costs by offering more direct long-haul routings and decreasing spacing requirements.

Outsourcing functions such as maintenance, catering and revenue accounting may provide additional cost savings for carriers. Several large European carriers have successfully outsourced their revenue accounting functions to specialized third party providers in Asia. Maintenance outsourcing continues to be a growing activity worldwide, but will remain problematic for major U.S. carriers holding strong labor contracts.

Alliances have the potential to reduce purchasing costs by bringing greater volume and purchasing power to supply contracts. Additional savings could result from sharing resources such as sales forces, reservations personnel, maintenance facilities, terminal space and so forth. The International Airlines panel later noted, however, that global marketing alliances generally have not yet realized significant cost efficiencies. The panel concluded that equity stakes between carriers or purpose-designed joint ventures may be prerequisites for meaningful cost reductions.

Opportunities for Improved Revenue Generation

Alternative Distribution Channels

Technological improvements in distribution may also have a positive effect on revenue generation in the coming years, although the primary impetus behind alternative distribution channels such as the Internet and electronic ticketing has been to reduce costs.

Airlines are starting to set up sites on the Internet to sell discount tickets (American Airlines "NetSAAvers" and USAirways' "E-SAVERS," for example). These "cyber-fares" offer deep discounts to sell off perishable seat inventory at the last minute.

Other airlines, including American, Lufthansa, Cathay Pacific and Canadian have offered fare auctions on the Internet, selling seats to the highest bidder. The philosophy behind such auctions again is to sell off seat inventory that would otherwise go unsold. Fare auctions offer an additional advantage to airlines by providing market intelligence on consumer willingness to pay that can be useful for future pricing decisions.

Currently, Internet ticketing is limited mostly to weekend travel. Airlines so far have resisted extending Internet ticketing to weekday flights to avoid diluting business traveler fares.

"Cyber-fares" have the potential to stimulate travel demand by making low fares and seat availability information more accessible and transparent to the end consumer. However, the increased demand would come at the expense of yield. Since U.S. carriers already are operating at very high load factors, it is questionable how much stimulated demand could be accommodated in the short- to medium-term.

Internet ticketing is likely to increase as a share of total distribution activity, with some long-range estimates projecting that up to half of all air travel sold will be via the Internet. The role of travel agencies will not disappear; and they are still expected to be widely used for corporate travel and will continue to sell inclusive travel packages to leisure travelers in Europe. Furthermore, travel agencies themselves are beginning to branch out into Internet ticket sales.

Impact of RJs

The joint panels noted the increasing importance that regional jets are likely to have in the U.S. and overseas air transport markets in the future. As of September 1997, over 700 regional jets were in service, on order or on option in the United States.

Fifty-seat RJs have trip costs one-half to two-thirds lower than 737s, and can turn a profit with loads of only 25-27 passengers. They are expected to strengthen hubs and open up new point-to-point route opportunities.

With a vast number of RJs entering the U.S. fleet over the next few years, the regional airline share of U.S. domestic passenger traffic will continue to increase.

Determinants of Passenger Demand Forecasts

The panels discussed some of the main economic determinants of traffic growth, and noted that GDP, although a primary driver is by itself insufficiently explanatory. Other important determinants that should be considered include population, age distribution, income distribution, immigration trends, exchange rates, quality of air service, and competing transport modes.

DOMESTIC AVIATION

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Introduction

Although domestic airlines appear to be on a stable growth trajectory, concerns about federal policy, airport user fees, and business-travel demand loom ominously on the horizon. Not only do these issues raise important questions about future profitability, they suggest that the existing rate of expansion will be difficult to sustain.

The panel of experts, representing domestic air carriers, agencies, consultants, and academics, considered the assumptions behind FAA forecasts and emerging issues affecting air travel demand. They evaluated the evolving character of the industry since the previous panel gathering in 1995.

On the whole, panel members are bullish about the short- and long-term outlook for domestic aviation. Major carriers, such as American, Continental, Delta, Northwest, and United, have made important strides in bringing stability to the marketplace. These carriers have refined their revenue-management systems, eliminated unprofitable hubs, and exercised restraint in adding new capacity to their markets.

