Challenges for the Region's System of Scheduled Passenger Jet Services

Introduction. As we reflect on the results of the forecasts, as presented in the preceding article, the following questions arise: What have we learned about the main air transportation issues that lie ahead for the New England region and how might they best be approached? In this article we address these questions, drawing on the primary themes of the NERASP study: a strong commitment to developing a New England regional aviation strategy and a focus throughout on acquiring - and applying - an understanding of the long-term interactions involved in regional aviation systems development. These interactions involve consideration of passenger needs, observed travel behavior, how the air carriers respond to market signals, and the lead-time required to accomplish development of major airport facility projects. From all of these considerations we have distilled a set of strategic objectives and associated issues to be pursued.

Looking ahead - potential trend breakers.

As shown in the previous article, "Understanding Regional Airport System Dynamics" the development of the regional system has been greatly determined by the continuing evolution and innovation in airline competitive strategies, in response to large-scale forces arising from our economy, society, and aviation technology. In order to develop a strategy that can cope with the risks and uncertainties behind these forecasts, it is useful to speculate about new events that could create major shifts in current trends in air transportation.[1] These include: the price of flying, societal and global issues, advances in aviation technology, and changes in airline business models. These are discussed on the next page.

[1] For a more thorough background on this topic see "Trends and Trendbreakers," Technical Paper #3, December 2002. (available on NERASP CD. See back cover for "how to order.")

The price of flying has until recently been in a long-term decline. Reasons for this include improved aircraft technology, airline business practices, and economies of scale associated with a rapidly expanding market. While these forces are predicted to continue to bring reductions in airline yields (fares charged per seat mile), several near-term developments could reverse this trend:

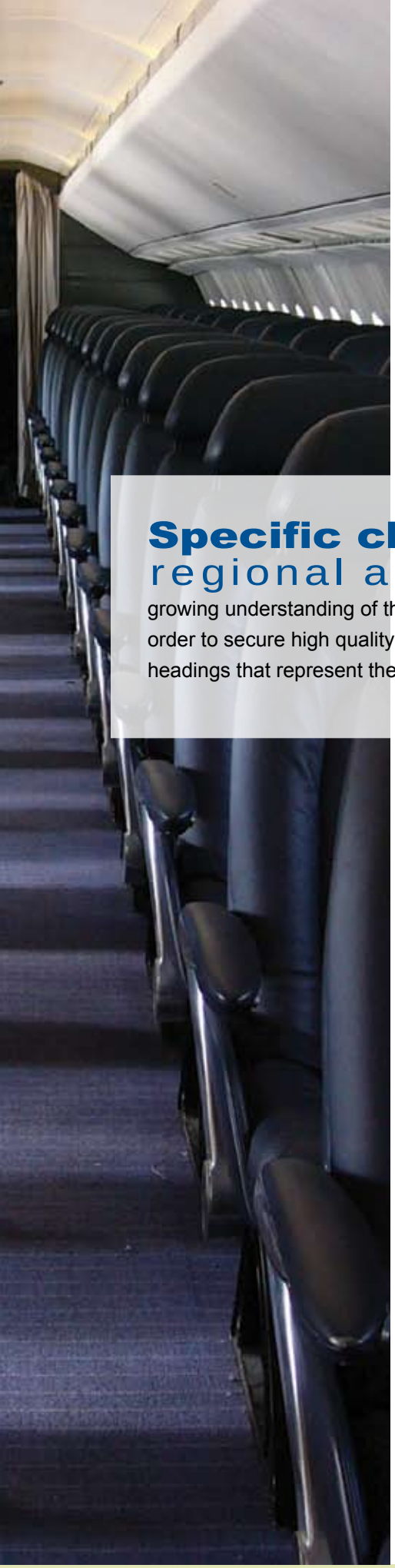
- There is an ongoing discussion of the need to re-structure the user fee system as part of the upcoming Re-authorization of the Federal Aviation Trust Fund. This could create changes in airlines service and pricing strategies as well several components of general aviation activity.
- The volatility of and current high cost of jet fuel has already altered airlines' decisions on fares and services, especially on longer routes.
- Environmental fees, such as taxes on air quality emissions or the need to purchase emission reduction credits could have dramatic financial implications for air carriers.

Social and global issues can have a major impact in a variety of ways:

- Pandemic outbreaks could significantly dampen passenger activity, perhaps producing severe financial hardship within the airline industry. Growth in terrorism could also lead to dramatic drops in passenger activity.
- Globalization, especially involving the more populous under-developed nations, could expand international travel with New England.
- Immigration patterns may eventually lead to greater air travel demand to new overseas markets.
- The retirement of the baby boomer generation may expand air travel markets. This would include leisure travel and travel generated by a growing trend to retire in countries with a lower cost of living.

Advances in aviation technology usually produce new opportunities for expansion of air travel services. These could include:

- The reliability and safety of air travel can be enhanced through improvements in navigation and surveillance technology, especially by exploiting satellite-based systems and in-cockpit avionics.
- "Micro-jet" technology and other breakthroughs in small aircraft technology may expand the market for point-to-point, on-demand flying. This could erode the ability of scheduled airlines to sell premium fares for first class passengers. It could also require significant enhancements to the air traffic system to expand airspace capacity.



