

Discussion Panel Report
**AIRPORTS AND
INFRASTRUCTURE**

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Introduction

The Airports and Infrastructure Panel was charged with examining, in a broad, comprehensive manner, the trends that will drive aviation demand over the next several years and providing an estimate of the direction and effects of these trends, drawing on the broad and diverse expertise represented on the panel. In this regard this panel differed from other panels in the workshop, which focused primarily on specific portions of the FAA forecast. The panel devoted itself to analyzing the FAA forecast methodology, discussed possible changes or improvements to the way the forecast is presented, and reviewed a wide range of factors that will influence the growth of aviation in the U.S. over the next several years.

FAA Forecast

The panel opened its discussions by devoting a significant amount of attention to the FAA forecast. Although it is well recognized that the FAA's purpose in developing aviation forecasts is as an aid in determining FAA workload requirements, the panel wished to explore their utility to those involved in airport planning and the preparation of environmental documentation in support of airport development projects. A question was raised about whether the

FAA could issue its forecast as a range rather than as exact numbers. In the view of some, the present FAA forecast has credibility problems. Providing the forecast in terms of a range may be more credible. For example, a probability distribution could be assigned to the forecast numbers. It might be useful to identify a confidence band around a central forecast. Or it might be more effective for scenarios to be used, possibly two per airport. Perhaps a narrative could accompany the forecast describing underlying characteristics and assumptions.

Because of the time lag between preparation of an airport master plan and the preparation of environmental documentation in support of airport development, a different forecast is often in effect at the time of environmental processing than was used in preparation of the airport master plan. This creates problems in satisfactory completion of the environmental work. Because actual aviation activity seldom agrees with the forecast, publication of the forecast as a range would help maintain the validity of the forecast over the time required to complete environmental documentation.

Panelists then turned to consideration of the extent to which capacity constraints affect the level of demand. The FAA forecast has historically been demand based and not constrained by availability of supply. The forecasting of demand without consideration of supply is problematic in

the view of some panelists since it is known that supply affects demand. Is an optimum market solution consistent with a demand-driven planning process? The forecasts don't indicate the appropriate response to demand.

The panel discussed the quality of the FAA forecast and offered suggestions on how quality can be maintained and improved. The quality of a forecast is dependent upon the quality of the underlying data. As factors influencing the growth of aviation change, the old forecasting techniques may no longer be satisfactory. The changing characteristics of the aviation world suggest that the current means of forecasting may not be of the highest quality and that, over time, the FAA will have to account for these changes to improve the quality of the forecast. The FAA should consider investing more resources in more comprehensive data collection. Some organizations such as the National Business Aircraft Association (NBAA) collect data that may be useful to the FAA in developing the general aviation forecast. The use of the air traffic organization's Enhanced Traffic Management System (ETMS) may be helpful in developing the general aviation forecast. The International Air Transport Association does a survey that includes airport data that may be helpful to the FAA. There is also a need to develop a good method for counting or estimating operations at nontowered airports. However, the panelists recognized the current budget constraints that limit the FAA's forecasting capabilities.

The panel concluded its discussion of the FAA forecast by offering a wish list of actions the FAA could take with respect to the forecast that would assist airport planners in carrying out their airport system planning and development responsibilities. These included the following:

- Because air cargo is an increasingly important segment of aviation, the FAA should develop cargo forecasts;
- The FAA should publish the origin-destination survey data it collects for the top 40 airports, at least in summary form;
- In lieu of hub forecasts, the FAA has focused on developing forecasts for the top 40 airports in recent years—FAA may want to consider returning to performing hub forecasts;
- Perhaps the general aviation portion of the FAA forecast should differentiate between business and recreational activity; and
- There is a need to be able to derive peak-hour demand from national forecasts, particularly for terminal design.

System Capacity

The panel next focused on the topic of system capacity. The discussion revealed that panelists were divided in opinion

on whether or not gridlock in the aviation system is imminent in spite of increasing delays. Some observed that, judging by their actions, the airlines apparently think not. There is no sign that airlines will utilize capacity more effectively as they continue the trend toward the use of smaller aircraft at congested large hub airports. It was noted that a countervailing factor is the planned addition of new runways at half of the large hub airports in the U.S. The increasing complexity of environmental documentation review processes and litigation could delay construction of at least some of these.

There was consensus among the panelists that it may be useful to know where supply and demand imbalances exist—where annual operations at a particular airport are approaching or exceeding that airport's estimated annual service volume. This could take the form of a narrative discussion in the forecast document in which airports are identified where capacity limitations inhibit realizing unconstrained forecast demand.

Some concern was expressed, on the other hand, that federal intervention and education, though well intentioned, may cause more harm than good by focusing attention on the perceived demand-capacity imbalance. However, a number of panelists felt that congestion must be affecting demand. There is probably latent demand that would become apparent if congestion could be alleviated. Adding to the complexity of this issue is the fact that at hubbing airports such as Chicago O'Hare, airlines sacrifice connecting traffic to other airports as origin-destination demand increases.

