# INTERNATIONAL AVIATION DEVELOPMENTS

**Second Report**

## TRANSATLANTIC DEREGULATION

### THE ALLIANCE NETWORK EFFECT

U. S. Department of Transportation
Office of the Secretary

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# TRANSATLANTIC DEREGULATION

THE ALLIANCE NETWORK EFFECT

***Open skies agreements now in place between the United States and a growing number of countries are producing enormous benefits for consumers. These agreements have made it possible for the airline industry to provide better quality, lower priced, more competitive service for millions of passengers in thousands of international city-pair markets.***

Open skies agreements in Europe have been in place for several years now and have fostered the development of many types of multinational airline alliances. Both broad-based strategic alliances and less integrated code-share alliances have changed the structure of the airline industry over the past five years and are generating new pressures on the remaining restrictive bilateral agreements in the region. It is therefore appropriate that we focus on transatlantic deregulation as we continue to examine the nature and evolution of international deregulation in the airline industry.

In December 1999, The U.S. Department of Transportation released its first public documentation of the effects of multinational alliances. That report, *International Aviation Developments: Global Deregulation Takes Off*, provided significant evidence of profound effects of multinational alliance development in transatlantic markets:

- It identified pro-competitive changes in industry structure—better, more competitive service as alliances expand and overlap.
- It documented enormous consumer benefits, both in terms of improved service and price reductions.
- It noted important consequences of alliance development not just for air travel consumers, but for local and national economies as well, due to greatly increased air travel.
- It noted important benefits for domestic European consumers and airlines as increased transatlantic traffic feed enabled European carriers to significantly expand their networks.

That report also noted that we are in the initial stages of global deregulation and alliance development. It pointed to continued expansion of alliances for years to come, with growing benefits for consumers, and suggested that new ways of competing may well evolve in international markets as the deregulation process continues to unfold.

This second report looks at further developments in transatlantic markets by updating and expanding information presented in our first study. While the operating and competitive structures in the transatlantic market are far from settled, the pro-consumer changes

identified in our first report dramatically accelerated during 1999. The alliance between Delta/Austrian/Sabena/Swissair began to dissolve toward the end of 1999 and has now ceased. Delta is developing a code-share alliance with Air France. Two of its former partners, Sabena and Swissair, now have an immunized relationship with American Airlines, and the third, Austrian has joined the Star Alliance. Various other changes in alliance formation occurred during 1999 as well.

Our focus here, however, is on the empirical results of transatlantic deregulation. In this report, we continue to focus on the same three strategic alliances as our first report, Northwest/KLM, United/Lufthansa, and Delta/Austrian/Sabena/Swissair, because the latter continued to effectively function as an alliance through most of calendar year 1999, which is the most current data available. Of course, the changes in airline relationships that have occurred and will continue to occur promise interesting developments to report in future updates.

***As transatlantic deregulation unfolds, competition intensifies and provides consumers enormous price benefits.***

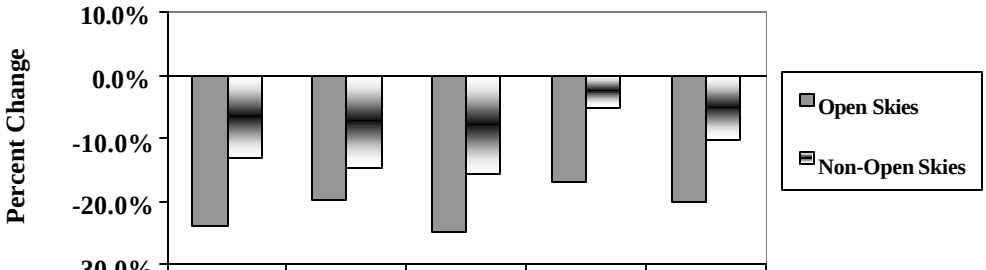
Data for 1999 show continued strong traffic growth and greater fare reductions than occurred through 1998. Clearly, open skies bilateral agreements have provided carriers the operating flexibility necessary to efficiently improve and expand services. This is particularly true for network services, both in terms of coordinating schedules in connecting markets and increasing the capacity in gate-to-gate markets needed to accommodate the resulting increase in demand. Open skies agreements have also afforded the pricing flexibility needed to develop complete pricing strategies and to market them effectively. In combination with individual airlines, multiple alliances of various types—from broad-based strategic alliances to more modest code-share alliances—are expanding geographically and creating ever-increasing numbers of overlap markets. This has created a more competitive transatlantic market structure. Thus, new flexibility for carriers to respond to marketplace demands has led to downward pressures on price, both due to increased supply and increased competitiveness.

