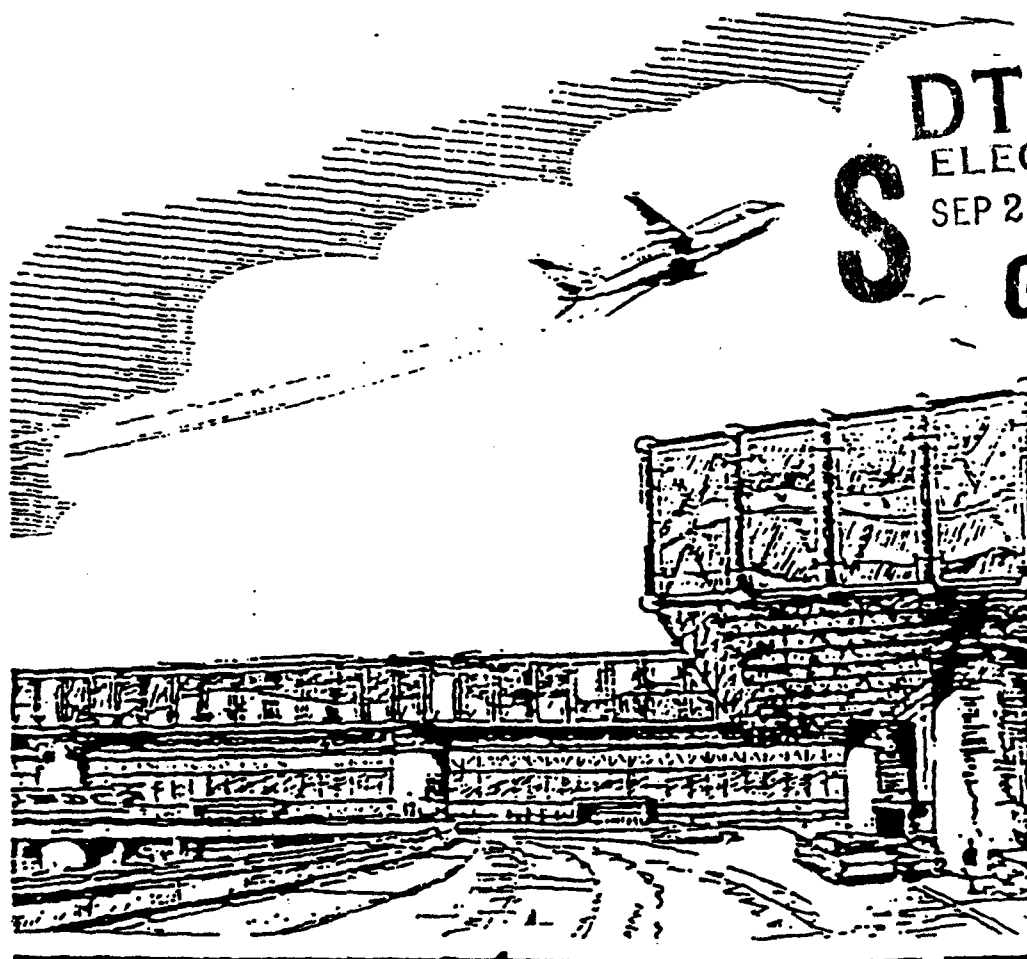


AD-A284 878

FAA-APO-93-5



# FAA LONG-RANGE AVIATION FORECASTS FISCAL YEARS 2005 - 2020



DTIC  
ELECTE  
SEP 26 1994  
S G D



94-30665

199

94 9 23 064

OFFICE OF  
AVIATION POLICY, PLANS, AND MANAGEMENT ANALYSIS

DTIC QUALITY INSPECTED 3

SEPTEMBER 1993



|                    |                                     |
|--------------------|-------------------------------------|
| Accession For      |                                     |
| NTIS CRA&I         | <input type="checkbox"/>            |
| DTIC TAB           | <input checked="" type="checkbox"/> |
| Unannounced        | <input type="checkbox"/>            |
| Justification      |                                     |
| By                 |                                     |
| Distribution /     |                                     |
| Availability Codes |                                     |
| Dist               | Avail and/or Special                |
| A-1                |                                     |

To assure consistency in agency planning, the Office of Aviation Policy, Plans, and Management Analysis provides an extension of its annual 12-year forecasts of aviation demand. Although forecast values are shown for specific years, it must be recognized that year-to-year fluctuations are difficult to forecast precisely. Therefore, the projections reflect the trend of average conditions expected during the forecast period.

**The fundamental assumptions used in developing these extended forecasts are:**

- DTIC OADR 00000008

These assumptions translate into somewhat slower growth of aviation activity and FAA workload measures during the extended 16-year period (2004 to 2020) than was forecast for the immediate 12-year period (1992 to 2004)..

|                                     | <u>AVERAGE ANNUAL PERCENT CHANGES</u> |                    |
|-------------------------------------|---------------------------------------|--------------------|
|                                     | <u>1992 - 2004</u>                    | <u>2004 - 2020</u> |
| <b><u>AVIATION ACTIVITY</u></b>     |                                       |                    |
| <b>PASSENGER ENPLANEMENTS</b>       |                                       |                    |
| AIR CARRIER                         | 3.5                                   | 2.5                |
| REGIONALS/COMMUTERS                 | 6.4                                   | 4.3                |
| <b>AIRCRAFT FLEET</b>               |                                       |                    |
| AIR CARRIER                         | 2.6                                   | 1.8                |
| COMMUTER                            | 1.6                                   | 1.5                |
| GENERAL AVIATION                    | 0.6                                   | 0.3                |
| MILITARY                            | (1.5)                                 | (0.5)              |
| <b>HOURS FLOWN</b>                  |                                       |                    |
| AIR CARRIER                         | 3.3                                   | 2.3                |
| GENERAL AVIATION                    | 1.4                                   | 0.9                |
| MILITARY                            | (1.3)                                 | (0.2)              |
| <b>PILOTS</b>                       |                                       |                    |
| TOTAL                               | 1.2                                   | 0.8                |
| INSTRUMENT RATED                    | 1.3                                   | 0.9                |
| <b><u>FAA WORKLOAD MEASURES</u></b> |                                       |                    |
| TOWER OPERATIONS                    | 1.8                                   | 1.2                |
| INSTRUMENT OPERATIONS               | 2.0                                   | 1.3                |
| IFR AIRCRAFT HANDLED                | 2.0                                   | 1.3                |
| FLIGHT SERVICE STATIONS             | (0.2)                                 | 0.1                |

