December 2007 the unemployment rate was 5.0 percent, and reached its pinnacle during the fourth quarter of FY 2009 (9.9 percent). The unemployment rate has been gradually falling since that time, averaging 9.7 percent in FY 2010, 9.2 percent in FY 2011, and 8.3 percent in FY 2012. .



The price of oil, as measured by the U.S. Refiners' Acquisition Cost (for West Texas Intermediate, or WTI), was $102.71 in FY 2012, an increase of 6.9 percent from FY 2011. Since FY 2009, the refiner acquisition cost of oil has risen by 88 percent. The fuel price volatility that characterized 2008-2009 has diminished considerably but a rising trend appears to be settling in throughout the last two years.

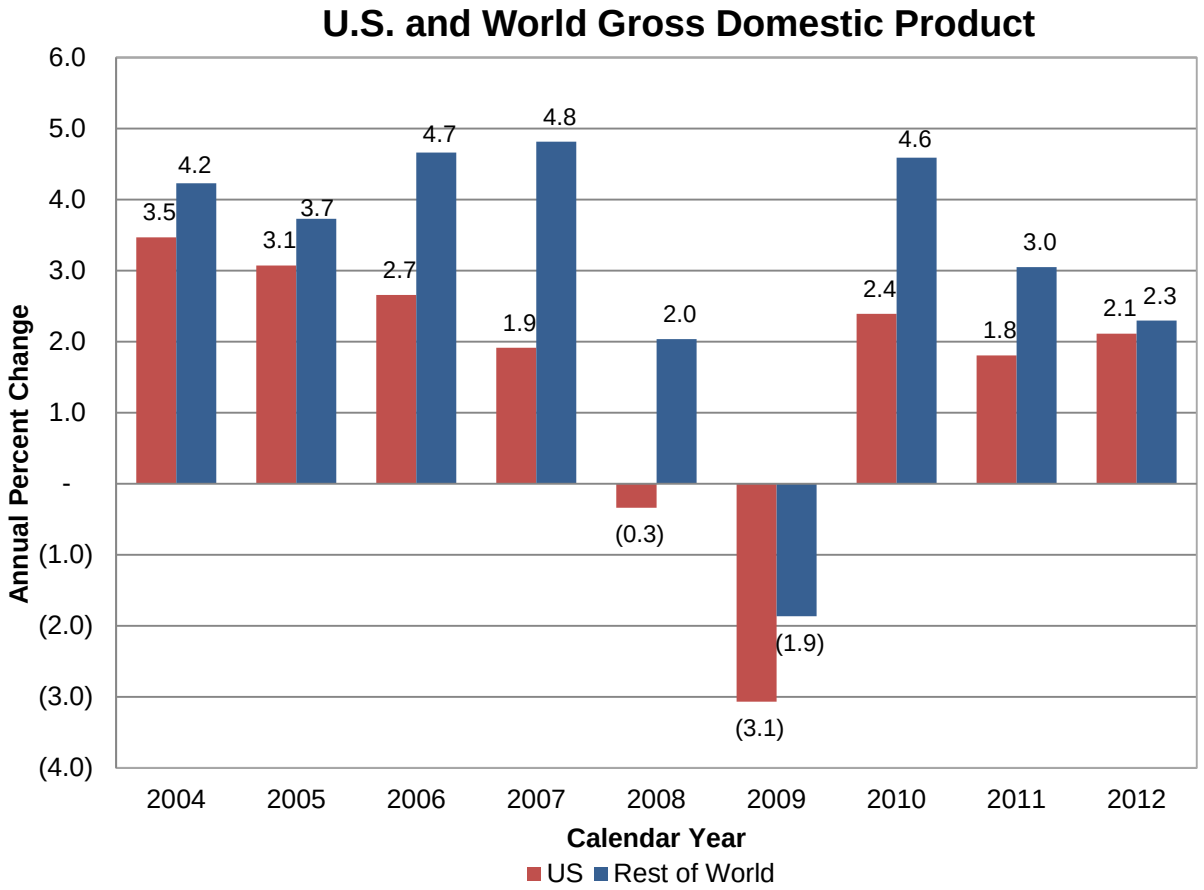


Source: IHS Global Insight

Finally, consumer prices continued to increase in 2012. Core inflation (excluding gas and food) was moderate (2.2 percent); while headline inflation was up 2.4 percent due to a 3.3 percent increase in food prices.

WORLD ECONOMIC ACTIVITY

Based on preliminary figures, according to IHS Global Insight, the U.S. and rest of the world economies grew 2.1 and 2.2 percent, respectively, in 2012. The advanced economies (U.S., Western Europe, Japan, Australia, New Zealand, and Canada) expanded 1.1 percent overall. All world regions saw their economies grow, including Japan even though it is still recovering from the devastation wrought by the earthquake and tsunami in 2011. China was still the world leader in economic growth followed by India and Mexico. Data coming out at the year's end suggest that the recovery in Europe is continuing to lag that of other world regions.



Source: IHS Global Insight, GDP Components Tables (Interim Forecast, Monthly), Release date 23

On a calendar year basis, gross domestic product (GDP) in Canada expanded at the same pace as the U.S. (up 2.1 percent, respectively) in 2012. The combined economies of the Asian and Far East nations grew 4.2 percent in 2011, down only .1 percent from a year earlier. This region includes the world's second largest economy, Japan (up 1.7 percent), and the world's most vibrant economy, China, which shows some signs of slowing down (10.5, 9.3, and 7.6 percent, respectively, for 2010, 2011, and 2012). The combined economies of Europe have stalled, with Western Europe (excluding Turkey) down 0.2 percent overall and the combined economies of Central Europe and the former Soviet Union up 2.5 percent. GDP in Latin America (including the Caribbean) expanded by 3.2 percent with Mexico up 4.0 percent. The largest economy in the region, Brazil, appears to be suffering through a slowdown in growth

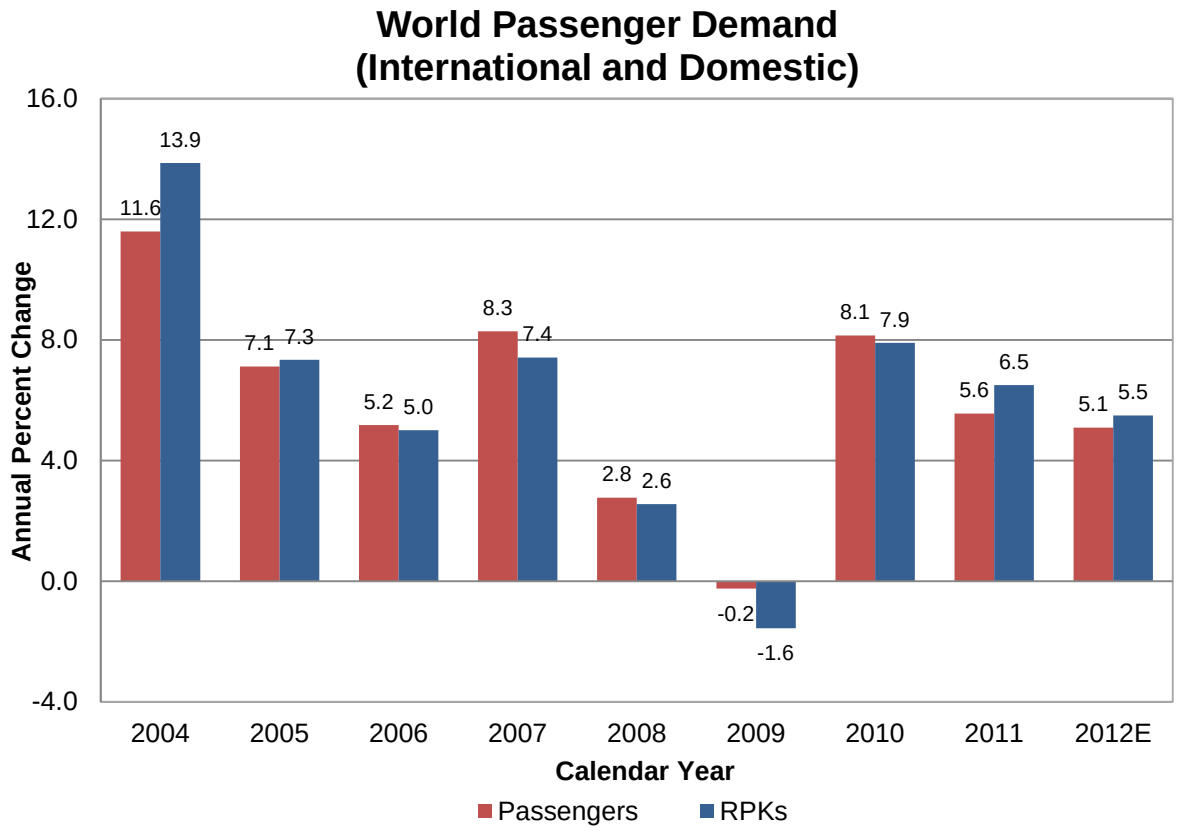
with GDP expanding only 1.5 percent in 2012, following gains of 7.5 and 2.7 percent, respectively, in 2010 and 2011.

COMMERCIAL AVIATION

Commercial aviation continued a slow recovery in 2012 despite rising jet fuel prices and a shaky global economy. The U.S. industry posted a net profit in 2012, with a similar outcome predicted for foreign carriers. After posting net profits of $8.8 billion in 2011, global industry net profits for calendar year 2012 are expected to be $6.7 billion.[3] All global regions except North America and Latin America are projected to see a drop in profits as fuel costs increased by $33 billion worldwide.

World Travel Demand

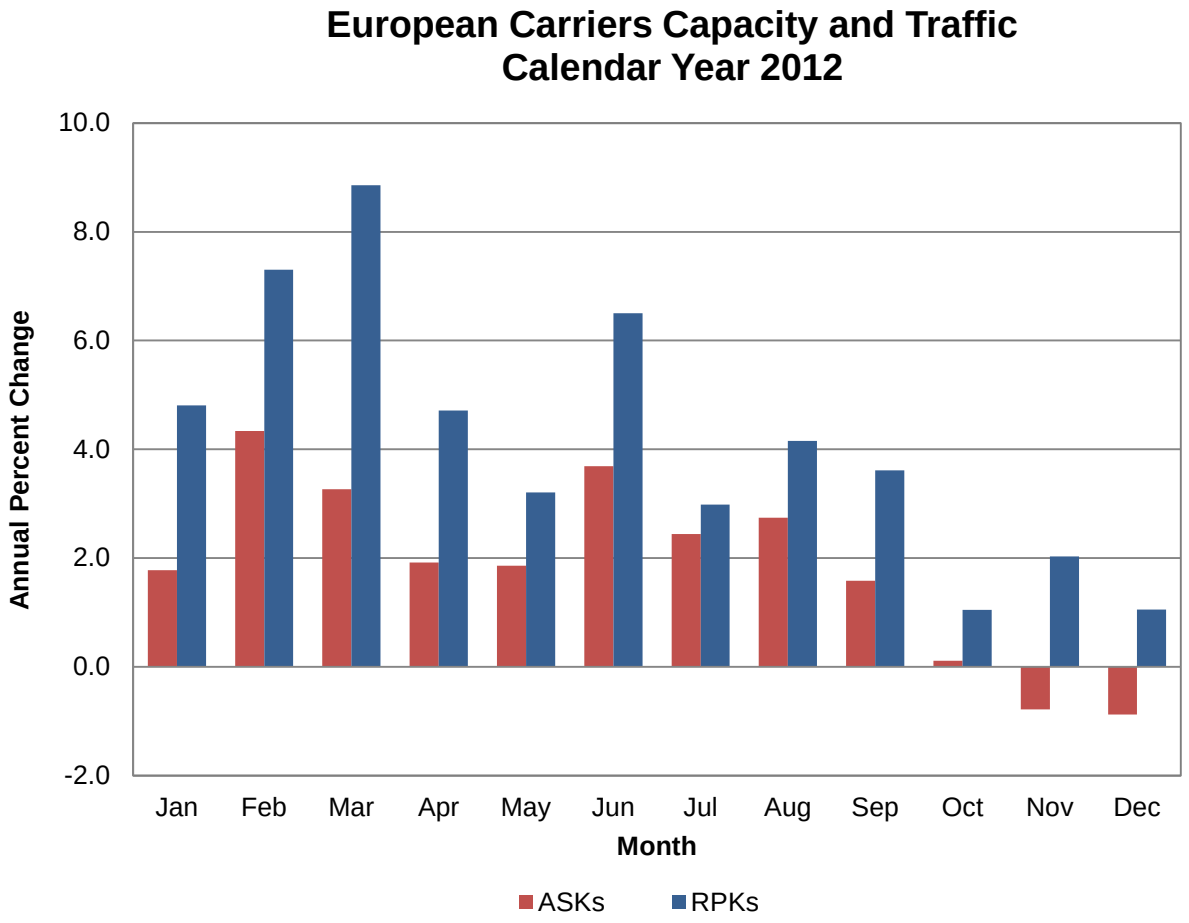
Based on data compiled by the International Civil Aviation Organization (ICAO), world air carriers are expected to post another moderate growth performance in CY 2012 as demand for air travel continues to recover from the depressed levels recorded during 2009. Although traffic results are not available for full year 2012 at the time of this printing, ICAO predicts that worldwide revenue passenger kilometers (RPKs) will increase 5.5 percent, a 0.9 percentage point decrease compared to last year's growth rate.[4]



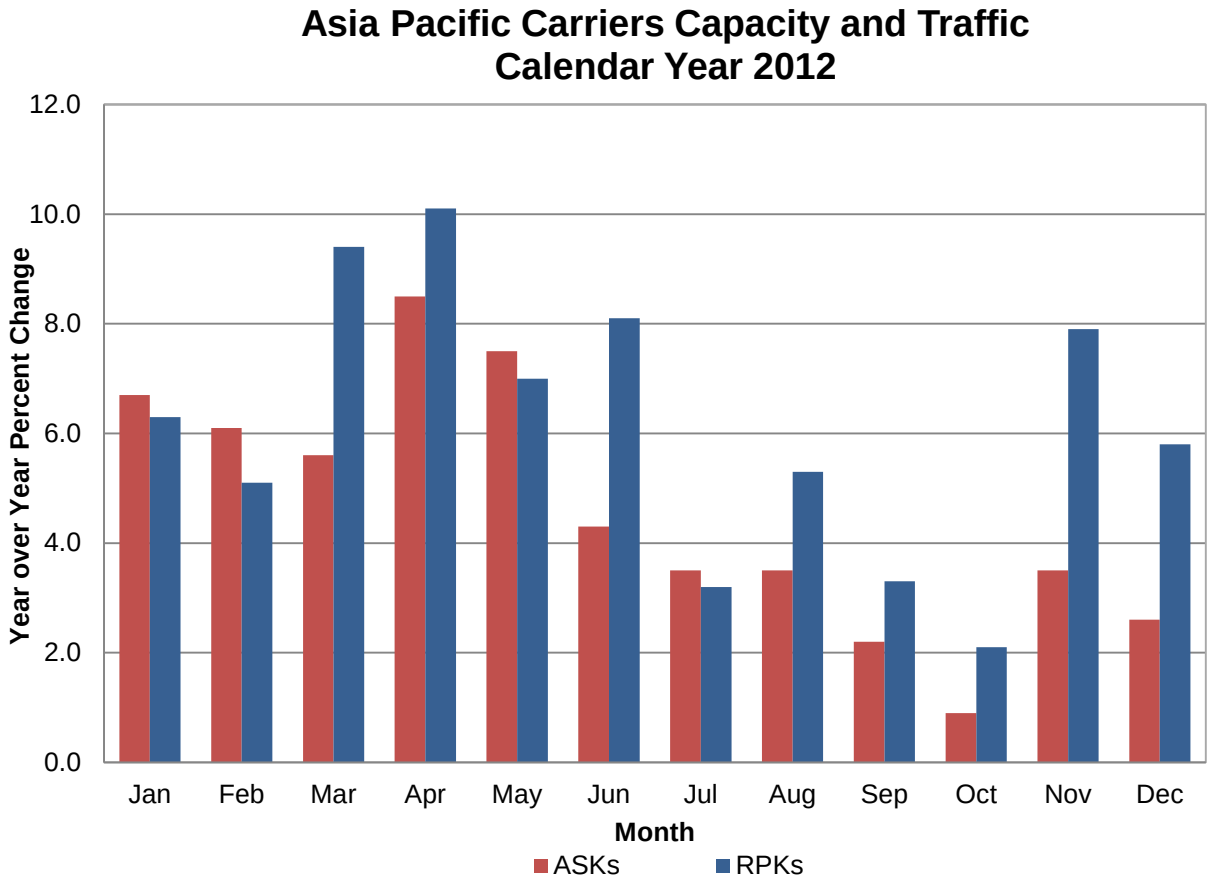
Source: RPKs (ICAO); Pax (2009-11 ICAO, 2012 IATA)

[3] IATA Financial Forecast, December 2012.
[4] ICAO press release dated December 18, 2012, COM 30/12.

Statistics from IATA, available for calendar year 2012 show passengers are up 5.1 percent over calendar year 2011. Data for the same period shows capacity, as measured by available seat kilometers (ASKs), to be up 4.0 percent and RPKs to be up 5.5 percent.

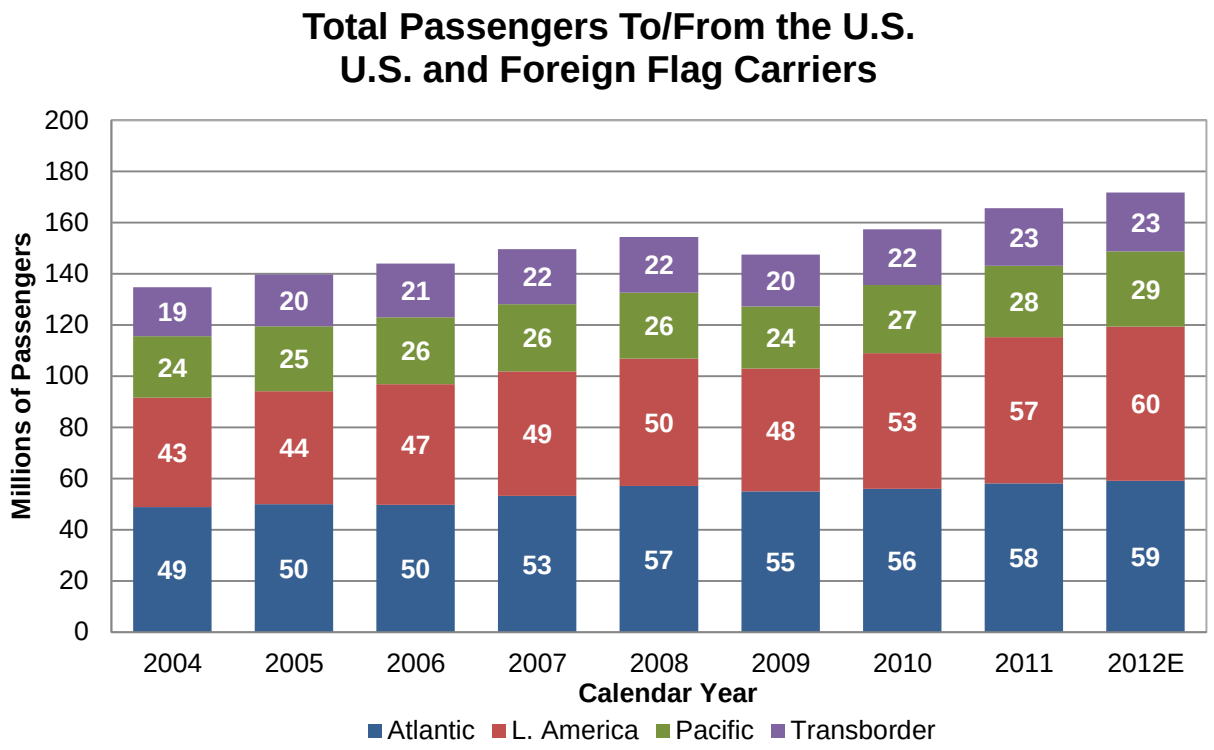


The Association of Asia Pacific Airlines (AAPA) reported an increase of 5.8 percent in international RPKs and a 3.9 percent increase in international ASKs; international passengers were up 7.0 percent during the same period.[5]



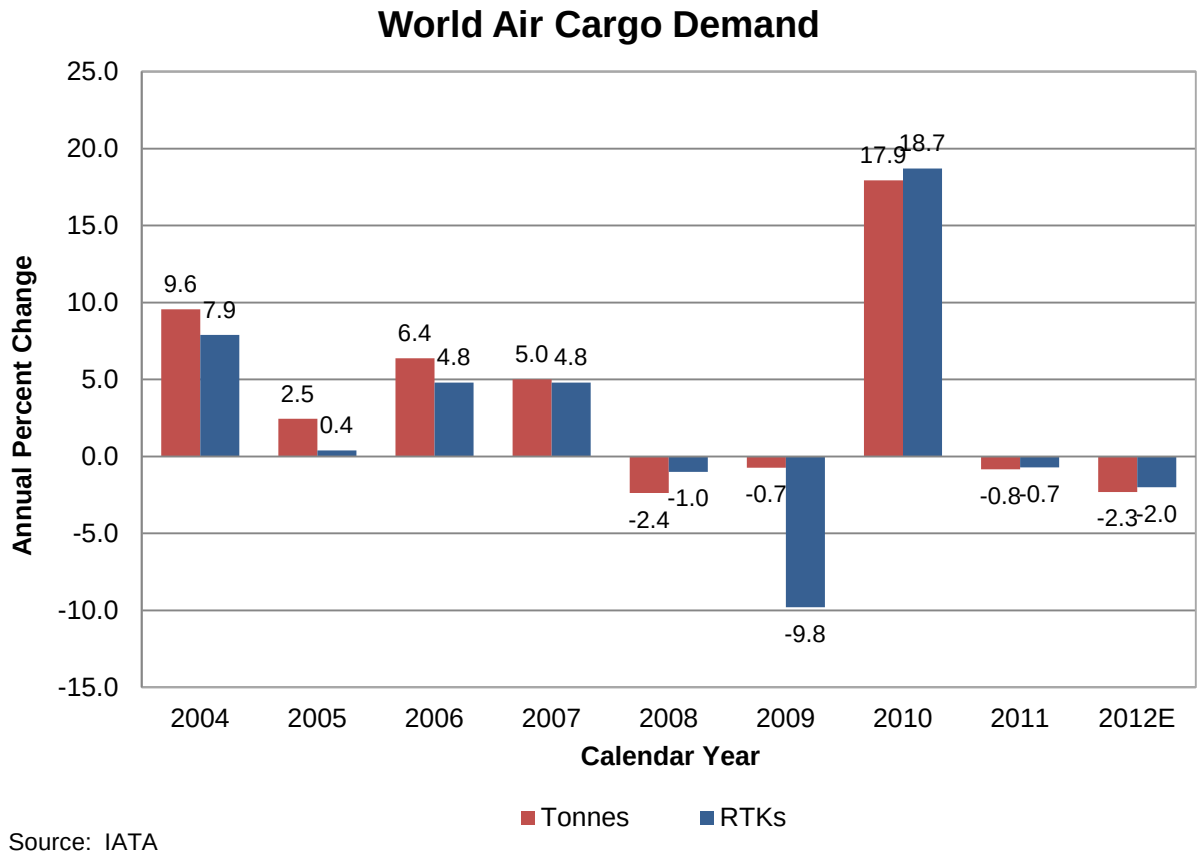
[5] Association of Asia Pacific Airlines, "Asia Pacific Full Year 2012 Traffic Results", Press Release dated 30 January 2013, Issue 2013: 03.

In CY 2012, U.S. and foreign flag carriers transported an estimated 171.8 million passengers between the United States and the rest of the world, a 3.7 percent increase from 2011. Year-over-year growth occurred in all markets (up 1.6, 5.6, 5.2, and 2.7 percent, respectively, for Atlantic, Latin America, Pacific, and Transborder). Passenger levels in the Atlantic market have stagnated due to repercussions from the debt crisis in Europe, the worldwide economic slowdown, and congressional impasse over the U.S. budget.



Source: US Customs & Border Protection data processed and released by Department of Commerce; data also received from Transport Canada

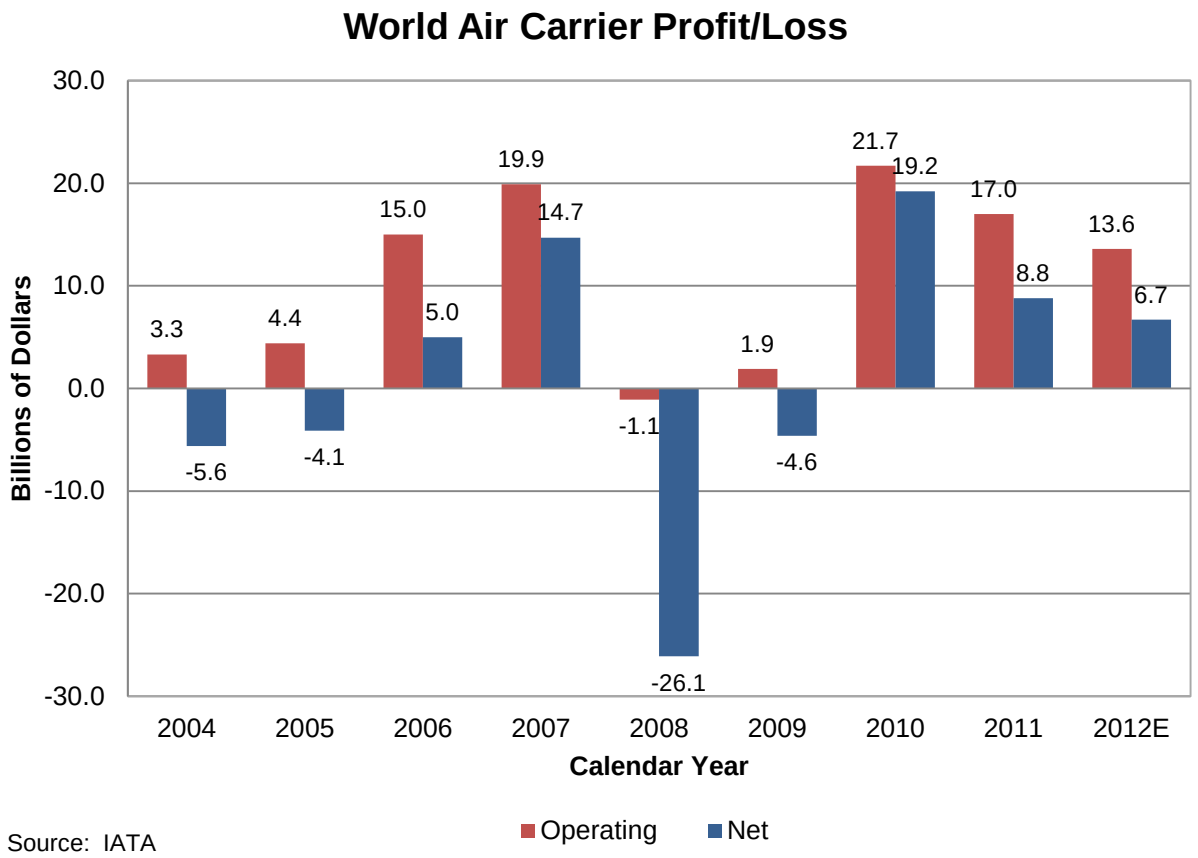
Worldwide air cargo demand fell for the 2nd consecutive year in 2012. According to IATA, worldwide freight ton kilometers were estimated to decline 2.0 percent in calendar year 2012 compared to 2011. Freight ton kilometers (FTKs) of AEA member carriers fell 3.4 percent in calendar year 2012 as did the FTKs of AAPA member carriers.



Source: IATA

The International Air Transport Association (IATA) reports that world air carriers (including U.S. airlines) are expected to register an operating profit of $13.6 billion for 2012. IATA estimates global airline industry net profits to be $6.7 billion for the same period with all regions expected to be in the black. Based on financial data compiled by ICAO and IATA, between 2004 and 2012 world airlines produced cumulative operating profits of $95.7 billion (with eight years out of nine posting gains) and net profits of $14.0 billion (with five years out of nine posting gains).[6]

[6] IATA Financial Forecast, December 2012.



Source: IATA

U.S. Travel Demand

By year end of FY 2012, the U.S. commercial aviation industry consisted of 15 scheduled mainline air carriers that used large passenger jets (over 90 seats) and 70 regional carriers that used smaller piston, turboprop, and regional jet aircraft (up to 90 seats) to provide connecting passengers to the larger carriers. Mainline and regional carriers offer domestic and international passenger service between the U.S. and foreign destinations, although regional carrier international service is confined to the border markets in Canada, Mexico, and the Caribbean. Thirty-three all-cargo carriers were providing domestic and/or international air cargo service at the end of 2012.

Shaping today's commercial air carrier industry are three distinct trends: (1) continuing industry consolidation and restructuring; (2) continued capacity discipline in response to external shocks, and (3) the proliferation of ancillary revenues.

The restructuring of the US airline industry that began in the aftermath of the terror attacks of September 11, 2011 and consolidation continued in 2012. Operations at AirTran Airways were folded into Southwest Airlines, while operations at Continental Airlines were folded into United Airlines. For the regional carriers, the operations at Mesaba, were folded into Pinnacle, and Atlantic Southeast was folded into ExpressJet, respectively. In early FY 2012 American Airlines declared bankruptcy and began the process of reducing flights and aircraft to bolster profitability. During the year, US Airways was actively pursuing a merger with American, furthering hopes of

additional consolidation[7]. Consequently, when compared to 2007, 7.7 percent fewer domestic ASMs were flown and 5.3 percent less passengers were carried domestically in 2012. This has had clear implications on the size of the aircraft being used and the load factors, topics which will be discussed later in this document.

One of the most striking outcomes of industry restructuring has been the unprecedented period of capacity discipline, especially in domestic markets. Between 1978 and 2000, ASMs in domestic markets increased at an average annual rate of 4 percent a year, recording only two years of decline. Even though domestic ASMs shrank by 6.9 percent in FY 2002, following the events of September 11, 2001, growth resumed and by 2007, domestic ASMs were 3.7 percent above the FY 2000 level. However, since 2007, ASMs in the U.S. domestic market have shrunk by 8.1 percent, as the industry responded first to the sharp rise in oil prices (up 155% between 2004 and 2008) and then the global recession that followed (2009 to the present). The 7.7 percent reduction in domestic capacity since 2007 has not been shared equally between the mainline carriers and their regional counterparts. To better match demand to capacity, the mainline carriers contracted out "thin" routes to their regional counterparts because they could provide lift at a lower cost, or simply removed the capacity altogether. In 2012, the mainline carrier group provided 9.2 percent less capacity than it did in 2007 (and carried 7.3 percent fewer passengers). Capacity flown by the regional group has increased 2.4 percent over the same five year period (with passengers carried up 1.8 percent).

The most recent trend to take hold is that of ancillary revenues. Carriers generate ancillary revenues by selling products and services beyond that of an airplane ticket to customers. This includes the un-bundling of services previously included in the ticket price. As noted earlier, U.S. passenger carriers posted net profits for the third consecutive year in 2012 with ancillary revenues a contributing factor to the favorable outcome.

Commercial Air Carriers – Passenger

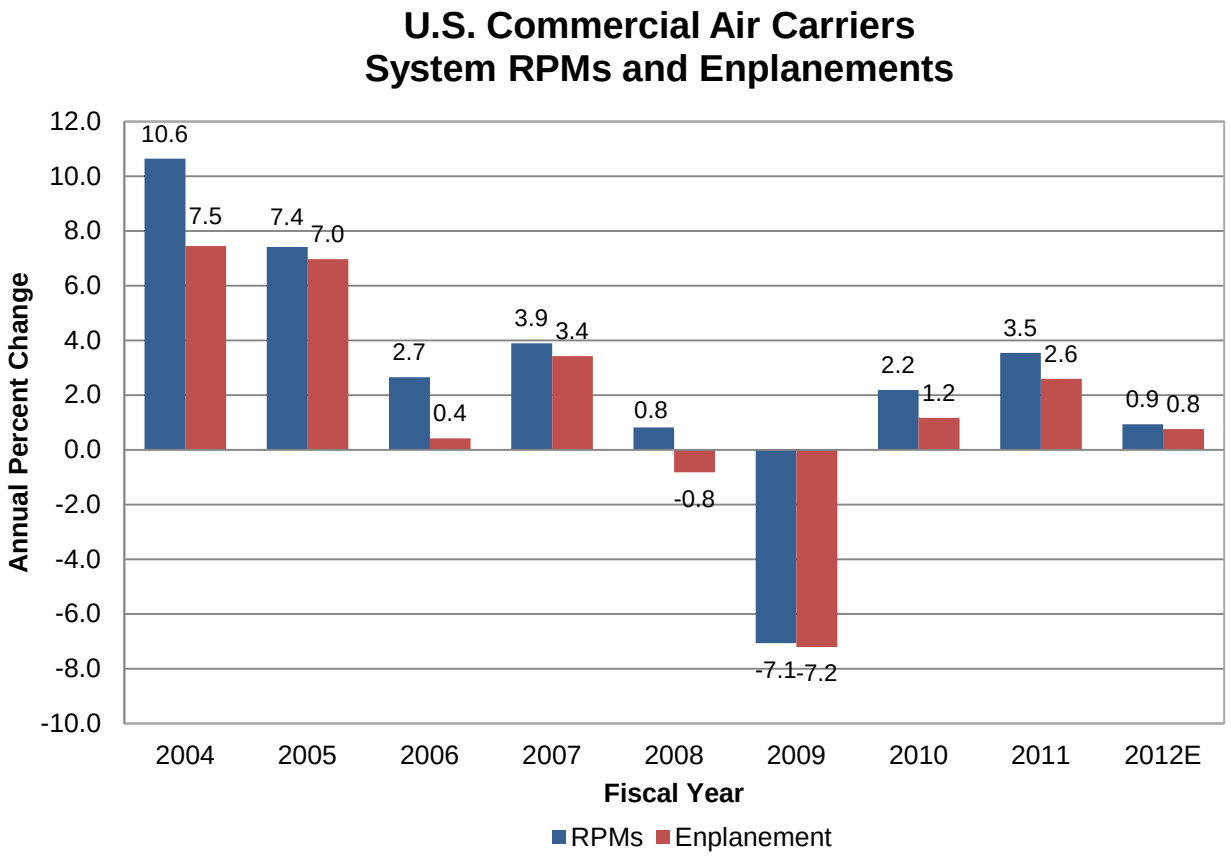
Coming off of a 2011 highlighted by continued global economic uncertainty with debt restructuring issues plaguing the financial recovery, U.S. commercial air carriers' traffic and capacity results in 2012 showed little or no growth. System (the sum of domestic plus international) capacity increased 0.1 percent to 995.2 billion ASMs while RPMs increased 0.9 percent to 822.3 billion. During the same period system-wide passengers increased 0.8 percent to 736.7 million; U.S. mainline carrier passenger growth was 1.3 percent while regional carrier passengers declined by 1.2 percent to 162.1 million. In the domestic market, mainline passengers saw an increase for the second consecutive year, up 1.3 percent. Mainline passengers in international markets posted a third year of growth, although at a slower rate than in 2011 (up 1.5 percent).

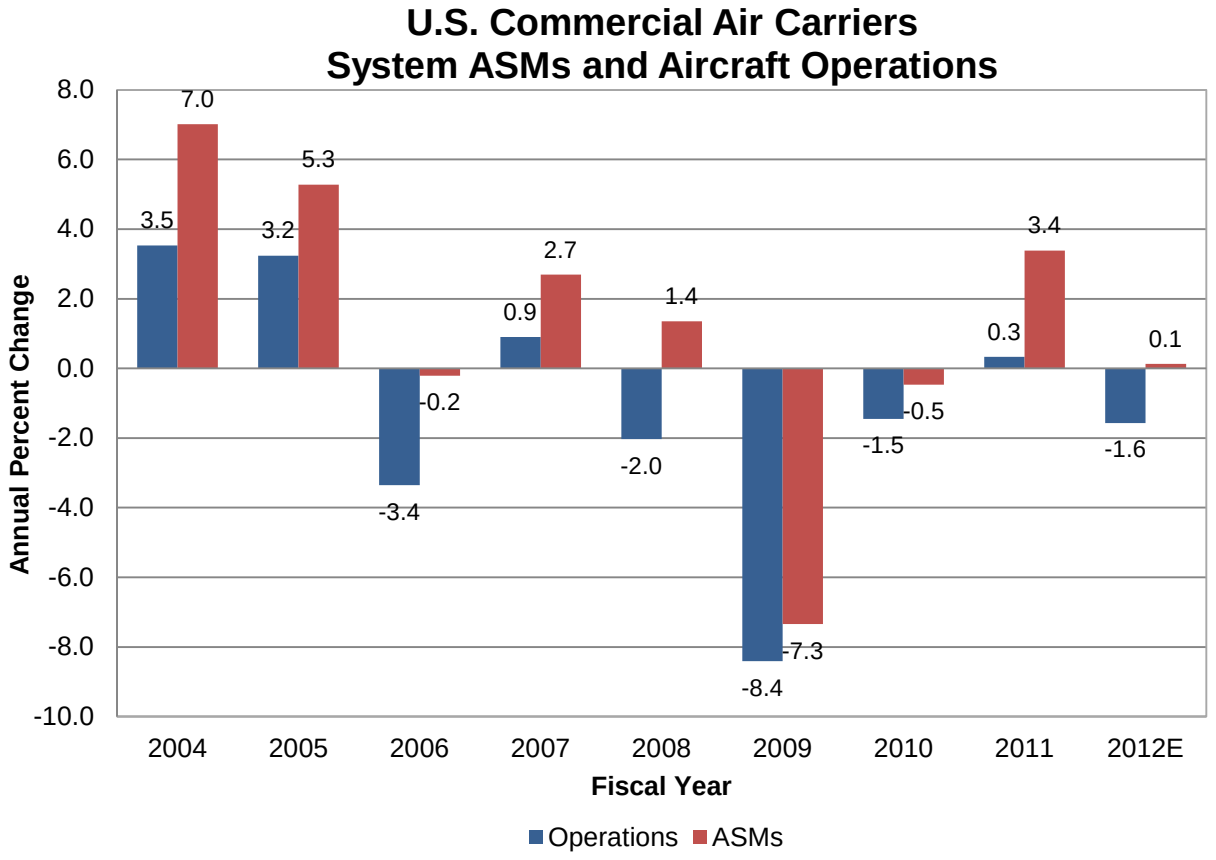
Even though the recession was officially over in June 2009,[8] carriers continued to face economic uncertainty in 2012 as corporate travel budgets remained strained and high unemployment persisted accompanied by uncertainty surrounding the "fiscal cliff" and the

[7] On February 14, 2013, US Airways and American announced a merger between the two carriers.
[8] According to the National Bureau of Economic Research.

payroll tax break. In such an uncertain environment, the industry held capacity flat (up 0.1 percent), after a 3.4 percent increase in 2011. Given the slight increase in seats available to the travelling public, carriers were still able to raise airfares despite the slow growth in demand. Combining this pricing power with ancillary revenues, U.S. carriers finished 2012 with a net profit.

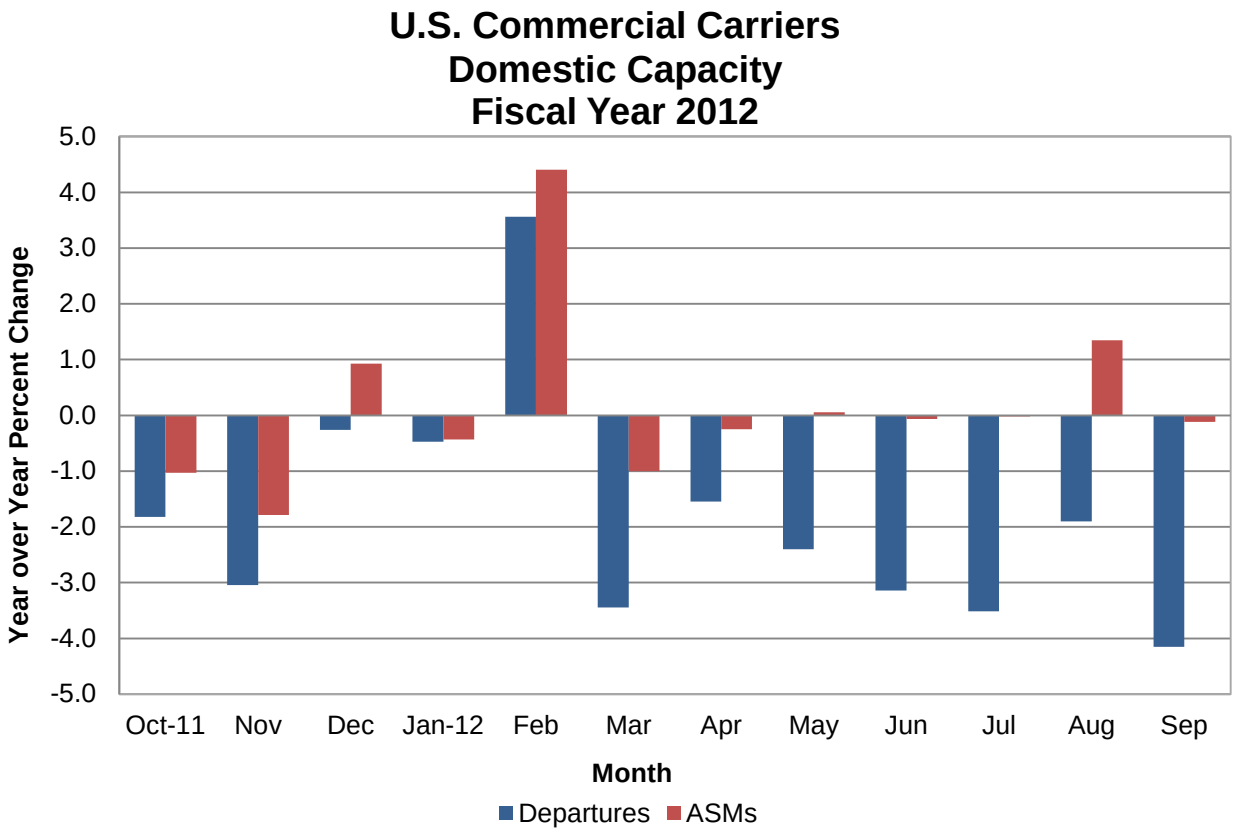
System load factor and trip length climbed in 2012, even as seats per aircraft mile increased. The average load factor reached a record-breaking 82.6 points, up 0.7 points from 2011. Passenger trip length increased by 2.0 miles to 1,116.2 miles. This marks the tenth consecutive annual increase in trip length. Seats per aircraft mile increased to 141.9 seats (up 0.8 seats per aircraft mile).


U.S. Commercial Air Carriers
System RPMs and Enplanements
Annual Percent Change
12.0
10.0
8.0
6.0
4.0
2.0
0.0
-2.0
-4.0
-6.0
-8.0
-10.0
10.6
7.5
7.4
7.0
2.7
0.4
3.9
3.4
0.8
-0.8
-7.1
-7.2
2.2
1.2
3.5
2.6
0.9
0.8
2004
2005
2006
2007
2008
2009
2010
2011
2012E
Fiscal Year
RPMs
Enplanement


U.S. Commercial Air Carriers
System ASMs and Aircraft Operations
Annual Percent Change
8.0
6.0
4.0
2.0
0.0
-2.0
-4.0
-6.0
-8.0
-10.0
3.5
7.0
3.2
5.3
-3.4
-0.2
0.9
2.7
-2.0
1.4
-8.4
-7.3
-1.5
-0.5
0.3
3.4
-1.6
0.1
2004
2005
2006
2007
2008
2009
2010
2011
2012E
Fiscal Year
Operations
ASMs

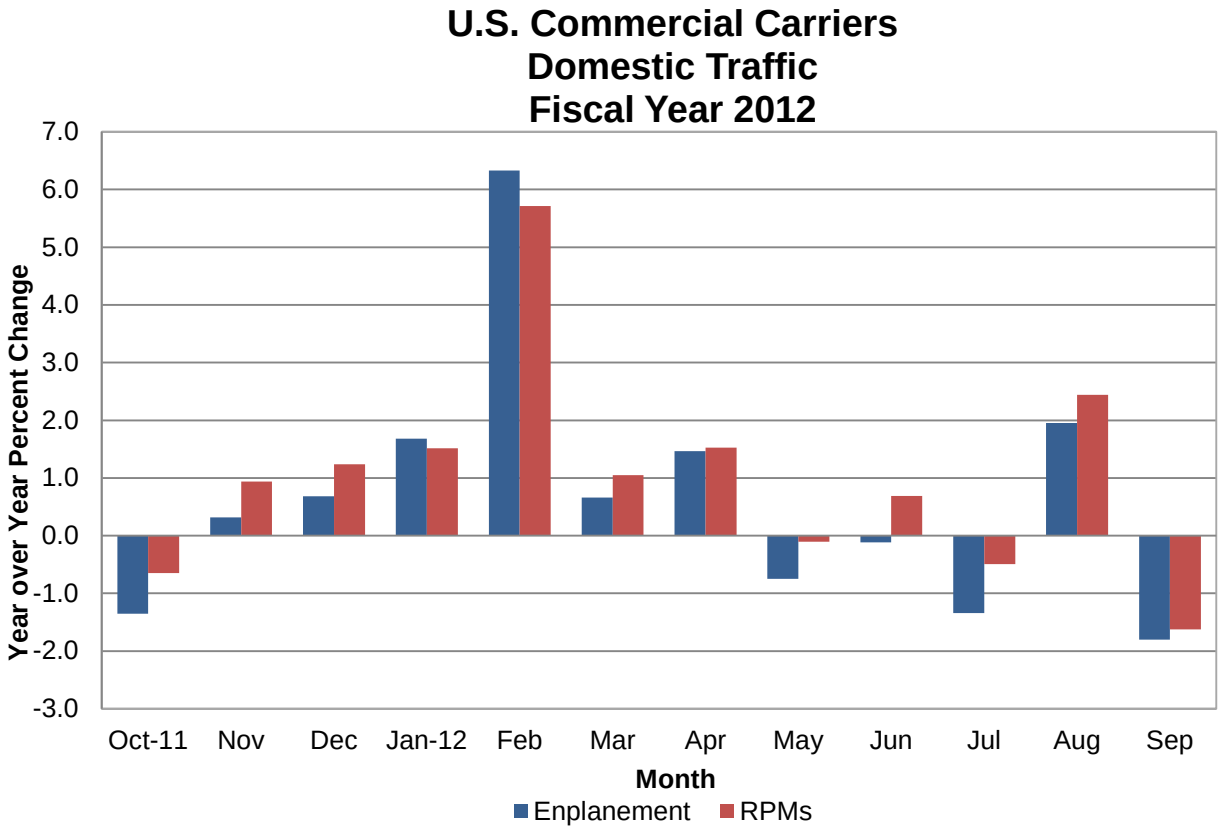
Domestic Passenger Markets

Domestic capacity[9] increased just 0.1 percent in 2012 after increasing by 2.0 percent in 2011. Departures were down 2.0 percent for the year after remaining flat in FY 2011. Capacity growth hovered around zero throughout the year. Mainline carrier capacity was up 0.7 percent for the year, while regional carrier capacity fell 3.4 percent. At the end of FY 2012, domestic ASMs were still 7.7 percent below pre-recession levels (2007) with departures down 14.3 percent.