As with our first report, in order to illustrate important fare trends without violating the confidentiality of the data, we have summarized fare information into four broad market sectors used throughout the report. These are behind gateway to beyond gateway markets (B-B), behind gateway to gateway markets (B-G), gateway to beyond gateway markets (G-B), and gateway to gateway markets (G-G).

Fare information for each of these market sectors is further segmented to distinguish between passengers that traveled between the U.S. and open skies countries and between the U.S. and other countries across the Atlantic. We have also removed the effects of changes in traffic mix between 1999 and the comparison year, 1996, by using actual fares reported for each period, but weighting the various city-pair markets for both periods by 1999 traffic levels.

Chart 1 compares such fare information for calendar years 1999 and 1996 (not adjusted for inflation). We continue to use 1996 as our base period because two of the three immunized transatlantic alliances were approved early that year.

**~~Chart 1:~~ Transatlantic Markets, Changes in Average Fares, 1996 vs. 1999**




| | BB | BG | GB | GG | Total |
|---|---|---|---|---|---|
| Open Skies | -23.9% | -19.9% | -24.8% | -17.0% | -20.1% |
| Non-Open Skies | -13.2% | -14.6% | -15.8% | -5.1% | -10.3% |

Source: DOT Origin & Destination Data

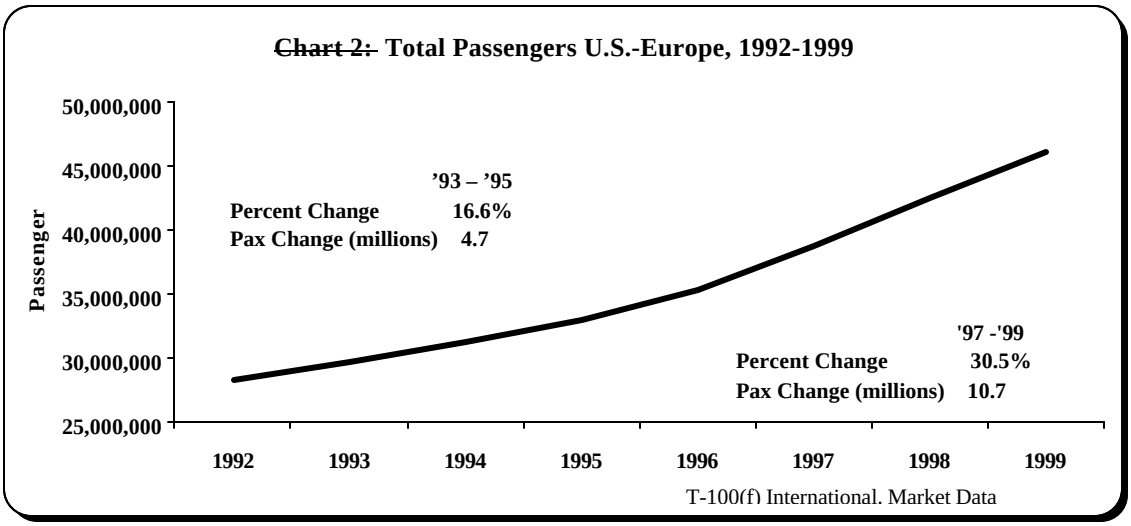
The results are remarkable, showing much larger fare decreases than had occurred through 1998. Average fares to open skies countries declined by 20 percent overall compared with 1996, and approached 25 percent in connecting markets beyond European gateways. Significantly, double-digit fare reductions have occurred even in gate-to-gate markets in open skies countries.