## **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 macroeconomic projections. For the purposes of this report, the forecast period refers to the long-range outlook, particularly the 2005 to 2020 period. Much of the discussion assumes some familiarity with the forecasts contained in FAA Aviation Forecasts Fiscal Years 1993-2004, dated February 1993. Copies of this report can be obtained from the FAA Statistics and Forecast Branch, APO-110, by phoning (202) 267-3355.

### **A. Economic**

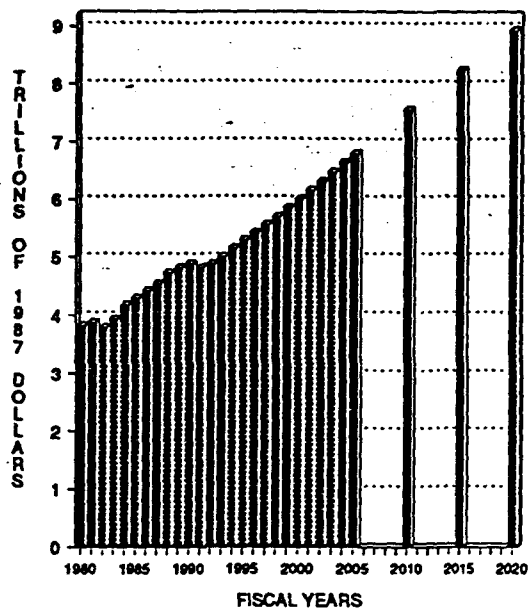
The long-range economic forecasts discussed herein are, for the most part, based on a consensus of the economic projections developed by DRI/McGraw-Hill (DRI) and The WEFA Group (WEFA). The DRI economic projections extend through the year 2017 and the WEFA economic forecasts extend through the year 2011. Both sets of economic forecasts were developed utilizing trend projections and assume that the economy experiences stable growth throughout the entire forecast period. Essentially, these projections represent the average of the possible paths that the U.S. economy could follow. Using trend projections assumes that (1) no major shocks will occur (such as a rapid run-up in oil prices), (2) economic policies remain stable, and (3) national and international markets do not experience dramatic shifts in either the supply or demand for economic goods and services. 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.

#### **Real Gross Domestic Product**

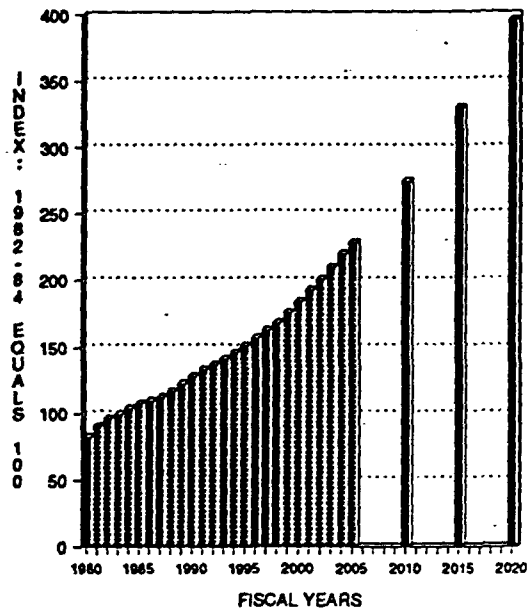
The U.S. economy's growth rate is expected to be slower than in the past. Growth in gross domestic product (GDP), adjusted for price changes and expressed in 1987 dollars, will average 1.9 percent annually over the extended 16-year forecast period. This is considerably slower than both the historical past (3.0 percent between 1960 and 1992) and the economic projections for the immediate 12-year forecast period (2.6 percent between 1992 and 2004).

# ECONOMIC VARIABLES FORECASTS

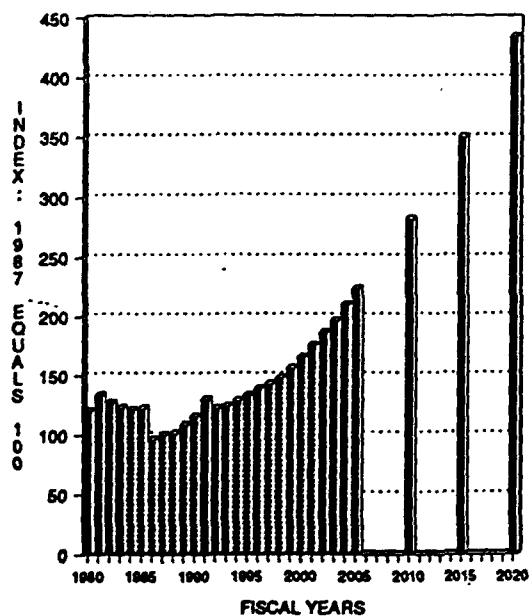
## REAL GDP



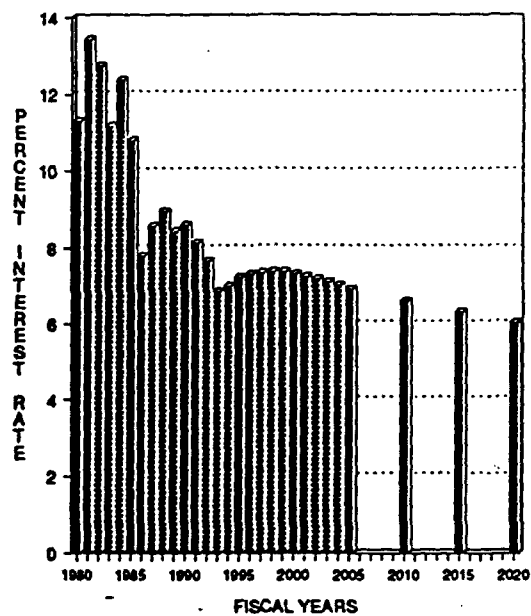
## CONSUMER PRICE INDEX



## OIL AND GAS DEFLATOR



## THIRTY-YEAR U.S. GOVERNMENT BONDS



### Consumer Price Index

Inflation is not expected to return to the very high rates experienced during the later half of the 1970's and early 1980's (8.7 percent annual growth between 1972 and 1982) during the entire 28-year forecast period. The consumer price index is projected to increase at an average annual rate of 3.7 percent a year during the 28-year time period--4.0 percent during the immediate 12-year period (to 2004) and 3.7 percent during the extended forecast period (to 2020).

