

**FAA LONG-RANGE  
AEROSPACE FORECASTS  
FISCAL YEARS  
2020, 2025 and 2030**

**SEPTEMBER 2007**

# **FAA LONG-RANGE AEROSPACE FORECASTS FISCAL YEARS 2020, 2025 and 2030**

## **I. SUMMARY**

To assure consistency in agency planning, the Office of Aviation Policy and Plans provides an extension of its annual forecasts of aviation demand. Although forecast values are shown for specific years, year-to-year fluctuations are difficult to forecast precisely. Therefore, the projections reflect the trend of average conditions expected during the forecast period.

The Federal Aviation Administration's (FAA) annual forecasts are utilized for both manpower and facility planning as well as for policy and regulatory analysis. The latest annual forecasts (FAA-APO-07-1, FAA Aerospace Forecasts: Fiscal Years 2007-2020, March 2007) provides projections of aviation activity and FAA workload measures through the year 2020. Periodically, a need arises for projections of aviation demand and activity beyond the published horizon. This document was developed to meet these needs, and contains projections for commercial and general aviation aircraft fleet and hours, mainline carrier and regional/commuter passenger enplanements (domestic and international), and mainline carrier air cargo revenue ton-miles (RTMs).

The economic assumptions used in developing these extended forecasts (FY2020-2030) are as follows:

- The U.S. economy will grow at a lower rate than the intermediate 14-year period -- 2.9 percent versus 3.1 percent annually;
- Inflation will be slightly lower than in the intermediate forecast period -- averaging 2.0 percent annually compared to 2.2 percent; and
- Falling real fuel prices -- a decrease of 1.1 percent annually compared to a decrease of 1.2 percent annually during the 2006-2020 period;

These assumptions translate into generally similar growth in aviation activity and FAA workload measures during the extended 10-year period (2020 to 2030) than was forecast for the intermediate 14-year period (2006 to 2020), but with singular exceptions. Table 1 shows comparative annual growth rates for 2 time periods: (1) 2006 to 2020, and (2) 2020 to 2030.

## **II. LONG-RANGE FORECAST ASSUMPTIONS**

The long-range aviation forecasts are based on assumptions concerning the future of the commercial and general aviation industries and on the latest macroeconomic projections. For the purposes of this report, the forecast period refers to the long-range outlook, particularly the 2021 to 2030 period. Much of the discussion assumes some familiarity with the forecasts contained in FAA Aerospace Forecasts: Fiscal Years 2007-2020 (March 2007). The forecast publication can be found on the Internet at [http://www.faa.gov/data\\_statistics/aviation/aerospace\\_forecasts](http://www.faa.gov/data_statistics/aviation/aerospace_forecasts).

### **A. Economic Assumptions**

FAA's long-range traffic, capacity and yield forecasts are based on the economic projections developed by the Office of Management and Budget (OMB) and Global Insight, Inc. OMB's projections of U.S. economic growth, inflation and interest rates were used for the period 2007-2020, while Global Insight's U.S. economic projections were used for the period 2021 to 2030. FAA's international market forecasts utilized Global Insight's economic projections for international economic growth through the year 2025. Stable global economic growth trends were assumed for the 2025 – 2030 period to round out the 2006 – 2030 forecast period. Essentially, these projections represent the average of the possible paths that the U.S. and global economy could follow. Using trend projections assumes that: (1) no major shocks will occur but the rapid run-up in oil prices in 2004/06 reflects a major change in the supply/demand relationship for oil; (2) economic policies remain stable; (3) national and international markets do not experience dramatic shifts in either the supply or demand for economic goods and services; and (4) the forecasts are not capacity constrained, and assume that the government, working with aviation stakeholders, will develop cost efficient solutions to mitigate any delay/congestion problems. In addition, the forecast assumes that these long-term economic projections represent appropriate points from which to evaluate the effects of variations about the mean of expected values of various activity measures, transportation services, or FAA workload measures. The major economic assumptions are addressed in more detail below.

**TABLE 1**

**COMPARISON OF**  
**INTERMEDIATE AND LONG-RANGE FORECASTS**

|                                     | <u>Average Annual Percent Change</u> |                    |
|-------------------------------------|--------------------------------------|--------------------|
|                                     | <u>2006 - 2020</u>                   | <u>2020 - 2030</u> |
| <b><u>AVIATION ACTIVITY</u></b>     |                                      |                    |
| Passenger Enplanements              |                                      |                    |
| U.S. Domestic                       |                                      |                    |
| Mainline Air Carriers               | 3.5                                  | 3.2                |
| Regionals/Commuters                 | 3.1                                  | 2.9                |
| International*                      | 4.9                                  | 4.4                |
| Air Cargo RTMs                      |                                      |                    |
| Domestic                            | 3.3                                  | 2.7                |
| International                       | 6.1                                  | 6.1                |
| Aircraft Fleets                     |                                      |                    |
| Mainline Air Carrier                | 3.2                                  | 2.9                |
| Regional/Commuter                   | 2.1                                  | 1.9                |
| Cargo Jets                          | 2.8                                  | 3.0                |
| General Aviation                    | 1.4                                  | 1.0                |
| Pilots                              |                                      |                    |
| Total                               | 0.6                                  | 1.0                |
| Instrument Rated                    | 0.9                                  | 1.3                |
| <b><u>FAA WORKLOAD MEASURES</u></b> |                                      |                    |
| Tower Operations**                  | 2.0                                  | 1.7                |
| Instrument Operations               | 2.6                                  | 2.3                |
| IFR Aircraft Handled                | 3.2                                  | 3.1                |

\* Total international passengers to and from United States—U.S. and Foreign Flag Carriers.

\*\* Includes combined activity at FAA and contract towers.

## **Real Gross Domestic Product**

The U.S. economy is expected to grow at a moderate rate of 2.8 percent annually during the 24-year forecast period (2006 – 2030). Growth in real gross domestic product (GDP), adjusted for price changes and expressed in 2000 dollars, is projected to average 2.6 percent annually over the extended 10-year period (2020 to 2030). This is comparable to both the historic rate of growth (2.9 percent between 1974 and 2000) and the projected growth for the intermediate 14-year forecast period (2.9 percent between 2006 and 2020).