Regional Jets

There was general agreement among panelists that regional jets will figure prominently in the growth of aviation over the next several years. Discussion centered on whether the growth in regional jet commuter activity would be accommodated primarily at existing hubs or if regional jets will begin to serve other airports by overflying hubs, for example. There was general agreement that regional jets are probably going to be a factor in higher growth at underutilized medium-sized and small hub airports with implications for U.S. commuter/air taxi enplanement forecasts. The issue of possible reuse of existing turboprops on new routes was mentioned.

International Aviation

Turning to the influence of international aviation on air traffic growth, the panel observed that transoceanic traffic is a very volatile segment of aviation because mergers, interline agreements, and code sharing can affect transfers and therefore the airports at which transfers occur. Some 70

to 80 percent of transoceanic travel is transfer traffic. There was agreement that alliances among air carriers are primarily a defensive measure that may bring about some small savings but little in added revenue.

New large aircraft may become viable for Atlantic and Pacific transoceanic traffic in about 10 years.

Los Angeles and New York will continue to be primary gateways for newer transoceanic markets, but as particular routes mature, the carriers serving those routes will increasingly overfly the coastal airports in favor of the interior megahubs such as Atlanta, Chicago, Dallas–Fort Worth, and, ultimately, Denver. Spillover from these hubs will increase traffic at other airports.

General Aviation

Some length of time was devoted to general aviation activity and general aviation airports. Concern was expressed that airspace congestion in parts of the country is a constraint on the growth of general aviation. General aviation is at risk of being priced out or squeezed out of access to larger metropolitan areas. However, most general aviation pilots are satisfied with being able to access a metropolitan area via a reliever airport.

On the plus side, it appears that fractional ownership of general aviation aircraft will have a positive effect on the growth of general aviation. Fifteen percent of new aircraft deliveries are for fractionally owned aircraft. Most of this growth will be experienced at relievers and larger general aviation airports.

There was some speculation about the demand on the airport system that may result from the Small Aircraft Transportation System and whether the tiltrotor aircraft will receive widespread civil use, with no consensus reached.

With respect to general aviation airports, there was some support for the idea that FAA design standards for these airports may be excessive and that there may be a need to reevaluate design criteria for general aviation airports.

Finally, there was agreement that a way should be found to keep privately owned airports a viable part of the system because too many of them are closing. All-weather capabilities will also need to be developed at more airports. It is recognized that the FAA is limited in how supportive it may be in this area in that most airports threatened with closure are not in the National Plan of Integrated Airport Systems and therefore not eligible to receive federal financial assistance.

Cargo

The panel discussed the increasing importance of the air cargo segment of aviation. The panel believes that there is a need to develop a cargo forecast on an airport-by-airport basis and that integrated carrier activity should be forecast separately from commercial air carrier activity. It was observed that the continued growth of air cargo has implications for noise concerns and airport landside planning and development. Another factor is that the trend away from one-day service to two- or three-day service may favor commercial carriers over integrated carriers such as FedEx and UPS.

Environmental Concerns

Noise may be of increasing concern as more aircraft are put into service to handle passenger growth, mitigating the effect of Stage 3 conversions of existing equipment to some degree. However, it appears that air quality is fast overtaking noise as a major concern in the environmental assessment process for proposed projects at many locations. In some cases, air quality compliance considerations will either curtail or stretch out the pace of airport development. Increases in analysis requirements, review time, and probable litigation all combine to stretch out environmental approval schedules. The location of an airport in an air quality nonattainment area certainly presents that airport with a major constraint on expansion. The operation of more sophisticated general aviation aircraft (turbojets) is also causing environmental problems.

New Technology

Although little time was devoted to discussion of the effect of new technology on the growth of aviation, it was observed that teleconferencing (or video conferencing) may replace a certain amount of business travel. Video conferencing via the Internet may eventually become a factor. However, not much research in this area has been reported by the aviation industry. Changing technologies can also increase airside capacity by reducing the separation requirements for arriving and departing aircraft, but these may be slow to be realized.

Conclusions

A number of factors could change or impede realization of projected demand levels:

- Degree to which airfield capacity will be a constraint;
- Effect of compliance with noise, air quality, and other environmental regulations;
- Role of regional jet service—whether it will be primarily on hub-and-spoke routes or direct and the effect that scope clauses will have on its use;
- Effect that changing influences in international aviation such as code sharing, global airlines, and new large aircraft may have on airport usage, causing increased international traffic at large inland transfer hubs; and

- Degree to which general aviation growth will be affected positively on the one hand by fractional ownership and negatively on the other hand by difficulties in protecting existing general aviation airports and restricting access to major metropolitan areas.

A variety of steps could be taken to improve the utility of FAA forecasts for airport planners:

- Presentation of forecast values as a central forecast with a range rather than a single number;
- Publication of information gathered on origin-destination versus transfer traffic at major airports; and
- Development of cargo forecasts on an airport-by-airport basis.