### Fuel Prices

Fuel prices, as measured by the Oil and Gas Deflator, are forecast to increase at a somewhat faster rate than overall inflation. Between 1992 and 2004, nominal fuel prices were forecast to increase by an annual rate of 4.6 percent or just over half a percentage point more the rate of inflation. For the extended forecast period, nominal fuel prices are also projected to increase at a yearly rate of approximately 4.6 percent, approximately 1.0 percentage point more than the rate of inflation.

### Interest Rates

Interest rates, adjusted for inflation, are expected to moderate somewhat even though the recent problems associated with the financial and banking system are expected to continue well into the forecast period. The 30-year U.S. Government bond rate (7.67 percent in 1992) has fallen 43 percent since reaching a high of 13.44 percent in 1981. The rate is expected to decline further in 1993 (to 7.11 percent) before rising gradually to 7.45 percent in 1998. Thereafter, the 30-year U.S. Federal bond rate is expected to decline gradually over the remaining years of the forecast period. The projected bond rate at the end of the immediate 12-year forecast period (2004) is 7.10 percent, falling to 6.36 percent by the end of the extended forecast period (2020).

## **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 Aviation Forecasts: Fiscal Years 1993-2004. As with the economic projections, these forecasts reflect an average trend of the possible paths that the various operational variables could follow. They assume that (1) no major shocks will occur (such as a rapid run-up in oil prices), (2) economic policies remain stable, and (3) no dramatic shifts in either the supply or demand for aviation services. These long-term projections represent appropriate points from which to evaluate the effects of variations about the mean or expected values of various activity measures, transportation demand and services, or FAA workload measures.

### **Passenger Yield**

The current 12-year forecast assumed that real domestic passenger yields (expressed as revenue per passenger mile) would reverse the long-term trend of declining real passenger yields and increase gradually (0.6 percent annually) over 12-year forecast period. This reversal of past trends was based on two assumptions: (1) that the U.S. commercial airline industry would continue to move toward greater concentration among a smaller number of larger carriers and (2) that the industry would also move toward a more rational pricing policy. We expect these two trends to continue over the extended forecast period. Therefore, real passenger yields have been forecast to increase by approximately 0.3 percent annually between 2004 and 2020.

### **Average Aircraft Size**

Federal noise legislation requires that all stage-2 aircraft be phased out of the U.S. fleet by January 1, 2000, although carriers are permitted to apply for exemptions to continue use of the stage-2 through December 31, 2003. This legislation is expected to result in the retirement and/or retrofitting of significant numbers of these smaller seating capacity stage-2 aircraft over the immediate 12-year forecast period, their replacements generally being larger stage-3 aircraft. This results in an increase in the average seating capacity of domestic aircraft of between 2 and 3 seats annually between 1992 and 2004 (from 152 to 175 seats).

The increase in average seating capacity should slow appreciably over the extended 16-year forecast period. After the year 2004 (following the retirement of large numbers of the older stage-2 aircraft), the average age of the U.S. fleet should have been lowered significantly. This means that fewer aircraft will have to be retired over the extended forecast period. In addition, those aircraft being added to the fleet will generally be similar in size to the aircraft currently being utilized. Therefore, we expect the average seating capacity of the domestic air carrier fleet to increase by less than one seat annually between 2004 and 2020 (to 195 seats in 2020).

The average seating capacity of regional/commuter aircraft is forecast to increase by just over one seat annually between 1992 and 2004 (from 22.9 to 35.7 seats). This trend is expected to continue over the extended forecast period, with the average seating capacity of regional/commuter aircraft averaging approximately 52 seats in the year 2020.

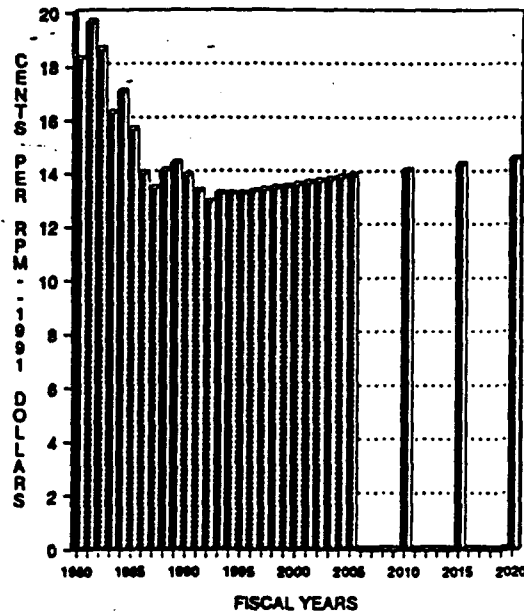
#### Load Factor

Domestic air carrier load factors were forecast to remain basically unchanged (at approximately 62.5 percent) during the 1992 to 2004 time period. This was due to several factors. Airline scheduling policies/procedures have become so proficient that the carriers can rapidly and efficiently adjust capacity levels in accordance with either increasing or decreasing passenger demand levels. In addition, the accelerated retirement of smaller stage-2 aircraft resulted in relatively large increases in the average seating capacity of domestic aircraft. After 2004, however, there will be very few aircraft retirements and very little gain in aircraft average seating capacity. While carriers will still have the ability to rapidly adjust capacity levels in accordance with demand, they will have lost the fully depreciated stage-2 aircraft which allowed them so much latitude in these adjustments. Therefore, domestic load factors should rise at least to the 63.0 percent range during the extended forecast period.

