

INTERNATIONAL AIRLINES

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Introduction

The International Airlines panel discussed six issues that are significantly affecting international passenger demand and air service planning in the late 1990s:

- International air transport policy (Open Skies);
- Developments in airline alliances;
- Other changes in airline competitive structure (startups and low cost carriers, privatization, mergers, acquisitions and consolidation);
- Network structure (hubs and gateways);
- Aircraft developments (small twins vs. Larger aircraft, superjumbos, ultra-long range aircraft, regional jets); and
- Data needs.

The panel focused primarily, but not exclusively, on air service between the United States and Europe, Latin America, and Asia. For each of these market areas, panel members also projected changes from 1997-2002 in passenger enplanements, yield, load factor, and aircraft size.

International Air Transport Policy

U.S. Open Skies Policy to Date

For the last twenty years, the United States has pursued a policy aimed at liberalizing its international air service agreements. Incremental progress was made through the early 1990s, when the United States began to conclude a large number of Open Skies bilateral agreements with many of its most important international air service trading partners.

The most recent series of liberalized bilateral agreements represents a dramatic break with the narrowly defined agreements of the past. In principle, an Open Skies bilateral between two nations permits any carrier of either country to fly between any gateway points they choose, without restrictions on capacity, service frequency, or fares offered. In most cases, no restrictions are placed on airlines' ability to carry local traffic in intermediate or fifth freedom markets, as well.

For the last several years, the United States has pursued a unique *quid pro quo* approach in international negotiations: in return for a partner nation accepting Open Skies with the United States, that nation's carriers are permitted to form immunized alliances with U.S. carriers. In such alliances, airlines can not only share codes in computer reservation systems (CRSs), but also jointly set prices and capacity, share sales forces and ultimately share revenue. In effect, the partner carriers are permitted to act as a single merged entity, jointly marketing a common product while effectively immunized from anti-trust prosecution.

Following the U.S.-Netherlands Open Skies agreement in 1993, Northwest and KLM tightened their existing alliance under the immunity provisions. As additional Open Skies agreements were concluded, two other immunized alliances subsequently developed: the Delta/Swissair/Sabena/Austrian grouping, and the Star Alliance of United, Air Canada, Lufthansa, SAS, Thai, and Varig.

The United States has signed more than twenty-five Open Skies agreements to date:

U.S. Open Skies Partners as of September 1997

North America

- Canada

Latin America & Caribbean

- | | |
|---------------|--------------|
| ■ Aruba | ■ Costa Rica |
| ■ El Salvador | ■ Guatemala |
| ■ Honduras | ■ Nicaragua |
| ■ Panama | |

Europe

- | | |
|------------------|---------------|
| ■ Austria | ■ Belgium |
| ■ Czech Republic | ■ Denmark |
| ■ Finland | ■ Germany |
| ■ Iceland | ■ Luxembourg |
| ■ Netherlands | ■ Norway |
| ■ Sweden | ■ Switzerland |

Middle East

- Jordan

Asia-Pacific

- | | |
|---------------|-------------|
| ■ Brunei | ■ Malaysia |
| ■ New Zealand | ■ Singapore |
| ■ Taiwan | |

These agreements can stimulate passenger demand enormously, illustrated by the 29 percent growth in U.S.-Canadian traffic from 1995 to 1996, following signing of the liberalized U.S.-Canada bilateral.

The U.S. policy has been so successful that relatively few restrictive agreements remain between the United States and its primary international air service partners—most notably, the United Kingdom, France and Japan.

Projections

The panel concluded that Open Skies will remain the rule in international air service agreements with the United States for the foreseeable future. For most nations that have not yet signed such agreements, it will be a question of when rather than if.

The pending American Airlines/British Airways immunized alliance, if granted in return for an Open Skies bilateral between the United States and Great Britain, would apply enormous pressure on France and Japan to form similar liberalized agreements with the United States. France is already under considerable pressure to accept an Open Skies regime, as it is now surrounded by nations committed to U.S. Open Skies, with powerful alliances threatening to drain off Air France's third, fourth and sixth freedom (direct and connecting) traffic to the United States.

Japan may well be influenced by the recent spate of Open Skies agreements between the United States and other Asian nations, although it is far from certain that Japan will commit to a fully liberalized bilateral with the United States during the next several years. Asia's geography minimizes the potential diversion of Japan-U.S. traffic to carriers in liberalized U.S.-Asia markets, somewhat insulating Japan from pressure to accept an Open Skies agreement. The historically contentious

U.S.-Japan aviation relationship will most likely see incremental progress toward liberalization, perhaps with new route rights or new concepts introduced such as limited code-sharing.

Nonetheless, a U.S.-UK Open Skies agreement in conjunction with an American Airlines (AA) and British Airways (BA) alliance would set an additional strong precedent for Japan. The parallels between Japan and the United Kingdom are striking: Narita and Heathrow are both the most constrained gateways in their respective regions, both airfields are severely capacity constrained, and U.S. carriers hold extensive rights to carry "beyond" traffic at each airport.

The AA/BA alliance is not a fait accompli and has attracted a good deal of resistance within the European Commission. However, the panel concluded that even if an agreement is not signed in 1997-1998, a similar U.S.-UK megaalliance, with an accompanying liberalized bilateral environment, would be a virtual certainty within the next half-decade.