Domestic passenger enplanements grew at a faster rate than ASMs in 2012 up 0.6 percent. In the first half of the year, domestic passengers were up 1.2 percent but reversed course in the second half of the year as passengers fell 0.1 percent. On a year-over-year basis, mainline carrier enplanements were up 1.3 percent for the year while regional carrier enplanements fell 1.7 percent, posting the second decline in four years for this segment of the industry.

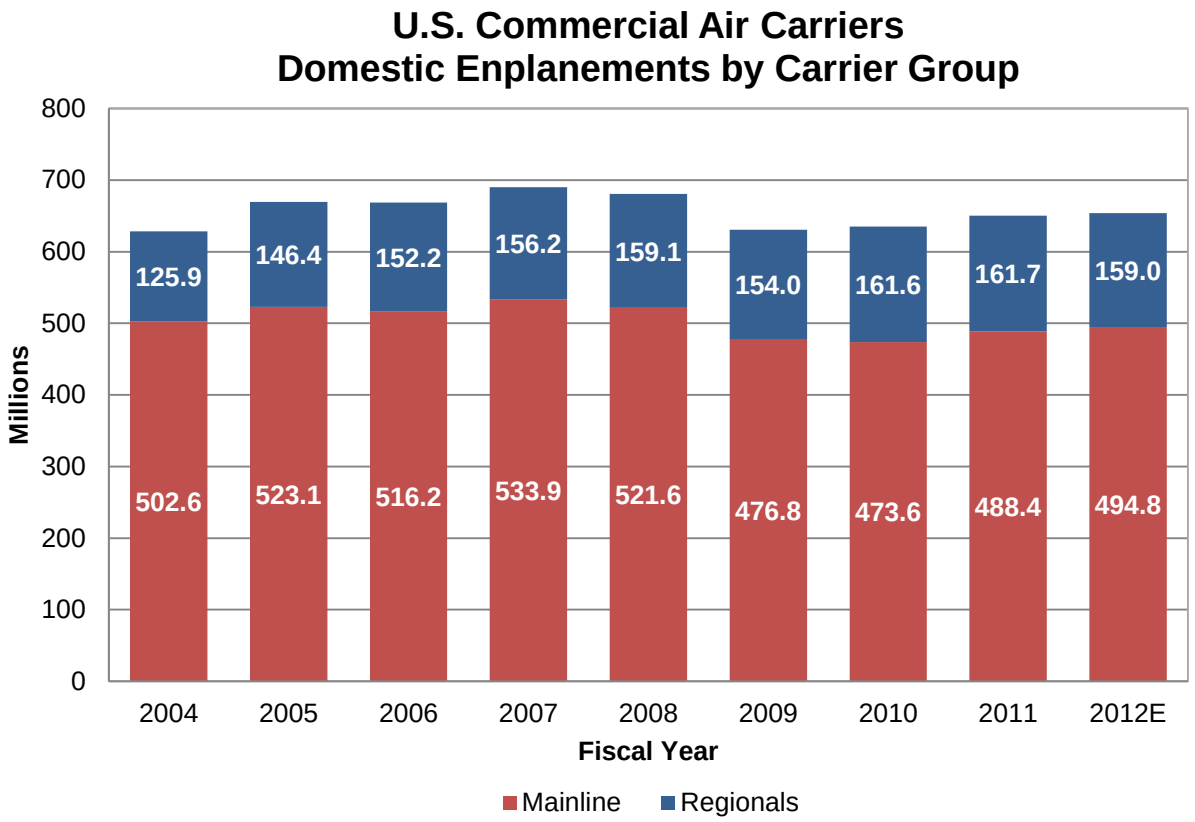
[9] The 50 states, Puerto Rico, and the U.S. Virgin Islands.



Similar to passenger counts, domestic RPMs grew faster than ASMs with domestic RPMs up 1.0 percent in FY 2012. Growth slowed during the year with the first quarter up 0.5 percent, the second quarter up 2.6 percent, and the last half of the year up 0.5 percent. For the year, mainline carrier RPM growth was 1.4 percent, while regional carrier RPMs declined 1.7 percent.

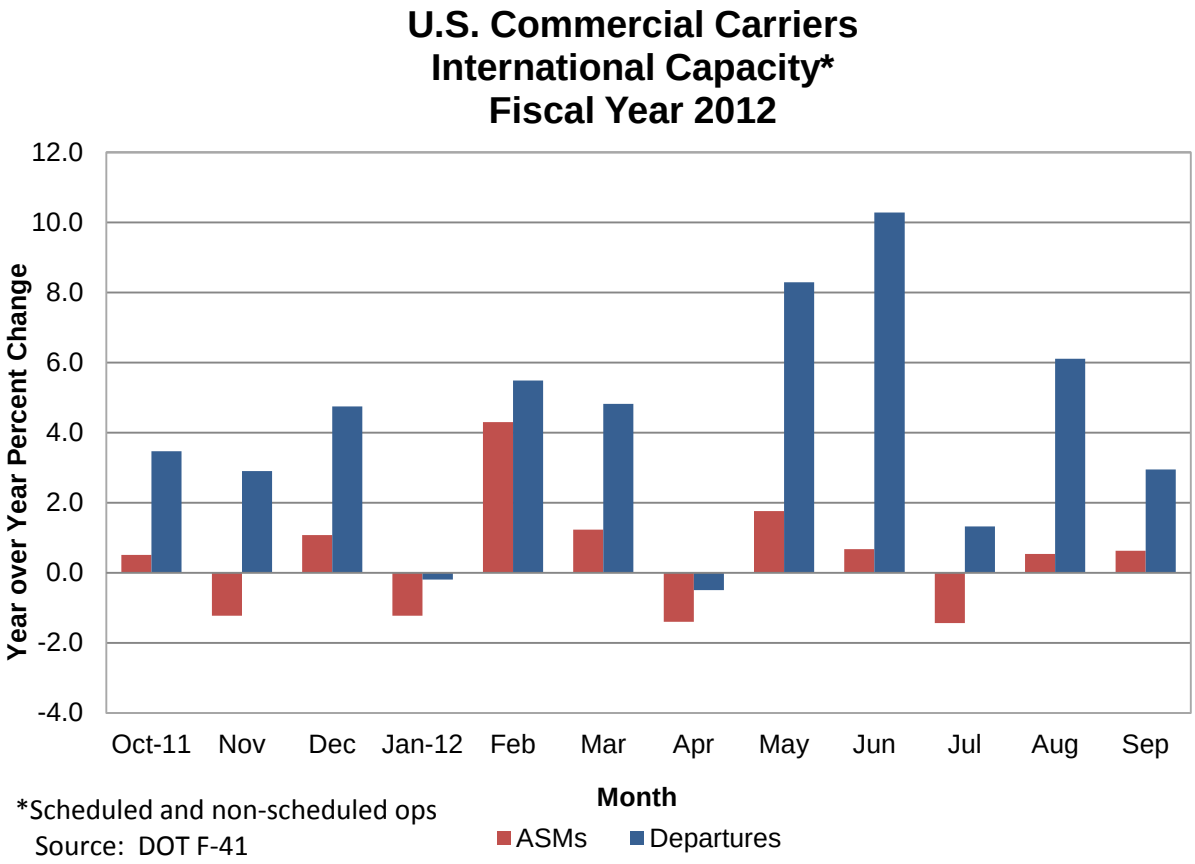
Domestic carrier load factor increased 0.7 points to 83.2 percent, with both the mainline and regional carriers groups posting record high loads. Mainline carrier load factor increased 0.5 points from FY 2011 to 84.1 percent, while regional carrier load factor increased 1.4 points to 77.6 percent.

Since FY 2007, total domestic capacity has decreased by 7.7 percent. Mainline carriers have reduced their domestic capacity by 9.2 percent with cutbacks by network carriers more than offsetting the growth of low-cost carriers. Making up some of the shortfall from network carrier capacity cuts during this time are the regional carriers. This segment of the industry has expanded capacity (up 2.4 percent from 2007). During the same period, mainline carrier RPMs have decreased 5.0 percent, while enplanements have fallen 7.3 percent. In comparison, regional carrier RPMs and enplanements have increased 5.3 percent and 1.8 percent, respectively. As a result, mainline carrier domestic capacity share has fallen from 87.6 percent in 2007 to 85.7 percent in 2012, with the share of domestic RPMs flown by mainline carriers dropping from 88.3 percent to 86.8 percent during the same period. In 2012 the regional carriers' domestic passenger share was 24.3 percent, up from 22.6 percent in 2007.

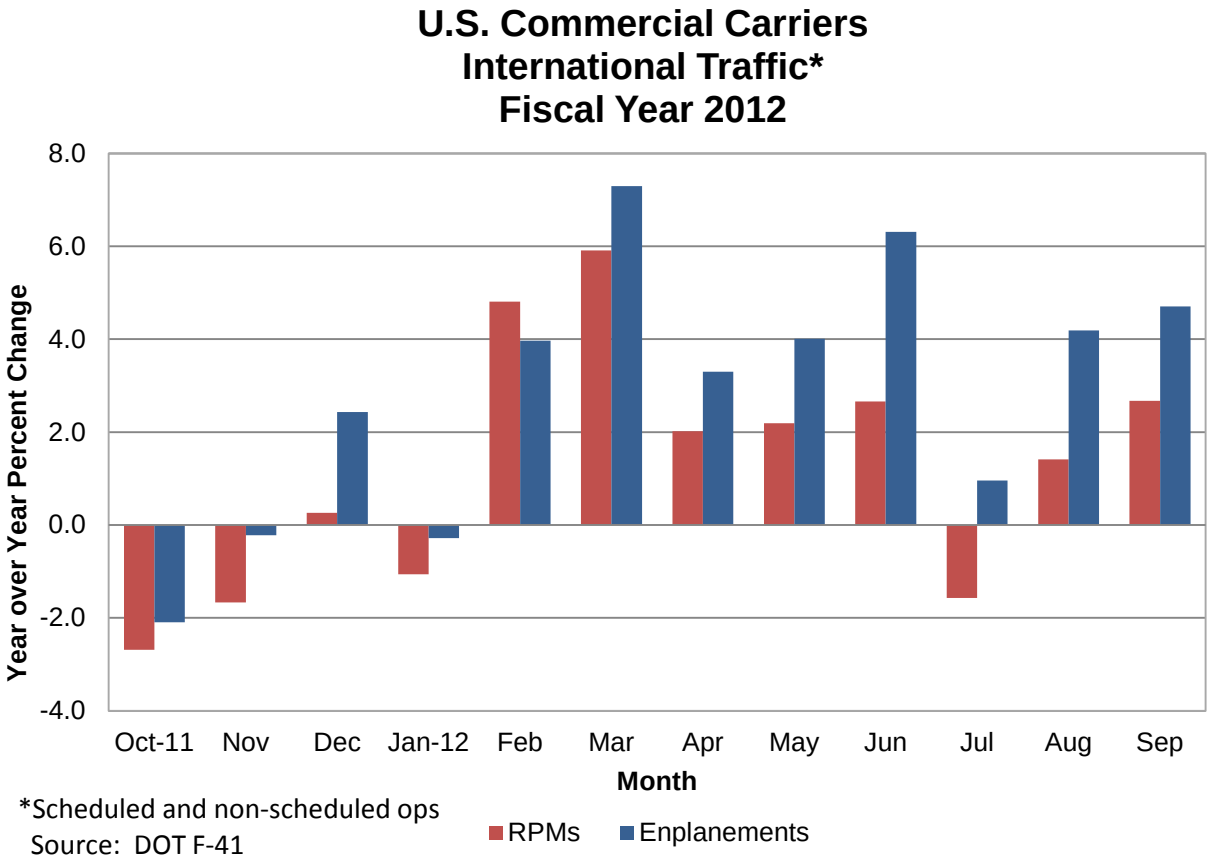

U.S. Commercial Air Carriers
Domestic Enplanements by Carrier Group
Millions
800
700
600
500
400
300
200
100
0
125.9
146.4
152.2
156.2
159.1
154.0
161.6
161.7
159.0
502.6
523.1
516.2
533.9
521.6
476.8
473.6
488.4
494.8
2004
2005
2006
2007
2008
2009
2010
2011
2012E
Fiscal Year
Mainline
Regionals

International Passenger Markets

U.S. carrier ASMs were up 0.1 percent and departures were up 4.8 percent in 2012. ASMs increased in the Latin, and Pacific markets, up 2.7 and 3.9 percent, respectively; but decreased 4.4 percent in the Atlantic market.



U.S. carrier international RPMs were up a mere 0.6 percent and passenger enplanements were up 2.9 percent in 2012. The Atlantic market posted a decrease, with RPMs decreasing 3.4 percent and enplanements down 2.2 percent. RPMs and enplanements increased 3.9 and 3.1 percent, respectively, in the Latin American market, while RPMs and enplanements increased 4.2 and 3.8 percent, respectively, in the Pacific market.



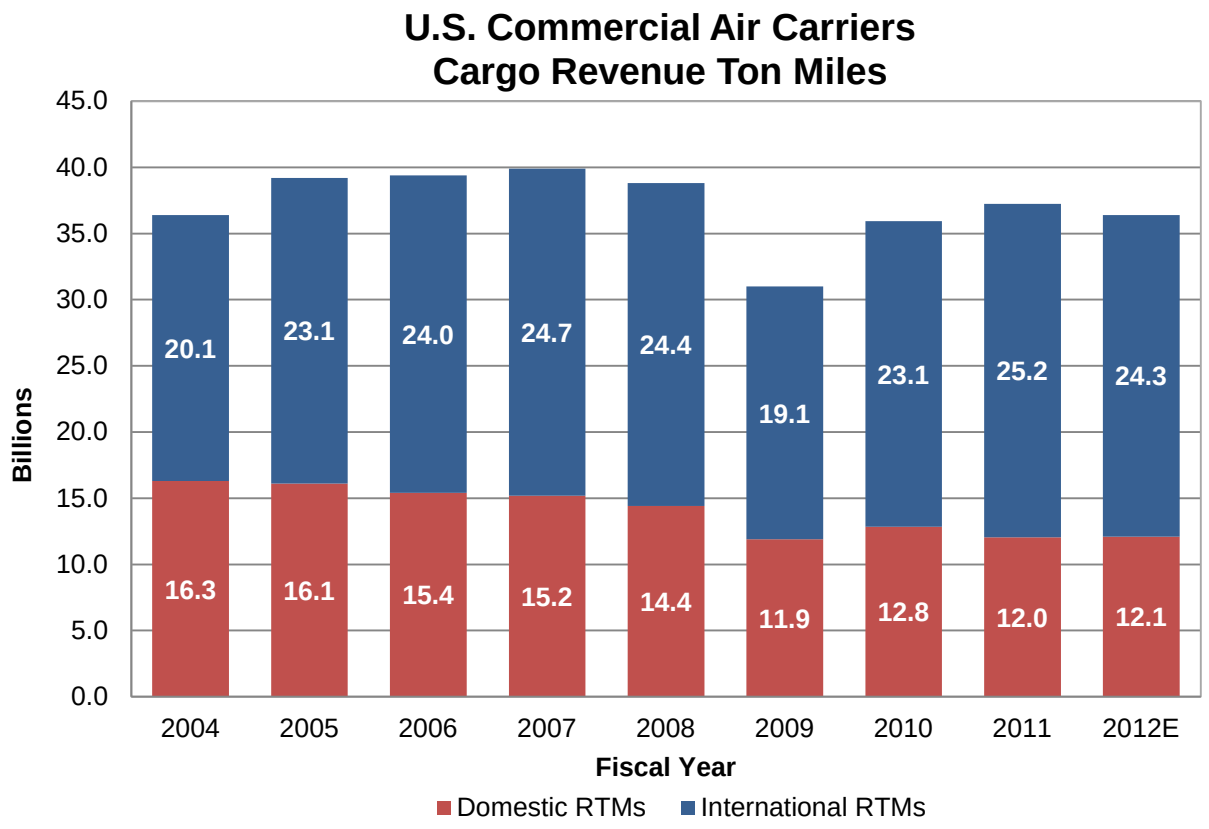
The international load factor increased 0.7 percentage points overall in 2012 to 81.5 percent. Load factor increased marginally in all markets: in the Pacific market load factor was up 0.2 points to 82.0 percent; in the North Atlantic market load factor was up 0.8 points to 81.6 percent; and in the Latin America market the load factor increased by 0.9 points to 80.9 percent.

In 2012, 51 percent of the passengers flying abroad on U.S. flag carriers traveled to the Latin America market. The remaining 49 percent of international passengers was split between the Atlantic market (31 percent) and the Pacific market (18 percent).

Commercial Air Carriers – Cargo

Air cargo traffic contains both domestic and international 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. Cargo carriers face price competition from alternative shipping modes such as trucks, container ships, and rail cars.

U.S. air carriers flew 36.4 billion revenue ton miles (RTMs) in 2012, down 2.4 percent from 2011. Domestic cargo revenue ton miles (RTMs) remained virtually unchanged (a 0.1 percent increase) at 12.0 billion. However, international RTMs declined by 3.6 percent to 24.3 billion.



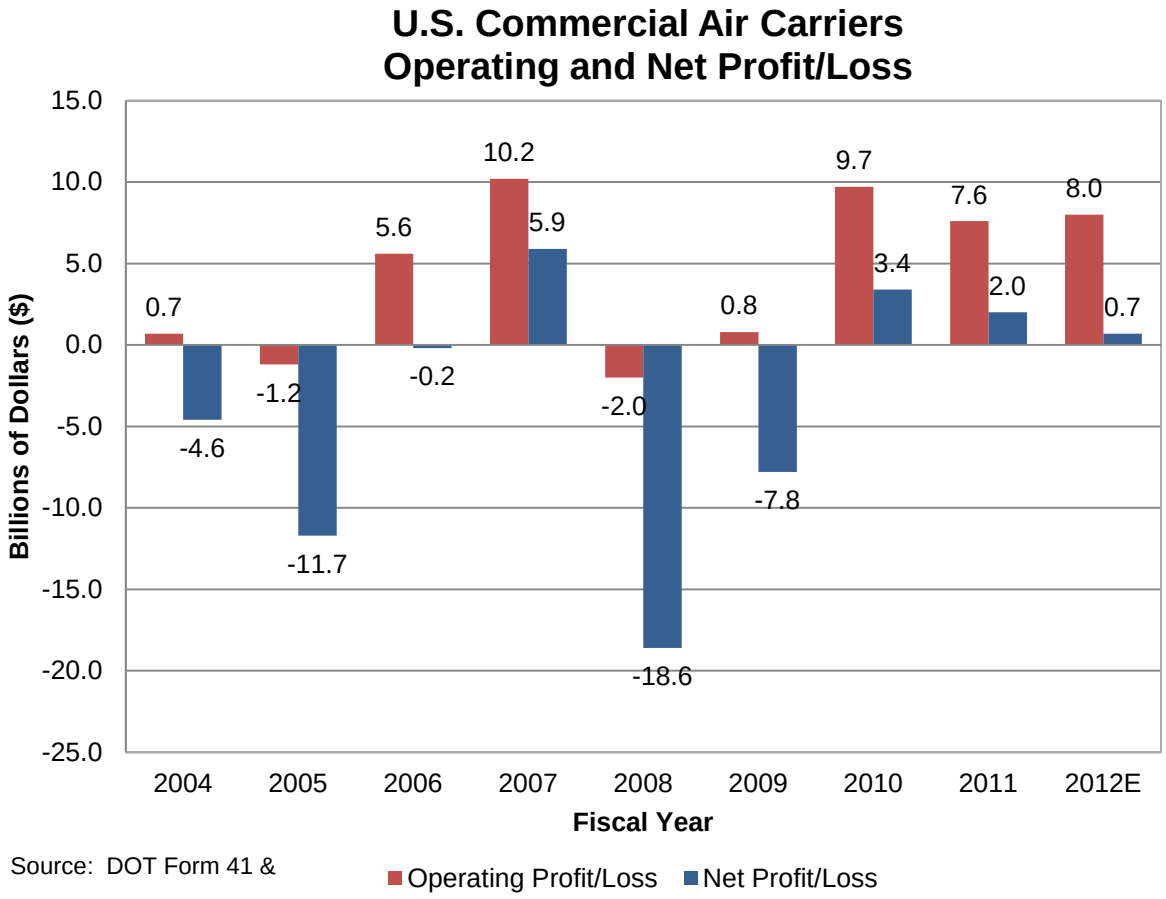
Air cargo RTMs flown by all-cargo carriers comprised 79.2 percent of total RTMs in 2012, with passenger carriers flying the remainder. Total RTMs flown by the all-cargo carriers decreased 2.6 percent in 2012 from 29.6 billion to 28.8 billion. Total RTMs flown by passenger carriers were 7.6 billion in 2012, 1.6 percent lower than in 2011.

International Air Cargo Revenue Ton Miles by Region

U.S. carrier international air cargo traffic can be divided into four components consisting of Atlantic, Latin, Pacific, and 'Other International.' In 2012 total international RTMs decreased 3.6 percent from 25.2 billion to 24.3 billion with all regions except the Latin posting declines. The Latin market saw cargo RTMs increase 3.4 percent from 1.83 billion RTMs to 1.89 billion RTMs. However, cargo RTMs in the Atlantic market fell 3.2 percent, from 7.24 to 7.00 billion while the Pacific region saw a greater contraction, a 5.8 percent decrease from 9.11 billion RTMs to 8.58 billion RTMs. Cargo RTMs in the 'Other International' category contracted by 2.9 percent, from 7.06 billion RTMs to 6.85 billion RTMs..

U.S. Commercial Air Carriers 2012 Financial Results

U.S. commercial air carriers posted a net profit of $ 719 million during FY 2012 after reporting a net profit of $2.0 billion one year earlier.



Source: DOT Form 41 &

Operating revenues (passenger and cargo) for FY 2012 were up 3.0 percent from FY2011. The increase in revenue underscored the ability of passenger carriers to push through fare increases and to offer value-added services that leisure and business passengers were willing to buy.

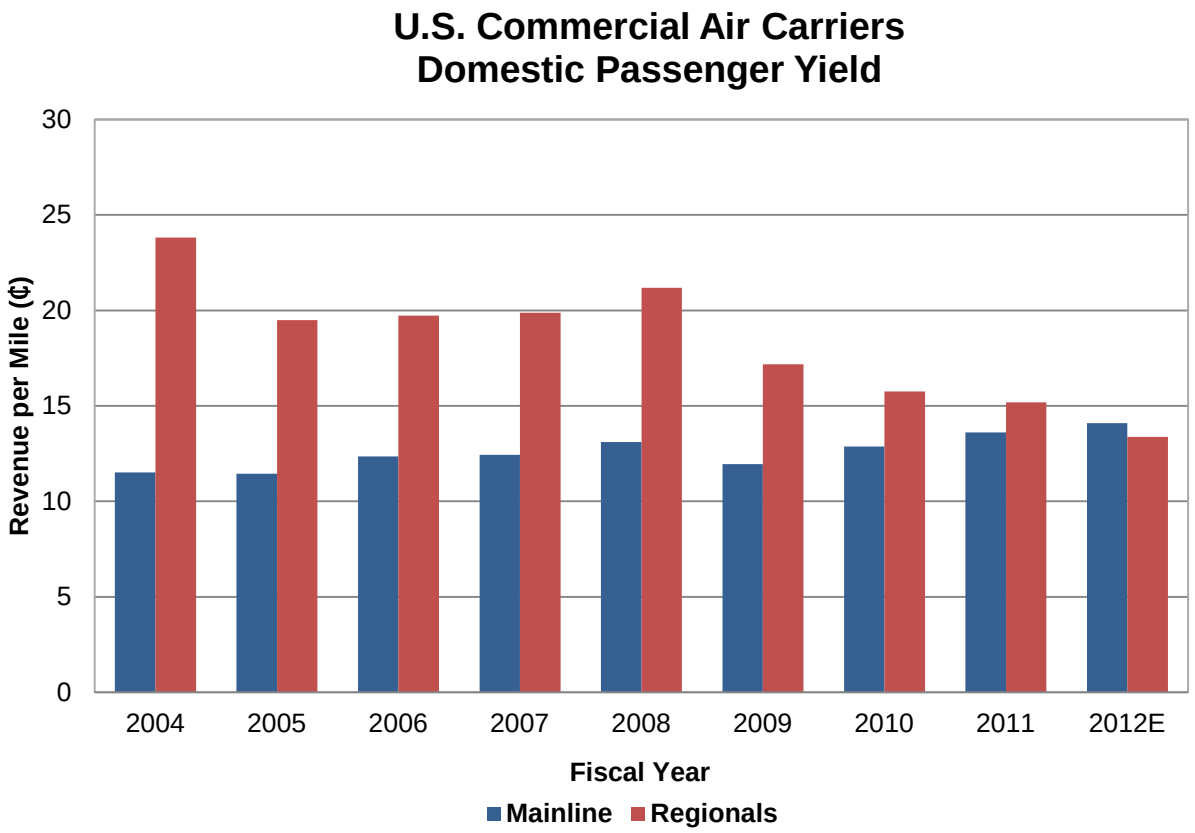
Revenues for cargo carriers remained essentially flat (up 0.5 percent) following a sharp rebound in 2010 and 2011 from the global financial crisis that strengthened demand for air cargo services.

During the same period, operating expenses for all carriers increased 2.9 percent. The increase in operating expenses during FY 2012 was driven by a 24.6 percent rise in the price of fuel for the year, as well as an increase in variable costs resulting from increased demand for passenger and cargo services.

In FY 2012, passenger carriers reported operating income of $6.0 billion but reported a net loss of $59 million, while air cargo carriers reported an operating profit of $2.0 billion and a net income of $778 million. In the domestic market, passenger carriers generated an operating profit of $3.0 billion but posted a net loss of $1.1 billion. In the international market, this carrier group posted operating and net profits of $3.0 billion and $1.0 billion, respectively. Cargo carriers posted an operating profit of $4.1 billion and a net income of $2.5 billion in domestic markets. In international markets, the cargo carriers reported an operating loss of $2.1 billion and net loss of $1.8 billion.

The industry's poorer financial results in FY 2012 are largely due to a turnaround in the performance of the network carriers. After two consecutive years (FY 2010-2011) of net profits totaling $2.2 billion, this carrier group posted operating profits of $4.2 billion and a net loss of $808 million. For the nine reporting low-cost carriers, operating profits totaled $1.3 billion and net income totaled $699 million for the full year.

Capacity discipline combined with stable demand resulted in a modest increase in mainline carrier passenger yield for the year. Domestic mainline carrier passenger yield increased 3.5 percent in 2012.



Of the reporting regional carriers, operating profits totaled $0.3 billion and net losses totaled $27 million for FY 2012, as domestic yield fell 12 percent.[10] Reflecting the changing nature of the industry the network carriers are putting the squeeze on their regional partners by negotiating fee-for-departure contracts that shift more of the financial risk of contract flying to the regional carriers. Since 2007, regional carrier yield is down 39.6 percent in real terms (compared to an increase of 1.8 percent in mainline carrier yield for the same period). The drop in regional carrier yield can be attributed primarily to renegotiated contracts (with lower revenues) between the regional carriers and the network carriers. In addition longer trip lengths (due to a growing number of larger and faster regional jet aircraft entering the fleet) and higher load factors have also contributed to the drop in regional yield. All other things being equal, an increase in either the trip length or the load factor results in drop in yield since fee-for-departure revenues are spread over a broader base of RPMs.

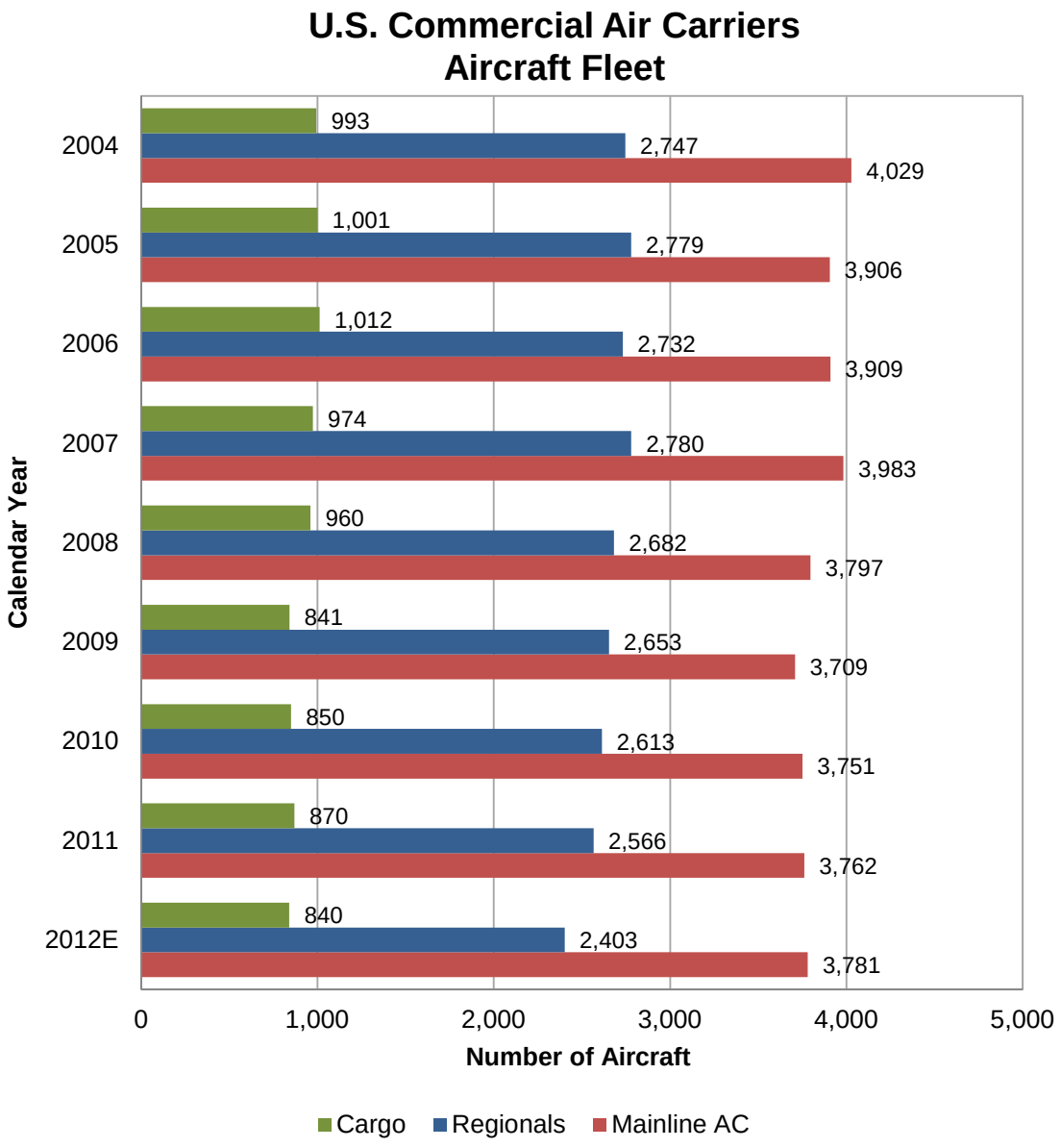
U.S. Commercial Air Carriers 2012 Aircraft Fleets

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 A320 and 737-700/800/900 aircraft. The regional

[10] The sharp decline in yield was primarily attributable to a decline in yield at American Eagle resulting from a change in their contractual arrangement with American. Passenger revenues include payments received by regionals from mainline partners for contractual flying.

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 7,024 for 2012, a decrease of 174 aircraft from 2011. This includes 3,781 mainline air carrier passenger aircraft (over 90 seats), 840 mainline air carrier cargo aircraft, and 2,403 regional carrier aircraft (jets, turboprops, and pistons).

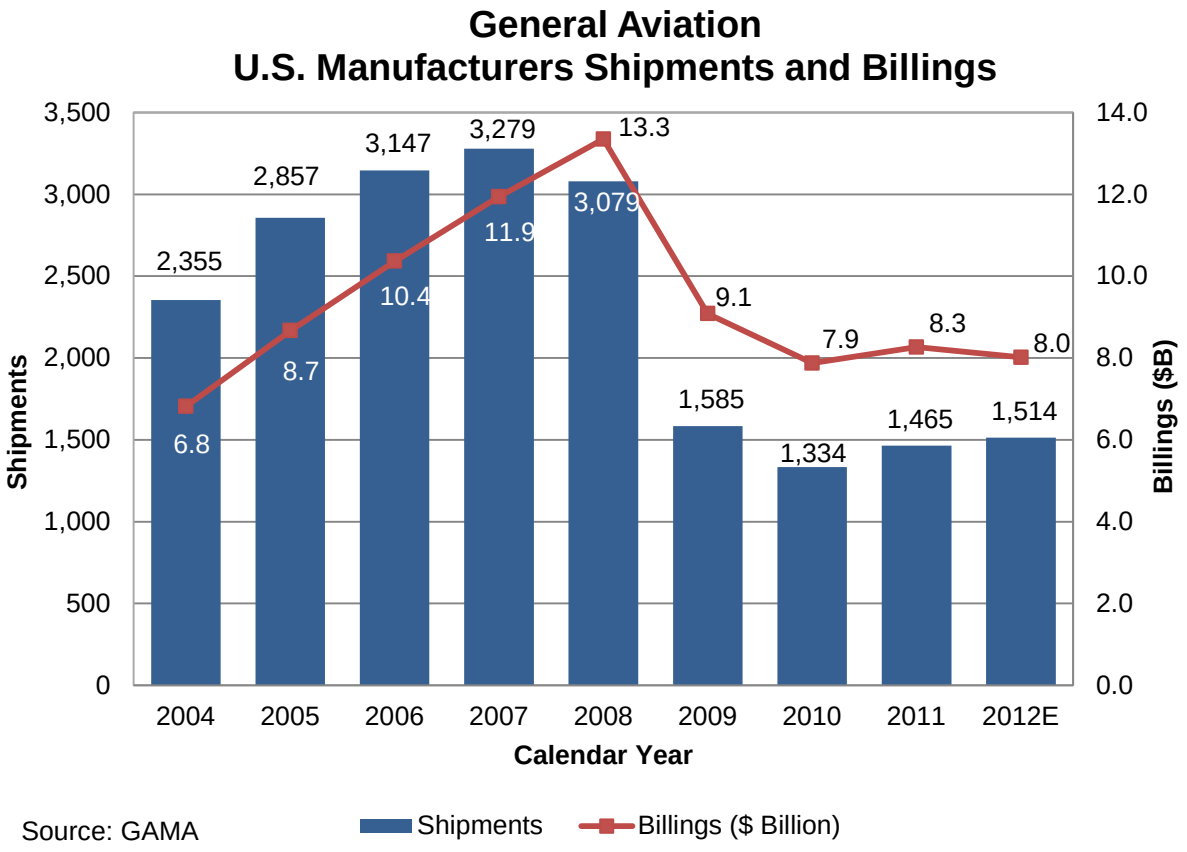


The mainline carriers' passenger jet fleet increased by 19 aircraft in 2012, following an 11 unit increase in 2011. The increase was driven by an 18 unit increase in the low cost carrier fleet. Despite the increase in the fleet in 2012, the mainline carrier fleet now stands at 15.8 percent below (707 aircraft) the level it was in 2000. The regional carrier fleet was also reduced in 2012, falling by 163 units, and now stands at its lowest level since 2002. Consolidation among

regional carriers and high fuel prices continue to spur retirements of 50 seat and smaller regional jets.

GENERAL AVIATION

General aviation industry began to show signs of recovery in 2012, especially with strong growth in rotorcraft and the agricultural aircraft segment of the turboprop deliveries, as well as a modest growth in the single-engine piston sector. Slow economic recovery and economic uncertainties continued to impact the turbojet and multi-engine piston deliveries.. Based on figures released by the General Aviation Manufacturers Association (GAMA), U.S. manufacturers of general aviation aircraft delivered -1,514 aircraft in CY 2012, 3.3 percent more than CY 2011. This translates into the second year of increase in shipments. Data were revised from all segments, but most significantly from agricultural aircraft producers. This revealed an increase of 9.8 percent in total deliveries in CY 2011, as opposed to a decline as previously estimated. Overall piston deliveries remained in essence flat with an increase of 0.3 percent, with single-engine deliveries up 0.9 percent and the much smaller multi-engine category down 6.0 percent. In the turbine categories, revised data showed turbojet deliveries did not fall in 2011 and were in fact unchanged. However, the latest available data recorded a decline of 4.7 percent in 2012. According to the revised GAMA data, turboprop deliveries were up by 76.3 percent in 2011 and continued to increase by an estimated 16.2 percent in 2012, even though a substantial portion of the deliveries were for the export market. U.S. billings in CY 2012 were totaled $8.0 billion, down 3.0 percent compared with 2011.



Source: GAMA

General Aviation operations at combined FAA and contract towers increased 0.6 percent in 2012, led by a 1.5 percent increase in local operations despite a fall in itinerant operations. General aviation activity at consolidated traffic facilities (FAA TRACONs) fell 0.6 percent, while the number of general aviation aircraft handled at FAA en-route centers declined by 1.3 percent.

The FAA uses estimates of fleet size, hours flown and utilization from the General Aviation and Part 135 Activity Survey (GA Survey), which has been conducted annually since 1977, as baseline figures upon which assumed growth rates are applied. The results of 2011 survey were not available to use as the basis for our forecast this year. Therefore, estimates of 2011 fleet and hours were based on estimated number of general aviation aircraft in the FAA civil aircraft registration database by the end of CY 2011, and past rates of active aircraft and utilization by type of aircraft and age of the fleet.

Based on the latest FAA assumptions about fleet attrition and aircraft utilization along with General Aircraft Manufacturer's Association (GAMA) aircraft shipment statistics, the active general aviation fleet is estimated to have decreased 1.2 percent in 2011, and remained unchanged in 2012 at 220,670. With the decrease in the active fleet, general aviation flight hours are estimated to have decreased 0.9 percent in 2011 and were flat in 2012 with a scant increase of 0.1 percent at 24.6 million.

Student pilots are important to general aviation and the aviation industry as a whole. Student pilot numbers had been in decline for many years but in 2010 the FAA issued a rule that increased the duration of validity for student pilot certificates for pilots under the age of 40 from 36 months to 60 months. As a result, according to statistics compiled by the FAA's Mike Monroney Aeronautical Center, the number of student pilots at the end of 2010 increased by 64.8 percent, or approximately 47,000 pilots, compared to calendar year end 2009. While the impact of the new rule on the long term trend in student pilots has yet to be fully determined, by the end of 2012, the number of student pilots increased by 1.1 percent from its 2011 level to 119,946. The average age of a U.S. pilot in 2012 was 44.7 years old.

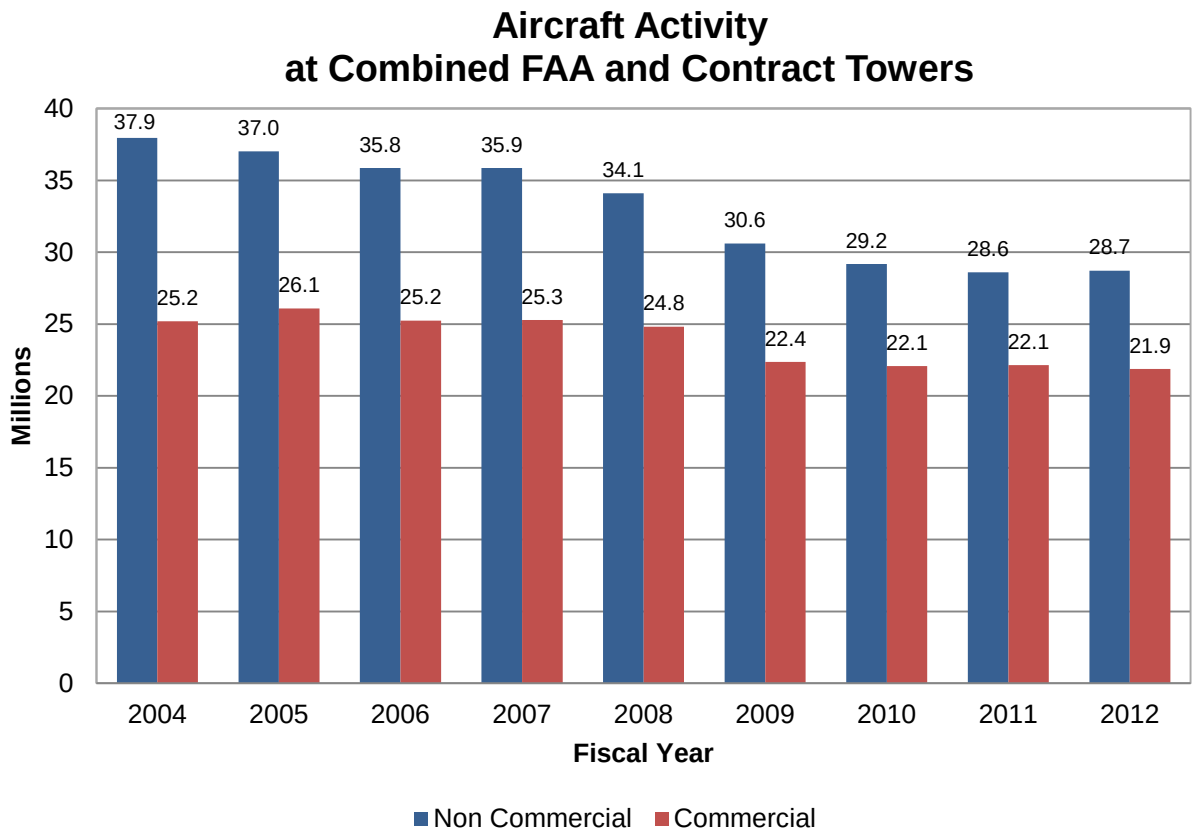
FAA WORKLOAD

In 2012, FAA facilities experienced their fifth year of decline in activity. Commercial air traffic activity fell for the fourth time in five years as declines in air taxi activity offset a slight increase in air carrier activity. The declines in activity were a continuation of the trend started in the second half of FY 2011. Noncommercial activity increased for the first time since 2008 as increases in general aviation activity offset a slight fall in military activity.

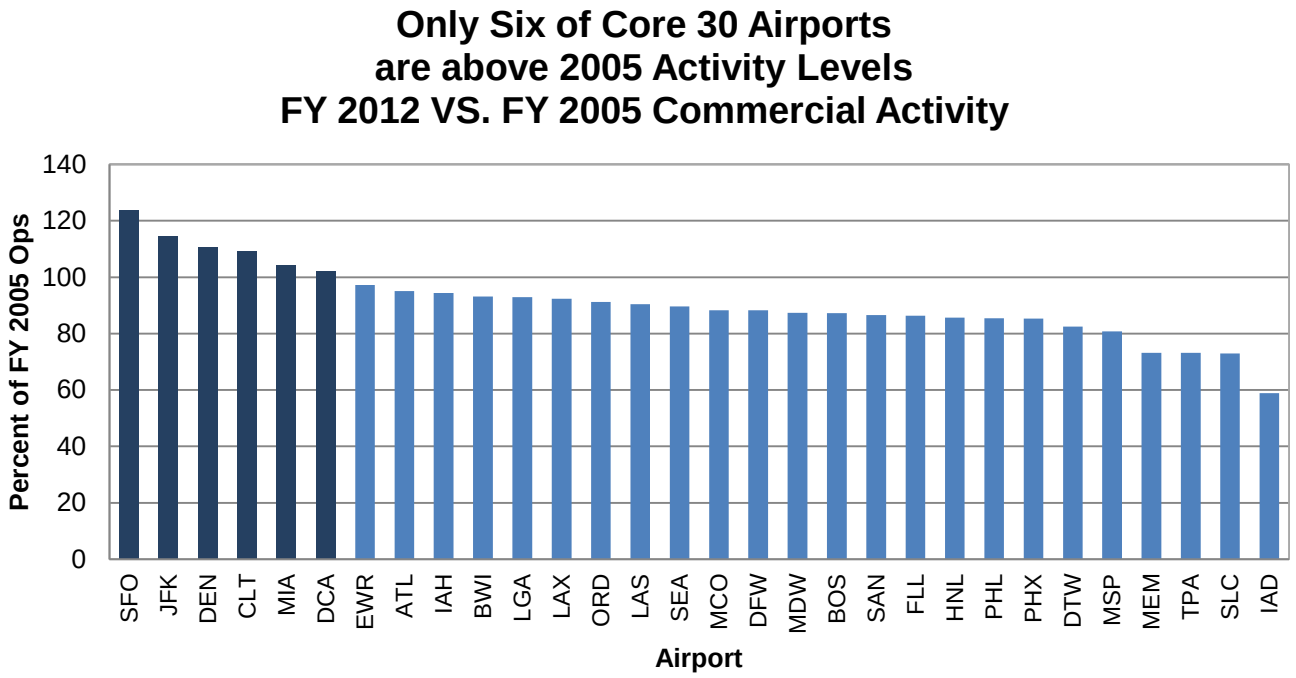
Total activity at combined FAA and contract tower airports (the set of 514 towers where FAA provides service, ranging from Atlanta (the busiest with 931,000 operations) to towers with as few as 7,800 operations (Branson, MO) was 50.6 million operations in 2012, down 0.3 percent from 2011 and 26.4 percent 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 fell by 1.3 percent in 2012. Air carrier operations were up 0.1 percent while commuter/air taxi operations declined 3.1 percent. Commercial operations in 2012 were 16.2 percent lower than their peak in 2005.

Non-commercial activity (the sum of general aviation and military) at combined FAA and contract towers increased by 0.4 percent in 2012, the first increase in five years. General aviation activity (26.1 million) was up 0.6 percent while military activity (2.6 million) was down 2.0 percent. The increase in general aviation activity in FY 2012 marked only the third increase in this category since 1999. At the end of 2012, non-commercial aircraft activity was 32.9 percent below the activity in 2000.

In FY 2012, total operations at the large hubs decreased by 0.8 percent to 12.5 million, and constituted 24.6 percent of all towered operations. Activity at the medium hubs fell by 3.7 percent to 5.4 million while activity at the small and non-hub towers increased by 0.4 percent, from 32.6 million to 32.7 million. The share of total towered operations at the medium, and small and non-hub towers in FY 2012 were 10.7 and 64.7 percent, respectively. Since 2000, operations at large hubs have declined by 11.5 percent, while operations at medium hubs have fallen by 40 percent, and operations at small and non-hub towers have declined by 28.2 percent.



The FAA pays close attention to the trends occurring at the "Core 30" airports. These airports represent the top 30 airports in the country in terms of passenger activity (except Memphis which is a major freight hub) and account for about 70 percent of commercial passengers. Commercial activity at the Core 30 airports peaked in 2005, but subsequent industry restructuring has resulted in a drop in combined commercial activity at these airports since then. In 2012, commercial activity at the Core 30 airports fell by 1.1 percent from the previous year and was 11.2 percent below 2005 activity levels. Of the Core 30 airports, 12 recorded increases in activity from 2011 with the largest increases occurring at San Francisco (up 6.1 percent) and Newark Liberty (up 3.3 percent). The largest decreases in activity occurred at Memphis (down 12.1 percent), and Salt Lake City (down 9.5 percent). Only six of the Core 30 airports exceeded 2005 peak activity levels during fiscal year 2012, unchanged from the number in 2011.