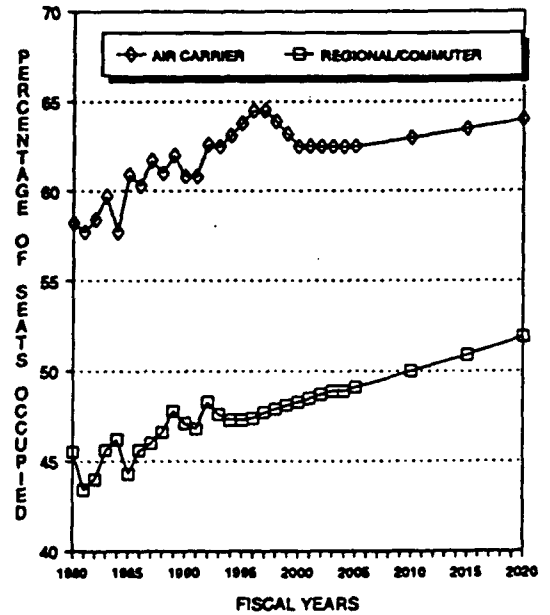
Regional/commuter load factors were projected to increase from 48.3 percent in 1992 to 48.9 percent in 2004. Regional/commuter load factors are expected to increase slightly over the extended forecast period, rising to approximately 52.0 percent by 2020.

# OPERATIONAL VARIABLES FORECASTS

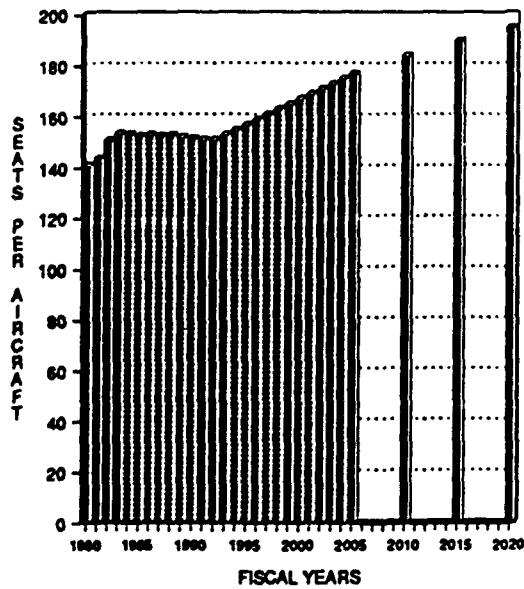
REAL DOMESTIC PASSENGER YIELD



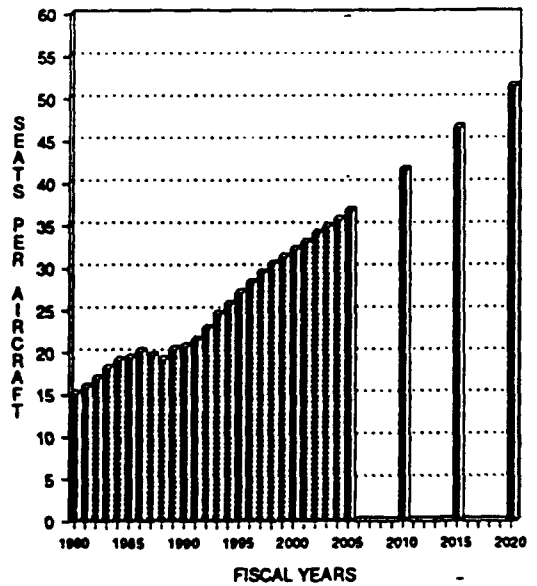
DOMESTIC PASSENGER LOAD FACTOR



AVERAGE SEATING CAPACITY  
DOMESTIC AIR CARRIER AIRCRAFT



AVERAGE SEATING CAPACITY  
REGIONAL/COMMUTER AIRCRAFT



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

Forecasts of various measures of aviation activity for 1992 and 5-year increments between 1995 and 2020 are provided in Table 1, page 12. A discussion of some of these measures of aviation activity follows in the paragraphs below.

#### **A. Passenger Enplanements**

##### **Air Carrier**

These traffic forecasts assume that the U.S. commercial aviation industry is gradually maturing. However, air carrier demand, as measured by domestic passenger enplanements, is projected to continue to grow faster than the general economy. For the period 1992 to 2004, domestic passenger enplanements were forecast to increase by 3.5 percent annually compared to a 2.6 percent annual growth rate in real GDP. Over the extended forecast period (2004-2020), domestic passenger enplanements are projected to increase at an average annual rate of 2.5 percent compared to real GDP growth of 1.9 percent annually during the same time period.

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

The regional/commuter industry is projected to continue to grow at a relatively fast pace through both the immediate and extended forecast periods. Much of this growth is the result of a continuation of the shift of low-density, short-haul markets from the larger air carriers to their commuter code-share partners. During the period 1992 to 2004, regional/commuter passenger enplanements were forecast to increase at a yearly rate of 6.4 percent. This rate of growth is expected to slow to only 4.3 percent during the extended forecast period.

#### **B. Aircraft Fleets and Hours Flown**

##### **Commercial Air Carriers**

The commercial air carrier jet fleet (60 seats or more) is forecast to increase at an annual rate of 2.6 percent or 125 aircraft annually between 1992 and 2004. These forecasts reflect some expansion of the carriers' major domestic hubs but a slowing in the growth and/or development of new secondary hubs at medium and small hub airports.

This slowing of expansion is expected to continue after the turn of the century, due, in part, to the continued consolidation of the industry. In addition, passenger demand is also expected to expand at a slower rate during the extended forecast period. These and other factors result in a slight slowing in the expansion of the air carrier fleet. Between 2004 and 2020, the air carrier fleet is forecast to increase at an average annual rate of 1.8 percent, or approximately 119 aircraft annually.