Interpreted broadly, these developments suggest that the industry will be able to expand without risking a repeat of the cataclysmic 1990-1993 period, when carriers were ravaged by cyclical price cutting and significant excess capacity.

Nevertheless, the panel urged moderation in making long-range traffic projections. For reasons summarized below, panel members believe that both traffic growth rates and yield reductions embedded in FAA forecasts, while reasonable, are marginally too high.

The Evolving Marketplace

The panel identified several developments—none of which were fully anticipated at the previous gathering in 1995—as hallmarks of the evolving marketplace:

(1) the sharp reversal of federal policy on several aviation issues,
(2) surging interest in regional jets, and
(3) the stabilization of passenger yields.

These developments, considered separately below, portend significant change to the quality of service to small and mid-size airports, the prices that certain travelers pay, and the distribution of traffic among various classes of carriers.

Federal Policy

The progression of federal policy since 1995 has unexpected and largely unfavorable consequences for domestic airlines. The burden of these policies is likely to be borne primarily by start-up carriers and buyers of discount fares.

No longer does FAA accept as its mandate the task of promoting aviation or supporting start-up airlines as a means of enhancing industry competition. To some extent this reversal of policy was caused by the TWA and Valujet crashes and subsequent media attention, which cast the safety record of start-up airlines in an extremely unfavorable light.

The financial effects of negative publicity has been greater and more persistent for newly-created airlines than many anticipated. Applications for new carriers have dropped precipitously over the past several years. Moreover, rules relating to the safety of small aircraft in the wake of recent accidents are emerging as a major barrier to sustaining service to small communities through the Essential Air Service program.

Second, the Federal Government is gradually raising the tax burden on carriers through a modified user fee system (approved by Congress in 1997), heightened fuel taxes, and other mechanisms. The new user-fee (i.e., ticket tax) arrangement, which relies heavily on a fixed fee per passenger enplanement, apparently reflects a more equitable distribution of airport and air traffic control costs. However, it represents an additional financial burden to the industry in general—and is likely have an especially damaging effect on start-up carriers in the years to come.

Finally, the Federal Government has developed a permissive attitude with respect to controversial marketing strategies of major airlines—strategies that often have the appearance of being predatory. Examples include the aggressive matching of discount fares, travel agent overrides, and frequent flyer promotion bonuses to lure traffic from start-up carriers.

Along with ongoing competitive problems arising from exclusive lease agreements at major airports and slot controls, the tolerance of the Federal Government toward the above market practices can create significant entry barriers for low-cost competitors. It also prevents these carriers from successfully prosecuting predatory pricing complaints against their larger counterparts.

Among federal institutions, the General Accounting Office has been a vocal critic of the market dominance of major carriers. Although GAO studies outline practical steps to alleviate the "pockets of pain" that stem from limited competition, little evidence suggests that federal intervention is forthcoming anytime soon.

All of the above policies come at a time when start-up airlines are struggling financially. Although some consolidation is likely, these carriers are not likely to have opportunities to merge with major carriers or receive governmental assistance. Kiwi, Vanguard, Western Pacific and other financially distressed smaller operators appear especially at risk of failure.

The change in federal policy also renders it more difficult for some small and mid-size communities to bring attractively priced service to their airports. As the niche for some start-up carriers grows more precarious, the subsidy offers of local airport authorities to attract these carriers will likely become less effective.

Regional Jets (RJs)

A second change of profound importance since 1995 is the rapid deployment of regional jets (50-70 seat planes that are faster and more comfortable than conventional turboprop aircraft) at majors hubs and on thinly traveled nonstop routes. Orders and options by regional airlines are in place for about 700 units. Prevailing public opinion holds that these RJs are destined to revolutionize convenience, frequency and speed in many smaller domestic markets.