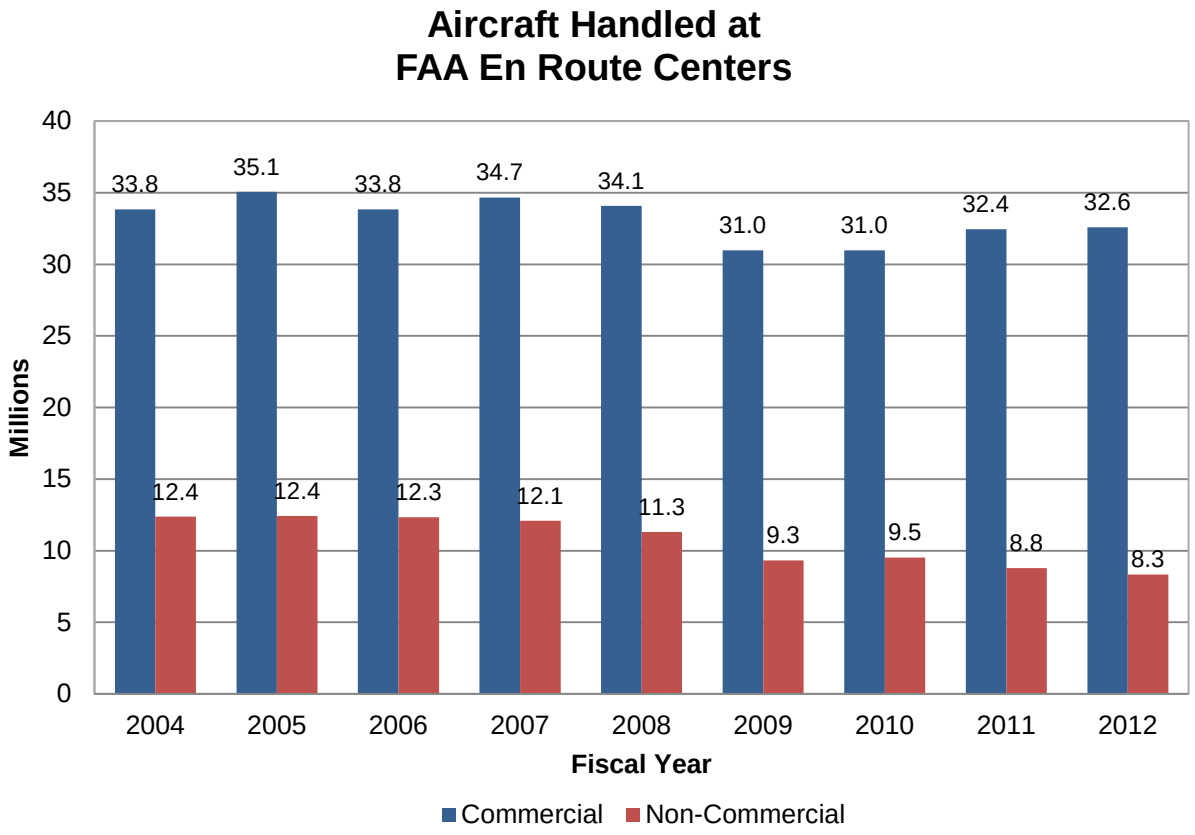


Since 2005 there has been a pronounced shift in demand which is reflected in the relative growth of commercial operations across the Core 30 airports. Commercial operations at San Francisco (up 23.7 percent), New York-Kennedy (up 14.5 percent), and Denver (up 10.6 percent) have increased the most relative to their 2005 activity levels. Commercial operations at Dulles (down 41.1 percent), and Salt Lake City (down 27.1 percent) show the largest declines from 2005 levels. These activity level shifts reflect the impact of airline industry restructuring. The demise of Independence Air and United's continuing restructuring of its network resulted in a dramatic reduction of operations at Dulles, while the bankruptcy of Delta, its subsequent merger with Northwest, and the restructuring of the combined network has led to a dramatic shrinking of operations in Salt Lake City.

Non-commercial activity, 91 percent of which is general aviation, increased 0.4 percent in 2012 with general aviation activity rising 0.6 percent. Breaking down the general aviation activity by hub size, general aviation activity at large and medium hubs fell 6.9 and 1.9 percent, respectively, while general aviation activity at small and non-hubs increased by 0.9 percent. However, general aviation activity at all hub categories has fallen substantially since 2005, down 40.4, 37.5, and 22.1 percent, respectively, at large, medium, and small/non hubs. Rising fuel prices, stagnant household incomes, falling household wealth, and a shrinking pilot population are all viewed as contributing to the long run decline in general aviation activity.

In 2012, total activity at FAA en-route centers (40.8 million) decreased 0.8 percent from the previous year, the first decline since 2009. Commercial activity was up slightly (0.4 percent) with air carrier operations up 0.9 percent while commuter/air taxi operations fell 0.9 percent. Non-commercial activity was down 5.2 percent for the year as general aviation activity posted a modest decline (down 1.3 percent) while military activity decreased 16.5 percent. In 2012, air carrier operations were 5.3 percent below their 2000 activity levels and air taxi/commuter operations were 10.3 percent above activity levels for 2000. Operations for the general aviation

and military user groups were 26.0 and 55.6 percent below their 2000 activity levels, respectively.



FAA AEROSPACE FORECASTS FISCAL YEARS 2013 – 2033

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. Once again, the U.S. aviation industry has shown that the demand for air travel is resilient as it rebounds from its most recent downward spiral caused by the Great Recession. As 2013 begins, lingering questions remain. Are the U.S. and global economies on firm ground? Have the structural changes undertaken by the industry over the past 5 years revamped the industry from one of boom-to-bust to one of sustainable profits? Will industry consolidation continue?

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 intent of these forecasts is to accurately predict future demand; however, due to the large uncertainty of the operating environment, the variance around the forecasts is wider than it was 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. They also do not assume any drastic changes in federal government operations.

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 by Innovata. To generate the short-term forecast (i.e., one year 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 2013-14. The medium to long-term forecasts (2014-2033) are based on the results of econometric models.

This year, FAA has changed its model for the U.S. domestic market from a GDP based model to a model based on real disposable personal income (DPI). FAA believes that aviation demand is a derived demand – that is, aviation demand depends upon the level of business and leisure activity in the economy. The level of business and especially leisure activity in the economy is driven in large part by the amount of disposable income (income after taxes) that is in the economy. As the U.S. economy recovers from the great recession, GDP growth may come from areas that don't necessarily translate directly into income growth (inventory accumulation or a reduction in imports). Furthermore, any changes in future tax policy that impact individual taxes will be more directly reflected in changes to DPI as opposed to GDP, and as such, FAA believes that

disposable income, rather than GDP, is a better metric to use for forecasting future demand. The result of this change is the forecast growth in domestic enplanements is lower by approximately 0.4 percent a year over the forecast horizon.

The general aviation forecasts rely heavily on discussions with industry experts conducted at industry meetings, including four Transportation Research Board (TRB) meetings of Business Aviation and Civil Helicopter Subcommittees in May 2012 and January 2013 along with estimates of the fleet from the FAA civil aircraft registration database. 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.

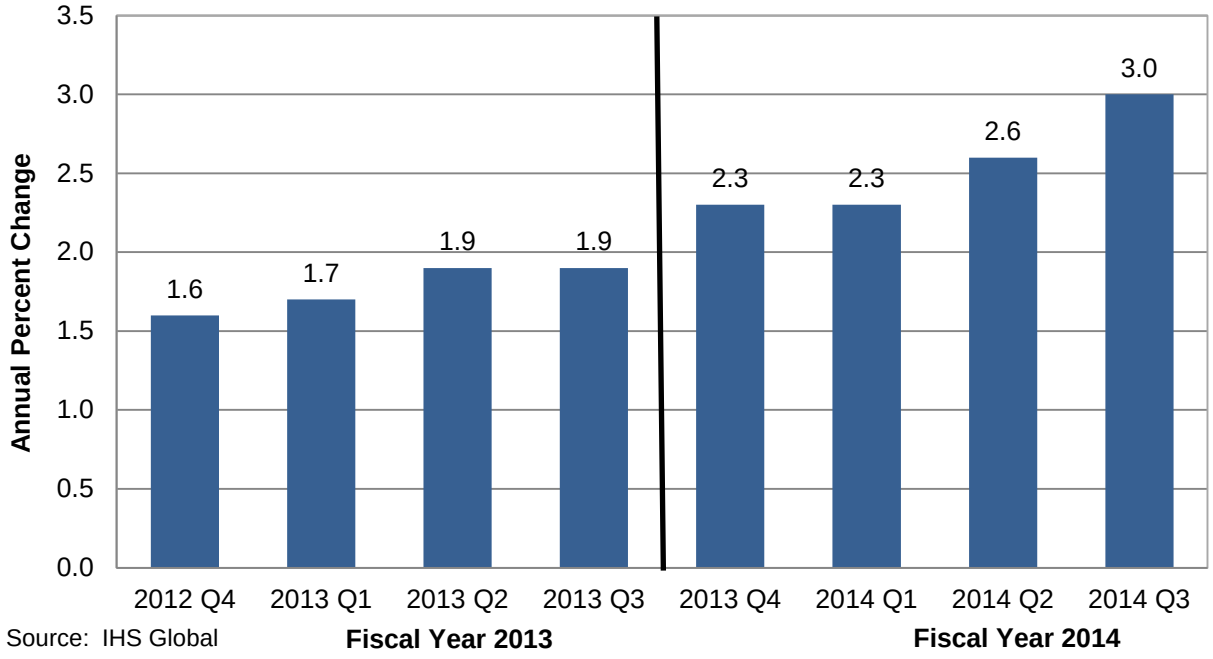
ECONOMIC FORECASTS

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

As the recovery is now approaching its fourth year, there continue to be headwinds. IHS Global Insight expects the recovery to continue to be modest by historical standards with the economy plagued by high levels of debt, both public and private, and uncertainty about U.S. government finances. How these issues are resolved will determine the future path of the recovery. On the bright side, the housing market is beginning to show signs of life and prior fears of a double-dip recession are unlikely to be realized.

The boost to the economy from fiscal stimulus and inventory buildup has faded, leaving the economy to depend on underlying strength in private demand. Growth is projected to be slow in the first half of FY 2013 as reductions in government spending, expiration of the payroll tax cut, and a drag from Hurricane Sandy limit growth. On a quarter-by-quarter basis U.S. economic growth is projected to range between 1.0 to 3.1 percent for the next two years.

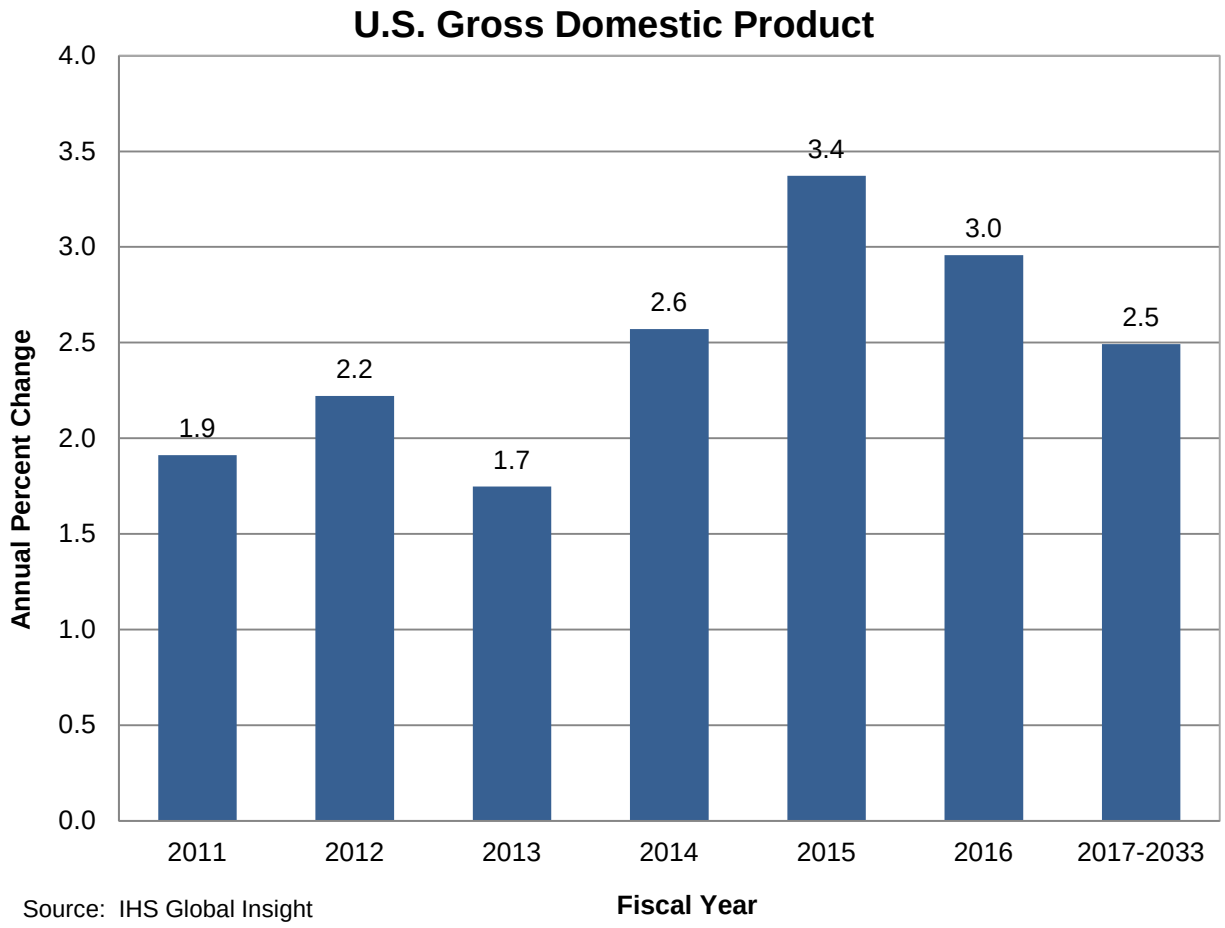
U.S. Gross Domestic Product
Seasonally Adjusted Annual Growth
by Quarter



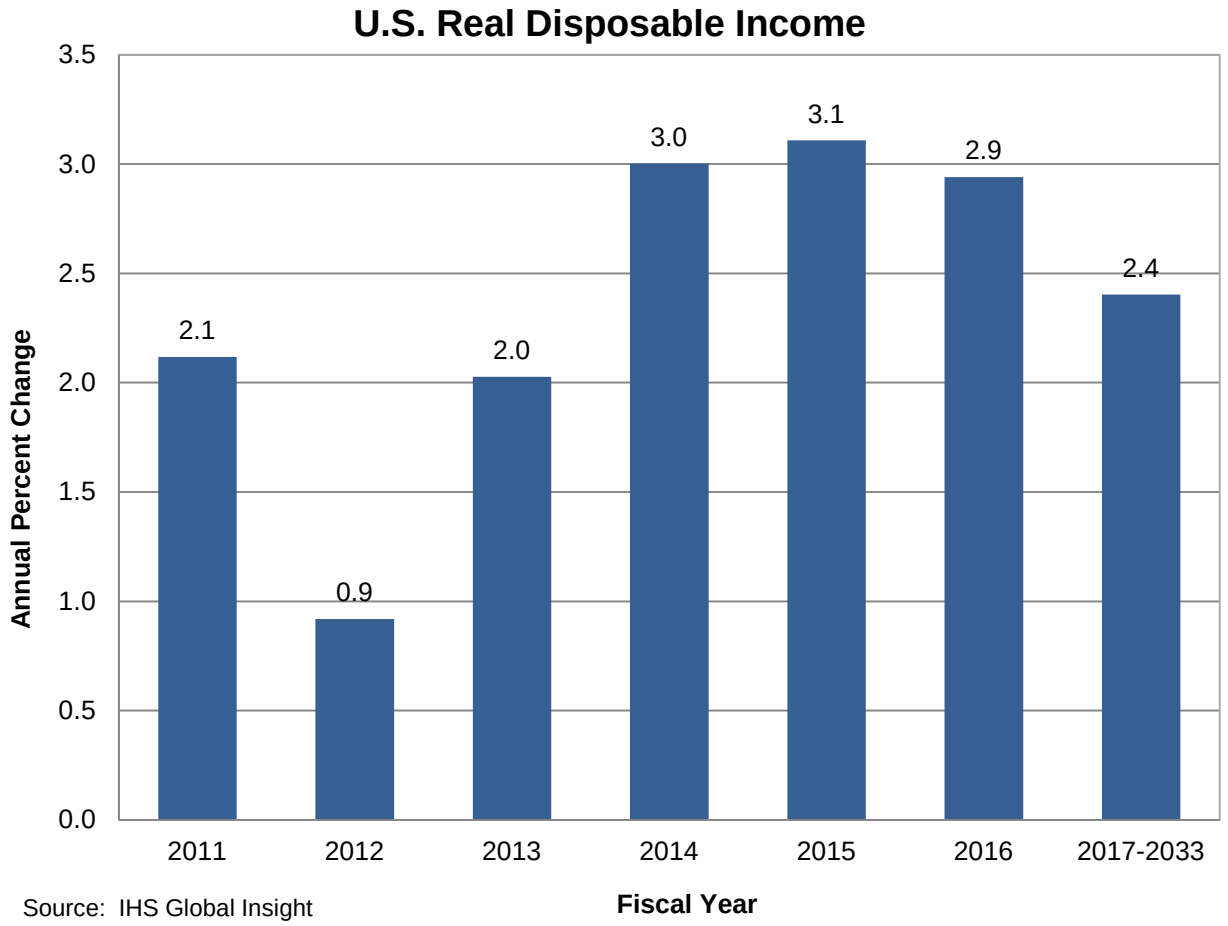
Source: IHS Global

The modest pace of economic recovery has been most evident in the nation's unemployment rate. Since peaking at 9.9 percent in the fourth quarter of FY 2009, the unemployment rate has come down gradually, dropping to 8.1 percent in the fourth quarter of FY 2012. IHS Global Insight is projecting that with the continued modest pace of recovery, the unemployment rate will drop only modestly in FY 2013, averaging 7.8 percent for the year. The slow fall in the unemployment rate will continue to keep income growth in check. Real disposable income (income after taxes) increased only 0.9 percent in 2012. The recovery in real disposable income is projected to continue with increases of 2.0 percent in 2013 and 3.0 percent in 2014 as unemployment falls and the role of taxes in any long term fiscal solution becomes clearer.

In the medium term, (the four year period between 2014 and 2018), U.S. economic growth is projected to average 2.9 percent per year with rates ranging between 2.6 and 3.4 percent. Income growth remains muted during the same period (up an average of 2.7 percent). For the balance of the forecast period, U.S. real GDP growth slows to around 2.5 percent annually while income growth increases to 2.4 percent annually. The long-term stability of U.S. economic growth depends on sustained growth in the workforce and capital stock along with improved productivity and competitiveness.



Source: IHS Global Insight



Source: IHS Global Insight

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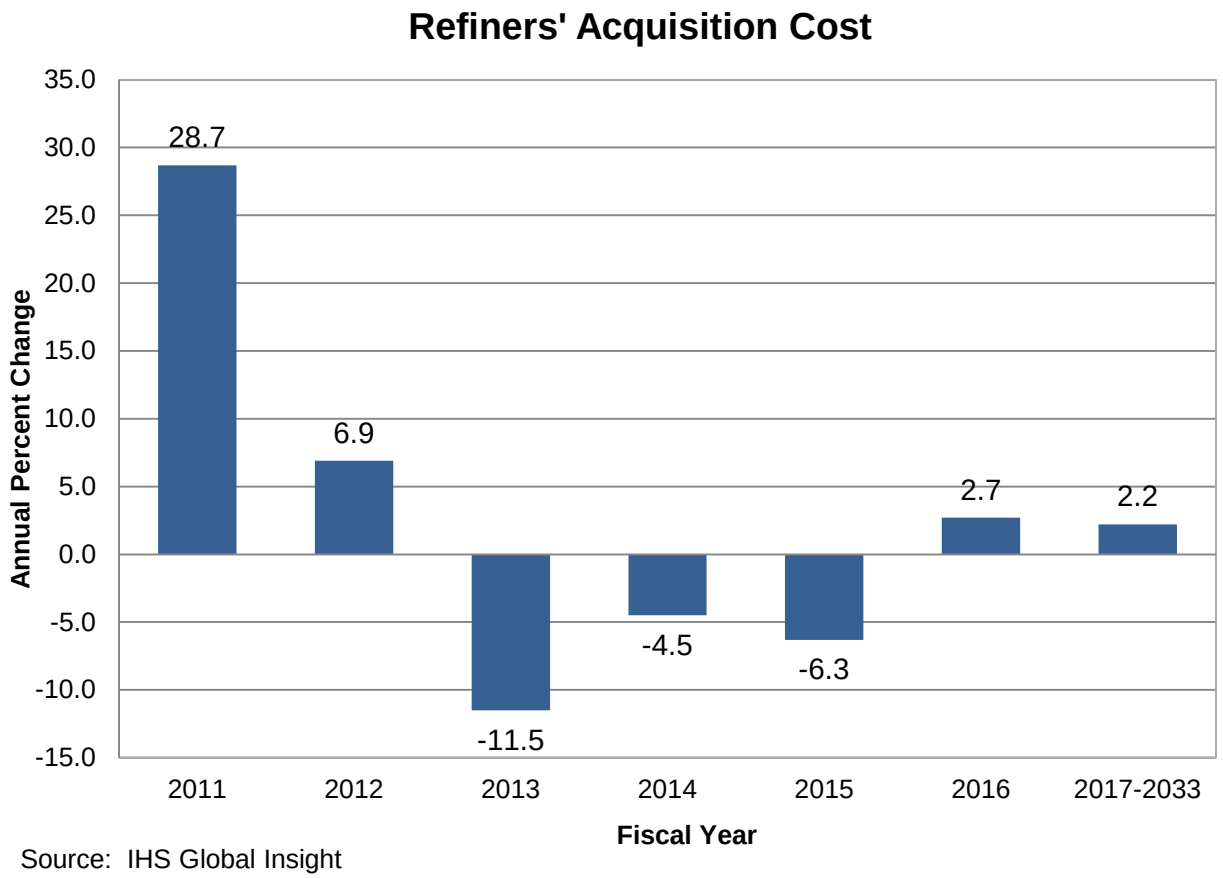
After the price of oil increased by 6.9 percent in 2012 and 88 percent in total since 2009, IHS Global Insight projects the price, as measured by the Refiners' Acquisition Cost, to fall to $91 per barrel in 2013 (down 11.5 percent from 2012). Oil prices are forecast to decline to around $81 per barrel by 2015 and then gradually increase to $112 per barrel by 2025. For the remainder of the forecast period, oil prices are projected to grow slower than inflation, reaching $125 per barrel by 2033.



Source: IHS Global Insight

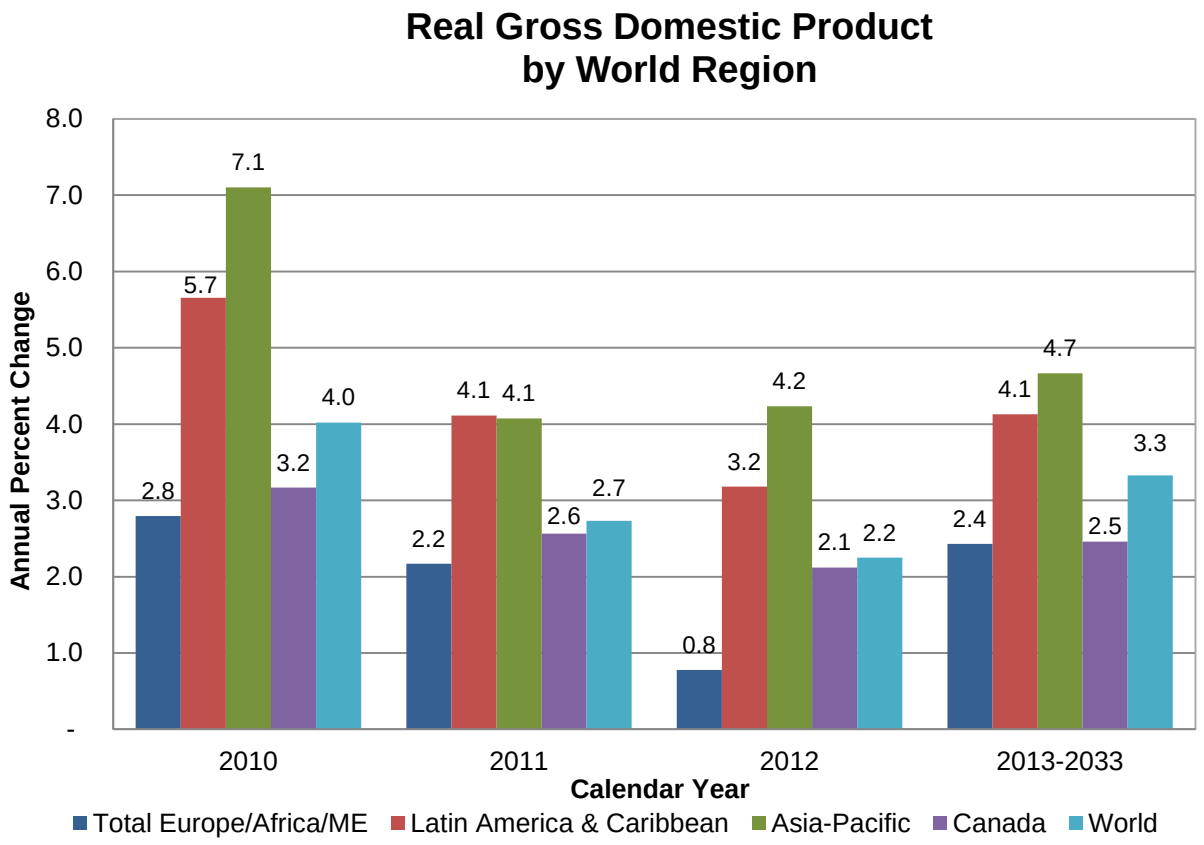
Inflation continues to remain in check as energy prices fall in 2013 and 2014. After increasing 2.4 percent in FY 2012, the inflation rate (as measured by the CPI), is projected to rise 1.4 percent and 1.7 percent in 2013 and 2014, respectively. After 2014, consumer price inflation is projected to grow between 1.7 and 2.0 percent per 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. However due to the increased level of uncertainty surrounding the resolution of U.S. government finances (taxes and spending along with the debt ceiling), the optimistic and pessimistic economic growth cases are based on optimistic and pessimistic scenarios from IHS Global Insight's January 2013 U.S. economic forecast and go out only to 2022. The optimistic case sees a credible plan for long-term deficit reduction being enacted, faster foreign economic growth, along with faster employment growth and sustained improvements in the housing sector. Real GDP growth between 2012 and 2022 in the optimistic case averages 3.1 percent annually compared to 2.6 percent in the base case. The pessimistic case assumes partisan politics turn the task

of raising the debt ceiling into a political crisis and assumes that in the face of uncertainty, cutting spending is the best solution. In addition, the Eurozone crisis intensifies reducing demand for U.S. exports. The private sector retrenches and the housing market slows down, and the U.S. economy enters a mild recession in 2013. Real GDP growth in the pessimistic case averages 1.9 percent annually between 2012 and 2022, 0.7 percentage points lower than the base case. Further details about the high and low scenarios can be found in Appendix A.

World Economy

After weathering the first contraction in global GDP since the Great Depression, a deepening recession in Europe and political stalemates in the U.S. over what to do with the U.S. federal budget, worldwide economic activity is estimated by IHS Global Insight to have expanded by 2.2 percent in 2012, down from 2.7 in 2011. The advanced economies (U.S., Canada, Western Europe, Australia, New Zealand, and Japan) posted growth in output ranging from a low of -0.2 percent to a high of 3.4 percent. The emerging market economies grew 4.8 percent, 1.4 points lower than in 2011 with the economy of China up 7.6 percent, India up 5.1 percent, Brazil up 1.5 percent, and Russia up 3.6 percent. In 2013, economic growth is projected to be 2.2 percent as weak household finances, sluggish employment growth, and constrained banking sectors of the advanced economies prevent global aggregate demand from growing fast enough to offset weakness from inventory accumulation, the recession in Europe, and the lack of stimulus spending. Beyond 2013 for the balance of the forecast period world real GDP is projected to increase an average of 3.2 percent per year.



Source: IHS Global Insight, GDP Components Tables (Interim Forecast, Monthly), Release date 23 November 2012

The Asia/Pacific and Latin America/Caribbean 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 4.5 and 3.9 percent a year, respectively, over the forecast period (2013-2033). China, with a population of approximately 1.35 billion in mid-2012, is forecast to increase population by only 0.3% percent a year from 2012-2025 but is still projected to become the

world's second largest economy by 2013 (surpassing Japan). India, with a population of approximately 1.26 billion, is projected to see its GDP more than quadruple in size, growing at an average rate of 6.9 percent a year during the forecast period. In contrast, Japan grows at just 1.41 percent a year over the forecast horizon as structural impediments, the effects of the 2011 earthquakes and tsunami, and an aging population continues to limit growth.[11, 12]

[11] 2012 World Population Data Sheet, Population Reference Bureau, www.prb.org
[12] IHS Global Insight, GDP Components Tables (Interim Forecast, Monthly), Release date 23 November 2012

AVIATION TRAFFIC AND ACTIVITY FORECASTS

Total traffic and activity forecasts for commercial air carriers (the sum of mainline and regional carriers) are presented 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 displayed in Tables 10 through 18, 21, and 23. These tables contain year-to-year historical data and forecasts.

Regional carrier forecasts and assumptions are found in Tables 24 through 27. These tables provide year-to-year historical and forecast data.

Tables 19 and 20 provide year-to-year historical and forecast data for cargo activity. Table 22 provides year-to-year historical and forecast data for the cargo jet fleet.

General aviation forecasts are found in Tables 28 through 31. These tables provide year-to-year historical data and forecasts.

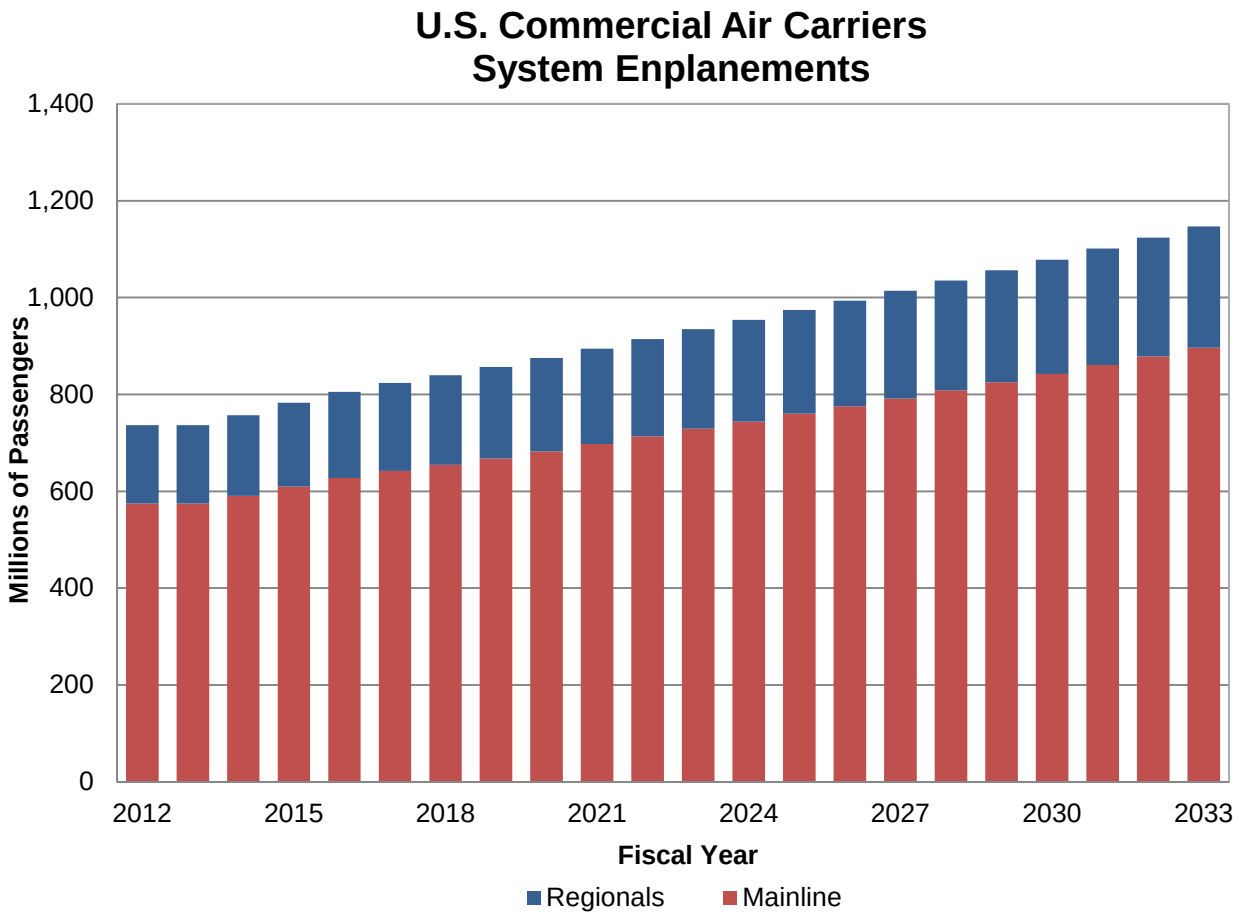
Tables 32 through 34 provide forecasts of aircraft activity at FAA and contract facilities.

Commercial Aviation Forecasts

System capacity is projected to decline slightly in2013. In the domestic market, mainline carrier capacity expanded slightly (0.7 percent) in 2012 but now is projected to be unchanged in 2013 while capacity for the regional carriers is projected to decline in FY 2013 (down 0.4 percent). In the international sector, capacity is forecast to decrease in the Atlantic market and increase modestly in the Latin and Pacific markets -- resulting in overall international capacity decline of 0.5 percent.

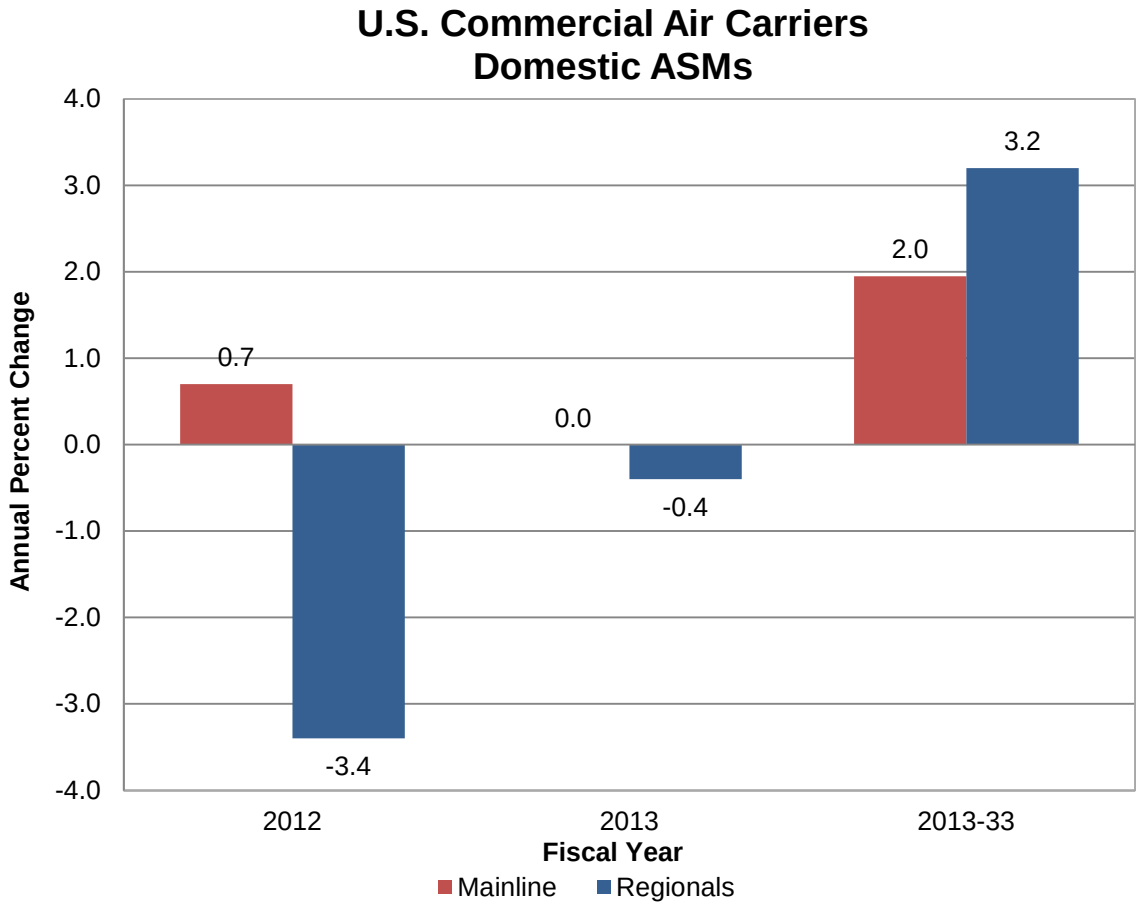
Passenger demand shows minimal growth in 2013 with system RPMs forecast to grow 0.4 percent with all of the increase coming in domestic markets. An upturn in growth is projected for the 2014-18 period coincident with faster economic growth as system RPMs and passengers increase at an average annual rate of 3.2 and 2.6 percent, respectively. Over the same time period, system capacity growth averages of 3.1 percent per year. For the overall forecast period, system capacity is projected to increase an average of 2.8 percent a year. Supported by a growing U.S. and world economy, system RPMs are projected to increase 2.9 percent a year, with regional carriers (up 3.2 percent a year) growing faster than mainline carriers (up 2.9 percent a year). System passengers are projected to increase an average of 2.2 percent a year, with mainline carriers growing at a slightly higher rate (up 2.3 percent a year) than their regional counterparts (up 2.2 percent). By 2033, U.S. commercial air carriers are projected to fly 1.74 trillion ASMs and transport 1.15 billion enplaned passengers a total of 1.46 trillion passenger miles.

Planes will remain crowded, with load factors projected to grow moderately during the early years of the forecast period then tapering during the mid to latter years to 83.9 percent in 2033 (up 0.8 points compared to the beginning of the forecast period in2013). Passenger trip length is forecast to increase by more than 153 miles over the forecast period to 1,275 miles in 2033 (up 8 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.



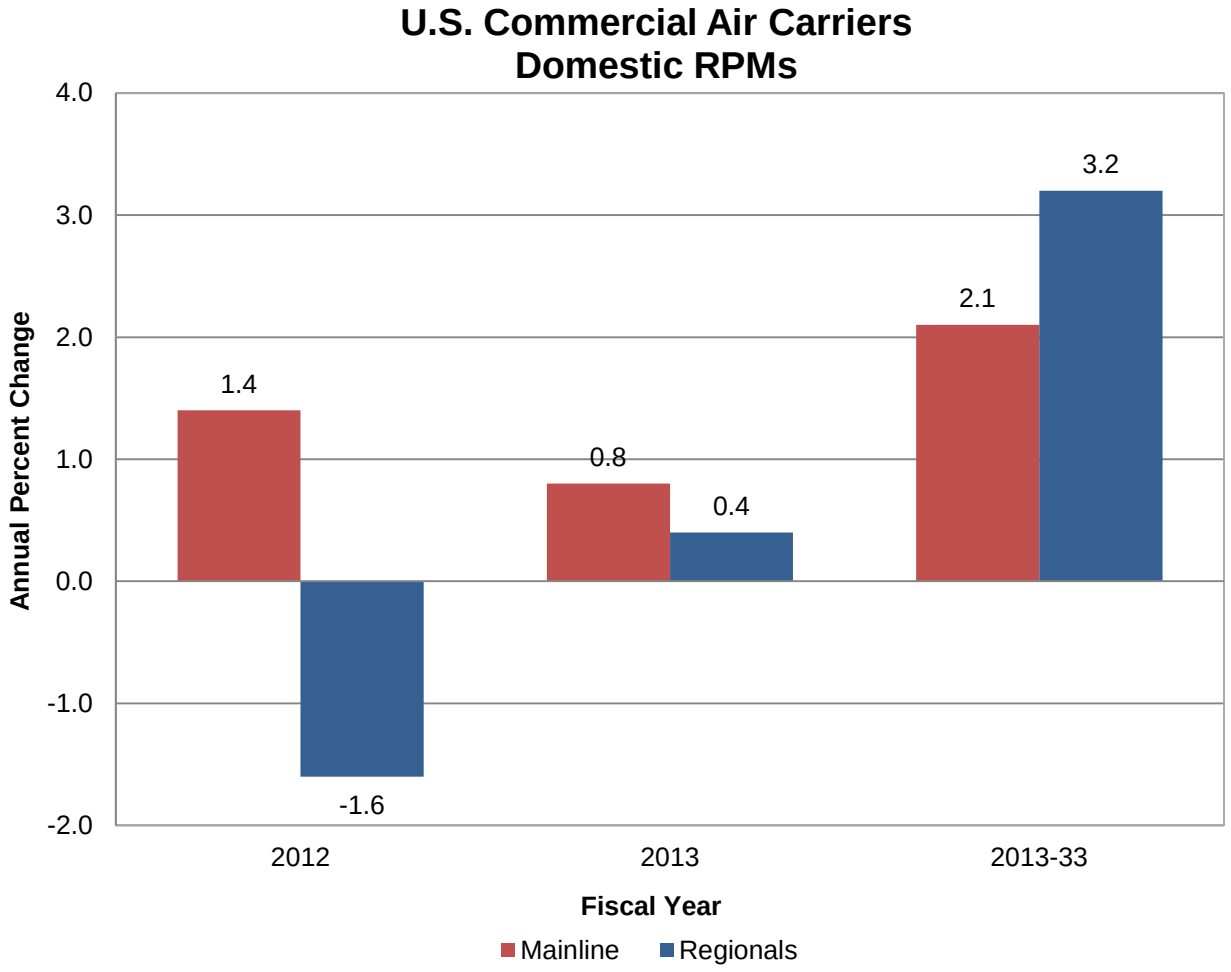
Domestic Markets

After expanding slightly in FY 2012 (up 0.1 percent), domestic capacity is projected to remain unchanged in 2013. Mainline carrier capacity is forecast to be flat while that of regional carriers is expected to fall by 0.4 percent. Domestic commercial carrier capacity growth picks up in 2014-2018 period (up 2.3 percent per year) as U.S. economic growth accelerates, with mainline carriers growing slower than regional carriers, 2.1percent versus 3.4 percent. For the entire forecast period (2013-2033), overall domestic capacity is projected to increase at an average annual rate of 2.1 percent, slower than economic growth. Mainline carriers are projected to grow at an annual rate of 2.0 percent while regional carriers are projected to grow at 3.2 percent a year.



The slow pace of the economic recovery in the U.S. will restrain RPM growth during 2013, the first year of the forecast (up 0.7 percent). Traffic growth is projected to be sluggish throughout the year as fiscal uncertainty continues to surround the U.S. economy. Mainline carrier RPMs are projected to increase by 0.8 percent during 2013, while regional carrier RPMs are projected to increase by 0.4 percent. Traffic growth improves over the 2014-18 period with annual RPM growth of 2.5 percent as the economic recovery gains steam. For the balance of the forecast period (2018-2033) modest economic growth and falling real yield drives domestic RPM growth of 2.1 percent a year.. Over the entire forecast period (2013-2033),

domestic RPMs grow an average of 2.2 percent a year with mainline carriers growing more slowly than the regional carriers (2.1 percent a year versus 3.2 percent a year, respectively).



Enplanements are forecast to decline slightly (down 0.1 percent) in 2013 following a 0.7 percent increase in 2012. Similar to RPMs, passenger growth is expected to pick up in the 2014-2018 period (up 2.4 percent a year) as the recovery gains momentum and then average 1.8 percent per year for the period 2018-2033. Over the entire forecast period, domestic enplanements are projected to grow at an average annual rate of 2.0 percent with mainline carriers growing more slowly than regional carriers (1.9 versus 2.2 percent a year, respectively).

Reduced capacity combined with a modest recovery in passenger demand provided pricing power for the carriers during2012, with nominal yield increasing3.5 percent (up 1.0 percent in real terms). In spite of slow demand growth, flat capacity will further lift fares higher in 2013, with an increase in nominal yield of 2.5 percent (1.0 percent in real terms). For the entire forecast period, nominal yield is projected to increase at an average rate of 1.2 percent a year, while in real terms it is projected to decline at an average rate of 0.8 percent a year. The decline in real yield over the forecast period assumes technological improvements, competition between carriers, and the increasing convergence of cost structures between network carriers and their low-cost counterparts. The convergence in cost structures between the carrier

groups 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 (1.4 percent per year for departures versus 2.2 percent for RPMs). This reflects increased carrier efficiencies in three operational measures: aircraft size, load factor, and trip length.

Overall domestic aircraft size increased by 0.9 seats to 123.4 in 2012 as increases in the mainline carrier group offset a slight decline in the regional carriers. Mainline carrier aircraft size increased 0.4 seats with the retirement of older, fuel inefficient aircraft (i.e. MD-80's and 737-300/400/500). Regional aircraft size decreased by 0.3 seats despite the retirement of 50-seat jet aircraft as larger 70-90 seat jet aircraft entered the fleet. Domestic seats per aircraft are forecast to increase in 2013 (up 0.6 seats) as mainline carrier capacity remains steady while regional carrier capacity falls slightly. Over the balance of the forecast (2014-2033), domestic seats per aircraft are projected to gradually increase to 127.8 seats by2033, an average of 0.2 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 the FAA's expectations of the changing domestic competitive landscape. In the near-term (through 2014), the forecast incorporates several assumptions: 1) mainline carriers desire to constrain ASM capacity growth; 2) the retirement of older inefficient aircraft (many of which are narrow-body); 3) the shifting of wide-body and larger narrow-body aircraft to international services, and 4) growing use of 70-90 seat regional jet aircraft.

In the longer-term, network carriers will replace their older narrow-body aircraft (A320's/B757-200/300) in their domestic route networks with next generation, narrow-body aircraft like the A320 Neo and the 737 Max. The use of smaller aircraft, like the 100-seat Embraer 190, to supplement carrier route structures will be limited. The use of the next generation, narrow-body aircraft will allow mainline carriers to better serve their customers by more closely matching supply (the number of seats) with demand (the number of passengers), and improve profitability through lower operating costs.

Mainline carrier domestic aircraft size increased in 2012 by 0.4 seats to 152.7 seats, and is projected to increase by 0.3 seats in 2013. Domestic aircraft size for mainline carriers is projected to increase by 0.3 seats in 2014 and then gradually increase for the balance of the forecast. Overall, average aircraft size for the mainline group will increase by 5.7 seats between 2012 and 2033, going from 152.7 to 158.4.

