

Most important are airport constraints, particularly airspace/airside limits at large hubs. Access to large airports may have no simple solutions, as large aircraft are replaced by a large number of smaller aircraft. Airports already having peak hour congestion will have increasingly severe problems as more aircraft desire access at peak times.

Smaller aircraft will likely generate less airport revenues through user fees than the larger aircraft they replace, complicating the problem for the airport. With expected changes in the Airport Development Aid Program (ADAP) law and funding, and the practical difficulty of expanding any airport today, airside capacity limits could be a major constraint on operators of small aircraft. Allocating capacity by pricing or public benefits would have just as serious an impact on small aircraft operators and on the affected communities.

Other constraints at large airports are access to airport landside facilities, and to the airport itself. Gates, ticket counters, etc., must be obtained at rates which do not unduly burden the smaller airline, yet provide adequate capital for the airport. Problems in getting to and from the airport itself to make short-haul air trips increase the attractiveness of other modes. At smaller airports, problems are lack of facilities, both airside and landside; the financial capability to resolve these lacks; competing land uses for airport property; and the future availability of fuel, particularly aviation gasoline.

Lack of center-city heliports in large hubs limits the role of the helicopter, whether from center city to outlying airport, or from city to city. Providing heliports raises issues including noise, finances, and competing land uses for valuable real estate. Until there are such facilities, the role of the helicopter cannot be fully exploited.

Finances are potential limitations to short-haul growth. For example:

The use of the larger turbine equipment increases the entry cost for new operators.

Fuel costs and availability, government regulations, and other operating costs will continue to press operating costs upward.

Labor and union influences are expected to increase short-haul costs.

These financial considerations are expected to mean consolidation of many carriers, and slower growth of new carriers.

Regulatory factors will impact the growth of short-haul activities. Interestingly, the loss of subsidies and the loan guarantee program were not viewed as major factors from an industry standpoint. However, losing subsidy in 1988 may mean loss of service for 80 to 100 small communities. Loss of service in these markets will be offset to some extent, for the industry, by the likely gain in markets abandoned by local service carriers in the absence of subsidies.

Loss of mandatory joint fares would have significant local impacts, but a lesser impact on industry growth.

Other issues and potential constraints identified included:

Aircraft availability - the proper aircraft for the type of service offered.

Passenger considerations - safety, and quality of service.

Alternative modes - surface transportation, including auto and high speed rail.

Future Scenario

On such assumptions the group formulated a possible 1985-1990 scenario for the short-haul air travel industry. There will be:

Fifteen to twenty Air Wisconsin type operators utilizing 30 to 60 passenger aircraft, and feeding traffic from small and medium communities into larger hub facilities.

A greater number of operators using 15 to 30 seat turbine aircraft also feeding larger hubs, but generally from smaller feeder communities. This includes the small community subsidy program.

Ten or so low fare, high frequency, jet operators providing point-to-point O&D service in high density markets.

Continuation of the existing feeder activities of the larger carriers, such as Delta at Atlanta.

Research Recommendations

Three issues needing more research were identified:

Access To Large Hub Airports. Ensuring adequate access for short-haul operators, particularly those utilizing small equipment, is a difficult problem. "Arm's length" allocation or pricing could virtually eliminate small operators from large congested facilities. Expansion of these facilities may be difficult due to environmental or financial limitations.

Center-City Heliports. If the helicopter is to be fully utilized in specialized roles for which it is best suited, adequate downtown facilities must be provided. In view of this need, questions on financing of these facilities, and other operational considerations, must be resolved.

Aircraft Types. For reasons including reliability, airline operating economics, aviation gasoline availability, and the elimination of subsidies, questions were raised regarding the future role of small piston twins in scheduled commuter service. A limited role was envisioned for these aircraft in the future, and questions were raised regarding the large number of small aircraft in the current FAA forecasts.

GENERAL AVIATION

Vincent J. Drago, Battelle Columbus Laboratories

The purpose of this mini-session was to portray the present and probable future of general aviation, identify and discuss important assumptions and issues, and recommend areas of research. This is

a summary of the various viewpoints expressed during session discussions. Particular statements do not necessarily represent a complete consensus.

The General Aviation System

General aviation has four parts: business, commercial (air taxi, aerial applications, etc.), instructional, and personal. Rising costs will shift activity away from the personal flyer and his single-engine piston aircraft, toward business and executive users in more sophisticated planes. "Personal" pilots will probably form partnerships and flying clubs, or switch to sail planes, power gliders, and the like. This shift may decrease the number of student pilot starts. Therefore, a study of student starts is a good area for future research. The shift toward business flying will be accentuated by the decrease in airline service to smaller cities which the business traveler must visit. This decrease will also promote more air taxi activity.