Chart 1 also shows that price benefits have extended to non-open skies countries, albeit at significantly lower rates. This is not unexpected. Alliances can offer improved, more marketable services to these countries as well from their hubs in open skies countries, although they generally lack the same ability either to increase capacity and/or compete aggressively on price.

***Deregulation is at the heart of transatlantic traffic growth.***

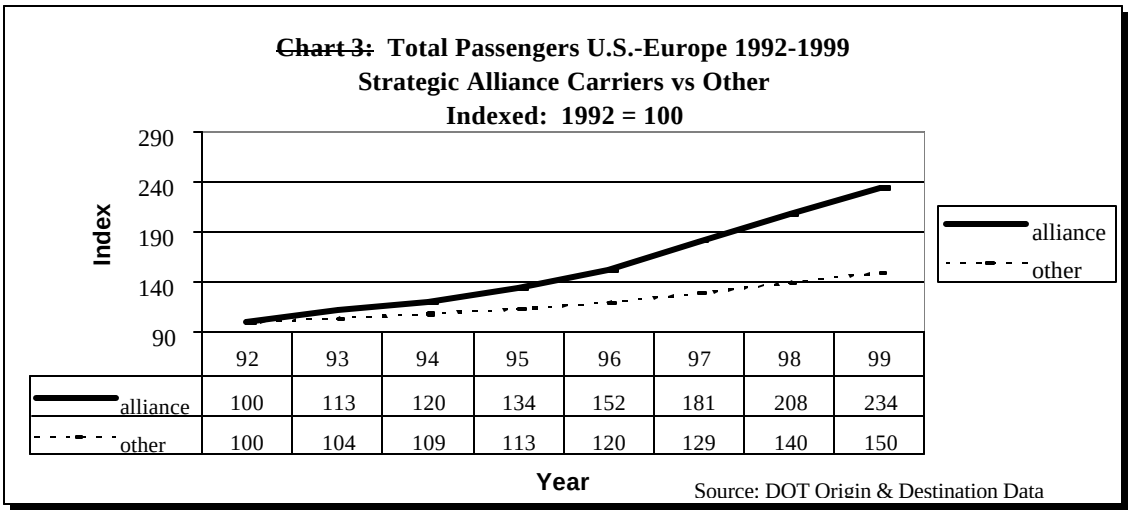
Chart 2 shows the total number of passengers flowing between U.S. and European gateway cities for calendar years 1992 through 1999.

We see a marked difference in passenger growth during and after 1996. Many factors have influenced this increase, but it is clear that deregulation is at the heart of the change.




***Consumer demand and increased competition are driving airlines to access as many markets and passengers as possible in the most efficient way possible.***

Chart 3 is based on the passengers reported in Chart 2, but distinguishes between passengers for the three broad-based strategic alliances and other passengers. These two groups of passengers are then indexed to 1992 to illustrate the relative rates of change.




| | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 |
|---|---|---|---|---|---|---|---|---|
| alliance | 100 | 113 | 120 | 134 | 152 | 181 | 208 | 234 |
| other | 100 | 104 | 109 | 113 | 120 | 129 | 140 | 150 |

This shows much more dramatic growth by the strategic alliances throughout this period, particularly after formation of the Delta and United alliances with their respective European partners. The initial increase in alliance traffic was predominantly by Northwest. The rate of increase began to pick up in 1995, when United and Delta began code-sharing with their European partners, and then rapidly accelerated after they received antitrust immunity in 1996. Non-alliance traffic increased only modestly through 1995, but the rate of increase picked up significantly in 1996 and thereafter. This

is significant in two respects. First, and most importantly, it is evident that the alliance growth is not simply traffic diverted from others, but is in large part new traffic. Secondly, it is evident that other carriers were prodded by competitive pressures to respond and to some extent were able to do so.

