

then economic forces. Nonetheless, it appears that recent budget action at the federal level will put to rest (for the short term) discussions about increasing landing fees or implementing new operating fees to partially privatize the nation's aviation infrastructure.

There is concern, however, about continuing efforts to reduce or constrain business aviation's access to major U.S. airports. It is important to understand that business aviation is not the source of congestion in the U.S. air traffic control system nor the reason for commercial aircraft delays. Business aviation provides transportation services important to the health and continued growth of corporate America. These services include both access to our major industrial and commercial centers, as well as access to locations not well served by commercial aviation or other transportation modes.

Summary

While variation will always occur around trends, the outlook for business aviation between 1997-2002 is relatively bright. Trends reflect three fundamental forces in business aviation (1) new product introductions, (2) corporate profitability, and (3) direct operating and regulatory costs. For this review exercise, the positives in these three factors outweigh any negatives that the panel could speculate about in terms of timing and magnitude of their effect on business aviation.

In business aviation, there is a fourth factor that can not be ignored, although its full impact can not be precisely measured. This factor is the emergence of fractional ownership as an institution in business aviation. Fractional ownership will likely expand the business aviation market by bringing new buyers and operators into business aviation.

Taking these four factors into consideration, it is likely that new aircraft sales, fleet growth, and fleet utilization will at least match, if not exceed, the expected real rate of growth in the U.S. economy. The extent to which growth in business aviation exceeds the real rate of economic growth in the United States will be determined, in large part, by the growth in the world economy and the influence of age on fleet utilization.

This is especially so in the turboprop sector. In comparing the turbojet and turboprop sectors of business aviation, it is expected that the turboprop sector will display the least robust growth. New product development is limited in the turboprop sector and the use of the turboprop fleet will be more severely affected by aging aircraft. Nonetheless, there is a viable market for existing turboprop products and new products have the potential for reenergizing certain sectors of the turboprop segment of business aviation.

LIGHT AND PERSONAL GENERAL AVIATION

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Introduction

The panel discussed the state of the light and personal general aviation market and the factors that will influence the market. The industry has been in a steady and unrelenting decline for well over a decade, but the panel felt that it is now in the early stages of a recovery spurred by the General Aviation Revitalization Act of 1994 and a healthy economy. There are industry marketing and product initiatives that will provide the impetus for continued growth. The most critical downside risk is the economy, but regulatory intervention could impact the business if significant changes are made.

Assumptions

The U. S. economy will continue to grow at a moderate rate and inflation and interest rates will not increase significantly in the next few years. There will be price stability in the general economy and specifically in the area of aviation fuels, and no drastic regulatory or tax changes that would adversely impact the recovery of the industry. Any significant shocks to the industry—causing operating cost increases, reduction in the utility of aircraft or added administrative burden for the use of aircraft—could reverse the improvements made to date. It was also assumed that GA Team 2000, or a similar, major promotional learn-to-fly program will continue throughout the forecast period.

U. S. Student and Private Pilot Population

Student Pilots

There are several industry initiatives that are intended to increase interest in flying and these are expected to rapidly increase the number of student pilot starts, effectively stopping the decline in student pilots that has plagued the industry and threatened its future. These initiatives will eventually increase the private pilot population and later the instrument rated pilot population, too.

The panel took into account:

- The "GA Team 2000" Program;
- Aircraft Owners and Pilots Association's (AOPA) "Mentor Program;"
- Experimental Aircraft Association's (EAA) "Young Eagles" and "Flying Start" Programs; and
- Cessna's Cessna Pilot Center network.

These initiatives are being undertaken by the industry and its pilot population to spur the interest in aviation that has been declining for years. This is the greatest concentration of new initiatives since the late 1970s, when the industry experienced high student pilot levels, robust sales of new aircraft and high fleet utilization.

The student pilot population is expected to grow from 1997 to 1998 by 11.5 percent, and in 1999 by another 7.0 percent, with continued growth expected after that. The student pilot population will grow at an annual rate of 7.0 percent for the period 1997-2002. These increase the student pilot population from about 96,000 in 1996 to 135,000 in 2002.

Private Pilots

After a delay as the new student pilots complete their training, the private pilot population will begin to increase and the growth rates are forecast to be 0.9% in 1998, and 4.0% in 1999. For the period 1997-2002, the private pilot population will increase by 4.0% annually which will increase the population of private pilots from 254,000 in 1997 to 309,000 in 2002.

Instrument Rated Pilots

The number of instrument rated pilots will also increase, but lag the growth in student starts. This increase will be caused by the increase in aviation interest, by the need for replacement commercial pilots as many of these pilots reach retirement age, and the advent of new technology in the cockpit, such as GPS navigation. Instrument rated pilots numbers will

increase by 0.9 percent in 1998, by 1.4 percent in 1999 and for the period 1997-2002 will increase at a 1.9 percent annual rate. This will increase the instrument rated population from 299,000 in 1997 to 328,500 in 2002.