Changes in airline business models to pursue greater efficiencies could include:

- Reductions in operational overhead through greater use of common vendors for terminal services, including ticket processing, baggage handling, and ramp services. This business model would make it easier for airlines to enter smaller markets.
- Expanded use of information technology for "e-ticketing," reservations, dynamic pricing to achieve higher load factors, re-routing passengers from cancelled flights, integrating reservations for ground transportation services, remote check-in, etc.

Specific challenges to New England's regional airport system.

The results of the forecasts, along with our growing understanding of the dynamics of the airport system, suggest a variety of challenges to be addressed in order to secure high quality air transportation across New England. These challenges are described below under headings that represent the objectives for addressing them.

Provide airline services close to centers of passenger demand.

The forecasts from the airport choice model identify where services can be enhanced to reduce "leakage" from airport catchment areas.

- Even with continuing expansion of regional airport services, the majority of New England passengers will fly through Boston Logan International Airport. Maintaining reliable and efficient airline services at Logan will be critical to how well the system meets the region's needs for air transportation.
- New Haven has the largest under-served passenger base. Improving service there could reduce the number of travelers on congested highway corridors. Complicating decisions in that direction is the fact that New Haven has the region's most challenging site problems for airfield and landside facilities.
- Worcester's catchment area is comparable to Portland's, yet it has lost service due to general financial problems of the airlines and direct competition from adjacent catchment areas, primarily Providence and Logan. Where New Haven is constrained by facilities, Worcester is constrained by airline industry practices. The forecast models demonstrate that removing airline reluctance to duplicate services could support viable service for almost 1.5 million passengers by 2020.

- Southeast Massachusetts and Cape Cod have a large base of passengers traveling on domestic routes outside of New England. Further analysis can determine the most beneficial way to meet the needs of the growing population and diversifying economy of that area.
- East Asia and India are emerging as key global markets for New England services and are becoming competitive in the areas of new technology research and development. Development of convenient non-stop service to those destinations is a current priority for Logan. This means that the airport must provide a level of service that is competitive with other U.S. international gateway airports. While delays at Logan have declined with the loss of traffic since 2001, this airport is now positioned to grow and will be vulnerable to significant delay problems in IFR weather.[2]
- To support the economic activities of Providence and Manchester, there is a need to develop facilities to support non-stop flights from those cities to the west coast. Airlines have been reluctant to use Manchester's longer runways to accomplish this if they cannot match the service at Providence.

Enhance the reliability of scheduled airline service for all airports in New England.

While periodic delays are tolerable, especially when traveling significant distances, lengthy delays and cancellations can be extremely costly to passengers. If service due to congestion at Logan erodes to the point where passengers frequently experience missed connections or delays, then the "true cost" of air travel from New England may become too high to sustain the region's competitiveness. Likewise, the ability of smaller airports to support low-weather minimum operations is essential in order to maintain airline services.

This was borne out by the experience of airlines operating out of Worcester in the 1980s when the inability to land and depart in low ceilings and visibility led to frequent schedule disruptions. Although significant investments have been made to reduce this problem, a perception remains among a segment of airlines and passengers that the airport is unreliable. To achieve and maintain a reputation of reliable service despite severe weather patterns New England airports must:

- Assess the capability of Boston Logan's airside and landside facilities in light of these forecasts as well as changes in aircraft fleet mix and airline service strategies.
- Support implementation across the system of the next generation (NexGen) navigation and surveillance technology systems currently being developed by FAA.
- Minimize leakage into Logan from the catchment areas for Providence, Manchester, Worcester, and Portland.
- Support continued growth of service at Bangor and Burlington Airports since this is reducing their reliance on Boston for connecting flights.
- Support proper application of dynamic, peak-period management programs when proposed schedules exceed VFR capability as currently adopted by Logan.

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through clouds is allowed; under VFR it is not.

Secure the stability of regional airports.

- Encourage a diversity of airlines at all airports in order to minimize risks associated with heavy reliance upon the fortunes of a single airline.
- In weaker markets, identify ways to reduce risks for new entrants and provide incentives for maintaining service over the long term.
- In order to secure and maintain services at smaller rural markets, assure that such airports have facilities that allow airlines to operate efficiently and with reasonable user fees.

Develop "niche" market airports (e.g., Bedford and Portsmouth) to enhance system performance and resiliency.

These airports have facilities that offer opportunities to enhance passenger services in specialized areas. If these facilities became unavailable for any reason, it would be almost impossible in the future to develop runways with the same proximity to the Boston market. It is therefore essential to the long-term interests of the entire system to preserve these runways. Portsmouth will soon be investigating its potential to accommodate the new family of very large transport jets. It has previously hosted charter flights and this is one of several niches that will be examined in the future.

Improve the relationship of the New England system to adjacent airport markets such as Albany, White Plains, and Newburgh.