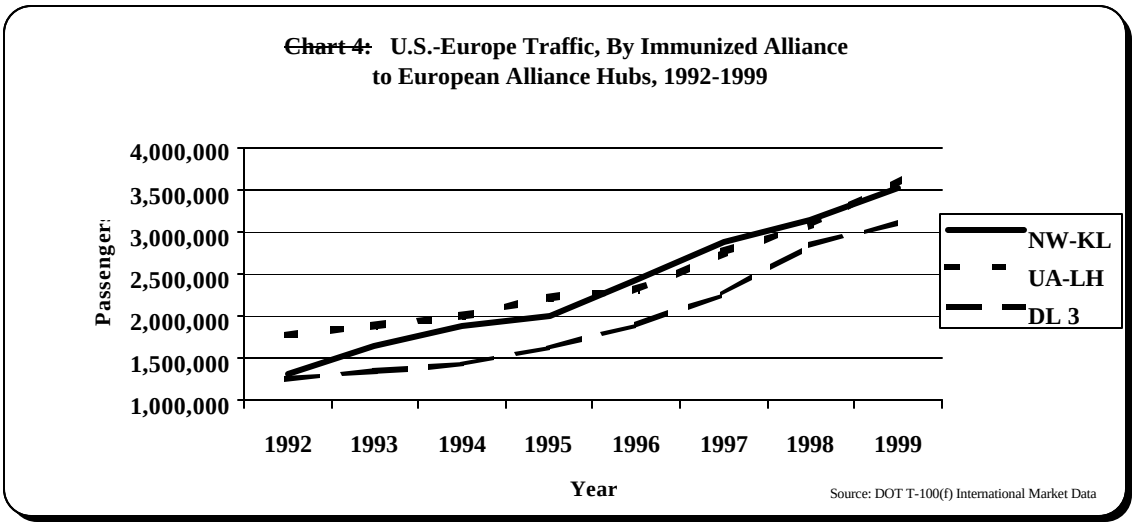
It is also important to consider the traffic growth reflected in Charts 2 and 3 in the context of the fare reductions reflected in Chart 1. The strong global economy no doubt explains some of the traffic increase. However, the healthy global economy does not explain the much more rapid growth by strategic alliances compared to other carriers. The strong economy also does not explain the fact that, for the market overall, connecting market sectors are growing much more rapidly than the gate-to-gate sector. Furthermore, increased demand driven by the economy does not explain the large reduction in price.

***Alliance-based networks are the principal driving force behind transatlantic price reductions and traffic gains. The "Alliance Network Effect" will therefore play a key role in the evolving international aviation economic and competitive environment.***

Competition in the transatlantic market takes many forms. Individual airlines have taken advantage of the relaxation in regulatory constraints to compete in new markets. An example of this is Continental Airlines' new service from its Newark hub to Amsterdam, Brussels, and Zurich. In each case, Continental provides new competition for alliance carriers at those European cities to the scores of U.S. markets Continental serves from Newark. An example of a "regional" code share alliance is U.S. Airways and Deutsche BA at Munich. This alliance provides new service from many U.S. cities not only to Munich, but also to various German cities served by Deutsche BA in competition with other alliances such as United/Lufthansa and Northwest/KLM.

But while various elements of competition are now benefiting consumers in the transatlantic market, broad-based strategic alliances are now the principal driving force behind the fare and traffic trends highlighted in Charts 1 and 2. In order to illustrate this, a series of charts that follow describe the breadth and expansion of those alliances. Although, for the most part, these charts update those presented in our first report, it is important to observe their continuing development and evaluate their competitive implications.