International economic growth is expected to grow at rates comparable to those of the U.S. during the 25-year forecast period. World real GDP is projected to average 3.2 percent annually for the intermediate 12-year forecast period and 3.0 percent annually over the extended 13-year forecast period. These rates of growth are comparable to the historic rate of growth of 2.8 percent between 1980 and 2000.

## **Consumer Price Index**

Inflation is not expected to return to the high rates experienced during the latter half of the 1970s and early 1980s (8.7 percent annual growth between 1972 and 1982) during the entire 24-year forecast period. Both OMB and Global Insight's forecasts show little upward pressure from real wage rates and commodity prices, and assume that the Federal Reserve is committed to controlling inflation while allowing the money supply to grow enough to ensure growth in output. The consumer price index is projected to increase at an average annual rate of 2.2 percent a year during the 24-year time period – 2.3 percent during the intermediate period, falling to 2.0 percent over the extended forecast period.

## **Fuel Prices**

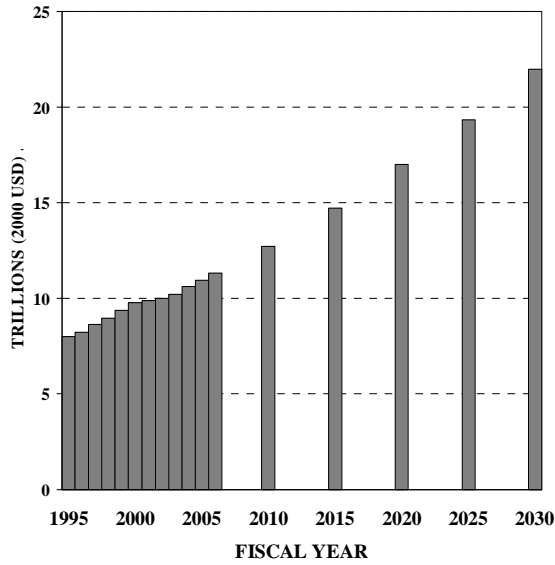
Fuel prices, as measured by the Refiners' Acquisition Cost of Oil, are forecast to increase at an annual rate of 1.0 percent over the 24-year forecast period—lower than the expected overall inflation rate. Between 2006 and 2020, nominal fuel prices are projected to increase 1.1 percent annually, a 1.2 percent decline annually in real terms. Between 2020 and 2030, nominal fuel prices are expected to maintain a slightly lower annual rate of increase (0.9 percent), resulting in a decrease of 1.1 percent annually in real terms.

## **Interest Rates**

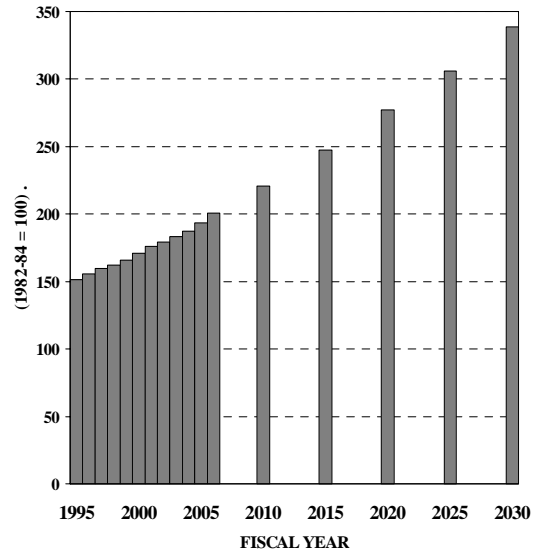
Long-term nominal interest rates are tied to inflationary expectations. The Federal Reserve is expected to pursue a monetary policy that keeps inflation in check and allows for sufficient money growth to sustain economic output gains. Given the long-term outlook for inflation, long-term interest rates are expected to rise gradually during both the intermediate and extended forecast periods. Interest rates (10 year U.S. treasury bonds) are expected to increase from 4.8 percent in 2006 to 5.3 percent in 2020 and remain at that level throughout the balance of the extended forecast period.

# ECONOMIC VARIABLES FORECASTS

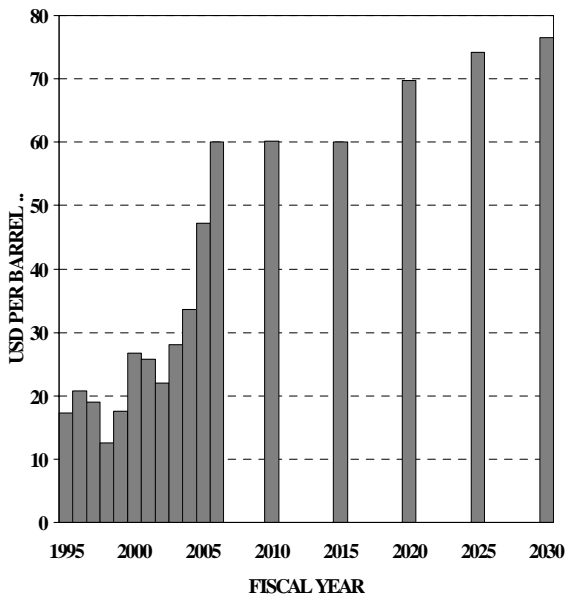
## REAL GDP



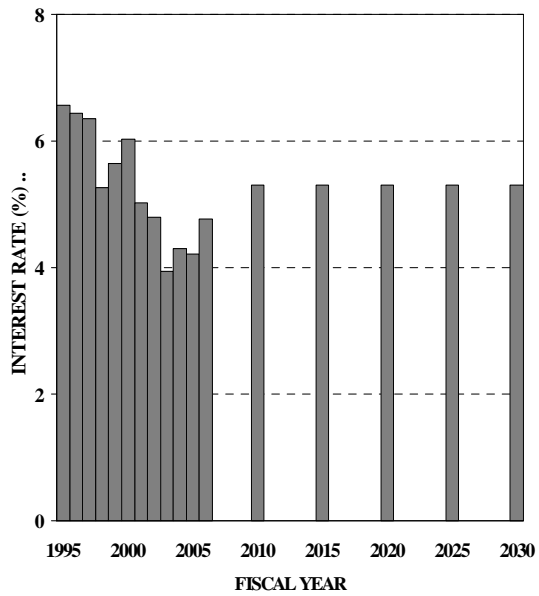
## CONSUMER PRICE INDEX



## REFINERS' ACQUISITION COST



## 10 YEAR GOVERNMENT BONDS



## **B. Operational Variables**

The long-range forecasts of various operational variables discussed below are, for the most part, a continuation of the trends discussed in greater detail in *FAA Aerospace Forecasts: Fiscal Years 2007-2020*. As with the economic projections, these forecasts reflect an average trend of the possible paths that the various operational variables could follow. These long-term projections represent appropriate points from which to evaluate the effects of variations about the expected values of various activity measures, transportation demand and services, or FAA workload measures.