Ultimately, as Open Skies between the United States and Europe becomes the norm, national resistance to granting aviation negotiating authority to a supranational body—the European Commission—will diminish. In some future year, the European Union (EU) Commission and the United States may negotiate an air service *treaty*, to replace the current network of U.S.-Europe bilateral agreements. However, if widespread Open Skies agreements are in place, there will be little left for European nations to give away in negotiations with the United States, and thus little danger in transferring negotiating authority to the EU Commission.

South American countries also are expected to develop Open Skies arrangements with the United States over the next several years, following the precedent established in Central America. Chile already has proposed an Open Skies arrangement in advance of its October 1997 talks with the U.S.

Open Skies Outside the U.S.

Although the U.S. experience will not necessarily lead immediately to global Open Skies agreements between other nations, regional air transport liberalization is becoming increasingly common worldwide. In particular, liberalized air service relationships have developed within regional trading blocs in recent years, spreading from the European Union to the Andean Pact and Mercosur nations in South America.

Developments in Airline Alliances

Developments to Date

Airline alliances have been common for the last decade, with transborder and intercontinental code-sharing agreements proliferating worldwide. Most of these agreements have been limited in scope, and often confined to a small number of routes with blocked-space purchases of seats and frequent flier program links, but no further strategic cooperation.

After the U.S.-Netherlands Open Skies agreement in 1993, carriers now granted antitrust immunity began entering into significantly more sophisticated alliances, cooperating on the crucial strategic parameters of pricing, capacity, and sales. Such strategic alliances have succeeded by offering a more unified product to travel agents and the end customer, through wide scale code-sharing and linked schedules, shared facilities, coordinated ticketing and handling, common branding, combined frequent flier programs and so forth. The KLM-Northwest alliance has proven to be the model for such alliances, with each airline tailoring its product to present a seamless service offering for passengers.

Such alliances have been enormously lucrative for partner carriers, leading to immediate market share gains that translate directly into added revenue, with little, if any, additional expenditure. Estimates for KLM-Northwest are that each carrier has received from \$100 to \$175 million in additional annual revenue as a direct result of their alliance (Feldman, Joan, "Alliances: Are We Making Money Yet?," *Air Transport World*, 10/95, page 32).

The KLM-Northwest example also demonstrates that equity exchanges may have little or no impact on the effectiveness or longevity of an alliance. KLM currently is divesting its Northwest equity holdings, but the two partners have committed to an additional 10 years of cooperation.

Immunized alliances capture many of the revenue benefits of mergers and acquisitions, and appear to be replacing the trend toward global carrier consolidation that was widely predicted in the early 1990s. Certainly, alliances are a beneficial alternative to acquisition for ambitious foreign carriers, given the U.S.-mandated limit of 49 percent foreign ownership (25 percent of voting stock), which the panel suggested will remain in force for the foreseeable future. (Foreign ownership limits may, however, come under considerable scrutiny during the next economic downturn if foreign capital becomes the only means available to sustain a failing U.S. carrier.)

There are now three large global strategic alliances of this new type: the KLM-Northwest alliance, the Delta/Swissair grouping and the Star Alliance. In each case, a major U.S. carrier is the backbone of the alliance, bringing strength in behind-gateway traffic feed in the United States. If the AA/BA alliance (with Qantas, Iberia, Canadian Airlines International, Aerolineas Argentinas and Avianca) is concluded, this will represent a fourth dominant global alliance pole.

Projections

The panel concluded that sophisticated global alliances will predominate in the future whether or not an AA/BA immunized alliance is agreed to this year. The ultimate number of megaalliances likely will remain limited, although their scope undoubtedly will grow and new large alliances may well be formed. Some major world airlines are still on the sidelines—including Continental, Air France, Singapore Airlines and Cathay Pacific—but are likely to join one or another alliance in the near future. (As of September 1997, Continental was in limited but not immunized alliances with Alitalia and Air France; Singapore was allied with Ansett Australia and Air New Zealand but had not joined an immunized alliance with a U.S. carrier.)

Most carriers worldwide that do not yet belong to alliances will quickly gravitate to one or another grouping, or find themselves at a severe competitive disadvantage as alliances channel off their traffic. From the viewpoint of the incumbent alliance partners, adding more partners is advantageous if those additional participants can extend the scope of the alliance to new city-pair markets or geographic regions.

Alliances will continue to consolidate their strength by employing sophisticated techniques to attract and retain passengers, including coordinated pricing, combined frequent flier programs and travel agency override commissions.

Overall, the panel had mixed views on whether megaalliances would have a detrimental impact on competition. On the one hand, in the new alliance environment, competition by a multitude of air carriers in international origin-destination markets will be replaced by competition between a smaller number of large alliances. Alliance partners will be able to coordinate capacity and prices, but will still face competition from other alliances.

On the other hand, alliances have the potential to raise competitive barriers in certain individual city-pair markets, where the new partners provide the vast majority of direct international air service. To maintain competitive market access, both the EU Commission and the U.S. Government have sought concessions from prospective partner carriers, in the form of reduced service or mandated noncooperation on pricing ("carve-outs"). The U.S. Government also is investigating the proposed American Airlines-TACA code-sharing alliance, which would control nearly 80 percent of U.S.-Central America nonstop service if concluded ("American's Controversial Alliance Strategy," *Aviation Economist*, April/May 1997, page 6).