The number of hours flown by the larger commercial air carriers is forecast to increase by 3.3 percent annually between 1992 and 2004 and by 2.3 percent annually between 2004 and 2020. The immediate and extended range fleet forecasts imply that U.S. air carriers will use larger aircraft and higher load factors to accommodate increasing passenger demand. The forecasts of hours flown imply that the average utilization of the U.S. fleet will increase gradually over the 28-year forecast period.

The regional/commuter fleet (less than 60 seats) is expected to grow from its current 2,000 aircraft in 1992 to 3,000 by the year 2020. This is an average annual growth rate of 1.5 percent or approximately 42 aircraft annually.

#### General Aviation Aircraft

The general aviation fleet is projected to grow by only 24,700 aircraft (0.4 percent annual growth) over the 28-year forecast period, increasing from 198,400 aircraft in 1992 to 223,100 aircraft in the year 2020. This growth is comprised of very strong growth in both the turbine fixed-wing fleet and the turbine rotorcraft fleet, reflecting the increased business use of general aviation aircraft. However, the single and multi-engine piston fleet, which accounted for 88.3 percent of the total general aviation fleet in 1992, is expected to lose share over both the immediate and extended forecast periods, declining to 85.5 percent in 2004 and to 81.3 in 2020.

With a greater use of general aviation aircraft in business missions, the turbine powered portion of the fleet will continue to outpace the growth of piston aircraft. However, as the piston fleet ages (average age of 34 years by 2000) and more aircraft are retired, deliveries of single engine piston aircraft will, by necessity, have to pick-up significantly in order to satisfy the demand for trainers and recreational aircraft.

While we recognize that many of the older aircraft will have to be retired, or at least grounded, at some point during the 28-year forecast period, we do not have sufficient enough information to allow us to project annual retirement rates. One of the problems associated with the retirement/replacement issue is the lack of sufficient technological differences between the new aircraft being marketed today and the oldest aircraft in the fleet. Because of this lack of obsolescence, many of those connected with the general aviation industry theorize that owners of older piston aircraft, rather than considering retirement as an option, merely cut back on the utilization or hours flown on the aircraft as it ages. If, however, large numbers of piston aircraft were actually retired during the two forecast periods and, if retirements exceeded the number of new replacement aircraft entering the fleet, then the active general aviation fleet could decline over the 28-year forecast period. Such a scenario could also result in a reduction in general aviation activity, both in hours flown and operations at FAA air traffic facilities.

### **C. Number of Pilots**

The total pilot population is forecast to increase from 692,100 in 1992 to 902,100 by the year 2020, an average annual growth rate of 0.9 percent over the 28-year forecast period. During this same time period, the number of instrument rated pilots will increase from 303,200 to 412,100, just slightly faster than the growth in the total pilot population. Much of the growth is reflected in the continuing demand for airline transport pilots. As the commercial airline industry gradually matures and growth slows after the turn of the century, so does the demand for airline transport pilots. This slowing in the demand for air transport pilots is reflected in the forecast of the total pilot population, which will increase by 1.2 percent annually during the immediate forecast period but by only 0.8 percent during the extended forecast period.

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

Total aircraft activity at towered and nontowered airports is projected to reach 220.0 million by the year 2020, an average annual growth rate of 1.4 percent over the activity level forecast for 2004 (173.2 million operations). This, in turn, represented annual growth of 2.1 percent over the 134.8 million total aircraft operations in 1992.

Commercial operations (the sum of air carrier and commuter/air taxi) at all U.S. airports, towered or non-towered, are forecast to increase from 27.7 million in 1992 to 38.4 million in 2004 and to 44.1 million in 2020. These forecasts imply an average annual growth rate of 2.8 percent over the immediate 12-year forecast period but only 0.9 percent over the 16-year extended forecast period. The slower growth during the extended forecast period reflects a continued maturing of the commercial airline industry and a slowing in passenger demand.

The number of general aviation operations at towered and non-towered airports is forecast to increase from 100.8 million in 1992 to 131.7 million in 2004 and to 160.0 million in 2020. The average annual growth rate for the immediate 12-year forecast period is 2.3 percent and 1.2 percent for the extended forecast period. Much of the growth is the result of increased use of the turbine fleet for business related flying.