Although the panel agrees with this assessment, it believes that significant obstacles will remain to the widespread introduction of these jets. More notably, the use of RJs will continue to be restricted by rules set by labor negotiators relating to aircraft size, scope clauses, and other labor issues. The American Airlines strike in 1997 and other labor-management conflicts failed to resolve all of the open questions about the long-range role for RJs.

Moreover, the demand for RJs is vulnerable to changing public opinion, which holds small commercial aircraft in low regard as to safety. (These opinions tend not to be substantiated by data.) If RJs suffer accidents early in their service life, public support could be severely damaged.

Nevertheless, panel members doubt that the RJ phenomenon carries with it the risk of bringing significant excess capacity to the markets they serve. Not only do these planes, by their very nature, provide only limited capacity, their delivery schedules could be lengthened if orders prove to be excessive.

Stabilization of yields

The final recent market development relates to the stability of domestic passenger fares, especially business fares. Although the industry's recovery was well underway by 1995, the strengthening of yield has only recently become a durable feature of the domestic market. In 1996, real yield (i.e., yield adjusted for inflation) rose 1.3 percent while unrestricted fares rose at a substantially faster rate.

Although real yield is likely to fall over the next decade, panel members believe that the 1.1 percent annual reduction in real yield anticipated by FAA is too aggressive. They anticipate more modest change—perhaps a decline half as large as FAA projection.

Perspectives on Forecasting

Business and leisure travelers are separate components of market demand. They respond differently to macroeconomic variables and technological change, have vastly different price and income elasticity, and choose air services in fundamentally different ways.

Accordingly, forecasts based solely on aggregate industry statistics—such as industry yield, revenue passenger miles (RPMs), and available seat miles (ASMs)—are more fallible than forecasts that consider the underlying trip purpose of airline consumers. Panel members believe that long-range forecasts could be enhanced through a separate evaluation of the business and leisure markets.

In a similar vein, the maturing business-travel market will almost certainly grow more slowly than leisure travel. (Leisure already accounts for a majority of domestic air travel enplanements). The rising share of leisure passengers suggests that: (1) traffic growth may become more closely tied to changes in yield; (2) traffic will tend to become more dependent on the state of the macroeconomy, and; (3) airports will experience vastly different rates of traffic growth depending on the mix of business and leisure traffic.

The growth of leisure traffic also has implications for the competitive mix of carriers. Much of the boom in air travel demand in recent years apparently consists of leisure passengers carried by low-fare airlines, such as Southwest, America West, Reno and American Trans Air, plus the "free" travel generated by frequent flyer programs. Obviously, the continued growth of this market segment depends heavily on the future of low-cost airlines.

The blurred distinction between "major" and "regional" airlines is another issue of fundamental importance in long-range forecasts. The distinction between these carrier groups will become even more ambiguous as large fleets of regiona; jets are deployed. Regional airlines, whose traffic consists almost entirely of business travelers, have captured traffic from their major partners in recent years and are expected to continue to do so in the future. Although this may represent traffic growth for regional carriers as a class, it does not constitute growth for the domestic air travel market as a whole.

Developing separate forecasts for various segments of the marketplace, however, is hindered by a dearth of reliable data. For example, the Air Transportation Association travel survey has been discontinued, eliminating a valuable source of information on trip purposes. Other comprehensive data bases do not allow for accurate assessments of the number of business and pleasure trips.

Rethinking Supply and Demand

The panel believes that FAA traffic growth forecasts for 1997-2002, which project 3.9 percent annual growth in enplanements, are marginally too high—even if FAA's anticipated yield decline of 1.1 percent annually comes to fruition. Panel members emphasized that real GDP growth is not expected to rise in upcoming years; a slowdown in the economy—a concern that far more than a hypothetical at the moment—could suppress rates of growth.

Also conspiring to limit traffic growth are passenger load factors, which have reached historical highs. The recent surge in load factors, while partially a function of the creative programs to fill empty seats, to a large extent reflects capacity limitations in important markets during peak periods.