Alliance Implementation Issues

Although it seems certain that alliances will remain a fixture of the air transportation landscape for the foreseeable future, there is less certainty on precisely how the alliance partners will work together. Numerous issues must be resolved by the partners to ensure alliance effectiveness and longevity.

1. Which carriers will perform the flying?

Although economic rationality dictates that international flying be granted to the lowest cost carrier, aircraft availability, union objections, and intangibles such as corporate pride and culture may be more influential in determining which carrier operates on which routes. While KLM has yielded some new transatlantic flying opportunities to Northwest over the last few years, a large share of the Delta alliance transatlantic flying is now performed by Sabena, Swissair and Austrian, although Delta's transatlantic operating costs are lower than its European partners'.

Currently, non-U.S. partner carriers may have an advantage in international alliance flying, as their passengers are not subject to the time-consuming prescreening that FAA requires of U.S. carriers.

2. How will revenue and costs be shared among the carriers?

Alliances stand a better chance of succeeding if participants believe that they are treated fairly by their partners, with equitable sharing of revenues, costs, and future market opportunities. Poorly-designed revenue and cost-sharing mechanisms may set up incentives for alliance members to compete with each other in selling, operating, or both.

3. How will carrier services be branded?

The panel suggested that branding will be an important issue to be resolved as alliances grow, particularly in regions such as Europe with many national flag carriers. In such an environment, where passengers often have a strong preference to fly on their home country carrier, it may be difficult to adopt a "one product" alliance identity, if that common identity would suppress the national carrier brand.

4. Can alliance partners cooperate with each other to reduce costs?

Theoretically, large opportunities exist for alliances to achieve scale economies from rationalizing capacity on overlapping routes, joint purchasing, joint aircraft maintenance, shared facilities, and so forth. However, major alliances to date have focused primarily on revenue gains and have not yet made as much headway in reducing costs.

The panel noted that large integrated alliances may actually lead to *increased* organizational and operational inefficiencies, simply due to the size and complexity of the joint enterprise. Furthermore, the perceived fragility of alliances, with breakups of previous partnerships such as British Airways-United, British Airways-USAir, Continental-SAS, and Delta-Virgin Atlantic, could

dissuade alliance partners from engaging in the long-term joint planning and strategic investment required to achieve substantial cost savings.

The panel suggested that equity stakes ultimately would provide a better guarantee than alliances of meaningful cost reductions.

The panel concluded that cost savings are possible through carrier cooperation or joint ventures in areas such as aircraft purchasing or maintenance, but these groupings need not parallel the global marketing alliances established for revenue-generation purposes.

5. Can partner carriers overcome cultural differences to effectively pursue joint strategies?

A significant although overlooked implementation issue is how partner carriers' cultures will interact and perform together. The longevity of an alliance ultimately must be based on carriers' ability to work together on a daily basis across all elements of their operations, from ground handling to sales, ticketing, and administering frequent flier programs. Integrating different airlines' existing operating practices may present numerous obstacles.

As alliances grow, these implementation issues are likely to become more acute, particularly as new partners' route networks overlap increasingly with incumbent carriers' systems—setting the stage for conflicts within the alliance on operating decisions, revenue-sharing and the like.

Given these issues, the panel projected that alliance memberships are likely to be fluid in the future, with partners continuing to switch from one alliance to another. However, the structure of a limited number of strong megaalliances will remain.

Other Changes in Airline Competitive Structure

Startups and Low-Cost Carriers

In spite of the primacy of alliances, the panel indicated that there will be a continuing role for niche carriers, including low cost startups and charter carriers.

The panel noted that low-cost carriers have developed a small, but important niche in major air service markets worldwide. Carriers such as Ryanair, Easyjet, Virgin Express, Eurowings and Air One have established themselves in the deregulated intra-European market. The Asia-Pacific and Indian subcontinent regions have seen similar carriers such as Cebu Pacific (Philippines) and Jet Airways (India) commence operations in recent years, and Latin America has had an influx of new entrants, including TAESA (Mexico), Aero-Sur (Bolivia), SAETA (Ecuador) and LAPA (Argentina).

Such carriers generally have been able to capture a low-yield travel market by following the U.S. carrier

Southwest's example: offering point-to-point services that do not rely on hub traffic feed, maximizing aircraft and crew utilization by minimizing ground time, seeking secondary airports farther from major metropolitan areas to avoid congestion and obtain lower landing fees, and selling seats directly to avoid costly CRS and travel agent fees.

In a wet-lease arrangement that may signal an increasing trend, Virgin Express is operating all of Sabena's Brussels-Heathrow and Brussels-Rome flights, and has introduced new Brussels-Gatwick services on behalf of the larger carrier. Similarly, Swissair has spun off a substantial portion of its short-haul flying to its regional partner, Crossair. Both British Airways and Air France have franchised numerous short-haul operations to regional carriers such as Manx and Brit Air. There may yet be other instances in Europe and elsewhere where low-cost or regional airlines take over short-haul flying from established carriers, costing the larger carriers less than if they operated the routes themselves, and freeing them to redeploy their aircraft to more productive routings.