TABLE 1

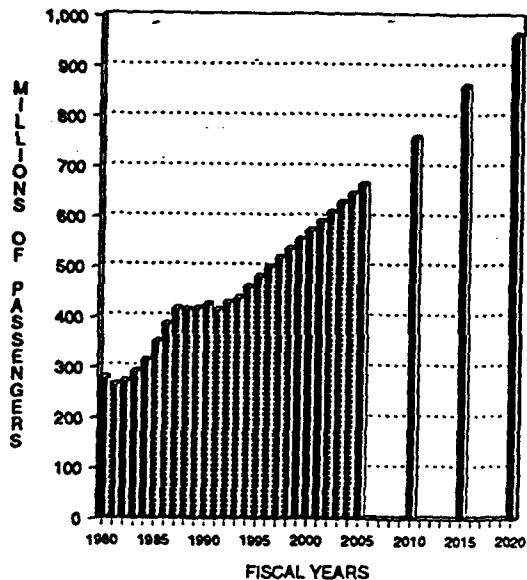
**LONG-RANGE FORECASTS**  
**AVIATION DEMAND AND ACTIVITY**

|                               | <u>ACTUAL</u>  | <u>2/93</u>    | <u>FORECASTS</u> | <u>LONG-RANGE FORECASTS</u> |                |                |                |
|-------------------------------|----------------|----------------|------------------|-----------------------------|----------------|----------------|----------------|
|                               | <u>FY 1992</u> | <u>FY 1995</u> | <u>FY 2000</u>   | <u>FY 2005</u>              | <u>FY 2010</u> | <u>FY 2015</u> | <u>FY 2020</u> |
| <b>Domestic Passenger</b>     |                |                |                  |                             |                |                |                |
| <b><u>Enplanements</u></b>    |                |                |                  |                             |                |                |                |
| <b>(In Millions)</b>          |                |                |                  |                             |                |                |                |
| Air Carrier                   | 428.8          | 479.8          | 572.7            | 665.6                       | 758.8          | 862.0          | 965.1          |
| Regional/Commuter             | 42.8           | 52.9           | 71.8             | 94.6                        | 120.1          | 147.2          | 176.2          |
| <b><u>Aircraft Fleets</u></b> |                |                |                  |                             |                |                |                |
| <b>(In Thousands)</b>         |                |                |                  |                             |                |                |                |
| Air Carrier                   | 4.2            | 4.4            | 5.0              | 5.9                         | 6.3            | 6.9            | 7.6            |
| Regional/Commuter*            | 2.0            | 2.1            | 2.3              | 2.4                         | 2.6            | 2.8            | 3.0            |
| General Aviation              | 198.4          | 200.8          | 207.6            | 213.3                       | 216.5          | 219.8          | 223.1          |
| Civil Helicopter              | 6.3            | 6.6            | 7.7              | 8.8                         | 9.9            | 11.1           | 12.4           |
| Military                      | 19.2           | 16.5           | 16.1             | 16.0                        | 15.6           | 15.2           | 14.8           |
| <b><u>Hours Flown</u></b>     |                |                |                  |                             |                |                |                |
| <b>(In Millions)</b>          |                |                |                  |                             |                |                |                |
| Air Carrier                   | 10.6           | 12.0           | 14.2             | 16.1                        | 18.1           | 20.3           | 22.6           |
| General Aviation              | 29.9           | 31.3           | 34.0             | 35.6                        | 37.2           | 38.9           | 40.7           |
| Military                      | 6.2            | 5.1            | 5.2              | 5.3                         | 5.2            | 5.2            | 5.1            |
| <b><u>Pilots</u></b>          |                |                |                  |                             |                |                |                |
| <b>(In Thousands)</b>         |                |                |                  |                             |                |                |                |
| Total                         | 692.1          | 721.3          | 767.3            | 800.5                       | 833.0          | 866.9          | 902.1          |
| Instrument Rated              | 303.2          | 315.2          | 337.5            | 360.3                       | 376.8          | 394.1          | 412.1          |
| <b><u>Estimated Civil</u></b> |                |                |                  |                             |                |                |                |
| <b><u>U.S. Operations</u></b> |                |                |                  |                             |                |                |                |
| <b>(In Millions)</b>          |                |                |                  |                             |                |                |                |
| Commercial                    | 27.7           | 30.9           | 35.5             | 39.2                        | 41.1           | 42.8           | 44.1           |
| General Aviation              | 107.1          | 113.9          | 124.7            | 137.7                       | 149.5          | 160.5          | 170.6          |

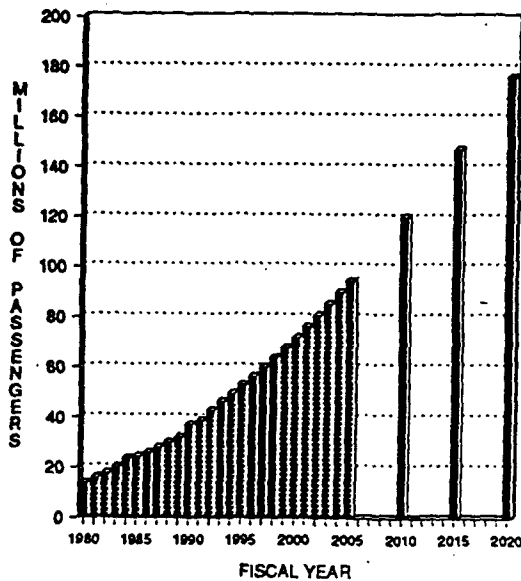
\* Included in General Aviation Count.

# AVIATION ACTIVITY FORECASTS

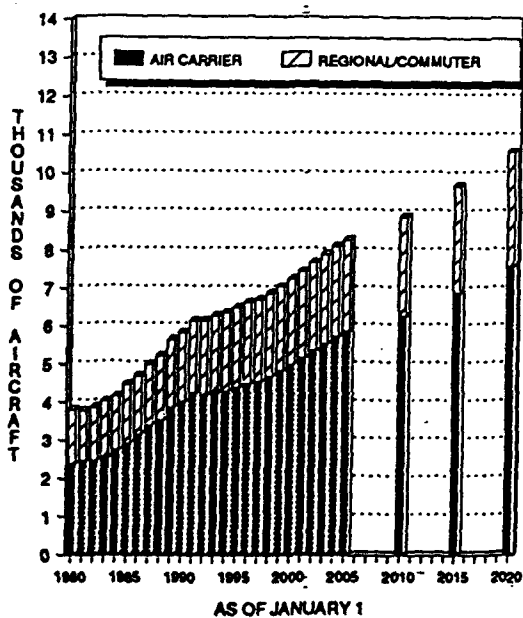
**AIR CARRIER  
DOMESTIC ENPLANEMENTS**



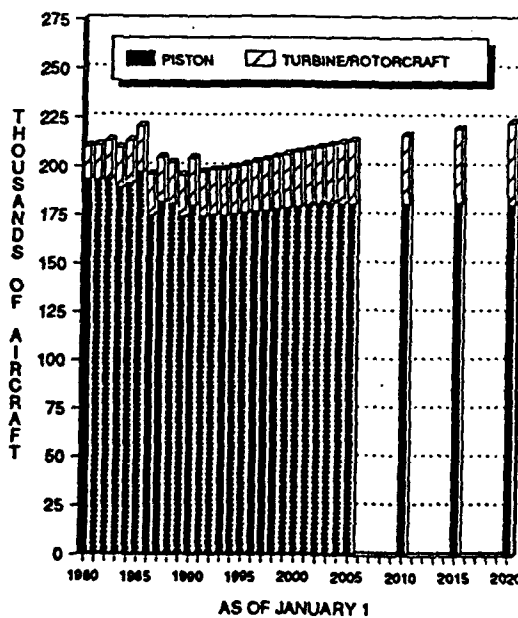
**REGIONALS/COMMUTERS  
PASSENGER ENPLANEMENTS**



**COMMERCIAL AIRCRAFT FLEET**



**GENERAL AVIATION FLEET**



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

Forecasts of FAA workload measures, by user groups, for 1992 and 5-year increments between 1995 and 2020 are provided in Table 2, page 17. A discussion of the forecasts follows in the paragraphs below.