### **Air Carrier Passenger Yield**

The current 14-year and extended 10-year forecasts assume that real domestic passenger yield (expressed as revenue per passenger mile) will continue its historical long-term gradual downward trend. Real domestic passenger yields are projected to decline by 0.9 percent annually over the 24-year period. The downward trend in real domestic yields is based on the assumptions of continued strong competition in the industry, and continued improvements in efficiency and productivity.

There has been a long-term decrease in international real yields similar to that experienced in the domestic market. However, real yields in international markets are generally lower than in the domestic market, because of lower operating costs. These lower costs are associated with longer average stage length and with the use of larger aircraft, which tend to have lower seat mile costs. It is assumed that productivity and competition in international markets will continue to expand over the forecast period and this will push real yields lower. Market efficiencies will be achieved with the use of more productive aircraft, expanded open-skies agreements, and extended global alliances. Total international real yields for U.S. flag carriers are forecast to decline 1.0 percent annually through 2030.

### **Average Aircraft Size**

The average number of seats per aircraft mile for the U.S. domestic mainline carrier fleet is projected to shrink modestly throughout the intermediate 14-year forecast period. The declines in average seats per aircraft mile in the near term result primarily from the retirement of older, larger aircraft out of the network carrier fleets coupled with the continued rapid expansion of the low cost carrier sector, which operate smaller aircraft on average than do the network carriers. Over the intermediate 14-year forecast period, the average seats per aircraft for the domestic mainline fleet is expected to decline by 0.2 seats per year – from 150.4 in 2006 to 147.7 in 2020.

The average seating capacity of the domestic mainline carrier fleet is projected to increase over the extended 10-year forecast period. The new aircraft entering the fleet during this period are expected to be somewhat larger than the aircraft being replaced. Therefore, the average seats per aircraft for the domestic fleet is expected to increase by 0.1 seats annually over the extended forecast period, reaching 148.6 seats in 2030.

The average number of seats per aircraft mile for the U.S. air carrier international fleet is expected to grow modestly over the 24-year forecast period as U.S. carriers continue to expand

non-stop city-pair service into deep South America (Argentina, Brazil, Chile), Europe, and Asia. Although U.S. carriers are expected to employ larger two-engine, two-aisle aircraft in Atlantic and Pacific markets, the growth of Latin American services (at a faster rate than in Europe, but slower than in the Pacific, and where aircraft seating capacity is significantly smaller), will dampen the overall increases in seats per international aircraft operations. The average number of seats per aircraft in international markets is expected to increase from 212.0 seats in 2006 to 228.8 seats in 2030.

The average seating capacity of domestic regional/commuter aircraft is forecast to increase by 1.2 seats annually between 2006 and 2020 (from 50.0 to 59.0 seats). This trend is expected to continue over the extended forecast period, with the average domestic seating capacity of regional/commuter aircraft averaging approximately 64.0 seats in the year 2030. This reflects the continued integration of greater numbers of regional jet aircraft (up to 90 seats) into the regional/commuter fleet, and will continue to blur the distinction between regional/commuters and the mainline commercial operators.

### **Load Factor**

Domestic mainline carrier load factors are projected to remain at their current historical high levels throughout the remainder of the intermediate and extended forecast periods. During the past several years, airline scheduling policies and yield management practices have allowed air carriers to rapidly adjust capacity levels to more closely correspond to changes in passenger demand. This ability to make rapid adjustments to meet changing demand conditions has enabled the airlines to push up load factors to all-time highs. It is expected that present fleet plans will provide capacity levels that should maintain the mainline carrier load factors at between 79.4 and 80.7 percent during the intermediate forecast period; and then remain at 80.8 percent through 2030.

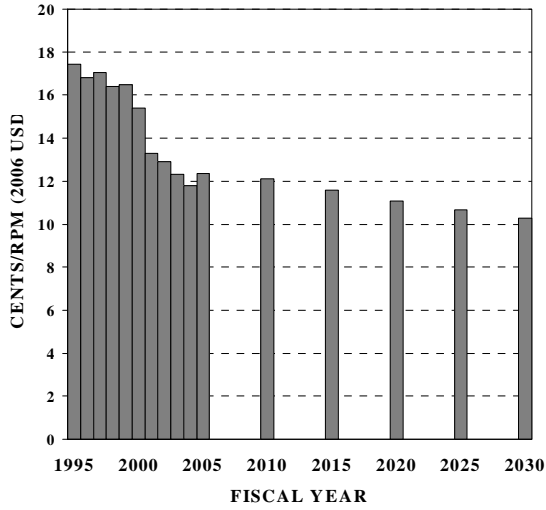
As in domestic markets, the wide range of aircraft capable of international flight also allows U.S. airlines to adjust their international capacity levels to changing levels of demand. The international load factor is also forecast to remain stable during the 24-year forecast period, increasing slightly from 79.7 percent in 2006 to 80.1 percent in 2030, as rapid growth in the higher load factor markets of the Pacific region is nearly matched by increasing share of the demand in the relatively low load factor Latin American markets.

Domestic regional/commuter load factors are projected to increase from 74.1 percent in 2006 to 77.2 percent in 2020. During the extended forecast period, regional/commuter load factors are expected to increase slightly to 77.7 percent by 2030. The modest increase in load factors reflect the relative maturation of this segment of the industry, along with network carriers' desire to maintain appropriate presence in their most profitable markets. It is expected that by 2020 the integration of regional jet aircraft into feeder markets will have reached its saturation level, and will remain stable through 2030.