The panel suggested that new startup carriers will continue to develop worldwide. It also indicated that some existing carriers might be able to reinvent themselves as niche carriers offering low-cost service, following the operating patterns of the startups.

The panel also concluded that charter carriers, which cater exclusively to low yield discretionary travelers, will continue to be an important global presence. Charter airlines currently account for 50 percent of European traffic and are expected to maintain this share of the European market in the future. Such carriers, which offer direct service to leisure destinations from non-hub airports such as Luton or Stansted, represent an attractive alternative to leisure travelers seeking to avoid indirect scheduled routings through congested hubs.

Privatization

The panel suggested that privatization efforts will continue as air service markets worldwide continue to be liberalized. Currently, many of the major European and Asian carriers have been privatized, while majority shares of virtually all Latin American carriers have been sold off to private interests within the past decade.

Selected Carriers with Majority Private Ownership, by Region, 1997

North America

- Air Canada
- Canadian Airlines International

Europe

- British Airways
- KLM
- Swissair
- Icelandair
- Lufthansa
- Sabena
- Virgin Atlantic
- Lauda Air

Latin America & Caribbean

- Aeromexico
- Aeroperu
- LanChile
- Varig
- VASP
- BWIA
- Mexicana
- Aerolineas Argentinas
- Ladeco
- Pluna
- TACA Group
- Air Jamaica

Asia-Pacific

- Japan Airlines
- Ansett Australia
- Asiana
- Malaysian Airlines
- Philippine Airlines
- Qantas
- Cathay Pacific
- ANA
- Air New Zealand
- EVA Air

Privatization has demonstrably improved the competitiveness and efficiency of non-U.S. carriers. In the case of Latin America in particular, the improved productivity of privatized carriers has coincided with increased government willingness to liberalize domestic and international air service markets.

Because so many privatizations have occurred already, future privatization activity is likely to slow somewhat. Nonetheless, several important national flag carriers, including Air France, Alitalia and South African Airways, remain candidates for eventual privatization—subject to government willingness to permit private ownership.

Mergers, Acquisitions and Consolidation

As indicated, alliances represent an effective alternative to carrier mergers and acquisitions, from a marketing perspective. In spite of this, international carrier acquisitions and consolidations will probably continue to occur for a variety of reasons, particularly involving airlines in poor financial health.

In Europe, the EU Commission has continually indicated its unwillingness to permit further subsidization of ailing carriers, and has met a great deal of resistance toward this practice from healthier, private European carriers. Without subsidies, weaker carriers may of necessity be acquired by others.

In recent years, strong European carriers have acquired smaller or weaker carriers, as evidenced by British Airways' purchases of the French airlines TAT

and Air Liberté. As with alliances, such acquisitions have permitted carriers to expand their geographic networks, marketing presence, and available equipment. Some governments may be reluctant to permit a country's flag carrier to fall to foreign ownership, although Swissair now owns 49.5 percent of the Belgian flag carrier Sabena, and the Brazilian carrier VASP has been seeking to purchase the non-operating Venezuelan flag carrier VIASA.

Equity investments can provide benefits to the acquiring carrier where route authority is limited. In such instances, a carrier may use its equity partner airline as a proxy to maintain or increase access in a given market. American Airlines appears to be following such a strategy with its proposed investment in Aerolineas Argentinas, to solidify its dominance in U.S.-Latin American and intra-Latin American markets.

Some small carriers in a geographic region have banded together with equity stakes to strengthen their competitiveness, and increase the marketing advantages and scale economies that arrive at a certain critical mass. In Latin America, the TACA Group (TACA International of El Salvador, LACSA of Costa Rica, TACA of Honduras, Aviateca of Guatemala, Nica of Nicaragua and COPA of Panama), SAETA Group (SAETA of Ecuador and LAPSA of Paraguay), and the VASP Group (VASP of Brazil, Lloyd Aero Boliviano, and Ecuatoriana) have formed important counterweights to the larger carriers operating in the region. (TACA has only a marketing alliance with COPA, not an equity stake).

Finally, carriers seeking to reduce costs considerably will favor equity acquisitions over non-equity alliances. The TACA Group example illustrates the link between equity stakes and cost efficiency, as the five equity carriers have reduced staff, rationalized aircraft types, centralized distribution functions and engaged in joint purchasing.

The panel projected that Latin American airlines will consolidate further in coming years. There is likely to be a shake-out in the wake of VIASA's recent collapse, with more carriers ceasing operations or being acquired by others.

Network Structure

Hubs and Gateways

The panel predicted that the new era of alliances will have a dramatic impact on the structure of international flying, with increasing service between large hubs, and an eventual slowing of service growth to and from secondary international gateways.

During the 1980s, with the development of liberalized bilaterals and the entry into service of small twin-aisle aircraft such as the Boeing 767 and Airbus A-

310, international flying on thinner routes to and from secondary gateways became politically and technologically feasible. Overseas carriers increased the number of U.S. points they served to broaden their access to the interior U.S. market. Simultaneously, U.S. carriers sought to exploit the feed potential of their hubs by increasing service to more overseas destinations. Finally, carriers on both sides of the Atlantic began to employ small twins on routes that had not been flown previously on a nonstop basis.