### **A. Towered Operations**

Aircraft operations at FAA towered airports are forecast to total 76.6 million in 2004 (1.8 percent annual growth) and 92.5 million in 2020 (1.2 percent annual growth). Most of the growth is expected to come from commercial activity (the sum of air carrier and commuter/air taxi), which is projected to grow 2.4 percent annually during the immediate forecast period and 1.4 percent annually during the extended forecast period. Commuter/air taxi activity growth is expected to average 2.0 percent annually over the 28-year forecast period while air carrier activity is forecast to increase at a yearly rate of 1.7 percent during the same time period. The slower growth in commercial activity relative to enplanements is due to a combination of higher load factors, larger aircraft, and longer passenger trip lengths.

General aviation activity, which accounted for almost 60.0 percent of total tower activity in 1992, grows at a considerably slower pace over the 28-year forecast period--1.6 and 1.1 percent, respectively, during the immediate and extended forecast periods. Military activity is held constant at the 1992 level throughout the 28-year forecast period.

### **B. Instrument Operations**

Instrument operations at FAA towered airports are forecast to total 58.0 million in 2004 and 70.8 million in 2020, average annual growth rates of 2.0 and 1.3 percent, respectively, during the immediate and extended forecast periods. Most of the growth is expected to come from commercial activity, which is projected to grow 2.5 percent annually during the immediate 12-year forecast period and 1.5 percent annually during the extended 16-year forecast period. Commuter/air taxi activity is forecast to grow 2.1 percent annually over the entire 28-year forecast period while air carrier activity is forecast to increase at an average annual rate of 1.8 percent during the same time period.

General aviation activity is projected to increase at a somewhat slower pace over the forecast period, averaging 1.8 and 1.0 percent, respectively, during the immediate and extended forecast periods. Military activity is expected to remain constant at the 1992 level.

### **C. ATRCC Aircraft Handled**

The number of aircraft handled at FAA enroute traffic control centers are forecast to reach 46.6 million in 2004 and 57.0 million in 2020, an average annual growth rate of 2.0 percent for the 1992-2004 time period and 1.3 percent for the 2004-2020 time period. Much of the growth occurs in the number of commercial aircraft handled, which increase by 2.5 and 1.5 percent, respectively, over the same two forecast periods. The number of commuter/air taxi aircraft handled is forecast to increase by 3.2 percent annually during the immediate forecast period and 1.6 percent over the extended forecast period--2.3 percent over the entire 28-year period. The number of air carrier aircraft handled increases by an average annual rate of 1.8 percent over the 28-year forecast period--2.2 and 1.4 percent, respectively, over the immediate and extended time periods.

The number of general aviation aircraft handled at FAA enroute centers increase at a slower rate over the two forecast periods, 1.7 percent annually over the immediate 12-year period and 1.1 percent over the extended 16-year period. The number of military aircraft handled remains constant at the 1992 level throughout the 28-year forecast period.

### **D. Flight Services**

The number of services provided by FAA flight service stations is forecast to reach 39.4 million in 2004 (an annual decline of 0.2 percent) and 39.8 million in 2020 (an annual increase of 0.1 percent). The relatively slow growth for the number of services provided by FAA flight service stations reflects both the continued consolidation of flight service stations and a greater use of automated and alternative flight services which are not provided directly by the FAA. However, as consolidation runs its course, it will be possible to achieve some modest growth in activity at flight service stations.

Average annual growth rates for each of the three flight service categories for the immediate and extended forecast periods are: flight plans originated: 0.5 and 0.1 percent; pilot briefs: -0.4 and 0.1 percent; and number of aircraft contacted: -0.9 and 0.0 percent.

TABLE 2

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

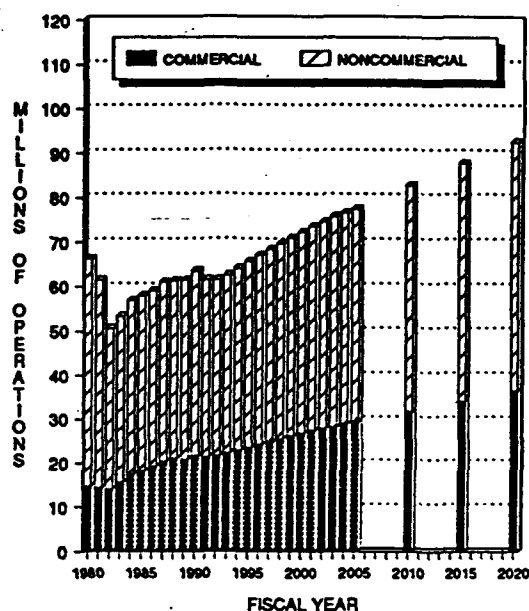
(In Millions)