Regional carrier aircraft size flown domestically is projected to grow at a much faster pace than that of the mainline carriers. The faster growth in aircraft size for regional carriers is stimulated by continued deliveries of 70 to 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 larger share of 70 to 90-seat regional jets in the fleet coupled with significant 50-seat jet and small turboprop retirements over the next few years increases the average seating

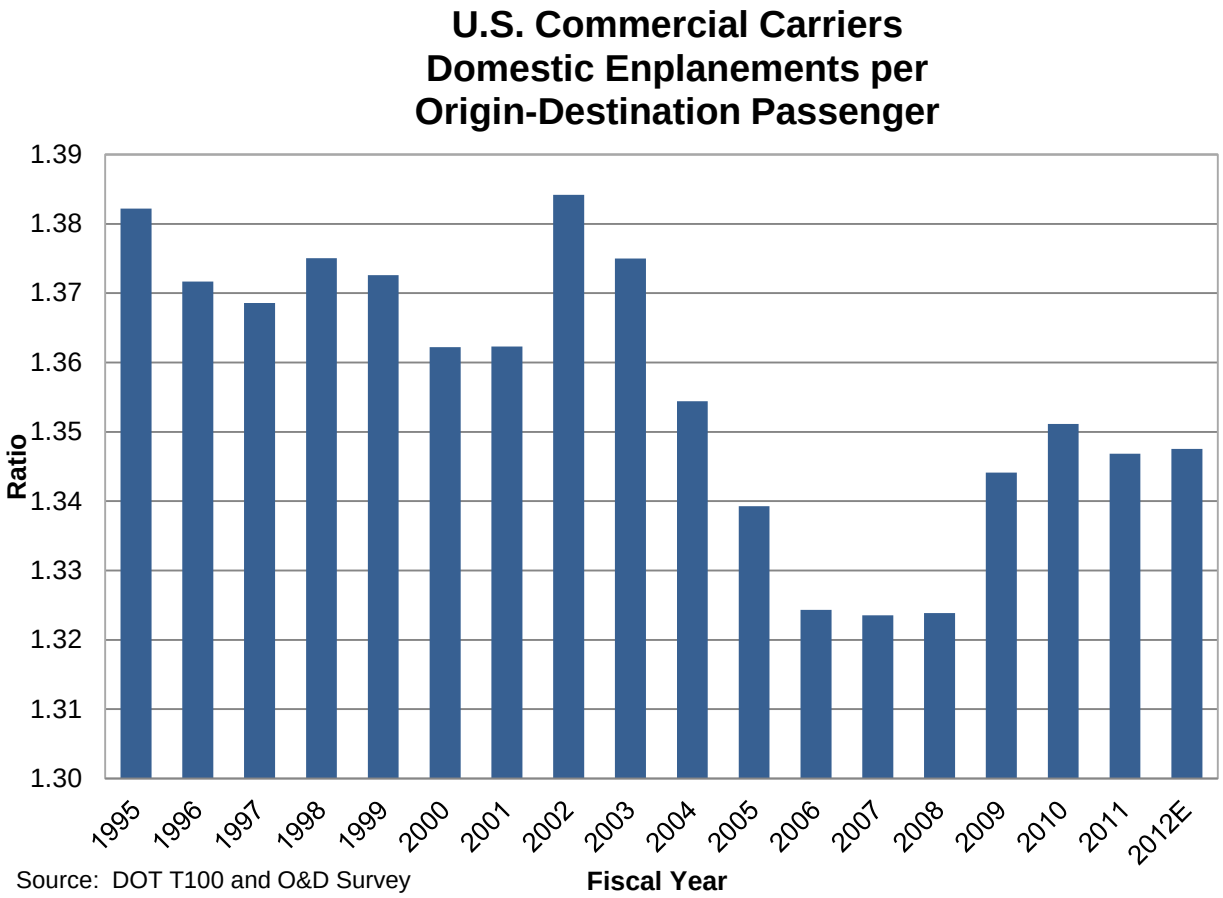
capacity of the regional fleet from 56.1 seats in 2012 to 56.9 seats by 2014. Over the course of the forecast, the seats per aircraft ratio for the regional carriers increases an average of 0.4 seats per year to 65.4 seats in 2033. The changing aircraft fleet mix is narrowing the gap between the size and aircraft types operated by the mainline and regional carriers.

The commercial carrier domestic load factor increased 0.7 points during FY 2012 to an all-time high of 83.2 percent, with record load factors posted by the mainline and regional carrier groups. The mainline carrier group posted a load factor of 84.1 percent, up 0.5 percentage points from 2011. The load factor for the regional carriers increased by 1.4 points to 77.6 percent. In 2013, the domestic load factor is forecast to increase 0.6 points to 83.2 percent as both mainline and regional carriers increase by 0.6 percentage points Thereafter, the commercial carrier domestic load factor gradually rises to 85.2 percent by 2033.

In 2012 the average domestic passenger trip length increased by 3.5 miles to 883.6 miles in total, after increasing by 5.1 miles in 2011. Passenger trip length is forecast to increase by 7.2 miles in 2013 as carriers continue to restructure their networks and realign capacity. After 2013, trip length is projected to remain stable for a number of years before steadily increasing from 2018 onwards, reaching 939.8 miles by 2033. The increase in trip length reflects longer trips flown by the mainline and regional carrier group. Mainline carrier trip length increases as thinner, relatively shorter haul markets are relinquished to regional partners and replaced with 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 continue to penetrate thinner longer-haul markets previously served 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 to its lowest level (1.32 enplanements for every O&D passenger) by 2007. The decline in the ratio during this six year period is characterized by a drop in connectivity by the network carriers and a rising passenger share for the low-cost carriers. A slight uptick in the ratio started again in 2009 (1.34 enplanements for every O&D passenger) and continued into 2012 (1.35 enplanements for every O&D passenger); this highlights the retrenchment by carriers as fuel costs skyrocketed and demand for air travel plummeted. 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

The FAA provides forecasts of total international passenger demand[13] 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 provided by the U.S. Customs and Border Protection[14] 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 171.8 million in CY 2012, 3.7 percent higher than in 2011. Passenger demand remains consistent in 2013 (up 2.6 percent) and accelerates in 2014 (up 4.5 percent) as the world economic recovery solidifies. For the balance of the forecast period, stable worldwide economic growth leads international passengers to grow at an average rate of 4.1 percent a year, totaling 402.9 million in 2033.

[13] The sum of U.S. and foreign flag carriers.

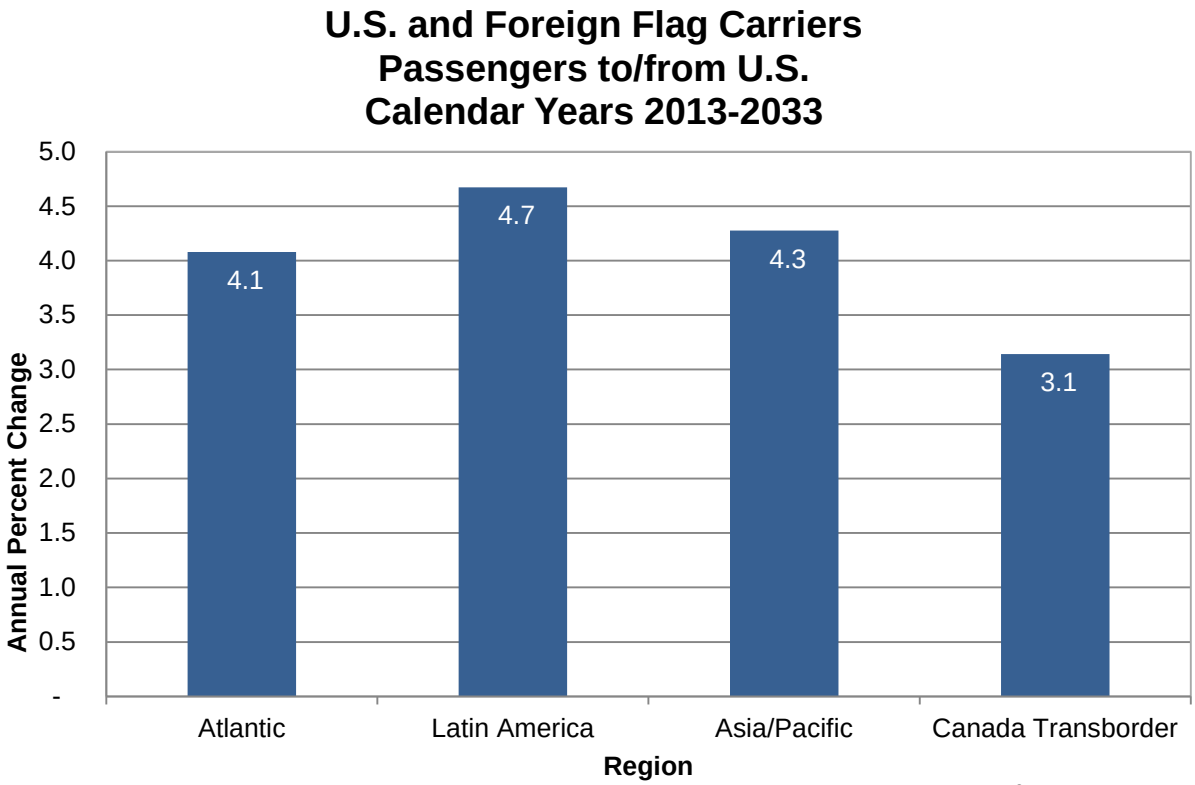
[14] Customs and border protection data is processed and released by the Department of Commerce.

In the Latin America region, sustained economic growth drives passenger growth to an average of 4.7 percent a year over the entire forecast period (2013-2033). The highest growth is projected for Brazil (average annual growth of 6.1 percent) while the largest market in the region, Mexico, grows at an average of 4.6 percent a year. The slowest rates of growth are projected to occur in the Bahamian and Jamaican markets (averaging growth of 0.1 and 2.8 percent a year, respectively).

Emerging economies in the Asia-Pacific market boost passenger demand an average of 4.3 percent per year. Taiwan, South Korea, India and China (passenger growth of 4.7, 4.7, 5.2 and 6.7 percent a year, respectively) are forecast to be the fastest growing markets in the region. Growth in the Japan market (the largest and most established in the region) is projected to be well below the regional average at 3.0 percent a year.

In the more mature Atlantic market, the Open Skies agreement between the European Union and the United States along with competition between global airline alliances helps fuel passenger growth of 4.1 percent a year over the forecast period. Over the 20-year forecast horizon, average annual passenger growth in the top four Atlantic country specific markets (the United Kingdom, Netherlands, Ireland and Germany) is 3.9, 4.0, 4.6, and 4.7 percent, respectively.

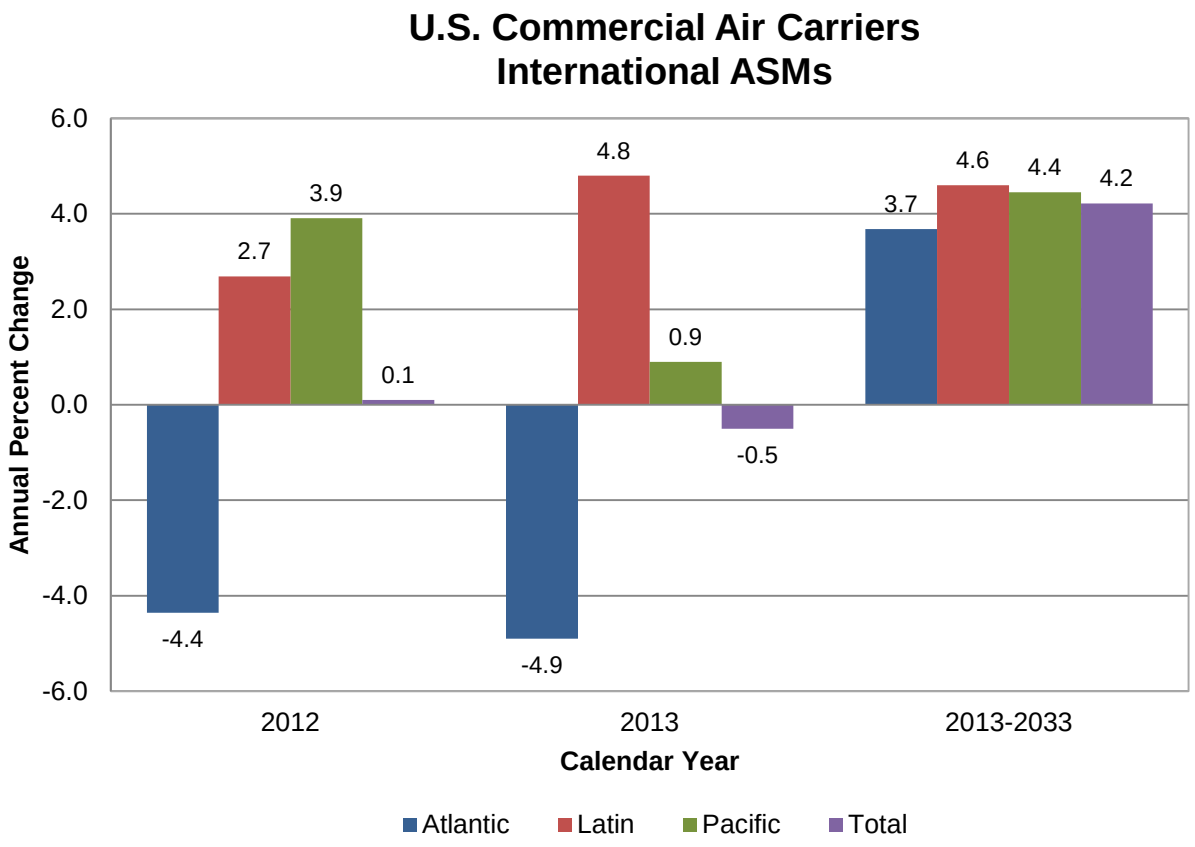
Growth in the Canadian transborder market is forecast to be higher than that of the domestic U.S. market (2.0 percent), averaging 3.1 percent a year over the forecast period.



Source: US Customs & Border Protection data processed and released by Department of Commerce; data also received from Transport Canada

U.S. Flag Air Carriers

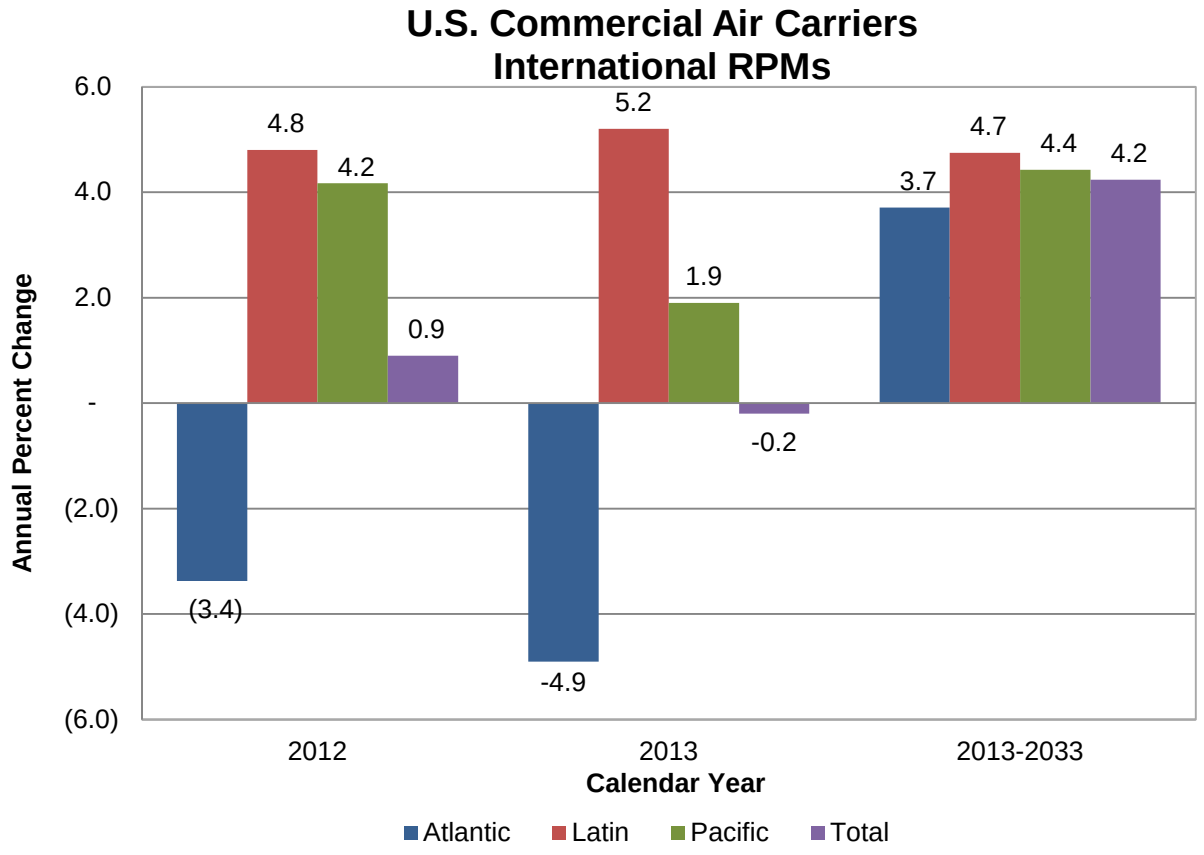
International U.S. commercial air carrier capacity saw minimal growth overall in 2012, up 0.1 percent from 2011. The Atlantic market fell quite a bit (down 4.4 percent) after having made a recovery in 2011 whereas both the Latin and Pacific markets continued their upward trajectories (both up 3.9 percent) but at diminished rates compared to 2011. In 2013, moderate demand and increasing competition between global alliances is expected to boost capacity in Latin (up 4.8 percent) and the Pacific (up 0.9 percent) markets but lackluster performance in the Atlantic (down 4.9 percent) market will result in overall international capacity falling by 0.5 percent. System-wide capacity is projected to recover in 2014 (up 3.9 percent), fueled by stronger economic growth projected for all world regions, and is projected to average 4.2 percent a year for the remainder of the forecast period. Moderate growth over the forecast period reflects favorable U.S. and world economic activity as it recovers from the global contraction.



U.S. commercial air carrier international RPMs and enplanements increased 0.9 and 2.4 percent, respectively, in 2012. The strong growth in enplanements relative to RPMs and ASMs highlights a return to earlier years when carriers actively restrained capacity as demand resumed following the world financial crisis in 2009. An increase in RPMs for the Latin market (up 3.9 percent) and Pacific market (up 4.2 percent) barely helped offset a substantial decrease in the Atlantic market (down 3.4 percent). In 2013, U.S. carrier international RPMs are expected to decrease by 0.2 percent as cuts in the Atlantic market (down 4.9 percent) more than offset increases in the Latin American market (up 5.2 percent), and the Pacific

market (up 1.9 percent). For the balance of the forecast, RPMs increase an average of 4.2 percent a year with the fastest growth showing in the Latin region (up 4.8 percent).

International enplanement growth for 2013 is projected to be 0.7 percent with the Atlantic region falling by 4.6 percent as the bleak economic outlook for Europe impacts demand. Enplanements are projected rebound at 3.8 percent in 2014 with all regions showing gains. Over the balance of the forecast period (2015-2033), enplanements are forecast to increase an average of 4.1 percent a year with the fastest growth in Latin and Pacific markets (up 4.5 and 4.2 percent a year, respectively).



The growth in U.S. carrier international passengers over the period 2012-2033 (4.0 percent a year) compares favorably to the growth in overall international passengers (4.1 percent a year, including the U.S.-Canada transborder market). Forecasts of international demand assume U.S. and foreign flag carriers will benefit from improving economic activity in both the United States and world markets.

International load factor for U.S. commercial carriers was 81.3 percent in 2012, an increase of 0.6 points from 2011. Load factor is expected to increase another 0.3 points in 2013 as capacity falls a bit faster than traffic. International load factor is projected to increase 0.5 points to 82.1 percent in 2014 as traffic growth exceeds capacity growth in all three world markets and remains at that level for the remainder of the forecast out to 2033.

International passenger real yields for U.S. mainline carriers were up 2.1 percent in 2012 as all regions posted increases with the largest increase in the Pacific market (up 3.5 percent), followed by the Latin and the Atlantic markets (both up 1.7 percent). Excess capacity in the Latin market coupled with weak demand in the Atlantic market leads to a 3.4 decline in international real yield in 2013. For the remainder of the forecast period, real yield decreases an average of 0.7 percent a year. In nominal terms, international yields are forecast to decrease 2.0 percent in 2013, and increase 1.1 percent in 2014 and then grow at an annual rate of 1.3 percent over the remainder of the forecast. The decline in real yields assumes competitive pressures and technological improvements will hold the line on fare increases.

Commercial Air Carriers – Air Cargo

Historically, air cargo activity tracks with GDP. Additional factors that affect air cargo growth are fuel price volatility, movement of real yields, and globalization. Significant structural changes have occurred in the air cargo industry; among these are air cargo security regulations by the FAA and TSA, maturation of the domestic express market, a shift from air to other modes (especially truck), use of all-cargo carriers (e.g., FedEx) by the U.S. Postal Service to transport mail, and the increased use of mail substitutes (e.g., faxes, 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 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 and all-cargo carriers was forecast based on an analysis of historic trends in shares, changes in industry structure, and market assumptions.

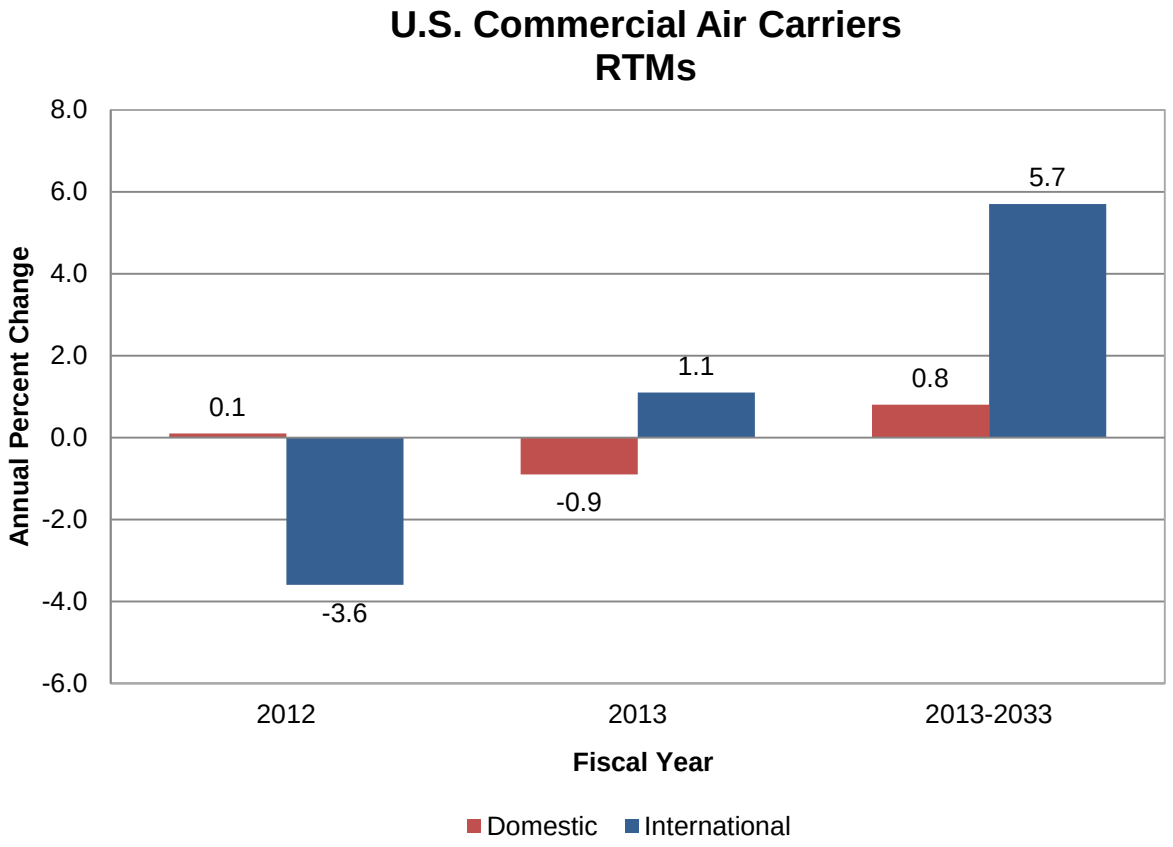
Total RTMs shrank by 2.4 percent in 2012 but are forecast to grow slightly (up 0.4 percent) in 2013. Driven by steady U.S. and world economic growth, total RTMs are projected to increase at an average annual rate of 4.6 percent for the balance of the forecast period.

Domestic cargo RTMs increased by 0.1 percent in 2012 and are forecast to decline by 0.9 percent in 2013. Between 2013 and 2033, domestic cargo RTMs are forecast to increase at an average annual rate of 0.8 percent.

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

The all-cargo carriers have increased their share of domestic cargo RTMs flown from 70.0 percent in 2000 to 88.0 percent in2012. This is because of the shrinkage of the domestic freight/express business for passenger carriers as they have responded to the substantial shocks to the aviation system during this time. Shrinking networks, elimination of unprofitable flying, and consolidation have reduced opportunities for growth in their freight/express business. The all-cargo share is

forecast to grow to 89.9 percent by 2033 based on increases in capacity for all-cargo carriers and ongoing security considerations.

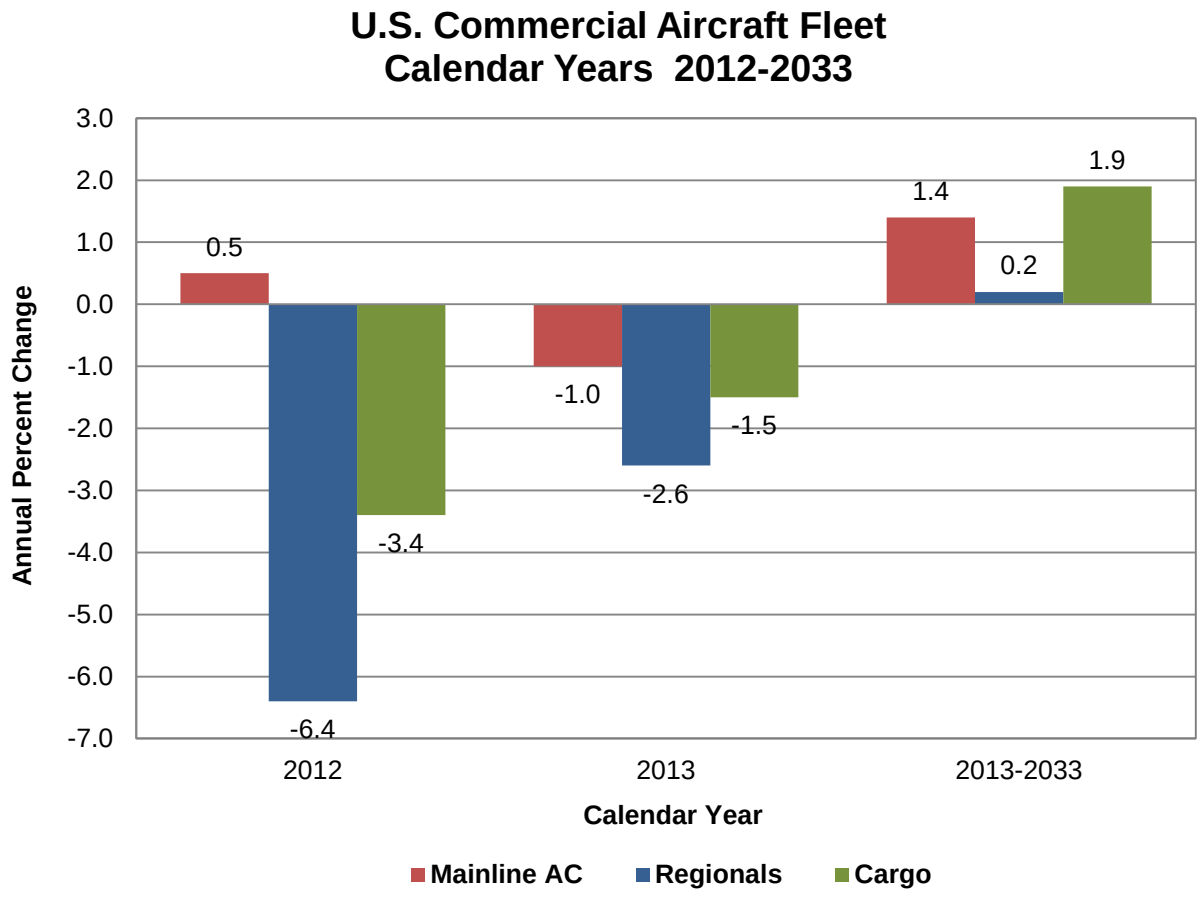


International cargo RTMs unexpectedly fell 3.6 percent in 2012 as fallout from the European debt crisis and a slowdown in China's economic growth slowed worldwide trade.. They are projected to grow 1.1 percent in 2013 as global trade growth resumes. For the balance of the forecast period, (2013-33) international cargo RTMs are forecast to increase an average of 5.7 percent a year based on projected growth in world GDP.

The share of international cargo RTMs flown by all-cargo carriers increased from 49.3 percent in 2000 to 74.7 percent in 2012. Continuing the trend experienced over the past decade, the all-cargo share of international RTMs flown is forecast to increase modestly to 81 percent by2033.

Commercial Aircraft Fleet

The number of commercial aircraft is forecast to grow from 7,024 in 2012 to 8,554 in 2033, an average annual growth rate of 0.9 percent or 73 aircraft annually. The commercial fleet is projected to decrease by 113 aircraft in 2013 after shrinking by 174 aircraft in 2012 as the slow recovery in demand and rising fuel prices prompted carriers to prune their fleets. Since 2007, the U.S. commercial airline fleet has contracted by 713 aircraft. In comparison, the U.S. commercial fleet contracted by 262 aircraft between 2000 and 2003, the last downturn in aviation.



The number of passenger jets in the U.S. mainline carrier fleet increased by 19 aircraft in 2012 but is expected to fall by 37 aircraft in 2013 as network carriers continue to remove older, less fuel efficient narrow body aircraft. After 2013, the mainline air carrier passenger fleet increases an average of 58 aircraft a year over the remaining years of the forecast period, totaling 4,907 aircraft in 2033. The narrow-body fleet (including E-190's at JetBlue and U.S. Airways) is projected to grow by 28 aircraft annually over the period 2012-2033; the wide-body fleet grows by 26 aircraft a year as the Boeing 787 and Airbus A350's enter the fleet.

The regional carrier passenger fleet is forecast to decrease by 63 aircraft in 2013 as increases in larger regional jets are more than offset by reductions in 50 seat and smaller regional jets and turboprops. After 2013, the regional carrier fleet is expected to increase by an average of 5 aircraft (0.2 percent) a year over the remaining years of the forecast period, totaling 2,436

aircraft in 2033. The number of regional jets (90 seats or fewer) at regional carriers is projected to grow from 1,645 in 2012 to 2,082 in2033, an average annual increase of 1.1 percent. All of the growth in regional jets over the forecast period occurs in the larger 70 to 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 shrink from 758 units in 2012 to 354 in 2033. Turboprop/piston aircraft are expected to account for just 14.5 percent of the regional carrier passenger fleet in2033, down from a 31.5 percent share in 2012.

Cargo large jet aircraft are forecast to decrease by 28 aircraft over the next two years (from 840 to 812 aircraft in 2014), and then grow to total 1,211 aircraft in 2033. The narrow-body, cargo jet fleet is projected to increase by 3 aircraft a year over the 21-year forecast period as older 757's and 737's are converted to cargo service. The wide-body, cargo jet fleet is projected to increase by 14 aircraft yearly.

General Aviation

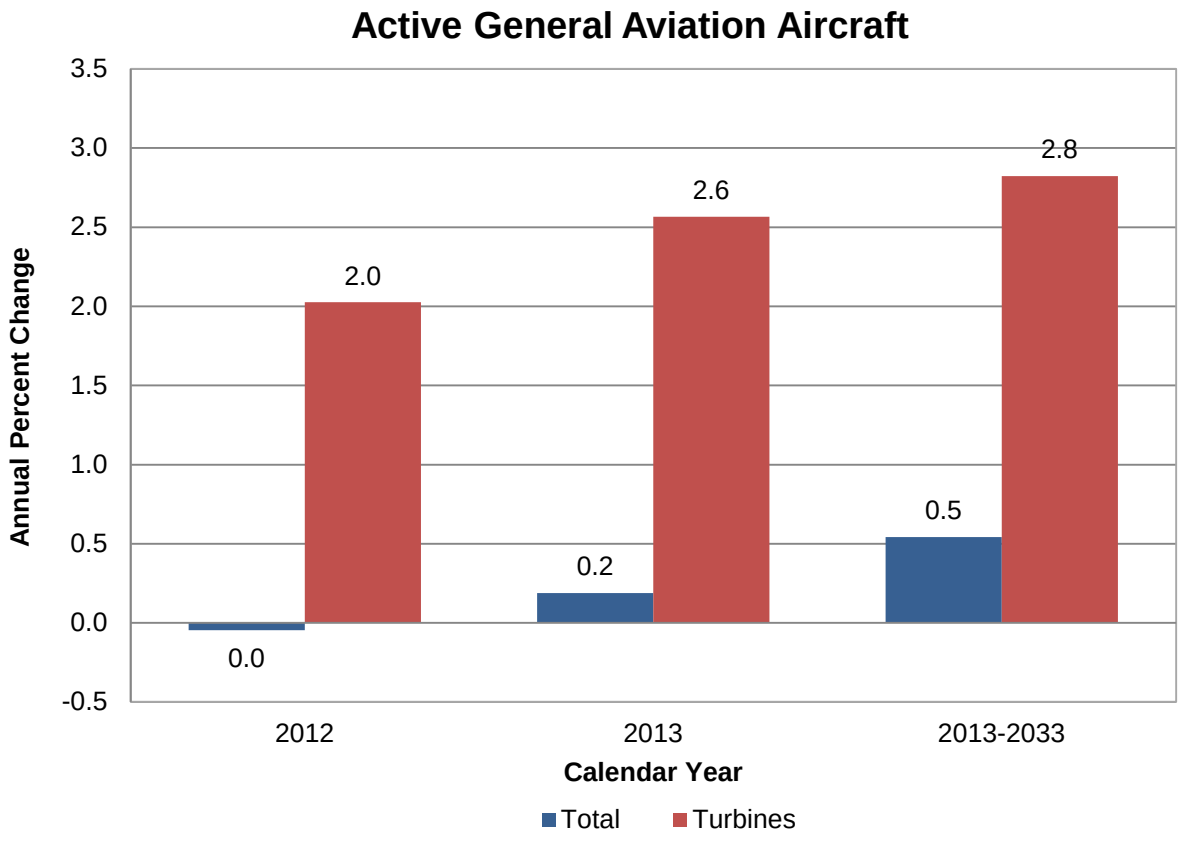
The FAA forecasts the fleet and hours flown for single-engine piston aircraft, multi-engine piston, turboprops, turbojets, piston and turbine powered rotorcraft, light sport, experimental and "other" (which consists of gliders and lighter than air vehicles). The FAA forecasts "active aircraft,"[15] not 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. The results of the 2011 survey were not available to use as the basis for our forecast this year. Therefore, estimates of 2011 fleet and hours were based on estimated number of general aviation aircraft in the FAA civil aircraft registration database by the end of CY 2011, and past rates of active aircraft and utilization by type of aircraft and age of the fleet. Figures for 2012 are estimated based on other activity indicators. Activity forecasts begin in 2013 and continue through 2033.

After growing rapidly for most of the past decade, and then slowing over the past few years, the most recent shipment activity indicates a cautiously optimistic outlook that the hard impact of the recession on the business jet market is coming to an end. The forecast calls for robust growth in the long term outlook, driven by higher corporate profits and the growth of worldwide GDP, though at rates lower than those predicted last year. Additionally, continued concerns about safety, security, and flight delays keep business aviation attractive relative to commercial air travel. As the industry experts and prior year's survey results report a significant portion of piston aircraft hours are also used for business purposes, we predict business usage of general aviation aircraft will expand at a faster pace than that for personal and recreational use. Increased demand, especially for agricultural use turboprop aircraft also contributes to increased turbine fleet and hours.

The active general aviation fleet is projected to increase at an average annual rate of 0.5 percent over the 21-year forecast period, growing from an estimated 220,670 in 2012 to 246,375 aircraft by 2033. The more expensive and sophisticated turbine-powered fleet

[15] An active aircraft is one that flies at least one hour during the year.

(including rotorcraft) is projected to grow at an average of 2.8 percent a year over the forecast period, with the turbine jet portion increasing at 3.5 percent a year, reaching a total of 24,620 by 2033.

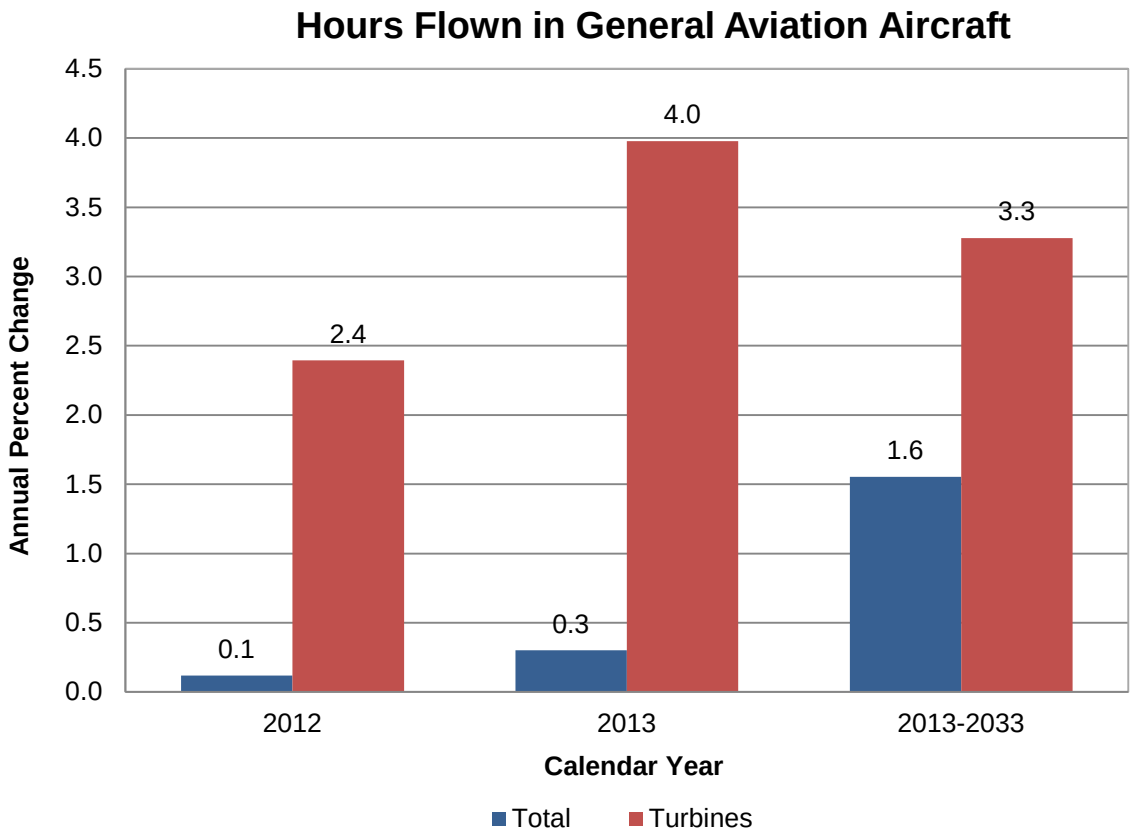


The number of active piston-powered aircraft (including rotorcraft) is projected to decrease from the 2010 total of 159,007 to 146,615 through 2028, with declines in both single and multi-engine fixed wing aircraft, but with the smaller category of piston-powered rotorcraft growing. Beyond 2028, new deliveries are expected to exceed retirements, and so active piston-powered aircraft are forecast to increase to 148,660 by 2033. Over the forecast period, piston-powered aircraft are projected to decrease by an average annual rate of 0.2 percent. Although piston rotorcraft are forecast to increase by 2.2 percent a year, they are a relatively small part of this segment of general aviation aircraft and therefore have little effect on the overall trend. Single-engine fixed-wing piston aircraft, which are much more numerous, are projected to decline at a rate of 0.2 percent, while multi-engine fixed wing piston aircraft are projected to decline by 0.6 percent a year.

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 2011, a total of 6,645 active aircraft were estimated to be in this category. The forecast assumes about 3.2 percent annual growth of the fleet through 2013. Thereafter the rate of increase in the fleet slows to about 2 percent per year. By 2033, a total of 10,245 light sport aircraft are projected to be in the fleet.

The number of general aviation hours flown is projected to increase by 1.5 percent yearly over the forecast period. The FAA projects above average growth in hours will occur after 2023 with

increases in the fixed wing turbine aircraft fleet, as well as a rebounding single engine piston fleet and increasing utilization of single engine piston aircraft as the aging of this fleet starts to slow down. In the medium term, much of the increase in hours flown reflects strong growth in the rotorcraft and turbine jet fleets. Hours flown by turbine aircraft (including rotorcraft) are forecast to increase 3.3 percent yearly over the forecast period, compared with a slight decline of 0.2 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 4.3 percent over the forecast period. The large increases in jet hours result mainly from the increasing size of the business jet fleet, along with a measured recovery in utilization rates from recession induced record lows. Turboprop hours are also expected to increase significantly from what forecast last year, due to the recent trend of significant increase in agricultural use turboprop aircraft, with an average of 2.1 percent per year. Rotorcraft hours, which were less impacted by the economic downturn when compared to other categories and rebounded earlier, are projected to grow by 2.7 percent yearly. An expected decline in utilization rates of turbine rotorcraft is due to the assumption that recently improved affordability at the lower end of the turbine market will sustain the recent market share shift toward turbines; however, as turbine powered rotorcraft replaces the pistons, and since most of their functions will remain unchanged, utilization rates of some of the new turbines will be closer to those of the pistons. Lastly, the light sport aircraft category is expected to see an increase in hours flown of 3.3 percent a year; this is primarily driven by growth in the fleet.



The number of active general aviation pilots (excluding air transport pilots) is projected to be 508,300 in 2033, an increase of over 40,000 (up 0.4 percent yearly) over the forecast period.

Commercial pilots are projected to increase from 116,400 in 2012 to 131,800 in 2033, an average annual increase of 0.6 percent. The number of student pilots is forecast to decrease at an average annual rate of 0.1 percent over the forecast period, declining from 119,946 in 2012 to 117,400 in 2033. In addition, the FAA is projecting that by the end of the forecast period a total of 14,200 sport pilots will be certified. As of December 31, 2012, the number of sport pilot certificates issued was 4,493 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 percent over the forecast period to a total of 195,600 in 2033 from 188,001 in 2012.

FAA Workload Forecasts

FAA and Contract Towers

Activity at the 514 FAA (264) and contract towers (250) totaled 50.6 million operations in 2012, down 0.3 percent from 2011. Activity is projected to fall another 0.3 percent in 2013, with declines in both commercial and non-commercial activity. Growth in total activity at FAA and contract towers resumes in 2014 (1.0 percent) and for the balance of the forecast, activity grows at an average rate of 1.0 percent per year, reaching 61.1 million operations in 2033.

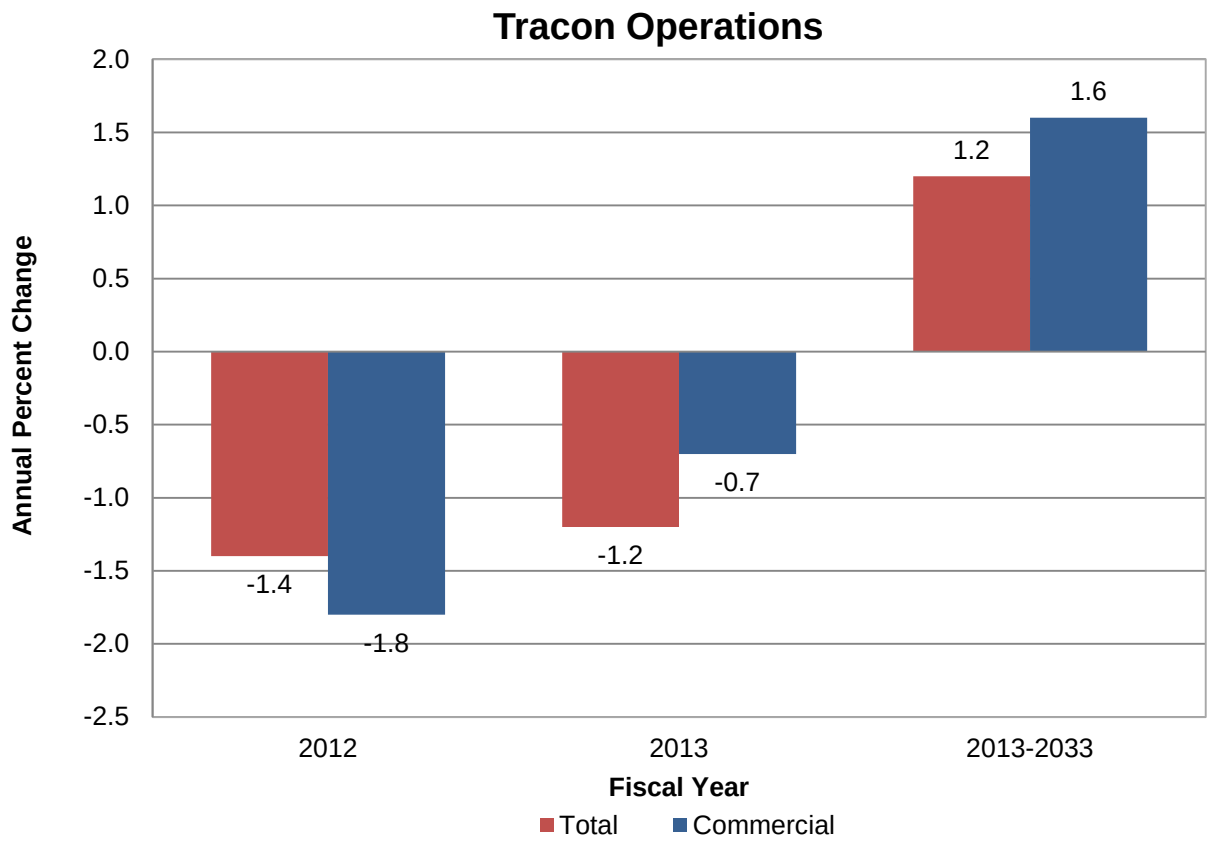
Most of the growth over the forecast period results from increased commercial aircraft activity (up 1.6 percent annually). Air carrier activity is projected to increase slightly (0.6) percent in 2013 as carriers keep capacity under control given the uncertain economic environment. Beyond 2013, air carrier activity is projected to increase an average of 2.5 percent per year over the forecast period. The increase in air carrier activity is driven by combination of mainline carriers increasing capacity in response to growing demand as well as an increase in the operations of 70-90 seat jets which are counted in the air carrier category. Commuter/air taxi operations are forecast to fall 1.9 percent in 2013 and decrease 0.1 percent a year for the balance of the forecast period as regional jets less than 50 seats exit the industry.