Business flying will continue to prosper because of its inherent economic advantages to U.S. business. Of the "Fortune One Thousand" companies about 520 use business aircraft. The corporate flight department is identified as a profit center in some companies, actually adding to profits. The aircraft are made available to everyone in the company, not only the chief executive officer. Aircraft are allocated according to the number of people flying. Since the chief executive officer normally travels with only two people he may go in the smallest aircraft. This trend is increasing. The airplane is no longer thought of as the royal barge but rather as an important part of the company's business philosophy. Business use has filtered far below the "Fortune One Thousand" companies, with greater use of owner-flown aircraft. A General Aviation Manufacturers Association survey found that over 75 percent of general aviation is for business in some way.

General aviation is an integral part of the aviation system, complementary rather than competing with the airlines. Concentrating the airlines on major routes and allowing general aviation to fill in shorter, less dense routes with more efficient aircraft, general aviation can work with the airlines to provide an effective air transport system.

Important Issues

These fall into four areas: new technology, information requirements, regulatory impacts, and airport and airway facilities.

New Technology Technological areas include composite structures, low-cost turbine engines, avionics, propellers, and agricultural aircraft. New technology will have a positive but evolutionary effect on the demand for general aviation aircraft. The reasons are three-fold -- time and money are required to develop the new technology; long certification processes are required; and once approved, it will take time to incorporate new technology into the fleet. Although manufacturers will incorporate composite materials into their aircraft throughout the 1980's, significant weight reduction will not be achieved in the next decade.

Regarding engine technology, turboprop power plants and pressurization of lighter planes will enhance the use of smaller, more fuel efficient aircraft for business. Some believe that in the long term general aviation will have to rely on jet fuel alone due to the unavailability of aviation gasoline. There is a need for a more efficient, low cost, general aviation turbine engine with costs one-half to two-thirds lower than at present. Development of this technology is a large task requiring the combined efforts of government and industry. Improved

propeller efficiency will have a positive effect on the acceptance of general aviation aircraft powered by piston and turboprop engines. However, a great deal of research is needed, especially for the development of composite propellers.

Avionics will offer the greatest advancements in technology over the next ten years. These will enhance the utility of owner-flown aircraft and will make sophisticated single and light twin engine aircraft more attractive for business. The greatest effects of avionics will be better flight management, better fuel control, and eventual weight savings due to aircraft design changes.

Agricultural aircraft are now being surpassed by superior ground-based equipment. This will mean less demand for such aircraft over the next decade. This industry needs new technology.

Informational Requirements FAA forecasts are not used by many members of the general aviation community. These would become more useful if broken down by user category (personal, business, etc.), by aircraft type (single-engine piston, etc.), and by various sections of the country. FAA and CAB historical data were considered very valuable. There was concern about the continuation of CAB data in view of the CAB's impending sunset. There is need for better data for non-towered airports, and for accurate and timely student start data by month, based on actual student starts rather than student applications processed which is the current practice.

Regulatory Impacts Three issues were identified for general aviation during the next decade: user taxes, defederalization of airports, and noise regulations. With respect to user taxes, some participants believe that the air transportation system provides a benefit to the general public, and the government should therefore contribute an amount proportionate to this benefit to maintain the system. There was also concern by some that user costs will not be allocated in accordance with use of the system by general aviation, and that general aviation may bear a disproportionate burden. They also believe that general aviation is paying for components in the system for which it never asked. The general aviation community does not oppose user taxes provided: (1) they are properly allocated; (2) they are equitably distributed; and (3) the general aviation community has some control over how the funds are used.

On airport defederalization, there is concern that defederalized airports, to recapture some of the lost Airport Development Aid Program funds, might impose high landing fees. The general aviation community believes these can be easily absorbed by the airlines, but would impose an unacceptable financial burden on general aviation operators.

On noise regulations, the FAA should retain control over regulatory powers concerning noise, and provide a consistent national policy. Some participants feel that this power has been abdicated to local authorities.

Airport and Airway Facilities There is concern in general aviation over the decrease in the number of public airports, and the lack of reliever airports. Some believe that funds should be provided to support publicly used but privately owned airports. It was also recommended that the FAA develop a direct traffic control system for point-to-point transportation. This would decrease general aviation operating costs and increase demand.