As a result, numerous new nonstop international routings were developed to and from secondary gateways, particularly across the Atlantic: Boston-Brussels, Boston-Lisbon, St. Louis-Paris, Atlanta-Munich and others.

The development of megaalliances in the mid-1990s has largely reversed this trend. New transatlantic flying by alliance partners has focused on bridge routes between the carriers' hub gateways in each continent, to attract feed traffic at either end. Since 1991, KLM and Northwest have initiated joint services between KLM's Schiphol hub and Northwest's U.S. hubs in Minneapolis, Detroit and Memphis. Delta has cut back its change-of-gauge services dramatically at Frankfurt since 1995, in favor of increasing services from its JFK, Atlanta and Cincinnati hubs to its partner hubs in Brussels, Zurich and Vienna.

As alliances coalesce, increased hub-hub scheduled services will become more common across the Atlantic and in other long-haul international market areas. The panel did note, however, that there are some practical limits to these developments that may argue for continued scheduled flying to secondary destinations.

- Passengers will continue to demand shortest elapsed-time routings and the fewest connections from origin to destination. Everything else being equal, a passenger traveling from New Orleans to Milan would prefer single connect service over New York/Newark to double-connect service over Memphis and Amsterdam or Atlanta and Zurich.

- Congestion and access problems at the largest gateway hubs, particularly JFK, Heathrow, Schiphol, Frankfurt, Narita and Kansai, will continue to constrain growth of frequencies at these hub airports.

The panel noted that the major European hubs—London, Amsterdam, Paris and Frankfurt—will maintain their dominance. There may be limited development of secondary hubs at Munich and other European cities to relieve congestion at the major hubs, but there will be nothing like the proliferation of regional hubs that occurred in the United States after U.S. deregulation. Secondary hub development will be limited in Europe by the proximity of major cities, a smaller and more concentrated population base and stronger competition from passenger rail.

The panel noted the possibility of cross-border secondary hubs being established in Europe by nonnational European carriers, now that the EU is fully deregulated with complete cabotage rights. The group also noted that a foreign carrier setting up a hub might have a marketing disadvantage given the traveling public's preferences for home carriers. On the other hand, that carrier might be able to circumvent this problem by setting up a cross-border partner or subsidiary, such as a Deutsche BA or a TAT, as the hub carrier.

Aircraft Developments

Small Twins vs. Larger Capacity Aircraft

Passengers continue to demand frequent service on international routes, and liberalized bilaterals have permitted increased service frequencies. Over the last decade, in response, airlines have augmented frequencies on U.S.-Europe and U.S.-Latin America routes by replacing 747's with 757's, 767's and A-310's. The panel projected, however, that over the next several years the small twins will be superseded gradually by larger aircraft in the transatlantic market.

Traffic growth and infrastructure constraints at major international airports will drive aircraft size increases on international routes. However, two other important factors will also underlie the transition to larger aircraft.

- Air carriers will continue to seek productivity improvements as real yields decline, with larger aircraft offering significant cost reduction opportunities. United's 767-300s, 777s and 747-400s offer direct seat-mile costs that are between 17 and 30 percent lower than its 168-seat 767-200's on transatlantic routes, for example (Source: U.S.DOT Form 41, CY 1996). Long-haul transpacific routes generally will employ the largest and most cost-efficient aircraft available, primarily 747-400s, to cope with the severe capacity shortages at the key Asian gateways of Tokyo and Osaka, and the low yield environment on transpacific routes outside of Japan. Only in the high yield and shorter-segment U.S.-Latin America market will relatively high frequency service with 757s and 767s continue to predominate.

- The increasing bridge flying by alliance partners between major hub gateways will also increase aircraft size, particularly on transatlantic routes. Hub-hub routings such as Atlanta-Zurich, attract passengers from four distinct origin-destination traffic pools—local gateway-to-gateway (i.e., Atlanta to Zurich), behind (i.e., New Orleans to Zurich), beyond (i.e., Atlanta to Milan), and behind-to-beyond (i.e., New Orleans to Milan)—and therefore warrant larger aircraft to accommodate the demand.

Accordingly, KLM-Northwest have used MD-11 or 747 aircraft on their Detroit-, Memphis-, and Minneapolis-Amsterdam routings, reserving smaller 767s and DC-10s for non-bridge routes such as Atlanta-, Boston- and Washington-Amsterdam.

Superjumbos

Although the panel projected increased overall aircraft size on international routings, they suggested that the market for aircraft larger than the 747-400 will remain limited. Ultimately, the planned Airbus A3XX will serve the largest and most constrained gateway fields such as Heathrow, Narita and Kansai, but may find only limited use elsewhere.

Ultra-Long Range Aircraft

New ultra-long range aircraft such as the A-340-8000 and Boeing 777-200X will be placed into service around the turn of the century, offering ranges of 8 to 9 thousand statute miles. Such performance will permit nonstop routings on key transpacific segments such as New York-Hong Kong and San Francisco-Bangkok, bypassing Japan.