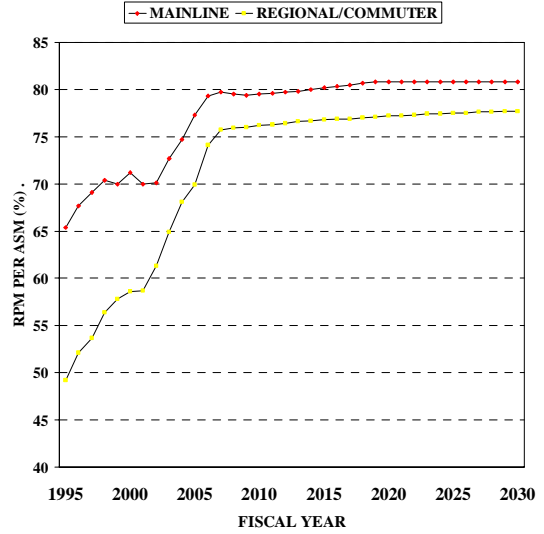


# OPERATIONAL VARIABLES FORECASTS

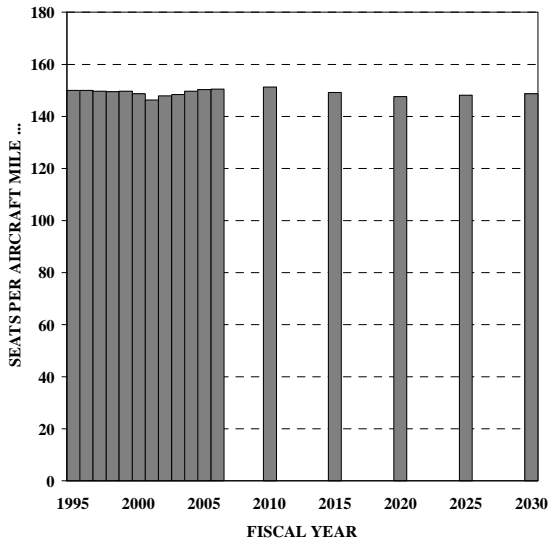
**REAL DOMESTIC MAINLINE  
CARRIER PASSENGER YIELD**



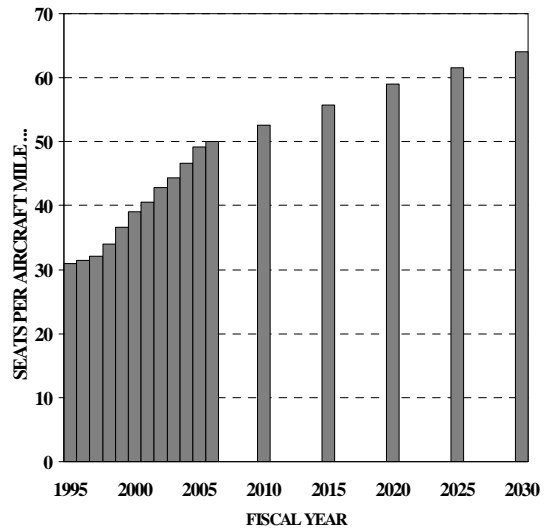
**DOMESTIC PASSENGER  
LOAD FACTOR**



**AVERAGE SEATING CAPACITY  
DOMESTIC MAINLINE CARRIER AIRCRAFT**



**AVERAGE SEATING CAPACITY  
REGIONAL/COMMUTER AIRCRAFT**



### **III. LONG-RANGE AVIATION ACTIVITY FORECASTS**

Forecasts of various measures of aviation activity for 2005 and 5-year increments between 2007 and 2030 are provided in Table 2, page 14. A discussion of some of these measures of aviation activity follows in the paragraphs below.

#### **A. Passenger Enplanements and Cargo**

##### **Mainline Carriers**

Mainline carrier demand, as measured by domestic passenger enplanements, is projected to grow at about the same rate as the general economy. For the period 2006 to 2020, domestic passenger enplanements for the mainline carriers are forecast to increase at an average annual rate of 3.5 percent compared to a 2.9 percent annual growth rate in real GDP. Over the extended forecast period (2020-2030), domestic passenger enplanements for the mainline carriers are projected to increase at an average annual rate of 3.2 percent compared to real GDP growth of 2.6 percent annually.

Forecasts of total international passenger traffic to and from the U.S. (U.S. and foreign flag carriers), are provided between the United States and three world travel areas--Atlantic, Latin America (including Mexico and the Caribbean), and the Pacific/Far East--as well as for U.S./Canadian transborder traffic. Total passenger traffic between the United States and the rest of the world is expected to grow from 141.5 million in 2006 to 422.3 million in 2030, for an average annual growth rate of 4.7 percent. Passenger traffic in the Pacific markets is expected to post the strongest growth at 6.8 percent annually through 2030. The second fastest growing market will be the Latin American market that is projected to grow at 4.5 percent annually during the same time period. The Atlantic market is forecast to grow at 3.8 percent annually through 2030, followed by U.S./Canadian transborder traffic at 3.5 percent for the 24-year forecast period.

##### **Regionals/Commuters**

Domestic regional/commuter passengers are projected to continue to grow relatively slower than the mainline air carriers through the intermediate forecast period with average annual growth of 3.1 percent. A large part of the growth during the early years of the intermediate forecast period results from the continued shift of low-density, short-haul markets from the mainline air carriers to their commuter code-share partners, a trend that accelerated in the aftermath of the September 11<sup>th</sup> terrorist attacks. In the longer run, the distinction between mainline carrier and regional/commuter flying will essentially be eliminated and these carriers will be competing for similar passengers. As a result, regional/commuter passenger growth during the extended forecast period will be similar to that of the mainline carriers, averaging 2.9 percent per year. The relatively slower growth rate during the extended 2020 – 2030 period reflects the maturation of this segment of the U.S. domestic industry.

The introduction and popularity of regional jets has opened up new growth opportunities in thin, intermediate range markets that cannot be served economically with larger mainline jet aircraft. The speed and range of the regional jet also offers the opportunity for more point-to-point (hub bypass) operations in markets that are currently served only via connecting flights through large

hubs. However, the rise in the price of jet fuel has diminished the popularity of smaller (less than 50 seats) regional jets. The continued public preference for jet aircraft together with the increasing availability of larger (e.g. 70+ seats) regional jets should ensure that the regional/commuter industry should continue to play a significant role in the industry's future profitability.