General aviation activity increased 0.6 percent in 2012 as local activity rose 1.5 percent.. Overall general aviation activity is projected to fall slightly in 2013 (down 0.2 percent) reflecting the impact of the uncertainty surrounding the economic outlook before beginning to rise modestly in 2014 (up 0.4 percent) as a growing economy promotes the growth of flight hours and operations. For the entire forecast period, general aviation activity at towered airports is projected to increase an average of 0.4 percent a year, to 28.5 million operations in 2033. General aviation activity at combined FAA/contract towers grows in line with the modest increase forecast 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 fell 2.0 percent in 2012 and is assumed to remain at 2012 levels (2.6 million) throughout the balance of the forecast period.

The forecasted growth in operations is not uniform across all facility categories. Over the forecast period, total operations at large hub airports (those airports that enplane 1% or more of total US enplanements) are projected to increase from 12.4 million in 2013 to 17.2 million in 2033, an average annual rate of 1.7 percent a year. Operations at these facilities are overwhelmingly commercial in nature (95.3 percent in 2012) and their growth will mirror the growth in total commercial operations. Total operations at medium hub airports (those airports that enplane 0.25 to 0.99 percent of total US enplanements) are projected to increase a bit slower than the large hubs, averaging 1.5 percent a year over the forecast period, to total 7.2 million in 2033. In the largest category, small and non-hub airports, where 82 percent of the operations are non-commercial in nature, total operations are projected to increase from 32.8 million in 2013 to 36.7 million in 2033, an average annual rate of 0.6 percent a year.

Operations[16] at FAA TRACONs (Terminal Radar Approach Control) fell 1.4 percent in 2012, the eighth year in a row. They are projected to fall an additional 1.2 percent in 2013 as both commercial and non-commercial activity decline. After 2013, TRACON operations are forecast to increase at an average annual rate of 1.2 percent for the balance of the forecast. For the entire forecast period, TRACON operations grow an average of 1.2 percent per year, totaling 47.2 million in2033.



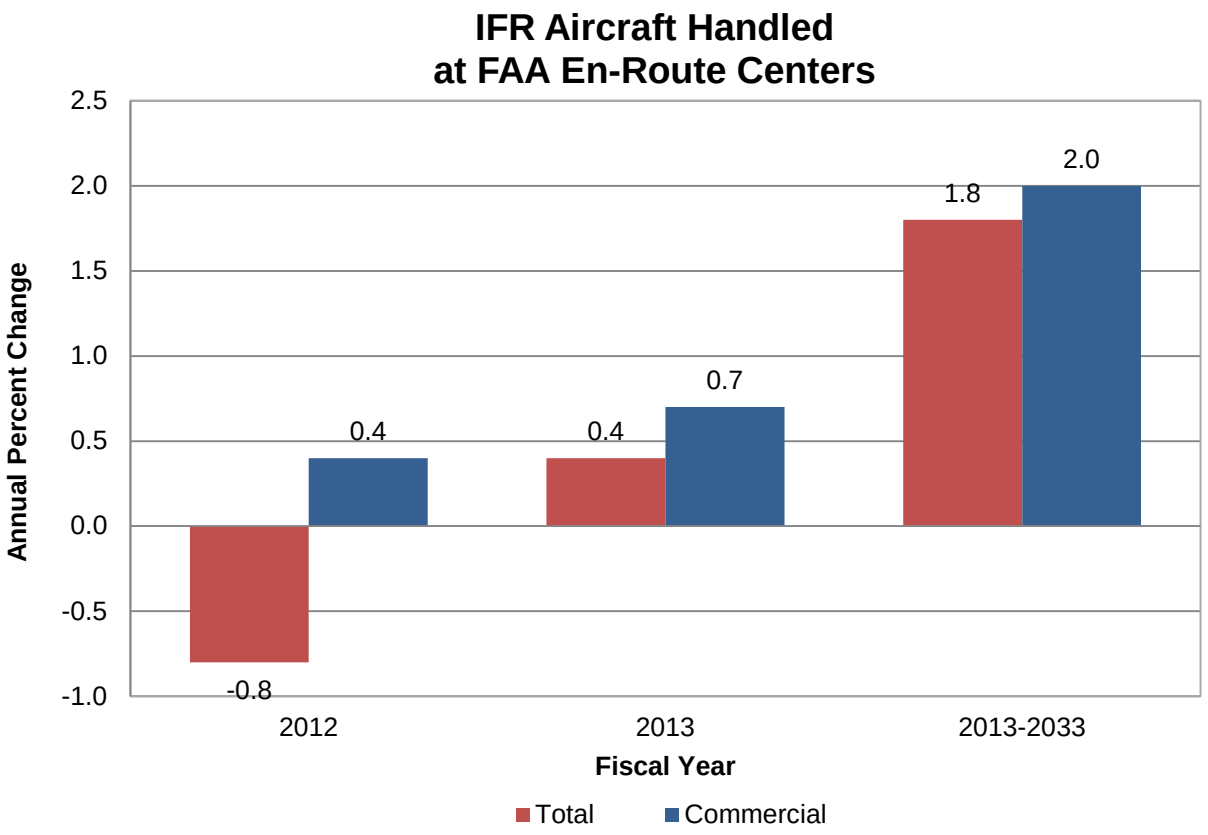
Over the forecast period, commercial aircraft operations at FAA TRACONs are forecast to increase at 1.6 percent per year driven by growth in air carrier activity. General aviation operations at FAA TRACONs are projected to grow 0.6 percent a year, reflecting the slow growth in the general aviation fleet and hours. Military activity is expected to remain at its 2012 level (2.3 million) of activity throughout the forecast period.

En-route Centers

The number of IFR aircraft handled at FAA en-route traffic control centers decreased 0.8 percent to 40.9 million in2012, as declines in general aviation and military activity offset a slight increase in commercial aviation activity. In 2013 a modest increase in airline activity offsets a

[16] TRACON operations consist of itinerant Instrument Flight Rules (IFR) and Visual Flight Rules (VFR) arrivals and departures at all airports in the domain of the TRACON as well as IFR and VFR overflights.

fall in general aviation activity, resulting in en-route center activity increasing by 0.4 percent. After 2013, through the balance of the forecast period, en-route activity increases 1.8 percent annually, reaching 58.2 million aircraft handled in 2033. Over the entire forecast period, commercial activity is projected to increase at an average annual rate of 1.9 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 growth in business aviation. Military activity is held constant at the 2012 activity level throughout the forecast period.

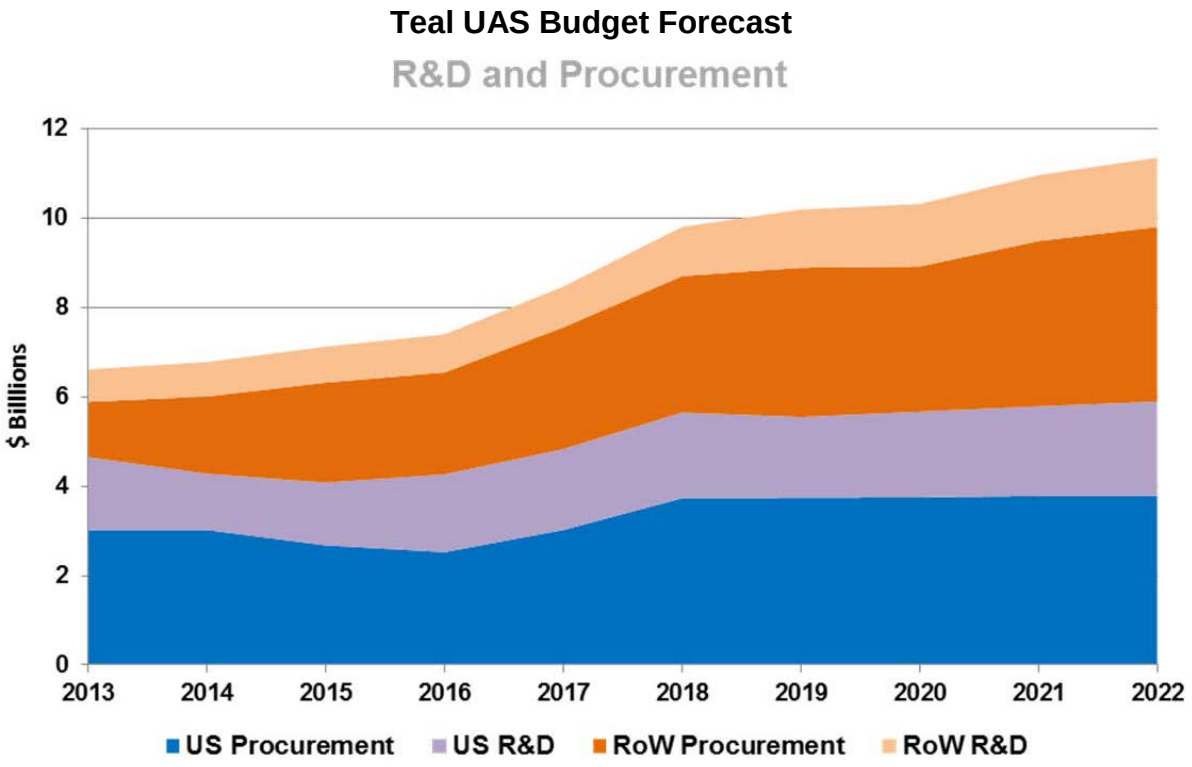


Activity at FAA en-route centers is growing faster than at towered airports because more of the activity at en-route centers is from the faster growing commercial sector and high-end (mainly turbine) general aviation flying. Much of general aviation activity at towered airports, which is growing more slowly, is local in nature, and does not impact the centers.

UNMANNED AIRCRAFT SYSTEMS

Unmanned Aircraft Systems (UAS) are currently the most dynamic growth sector within the aviation industry and have two distinctive characteristics. First, they have no human pilot/operator onboard and second, they are remotely operated by a pilot using data link transmissions.

As shown in the graph below, the Teal Group forecasts worldwide annual spending on research, development, testing, and evaluation procurement will increase from $6.6 billion in 2013, to $11.4 billion in 2022 for all UAS. Over the next ten years, Teal Group forecasts total UAS spending worldwide at $89.1 billion.



Most UAS were initially developed for military applications but have great potential for cross over to commercial and civil markets. The most popular military UAS use is for reconnaissance and surveillance, so we would expect that these types of operations would be adopted more quickly. As such, we expect that search and rescue will be an extremely viable for UAS.

In 2009, the FAA created the Unmanned Aircraft Program Office (UAPO) to integrate UAS safely and efficiently into the National Airspace Systems and coordinate all FAA certification and operational policy activities related to UAS. In October 2010, the UAPO published a Civil/Public UAS roadmap to clarify the path toward certification and operation of UAS in the NAS. The FAA is continuing to develop a plan to accelerate the integration of civil UAS into the NAS.

With all the possible applications for unmanned aircraft, the FAA forecasts the largest near-term growth in civil/commercial unmanned operations will be in the area of Small Unmanned Aircraft Systems (sUAS). The FAA is continuing to make a significant effort to develop the necessary regulatory framework for Small Unmanned Aircraft Systems to operate. The regulatory framework will includes standards, airworthiness criteria, certification and procedures for sense and avoid systems, as well as protocols to be used for the certification of command control and communication systems in the defined flight environment.

We believe that the civil UAS markets will evolve within the constraints of the regulatory and airspace requirements. Once enabled, commercial markets will develop and demand will be created for additional UAS and the accompanying services they can provide. Once enabled, we estimate roughly 7,500 commercial sUAS would be viable at the end of five years.

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 Title 51 U.S. Code, Subtitle V, Chapter 509 (formerly the Commercial Space Launch Act). Title 51 and the Executive Order also direct the Department of Transportation (carried out by the FAA) to encourage, facilitate, and promote U.S. 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 primarily consists of commercial launch service providers launching satellites and cargo into orbit for either commercial or government customers. Commercial space transportation also includes suborbital launches, where a payload or a vehicle is launched on a trajectory that briefly enters space but returns to Earth without entering orbit. Finally, it includes the reentry of objects from space to Earth.

The FAA licenses several expendable vehicles used for commercial orbital launches. The most frequently used vehicles are:

- Atlas V, a heavy-class vehicle built by United Launch Alliance (ULA), a joint venture between Boeing and Lockheed Martin, and marketed by Lockheed Martin Commercial Launch Services (LMCLS);
- Delta IV, a heavy-class vehicle and the Delta II, a medium-class vehicle, both built by ULA and marketed by Boeing Launch Services (BLS);
- Falcon 9, an intermediate-class launch vehicle built, operated, and marketed by Space Exploration Technologies Corp. (SpaceX).
- Pegasus and Taurus, two small vehicles built, operated, and marketed by Orbital Sciences Corporation (Orbital); and
- Zenit-3SL, a heavy-class vehicle built by the Ukrainian company KB Yuzhnoye for the Russian-owned Sea Launch venture, launched from a floating launch platform based at Long Beach, CA.

The medium-class Antares by Orbital is currently under development and its first launch is planned for 2013.

From 1989 through the end of 2012, DOT/FAA has licensed 212 orbital and suborbital commercial launches.

Experimental Permits, for suborbital reusable vehicle development and test flights, were first granted by the FAA in 2006 to Blue Origin and Armadillo Aerospace. Other permits have been

granted for vehicles participating in the Lunar Lander Challenge, completed in 2009. Since then, Experimental Permits have been issued to Blue Origin, SpaceX, and Scaled Composites as those companies develop new vehicles.

Eight commercial spaceports, located in six states, Alaska, California (part of Vandenberg Air Force Base and Mojave Air and Space Port), Florida (Cape Canaveral and Cecil Field Spaceport), 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 2012

There were five FAA-licensed orbital launches in 2012, up from one in 2011. SpaceX's Falcon 9 vehicle made two licensed launches to the International Space Station. In May, SpaceX completed its second flight under NASA's Commercial Orbital Transportation Services (COTS) program, and in October, the company launched its first flight under NASA's Commercial Resupply Services (CRS) program. Sea Launch's Zenit-3SL vehicle performed three licensed launches, which carried Intelsat 19, Intelsat 21, and Eutelsat 70B communications satellites to geostationary orbit.

	2011	2012	2013 Forecast
Licensed Launches	1	5	7-12
Permitted Launches	2	2	10-25

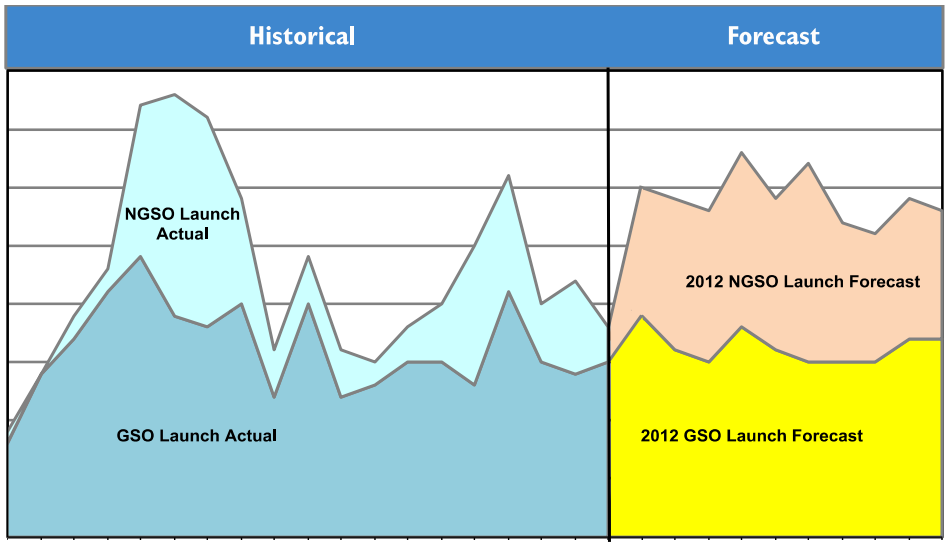
FAA Licensed and Permitted Launches, 2011-2012

Worldwide there were 20 orbital commercial launches in 2012, compared to 18 in 2011. In addition to the five FAA-licensed launches, Europe performed six commercial launches, all on the Ariane 5 vehicle. Russian conducted seven commercial launches, all on the Proton M vehicle, and China conducted two commercial launches on the Long March 3B and Long March 2D vehicles. There were 78 total worldwide commercial, civil, and military launches in 2012, with commercial launches representing approximately 26 percent of the total. For more details, see the 2012 *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 2012, the FAA and the Commercial Space Transportation Advisory Committee (COMSTAC) published their annual global forecast for commercial launch demand, the *2012 Commercial Space Transportation Forecasts*. The report forecasts an average of 29.1 commercial orbital launches per year of geosynchronous orbit (GSO) and non-geosynchronous orbit (NGSO) payloads through 2021. That annual average includes 16.3 launches of medium-to-heavy vehicles to deploy GSO satellites, 12.0 launches of medium-to-heavy vehicles to NGSO, and 0.8 launches to NGSO by small vehicles.



Combined 2012 GSO and NGSO Historical Launches and Launch Forecasts

Commercial GSO launches are used for communications satellites with masses ranging from 2,000 to over 6,000 kilograms. There has been an increase in the number of GSO satellites that are larger and more complex; however, there is still a demand for smaller satellites. Demand for commercial NGSO launches spans a number of markets, including commercial remote sensing; science and technology demonstration; and replenishment and replacement of low Earth orbit communications satellite systems reaching the end of their lifespan. The majority of commercial NGSO launches for science and technology demonstration missions are for nations that do not have indigenous launch capability.

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/

Suborbital Reusable Vehicles Forecast

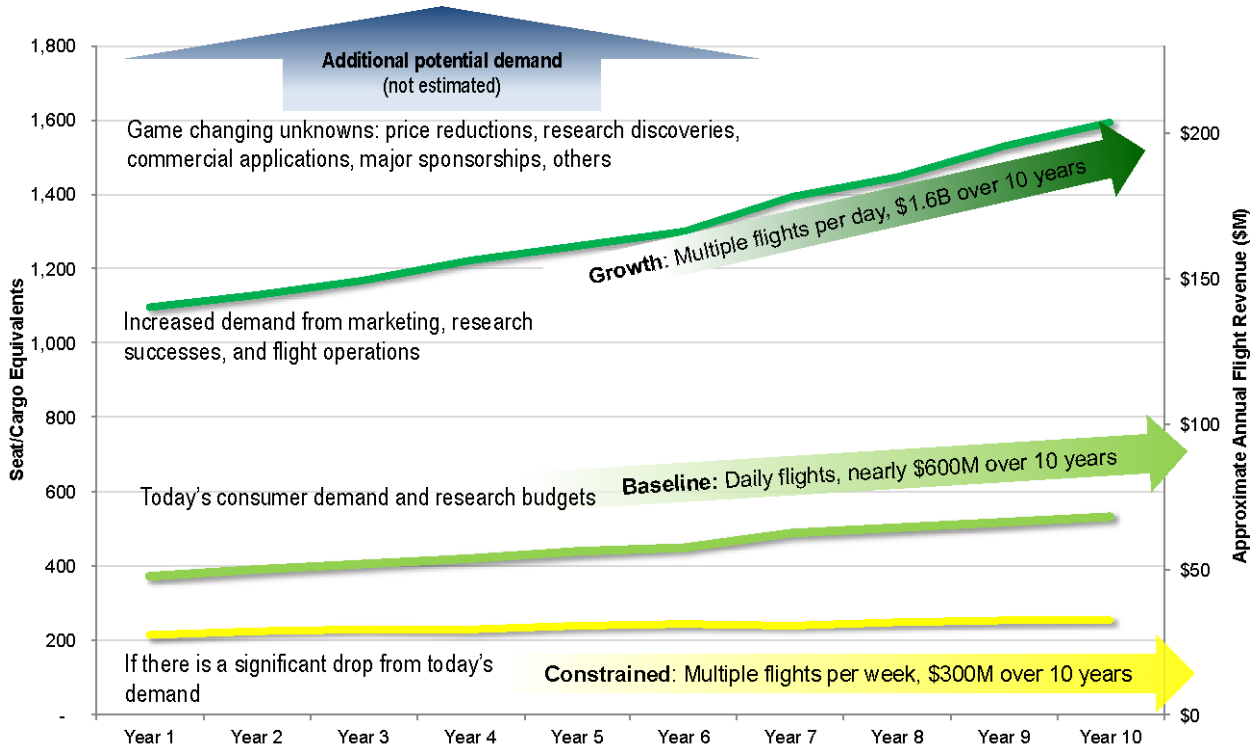
In July 2012, the FAA and Space Florida prepared forecasts of demand for suborbital reusable vehicles (SRVs) for a 10-year period. The goal of the study was to provide information for government and industry decision makers on the emerging SRV market by analyzing dynamics, trends, and areas of uncertainty in eight distinct markets SRVs could address. The eight markets include: Commercial Human Spaceflight, Basic and Applied Research, Aerospace Technology Test and Demonstration, Media and Public Relations, Education, Satellite Deployment, Remote Sensing, and Point-to-Point Transportation. Demand in each market was forecast for three scenarios: baseline, growth, and constrained. The units used are seat/cargo equivalents, translated as either one seat for a single occupant or a cargo equivalent of 3.3 lockers (based on the mid-deck lockers used aboard the Space Shuttle).

Total projected demand for SRVs, across all eight markets, grows from around 370 seat/cargo equivalents in Year 1 to over 500 seat/cargo equivalents in the tenth year of the baseline case. (Year 1 represents the first year of regular SRV operations.) Demand under the growth scenario, which reflects increases due to factors such as marketing, research successes, and flight operations, grows from about 1,100 to more than 1,500 seat/cargo equivalents over ten years. The constrained scenario, which reflects significantly reduced consumer spending and government budgets, shows demand from about 200 to 250 seat/cargo equivalents per year.

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Total
Baseline Scenario	373	390	405	421	438	451	489	501	517	533	4,518
Growth Scenario	1,096	1,127	1,169	1,223	1,260	1,299	1,394	1,445	1,529	1,592	13,134
Constrained Scenario	213	226	232	229	239	243	241	247	252	255	2,378

Total projected demand for suborbital reusable vehicles across all markets by seat/cargo equivalents

Demand for SRVs is dominated by Commercial Human Spaceflight. The analysis indicates that about 8,000 high net worth individuals from across the globe are sufficiently interested and have spending patterns likely to result in the purchase of a suborbital flight. The second largest area of demand is Basic and Applied Research, funded primarily by government agencies, and also by research for not-for-profits, universities, and commercial firms. Aerospace Technology Test and Demonstration, Education, Satellite Deployment, and Media and PR generate the remaining demand. The Remote Sensing and Point-to-Point Transportation markets are not forecasted to drive launches at this time.



10-year SRV demand forecast

For more details, see the Suborbital Reusable Vehicles: A 10-Year Forecast of Market Demand report available online at:

http://www.faa.gov/about/office_org/headquarters_offices/ast/reports_studies/forecasts/

RISKS TO THE FORECASTS

The forecasts in this document are forecasts of aviation demand, driven by models built on forecasts of economic activity. There are many assumptions in both the economic forecasts and in the FAA models that could impact the degree to which these forecasts are realized. This year's forecast is driven, at least in the short-term, by a number of factors including the strength of the economic recovery and any impact resulting from the U.S. government fiscal situation. Also, as numerous recent incidents (like the attempted bombing of a Northwest airliner on Christmas Day 2009, the discovery of multiple devices on cargo flights out of Europe in October 2010) remind us, terrorism remains among the greatest risks to aviation growth. Any terrorist incident aimed at aviation would have an immediate and significant impact on the demand for aviation services that would be greater than its impact on overall economic activity.

Although oil prices remained high in 2012, there is still considerable uncertainty as to the level of oil prices once the economic recovery is on firmer ground. The FAA's baseline forecast (derived from economic assumptions in IHS Global Insight's 30-Year Focus released during the fourth quarter of 2012) calls for decreases in oil prices until 2015. These are relatively modest, with the price of oil approaching $80/barrel by 2015 and then gradually increasing thereafter, approaching $128/barrel by the end of the forecast period in 2033. Some forecasters are calling for a much sharper increase in the price of oil. The U.S. Energy Information Administration (EIA) in its 2013 Annual Energy Outlook projects oil prices to remain between $90 and $100/barrel through 2015-2016 and then rising steadily over the next 17 years, reaching $200 per barrel in 2033. 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 industry profitability, put increasing pressure on airline costs, delay balance sheet improvements and discourage expansion plans or orders for new aircraft as carriers focus on maintaining and increasing cash balances.

Although the global economy is growing, the data suggests that growth is concentrated in relatively few countries. As a result, the ensuing economic recovery may not be balanced and there is considerable doubt about the strength and sustainability of the expansion. The baseline forecast assumes that growth in the BRIC[17] economies will be significantly higher than in the other large economies – U.S., Japan and the European Union. Doubts remain over the strength of demand in the U.S., Japan and in the European Union as these areas continue to be constrained by structural economic problems and institutional constraints. In addition, many countries in the European Union have implemented austerity policies, aimed at reducing government spending and personal debt, which could prolong the regional downturn. Furthermore the steps that were taken to resuscitate the global economy may prove to be

[17] Acronym given to the economies of Brazil, Russia, India, and China.

excessive, since the resulting surge in liquidity growth seems to be inflating asset bubbles and exacerbating existing global imbalances. Once the global economy recovers from the current downturn, there could be an increased risk posed by asset bubbles and macroeconomic imbalances, which could result 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 worldwide economic activity could seriously inhibit the growth in global passenger demand.

The outlook for further consolidation via mergers and acquisitions (M&A) appears to be rather limited beyond the announced merger between American Airlines and U.S. Airways. If the merger is approved, this will leave the U.S. industry with four major players (Delta, United, American, and Southwest), who accounted for almost 80% of all capacity and traffic flown in 2012. Of the network carriers, only Alaska remains independent, although it does have code share agreements with both American and Delta. In the low cost carrier sector, the merger between Southwest and AirTran is progressing at a steady pace as the carriers plan to fully connect their networks by April, 2013 and have full integration of the fleet and a single ticketing system by the end of 2014. Aside from Southwest and AirTran, there appears to be little scope for further consolidation as there are significant obstacles. In particular the financial situation of many low cost carriers limits the possibilities of additional merger activity. For many low cost carriers, the sheer size of merger transactions or the amount of financial risk associated with a merger makes further merger activity unlikely. However, U.S. airlines are exploring other options including global alliances. Many of the major carriers in the U.S. are members of global alliances that operate with some measure of anti-trust immunity from the U.S. DOT. While anti-trust immunity may provide flexibility for 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 large regional jets (70 to 90 seats) 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, as consolidation has occurred among the network carriers, certain regional carriers have found themselves either saddled with excess capacity or lack of sufficient capacity, or lack of feed traffic. Unlike the period after the terror attacks of September 11, 2001, when network carriers also reduced the size and breadth of their networks, regional carriers have not necessarily seen opportunities for increased flying to backfill the loss of the mainline service. While Delta's announced plans to reduce its reliance on small (read 50 seat) regional jets may provide some opportunities for well positioned regional carriers, the overall impact of consolidation so far has been to reduce opportunities for regional flying substantially.

After suffering through a significant downturn in 2009, business and corporate aviation have seen a partial recovery during the past three years. The pace of the recovery in business and corporate aviation is 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 jets are delivered overseas and, with the potential easing of regulations on the use of airspace in foreign countries, the scenario for business jet manufacturers looks all the more promising. Raising the level of security restrictions, and the subsequent travel hassles placed on airline passengers, could make corporate jet travel look increasingly appealing.

Not only is the volume of aircraft operating at most large hubs expected to increase over the next 20 years, so is the mix of aircraft for this same period. The expected increases in the numbers of regional jets and business jets will increase the impact the national airspace system and make the FAA's job more challenging. This increase in the mix of aircraft will impact workload strictly due to the increasing demand for aviation services projected over the forecast period.

Although overall activity at FAA and contract towers fell in 2012, activity at many of the largest airports increased in 2012 and delays remained at historically high levels at many U.S. airports. 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.

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. There is also an ongoing effort to address the climate impacts of aviation. Aviation currently accounts for 2 to 3 percent of global carbon emissions, but this percentage is expected to increase with the growth in operations unless mitigated with new technology, renewable fuels, operational improvements and market based measures. While certain measures to address climate impacts can result in reduced costs, such as increased fuel efficiency, other measures, such as market instruments could pose additional constraints on growth. Energy concerns are also rising, driven by spikes in fuel prices, supply and security issues, and concerns about fossil fuel emissions contributing to global climate change. Lack of progress in improving the environmental and energy outlook for the future fleet may result in more restrictions via standards or operating limitations on the fleet in service which in turn may depress growth. By contrast, breakthroughs in quieter, cleaner aircraft technologies and renewable fuels could reduce environmental and energy constraints on the forecast, and enable sustainable growth.

APPENDIX A: ALTERNATIVE FORECAST SCENARIOS

Uncertainty exists in all industries, but especially in the commercial air travel industry. As volatility in the global environment has increased, the importance of scenarios for planning purposes has increased. In order to help stakeholders better prepare for the future, the FAA has begun to provide alternative scenarios to our baseline forecasts of airline traffic and capacity.

To create the baseline domestic forecast, economic assumptions for both U.S. and international regions from IHS Global Insight's 30-Year Focus (released fourth quarter 2012) were used to generate enplanements, mainline real yield and nominal yield. To develop the alternative scenarios, assumptions from the optimistic and pessimistic scenarios contained in IHS Global Insight's 10 year alternatives from their January 2013, U.S. forecast were used. The January 2013 forecast reflected the incorporation of the "fiscal cliff" deal that was agreed to on New Year's Day. Inputs from these scenarios were substituted for the baseline scenario inputs to create a "high" and "low" traffic, capacity, and yield forecast.

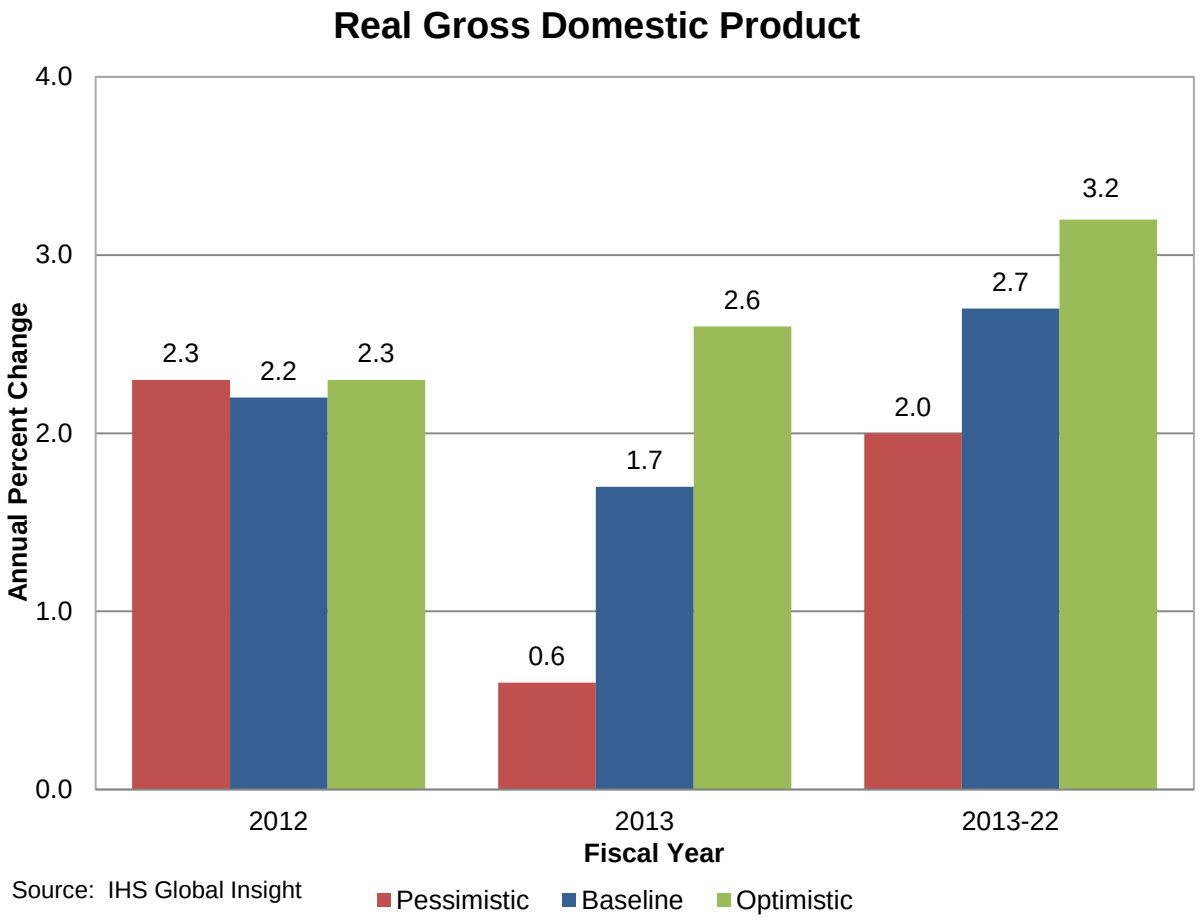
International passengers and traffic are primarily determined by country specific Gross Domestic Product (GDP) provided by IHS Global Insight. Thus, the baseline forecast of GDP for both the U.S. and international regions is modified using the optimistic and pessimistic forecasts of GDP described above in order to create a high and low case. Since only the ten year alternative GDP forecasts by Global Insight were available at the time of this analysis, both the domestic and international optimistic and pessimistic scenarios extend to 2022 only.[18]

Scenario Assumptions

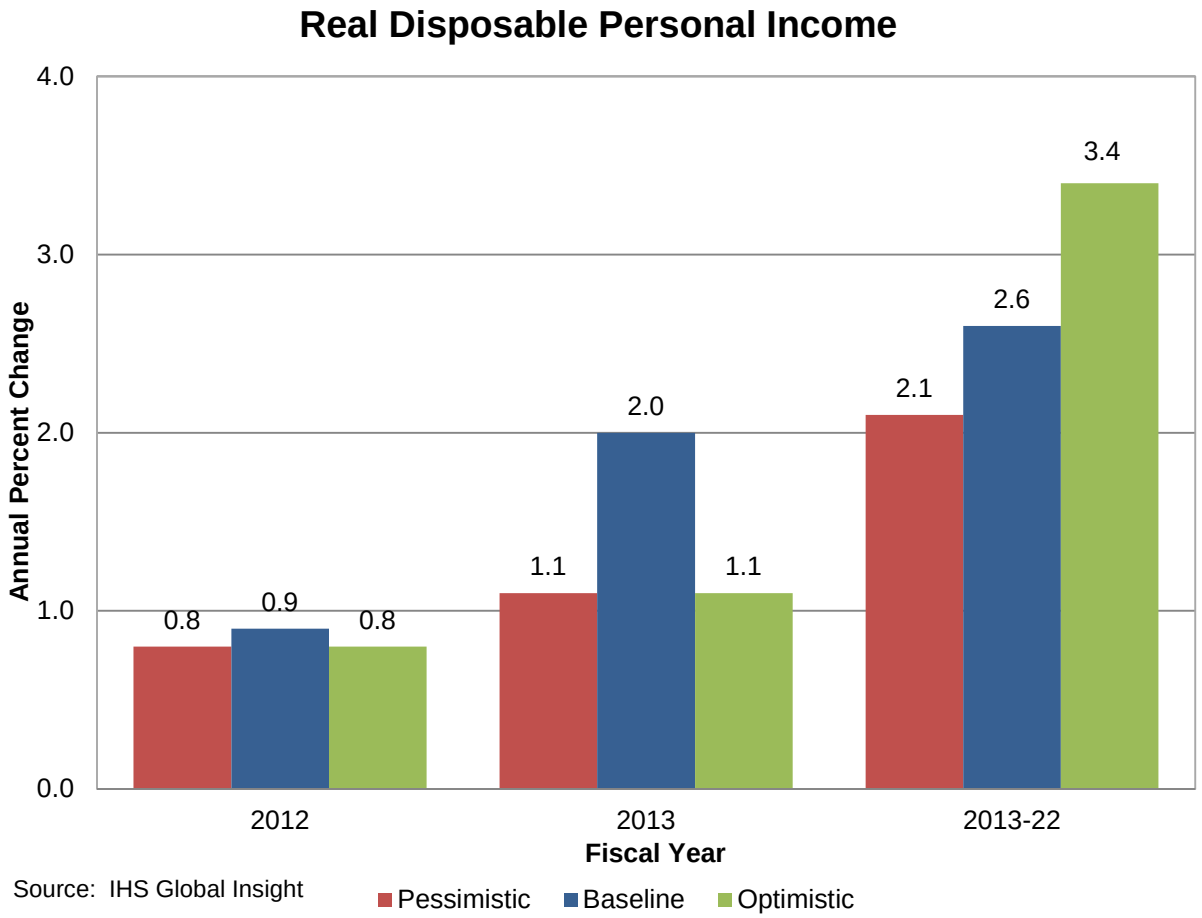
The FAA's baseline forecast assumes that the economy recovers from the current downturn and suffers no major mishaps such as large oil price shocks, swings in macroeconomic policy, or financial meltdowns. The FAA's high case forecast uses IHS Global Insight's optimistic forecast. The optimistic forecast sees faster employment growth and sustained improvements in the housing sector leading to a stronger economy. A credible plan for long-term deficit reduction is enacted, and policy decisions in both Europe and China boost the global economic outlook. In this scenario GDP and real DI growth are about 0.5 and 0.8 percentage points, respectively, faster per year than the baseline forecast and unemployment averaging 1.5 points lower on an annual basis than the baseline (Real DI and unemployment are used as an input variables to the FAA's base, high and low forecasts of enplanements). Conversely, FAA's low case forecast uses IHS Global Insight's pessimistic scenario. In the pessimistic forecast, the U.S. is not able to avoid a prolonged fight over the debt ceiling and in the face of uncertainty,

[18] IHS Global Insight, Short-term macro forecast – baseline and alternatives, released January 4, 2013.

policymakers decide to cut spending. The Eurozone crisis intensifies which reduces the demand for U.S. exports. As the private sector cuts back, housing activity begins to slow and credit dries up, pushing the U.S. economy into a mild recession in early 2013. In this scenario, GDP and real DI grow 0.7 and 0.5 percentage points, respectively, slower per year than in the baseline, and unemployment, on average, is 1.4 points higher on an annual basis than in the baseline.

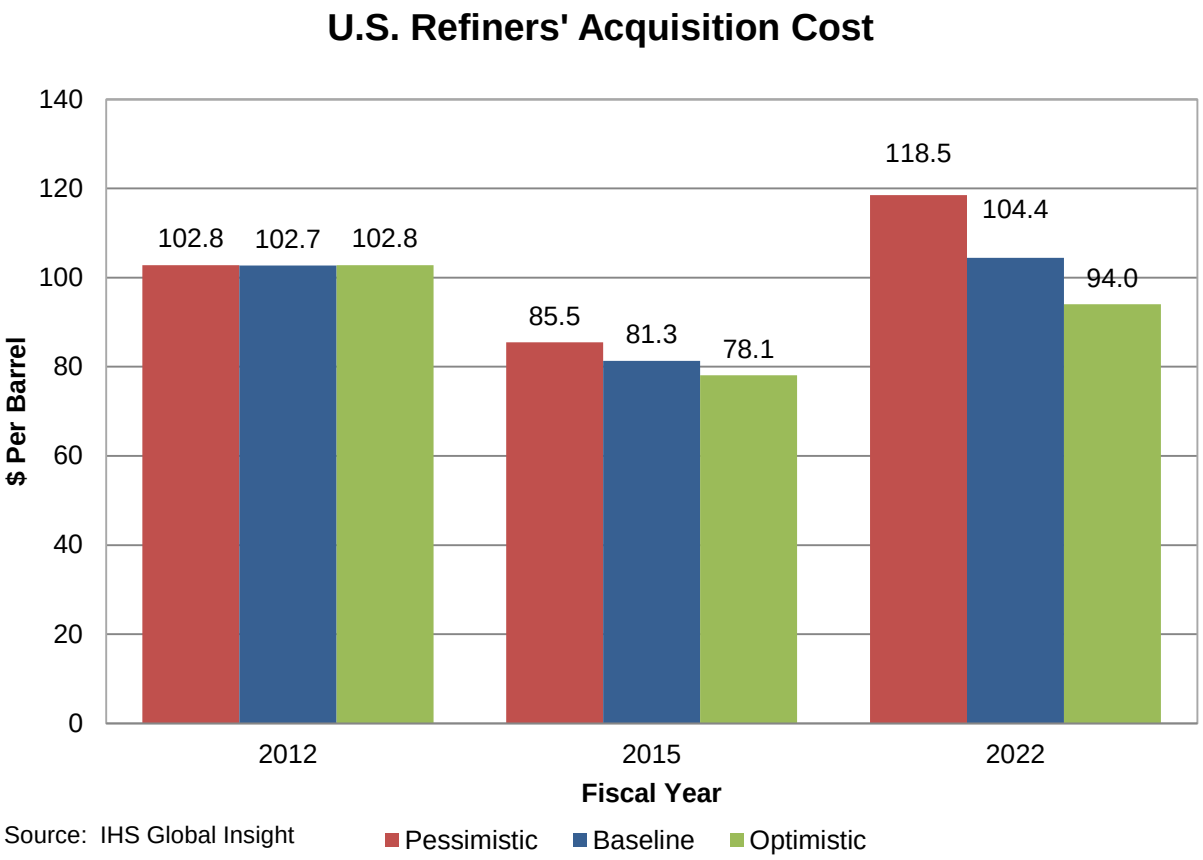


Source: IHS Global Insight



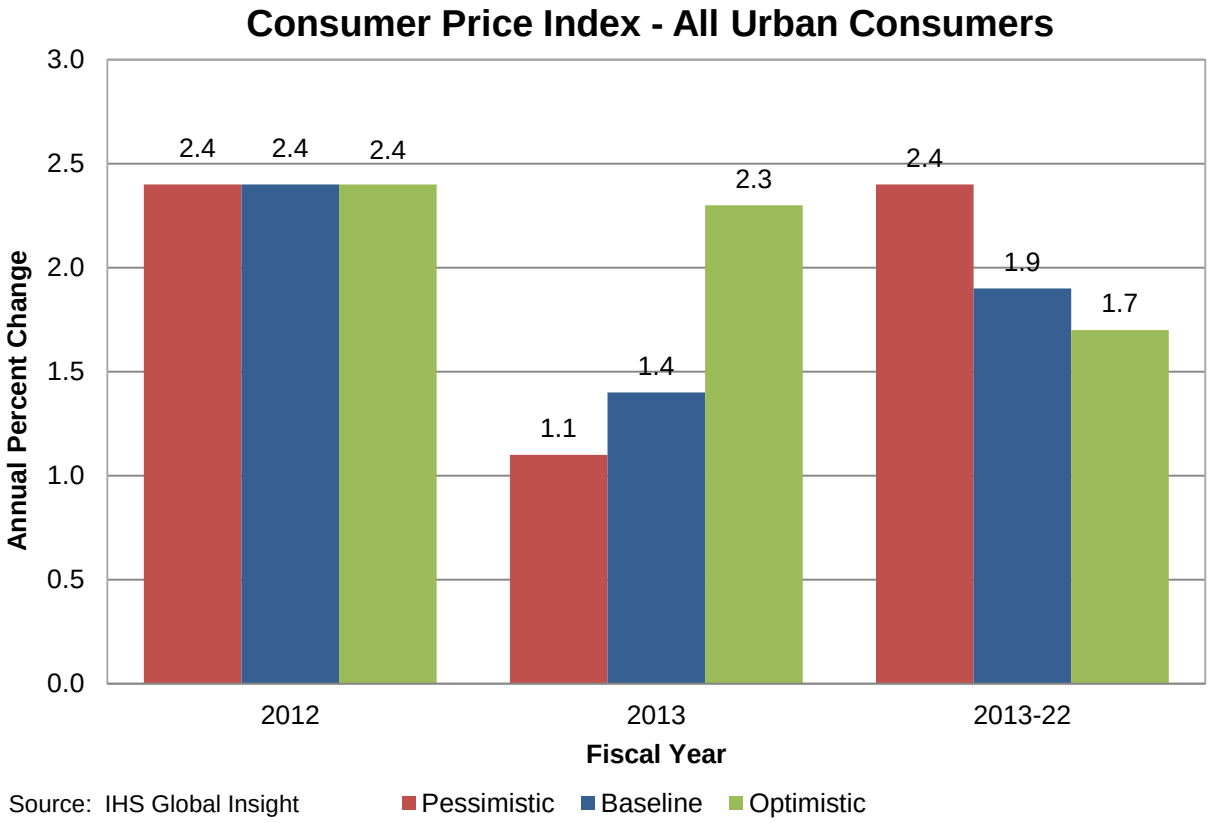
Source: IHS Global Insight

Oil prices affect 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 fall over the next few years. In the baseline forecast, oil prices are kept in check as technological improvements act as a counterbalance to rising prices. In the baseline, the refiners acquisition cost (RAC) of oil increases only 1.7 percent between 2012 and 2022, rising from $103 to $104 per barrel. In the optimistic case, the price of oil (RAC) decreases at a faster pace through 2015 than in the baseline forecast and then rises more slowly thereafter, resulting in a price of $94 per barrel by 2022. The high case is characterized by availability of energy, further gains in technology, and a stronger dollar which help to temper prices compared to the baseline. In the low case forecast, a weaker dollar and lower productivity gains create upward pressure in oil prices after 2015. In this scenario, the RAC rises by 38 percent over its 2015 low to $119 by 2022.



Source: IHS Global Insight

The price of energy is one of the critical drivers in the growth of consumer prices over the forecast period. In the optimistic case 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 pessimistic case forecast the opposite holds with energy prices, wages and import prices rising more rapidly compared to the baseline. As a result, in the pessimistic case, the CPI grows an average of 2.4 percent annually over the forecast period.