The panel agreed that these aircraft will find a niche market, but have a minimal overall impact on the key Tokyo and Osaka gateways. The group projected that Narita and Kansai will remain the primary Asian gateways for transpacific travel, given the high yields and strong demand in the U.S.-Japan market. The panel also noted that the increasing importance of Asia-Japan and intraAsia traffic, which Northwest and United tap into via their extensive fifth freedom rights beyond Japan, will guarantee continued importance for Tokyo and Osaka. (Asian carriers such as Korean Air, Thai Airways, Malaysia Airlines and Singapore Airlines also benefit from fifth freedom rights beyond Japan to the United States, and thus also have an incentive to continue using Tokyo and Osaka as transpacific gateways.)

Regional Jets

The regional jet market is projected to continue growing worldwide as it has in the United States, offering larger capacity, more range, lower seat-mile costs and greater passenger appeal to turboprop operators. Such aircraft will be used to replace turboprops in growing regional markets, add frequencies in existing jet markets, and open up new point-to-point routings in long-range, thin demand regional markets.

The impact of the RJs may be more muted outside

of the United States, given stronger unions (which, as in the United States, object vehemently to routes being spun off from major carriers to low-cost partners with RJ's) and fewer airports, which are by-and-large more capacity-constrained. The panel suggested that the long route distances and limited number of airports in the Far East would preclude the RJs from taking hold there. The panel also noted limiting factors in Europe, including higher fixed charges—particularly navigation and landing fees—that place a disproportionate burden on operators of smaller aircraft.

Data Needs

The panel noted that the definition of "U.S. carrier traffic" has become blurred, as marketing carriers and operating carriers are no longer one and the same in international alliances:

- Is U.S. carrier traffic purely the number of passengers carried on aircraft belonging to U.S. carriers, or
- does it include passengers purchasing tickets from the U.S. carrier, but flying on an overseas partner carrier's aircraft, or
- does it include passengers purchasing tickets from an overseas partner carrier, but flying on an aircraft belonging to the U.S. carrier?

Current origin-destination and enplanement data collected by the U.S. Government (U.S. DOT Origin-Destination (O&D) Survey, T-100 and INS I-92 data, etc.) and foreign organizations (AEA, IATA, etc.) portrays passengers as belonging to an air carrier when they fly on that carrier's aircraft, regardless of which carrier sells the ticket or shares in the revenue from that sale.

In the alliance era, greater transparency is warranted to determine which carriers are benefiting from traffic flows, regardless of whether or not they actually flew the passengers. Simple breakdowns of traffic by individual operating carrier or carrier nationality no longer have the same relevance as in the past.

An argument may also be made that Open Skies agreements warrant an increased exchange of traffic data between the carriers of each signatory nation, to support open and free competition. Currently, U.S. carriers have full access to origin-destination data of their U.S. competitors but only limited access to foreign competitors' O&D statistics. Similarly, foreign carriers cannot obtain statistics for U.S. carrier traffic in international markets. Although the has required participants in immunized alliances to report O&D data, this information has not been made publicly available.

Rational economic decision-making in free markets

depends on the availability of accurate and complete information to all participants in those markets. The panel suggested therefore that the United States and its Open Skies partners establish traffic data reporting and availability requirements for their respective carriers. A practical starting point might be to require some form of cumulative "true" O&D market traffic statistics (summed across all carriers of the partner nations) to be made available to each country's carriers

Highlights by World Region

For the 1997-2002 period, the panel projected passenger traffic demand, yield, load factor and average aircraft size for the U.S.-Atlantic, U.S.-Pacific and U.S.-Latin America markets.

U.S.-Atlantic

- Enplanements will continue to grow at 4.8 percent per year, slightly slower than prior years due to service consolidation/alliances, but counterbalanced by increased European wealth and declining air fares.

- Intraeuropean traffic growth is expected to remain strong as the European market has completely deregulated, with the addition of unlimited cabotage rights in 1997.

- Real yield will continue to decline at a moderate -0.6 percent annually, with introduction of larger capacity aircraft with lower seat-mile costs.

- Load factor will decline slightly, from 76 percent in 1997 to 73.6 percent in 2002. There is no projected glut of new capacity that will overwhelm demand, but capacity growth on the North Atlantic will slightly outpace traffic growth.

- Average aircraft capacity will grow from 239 to 246 seats between 1997 and 2002, reflecting increasing use of larger twin-aisle aircraft (A-330/340s, 777s, 747s) in lieu of the 767's and A-310's that have dominated the North Atlantic market for the past decade. Increasing hub-hub transatlantic routes and consolidation of the largest hubs in Europe will demand larger aircraft.

Constrained airfields and environmental pressure against airport expansion will further contribute to aircraft size increases and limit frequency growth.

U.S.-Pacific

- The Asia-Pacific region is projected to continue growing at very high rates with enplanements increasing at 7.2 percent annually through 2002, driven by the restoration of Japanese economic growth and the booming PRC economy.

- Intra-Asia travel also is expected to grow

rapidly, with the most rapid growth coming from travel within and to the PRC.

- Real yield will decline at about 1 percent per year, driven by continued economic sluggishness in Japan in the near term, and increasing Asian market liberalization in the longer term.

- Nonetheless, U.S.-Japan yields will remain significantly higher than yields to other Asian points, ensuring a continued high level of services to Narita and Kansai.

- Pacific load factors will remain in the mid-seventies over the 1997-2002 period, declining slightly in the near term, but rebounding to 76 percent by 2002.