## **Air Cargo**

The air cargo forecast discussed here is comprised of domestic and international revenue freight/express and mail carried by U.S. mainline air carriers and is measured by revenue ton-miles (RTMs). Air cargo is moved in the bellies of passenger aircraft and in dedicated all-cargo aircraft on both scheduled and non-scheduled service.

In 2006, combined domestic and international RTMs flown by U.S. air carriers totaled 39.6 billion. By 2020 this figure is projected to reach 79.6 billion, an average annual increase of 5.1 percent. During the extended forecast period, total domestic and international cargo RTMs are projected to grow to 131.6 billion RTMs by 2030, an average annual increase of 5.2 percent. Over the entire 24-year forecast period, growth in total air cargo RTMs averages 5.1 percent annually.

Domestic RTMs are forecast to increase from 15.7 billion in 2006 to 32.5 billion in 2030, an average annual increase of 3.1 percent over the 24-year forecast period. International RTMs are forecast to grow at a faster rate than domestic RTMs, increasing from 23.9 billion in 2006 to 99.2 billion in 2030, averaging 6.1 percent growth annually for the 24-year forecast period. This expectation is based on the projected economic growth in world GDP, with the highest rates of growth expected in the Asian (particularly China) and Latin American regions.

## **B. Aircraft Fleet**

### **Mainline Air Carriers**

The mainline air carrier passenger jet fleet is forecast to increase at an annual rate of 2.8 percent from 3,886 aircraft in 2006 to 6,041 aircraft in 2020. The size of the fleet grows modestly from the low point in 2006 as carriers add aircraft to accommodate growing demand. By far the largest increase, in terms of number of aircraft, is projected to occur in the two-engine narrowbody aircraft category, which is expected to grow by an average of over 106 aircraft (2.7 percent) annually. By 2020, the two-engine narrowbody aircraft category is expected to total 4,739 units and account for 78.4 percent of the fleet. This trend is also expected to continue throughout the extended forecast period.

Between 2020 and 2030, the mainline carrier fleet is forecast to increase at an average annual rate of 2.9 percent, reaching a total of 8,008 aircraft. Again, the largest growth in the fleet is expected to occur in the two-engine narrowbody aircraft category. By 2030, this category is forecast to grow to 6,400 units and account for approximately 80 percent of the fleet.

The cargo jet fleet is projected to increase at an annual rate of 2.8 percent during the intermediate 14-year forecast period, from 997 aircraft in 2006 to 1,468 in 2020. During the extended 10-year forecast period, the cargo jet fleet is forecast to increase at a 3.0 percent average annual rate reaching 1,974 aircraft by 2030. Over the entire 24-year forecast period, the cargo jet fleet is forecast to grow at 2.9 percent.

The regional/commuter fleet is expected to grow from its current 2,743 aircraft in 2006 to 4,449 by the year 2030. This is an average annual growth rate of 2.0 percent over the 24-year forecast period, or an increase of approximately 71 aircraft annually. These totals reflect the continued growth in the regional jet fleet, especially the larger versions (70+ seats), which will be introduced into the fleet in significant numbers over the forecast period.

### **General Aviation Aircraft & Hours Flown**

The number of active general aviation aircraft is expected to increase from 226,422 aircraft in 2006 to 274,913 in 2020, and then expand to 303,298 by 2030. This represents an average annual growth of 1.4 percent during the intermediate forecast period and 1.2 percent over the extended forecast period. The piston engine portion of the general aviation fixed-wing aircraft fleet is forecast to increase by 0.4 percent during both the intermediate and extended forecast periods. Fixed-wing turbine powered general aviation aircraft are expected to increase 4.1 percent annually between 2006 and 2020, and by 3.2 percent during the 2020 to 2030 period. The higher growth rate for the turbine portion of the fleet is based on the expectations of a greater business and corporate use (including new microjets) of general aviation aircraft in an expanding U.S. economy.

Growth in general aviation flight hours is forecast to increase at a faster rate than the active fleet, reflecting increasing aircraft utilization rates. General aviation activity is very sensitive to changes in fuel prices and to variations in the rate of economic growth. Based on the assumptions of sustained economic growth, relative stability in real fuel prices, and the continued growth in fractional ownership programs and corporate flying, it is expected that general aviation aircraft utilization will increase from recent levels, and begin to return to historical rates. Flight hours will grow at 3.4 percent annually during the intermediate forecast period, and 2.5 percent annually over the extended forecast period, increasing from 27.5 million in 2006 to 43.9 million in 2020, and to 56.0 million in 2030.

The positive forecasts for general aviation fleet and flight hours are heavily dependent on the assumptions related to continued economic growth, price stability, as well as a rapid increase in the use of microjets or very light jets (VLJ's). The forecast assumes that the market for on-demand air taxi service will continue to grow and stimulate high demand for VLJ's. By 2020, the VLJ fleet is projected to total 6,300 aircraft. However, equally important to future growth are continued investment in plant expansion and production by general aviation manufacturers and the success of industry programs, such as "GA Team 2000," to foster the growth in number of student pilots. If the general aviation industry falters in its efforts to stimulate the production of new general aviation products and services, and/or the growth in the number of student pilots, the outlook for the active fleet, hours flown, and general aviation activity at FAA air traffic facilities could be considerably lower than the current projections.

### **C. Pilot Population**

The total pilot population is forecast to increase from 597,109 in 2006 to 721,335 by the year 2030, an average annual growth rate of 0.8 percent over the 24-year forecast period. The largest growth is found in the commercial and student pilot categories. Recent industry program initiatives designed to promote the benefits of general aviation flying to businesses and the public, to stimulate growth in the number of new student pilots, and to develop an improved flight training infrastructure contribute to the growth in the pilot population. Increased demand for corporate, fractional, and on-demand air taxi services is expected to stimulate the growth in the commercial pilot population. During this same time period, the number of instrument rated pilots is expected to increase from 309,333 to 401,555. The instrument rated pilot share of the total pilot population increases from 51.8 percent in 2005 to 55.7 percent in 2030.

### **D. Total Aviation Activity**

Total civil aircraft activity at towered airports (266 FAA and 231 contract in 2006) and non-towered airports (based on projections for just under 3,500 public use airports in the Terminal Area Forecast database) is forecast to reach 150.9 million by the year 2030, an average annual growth of 1.2 percent over the activity level forecast for 2020 (134.4 million operations).