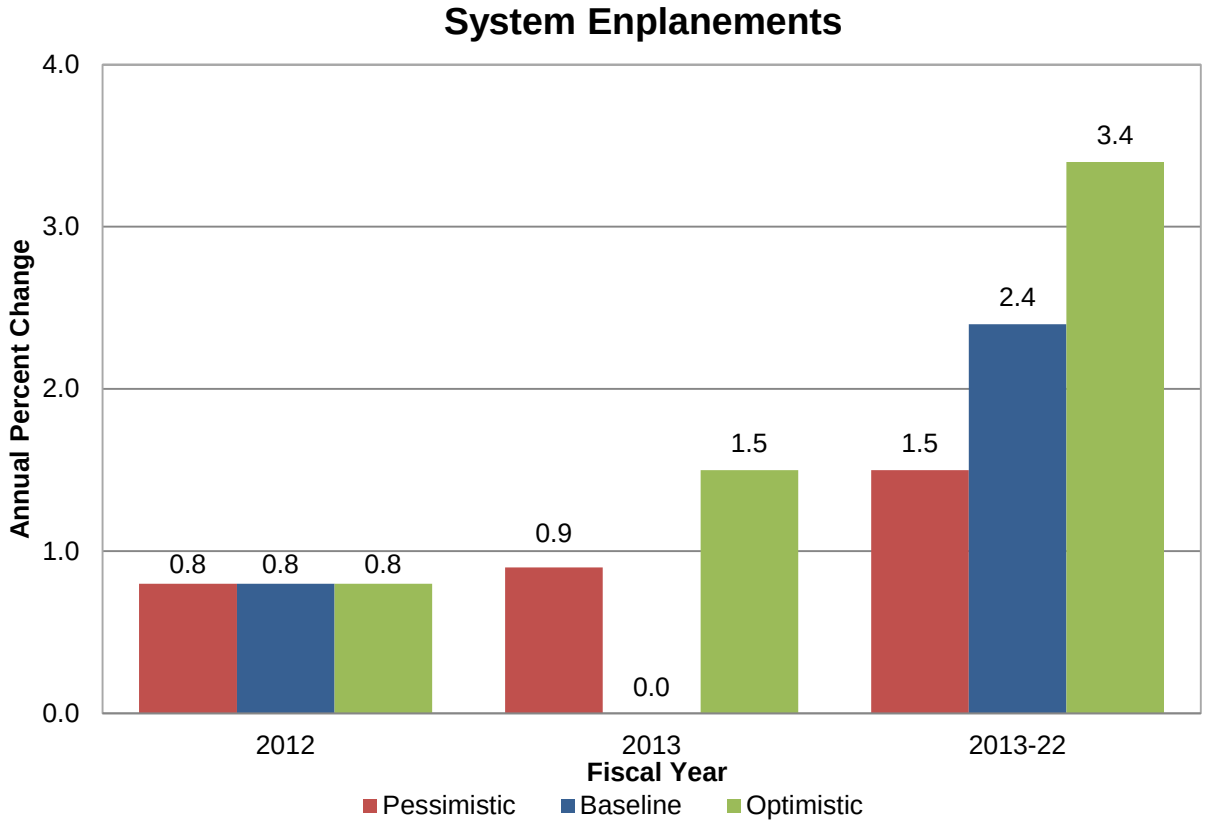


Source: IHS Global Insight

Alternative Forecasts

Passengers

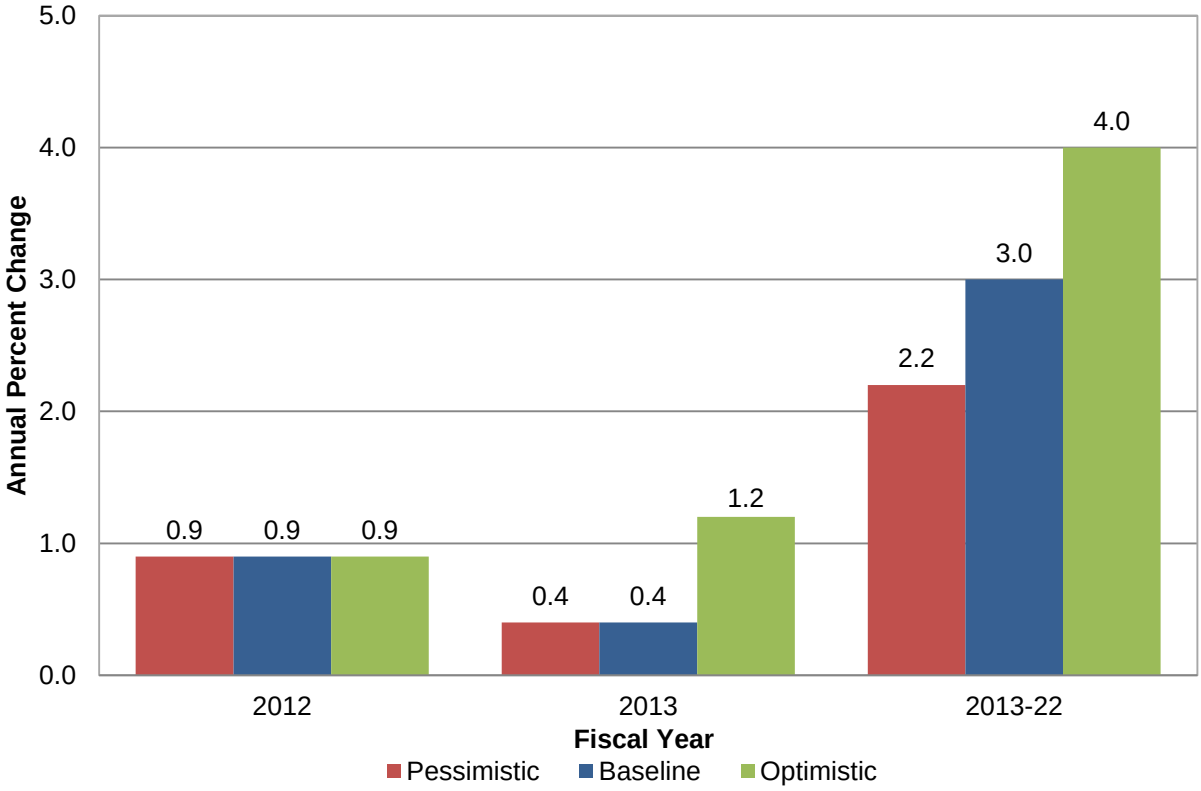
In the baseline forecast, system passengers are forecast to grow at an average annual rate of 2.4 percent a year over the forecast horizon of 2013-2022 (with domestic and international passengers up 2.2 and 4.2 percent, respectively). In the optimistic case, passengers grow at a quicker pace, averaging 3.4 percent per year (up 3.2 percent domestically and 4.7 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. By the end of the forecast period in 2022, passengers in the optimistic case are 10.3 percent above the baseline. The pessimistic case is characterized by a mild recession in 2013 along with weakened consumer confidence brought on by persistent unemployment, higher energy prices, and higher inflation. In this scenario passengers grow an average of 1.3 percent per year (domestic up 1.1 percent and international up 2.8 percent). In the pessimistic case, system passengers in 2022 are 8.7 percent below the baseline case, totaling 835 million, 80 million fewer than in the baseline.



Revenue Passenger Miles

In the baseline forecast, system RPMs grow at an average annual rate of 3.0 percent a year over the forecast horizon, with domestic RPMs increasing 2.4 percent annually and international RPMs growing 4.5 percent annually. In the optimistic case, the faster growing economy coupled with lower energy prices drives RPMs higher than the baseline, with growth averaging 4.0 percent per year (domestic and international RPMs up 3.6 and 5.0 percent, respectively). In the pessimistic case, the combination of a slower growing economy and higher energy prices result in RPM growth averaging 1.7 percent annually with domestic markets growing 1.1 percent a year while international traffic grows 2.9 percent annually.

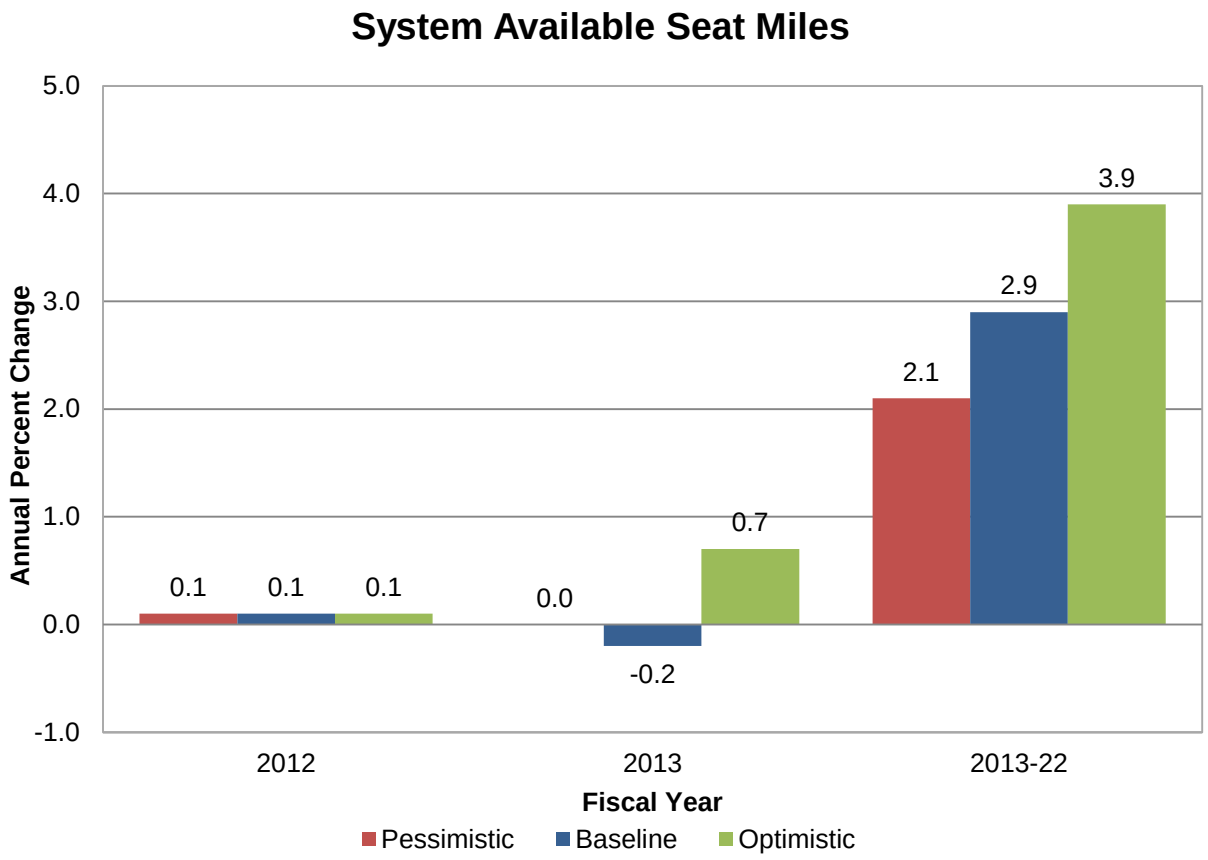
System Revenue Passenger Miles



Available Seat Miles

In the base case, system capacity is forecast to increase an average of 2.9 percent annually over the forecast horizon (with growth averaging 2.2 percent annually in domestic markets and 4.4 percent a year in international markets). In the optimistic case, capacity grows at a faster clip than in the baseline forecast, averaging 3.9 percent annually (up 3.4 percent domestically and up 4.9 percent internationally). Carriers increase capacity compared to the baseline forecast to accommodate increased travel demand brought about by a more favorable economic environment and by the end of the forecast horizon, system capacity in the optimistic

case is 9.9 percent above the baseline case. In the pessimistic case, demand for air travel is lower than in the baseline, thus system capacity grows at a slower pace of 1.6 percent annually (domestic growth of 1.0 percent annually and international up 2.9 percent annually). Total system capacity in the pessimistic case in 2022 is 11.1 percent below the baseline and 19.1 percent below the optimistic case.



Load Factor

System load factors over the 10-year forecast period are relatively similar for all three forecast scenarios. In the base case, system load factor rises from 82.6 percent in 2012 to 83.9 percent in 2022. In both the optimistic and pessimistic scenarios, system load factor increases from 82.6 percent in 2012 to 83.4 percent and 83.8 percent, respectively, in 2022. 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 increases over the forecast horizon from 83.2 percent to 84.9 percent in the base case, and to 84.6 percent in both the pessimistic and optimistic scenarios. The international load factor grows from 81.3 percent in 2012 to 82.1 percent in 2022 in all three scenarios.

Yield

In the baseline forecast, nominal system yield increases 1.4 percent annually, going from 14.20 cents in 2012 to 16.32 cents in 2022. In domestic markets, yield in the baseline forecast rises from 14.00 cents in 2012 to 16.41 cents in 2022, while international yield rises from 14.68 cents in 2012 to 16.13 cents in 2022. System yield rises more slowly in the optimistic case, up 0.6 percent annually to be 15.28 cents at the end of the forecast period. Domestic yield increases to 15.08 cents while international yield increases to 15.69 cents. 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 pessimistic case, nominal yields rise more rapidly than in the baseline, growing an average of 2.3 percent annually, reaching 16.87 cents by 2022 (16.88 cents domestically and 16.85 cents internationally). This scenario reflects higher general inflation and higher energy prices than in the baseline, forcing carriers to increase fares in order to cover the higher costs of fuel, labor, and capital.

TABLE A-1

FAA FORECAST ECONOMIC ASSUMPTIONS

FISCAL YEARS 2012-2022

Variable	Scenario	Historical	FORECAST				PERCENT AVERAGE ANNUAL GROWTH			
		2012E	2013	2014	2018	2022	2012-13	2013-14	2013-18	2013-22
Economic Assumptions										
Real Gross Domestic Product	Pessimistic	13,537	13,622	13,670	15,085	16,298	0.6%	0.4%	2.1%	2.0%
(BIL 05$)	Baseline	13,528	13,764	14,118	15,809	17,445	1.7%	2.6%	2.8%	2.7%
	Optimistic	13,537	13,891	14,450	16,510	18,388	2.6%	4.0%	3.5%	3.2%
Refiners Acquisition Cost -	Pessimistic	102.8	84.2	79.0	106.0	118.5	-18.1%	-6.2%	4.7%	3.9%
Average - $ Per Barrel	Baseline	102.7	90.9	86.8	91.9	104.4	-11.5%	-4.5%	0.2%	1.6%
	Optimistic	102.8	106.0	93.3	81.8	94.0	3.1%	-11.9%	-5.0%	-1.3%
Consumer Price Index	Pessimistic	2.29	2.31	2.34	2.57	2.85	1.1%	1.4%	2.1%	2.4%
All Urban, 1982-84 = 1.0	Baseline	2.29	2.32	2.36	2.54	2.74	1.4%	1.7%	1.8%	1.9%
	Optimistic	2.29	2.34	2.38	2.52	2.71	2.3%	1.9%	1.5%	1.7%
Civilian Unemployment Rate	Pessimistic	8.3	8.0	8.6	7.4	7.3	0.0	0.1	0.0	0.0
(%)	Baseline	8.3	7.8	7.5	5.9	5.5	-0.1	0.0	-0.1	0.0
	Optimistic	8.3	7.2	6.2	4.2	4.0	-0.1	-0.1	-0.1	-0.1

Sources: Baseline -IHS Global Insight, 30-Year Focus, Fourth Quarter 2012; Optimistic and Pessimistic - IHS Global Insight, U.S. Economic Outlook, January 2013

TABLE A-2

FAA FORECAST OF AVIATION ACTIVITY

FISCAL YEARS 2012-2022

Variable	Scenario	Historical	FORECAST				PERCENT AVERAGE ANNUAL GROWTH			
		2012E	2013	2014	2018	2022	2012-13	2013-14	2013-18	2013-22
System										
Aviation Activity										
Available Seat Miles	Pessimistic	995.2	991.9	994.0	1,043.7	1,143.2	-0.3%	0.2%	1.0%	1.6%
(BIL)	Baseline	995.2	993.5	1,020.8	1,151.5	1,286.6	-0.2%	2.7%	3.0%	2.9%
	Optimistic	995.2	1,002.6	1,055.7	1,264.7	1,413.6	0.7%	5.3%	4.8%	3.9%
Revenue Passenger Miles	Pessimistic	822.3	823.1	827.3	872.3	957.6	0.1%	0.5%	1.2%	1.7%
(BIL)	Baseline	822.3	826.0	851.6	964.8	1,080.1	0.4%	3.1%	3.2%	3.0%
	Optimistic	822.3	831.9	878.7	1,057.7	1,184.4	1.2%	5.6%	4.9%	4.0%
Enplanements	Pessimistic	736.7	742.7	743.8	775.8	834.9	0.8%	0.1%	0.9%	1.3%
(MIL)	Baseline	736.7	736.7	757.2	840.0	914.5	0.0%	2.8%	2.7%	2.4%
	Optimistic	736.7	748.0	789.3	929.8	1,008.3	1.5%	5.5%	4.4%	3.4%
Psgr Carrier Miles Flown	Pessimistic	7,033.0	7,057.2	7,052.9	7,296.7	7,909.9	0.3%	-0.1%	0.7%	1.3%
(MIL)	Baseline	7,033.0	7,005.7	7,173.8	7,966.2	8,753.7	-0.4%	2.4%	2.6%	2.5%
	Optimistic	7,033.0	7,108.3	7,488.7	8,877.4	9,747.1	1.1%	5.4%	4.5%	3.6%
Psgr Carrier Departures	Pessimistic	9,357.4	9,394.4	9,343.9	9,507.1	10,012.1	0.4%	-0.5%	0.2%	0.7%
(000s)	Baseline	9,357.4	9,240.4	9,424.4	10,212.9	10,850.0	-1.3%	2.0%	2.0%	1.8%
	Optimistic	9,357.4	9,486.9	9,912.5	11,307.6	11,964.1	1.4%	4.5%	3.6%	2.6%
Nominal Passenger Yield	Pessimistic	14.20	13.71	13.74	15.58	16.87	-3.5%	0.2%	2.6%	2.3%
(cents)	Baseline	14.20	14.36	14.51	15.42	16.32	1.1%	1.0%	1.4%	1.4%
	Optimistic	14.20	14.44	14.36	14.48	15.28	1.7%	-0.6%	0.1%	0.6%

TABLE A-3

FAA FORECAST OF DOMESTIC AVIATION ACTIVITY

FISCAL YEARS 2012-2022

Variable	Scenario	Historical	FORECAST				PERCENT AVERAGE ANNUAL GROWTH			
		2012E	2013	2014	2018	2022	2012-13	2013-14	2013-18	2013-22
Domestic Aviation Activity										
Available Seat Miles	Pessimistic	694.4	698.7	698.0	707.1	764.4	0.6%	-0.1%	0.2%	1.0%
(BIL)	Baseline	694.4	694.2	710.7	779.0	846.4	0.0%	2.4%	2.3%	2.2%
	Optimistic	694.4	698.7	742.2	877.6	946.0	0.6%	6.2%	4.7%	3.4%
Revenue Passenger Miles	Pessimistic	577.6	583.5	584.6	596.1	646.8	1.0%	0.2%	0.4%	1.1%
(BIL)	Baseline	577.6	581.7	597.2	659.1	718.6	0.7%	2.7%	2.5%	2.4%
	Optimistic	577.6	583.5	621.6	740.2	800.7	1.0%	6.5%	4.9%	3.6%
Enplanements	Pessimistic	653.7	660.8	661.3	682.1	729.9	1.1%	0.1%	0.6%	1.1%
(MIL)	Baseline	653.7	653.2	670.5	736.9	793.6	-0.1%	2.7%	2.4%	2.2%
	Optimistic	653.7	663.2	702.3	822.9	879.8	1.4%	5.9%	4.4%	3.2%
Psgr Carrier Miles Flown	Pessimistic	5,627.2	5,681.2	5,671.5	5,743.5	6,180.4	1.0%	-0.2%	0.2%	0.9%
(MIL)	Baseline	5,627.2	5,600.8	5,725.4	6,247.6	6,745.4	-0.5%	2.2%	2.2%	2.1%
	Optimistic	5,627.2	5,681.2	6,025.4	7,087.5	7,608.9	1.0%	6.1%	4.5%	3.3%
Psgr Carrier Departures	Pessimistic	8,743.8	8,780.1	8,731.0	8,837.1	9,280.9	0.4%	-0.6%	0.1%	0.6%
(000s)	Baseline	8,743.8	8,617.3	8,785.9	9,475.2	10,007.7	-1.4%	2.0%	1.9%	1.7%
	Optimistic	8,743.8	8,854.0	9,263.4	10,532.0	11,062.1	1.3%	4.6%	3.5%	2.5%
Nominal Passenger Yield	Pessimistic	14.00	13.39	13.42	15.61	16.88	-4.4%	0.2%	3.1%	2.6%
(cents)	Baseline	14.00	14.35	14.50	15.48	16.41	2.5%	1.0%	1.5%	1.5%
	Optimistic	14.00	14.48	14.30	14.26	15.08	3.4%	-1.2%	-0.3%	0.5%

TABLE A-4

FAA FORECAST OF INTERNATIONAL AVIATION ACTIVITY*

FISCAL YEARS 2012-2022

Variable	Scenario	Historical	FORECAST				PERCENT AVERAGE ANNUAL GROWTH			
		2012E	2013	2014	2018	2022	2012-13	2013-14	2013-18	2013-22
International Aviation Activity										
Available Seat Miles	Pessimistic	300.8	293.3	296.0	336.6	378.8	-2.5%	0.9%	2.8%	2.9%
(BIL)	Baseline	300.8	296.4	307.6	369.7	437.3	-1.5%	3.8%	4.5%	4.4%
	Optimistic	300.8	303.9	313.5	387.1	467.6	1.0%	3.1%	5.0%	4.9%
Revenue Passenger Miles	Pessimistic	244.7	239.6	242.7	276.1	310.9	-2.1%	1.3%	2.9%	2.9%
(BIL)	Baseline	244.7	242.1	252.4	303.3	358.8	-1.0%	4.2%	4.6%	4.5%
	Optimistic	244.7	248.3	257.1	317.6	383.7	1.5%	3.5%	5.0%	5.0%
Enplanements	Pessimistic	82.9	81.9	82.5	93.6	105.0	-1.3%	0.7%	2.7%	2.8%
(MIL)	Baseline	82.9	80.4	83.5	99.5	117.0	-3.1%	3.8%	4.4%	4.3%
	Optimistic	82.9	84.7	87.0	106.9	128.5	2.2%	2.7%	4.8%	4.7%
Psgr Carrier Miles Flown	Pessimistic	1,405.7	1,376.0	1,381.4	1,553.2	1,728.6	-2.1%	0.4%	2.5%	2.6%
(MIL)	Baseline	1,405.7	1,351.2	1,393.0	1,658.3	1,944.1	-3.9%	3.1%	4.2%	4.1%
	Optimistic	1,405.7	1,427.0	1,463.2	1,789.9	2,138.2	1.5%	2.5%	4.6%	4.6%
Psgr Carrier Departures	Pessimistic	613.6	614.2	612.9	670.1	731.2	0.1%	-0.2%	1.8%	2.0%
(000s)	Baseline	613.6	619.1	635.8	735.2	839.9	0.9%	2.7%	3.5%	3.4%
	Optimistic	613.6	632.9	649.1	775.6	902.0	3.1%	2.6%	4.2%	4.0%
Nominal Passenger Yield	Pessimistic	14.68	14.50	14.50	15.54	16.85	-1.2%	0.0%	1.4%	1.7%
(cents)	Baseline	14.68	14.44	14.59	15.34	16.19	-1.7%	1.1%	1.2%	1.3%
	Optimistic	14.68	14.35	14.49	14.98	15.69	-2.2%	1.0%	0.9%	1.0%

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 2007-2012 forecast period. Although this brief period has experienced industry upheaval, the FAA's forecast methodology remained consistent during this time. For this reason, 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 below contains the mean absolute percent errors for the projected values versus the actual 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 ASMs shows that the mean absolute percent error was 10.5 percent for ASM forecasts prepared 3 years in advance. For the period under examination, preparation of the forecasts for FY 2007 through FY 2012 occurred in FY 2006, FY 2007, FY 2008, FY 2009, FY 2010, and FY 2011, respectively.[19]

[19] 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.

U.S. AIR CARRIERS
DOMESTIC SCHEDULED PASSENGER ACTIVITY
FORECAST EVALUATION

Forecast Variable	Mean Absolute Percent Error (Combined FY 2007 - FY 2012) (Forecast Variance from Actual) Forecast Performed Years Prior to Actual				
	1 Year	2 Years	3 Years	4 Years	5 Years
ASMs	0.6%	5.2%	10.5%	17.1%	21.7%
RPMs	0.9%	4.0%	7.6%	11.9%	15.6%
Passenger Enplanements	0.8%	4.0%	7.7%	12.2%	15.4%
Mainline Yield	3.5%	4.7%	7.4%	4.8%	4.8%
IFR Aircraft Handled*	2.6%	7.5%	11.8%	17.7%	21.4%

*Total - scheduled and nonscheduled commercial plus noncommercial

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 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 IFR Aircraft Handled, the variables most directly affected by exogenous events. Second, the ASM forecast variance being larger than the RPM forecast variance indicates a consistent underestimation of load factors, one of the critical elements in converting passenger demand into aviation activity. 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 and aircraft handled 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 these forecasts suggest that carriers have been permanently removing capacity by reducing flights and by changing the mix of aircraft to satisfy demand. In the short term, such capacity reductions can be identified by using advance schedule information. However, the 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 and aircraft handled forecasts, a simpler approach to projecting ASMs, such as RPMs divided by load factors, may improve the long run accuracy of the ASM and aircraft handled forecasts. It should also be noted that the low variance of the mainline passenger yield relative to the other metrics is due in large part to the inclusion of FY 2011-12 in the sample period.

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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APPENDIX D: FORECAST TABLES

TABLE 1

U.S. SHORT-TERM ECONOMIC FORECASTS

ECONOMIC VARIABLE	FISCAL YEAR 2012				FISCAL YEAR 2013				FISCAL YEAR 2014			
	1ST. QTR.	2ND. QTR.	3RD QTR.	4TH. QTR.	1ST. QTR.	2ND. QTR.	3RD QTR.	4TH. QTR.	1ST. QTR.	2ND. QTR.	3RD QTR.	4TH. QTR.
Real GDP												
(Billions of 2005$)	13,441.0	13,506.4	13,548.5	13,616.2	13,650.0	13,734.1	13,800.5	13,873.0	13,962.5	14,054.7	14,163.9	14,291.5
Seasonally Adjusted Annual Rate		2.0%	1.3%	2.0%	1.0%	2.5%	1.9%	2.1%	2.6%	2.7%	3.1%	3.7%
Refiners' Acquisition Cost - Average												
(Dollars)	104.51	107.60	101.63	97.08	97.38	88.98	88.10	88.93	88.56	87.61	86.18	84.77
Seasonally Adjusted Annual Rate		12.3%	-20.4%	-16.7%	1.2%	-30.3%	-3.9%	3.9%	-1.7%	-4.2%	-6.3%	-6.4%
Consumer Price Index												
(1982-84 equals 100)	227.0	228.3	228.8	230.1	231.1	231.2	231.9	233.1	234.1	235.2	236.3	237.3
Seasonally Adjusted Annual Rate		2.5%	0.8%	2.3%	1.8%	0.1%	1.2%	2.1%	1.7%	1.9%	1.9%	1.8%

Source: IHS Global Insight, 30-Year Focus, Fourth Quarter 2012

TABLE 2

U.S. LONG-TERM ECONOMIC FORECASTS

FISCAL YEAR	GROSS DOMESTIC PRODUCT (Billions 2005$)	DISPOSABLE PERSONAL INCOME (Billions 2005$)	CONSUMER PRICE INDEX (1982-84=100)	REFINERS' ACQUISITION COST AVERAGE (Dollars per barrel)
Historical				
2000	11,136.4	8,071.2	170.74	26.70
2001	11,326.2	8,318.6	176.23	25.79
2002	11,488.0	8,567.4	178.87	21.98
2003	11,724.4	8,766.0	183.09	28.01
2004	12,159.8	9,073.3	187.34	33.65
2006	12,882.8	9,544.6	200.58	59.95
2007	13,134.5	9,842.3	205.31	60.62
2008	13,272.6	10,093.4	214.42	101.52
2009	12,760.6	9,912.8	213.78	54.68
2010	12,986.0	9,931.4	217.42	74.61
2011	13,234.2	10,141.6	223.11	96.05
2012E	13,528.0	10,234.8	228.54	102.71
Forecast				
2013	13,764.4	10,442.2	231.83	90.85
2014	14,118.1	10,755.7	235.70	86.78
2015	14,594.1	11,090.0	239.73	81.30
2016	15,025.8	11,416.0	243.98	83.46
2017	15,428.5	11,696.7	248.72	88.59
2018	15,808.5	11,952.5	253.61	91.92
2019	16,195.5	12,241.4	258.68	95.68
2020	16,602.3	12,545.9	263.71	98.75
2021	17,018.0	12,852.8	268.87	101.72
2022	17,445.1	13,179.7	274.19	104.42
2023	17,898.2	13,523.0	279.60	107.46
2024	18,336.2	13,843.1	284.98	110.00
2025	18,792.2	14,200.8	290.44	112.18
2026	19,254.0	14,534.3	295.98	114.41
2027	19,728.9	14,890.1	301.68	116.56
2028	20,213.7	15,261.5	307.43	118.60
2029	20,715.5	15,615.3	313.35	120.67
2030	21,241.0	15,983.9	319.39	121.93
2031	21,772.1	16,366.0	325.62	122.91
2032	22,320.3	16,740.5	332.09	124.05
2033	22,876.3	17,102.8	338.63	124.63
Avg Annual Growth				
2000-12	1.6%	2.0%	2.5%	11.9%
2012-13	1.7%	2.0%	1.4%	-11.5%
2012-22	2.6%	2.6%	1.8%	0.2%
2012-33	2.5%	2.5%	1.9%	0.9%

Source: IHS Global Insight, 30-Year Focus, Fourth Quarter 2012

TABLE 3

INTERNATIONAL GDP FORECASTS BY TRAVEL REGION

CALENDAR YEAR	GROSS DOMESTIC PRODUCT (In Billions of 2005 U.S. Dollars)				
	CANADA	EUROPE/ AFRICA/ MIDDLE EAST	LATIN AMERICA/ MEXICO	JAPAN/PACIFIC BASIN/CHINA/OTHER ASIA/AUSTRALIA/ N. ZEALAND	WORLD
Historical					
2000	1,054.9	16,059.8	2,944.9	9,108.0	39,893.3
2006	1,229.1	18,947.7	3,489.5	11,716.8	47,784.5
2007	1,254.8	19,684.0	3,665.0	12,473.2	49,708.6
2008	1,268.5	19,911.7	3,790.4	12,855.8	50,406.3
2009	1,233.0	19,174.5	3,696.3	12,993.6	49,306.7
2010	1,272.0	19,710.6	3,905.4	13,916.5	51,289.4
2011	1,304.7	20,138.1	4,066.0	14,483.6	52,691.4
2012E	1,332.3	20,294.8	4,195.3	15,097.0	53,876.4
Forecast					
2013	1,358.3	20,473.9	4,345.3	15,699.8	55,075.2
2014	1,391.6	20,835.2	4,538.3	16,495.2	56,817.8
2015	1,428.3	21,371.3	4,721.6	17,388.9	58,915.8
2016	1,464.8	21,965.5	4,915.5	18,272.8	61,019.1
2017	1,500.8	22,563.4	5,111.6	19,183.0	63,129.4
2018	1,537.6	23,145.6	5,316.4	20,120.1	65,242.6
2019	1,574.7	23,735.2	5,532.7	21,085.7	67,413.5
2020	1,610.9	24,332.1	5,754.0	22,079.0	69,645.4
2021	1,647.2	24,935.6	5,984.9	23,116.7	71,939.2
2022	1,683.8	25,542.1	6,220.7	24,169.4	74,278.5
2023	1,721.8	26,157.2	6,463.7	25,227.5	76,652.3
2024	1,761.8	26,777.1	6,715.3	26,305.2	79,064.2
2025	1,802.7	27,404.5	6,977.4	27,427.3	81,551.2
2026	1,843.8	28,039.3	7,249.2	28,595.8	84,099.6
2027	1,885.8	28,688.4	7,529.1	29,802.7	86,721.1
2028	1,929.3	29,348.5	7,816.3	31,037.8	89,401.6
2029	1,973.8	30,015.8	8,116.7	32,298.5	92,136.9
2030	2,019.5	30,695.0	8,427.1	33,582.4	94,948.8
2031	2,066.8	31,388.4	8,747.9	34,886.4	97,815.1
2032	2,115.8	32,088.8	9,078.7	36,220.6	100,735.4
2033	2,166.5	32,802.1	9,422.7	37,584.5	103,721.4
Avg Annual Growth					
2000-12	2.0%	2.0%	3.0%	4.3%	2.5%
2012-13	1.9%	0.9%	3.6%	4.0%	2.2%
2012-22	2.4%	2.3%	4.0%	4.8%	3.3%
2012-33	2.3%	2.3%	3.9%	4.4%	3.2%

Source: IHS Global Insight, GDP Components Tables (Interim Forecast, Monthly), Release date 23 November 2012

TABLE 4

INTERNATIONAL GDP FORECASTS – SELECTED AREAS/COUNTRIES

CALENDAR YEAR	GROSS DOMESTIC PRODUCT (In Billions of 2005 U.S. Dollars)				
	NORTH AMERICA (NAFTA)	EUROZONE	UNITED KINGDOM	JAPAN	CHINA
Historical*					
2000	13,516.7	9,388.7	1,984.1	4,309.5	1,430.3
2006	15,599.7	10,457.7	2,355.5	4,649.7	2,567.3
2007	15,919.2	10,769.3	2,441.1	4,750.7	2,931.9
2008	15,906.7	10,798.1	2,417.5	4,699.7	3,213.3
2009	15,379.3	10,327.3	2,321.4	4,440.4	3,509.3
2010	15,800.2	10,533.2	2,363.2	4,643.1	3,876.1
2011	16,126.2	10,692.7	2,383.8	4,609.1	4,236.3
2012E	16,495.9	10,648.4	2,382.7	4,686.2	4,559.7
Forecast					
2013	16,840.0	10,610.2	2,409.2	4,700.6	4,916.9
2014	17,344.6	10,682.2	2,447.1	4,794.1	5,323.4
2015	17,923.8	10,850.1	2,511.7	4,909.2	5,759.8
2016	18,450.9	11,060.9	2,574.0	4,977.1	6,214.2
2017	18,950.2	11,269.6	2,635.0	5,049.3	6,681.2
2018	19,435.9	11,470.8	2,695.4	5,119.1	7,170.8
2019	19,936.2	11,671.6	2,756.0	5,192.2	7,680.8
2020	20,458.2	11,872.1	2,818.8	5,264.3	8,210.5
2021	20,987.9	12,073.7	2,882.5	5,332.3	8,770.3
2022	21,540.3	12,273.8	2,945.4	5,391.3	9,341.7
2023	22,107.4	12,474.8	3,008.7	5,440.8	9,917.2
2024	22,684.0	12,677.3	3,071.6	5,488.4	10,500.4
2025	23,278.0	12,881.4	3,135.5	5,534.9	11,114.2
2026	23,873.1	13,087.0	3,200.4	5,581.1	11,761.8
2027	24,483.0	13,293.3	3,268.6	5,627.9	12,429.9
2028	25,105.5	13,500.3	3,337.5	5,674.2	13,113.8
2029	25,745.4	13,707.0	3,406.6	5,718.4	13,811.7
2030	26,419.7	13,914.6	3,478.1	5,761.0	14,521.7
2031	27,108.0	14,126.4	3,551.5	5,802.6	15,242.4
2032	27,805.0	14,338.1	3,625.8	5,843.2	15,978.2
2033	28,519.4	14,551.5	3,701.5	5,882.3	16,729.8
Avg Annual Growth					
2000-12	1.7%	1.1%	1.5%	0.7%	10.1%
2012-13	2.1%	-0.4%	1.1%	0.3%	7.8%
2012-22	2.7%	1.4%	2.1%	1.4%	7.4%
2012-33	2.6%	1.5%	2.1%	1.1%	6.4%

Source: IHS Global Insight, GDP Components Tables (Interim Forecast, Monthly), Release date 23 November 2012

TABLE 5

U.S. COMMERCIAL AIR CARRIERS[1]

TOTAL SCHEDULED U.S. PASSENGER TRAFFIC

FISCAL	REVENUE PASSENGER ENPLANEMENTS (Millions)			REVENUE PASSENGER MILES (Billions)		
YEAR	DOMESTIC	INTERNATIONAL	SYSTEM	DOMESTIC	INTERNATIONAL	SYSTEM
Historical*						
2000	641.2	56.4	697.6	512.8	181.8	694.6
2006	668.4	71.6	740.0	582.4	208.5	790.9
2007	690.1	75.3	765.3	600.5	221.2	821.7
2008	680.7	78.3	759.1	594.6	233.8	828.5
2009	630.8	73.6	704.4	548.6	221.3	769.9
2010	635.2	77.4	712.6	555.8	231.0	786.8
2011	650.1	81.0	731.1	572.2	242.5	814.6
2012E	653.7	82.9	736.7	577.6	244.7	822.3
Forecast						
2013	653.2	83.5	736.7	581.9	244.1	826.0
2014	670.5	86.7	757.2	597.2	254.4	851.6
2015	691.6	91.0	782.6	614.7	267.8	882.6
2016	710.3	95.1	805.4	631.6	280.6	912.2
2017	724.8	99.1	823.9	646.4	293.2	939.6
2018	736.9	103.1	839.9	659.1	305.7	964.8
2019	749.4	107.2	856.6	672.2	318.8	991.0
2020	763.5	111.6	875.1	687.0	332.6	1,019.6
2021	778.2	116.1	894.4	702.5	346.7	1,049.2
2022	793.6	120.9	914.5	718.6	361.5	1,080.1
2023	809.1	125.9	934.9	734.9	376.7	1,111.6
2024	822.8	131.0	953.8	749.8	392.2	1,142.1
2025	837.9	136.3	974.2	766.0	408.4	1,174.4
2026	852.2	141.6	993.8	781.7	425.0	1,206.7
2027	867.1	147.2	1,014.3	798.1	442.1	1,240.2
2028	882.4	153.0	1,035.4	815.0	459.9	1,274.9
2029	897.3	159.0	1,056.3	831.6	478.1	1,309.7
2030	913.0	165.4	1,078.4	849.1	497.5	1,346.6
2031	929.3	172.0	1,101.3	867.3	517.4	1,384.7
2032	945.3	178.7	1,124.1	885.3	537.8	1,423.1
2033	961.0	185.7	1,146.8	903.2	558.8	1,462.0
Avg Annual Growth						
2000-12	0.2%	3.3%	0.5%	1.0%	2.5%	1.4%
2012-13	-0.1%	0.7%	0.0%	0.7%	-0.2%	0.4%
2012-22	2.0%	3.8%	2.2%	2.2%	4.0%	2.8%
2012-33	1.9%	3.9%	2.1%	2.2%	4.0%	2.8%

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

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

TABLE 6

U.S. COMMERCIAL AIR CARRIERS[1]

SCHEDULED PASSENGER CAPACITY, TRAFFIC, AND LOAD FACTORS

	DOMESTIC			INTERNATIONAL			SYSTEM		
FISCAL YEAR	ASMs (BIL)	RPMs (BIL)	% LOAD FACTOR	ASMs (BIL)	RPMs (BIL)	% LOAD FACTOR	ASMs (BIL)	RPMs (BIL)	% LOAD FACTOR
Historical*									
2000	726.6	512.8	70.6	239.3	181.8	76.0	965.9	694.6	71.9
2006	740.2	582.4	78.7	261.3	208.5	79.8	1,001.5	790.9	79.0
2007	752.5	600.5	79.8	275.9	221.2	80.2	1,028.4	821.7	79.9
2008	749.6	594.6	79.3	292.7	233.8	79.9	1,042.4	828.5	79.5
2009	682.5	548.6	80.4	283.3	221.3	78.1	965.8	769.9	79.7
2010	680.0	555.8	81.7	281.3	231.0	82.1	961.3	786.8	81.8
2011	693.5	572.2	82.5	300.4	242.5	80.7	993.9	814.6	82.0
2012E	694.4	577.6	83.2	300.8	244.7	81.3	995.2	822.3	82.6
Forecast									
2013	694.2	581.9	83.8	299.3	244.1	81.6	993.5	826.0	83.1
2014	710.7	597.2	84.0	310.1	254.4	82.1	1,020.8	851.6	83.4
2015	730.0	614.7	84.2	326.4	267.8	82.1	1,056.3	882.6	83.5
2016	748.7	631.6	84.4	341.9	280.6	82.1	1,090.5	912.2	83.6
2017	765.0	646.4	84.5	357.2	293.2	82.1	1,122.2	939.6	83.7
2018	779.0	659.1	84.6	372.4	305.7	82.1	1,151.5	964.8	83.8
2019	793.7	672.2	84.7	388.3	318.8	82.1	1,181.9	991.0	83.8
2020	810.4	687.0	84.8	405.0	332.6	82.1	1,215.4	1,019.6	83.9
2021	828.0	702.5	84.8	422.2	346.7	82.1	1,250.2	1,049.2	83.9
2022	846.4	718.6	84.9	440.2	361.5	82.1	1,286.6	1,080.1	83.9
2023	865.2	734.9	84.9	458.7	376.7	82.1	1,323.8	1,111.6	84.0
2024	882.2	749.8	85.0	477.6	392.2	82.1	1,359.8	1,142.1	84.0
2025	900.8	766.0	85.0	497.3	408.4	82.1	1,398.1	1,174.4	84.0
2026	919.0	781.7	85.1	517.4	425.0	82.1	1,436.4	1,206.7	84.0
2027	937.9	798.1	85.1	538.3	442.1	82.1	1,476.2	1,240.2	84.0
2028	957.6	815.0	85.1	559.9	459.9	82.1	1,517.5	1,274.9	84.0
2029	976.9	831.6	85.1	582.1	478.1	82.1	1,558.9	1,309.7	84.0
2030	997.2	849.1	85.1	605.6	497.5	82.1	1,602.8	1,346.6	84.0
2031	1,018.4	867.3	85.2	629.8	517.4	82.1	1,648.3	1,384.7	84.0
2032	1,039.4	885.3	85.2	654.7	537.8	82.1	1,694.1	1,423.1	84.0
2033	1,060.3	903.2	85.2	680.3	558.8	82.1	1,740.6	1,462.0	84.0
Avg Annual Growth									
2000-12	-0.4%	1.0%	1.4%	1.9%	2.5%	0.6%	0.2%	1.4%	1.2%
2012-13	0.0%	0.7%	0.7%	-0.5%	-0.2%	0.3%	-0.2%	0.4%	0.6%
2012-22	2.0%	2.2%	0.2%	3.9%	4.0%	0.1%	2.6%	2.8%	0.2%
2012-33	2.0%	2.2%	0.1%	4.0%	4.0%	0.0%	2.7%	2.8%	0.1%

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

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

TABLE 7

U.S. COMMERCIAL AIR CARRIERS[1]

TOTAL SCHEDULED U.S. INTERNATIONAL PASSENGER TRAFFIC

	REVENUE PASSENGER ENPLANEMENTS				REVENUE PASSENGER MILES			
FISCAL YEAR	ATLANTIC (Mil)	LATIN AMERICA (Mil)	PACIFIC (Mil)	TOTAL INTERNATIONAL (Mil)	ATLANTIC (Bil)	LATIN AMERICA (Bil)	PACIFIC (Bil)	TOTAL INTERNATIONAL (Bil)
Historical*								
2000	20.9	24.3	11.2	56.4	87.1	36.3	58.4	181.8
2006	22.5	35.2	13.9	71.6	93.9	53.6	61.1	208.5
2007	24.1	37.6	13.6	75.3	102.2	57.7	61.4	221.2
2008	26.0	39.1	13.2	78.3	112.7	60.7	60.4	233.8
2009	24.7	36.8	12.0	73.6	108.9	57.7	54.7	221.3
2010	24.5	39.9	12.9	77.3	108.6	63.1	59.2	231.0
2011	25.3	42.2	13.5	81.0	111.7	67.2	63.6	242.5
2012E	24.7	44.2	14.0	82.9	107.9	70.4	66.4	244.7
Forecast								
2013	23.5	45.8	14.2	83.5	102.7	74.2	67.3	244.1
2014	24.2	47.6	14.9	86.7	106.1	77.3	71.0	254.4
2015	25.1	50.1	15.8	91.0	110.8	81.7	75.3	267.8
2016	26.0	52.4	16.6	95.1	115.4	85.9	79.3	280.6
2017	26.9	54.8	17.5	99.1	119.9	90.0	83.2	293.2
2018	27.7	57.0	18.3	103.1	124.3	94.1	87.2	305.7
2019	28.6	59.5	19.1	107.2	128.9	98.4	91.4	318.7
2020	29.5	62.1	20.0	111.6	133.7	103.1	95.6	332.5
2021	30.5	64.8	20.9	116.1	138.7	108.0	100.0	346.6
2022	31.4	67.7	21.8	120.9	143.8	113.1	104.4	361.4
2023	32.4	70.8	22.7	125.9	149.2	118.6	108.9	376.6
2024	33.5	73.9	23.6	131.0	154.6	124.2	113.4	392.2
2025	34.5	77.2	24.6	136.3	160.3	130.0	118.1	408.4
2026	35.6	80.5	25.5	141.6	166.1	136.0	122.9	424.9
2027	36.7	84.0	26.5	147.2	172.0	142.2	127.9	442.1
2028	37.8	87.7	27.6	153.0	178.2	148.7	132.9	459.8
2029	38.9	91.5	28.6	159.0	184.6	155.4	138.1	478.1
2030	40.1	95.6	29.7	165.4	191.3	162.7	143.4	497.4
2031	41.4	99.8	30.8	172.0	198.3	170.2	148.8	517.4
2032	42.7	104.2	31.9	178.7	205.4	178.0	154.4	537.8
2033	44.0	108.8	33.0	185.7	212.7	186.1	160.0	558.8
Avg Annual Growth								
2000-12	1.4%	5.1%	1.7%	3.3%	2.3%	5.8%	0.8%	2.7%
2012-13	-5.0%	3.8%	0.9%	0.7%	-4.8%	5.3%	1.4%	-0.2%
2012-22	2.4%	4.4%	4.5%	3.8%	2.9%	4.9%	4.6%	4.0%
2012-33	2.8%	4.4%	4.2%	3.9%	3.3%	4.7%	4.3%	4.0%

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

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

TABLE 8

U.S. AND FOREIGN FLAG CARRIERS

TOTAL PASSENGER TRAFFIC TO/FROM THE UNITED STATES

CALENDAR YEAR	TOTAL PASSENGERS BY WORLD TRAVEL AREA (Millions)				
	ATLANTIC	LATIN AMERICA	PACIFIC	U.S./CANADA TRANSBORDER	TOTAL
Historical*					
2000	53.0	40.8	26.2	20.5	140.5
2006	49.8	47.1	26.1	21.0	96.9
2007	53.3	48.6	26.3	21.5	101.1
2008	57.1	49.8	25.8	21.7	104.6
2009	55.0	48.0	24.4	20.2	99.6
2010	55.9	53.1	26.7	21.8	157.5
2011	58.1	57.2	27.8	22.5	165.6
2012E	59.1	60.3	29.3	23.1	171.8
Forecast					
2013	60.2	62.2	30.3	23.6	176.4
2014	62.7	65.1	32.0	24.4	184.3
2015	66.2	68.4	34.0	25.4	193.9
2016	69.5	71.7	35.7	26.3	203.2
2017	72.7	75.1	37.5	27.1	212.4
2018	75.8	78.6	39.3	27.9	221.6
2019	79.0	82.3	41.1	28.8	231.2
2020	82.3	86.2	43.0	29.7	241.2
2021	85.6	90.3	44.9	30.6	251.4
2022	89.1	94.6	46.8	31.5	262.0
2023	92.7	99.0	48.7	32.5	272.9
2024	96.3	103.6	50.7	33.5	284.1
2025	100.0	108.4	52.7	34.5	295.7
2026	103.8	113.4	54.8	35.5	307.5
2027	107.7	118.6	56.9	36.6	319.8
2028	111.7	124.0	59.0	37.7	332.5
2029	115.9	129.7	61.1	38.9	345.6
2030	120.2	135.7	63.3	40.1	359.3
2031	124.7	141.9	65.6	41.3	373.4
2032	129.3	148.3	67.8	42.6	388.0
2033	134.0	155.0	70.1	43.9	402.9
Avg Annual Growth					
2000-12	0.9%	3.3%	0.9%	1.0%	1.7%
2012-13	1.9%	3.0%	3.5%	2.2%	2.6%
2012-22	4.2%	4.6%	4.8%	3.1%	4.3%
2012-33	4.0%	4.6%	4.2%	3.1%	4.1%

Source: US Customs & Border Protection data processed and released by Department of Commerce; data also received from Transport Canada.