The panel noted that average load factors above 75 percent are achievable with aggressive pricing during off-peak seasons.

Intra-Asian load factors may be higher, trending toward the 77-78 percent level.

- Aircraft size across the Pacific will continue to grow as carriers place the largest available equipment in markets characterized by high growth rates, extremely long distances, constrained airfields, and relatively low yields (outside of Japan).

The panel projected that average seats on U.S. aircraft would increase from 328 in 1997 to 338 in 2002.

U.S.-Latin America

- Overall, traffic will grow at a very high rate, averaging 6.9 percent per year from 1997-2002, driven by strong economic performance and growth in the newly free-market Latin American economies.

Growth to the Mercosur nations, particularly Chile, Argentina and Brazil, has been the most rapid over the past few years and is expected to continue at a high rate. If the U.S. succeeds in expanding its Open Skies relationships beyond Central America to South America, traffic would grow even more rapidly. In contrast, traffic growth to the Caribbean, Mexico and Venezuela will trail other Latin American markets in

the near term, given the current economic and operational difficulties in these areas.

Intra-Latin American growth is expected to be very high, particularly within the liberalized air service environments of the Andean Pact and Mercosur nations. However, intra-Latin American route networks are expected to remain primarily linear, although development of some hub-and-spoke operations in Latin America is not precluded.

U.S. carriers have greatly increased their share of the U.S.-Latin America market in the 1990s. American Airlines now has the largest single presence in the market, leveraging its effective Miami hub. Already strong on fifth freedom intra-Latin American routes, American is solidifying its position in the region via equity purchases and/or and planned alliances with Aerolineas Argentinas, Avianca, the TACA Group, LanChile and TAM.

- Real yields are forecast to decline slightly, at approximately -0.5 percent per year, but will remain considerably higher than either transatlantic or transpacific yields. (Higher yields in the US-Latin America market are partly explained by shorter length-of-haul operations to Central America and Mexico.) Strong traffic growth and American's increasing power in the region will offset increased competition in the liberalized Latin American markets.

- Capacity generally will keep pace with demand growth, with a constant load factor in the 64-65 percent range projected through 2002. High yields in the U.S.-Latin America market allow operations at lower load factors relative to the transatlantic or transpacific markets.

- Average aircraft seating capacity will grow slightly during the next five years from 182 to 184, in line with the wide use of 757 and 767 equipment in U.S.-South American markets, and 737s and A320s to Central America. Passenger demand growth will be accommodated by increasing frequencies, not aircraft capacity.

Forecast U.S. Carrier Load Factor, 1997-2002

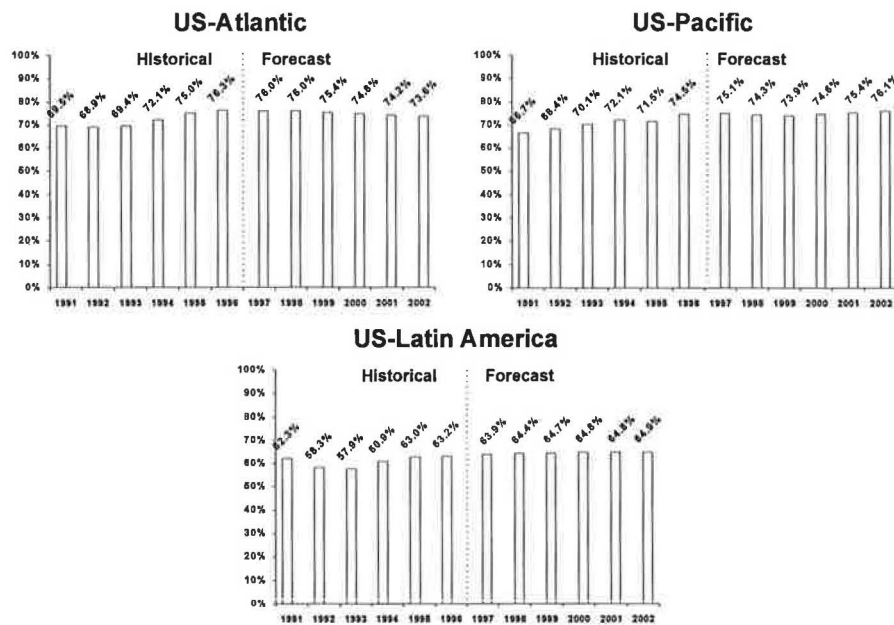


FIGURE 1 Forecasts U.S. carrier load factor, 1997-2002.