With respect to load factors, consequently, the panel agreed unconditionally with FAA. Load factors will likely remain for the foreseeable future at their current level of approximately 68 percent to 70 percent. Orders for new aircraft will primarily be used to replace older aircraft, especially older B-727 and DC-9 equipment. If traffic growth is interrupted by recession, panel members believed that carriers will further limit capacity growth, avoiding a repeat of the costly price-cutting experience of the early 1990s. They expect ASM growth in domestic aviation to roughly match growth in RPMs.

This has important implications for all travelers. By exercising restraint in expanding capacity airlines while deploying sophisticated yield management systems, domestic airlines will seek to extract even greater revenues from business travelers. Discount fares will continue to be more effectively targeted at discretionary travelers through new distribution systems, such as the Internet.

Accordingly, the promotional efforts of major airlines (including their scheduling decisions) will continue to reflect the dominant role of business travel in generating revenue. These efforts will remain focused on garnering more of the mature business travel market rather than seeking to expand the business market as a whole.

At the same time, the panel anticipated only modest reductions in unit costs. Most of the easy ways to cut expenses or boost productivity (such as through increased aircraft utilization) have been exploited. The panel believed that distribution costs are the best remaining opportunity for immediate expense reduction—a process that appears to be well underway. (Less than two weeks after the panel adjourned, United Airlines announced its controversial 20 percent reduction in commission payments to travel agents.)

In the final analysis, the panel anticipated a future differing sharply from the boom-and-bust character of the industry's recent past. While panel members are more bearish about traffic growth and yield reductions than FAA, they believed that domestic aviation is approaching the twenty-first century on a stable and, ultimately, profitable course.

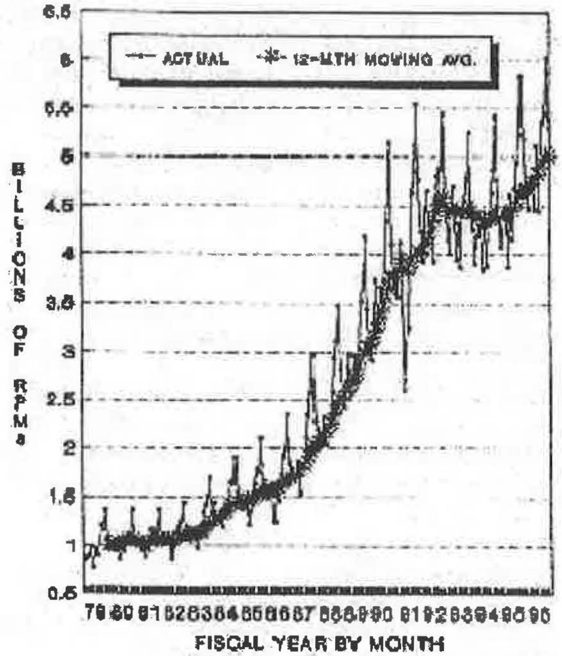

FIGURE 1 Revenue passenger miles.

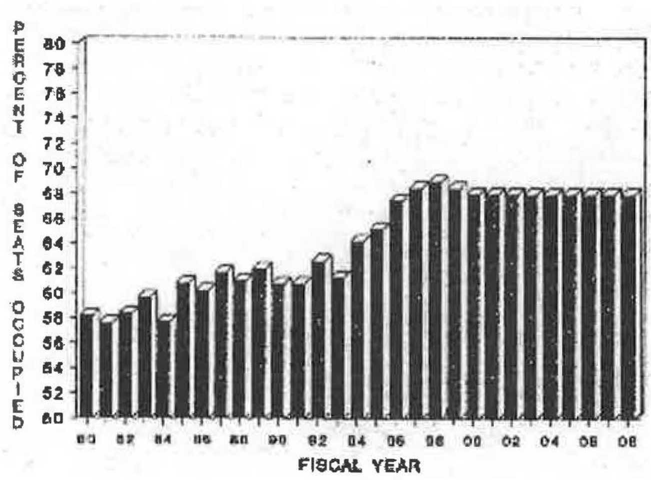

FIGURE 2 U.S. Commercial air carriers passenger load factor: Domestic.