TABLE 9

U.S. COMMERCIAL AIR CARRIERS' FORECAST ASSUMPTIONS[1]

SEATS PER AIRCRAFT MILE AND PASSENGER TRIP LENGTH

	AVERAGE SEATS PER AIRCRAFT MILE			AVERAGE PASSENGER TRIP LENGTH		
FISCAL YEAR	DOMESTIC (Seats/Mile)	INT'L. (Seats/Mile)	SYSTEM (Seats/Mile)	DOMESTIC (Miles)	INT'L. (Miles)	SYSTEM (Miles)
Historical*						
2000	129.3	230.6	145.0	799.8	3,223.2	995.7
2006	120.1	215.0	135.7	871.4	2,911.5	1,068.8
2007	120.4	216.1	136.6	870.2	2,939.0	1,073.7
2008	120.8	218.6	138.2	873.5	2,985.2	1,091.4
2009	121.8	219.0	140.0	869.7	3,008.1	1,093.1
2010	121.8	216.4	139.7	875.0	2,983.8	1,104.0
2011	122.5	216.8	141.1	880.1	2,992.7	1,114.2
2012E	123.4	214.0	141.5	883.6	2,949.7	1,116.2
Forecast						
2013	124.0	213.8	141.9	890.8	2,923.5	1,121.2
2014	124.1	214.9	142.4	890.7	2,934.7	1,124.7
2015	124.3	215.5	143.0	888.8	2,942.5	1,127.7
2016	124.3	216.1	143.4	889.3	2,950.2	1,132.6
2017	124.5	216.8	144.0	891.8	2,958.3	1,140.4
2018	124.7	217.4	144.6	894.4	2,966.5	1,148.7
2019	124.9	218.1	145.3	897.0	2,973.6	1,156.9
2020	125.0	218.7	145.8	899.9	2,979.4	1,165.1
2021	125.3	219.3	146.5	902.7	2,984.9	1,173.1
2022	125.5	219.8	147.1	905.6	2,988.8	1,181.1
2023	125.7	220.4	147.7	908.4	2,992.0	1,189.0
2024	125.9	220.9	148.3	911.3	2,995.0	1,197.4
2025	126.2	221.4	149.0	914.1	2,997.6	1,205.5
2026	126.4	222.0	149.6	917.3	3,000.6	1,214.2
2027	126.6	222.5	150.2	920.4	3,003.2	1,222.7
2028	126.8	223.0	150.8	923.6	3,005.3	1,231.3
2029	127.0	223.5	151.4	926.8	3,007.1	1,240.0
2030	127.2	223.9	152.0	930.0	3,007.8	1,248.7
2031	127.4	224.4	152.6	933.3	3,008.2	1,257.3
2032	127.6	224.8	153.2	936.6	3,008.5	1,266.0
2033	127.8	225.3	153.8	939.8	3,008.6	1,274.9

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

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

TABLE 10

U. S. MAINLINE AIR CARRIERS

SCHEDULED PASSENGER TRAFFIC

FISCAL YEAR	REVENUE PASSENGER ENPLANEMENTS (Millions)			REVENUE PASSENGER MILES (Billions)		
	DOMESTIC	INTERNATIONAL	SYSTEM	DOMESTIC	INTERNATIONAL	SYSTEM
Historical*						
2000	561.5	53.3	614.8	490.0	181.0	670.9
2006	516.2	68.1	584.4	513.9	206.8	720.7
2007	533.9	71.9	605.7	529.9	219.5	749.4
2008	521.6	74.8	596.5	521.3	231.9	753.3
2009	476.8	71.0	547.8	478.2	220.0	698.2
2010	473.6	74.6	548.2	480.7	229.6	710.4
2011	488.4	78.6	567.0	496.7	241.2	737.9
2012E	494.8	79.8	574.6	503.4	242.7	746.1
Forecast						
2013	494.6	80.4	574.9	507.3	242.1	749.4
2014	506.9	83.5	590.4	520.0	252.4	772.4
2015	522.3	87.7	609.9	534.4	265.7	800.1
2016	535.7	91.7	627.3	548.1	278.4	826.5
2017	546.3	95.6	641.9	560.4	290.9	851.3
2018	555.0	99.5	654.5	570.7	303.4	874.1
2019	564.1	103.6	667.7	581.5	316.4	897.8
2020	574.3	107.9	682.2	593.5	330.1	923.5
2021	585.0	112.3	697.4	606.0	344.1	950.1
2022	596.1	117.0	713.2	619.0	358.8	977.8
2023	607.3	121.9	729.2	632.1	374.0	1,006.1
2024	617.2	126.9	744.1	643.9	389.4	1,033.4
2025	628.0	132.1	760.1	656.8	405.6	1,062.4
2026	638.2	137.4	775.6	669.1	422.0	1,091.1
2027	648.8	142.9	791.7	681.8	439.1	1,121.0
2028	659.7	148.6	808.4	695.0	456.8	1,151.8
2029	670.3	154.5	824.8	707.8	475.0	1,182.8
2030	681.5	160.8	842.3	721.4	494.2	1,215.6
2031	693.1	167.3	860.4	735.4	514.0	1,249.4
2032	704.4	174.0	878.4	749.2	534.3	1,283.5
2033	715.5	180.9	896.4	762.8	555.3	1,318.0
Avg Annual Growth						
2000-12	-1.0%	3.4%	-0.6%	0.2%	2.5%	0.9%
2012-13	0.0%	0.7%	0.1%	0.8%	-0.2%	0.5%
2012-22	1.9%	3.9%	2.2%	2.1%	4.0%	2.7%
2012-33	1.8%	4.0%	2.1%	2.0%	4.0%	2.7%

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

TABLE 11

U.S. MAINLINE AIR CARRIERS

SCHEDULED PASSENGER CAPACITY, TRAFFIC, AND LOAD FACTORS

	DOMESTIC			INTERNATIONAL			SYSTEM		
FISCAL YEAR	ASMs (BIL)	RPMs (BIL)	% LOAD FACTOR	ASMs (BIL)	RPMs (BIL)	% LOAD FACTOR	ASMs (BIL)	RPMs (BIL)	% LOAD FACTOR
Historical*									
2000	688.3	490.0	71.2	238.0	181.0	76.0	926.2	670.9	72.4
2006	648.7	513.9	79.2	258.9	206.8	79.9	907.6	720.7	79.4
2007	659.0	529.9	80.4	273.4	219.5	80.3	932.4	749.4	80.4
2008	650.2	521.3	80.2	290.1	231.9	80.0	940.3	753.3	80.1
2009	587.8	478.2	81.4	281.5	220.0	78.2	869.3	698.2	80.3
2010	581.5	480.7	82.7	279.5	229.6	82.2	861.0	710.4	82.5
2011	594.4	497.0	83.6	298.6	241.2	80.8	893.0	738.2	82.7
2012E	598.7	503.4	84.1	297.9	242.7	81.5	896.6	746.1	83.2
Forecast									
2013	598.9	507.3	84.7	296.4	242.1	81.7	895.3	749.4	83.7
2014	612.0	520.0	85.0	307.1	252.4	82.2	919.1	772.4	84.0
2015	627.4	534.4	85.2	323.3	265.7	82.2	950.6	800.1	84.2
2016	642.1	548.1	85.4	338.7	278.4	82.2	980.8	826.5	84.3
2017	655.3	560.4	85.5	353.9	290.9	82.2	1,009.2	851.3	84.4
2018	666.4	570.7	85.6	369.1	303.4	82.2	1,035.5	874.1	84.4
2019	678.0	581.5	85.8	384.9	316.4	82.2	1,062.9	897.8	84.5
2020	691.2	593.5	85.9	401.5	330.1	82.2	1,092.7	923.5	84.5
2021	705.1	606.0	85.9	418.6	344.1	82.2	1,123.7	950.1	84.6
2022	719.6	619.0	86.0	436.5	358.8	82.2	1,156.1	977.8	84.6
2023	734.3	632.1	86.1	455.0	374.0	82.2	1,189.2	1,006.1	84.6
2024	747.5	643.9	86.1	473.8	389.4	82.2	1,221.3	1,033.4	84.6
2025	762.0	656.8	86.2	493.4	405.6	82.2	1,255.4	1,062.4	84.6
2026	775.8	669.1	86.2	513.5	422.0	82.2	1,289.2	1,091.1	84.6
2027	790.2	681.8	86.3	534.2	439.1	82.2	1,324.4	1,121.0	84.6
2028	805.1	695.0	86.3	555.7	456.8	82.2	1,360.8	1,151.8	84.6
2029	819.6	707.8	86.4	577.8	475.0	82.2	1,397.4	1,182.8	84.6
2030	834.9	721.4	86.4	601.3	494.2	82.2	1,436.1	1,215.6	84.6
2031	850.8	735.4	86.4	625.4	514.0	82.2	1,476.2	1,249.4	84.6
2032	866.5	749.2	86.5	650.1	534.3	82.2	1,516.6	1,283.5	84.6
2033	881.9	762.8	86.5	675.6	555.3	82.2	1,557.5	1,318.0	84.6
Avg Annual Growth									
2000-12	-1.2%	0.2%	1.4%	1.9%	2.5%	0.6%	-0.3%	0.9%	1.2%
2012-13	0.0%	0.8%	0.7%	-0.5%	-0.2%	0.3%	-0.1%	0.5%	0.6%
2012-22	1.9%	2.1%	0.2%	3.9%	4.0%	0.1%	2.6%	2.7%	0.2%
2012-33	1.9%	2.0%	0.1%	4.0%	4.0%	0.0%	2.7%	2.7%	0.1%

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

TABLE 12

U.S. MAINLINE AIR CARRIERS

SCHEDULED INTERNATIONAL PASSENGER ENPLANEMENTS

FISCAL YEAR	REVENUE PASSENGER ENPLANEMENTS (MIL)			
	ATLANTIC	LATIN AMERICA	PACIFIC	TOTAL
Historical*				
2000	20.9	21.2	11.2	53.3
2006	22.5	31.7	13.9	68.1
2007	24.1	34.2	13.6	71.9
2008	26.0	35.6	13.2	74.8
2009	24.7	34.3	12.0	71.0
2010	24.5	37.2	12.9	74.6
2011	25.3	39.8	13.5	78.6
2012E	24.7	41.0	14.0	79.8
Forecast				
2013	23.5	42.7	14.2	80.4
2014	24.2	44.4	14.9	83.5
2015	25.1	46.7	15.8	87.7
2016	26.0	49.0	16.6	91.7
2017	26.9	51.2	17.5	95.6
2018	27.7	53.5	18.3	99.5
2019	28.6	55.8	19.1	103.6
2020	29.5	58.4	20.0	107.9
2021	30.5	61.0	20.9	112.3
2022	31.4	63.8	21.8	117.0
2023	32.4	66.8	22.7	121.9
2024	33.5	69.8	23.6	126.9
2025	34.5	73.0	24.6	132.1
2026	35.6	76.3	25.5	137.4
2027	36.7	79.7	26.5	142.9
2028	37.8	83.3	27.6	148.6
2029	38.9	87.0	28.6	154.5
2030	40.1	91.0	29.7	160.8
2031	41.4	95.2	30.8	167.3
2032	42.7	99.5	31.9	174.0
2033	44.0	103.9	33.0	180.9
Avg Annual Growth				
2000-12	1.4%	5.7%	1.9%	3.4%
2012-13	-5.0%	4.1%	0.8%	0.7%
2012-22	2.4%	4.5%	4.5%	3.9%
2012-33	2.8%	4.5%	4.2%	4.0%

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

TABLE 13

U.S. MAINLINE AIR CARRIERS

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

	ATLANTIC			LATIN AMERICA			PACIFIC			INTERNATIONAL		
FISCAL YEAR	ASMs (BIL)	RPMs (BIL)	% LOAD FACTOR	ASMs (BIL)	RPMs (BIL)	% LOAD FACTOR	ASMs (BIL)	RPMs (BIL)	% LOAD FACTOR	ASMs (BIL)	RPMs (BIL)	% LOAD FACTOR
Historical*												
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
2006	115.8	93.9	81.1	69.4	51.9	74.9	73.7	61.1	82.8	258.9	206.8	79.9
2007	126.6	102.2	80.7	72.7	55.9	76.9	74.1	61.4	82.9	273.4	219.5	80.3
2008	141.0	112.7	80.0	74.2	58.8	79.3	74.9	60.4	80.6	290.1	231.9	80.0
2009	138.2	108.9	78.9	73.5	56.4	76.8	69.9	54.7	78.3	281.5	220.0	78.2
2010	130.9	108.6	82.9	78.0	61.8	79.2	70.5	59.2	84.1	279.5	229.6	82.2
2011	138.3	111.7	80.7	82.5	65.9	79.9	77.8	63.6	81.8	298.6	241.2	80.8
2012E	132.3	107.9	81.6	84.7	68.5	80.9	81.0	66.4	82.0	297.9	242.7	81.5
Forecast												
2013	125.6	102.7	81.7	88.9	72.2	81.2	81.8	67.3	82.2	296.4	242.1	81.7
2014	129.4	106.1	82.0	91.2	75.2	82.4	86.4	71.0	82.2	307.06	252.4	82.2
2015	135.1	110.8	82.0	96.5	79.5	82.4	91.7	75.3	82.2	323.26	265.7	82.2
2016	140.7	115.4	82.0	101.5	83.7	82.4	96.5	79.3	82.2	338.66	278.3	82.2
2017	146.2	119.9	82.0	106.4	87.7	82.4	101.3	83.2	82.2	353.92	290.9	82.2
2018	151.6	124.3	82.0	111.3	91.8	82.4	106.2	87.2	82.2	369.09	303.3	82.2
2019	157.2	128.9	82.0	116.5	96.0	82.4	111.2	91.4	82.2	384.88	316.3	82.2
2020	163.1	133.7	82.0	122.1	100.7	82.4	116.4	95.6	82.2	401.54	330.0	82.2
2021	169.1	138.7	82.0	127.9	105.4	82.4	121.7	100.0	82.2	418.64	344.1	82.2
2022	175.4	143.8	82.0	134.0	110.5	82.4	127.1	104.4	82.2	436.54	358.8	82.2
2023	181.9	149.2	82.0	140.5	115.9	82.4	132.5	108.9	82.2	454.97	373.9	82.2
2024	188.6	154.6	82.0	147.2	121.4	82.4	138.0	113.4	82.2	473.82	389.4	82.2
2025	195.5	160.3	82.0	154.2	127.2	82.4	143.7	118.1	82.2	493.44	405.6	82.2
2026	202.5	166.1	82.0	161.4	133.0	82.4	149.6	122.9	82.2	513.45	422.0	82.2
2027	209.8	172.0	82.0	168.8	139.2	82.4	155.6	127.9	82.2	534.23	439.1	82.2
2028	217.4	178.2	82.0	176.6	145.6	82.4	161.8	132.9	82.2	555.72	456.7	82.2
2029	225.1	184.6	82.0	184.7	152.2	82.4	168.0	138.1	82.2	577.84	474.9	82.2
2030	233.3	191.3	82.0	193.4	159.4	82.4	174.5	143.4	82.2	601.26	494.2	82.2
2031	241.8	198.3	82.0	202.5	166.9	82.4	181.1	148.8	82.2	625.38	514.0	82.2
2032	250.5	205.4	82.0	211.8	174.6	82.4	187.8	154.4	82.2	650.11	534.3	82.2
2033	259.4	212.7	82.0	221.5	182.6	82.4	194.7	160.0	82.2	675.61	555.3	82.2
Avg Annual Growth												
2000-12	1.6%	1.8%	0.2%	4.2%	5.6%	1.3%	0.5%	1.1%	0.6%	1.9%	2.5%	0.6%
2012-13	-5.0%	-4.8%	0.2%	5.0%	5.5%	0.4%	1.1%	1.4%	0.3%	-0.5%	-0.2%	0.3%
2012-22	2.9%	2.9%	0.1%	4.7%	4.9%	0.2%	4.6%	4.6%	0.0%	3.9%	4.0%	0.1%
2012-33	3.3%	3.3%	0.0%	4.7%	4.8%	0.1%	4.3%	4.3%	0.0%	4.0%	4.0%	0.0%

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

TABLE 14

U.S. MAINLINE AIR CARRIER FORECAST ASSUMPTIONS

SEATS PER AIRCRAFT MILE

FISCAL YEAR	DOMESTIC (Seats/Mile)	INTERNATIONAL ATLANTIC (Seats/Mile)	INTERNATIONAL LATIN AMERICA (Seats/Mile)	INTERNATIONAL PACIFIC (Seats/Mile)	INTERNATIONAL TOTAL (Seats/Mile)	SYSTEM (Seats/Mile)
Historical*						
2000	148.8	233.7	179.5	307.8	236.6	164.5
2006	150.5	229.4	175.2	274.4	221.4	165.7
2007	150.6	229.2	176.2	279.6	222.3	166.3
2008	150.3	229.2	177.3	292.3	224.9	167.5
2009	151.2	230.0	175.8	291.3	223.7	168.9
2010	151.9	231.7	171.5	287.2	220.9	169.1
2011	152.3	230.5	172.1	282.9	221.0	170.0
2012E	152.7	230.4	171.8	278.3	219.4	169.9
Forecast						
2013	153.0	231.4	172.5	279.3	219.3	170.0
2014	153.3	233.0	173.0	281.1	220.4	170.7
2015	153.6	233.5	173.5	281.8	220.9	171.4
2016	153.8	234.0	174.0	282.6	221.4	171.9
2017	153.9	234.5	174.5	283.3	222.0	172.4
2018	154.1	235.0	175.0	284.1	222.5	173.0
2019	154.2	235.5	175.5	284.8	223.0	173.6
2020	154.4	236.0	176.0	285.6	223.5	174.2
2021	154.7	236.5	176.5	286.3	224.0	174.8
2022	155.0	237.0	177.0	287.1	224.5	175.5
2023	155.3	237.5	177.5	287.8	224.9	176.1
2024	155.6	238.0	178.0	288.6	225.4	176.8
2025	155.9	238.5	178.5	289.3	225.8	177.5
2026	156.2	239.0	179.0	290.1	226.3	178.2
2027	156.5	239.5	179.5	290.8	226.7	178.8
2028	156.8	240.0	180.0	291.6	227.1	179.5
2029	157.1	240.5	180.5	292.3	227.6	180.2
2030	157.4	241.0	181.0	293.1	227.9	180.8
2031	157.7	241.5	181.5	293.8	228.3	181.5
2032	158.0	242.0	182.0	294.6	228.7	182.2
2033	158.4	242.5	182.5	295.3	229.1	182.8

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

TABLE 15

U.S. MAINLINE AIR CARRIER FORECAST ASSUMPTIONS

AVERAGE PASSENGER TRIP LENGTH

FISCAL YEAR	DOMESTIC (Miles)	INTERNATIONAL ATLANTIC (Miles)	INTERNATIONAL LATIN AMERICA (Miles)	INTERNATIONAL PACIFIC (Miles)	INTERNATIONAL TOTAL (Miles)	SYSTEM (Miles)
Historical*						
2000	872.6	4,168.1	1,675.2	5,219.9	3,397.3	1,091.4
2006	995.4	4,175.4	1,637.0	4,390.4	3,037.0	1,233.4
2007	992.8	4,247.8	1,634.3	4,515.1	3,054.2	1,237.2
2008	999.4	4,332.7	1,651.6	4,583.5	3,100.1	1,262.9
2009	1,003.0	4,402.4	1,645.6	4,549.9	3,097.6	1,274.6
2010	1,015.1	4,433.0	1,660.1	4,586.6	3,072.5	1,295.6
2011	1,016.9	4,414.7	1,655.3	4,706.9	3,067.5	1,301.3
2012E	1,017.3	4,361.4	1,668.2	4,725.1	3,040.8	1,298.4
Forecast						
2013	1,025.8	4,368.0	1,690.5	4,749.7	3,012.5	1,303.5
2014	1,025.8	4,390.4	1,695.6	4,754.5	3,023.4	1,308.2
2015	1,023.2	4,413.0	1,701.7	4,759.3	3,030.1	1,311.7
2016	1,023.2	4,435.7	1,707.1	4,764.1	3,036.6	1,317.4
2017	1,025.8	4,458.5	1,712.0	4,768.9	3,043.1	1,326.2
2018	1,028.3	4,481.4	1,716.4	4,773.8	3,049.6	1,335.5
2019	1,030.8	4,504.4	1,720.6	4,778.6	3,055.1	1,344.8
2020	1,033.3	4,527.6	1,724.6	4,783.4	3,059.2	1,353.7
2021	1,035.8	4,550.8	1,728.3	4,788.2	3,063.2	1,362.4
2022	1,038.4	4,574.2	1,731.8	4,793.1	3,065.6	1,371.1
2023	1,040.9	4,597.7	1,735.0	4,797.9	3,067.3	1,379.7
2024	1,043.4	4,621.4	1,738.0	4,802.8	3,068.6	1,388.8
2025	1,045.9	4,645.1	1,740.7	4,807.6	3,069.7	1,397.7
2026	1,048.4	4,669.0	1,743.3	4,812.5	3,071.2	1,406.8
2027	1,051.0	4,693.0	1,745.6	4,817.4	3,072.4	1,415.9
2028	1,053.5	4,717.1	1,747.8	4,822.2	3,073.1	1,424.8
2029	1,056.0	4,741.4	1,749.9	4,827.1	3,073.5	1,434.0
2030	1,058.5	4,765.8	1,751.8	4,832.0	3,072.7	1,443.1
2031	1,061.0	4,790.3	1,753.5	4,836.9	3,071.8	1,452.1
2032	1,063.6	4,814.9	1,755.1	4,841.7	3,070.7	1,461.2
2033	1,066.1	4,839.6	1,756.6	4,846.6	3,069.5	1,470.4

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

TABLE 16

U.S. MAINLINE AIR CARRIER FORECAST ASSUMPTIONS

PASSENGER YIELDS

	REVENUE PER PASSENGER MILE					
	DOMESTIC		INTERNATIONAL		SYSTEM	
FISCAL YEAR	CURRENT $ (Cents)	FY 2012 $ (Cents)	CURRENT $ (Cents)	FY 2012 $ (Cents)	CURRENT $ (Cents)	FY 2012 $ (Cents)
Historical*						
2000	14.03	18.78	10.46	14.00	13.06	17.49
2006	12.36	14.08	11.63	13.25	12.15	13.84
2007	12.45	13.85	12.45	13.86	12.45	13.86
2008	13.11	13.97	13.37	14.25	13.19	14.06
2009	11.95	12.78	11.68	12.49	11.87	12.69
2010	12.87	13.53	12.84	13.49	12.86	13.52
2011	13.62	13.95	14.09	14.43	13.77	14.11
2012E	14.10	14.10	14.74	14.74	14.31	14.31
Forecast						
2013	14.45	14.24	14.44	14.23	14.45	14.24
2014	14.60	14.16	14.59	14.15	14.60	14.15
2015	14.82	14.12	14.75	14.06	14.79	14.10
2016	15.09	14.14	14.93	13.99	15.04	14.09
2017	15.35	14.11	15.13	13.90	15.28	14.04
2018	15.59	14.05	15.34	13.82	15.50	13.97
2019	15.83	13.99	15.55	13.74	15.73	13.90
2020	16.06	13.92	15.76	13.66	15.95	13.83
2021	16.30	13.85	15.97	13.57	16.18	13.75
2022	16.53	13.78	16.19	13.49	16.40	13.67
2023	16.77	13.71	16.41	13.41	16.63	13.60
2024	16.99	13.63	16.62	13.33	16.85	13.52
2025	17.22	13.55	16.84	13.25	17.07	13.43
2026	17.44	13.47	17.06	13.17	17.29	13.35
2027	17.67	13.39	17.29	13.10	17.52	13.27
2028	17.90	13.30	17.52	13.02	17.75	13.19
2029	18.13	13.22	17.75	12.95	17.98	13.11
2030	18.35	13.13	18.00	12.88	18.21	13.03
2031	18.58	13.04	18.25	12.81	18.44	12.94
2032	18.81	12.95	18.50	12.73	18.68	12.86
2033	19.04	12.85	18.75	12.66	18.92	12.77
Avg Annual Growth						
2000-12	0.0%	-2.4%	2.9%	0.4%	0.8%	-1.7%
2012-13	2.5%	1.0%	-2.0%	-3.4%	1.0%	-0.5%
2012-22	1.6%	-0.2%	0.9%	-0.9%	1.4%	-0.5%
2012-33	1.4%	-0.4%	1.2%	-0.7%	1.3%	-0.5%

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

TABLE 17

U.S. MAINLINE AIR CARRIER FORECAST ASSUMPTIONS

INTERNATIONAL PASSENGER YIELDS BY REGION

	REVENUE PER PASSENGER MILE							
	ATLANTIC		LATIN AMERICA		PACIFIC		TOTAL INTERNATIONAL	
FISCAL	CURRENT $	FY 2012 $	CURRENT $	FY 2012 $	CURRENT $	FY 2012 $	CURRENT $	FY 2012 $
YEAR	(Cents)	(Cents)	(Cents)	(Cents)	(Cents)	(Cents)	(Cents)	(Cents)
Historical*								
2000	9.73	13.02	13.00	17.41	9.99	13.37	10.46	14.00
2006	11.64	13.26	12.68	14.45	10.73	12.23	11.63	13.25
2007	12.46	13.87	13.37	14.88	11.61	12.92	12.45	13.86
2008	13.29	14.16	14.19	15.12	12.73	13.57	13.37	14.25
2009	11.25	12.02	12.99	13.89	11.20	11.97	11.68	12.49
2010	12.73	13.39	13.33	14.01	12.50	13.14	12.83	13.49
2011	13.48	13.81	15.13	15.50	14.07	14.41	14.09	14.43
2012E	13.96	13.96	15.72	15.72	14.99	14.99	14.74	14.74
Forecast								
2013	13.72	13.52	14.94	14.72	14.99	14.78	14.44	14.23
2014	13.88	13.46	15.06	14.61	15.17	14.71	14.59	14.15
2015	14.05	13.39	15.17	14.46	15.35	14.63	14.75	14.06
2016	14.22	13.32	15.34	14.37	15.55	14.57	14.93	13.99
2017	14.43	13.26	15.50	14.24	15.75	14.47	15.13	13.90
2018	14.64	13.19	15.68	14.13	15.99	14.41	15.34	13.82
2019	14.85	13.12	15.86	14.01	16.21	14.32	15.55	13.74
2020	15.07	13.06	16.04	13.90	16.43	14.24	15.76	13.66
2021	15.29	12.99	16.22	13.78	16.66	14.16	15.97	13.57
2022	15.51	12.93	16.41	13.68	16.90	14.09	16.19	13.49
2023	15.74	12.86	16.59	13.56	17.14	14.01	16.41	13.41
2024	15.96	12.80	16.77	13.45	17.37	13.93	16.62	13.33
2025	16.18	12.73	16.95	13.34	17.62	13.86	16.84	13.25
2026	16.41	12.67	17.14	13.23	17.86	13.79	17.06	13.17
2027	16.64	12.61	17.33	13.13	18.12	13.72	17.29	13.10
2028	16.87	12.54	17.53	13.03	18.37	13.66	17.52	13.02
2029	17.11	12.48	17.73	12.93	18.64	13.59	17.75	12.95
2030	17.36	12.42	17.95	12.84	18.91	13.53	18.00	12.88
2031	17.61	12.36	18.18	12.76	19.19	13.47	18.25	12.81
2032	17.87	12.30	18.38	12.65	19.48	13.41	18.50	12.73
2033	18.13	12.23	18.59	12.55	19.77	13.34	18.75	12.66
Avg Annual Growth								
2000-12	3.1%	0.6%	1.6%	-0.8%	3.4%	1.0%	2.9%	0.4%
2012-13	-1.7%	-3.1%	-5.0%	-6.3%	0.0%	-1.4%	-2.0%	-3.4%
2012-22	1.1%	-0.8%	0.4%	-1.4%	1.2%	-0.6%	0.9%	-0.9%
2012-33	1.3%	-0.6%	0.8%	-1.1%	1.3%	-0.6%	1.2%	-0.7%

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

TABLE 18

U.S. MAINLINE AIR CARRIER FORECAST ASSUMPTIONS

JET FUEL PRICES

FISCAL YEAR	DOMESTIC CURRENT $ (Cents)	DOMESTIC FY 2012 $ (Cents)	INTERNATIONAL CURRENT $ (Cents)	INTERNATIONAL FY 2012 $ (Cents)	SYSTEM CURRENT $ (Cents)	SYSTEM FY 2012 $ (Cents)
Historical*						
2000	71.49	95.69	79.35	106.21	73.57	98.47
2006	194.69	221.82	204.69	233.22	197.72	225.28
2007	194.01	216.14	203.31	226.32	196.90	219.18
2008	292.64	311.82	314.57	335.27	299.74	319.47
2009	202.31	216.28	208.41	222.80	204.35	218.46
2010	219.19	230.40	220.08	231.33	219.49	230.71
2011	274.41	281.09	271.77	278.39	273.44	280.10
2012E	299.72	299.72	287.24	287.24	291.52	291.52
Forecast						
2013	270.89	267.04	259.61	255.92	263.48	259.74
2014	257.26	249.44	246.55	239.05	250.22	242.61
2015	242.07	230.76	231.99	221.15	235.44	224.45
2016	244.17	228.72	234.00	219.19	237.49	222.46
2017	256.22	235.43	245.55	225.62	249.21	228.99
2018	266.16	239.85	255.08	229.86	258.88	233.29
2019	276.67	244.43	265.15	234.26	269.10	237.75
2020	285.69	247.58	273.79	237.27	277.87	240.81
2021	294.20	250.07	281.95	239.65	286.15	243.23
2022	301.97	251.69	289.40	241.21	293.71	244.80
2023	310.38	253.70	297.46	243.14	301.89	246.76
2024	317.76	254.83	304.53	244.21	309.07	247.85
2025	324.14	255.05	310.65	244.43	315.28	248.08
2026	330.42	255.13	316.67	244.51	321.38	248.15
2027	336.51	254.92	322.50	244.30	327.30	247.94
2028	342.31	254.47	328.05	243.87	332.94	247.51
2029	348.11	253.89	333.62	243.32	338.59	246.95
2030	352.09	251.93	337.42	241.44	342.45	245.04
2031	355.07	249.20	340.28	238.82	345.35	242.38
2032	358.21	246.51	343.29	236.25	348.41	239.77
2033	360.14	243.05	345.15	232.93	350.29	236.40
Avg Annual Growth						
2000-12	12.7%	10.0%	11.3%	8.6%	12.2%	9.5%
2012-13	-9.6%	-10.9%	-9.6%	-10.9%	-9.6%	-10.9%
2012-22	0.1%	-1.7%	0.1%	-1.7%	0.1%	-1.7%
2012-33	0.9%	-1.0%	0.9%	-1.0%	0.9%	-1.0%

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

TABLE 19

U.S. COMMERCIAL AIR CARRIERS

AIR CARGO REVENUE TON MILES[1, 2, 3]

FISCAL YEAR	ALL-CARGO CARRIER RTMS (Millions)			PASSENGER CARRIER RTMS (Millions)			TOTAL RTMS (Millions)		
	DOMESTIC	INT'L.	TOTAL	DOMESTIC	INT'L.	TOTAL	DOMESTIC	INT'L.	TOTAL
Historical*									
2000	10,283.5	7,573	17,856.6	4,415.2	7,785	12,199.9	14,698.7	15,357.8	30,056.5
2006	12,481.2	15,475	27,956.4	2,899.7	8,483	11,383.2	15,380.9	23,958.7	39,339.6
2007	12,940.5	17,503	30,443.2	2,278.6	7,187	9,465.7	15,219.1	24,689.7	39,908.8
2008	12,260.7	17,516	29,776.7	2,147.0	6,905	9,052.4	14,407.6	24,421.5	38,829.1
2009	10,275.3	13,834	24,109.7	1,623.2	5,266	6,889.1	11,898.6	19,100.2	30,998.8
2010	11,243.2	16,733	27,975.9	1,579.8	6,332	7,911.7	12,823.1	23,064.5	35,887.6
2011	10,601.2	18,980	29,580.9	1,445.7	6,250	7,696.2	12,046.9	25,230.2	37,277.0
2012E	10,631.1	18,181	28,812.2	1,422.3	6,149	7,571.5	12,053.4	24,330.3	36,383.7
Forecast									
2013	10,548.5	18,451	28,999.4	1,397.7	6,142	7,539.4	11,946.2	24,592.6	36,538.8
2014	10,723.8	19,896	30,619.3	1,407.2	6,517	7,924.1	12,131.0	26,412.5	38,543.5
2015	11,054.3	21,660	32,714.3	1,436.4	6,981	8,417.3	12,490.8	28,640.8	41,131.6
2016	11,241.7	23,327	34,568.7	1,450.0	7,396	8,846.3	12,691.7	30,723.3	43,415.0
2017	11,351.3	24,956	36,307.2	1,453.3	7,783	9,236.7	12,804.6	32,739.3	45,543.9
2018	11,404.7	26,565	37,969.7	1,449.3	8,149	9,597.9	12,854.0	34,713.6	47,567.6
2019	11,461.8	28,243	39,705.1	1,445.6	8,519	9,964.9	12,907.4	36,762.7	49,670.1
2020	11,543.6	30,019	41,562.9	1,445.0	8,903	10,348.0	12,988.6	38,922.3	51,910.9
2021	11,610.9	31,860	43,471.4	1,442.4	9,289	10,731.4	13,053.3	41,149.5	54,202.7
2022	11,701.8	33,797	45,498.7	1,442.6	9,685	11,127.7	13,144.4	43,482.0	56,626.4
2023	11,795.0	35,803	47,598.3	1,442.9	10,083	11,525.8	13,238.0	45,886.1	59,124.1
2024	11,875.9	37,868	49,744.3	1,441.6	10,479	11,920.2	13,317.6	48,347.0	61,664.5
2025	11,960.4	40,036	51,996.5	1,440.6	10,883	12,324.0	13,401.0	50,919.5	64,320.5
2026	12,021.5	42,271	54,292.4	1,436.7	11,287	12,723.2	13,458.1	53,557.6	67,015.7
2027	12,084.1	44,609	56,692.9	1,432.8	11,697	13,129.6	13,516.9	56,305.5	69,822.5
2028	12,145.6	47,039	59,185.0	1,428.7	12,110	13,538.8	13,574.3	59,149.5	72,723.8
2029	12,204.4	49,560	61,764.6	1,424.2	12,525	13,949.1	13,628.6	62,085.1	75,713.7
2030	12,294.7	52,231	64,525.6	1,423.2	12,955	14,378.1	13,718.0	65,185.7	78,903.7
2031	12,378.8	54,994	67,372.5	1,421.4	13,384	14,805.5	13,800.2	68,377.9	82,178.1
2032	12,450.6	57,843	70,293.8	1,418.1	13,810	15,228.4	13,868.7	71,653.4	85,522.2
2033	12,518.0	60,799	73,317.2	1,414.1	14,237	15,651.3	13,932.1	75,036.4	88,968.5
Avg Annual Growth									
2000-12	0.3%	7.6%	4.1%	-9.0%	-1.9%	-3.9%	-1.6%	3.9%	1.6%
2012-13	-0.8%	1.5%	0.6%	-1.7%	-0.1%	-0.4%	-0.9%	1.1%	0.4%
2013-14	1.0%	6.4%	4.7%	0.1%	4.6%	3.9%	0.9%	6.0%	4.5%
2012-33	0.8%	5.9%	4.5%	0.0%	4.1%	3.5%	0.7%	5.5%	4.3%

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

[1]Includes freight/express and mail revenue ton miles on mainline air carriers and regionals/commuters.

[2]Domestic figures from 2000 through 2002 exclude Airborne Express, Inc.; international figures for 2003 and beyond include new reporting of contract service by U.S. carriers for foreign flag carriers.

[3]Domestic figures from 2003 and beyond include Airborne Express. Inc.

TABLE 20

U.S. COMMERCIAL AIR CARRIERS

INTERNATIONAL AIR CARGO REVENUE TON MILES BY REGION[1, 2]

FISCAL YEAR	ATLANTIC (MILLIONS)	LATIN AMERICA (MILLIONS)	PACIFIC (MILLIONS)	OTHER INTERNATIONAL (MILLIONS)	TOTAL (MILLIONS)
Historical*					
2000	5,416.8	1,791.2	7,543.8	1,088.7	15,840.5
2006	6,084.1	2,004.9	9,564.2	6,555.6	24,208.9
2007	6,124.7	2,304.2	9,497.3	6,763.5	24,689.7
2008	6,415.4	2,336.3	9,050.0	6,619.8	24,421.5
2009	5,740.1	1,793.4	6,855.4	4,711.2	19,100.2
2010	6,865.3	1,990.6	8,348.4	5,860.3	23,064.5
2011	7,235.5	1,832.4	9,105.4	7,056.5	25,229.8
2012E	7,002.9	1,894.5	8,581.8	6,851.0	24,330.3
Forecast					
2013	6,912.1	1,960.4	8,858.0	6,862.2	24,592.6
2014	7,259.2	2,134.9	9,514.5	7,503.8	26,412.5
2015	7,711.3	2,319.5	10,407.3	8,202.7	28,640.8
2016	8,170.3	2,490.7	11,175.0	8,887.3	30,723.3
2017	8,626.4	2,653.0	11,896.5	9,563.4	32,739.3
2018	9,075.2	2,810.3	12,591.9	10,236.3	34,713.6
2019	9,541.0	2,970.6	13,325.9	10,925.2	36,762.7
2020	10,030.5	3,136.6	14,122.9	11,632.3	38,922.3
2021	10,535.4	3,305.2	14,946.6	12,362.2	41,149.5
2022	11,064.5	3,481.6	15,828.7	13,107.1	43,482.0
2023	11,616.6	3,664.5	16,740.6	13,864.4	45,886.1
2024	12,186.6	3,852.5	17,671.8	14,636.1	48,347.0
2025	12,781.1	4,049.1	18,653.2	15,436.1	50,919.5
2026	13,392.6	4,250.6	19,652.2	16,262.1	53,557.5
2027	14,033.5	4,460.8	20,696.5	17,114.7	56,305.5
2028	14,702.0	4,679.9	21,778.7	17,988.9	59,149.5
2029	15,396.4	4,908.9	22,895.9	18,884.0	62,085.1
2030	16,133.1	5,154.4	24,094.8	19,803.4	65,185.7
2031	16,901.8	5,410.2	25,323.8	20,742.1	68,377.9
2032	17,696.3	5,675.6	26,579.4	21,702.1	71,653.4
2033	18,524.3	5,953.0	27,872.5	22,686.5	75,036.4
Avg. Annual Growth					
2000-12	2.2%	0.5%	1.1%	16.6%	3.6%
2012-13	-1.3%	3.5%	3.2%	0.2%	1.1%
2012-22	4.7%	6.3%	6.3%	6.7%	6.0%
2012-33	4.7%	5.6%	5.8%	5.9%	5.5%

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

[1]Includes freight/express and mail revenue ton miles on mainline air carriers and regionals/commuters.

[2]Figures for 2003 and beyond include new reporting of contract service by U.S. carriers for foreign flag carriers.

TABLE 21

U.S. MAINLINE AIR CARRIERS

PASSENGER JET AIRCRAFT

CALENDAR	LARGE NARROWBODY				LARGE WIDEBODY				LARGE	REGIONAL	TOTAL
YEAR	2 ENGINE	3 ENGINE	4 ENGINE	TOTAL	2 ENGINE	3 ENGINE	4 ENGINE	TOTAL	JETS	JETS	JETS
Historical											
2000	3,364	385	0	3,749	424	169	120	713	4,462	26	4,488
2006	3,302	26	0	3,328	463	19	49	531	3,859	39	3,898
2007	3,354	29	0	3,383	477	12	47	536	3,919	64	3,983
2008	3,170	10	1	3,181	470	9	44	523	3,704	91	3,795
2009	3,109	9	2	3,120	447	9	42	498	3,618	92	3,710
2010	3,127	10	1	3,138	471	9	43	523	3,661	90	3,751
2011	3,136	9	1	3,146	472	7	41	520	3,666	96	3,762
2012E	3,138	9	1	3,148	479	5	40	524	3,672	110	3,782
Forecast											
2013	3,097	9	0	3,106	483	3	40	526	3,632	112	3,744
2014	3,107	9	0	3,116	494	1	40	535	3,651	114	3,765
2015	3,039	9	0	3,048	532	0	40	572	3,620	121	3,741
2016	3,042	9	0	3,051	539	0	40	579	3,630	129	3,759
2017	3,074	9	0	3,083	563	0	36	599	3,682	134	3,816
2018	3,104	9	0	3,113	599	0	26	625	3,738	136	3,874
2019	3,148	8	0	3,156	626	0	21	647	3,803	126	3,929
2020	3,185	7	0	3,192	663	0	16	679	3,871	126	3,997
2021	3,193	7	0	3,200	698	0	10	708	3,908	126	4,034
2022	3,230	2	0	3,232	728	0	6	734	3,966	126	4,092
2023	3,277	0	0	3,277	753	0	2	755	4,032	126	4,158
2024	3,316	0	0	3,316	788	0	0	788	4,104	126	4,230
2025	3,315	0	0	3,315	808	0	0	808	4,123	126	4,249
2026	3,352	0	0	3,352	835	0	0	835	4,187	126	4,313
2027	3,403	0	0	3,403	857	0	0	857	4,260	126	4,386
2028	3,464	0	0	3,464	884	0	0	884	4,348	126	4,474
2029	3,503	0	0	3,503	921	0	0	921	4,424	126	4,550
2030	3,550	0	0	3,550	954	0	0	954	4,504	126	4,630
2031	3,610	0	0	3,610	985	0	0	985	4,595	126	4,721
2032	3,664	0	0	3,664	1,018	0	0	1,018	4,682	126	4,808
2033	3,722	0	0	3,722	1,059	0	0	1,059	4,781	126	4,907
Avg Annual Growth											
2000-12	-0.6%	-26.9%	N/A	-1.4%	1.0%	-25.4%	-8.7%	-2.5%	-1.6%	12.8%	-1.4%
2012-13	-1.3%	0.0%	-100.0%	-1.3%	0.8%	-40.0%	0.0%	0.4%	-1.1%	1.8%	-1.0%
2012-22	0.3%	-14.0%	-100.0%	0.3%	4.3%	-100.0%	-17.3%	3.4%	0.8%	1.4%	0.8%
2012-33	0.8%	-99.9%	-99.9%	0.8%	3.9%	-99.9%	-99.9%	3.4%	1.3%	0.6%	1.2%

TABLE 22

U.S. MAINLINE AIR CARRIERS

CARGO JET AIRCRAFT

CALENDAR	LARGE NARROWBODY				LARGE WIDEBODY				
YEAR	2 ENGINE	3 ENGINE	4 ENGINE	TOTAL	2 ENGINE	3 ENGINE	4 ENGINE	TOTAL	TOTAL
Historical									
2000	166	332	176	674	164	158	68	390	1,064
2006	162	220	78	460	264	208	80	552	1,012
2007	162	162	75	399	276	213	86	575	974
2008	161	143	68	372	276	215	97	588	960
2009	160	104	33	297	253	209	82	544	841
2010	153	104	31	288	265	200	97	562	850
2011	175	89	26	290	281	203	96	580	870
2012E	186	67	12	265	292	188	95	575	840
Forecast									
2013	192	56	10	258	288	184	97	569	827
2014	196	45	7	248	289	177	98	564	812
2015	200	34	5	239	301	167	100	568	807
2016	213	21	4	238	322	158	101	581	819
2017	225	18	2	245	334	155	103	592	837
2018	236	17	0	253	350	147	103	600	853
2019	250	15	0	265	363	136	105	604	869
2020	265	12	0	277	386	125	107	618	895
2021	274	10	0	284	404	126	108	638	922
2022	276	9	0	285	426	128	109	663	948
2023	281	7	0	288	444	128	112	684	972
2024	287	4	0	291	457	129	113	699	990
2025	298	2	0	300	470	129	115	714	1,014
2026	302	0	0	302	483	130	116	729	1,031
2027	309	0	0	309	493	132	120	745	1,054
2028	311	0	0	311	517	132	122	771	1,082
2029	317	0	0	317	530	132	125	787	1,104
2030	319	0	0	319	553	133	127	813	1,132
2031	326	0	0	326	568	133	130	831	1,157
2032	327	0	0	327	595	135	132	862	1,189
2033	333	0	0	333	608	135	135	878	1,211
Avg Annual Growth									
2000-12	1.0%	-12.5%	-20.1%	-7.5%	4.9%	1.5%	2.8%	3.3%	-2.0%
2012-13	3.2%	-16.4%	-16.7%	-2.6%	-1.4%	-2.1%	2.1%	-1.0%	-1.5%
2012-22	4.0%	-18.2%	-100.0%	0.7%	3.8%	-3.8%	1.4%	1.4%	1.2%
2012-33	2.8%	-99.9%	-99.9%	1.1%	3.6%	-1.6%	1.7%	2.0%	1.8%

TABLE 23

TOTAL JET FUEL AND AVIATION GASOLINE FUEL CONSUMPTION

U.S. CIVIL AVIATION AIRCRAFT

(Millions of Gallons)

FISCAL YEAR	JET FUEL					AVIATION GASOLINE			TOTAL FUEL CONSUMED
	U.S. AIR CARRIERS[1]			GENERAL AVIATION	TOTAL	AIR CARRIER	GENERAL AVIATION	TOTAL	
	DOMESTIC	INT'L.	TOTAL						
Historical*									
2000	15,030	5,484	20,513	972	21,485	2	333	335	21,350
2006	13,775	6,186	19,961	1,643	21,603	2	283	285	21,889
2007	13,882	6,309	20,191	1,486	21,676	2	274	276	21,952
2008	13,397	6,499	19,896	1,706	21,602	2	248	250	21,852
2009	11,896	6,033	17,929	1,447	19,376	2	227	229	19,606
2010	11,973	6,290	18,263	1,435	19,698	2	221	223	19,921
2011	12,088	6,548	18,636	1,491	20,127	2	216	218	20,344
2012E	11,918	6,582	18,500	1,542	20,042	2	212	214	20,256
Forecast[2]									
2013	11,798	6,483	18,281	1,612	19,893	2	210	212	20,104
2014	11,958	6,650	18,608	1,682	20,290	2	207	209	20,499
2015	12,161	6,930	19,091	1,756	20,847	2	205	207	21,053
2016	12,349	7,188	19,536	1,830	21,366	2	202	204	21,570
2017	12,493	7,436	19,929	1,906	21,835	2	201	203	22,038
2018	12,596	7,676	20,272	1,982	22,254	2	201	203	22,456
2019	12,706	7,923	20,629	2,051	22,680	2	200	202	22,882
2020	12,845	8,183	21,028	2,120	23,148	2	199	201	23,349
2021	12,995	8,446	21,440	2,177	23,617	2	197	199	23,816
2022	13,152	8,718	21,870	2,237	24,107	2	197	199	24,306
2023	13,310	8,995	22,305	2,289	24,594	2	197	199	24,793
2024	13,438	9,273	22,711	2,347	25,058	2	198	200	25,258
2025	13,586	9,560	23,146	2,404	25,550	2	198	200	25,750
2026	13,722	9,848	23,570	2,461	26,032	2	198	200	26,231
2027	13,866	10,144	24,010	2,524	26,534	2	199	201	26,735
2028	14,017	10,446	24,463	2,591	27,054	2	200	202	27,256
2029	14,157	10,753	24,911	2,662	27,573	2	201	203	27,776
2030	14,310	11,077	25,387	2,733	28,120	2	202	204	28,324
2031	14,469	11,406	25,875	2,808	28,683	2	204	206	28,889
2032	14,621	11,739	26,360	2,884	29,244	2	206	208	29,453
2033	14,766	12,077	26,844	2,965	29,809	2	209	211	30,019
Avg Annual Growth									
2000-12	-1.9%	1.5%	-0.9%	3.9%	-0.6%	0.0%	-3.7%	-3.6%	-0.4%
2012-13	-1.0%	-1.5%	-1.2%	4.5%	-0.7%	0.0%	-1.3%	-1.3%	-0.8%
2012-22	1.0%	2.9%	1.7%	3.8%	1.9%	0.0%	-0.7%	-0.7%	1.8%
2012-33	1.0%	2.9%	1.8%	3.2%	1.9%	0.0%	-0.1%	-0.1%	1.9%

* Source: Air carrier jet fuel, Form 41, U.S. Department of Transportation; all others, FAA APO estimates.