Commercial aircraft operations (the sum of air carrier and commuter/air taxi) at all U.S. airports, towered and non-towered, are projected to increase from 28.3 million in 2006 to 37.3 million in 2020, and to 45.4 million in 2030. These forecasts imply an average annual growth rate of 2.0 percent for both the intermediate and extended forecast periods, respectively.

The number of general aviation operations at towered and non-towered airports is forecast to increase from 80.9 million in 2006 to 92.1 million in 2020 and to 100.4 million in 2030. These forecasts imply an average annual growth rate of 0.9 percent over both the intermediate and extended forecast periods. Much of the growth is the result of increased use of the turbine fleet for business/corporate related flying.

**TABLE 2**

**LONG-RANGE FORECASTS**  
**AVIATION DEMAND AND ACTIVITY**

|  | Actual | March 2007 Forecast |       |       | Long Range Forecast |         |
|--|--------|---------------------|-------|-------|---------------------|---------|
|  | 2006   | 2010                | 2015  | 2020  | 2025                | 2030    |
| <b><u>Passenger Enplanements and Air Cargo (In Millions)</u></b> |        |                     |       |       |                     |         |
| Enplanements   |        |                     |       |       |                     |         |
| Mainline Air Carriers  |        |                     |       |       |                     |         |
| Domestic*  | 516.3  | 586.6               | 694.7 | 832.8 | 974.3               | 1,139.5 |
| International**  | 141.5  | 173.5               | 219.6 | 274.7 | 341.8               | 422.3   |
| Regional/Commuter  | 156.7  | 178.5               | 206.7 | 240.7 | 277.8               | 318.7   |
| Freight/Express RTMs   | 39.6   | 48.1                | 61.9  | 79.6  | 101.9               | 131.6   |
| <b><u>Aircraft Fleets (In Thousands)</u></b>                     |        |                     |       |       |                     |         |
| Mainline Carrier-Large Jets***                                   | 3.9    | 4.4                 | 5.1   | 6.0   | 6.9                 | 8.0     |
| Cargo-Jet Aircraft   | 1.0    | 1.1                 | 1.3   | 1.5   | 1.7                 | 2.0     |
| Regional/Commuter  | 2.7    | 2.9                 | 3.3   | 3.7   | 4.1                 | 4.4     |
| Regional Jets  | 1.7    | 1.9                 | 2.3   | 2.7   | 3.1                 | 3.5     |
| Turboprops   | 1.1    | 1.0                 | 1.0   | 1.0   | 1.0                 | 0.9     |
| General Aviation   |        |                     |       |       |                     |         |
| Piston Engine  | 167.6  | 169.6               | 173.0 | 174.4 | 175.5               | 176.6   |
| Turbine Engine   | 18.1   | 21.7                | 26.5  | 31.6  | 37.1                | 43.3    |
| Helicopters  | 9.2    | 11.3                | 13.6  | 15.2  | 17.0                | 19.0    |
| Experimental/Other   | 31.5   | 40.1                | 48.3  | 53.7  | 58.7                | 64.5    |
| <b><u>Active Pilots (In Thousands)</u></b>                       |        |                     |       |       |                     |         |
| Total  | 597.1  | 592.8               | 620.5 | 651.8 | 685.1               | 721.3   |
| Instrument Rated   | 309.3  | 314.3               | 333.3 | 350.3 | 372.7               | 401.6   |
| <b><u>Estimated U. S. Civil Operations (In Millions)</u></b>     |        |                     |       |       |                     |         |
| Commercial   | 28.3   | 30.8                | 33.9  | 37.3  | 41.2                | 45.4    |
| General Aviation   | 80.9   | 84.2                | 88.4  | 92.1  | 96.2                | 100.4   |

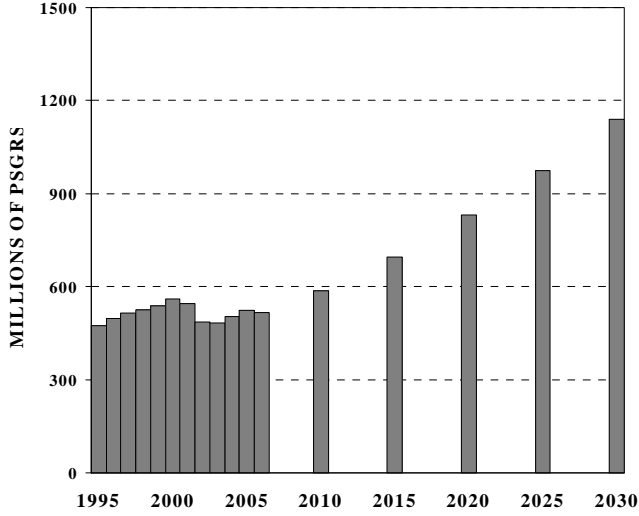
\* Mainline Commercial Carriers only (excluding Form 41 Commuters)

\*\* Total international passengers to and from the United States—U.S. and Foreign Flag carriers