Forecast Passenger Enplanements, 1997-2002 (Millions)

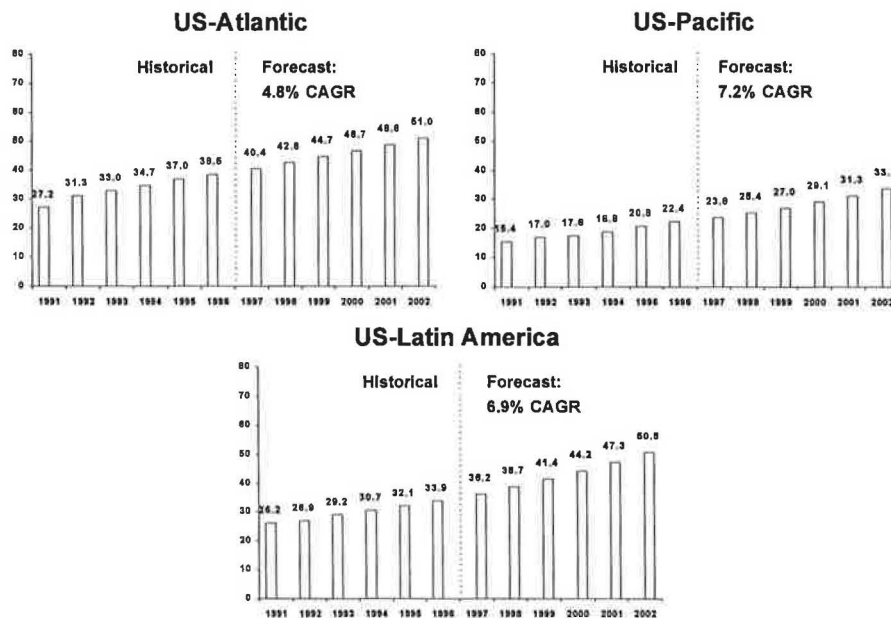


FIGURE 2 Forecast of passenger enplanements, 1997-2002 (millions).

Forecast Real Yield, 1997-2002

(Cents per Psgr. Mile, \$US 1996)

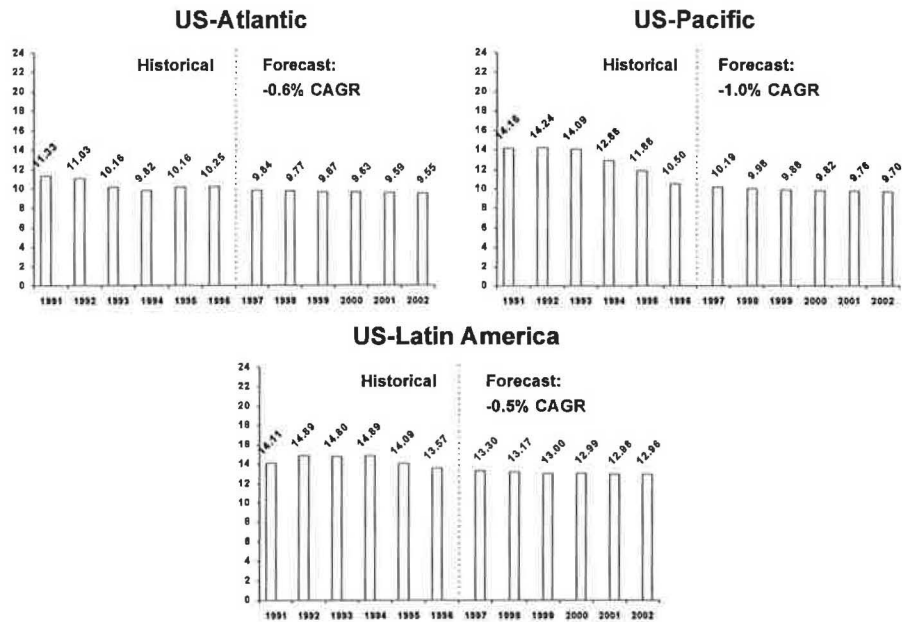


FIGURE 3 Forecast real yield, 1997-2002.

Forecast Average U.S. Carrier Aircraft Seats, 1997-2002

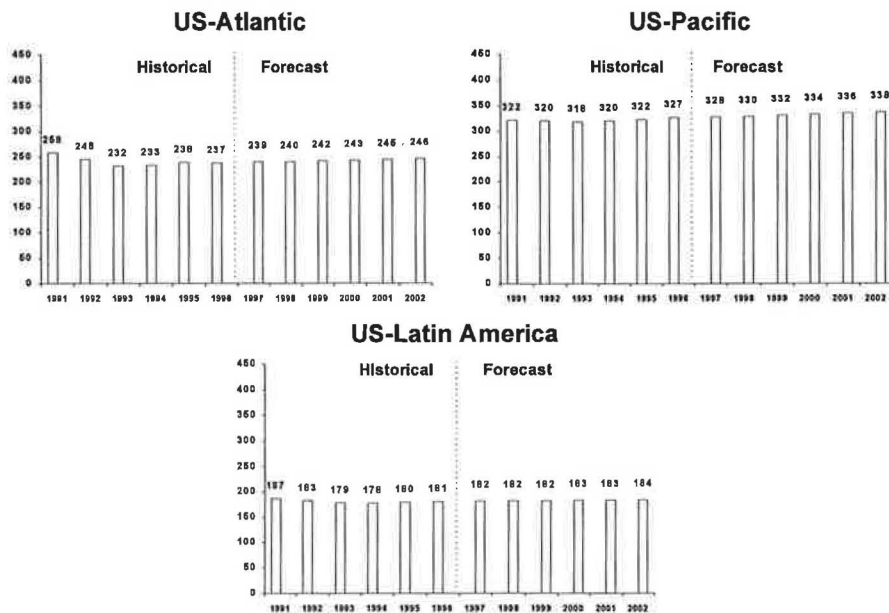


FIGURE 4 Forecast average U.S. carrier aircraft seats, 1997-2002.