|                                      | <u>ACTUAL</u>  | <u>2/93 FORECASTS</u> |                | <u>LONG-RANGE FORECASTS</u> |                |                |                |
|--------------------------------------|----------------|-----------------------|----------------|-----------------------------|----------------|----------------|----------------|
|                                      | <u>FY 1992</u> | <u>FY 1995</u>        | <u>FY 2000</u> | <u>FY 2005</u>              | <u>FY 2010</u> | <u>FY 2015</u> | <u>FY 2020</u> |
| <b><u>Towered Operations</u></b>     |                |                       |                |                             |                |                |                |
| Total                                | <u>61.5</u>    | <u>65.6</u>           | <u>72.2</u>    | <u>77.4</u>                 | <u>82.7</u>    | <u>87.7</u>    | <u>92.5</u>    |
| Itinerant                            | <u>44.4</u>    | <u>47.6</u>           | <u>52.9</u>    | <u>56.9</u>                 | <u>61.0</u>    | <u>65.0</u>    | <u>68.8</u>    |
| Air Carrier                          | 12.4           | 13.2                  | 15.0           | 16.3                        | 17.6           | 18.9           | 20.1           |
| Air Taxi/Commuter                    | 9.3            | 10.4                  | 11.9           | 13.1                        | 14.2           | 15.3           | 16.4           |
| General Aviation                     | 21.3           | 22.6                  | 24.6           | 26.1                        | 27.8           | 29.4           | 30.9           |
| Military                             | 1.4            | 1.4                   | 1.4            | 1.4                         | 1.4            | 1.4            | 1.4            |
| Local                                | <u>17.1</u>    | <u>18.0</u>           | <u>19.3</u>    | <u>20.5</u>                 | <u>21.7</u>    | <u>22.7</u>    | <u>23.7</u>    |
| General Aviation                     | 15.7           | 16.6                  | 17.9           | 19.1                        | 20.3           | 21.3           | 22.3           |
| Military                             | 1.4            | 1.4                   | 1.4            | 1.4                         | 1.4            | 1.4            | 1.4            |
| <b><u>Instrument Operations</u></b>  |                |                       |                |                             |                |                |                |
| Total                                | <u>45.6</u>    | <u>48.9</u>           | <u>54.4</u>    | <u>58.9</u>                 | <u>63.1</u>    | <u>67.0</u>    | <u>70.8</u>    |
| Air Carrier                          | 13.4           | 14.4                  | 16.4           | 18.0                        | 19.5           | 20.9           | 22.3           |
| Air Taxi/Commuter                    | 9.9            | 11.0                  | 12.7           | 14.1                        | 15.4           | 16.6           | 17.7           |
| General Aviation                     | 18.2           | 19.4                  | 21.2           | 22.7                        | 24.1           | 25.4           | 26.7           |
| Military                             | 4.1            | 4.1                   | 4.1            | 4.1                         | 4.1            | 4.1            | 4.1            |
| <b><u>ARTCC Aircraft Handled</u></b> |                |                       |                |                             |                |                |                |
| Total                                | <u>36.7</u>    | <u>39.3</u>           | <u>43.6</u>    | <u>47.4</u>                 | <u>50.8</u>    | <u>54.0</u>    | <u>57.0</u>    |
| Air Carrier                          | 18.3           | 19.3                  | 22.0           | 24.2                        | 26.2           | 28.1           | 29.9           |
| Air Taxi/Commuter                    | 5.9            | 6.9                   | 7.8            | 8.8                         | 9.6            | 10.4           | 11.1           |
| General Aviation                     | 7.4            | 8.0                   | 8.7            | 9.3                         | 9.9            | 10.4           | 10.9           |
| Military                             | 5.1            | 5.1                   | 5.1            | 5.1                         | 5.1            | 5.1            | 5.1            |
| <b><u>FSS Services</u></b>           |                |                       |                |                             |                |                |                |
| Total                                | 40.2           | 37.4                  | 38.6           | 39.6                        | 39.7           | 39.8           | 39.8           |
| Pilot Briefs                         | 10.8           | 10.0                  | 10.1           | 10.3                        | 10.3           | 10.4           | 10.4           |
| Flight Plans Filed                   | 6.5            | 6.3                   | 6.7            | 7.0                         | 7.0            | 7.0            | 7.0            |
| Aircraft Contacted                   | 5.6            | 4.8                   | 5.0            | 5.0                         | 5.1            | 5.0            | 5.0            |

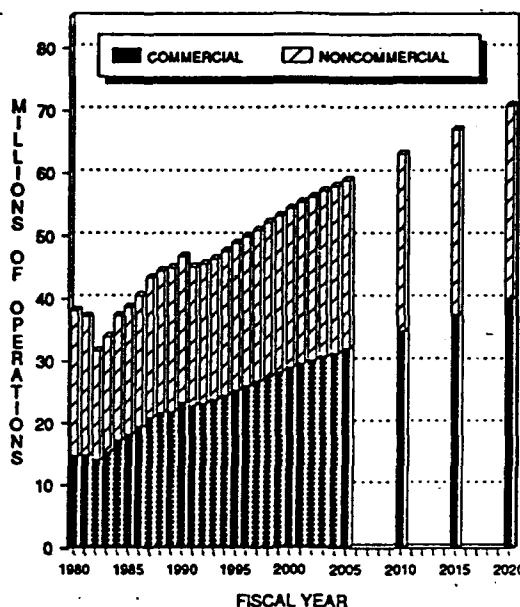
**Best  
Available  
Copy**

# FAA WORKLOAD FORECASTS

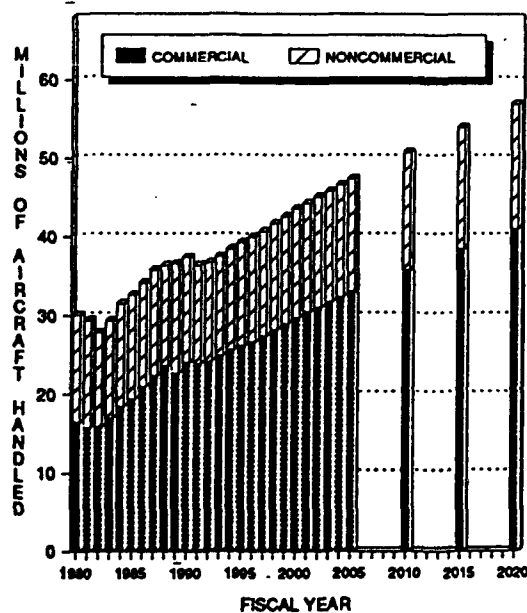
## TOWERED OPERATIONS



## INSTRUMENT OPERATIONS



## IFR AIRCRAFT HANDLED



## FLIGHT SERVICES