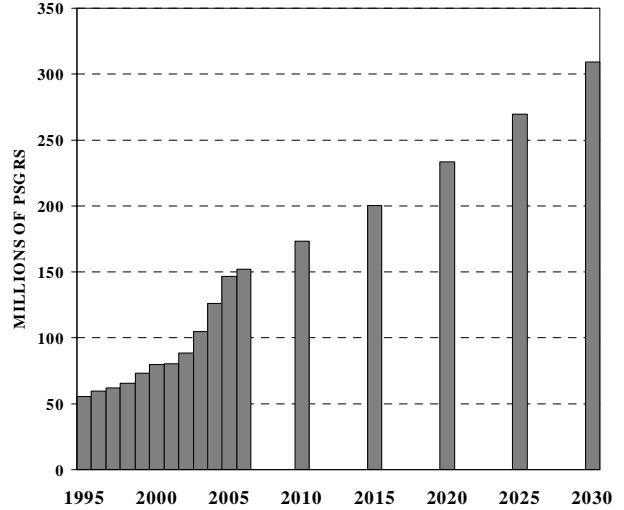
\*\*\* Including EMB-190's

# AVIATION ACTIVITY FORECASTS

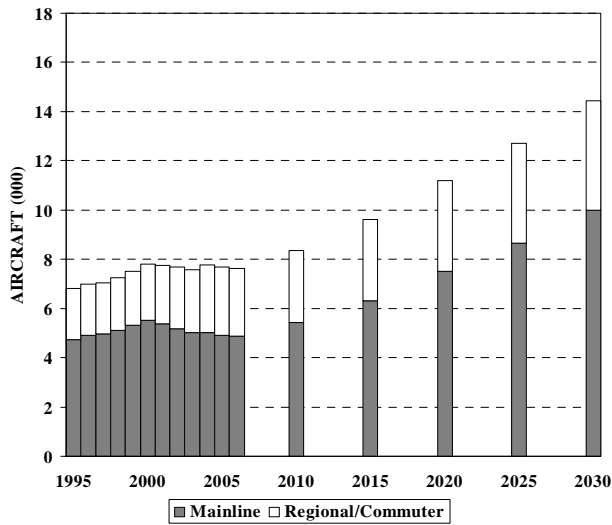
## MAINLINE DOMESTIC ENPLANEMENTS



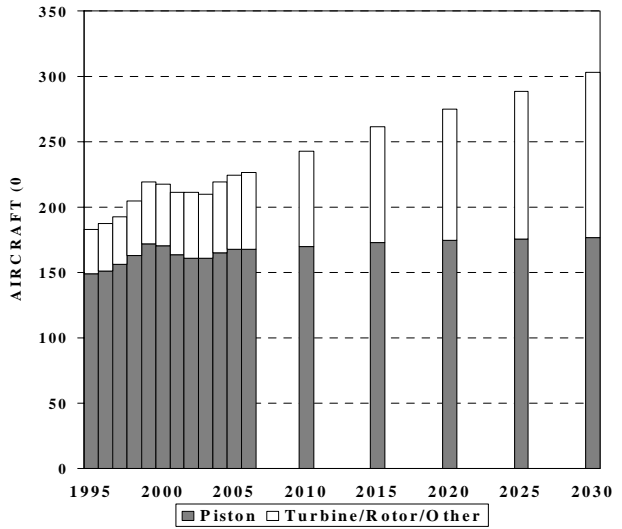
## REGIONAL/COMMUTER DOMESTIC ENPLANEMENTS



## COMMERCIAL AIRCRAFT FLEET



## GENERAL AVIATION FLEET



## **IV. LONG-RANGE WORKLOAD MEASURE FORECASTS**

Forecasts of FAA workload measures by user groups for 2006 and 5-year increments between 2010 and 2030 are provided in Table 2, page 19. A discussion of the forecasts follows in the paragraphs below.

### **A. Towered Operations**

At the end of FY 2006 the number of FAA towers totaled 263, down from 402 in 1994. During this same period of time, the number of FAA contract towers has increased from 34 to 231. An additional 8 contract towers are expected to be added in 2007, bringing the total number of contract towers to 239. Given the uncertainty about current and future year conversions and additions, the forecasts presented in this document are combined forecasts independent of the distinction between FAA and contract tower status.

Aircraft operations at combined FAA and contract towered airports are forecast to total 81.1 million in 2020 and 95.9 million in 2030--an average annual growth rate of 1.9 percent over the 24-year forecast period. Much of the growth is expected to come from commercial activity, which is projected to grow 2.3 percent annually during the both intermediate forecast period and the extended forecast period. The slower growth in commercial activity relative to total domestic enplanements (3.5 and 2.9 percent during the intermediate and extended forecast periods) is due to a combination of continued high load factors, larger aircraft, and longer passenger trip lengths.

Commuter/air taxi operations increase at a much slower rate than air carrier operations (1.2 percent compared to 3.1 percent) over the 24-year forecast period. The slower growth in commuter/air taxi activity growth is largely due to the large numbers of 70-90 seat regional jet aircraft that are expected to enter the regional/commuter fleet over the forecast period. As such, regional/commuter average aircraft size, load factors, and passenger trip lengths all increase at significantly faster rates than do those of the mainline carriers.

General aviation activity, which accounted for 54.2 percent of combined tower activity in 2006, grows at a slower pace relative to commercial activity over the 24-year forecast period – 1.7 percent. In the year 2030, general aviation is expected to account for 51.6 percent of combined tower activity. Military activity is projected to grow to 2.8 million operations by 2008 and remain at that level through the balance of the intermediate and the extended forecast periods.

### **B. Instrument Operations**

Instrument operations at FAA towered airports are forecast to total 65.4 million in 2020 and 82.3 million in 2030, an average annual growth rate of 2.6 and 2.3 percent respectively, during the intermediate and extended forecast periods. While commercial activity (2.5 and 2.6 percent annual growth) grows at similar rates in both the intermediate and extended forecast periods, non-commercial activity growth does fall off a bit (2.7 and 2.0 percent annual growth) in the extended forecast period. Mainline carrier instrument activity is forecast to grow 3.4 percent annually during the intermediate forecast period and 3.2 percent during the extended forecast period. Commuter/air taxi activity is forecast to increase at a 1.2 percent annual rate during the intermediate forecast period and 1.4 percent annually over the extended forecast period.



Through the intermediate forecast period, general aviation activity is projected to increase at approximately the same pace as mainline carrier activity, averaging 3.1 percent as growth in the VLJ fleet stimulates on-demand air taxi activity. General aviation activity growth then slows to 2.2 percent during the extended forecast period. Military activity is forecast to fall slightly to 2.6 million operations in 2007 and remain at that level for the balance of the forecast.

Commercial activity share of instrument operations is expected to grow slightly from 57.0 percent of total instrument activity at FAA towers in 2006 to 57.5 percent by the year 2030.

### **C. ARTCC Aircraft Handled**

The number of aircraft handled at FAA en route traffic control centers is forecast to reach 70.3 million in 2020 and 93.2 million in 2030, an average growth rate of 3.1 and 2.9 percent for the intermediate and extended forecast periods, respectively. Most of the growth occurs in the number of commercial aircraft handled, which increases by 3.2 percent annually during the intermediate and 3.1 percent annually during the extended forecast period. The number of mainline carrier aircraft handled increases by an average annual rate of 3.6 percent in the intermediate time period and then falls to 3.4 percent in the extended time period. The number of commuter/air taxi aircraft handled is forecast to increase by 2.0 percent annually during the intermediate forecast period and 2.1 percent over the extended forecast period.