[1]Includes both passenger (mainline and regional air carrier) and cargo carriers.

[2]Forecast assumes 1.0% annual improvement in ASMs/Gallon for U.S. Commercial Air Carrier

TABLE 24

U.S. REGIONAL CARRIER FORECAST ASSUMPTIONS

FISCAL YEAR	AVERAGE SEATS PER AIRCRAFT MILE			AVERAGE PASSENGER TRIP LENGTH			REVENUE PER PASSENGER MILE**	
	DOMESTIC (Seats/Mile)	INT'L. (Seats/Mile)	SYSTEM (Seats/Mile)	DOMESTIC (Miles)	INT'L. (Miles)	SYSTEM (Miles)	CURRENT $ (Cents)	2012$ (Cents)
Historical*								
2000	38.4	41.8	38.5	286.5	260.0	285.5	30.28	40.53
2006	49.3	52.2	49.4	450.4	467.2	450.7	19.84	22.61
2007	49.9	54.0	50.0	451.5	518.1	452.9	19.95	22.21
2008	52.9	53.4	53.0	460.8	532.7	462.3	21.04	22.43
2009	55.2	52.8	55.1	456.9	512.3	457.8	17.04	18.22
2010	56.1	53.2	56.1	464.3	502.9	465.0	15.73	16.54
2011	56.4	52.7	56.3	467.0	531.4	468.0	15.10	15.47
2012E	56.1	59.8	56.2	467.2	626.4	470.3	13.21	13.21
Forecast								
2013	56.5	60.1	56.6	470.1	631.4	473.2	13.54	13.35
2014	56.9	60.4	57.0	472.2	636.4	475.4	13.68	13.26
2015	57.3	60.7	57.4	474.4	641.4	477.6	13.87	13.23
2016	57.8	61.0	57.9	478.2	646.4	481.4	14.13	13.24
2017	58.2	61.3	58.3	482.0	651.4	485.3	14.38	13.21
2018	58.6	61.6	58.7	485.9	656.4	489.2	14.59	13.15
2019	59.0	61.9	59.1	489.8	661.4	493.1	14.82	13.09
2020	59.5	62.2	59.6	494.7	666.4	498.0	15.04	13.03
2021	59.9	62.5	60.0	499.6	671.4	502.9	15.25	12.96
2022	60.4	62.8	60.4	504.6	676.4	507.9	15.47	12.89
2023	60.8	63.1	60.9	509.7	681.4	513.0	15.70	12.83
2024	61.2	63.4	61.3	514.8	686.4	518.1	15.91	12.76
2025	61.7	63.7	61.7	519.9	691.4	523.2	16.12	12.68
2026	62.1	64.0	62.2	526.1	696.4	529.4	16.32	12.60
2027	62.6	64.3	62.6	532.5	701.4	535.7	16.54	12.53
2028	63.1	64.6	63.1	538.8	706.4	542.1	16.75	12.45
2029	63.5	64.9	63.6	545.3	711.4	548.5	16.97	12.37
2030	64.0	65.2	64.0	551.9	716.4	555.0	17.18	12.29
2031	64.5	65.5	64.5	558.5	721.4	561.6	17.39	12.20
2032	64.9	65.8	64.9	565.2	726.4	568.3	17.61	12.12
2033	65.4	66.1	65.4	572.0	731.4	575.0	17.83	12.03
Avg Annual Growth								
2000-12	3.2%	3.0%	3.2%	4.2%	7.6%	4.2%	-6.7%	-8.9%
2012-13	0.8%	0.5%	0.8%	0.6%	0.8%	0.6%	2.5%	1.0%
2012-22	0.7%	0.5%	0.7%	0.8%	0.8%	0.8%	1.6%	-0.2%
2012-33	0.7%	0.5%	0.7%	1.0%	0.7%	1.0%	1.4%	-0.4%

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

** Reporting carriers.

TABLE 25

U.S. REGIONAL CARRIERS

SCHEDULED PASSENGER TRAFFIC
(In Millions)

FISCAL	REVENUE PASSENGERS			REVENUE PASSENGER MILES		
YEAR	DOMESTIC	INTERNATIONAL	SYSTEM	DOMESTIC	INTERNATIONAL	SYSTEM
Historical*						
2000	79.7	3.1	82.8	22,825	814	23,639
2006	152.2	3.5	155.7	68,532	1,634	70,166
2007	156.2	3.4	159.6	70,528	1,772	72,300
2008	159.1	3.5	162.6	73,305	1,867	75,172
2009	154.0	2.5	156.6	70,374	1,304	71,678
2010	161.6	2.7	164.3	75,053	1,347	76,400
2011	161.7	2.4	164.1	75,513	1,270	76,783
2012E	159.0	3.1	162.1	74,269	1,960	76,229
Forecast						
2013	158.6	3.1	161.7	74,559	1,972	76,531
2014	163.6	3.2	166.8	77,228	2,049	79,277
2015	169.4	3.3	172.7	80,350	2,139	82,489
2016	174.6	3.4	178.0	83,487	2,222	85,709
2017	178.5	3.5	182.0	86,040	2,289	88,329
2018	181.8	3.6	185.4	88,347	2,350	90,697
2019	185.3	3.6	188.9	90,742	2,413	93,155
2020	189.1	3.7	192.9	93,558	2,482	96,039
2021	193.2	3.8	197.0	96,514	2,554	99,068
2022	197.4	3.9	201.3	99,632	2,629	102,261
2023	201.8	4.0	205.7	102,832	2,707	105,539
2024	205.7	4.0	209.7	105,879	2,780	108,658
2025	210.0	4.1	214.1	109,155	2,858	112,013
2026	214.0	4.2	218.2	112,610	2,935	115,545
2027	218.3	4.3	222.6	116,227	3,014	119,241
2028	222.7	4.4	227.1	119,994	3,097	123,091
2029	227.0	4.5	231.5	123,776	3,179	126,955
2030	231.5	4.6	236.1	127,767	3,266	131,033
2031	236.2	4.7	240.9	131,935	3,355	135,291
2032	240.9	4.7	245.6	136,152	3,445	139,597
2033	245.6	4.8	250.4	140,448	3,536	143,985
Avg Annual Growth						
2000-12	5.9%	0.0%	5.8%	10.3%	7.6%	10.2%
2012-13	-0.2%	-0.2%	-0.2%	0.4%	0.6%	0.4%
2012-22	2.2%	2.2%	2.2%	3.0%	3.0%	3.0%
2012-33	2.1%	2.1%	2.1%	3.1%	2.8%	3.1%

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

TABLE 26

U.S. REGIONAL CARRIERS

SCHEDULED PASSENGER CAPACITY, TRAFFIC, AND LOAD FACTORS

	DOMESTIC			INTERNATIONAL			SYSTEM		
FISCAL YEAR	ASMs (MIL)	RPMs (MIL)	% LOAD FACTOR	ASMs (MIL)	RPMs (MIL)	% LOAD FACTOR	ASMs (MIL)	RPMs (MIL)	% LOAD FACTOR
Historical*									
2000	38,332	22,825	59.5	1,338	814	60.8	39,670	23,639	59.6
2006	91,458	68,532	74.9	2,387	1,634	68.5	93,845	70,166	74.8
2007	93,452	70,528	75.5	2,550	1,772	69.5	96,002	72,300	75.3
2008	99,469	73,305	73.7	2,632	1,867	70.9	102,101	75,172	73.6
2009	94,664	70,374	74.3	1,859	1,304	70.2	96,523	71,678	74.3
2010	98,489	75,053	76.2	1,857	1,347	72.5	100,346	76,400	76.1
2011	99,075	75,513	76.2	1,818	1,270	69.9	100,893	76,783	76.1
2012E	95,675	74,269	77.6	2,905	1,960	67.5	98,581	76,229	77.3
Forecast									
2013	95,305	74,559	78.2	2,901	1,972	68.0	98,206	76,531	77.9
2014	98,663	77,228	78.3	2,993	2,049	68.5	101,655	79,277	78.0
2015	102,598	80,350	78.3	3,101	2,139	69.0	105,699	82,489	78.0
2016	106,553	83,487	78.4	3,198	2,222	69.5	109,751	85,709	78.1
2017	109,761	86,040	78.4	3,271	2,289	70.0	113,033	88,329	78.1
2018	112,657	88,347	78.4	3,334	2,350	70.5	115,991	90,697	78.2
2019	115,666	90,742	78.5	3,399	2,413	71.0	119,065	93,155	78.2
2020	119,210	93,558	78.5	3,472	2,482	71.5	122,682	96,039	78.3
2021	122,934	96,514	78.5	3,548	2,554	72.0	126,482	99,068	78.3
2022	126,863	99,632	78.5	3,628	2,629	72.5	130,491	102,261	78.4
2023	130,897	102,832	78.6	3,709	2,707	73.0	134,606	105,539	78.4
2024	134,735	105,879	78.6	3,783	2,780	73.5	138,518	108,658	78.4
2025	138,865	109,155	78.6	3,863	2,858	74.0	142,728	112,013	78.5
2026	143,222	112,610	78.6	3,954	2,935	74.2	147,176	115,545	78.5
2027	147,784	116,227	78.6	4,047	3,014	74.5	151,832	119,241	78.5
2028	152,537	119,994	78.7	4,145	3,097	74.7	156,682	123,091	78.6
2029	157,308	123,776	78.7	4,240	3,179	75.0	161,549	126,955	78.6
2030	162,345	127,767	78.7	4,350	3,266	75.1	166,694	131,033	78.6
2031	167,606	131,935	78.7	4,463	3,355	75.2	172,069	135,291	78.6
2032	172,927	136,152	78.7	4,577	3,445	75.3	177,504	139,597	78.6
2033	178,350	140,448	78.7	4,691	3,536	75.4	183,041	143,985	78.7
Avg Annual Growth									
2000-12	7.9%	10.3%	2.2%	6.7%	7.6%	0.9%	7.9%	10.2%	2.2%
2012-13	-0.4%	0.4%	0.8%	-0.2%	0.6%	0.7%	-0.4%	0.4%	0.8%
2012-22	2.9%	3.0%	0.1%	2.2%	3.0%	0.7%	2.8%	3.0%	0.1%
2012-33	3.0%	3.1%	0.1%	2.3%	2.8%	0.5%	3.0%	3.1%	0.1%

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

TABLE 27

U.S. REGIONAL CARRIERS

PASSENGER AIRCRAFT

AS OF	REGIONAL AIRCRAFT											
	LESS THAN	10 TO 19	20 TO 30	31 TO 40 SEATS			OVER 40 SEATS			TOTAL FLEET		
JANUARY 1	9 SEATS	SEATS	SEATS	PROP	JET	TOTAL	PROP	JET**	TOTAL	NON JET	JET	TOTAL
Historical*												
2000	470	343	262	474	74	548	155	496	651	1,704	570	2,274
2006	453	204	88	224	92	316	87	1,584	1,671	1,056	1,676	2,732
2007	453	172	79	228	91	319	101	1,656	1,757	1,033	1,747	2,780
2008	451	107	68	180	25	205	121	1,730	1,851	927	1,755	2,682
2009	466	103	65	153	29	182	115	1,722	1,837	902	1,751	2,653
2010	440	92	82	144	28	172	99	1,728	1,827	857	1,756	2,613
2011	447	94	67	113	27	140	135	1,683	1,818	860	1,710	2,570
2012E	394	90	55	115	23	138	104	1,622	1,726	758	1,645	2,403
Forecast												
2013	386	88	54	106	15	121	108	1,582	1,690	743	1,597	2,340
2014	378	85	53	103	10	113	112	1,572	1,684	732	1,582	2,314
2015	371	82	52	99	10	109	117	1,605	1,722	721	1,615	2,336
2016	363	80	51	96	0	96	120	1,625	1,745	711	1,625	2,336
2017	356	77	50	92	0	92	125	1,619	1,744	700	1,619	2,319
2018	346	74	49	89	0	89	129	1,615	1,744	687	1,615	2,302
2019	333	71	48	85	0	85	133	1,618	1,751	670	1,618	2,288
2020	322	68	47	82	0	82	137	1,631	1,768	656	1,631	2,287
2021	308	65	46	78	0	78	141	1,633	1,774	638	1,633	2,271
2022	289	61	43	73	0	73	147	1,639	1,786	613	1,639	2,252
2023	271	57	41	68	0	68	153	1,668	1,821	590	1,668	2,258
2024	253	53	38	64	0	64	158	1,683	1,841	566	1,683	2,249
2025	233	49	35	59	0	59	164	1,698	1,862	540	1,698	2,238
2026	214	45	32	54	0	54	170	1,732	1,902	515	1,732	2,247
2027	194	41	29	49	0	49	177	1,760	1,937	490	1,760	2,250
2028	178	37	27	45	0	45	183	1,808	1,991	470	1,808	2,278
2029	160	34	24	40	0	40	189	1,856	2,045	447	1,856	2,303
2030	142	30	21	36	0	36	195	1,911	2,106	424	1,911	2,335
2031	124	26	19	31	0	31	201	1,967	2,168	401	1,967	2,368
2032	106	22	16	27	0	27	207	2,024	2,231	378	2,024	2,402
2033	88	19	13	22	0	22	212	2,082	2,294	354	2,082	2,436
Avg Annual Growth												
2000-12	-1.5%	-10.6%	-12.2%	-11.1%	-9.3%	-10.9%	-3.3%	10.4%	8.5%	-6.5%	9.2%	0.5%
2012-13	-2.0%	-2.2%	-1.0%	-7.8%	-34.8%	-12.3%	3.8%	-2.5%	-2.1%	-2.0%	-2.9%	-2.6%
2012-22	-3.1%	-3.8%	-2.4%	-4.4%	-100.0%	-6.2%	3.5%	0.1%	0.3%	-2.1%	0.0%	-0.6%
2012-33	-6.9%	-7.1%	-6.6%	-7.6%	-100.0%	-8.4%	3.4%	1.2%	1.4%	-3.6%	1.1%	0.1%

*Source: The Velocity Group for the Regional Airline Association through 2004.

**Independence Air A319 aircraft are included in Table 20 - U.S. Mainline Air Carriers Passenger Jet Aircraft.

TABLE 28

ACTIVE GENERAL AVIATION AND AIR TAXI AIRCRAFT

AS OF DEC. 31	FIXED WING						ROTORCRAFT			EXPERI-MENTAL	SPORT AIRCRAFT	OTHER	TOTAL GENERAL AVIATION FLEET	TOTAL PISTONS	TOTAL TURBINES
	PISTON			TURBINE											
	SINGLE ENGINE	MULTI-ENGINE	TOTAL	TURBO PROP	TURBO JET	TOTAL	PISTON	TURBINE	TOTAL						
Historical*															
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
2006	145,036	18,708	163,744	8,063	10,379	18,442	3,264	5,895	9,159	23,047	1,273	6,277	221,942	167,008	24,337
2007	147,569	19,337	166,906	9,514	10,385	19,899	2,769	6,798	9,567	23,228	6,066	5,940	231,606	169,675	26,697
2008	145,497	17,515	163,012	8,907	11,042	19,949	3,498	6,378	9,876	23,364	6,811	5,652	228,664	166,510	26,327
2009	140,649	16,474	157,123	9,055	11,268	20,323	3,499	6,485	9,984	24,419	6,547	5,480	223,876	160,622	26,808
2010	139,519	15,900	155,419	9,369	11,484	20,853	3,588	6,514	10,102	24,784	6,528	5,684	223,370	159,007	27,367
2011E	136,885	15,700	152,585	9,520	11,650	21,170	3,685	6,725	10,410	24,275	6,645	5,685	220,770	156,270	27,895
2012E	135,935	15,600	151,535	9,670	11,890	21,560	3,765	6,900	10,665	24,410	6,825	5,675	220,670	155,300	28,460
Forecast															
2013	135,005	15,530	150,535	9,830	12,230	22,060	3,865	7,130	10,995	24,750	7,075	5,670	221,085	154,400	29,190
2014	134,130	15,485	149,615	9,990	12,640	22,630	3,970	7,375	11,345	25,075	7,260	5,660	221,585	153,585	30,005
2015	133,315	15,425	148,740	10,150	13,075	23,225	4,075	7,630	11,705	25,415	7,425	5,655	222,165	152,815	30,855
2016	132,545	15,350	147,895	10,315	13,525	23,840	4,185	7,890	12,075	25,665	7,585	5,645	222,705	152,080	31,730
2017	131,805	15,265	147,070	10,475	13,980	24,455	4,295	8,155	12,450	25,960	7,740	5,640	223,315	151,365	32,610
2018	131,095	15,165	146,260	10,650	14,420	25,070	4,400	8,415	12,815	26,250	7,890	5,635	223,920	150,660	33,485
2019	130,410	15,075	145,485	10,830	14,875	25,705	4,500	8,670	13,170	26,585	8,055	5,630	224,630	149,985	34,375
2020	129,785	14,960	144,745	11,015	15,350	26,365	4,595	8,925	13,520	26,880	8,210	5,620	225,340	149,340	35,290
2021	129,200	14,850	144,050	11,200	15,850	27,050	4,690	9,180	13,870	27,215	8,360	5,610	226,155	148,740	36,230
2022	128,670	14,735	143,405	11,395	16,355	27,750	4,785	9,435	14,220	27,460	8,525	5,610	226,970	148,190	37,185
2023	128,200	14,605	142,805	11,595	16,895	28,490	4,885	9,705	14,590	27,745	8,680	5,605	227,915	147,690	38,195
2024	127,790	14,495	142,285	11,810	17,490	29,300	4,990	9,980	14,970	28,085	8,830	5,590	229,060	147,275	39,280
2025	127,480	14,395	141,875	12,015	18,120	30,135	5,095	10,260	15,355	28,415	8,995	5,585	230,360	146,970	40,395
2026	127,265	14,285	141,550	12,235	18,800	31,035	5,200	10,540	15,740	28,695	9,150	5,585	231,755	146,750	41,575
2027	127,150	14,190	141,340	12,450	19,520	31,970	5,305	10,825	16,130	29,030	9,305	5,580	233,355	146,645	42,795
2028	127,115	14,085	141,200	12,665	20,285	32,950	5,415	11,110	16,525	29,370	9,460	5,575	235,080	146,615	44,060
2029	127,210	13,985	141,195	12,875	21,080	33,955	5,525	11,400	16,925	29,695	9,620	5,560	236,950	146,720	45,355
2030	127,440	13,890	141,330	13,095	21,915	35,010	5,635	11,695	17,330	29,985	9,775	5,555	238,985	146,965	46,705
2031	127,805	13,800	141,605	13,305	22,775	36,080	5,745	11,990	17,735	30,315	9,930	5,555	241,220	147,350	48,070
2032	128,330	13,720	142,050	13,525	23,670	37,195	5,855	12,285	18,140	30,645	10,090	5,550	243,670	147,905	49,480
2033	129,040	13,650	142,690	13,740	24,620	38,360	5,970	12,585	18,555	30,980	10,245	5,545	246,375	148,660	50,945
Avg Annual Growth															
2000-12	-0.8%	-2.5%	-1.0%	4.4%	4.5%	4.5%	2.9%	3.7%	3.4%	1.5%	NA	-1.4%	0.1%	-0.9%	4.3%
2012-13	-0.7%	-0.4%	-0.7%	1.7%	2.9%	2.3%	2.7%	3.3%	3.1%	1.4%	3.7%	-0.1%	0.2%	-0.6%	2.6%
2012-22	-0.5%	-0.6%	-0.5%	1.7%	3.2%	2.6%	2.4%	3.2%	2.9%	1.2%	2.2%	-0.1%	0.3%	-0.5%	2.7%
2012-33	-0.2%	-0.6%	-0.3%	1.7%	3.5%	2.8%	2.2%	2.9%	2.7%	1.1%	2.0%	-0.1%	0.5%	-0.2%	2.8%

* Source: 2000-2010, 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.

TABLE 29

ACTIVE GENERAL AVIATION AND AIR TAXI HOURS FLOWN
(In Thousands)

CALENDAR YEAR	FIXED WING						ROTORCRAFT			EXPERI-MENTAL	SPORT AIRCRAFT	OTHER	TOTAL GENERAL AVIATION HOURS	TOTAL PISTONS	TOTAL TURBINES
	PISTON			TURBINE											
	SINGLE ENGINE	MULTI-ENGINE	TOTAL	TURBO PROP	TURBO JET	TOTAL	PISTON	TURBINE	TOTAL						
Historical*															
2000	18,089	3,400	21,489	1,986	2,755	4,741	530	1,661	2,191	1,307	NA	374	30,102	22,019	6,402
2006	13,976	2,550	16,525	2,162	4,077	6,240	918	2,528	3,446	1,218	66	211	27,705	17,443	8,767
2007	13,571	2,686	16,257	2,661	3,938	6,600	704	2,541	3,245	1,275	260	215	27,852	16,962	9,141
2008	12,746	2,328	15,074	2,457	3,600	6,057	751	2,470	3,222	1,155	293	209	26,009	15,825	8,527
2009	11,730	1,903	13,634	2,215	3,161	5,376	755	2,248	3,003	1,286	286	178	23,763	14,389	7,624
2010	12,161	1,818	13,979	2,325	3,375	5,700	794	2,611	3,405	1,226	311	181	24,802	14,773	8,311
2011	11,844	1,782	13,626	2,324	3,577	5,901	785	2,545	3,331	1,213	317	181	24,570	14,411	8,447
2012E	11,642	1,755	13,396	2,357	3,756	6,113	808	2,535	3,344	1,232	331	182	24,599	14,205	8,649
Forecast															
2013	11,269	1,738	13,007	2,424	3,970	6,394	832	2,599	3,430	1,312	346	183	24,673	13,839	8,993
2014	10,927	1,725	12,652	2,506	4,179	6,685	857	2,660	3,516	1,396	363	183	24,795	13,508	9,345
2015	10,656	1,704	12,360	2,589	4,400	6,989	881	2,723	3,604	1,457	378	184	24,973	13,241	9,712
2016	10,414	1,675	12,089	2,674	4,631	7,305	907	2,805	3,712	1,515	394	185	25,200	12,996	10,110
2017	10,260	1,653	11,913	2,759	4,859	7,618	934	2,894	3,827	1,579	410	186	25,534	12,847	10,512
2018	10,142	1,638	11,780	2,835	5,093	7,928	959	2,981	3,940	1,612	427	186	25,874	12,739	10,909
2019	10,030	1,624	11,654	2,901	5,308	8,209	983	3,066	4,048	1,649	444	187	26,193	12,637	11,275
2020	9,938	1,615	11,553	2,959	5,531	8,489	1,005	3,151	4,156	1,684	462	188	26,532	12,558	11,640
2021	9,853	1,605	11,458	3,011	5,756	8,768	1,028	3,235	4,263	1,714	475	188	26,866	12,486	12,002
2022	9,816	1,597	11,413	3,065	5,985	9,050	1,051	3,325	4,376	1,738	489	189	27,255	12,464	12,375
2023	9,782	1,582	11,364	3,119	6,191	9,310	1,075	3,417	4,492	1,765	503	190	27,623	12,439	12,726
2024	9,806	1,568	11,374	3,173	6,419	9,592	1,101	3,510	4,610	1,795	517	191	28,079	12,475	13,101
2025	9,847	1,559	11,406	3,226	6,648	9,873	1,126	3,606	4,732	1,825	532	191	28,560	12,532	13,480
2026	9,873	1,557	11,430	3,279	6,893	10,172	1,151	3,704	4,855	1,853	546	192	29,048	12,581	13,875
2027	9,951	1,561	11,512	3,333	7,156	10,489	1,177	3,803	4,980	1,884	561	193	29,619	12,689	14,292
2028	10,016	1,559	11,575	3,388	7,434	10,822	1,203	3,905	5,108	1,915	576	194	30,190	12,778	14,727
2029	10,089	1,553	11,642	3,441	7,726	11,168	1,230	4,009	5,238	1,946	592	194	30,780	12,872	15,176
2030	10,188	1,553	11,741	3,495	8,029	11,524	1,256	4,117	5,373	1,975	607	195	31,415	12,996	15,641
2031	10,301	1,558	11,859	3,548	8,342	11,889	1,282	4,230	5,512	2,006	623	196	32,086	13,142	16,119
2032	10,441	1,567	12,009	3,603	8,669	12,271	1,309	4,345	5,654	2,039	639	197	32,808	13,317	16,616
2033	10,597	1,578	12,174	3,657	9,012	12,669	1,337	4,471	5,808	2,071	656	197	33,576	13,511	17,141
Avg Annual Growth															
2000-12	-3.6%	-5.4%	-3.9%	1.4%	2.6%	2.1%	3.6%	3.6%	3.6%	-0.5%	NA	-5.8%	-1.7%	-3.6%	2.5%
2012-13	-3.2%	-1.0%	-2.9%	2.8%	5.7%	4.6%	2.9%	2.5%	2.6%	6.5%	4.7%	0.4%	0.3%	-2.6%	4.0%
2012-22	-1.7%	-0.9%	-1.6%	2.7%	4.8%	4.0%	2.7%	2.7%	2.7%	3.5%	4.0%	0.4%	1.0%	-1.3%	3.6%
2012-33	-0.4%	-0.5%	-0.5%	2.1%	4.3%	3.5%	2.4%	2.7%	2.7%	2.5%	3.3%	0.4%	1.5%	-0.2%	3.3%

* Source: 2000-2010, 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 previous calendar year.

TABLE 30

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[1]
Historical*											
2000	93,064	340	N/A	251,561	121,858	141,596	7,775	9,387	625,581	483,985	311,944
2006	84,866	239	939	219,233	117,610	141,935	10,690	21,597	597,109	455,174	309,333
2007	84,339	239	2,031	211,096	115,127	143,953	12,290	21,274	590,349	446,396	309,865
2008	80,989	252	2,623	222,596	124,746	146,838	14,647	21,055	613,746	466,908	325,247
2009	72,280	234	3,248	211,619	125,738	144,600	15,298	21,268	594,285	449,685	323,495
2010	119,119 [2]	212	3,682	202,020	123,705	142,198	15,377	21,275	627,588	485,390	318,001
2011	118,657	227	4,066	194,441	120,865	142,511	15,220	21,141	617,128	474,617	314,122
2012	119,946	218	4,493	188,001	116,400	145,590	15,126	20,802	610,576	464,986	311,952
Forecast											
2013	120,200	220	5,100	189,500	111,200	146,100	15,190	20,805	608,315	462,215	311,100
2014	119,850	220	5,650	188,250	115,950	143,800	15,385	20,865	609,970	466,170	311,000
2015	119,200	220	5,950	187,400	116,400	144,700	15,690	20,900	610,460	465,760	311,300
2016	118,450	220	6,250	186,950	117,600	146,400	16,090	20,920	612,880	466,480	311,850
2017	117,750	220	6,600	186,700	118,400	147,000	16,565	20,960	614,195	467,195	312,550
2018	117,100	220	6,950	186,400	118,850	147,000	17,100	20,995	614,615	467,615	313,300
2019	116,550	220	7,300	186,400	119,250	147,200	17,700	21,035	615,655	468,455	314,100
2020	116,050	220	7,700	186,350	119,600	147,900	18,350	21,050	617,220	469,320	314,950
2021	115,600	215	8,100	186,450	120,000	148,700	18,950	21,090	619,105	470,405	315,800
2022	115,300	215	8,500	186,700	120,500	149,300	19,600	21,125	621,240	471,940	316,700
2023	115,050	215	8,900	187,000	121,050	149,800	20,250	21,165	623,430	473,630	317,650
2024	114,950	215	9,350	187,600	121,700	150,500	20,900	21,180	626,395	475,895	318,700
2025	114,950	215	9,800	188,400	122,400	151,300	21,600	21,220	629,885	478,585	319,750
2026	115,000	210	10,250	188,950	123,250	152,100	22,300	21,255	633,315	481,215	320,950
2027	115,150	210	10,750	189,750	124,200	152,900	23,000	21,290	637,250	484,350	322,150
2028	115,350	210	11,250	190,550	125,300	153,800	23,750	21,330	641,540	487,740	323,500
2029	115,600	210	11,800	191,400	126,400	154,700	24,500	21,345	645,955	491,255	324,900
2030	115,950	210	12,350	192,400	127,600	155,600	25,250	21,380	650,740	495,140	326,350
2031	116,350	210	12,950	193,400	128,900	156,600	26,000	21,420	655,830	499,230	327,850
2032	116,850	210	13,550	194,450	130,300	157,500	26,800	21,455	661,115	503,615	329,450
2033	117,400	210	14,200	195,600	131,800	158,500	27,600	21,490	666,800	508,300	331,100
Avg Annual Growth											
2000-12	2.1%	-3.6%	N/A	-2.4%	-0.4%	0.2%	5.7%	6.9%	-0.2%	-0.3%	0.0%
2012-13	0.2%	0.9%	13.5%	0.8%	-4.5%	0.4%	0.4%	0.0%	-0.4%	-0.6%	-0.3%
2012-22	-0.4%	-0.1%	6.6%	-0.1%	0.3%	0.3%	2.6%	0.2%	0.2%	0.1%	0.2%
2012-33	-0.1%	-0.2%	5.6%	0.2%	0.6%	0.4%	2.9%	0.2%	0.4%	0.4%	0.3%

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

[1]Instrument rated pilots should not be added to other categories in deriving total.

[2]In July 2010, the FAA issued a rule that increased the duration of validity for student pilot certificates for pilots under the age of 40 from 36 to 60 months. This resulted in the increase in active student pilots to 119,119 from 72,280 at the end of 2009.

Note: An active pilot is a person with a pilot certificate and a valid medical certificate.

TABLE 31

GENERAL AVIATION AIRCRAFT FUEL CONSUMPTION

(In Millions of Gallons)

CALENDAR YEAR	FIXED WING PISTON SINGLE ENGINE	FIXED WING PISTON MULTI-ENGINE	FIXED WING TURBINE TURBO-PROP	FIXED WING TURBINE TURBO-JET	ROTORCRAFT PISTON	ROTORCRAFT TURBINE	EXPERI-MENTAL/ OTHER	SPORT	TOTAL FUEL CONSUMED AVGAS	TOTAL FUEL CONSUMED JET FUEL	TOTAL FUEL CONSUMED TOTAL
Historical*											
2000	200.8	108.4	176.3	736.7	8.4	59.0	15.2	NA	332.8	972.0	1,304.8
2006	164.9	79.9	190.1	1,303.9	16.7	148.6	21.6	0.3	283.4	1,642.6	1,926.0
2007	157.6	83.0	205.2	1,148.0	9.3	132.4	22.6	1.2	273.6	1,485.6	1,759.2
2008	143.0	69.5	230.4	1,313.2	10.7	162.1	23.3	1.5	248.1	1,705.7	1,953.8
2009	132.3	57.1	208.7	1,104.6	10.7	133.6	25.8	1.4	227.4	1,447.0	1,674.4
2010	133.1	53.9	187.1	1,122.9	10.7	124.8	21.6	1.5	220.7	1,434.8	1,655.6
2011	129.3	52.9	188.0	1,181.8	10.5	120.8	21.3	1.5	215.5	1,490.7	1,706.2
2012E	126.6	51.8	190.7	1,232.2	10.7	119.5	21.7	1.5	212.3	1,542.4	1,754.7
Forecast											
2013	122.6	51.3	194.1	1,295.9	11.0	121.9	23.1	1.6	209.5	1,612.0	1,821.5
2014	118.8	51.2	200.7	1,357.3	11.2	124.1	24.4	1.7	207.4	1,682.2	1,889.5
2015	115.3	50.5	207.4	1,421.8	11.5	126.4	25.5	1.8	204.7	1,755.7	1,960.3
2016	112.7	49.4	212.1	1,489.0	11.9	128.9	26.4	1.8	202.2	1,830.0	2,032.2
2017	111.0	48.8	218.8	1,554.7	12.2	132.4	27.5	1.9	201.5	1,905.8	2,107.3
2018	109.8	48.3	224.8	1,621.2	12.6	135.7	28.1	2.0	200.7	1,981.7	2,182.4
2019	108.5	47.9	230.1	1,681.3	12.9	139.5	28.7	2.1	200.1	2,050.8	2,251.0
2020	107.0	47.7	233.4	1,743.0	13.2	143.4	29.3	2.1	199.3	2,119.8	2,319.2
2021	105.0	46.9	235.2	1,796.0	13.4	145.7	29.6	2.2	197.1	2,177.0	2,374.0
2022	104.6	46.7	239.4	1,848.7	13.7	149.1	30.0	2.2	197.2	2,237.1	2,434.3
2023	104.3	46.2	243.6	1,893.1	14.0	152.4	30.4	2.3	197.3	2,289.1	2,486.4
2024	104.5	45.8	247.8	1,943.3	14.3	155.8	31.0	2.4	198.0	2,346.8	2,544.9
2025	103.9	45.6	251.9	1,992.4	14.7	160.0	31.5	2.4	198.1	2,404.4	2,602.5
2026	103.2	45.5	253.6	2,045.2	14.9	162.7	31.6	2.5	197.7	2,461.5	2,659.1
2027	103.4	45.6	255.2	2,102.1	15.3	166.3	32.2	2.5	199.0	2,523.5	2,722.5
2028	103.6	45.5	259.4	2,162.0	15.6	169.8	32.7	2.6	200.1	2,591.3	2,791.3
2029	103.8	45.4	263.5	2,224.4	15.9	174.4	33.2	2.7	201.1	2,662.2	2,863.3
2030	104.3	45.4	267.5	2,288.6	16.3	177.3	33.7	2.8	202.5	2,733.4	2,935.9
2031	105.0	45.5	271.6	2,353.8	16.6	182.1	34.3	2.8	204.2	2,807.6	3,011.8
2032	105.9	45.8	275.8	2,421.6	17.0	187.1	34.8	2.9	206.3	2,884.5	3,090.8
2033	106.9	46.1	280.0	2,492.4	17.3	192.6	35.4	3.0	208.7	2,964.9	3,173.6
Avg Annual Growth											
2000-12	-3.8%	-6.0%	0.7%	4.4%	2.0%	6.1%	3.0%	NA	-3.7%	3.9%	2.5%
2012-13	-3.2%	-1.0%	1.8%	5.2%	2.4%	2.0%	6.5%	4.7%	-1.3%	4.5%	3.8%
2012-22	-1.9%	-1.0%	2.3%	4.1%	2.5%	2.2%	3.3%	3.8%	-0.7%	3.8%	3.3%
2012-33	-0.8%	-0.6%	1.8%	3.4%	2.3%	2.3%	2.4%	3.2%	-0.1%	3.2%	2.9%

*Source: FAA APO Estimates.

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

TABLE 32

TOTAL COMBINED AIRCRAFT OPERATIONS AT AIRPORTS

WITH FAA AND CONTRACT TRAFFIC CONTROL SERVICE

(In Thousands)

FISCAL	AIR	AIR TAXI/	GENERAL AVIATION			MILITARY				NUMBER OF TOWERS	
YEAR	CARRIER	COMMUTER	ITINERANT	LOCAL	TOTAL	ITINERANT	LOCAL	TOTAL	TOTAL	FAA	CONTRACT
Historical*											
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
2006	13,256.3	11,967.6	18,707.1	14,365.4	33,072.5	1,358.4	1,417.3	2,775.7	61,072.1	263	231
2007	13,611.2	11,667.3	18,575.2	14,556.8	33,132.0	1,313.9	1,405.7	2,719.5	61,130.0	264	235
2008	13,780.1	11,032.1	17,492.7	14,081.2	31,573.8	1,285.0	1,245.6	2,530.6	58,916.6	264	239
2009	12,836.4	9,520.8	15,571.1	12,448.0	28,019.0	1,305.2	1,280.4	2,585.5	52,961.7	264	244
2010	12,657.6	9,410.4	14,863.9	11,716.3	26,580.1	1,309.0	1,297.9	2,606.9	51,255.0	264	244
2011	12,866.0	9,278.5	14,527.9	11,437.0	25,964.9	1,319.0	1,311.3	2,630.3	50,739.8	264	248
2012E	12,872.9	8,994.4	14,521.7	11,608.3	26,130.0	1,308.9	1,269.9	2,578.8	50,576.0	264	250
Forecast											
2013	12,954.5	8,822.6	14,387.4	11,698.1	26,085.6	1,309.7	1,270.1	2,579.8	50,442.5	264	250
2014	13,403.4	8,779.9	14,448.3	11,749.5	26,197.8	1,309.7	1,270.1	2,579.8	50,960.9	264	250
2015	13,876.6	8,717.5	14,509.8	11,801.3	26,311.1	1,309.7	1,270.1	2,579.8	51,485.0	264	250
2016	14,328.0	8,624.2	14,571.9	11,853.6	26,425.4	1,309.6	1,270.1	2,579.8	51,957.4	264	250
2017	14,778.8	8,553.0	14,634.4	11,906.4	26,540.8	1,309.6	1,270.1	2,579.8	52,452.4	264	250
2018	15,127.9	8,539.3	14,697.6	11,959.7	26,657.3	1,309.6	1,270.1	2,579.7	52,904.3	264	250
2019	15,485.7	8,526.9	14,761.4	12,013.5	26,774.9	1,309.6	1,270.1	2,579.7	53,367.2	264	250
2020	15,852.4	8,515.8	14,825.7	12,067.9	26,893.6	1,309.6	1,270.1	2,579.7	53,841.5	264	250
2021	16,228.8	8,505.4	14,890.7	12,122.7	27,013.4	1,309.5	1,270.1	2,579.7	54,327.3	264	250
2022	16,614.6	8,496.2	14,956.2	12,178.2	27,134.4	1,309.5	1,270.1	2,579.7	54,824.9	264	250
2023	17,010.2	8,488.0	15,022.4	12,234.1	27,256.5	1,309.5	1,270.1	2,579.6	55,334.3	264	250
2024	17,415.6	8,480.5	15,089.2	12,290.6	27,379.8	1,309.5	1,270.1	2,579.6	55,855.5	264	250
2025	17,830.6	8,473.0	15,156.6	12,347.7	27,504.2	1,309.5	1,270.1	2,579.6	56,387.4	264	250
2026	18,241.1	8,480.2	15,224.6	12,405.3	27,629.9	1,309.4	1,270.1	2,579.6	56,930.8	264	250
2027	18,662.0	8,488.6	15,293.3	12,463.4	27,756.8	1,309.4	1,270.1	2,579.6	57,486.9	264	250
2028	19,093.4	8,498.2	15,362.7	12,522.2	27,884.9	1,309.4	1,270.1	2,579.5	58,055.9	264	250
2029	19,535.6	8,508.8	15,432.7	12,581.5	28,014.2	1,309.4	1,270.1	2,579.5	58,638.1	264	250
2030	19,988.9	8,520.4	15,503.4	12,641.5	28,144.9	1,309.4	1,270.1	2,579.5	59,233.6	264	250
2031	20,450.9	8,535.7	15,574.8	12,702.0	28,276.8	1,309.3	1,270.1	2,579.5	59,842.9	264	250
2032	20,924.7	8,551.9	15,646.8	12,763.1	28,410.0	1,309.3	1,270.1	2,579.5	60,466.0	264	250
2033	21,410.5	8,568.9	15,719.6	12,824.9	28,544.5	1,309.3	1,270.1	2,579.5	61,103.4	264	250
Avg Annual Growth											
2000-12	-1.4%	-1.5%	-3.7%	-3.1%	-3.5%	-0.8%	-1.1%	-0.9%	-2.5%		
2012-13	0.6%	-1.9%	-0.9%	0.8%	-0.2%	0.1%	0.0%	0.0%	-0.3%		
2012-22	2.6%	-0.6%	0.3%	0.5%	0.4%	0.0%	0.0%	0.0%	0.8%		
2012-33	2.5%	-0.2%	0.4%	0.5%	0.4%	0.0%	0.0%	0.0%	0.9%		

* Source: FAA Air Traffic Activity.

TABLE 33

TOTAL TRACON OPERATIONS
(In Thousands)

FISCAL YEAR	AIR CARRIER	AIR TAXI/ COMMUTER	GENERAL AVIATION	MILITARY	TOTAL
Historical*					
2000	16,395.0	11,197.7	20,799.2	3,466.9	51,858.8
2006	13,963.3	12,035.7	17,005.3	2,669.9	45,674.2
2007	14,366.0	11,675.8	16,747.4	2,498.7	45,288.0
2008	14,443.0	11,048.3	15,763.0	2,399.5	43,653.8
2009	13,302.3	9,622.8	14,151.1	2,398.8	39,474.9
2010	13,174.3	9,511.3	13,863.6	2,437.5	38,986.7
2011	13,068.0	9,349.4	13,503.1	2,374.6	38,295.2
2012E	13,045.1	8,977.0	13,423.6	2,332.2	37,778.0
Forecast					
2013	13,114.9	8,755.7	13,125.8	2,332.2	37,328.6
2014	13,564.5	8,702.1	13,210.9	2,332.1	37,809.6
2015	14,038.9	8,628.6	13,297.5	2,332.1	38,297.0
2016	14,489.7	8,522.6	13,379.2	2,332.0	38,723.6
2017	14,941.2	8,439.4	13,463.3	2,332.0	39,175.9
2018	15,292.3	8,414.9	13,544.7	2,331.9	39,583.9
2019	15,652.3	8,391.9	13,627.4	2,331.9	40,003.4
2020	16,021.3	8,370.0	13,711.4	2,331.8	40,434.6
2021	16,400.1	8,349.0	13,796.9	2,331.8	40,877.8
2022	16,788.5	8,329.1	13,883.7	2,331.7	41,333.0
2023	17,186.7	8,310.2	13,971.9	2,331.7	41,800.5
2024	17,594.8	8,291.9	14,061.6	2,331.6	42,279.9
2025	18,012.5	8,273.4	14,152.6	2,331.6	42,770.0
2026	18,425.8	8,272.0	14,245.1	2,331.5	43,274.5
2027	18,849.4	8,271.9	14,339.1	2,331.5	43,791.9
2028	19,283.7	8,272.9	14,434.7	2,331.4	44,322.7
2029	19,728.9	8,275.0	14,531.8	2,331.4	44,867.0
2030	20,185.3	8,278.2	14,630.5	2,331.3	45,425.3
2031	20,650.5	8,285.2	14,730.9	2,331.3	45,997.8
2032	21,127.5	8,293.1	14,832.9	2,331.3	46,584.7
2033	21,616.7	8,301.9	14,936.5	2,331.2	47,186.3
Avg Annual Growth					
2000-12	-1.9%	-1.8%	-3.6%	-3.2%	-2.6%
2012-13	0.5%	-2.5%	-2.2%	0.0%	-1.2%
2012-22	2.6%	-0.7%	0.3%	0.0%	0.9%
2012-33	2.4%	-0.4%	0.5%	0.0%	1.1%

* Source: FAA Air Traffic Activity.

TABLE 34

IFR AIRCRAFT HANDLED

AT FAA EN ROUTE TRAFFIC CONTROL CENTERS

(In Thousands)

FISCAL YEAR	IFR AIRCRAFT HANDLED				
	AIR CARRIER	AIR TAXI/ COMMUTER	GENERAL AVIATION	MILITARY	TOTAL
Historical*					
2000	24,987.0	8,100.9	8,744.3	4,192.5	46,024.8
2006	24,394.5	9,436.7	8,197.0	4,149.7	46,177.8
2007	25,006.2	9,652.9	8,294.3	3,803.3	46,756.7
2008	23,895.3	10,179.0	7,670.7	3,649.2	45,394.1
2009	22,406.8	8,561.8	6,331.8	2,993.0	40,293.5
2010	22,341.5	8,623.8	6,550.3	2,982.2	40,497.8
2011	23,431.7	9,010.4	6,557.3	2,227.6	41,227.1
2012E	23,650.9	8,932.1	6,472.1	1,859.9	40,915.1
Forecast					
2013	23,889.3	8,931.7	6,390.6	1,859.9	41,071.6
2014	24,513.8	9,076.3	6,415.5	1,859.9	41,865.5
2015	25,111.3	9,199.4	6,436.5	1,859.9	42,607.2
2016	25,677.6	9,336.2	6,464.7	1,859.9	43,338.5
2017	26,267.9	9,481.7	6,503.5	1,859.9	44,113.0
2018	26,837.7	9,615.7	6,538.0	1,859.9	44,851.4
2019	27,416.4	9,749.9	6,576.8	1,859.9	45,603.0
2020	28,005.4	9,891.4	6,619.6	1,859.9	46,376.4
2021	28,598.1	10,042.3	6,665.9	1,859.9	47,166.2
2022	29,203.9	10,195.6	6,715.5	1,859.9	47,975.0
2023	29,822.1	10,351.2	6,768.3	1,859.9	48,801.5
2024	30,452.9	10,508.9	6,824.1	1,859.9	49,645.9
2025	31,092.0	10,671.1	6,882.6	1,859.9	50,505.7
2026	31,745.9	10,836.6	6,944.5	1,859.9	51,386.9
2027	32,413.8	11,004.8	7,009.9	1,859.9	52,288.4
2028	33,090.7	11,181.3	7,078.6	1,859.9	53,210.6
2029	33,782.4	11,360.8	7,151.0	1,859.9	54,154.1
2030	34,489.3	11,543.6	7,227.0	1,859.9	55,119.8
2031	35,212.2	11,729.6	7,306.8	1,859.9	56,108.6
2032	35,951.3	11,919.0	7,390.6	1,859.9	57,120.9
2033	36,707.4	12,111.9	7,478.4	1,859.9	58,157.7
Avg Annual Growth					
2000-12	-0.5%	0.8%	-2.5%	-6.5%	-1.0%
2012-13	1.0%	0.0%	-1.3%	0.0%	0.4%
2012-22	2.1%	1.3%	0.4%	0.0%	1.6%
2012-33	2.1%	1.5%	0.7%	0.0%	1.7%

* Source: FAA Air Traffic Activity.