Commercial Pilots

The number of commercial pilots will increase at a slower rate and will be stable in 1998, up 1.0% in 1999 and by 0.9% per year for the 1997-2002 period. This will produce commercial pilot populations of 127,800 in 1997 and 133,700 in 2002.

Pilot Summary

After a long decline in pilot ranks, industry initiatives and economic strength will produce an increase in pilot training activities. These initiatives will need to be continued for several years to cause the forecasted improvements. The increases may seem modest compared to the effort and new initiatives involved, but the slope of the pilot population curves over time has been negative and stopping that decline requires a significant effort. The student pilot population declined at an annual rate of 4.2 percent from 1990 to 1997 and a forecasted increase of 7.0 percent for 1997 to 2002 shows an 11.2 percentage point change in the rate—a significant accomplishment.

Flight Activity

Assumptions

FAA database on piston powered light and personal aircraft activity is split into three categories. The panel addressed two of these: the single-engine and multi-engine piston fleet. The amateur built experimental (ABE) aircraft were not discussed and are excluded from this report.

Since the last meeting in 1995 market factors that drive flight activity changes are:

- the Cessna single engine start-up program,
- the increase in production by other original equipment manufacturer companies, and
- the increase in the number of new products entering the market.

These are all spurred by the General Aviation Revitalization Act of 1994, which provided limited tort reform for general aviation by enacting an 18-year statute of repose on the products. This has stood up to several tests in the courts and has allowed the

manufacturers to spend more money in research and development and less to defend product liability cases in the courts.

While these changes were anticipated at the 1995 TRB Forecast Workshop, the benefits are now becoming reality, and the industry initiatives over the past two years have evolved from sketchy plans to market place reality.

Piston-Powered Aircraft Fleet

The piston-powered aircraft fleet is divided into two segments, single-engine and multi-engine aircraft. Fleet age has increased; the average piston aircraft is now 27 years old. With the aircraft population at 129,000 for single-engine and 16,000 for twin-engine, new production will not be sufficient to reduce the average age. However, fleet size should grow—after declining by about 3 percent for the period 1990-1996. Even with the attrition of older aircraft and loss of some aircraft to accidents, the fleet will begin to grow in 1997.

The single engine fleet will grow from 128,848 in 1996 to 129,080 in 1997, 0.4 percent in 1997. The 1998 fleet will grow by 1.2 percent to 130,915 and for 1999 it will grow to 132,486, 1.2 percent increase. For the period 1996 to 2002 the fleet will grow at an annual rate of 0.9 percent to 135,964 in 2002. This growth rate seems relatively modest until one considers the 2.9 percent per year *reduction* that has taken place in the fleet since 1990.

The multi-engine fleet has contracted by an average of 4.6 percent per year since 1990, and aircraft production growth has been limited primarily to single-engine aircraft. This reduction is expected to stop in 1997, with no change in fleet size from 1996. Growth thereafter should increase by 0.3 percent in 1998, and 0.4 percent in 1999. The fleet will stay at 15,937 in 1997 and grow to 15,983 in 1998 and to 16,050 in 1999. By 2002 the fleet is forecast to increase to 16,314.

Flight Hours

Piston-powered aircraft hours flown have declined by 4.9 percent for single-engine, and 6.8 percent for multi-engine aircraft from 1990 through 1996. With the improvement in the general aviation environment, caused primarily by tort reform and the improved economy, the flight hours should increase.

Single-engine flight hours were estimated at 16,169 thousand in 1996, and are expected to grow by 0.5 percent in 1997 to 16,250 thousand. 1998 will bring a 1.4 percent growth to 16,484 thousand and by 1999 flight hours will grow by 1.5 percent to 16,728 thousand. For the period 1996-2002 the flight hours for single engine piston aircraft will grow by 1.5 percent per

annum to 17,680 thousand.

Multi-engine piston-powered aircraft flew an estimated 2,595 thousand hours in 1996 and this reflects a 6.8 percent annual decline since 1990. In 1997 the figures are expected to show an improvement of 0.2 percent to 2,600 thousand hours and in 1998 to 2,610 thousand for 0.4 percent increase. 1999 estimates are 2,623 thousand hours—a 0.5 percent increase—and the period 1997-2002 will show a 0.5 percent growth rate to 2,681 thousand hours in 2002.

A concern of the panel was that FAA data have shown large fluctuations in flight hours—both up and down—in past years, indicating a possible problem that needs to be explained, validated and/or corrected to ensure that this is an accurate indicator of industry health.

Summary

The panel was optimistic about growth of the light and personal aircraft market—one direct result of the improved climate provided by the General Aviation Revitalization Act of 1994 and the continuous improvement in the economy. If the economy stumbles or the regulatory environment becomes less friendly, this activity could return to its previous downward trends. Therefore, the industry initiatives to spur flight training activities and industry lobbying efforts to prevent over regulation will be critical to continuing the positive growth trends that have been developed in the past two years.

Overall, this is the most optimistic that industry participants have been in many years, and the panel felt that the upward trends forecasted have been hard-won results of a long battle to turn the industry around.

VERTICAL FLIGHT

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