It is important that investment decisions for New England airports that compete with these New York airports are aware of developments that could impact future passenger levels and revenue forecasts. Likewise it may be relevant to environmental and investment decisions at these New York airports to understand the system benefits they could provide to New England passengers.

Improve ground access to the New England airports.

The portion of air travel that occurs within an aircraft's cabin is obviously only one component of the trip from the passenger's point of view. Increasingly, the ease of getting to the door of the airport terminal and the cost of parking or alternative transportation services may be just as influential in planning the trip as the price of the ticket and flight times.

- Airport ground access times have recently changed for Boston with the Third Harbor tunnel dramatically reducing travel times to downtown Boston and communities served by the Massachusetts Turnpike.[3]
- There is a planned new access road to Manchester from Route 3 that will significantly reduce access to communities southwest of Manchester.
- The City of Worcester is working with its regional planning agency to address the need to improve access to Worcester Airport as part of a project to improve east-west transportation for this area. The NERASP airport choice model indicates that,

[3] The temporary closure of this tunnel following the unfortunate fatality from an improperly secured ceiling panel served to illustrate how valuable this new access has become.

in the Base Case forecast, improvements equivalent to a ten-minute reduction in access time from I-290 could increase Worcester Airport passengers by 110,000, or 39 percent.

- T.F. Green Airport has commenced the development of an Airport Rail Station with an associated parking garage. But in order to be of value to airport passengers, rail service must provide sufficient frequency and hours of service for air traveler requirements.
- New models of ground access services should be explored for their ability to improve the ability of regional airports to increase their share of passengers.
    - *Integrating express bus service to Logan and Providence at the Route128 Railroad Station would offer passengers a variety of appealing itinerary options that could include combining airports or even modes.*
    - *Use of information technology and other technology could help optimize coordination of door-to-door services to improve their efficiency.*
    - *Manchester is experimenting with free bus service to the Woburn transportation center and a mass transit station in Somerville.*

Improve the environmental **review process.**

Airports are obviously a conspicuous component of a community's landscape. In addition to the travel benefits they create, they can also generate off-site impacts such as traffic, noise, and air quality. Conflicts arising from the proximity of airports to communities has in the past given rise to complex and lengthy environmental review processes. This has occurred even when off-site impacts are relatively modest. Sometimes environmental reviews are so lengthy that the original impacts under investigation are reduced by virtue of the inevitable advances in aviation technology and operating practices. This can affect the original objectives concerning purpose and need as well as the accuracy of projected impacts under conditions of altered fleet mix and activity levels.

Emerging Market

By 2020, the Cape Cod market will have grown to almost two million passengers flying to destinations beyond New England and the NYC area. This reflects the Cape's evolution from primarily a seasonal vacation/retirement community to a more balanced year round economy. Because the closest airport for long trips is Logan, most of these passengers will be driving along the congested Route 3 corridor or traveling west to Providence.

The primary airport serving Cape Cod is Barnstable Municipal Airport with intra-regional service to the islands, Boston, and the NYC area. Its longest runway is 5,425 feet, and its expansion is constrained by major arterial roads, substantial development, and natural resources. It has never been evaluated for providing services beyond the Boston and New York City markets.

In order to address these concerns there is a need to:

- Build acceptance for the regional airport strategy to enhance the capacity of each airport to provide reliable and efficient airport services for its market area.
- Develop - and communicate - an understanding of purpose and need focused on long-term public interest versus a specific airline's immediate needs.
- Apply the principles of FAA's guidance for streamlining through early integration of the environmental review process in planning.
- Use scenario forecasts or principles of risk analysis to provide forecasts of impacts that cover the range of uncertainty involved in predicting levels and types of aviation activity.

Alternative modes to air travel. This study team reviewed current analysis of AMTRAK service conducted by the Volpe National Transportation System Center. It was determined that high-speed rail is a valuable complement to the region's air service system. Each mode offers advantages that depend on the details of the journey and the needs of the traveler. At the same time, future enhancements to high speed rail service appear less likely to impact airport facility planning than air carrier decisions concerning schedules, fares and aircraft size. Improved ground access between Manhattan and the New York City airports may also reduce the relative advantage of rail for city center to city center trips.

There's always something new! One of the exciting aspects of being involved in air transportation is that it is constantly changing. Therefore, while the strategies discussed in this document are based upon a 2020 forecast, the most reliable prediction is that these strategies must evolve and adapt to the ever-changing nature of passenger needs, airline innovations, and our improved understanding of their interactive relationships. This will require ongoing review of market conditions as well as updates to this plan based upon the variety of setbacks and new opportunities that are bound to present themselves through the future. Given what this coalition has accomplished in the past ten years, continuing this collaboration through the next decade promises to be a very rewarding investment of effort for securing the region's air transportation needs.

While the system can continue to serve this area from Boston and Providence, the size of this market means that there is also an opportunity to improve air transportation services for the needs of the industries and population on the Cape. Over the long term it also represents another opportunity to reduce congestion going into Boston. Identifying the variety of alternatives to accomplish this and how they would relate to ongoing growth management planning for the future of Cape Cod could be a very timely and valuable initiative.