General aviation aircraft handled growth at FAA en route centers follows a pattern similar to the mainline carriers, growing 3.7 and 2.8 percent annually during the respective forecast periods. The number of military aircraft handled is forecast to decline slightly to 4.1 million in 2007 and remain at level for the balance of the forecast.

By the end of the 24-year forecast period, commercial activity is expected to account for 76.5 percent of the total center activity, up from 73.3 percent in 2006.

**TABLE 3**

**LONG-RANGE FORECASTS**  
**FAA WORKLOAD MEASURES**

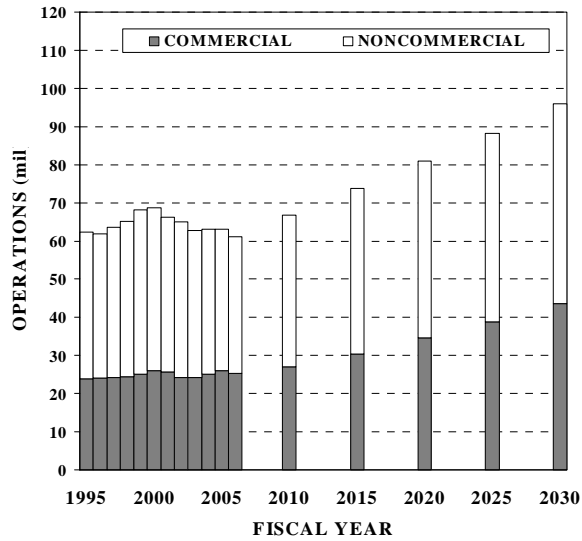
(In Millions)

|                                      | Actual      | <u>March 2007 Forecast</u> |             |             | <u>Long Range Forecast</u> |             |
|--------------------------------------|-------------|----------------------------|-------------|-------------|----------------------------|-------------|
|                                      | <u>2006</u> | <u>2010</u>                | <u>2015</u> | <u>2020</u> | <u>2025</u>                | <u>2030</u> |
| <b><u>Tower Operations*</u></b>      |             |                            |             |             |                            |             |
| Total                                | <u>61.1</u> | <u>66.8</u>                | <u>73.8</u> | <u>81.1</u> | <u>88.2</u>                | <u>95.9</u> |
| Itinerant                            | <u>45.3</u> | <u>49.3</u>                | <u>55.2</u> | <u>61.3</u> | <u>67.6</u>                | <u>74.6</u> |
| Air Carrier                          | 13.2        | 14.9                       | 17.6        | 20.8        | 24.0                       | 27.8        |
| Commuter/Air Taxi                    | 12.0        | 12.2                       | 12.9        | 13.8        | 14.8                       | 15.8        |
| General Aviation                     | 18.8        | 20.8                       | 23.3        | 25.4        | 27.4                       | 29.6        |
| Military                             | 1.4         | 1.4                        | 1.4         | 1.4         | 1.4                        | 1.4         |
| Local                                | <u>15.8</u> | <u>17.4</u>                | <u>18.7</u> | <u>19.7</u> | <u>20.5</u>                | <u>21.3</u> |
| General Aviation                     | 14.4        | 16.0                       | 17.3        | 18.3        | 19.1                       | 19.9        |
| Military                             | 1.4         | 1.4                        | 1.4         | 1.4         | 1.4                        | 1.4         |
| <b><u>Instrument Operations</u></b>  |             |                            |             |             |                            |             |
| Total                                | <u>45.8</u> | <u>49.9</u>                | <u>57.4</u> | <u>65.4</u> | <u>73.5</u>                | <u>82.4</u> |
| Air Carrier                          | 14.0        | 15.7                       | 18.7        | 22.5        | 26.4                       | 30.9        |
| Commuter/Air Taxi                    | 12.1        | 12.5                       | 13.3        | 14.3        | 15.4                       | 16.5        |
| General Aviation                     | 17.0        | 19.1                       | 22.8        | 26.0        | 29.1                       | 32.3        |
| Military                             | 2.7         | 2.6                        | 2.6         | 2.6         | 2.6                        | 2.6         |
| <b><u>ARTCC Aircraft Handled</u></b> |             |                            |             |             |                            |             |
| Total                                | <u>46.2</u> | <u>51.0</u>                | <u>59.8</u> | <u>70.3</u> | <u>81.0</u>                | <u>93.2</u> |
| Air Carrier                          | 24.4        | 27.5                       | 33.0        | 40.2        | 47.4                       | 55.9        |
| Commuter/Air Taxi                    | 9.4         | 10.0                       | 11.1        | 12.4        | 13.9                       | 15.3        |
| General Aviation                     | 8.2         | 9.4                        | 11.6        | 13.6        | 15.6                       | 17.8        |
| Military                             | 4.1         | 4.1                        | 4.1         | 4.1         | 4.1                        | 4.1         |

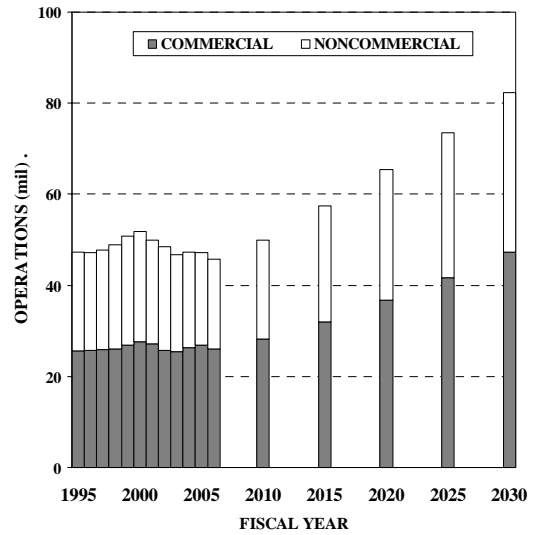
Note: Totals may not add due to independent rounding.

# FAA WORKLOAD FORECASTS

## TOWERED OPERATIONS



## INSTRUMENT OPERATIONS



## IFR AIRCRAFT HANDLED