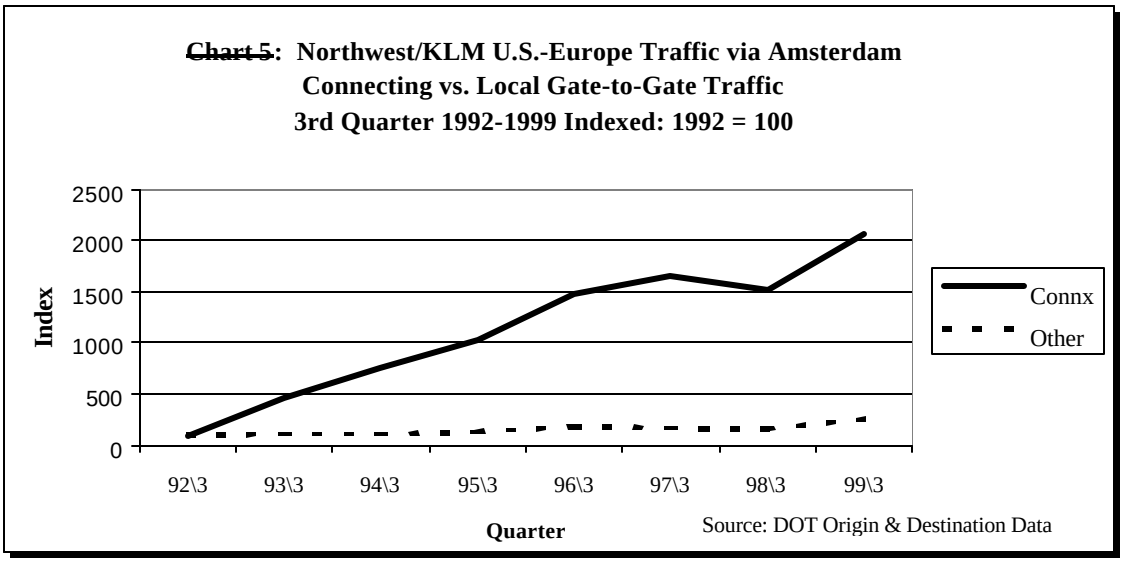
Chart 4 illustrates the continued growth of the three strategic alliances. Specifically, this chart shows traffic flowing between the U.S. and Amsterdam for Northwest and KLM, between the U.S. and Frankfurt for United and Lufthansa, and between the U.S. and Brussels, Geneva, Vienna, and Zurich by Delta and its three partners during this period.

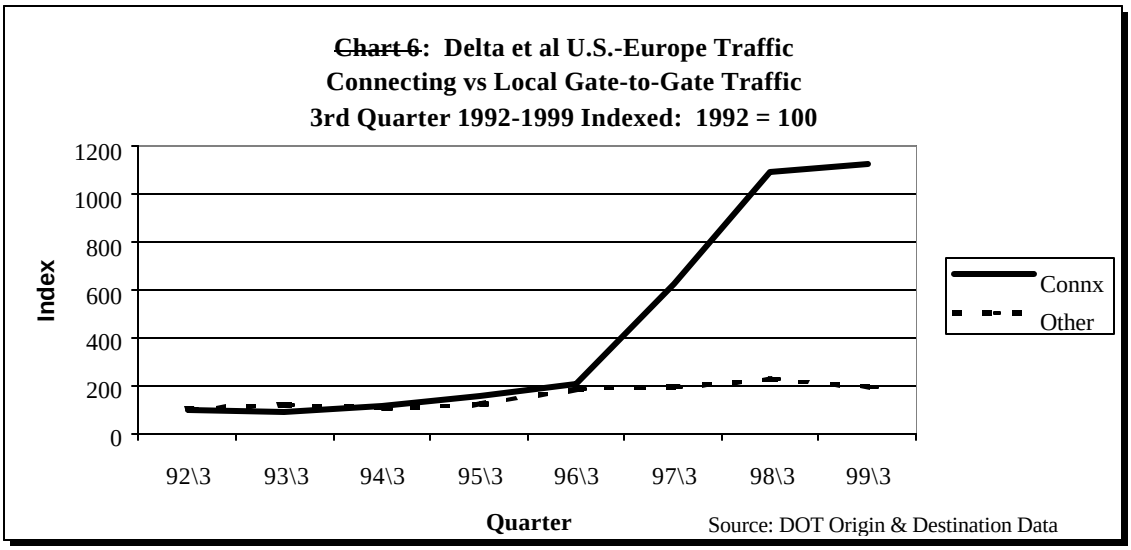



In each instance, the alliances show strong traffic growth coincident with receipt of antitrust immunity, even for the Delta and United alliances that previously had code-share relationships with their alliance partners.

The importance of the sustained strong growth in alliance traffic is illustrated in charts that follow, which show that the growth stems in large part from continued geographic expansion. As expected, this growth is predominantly in connecting market sectors that can only be effectively served by linking large multinational networks. Alliances are providing improved service to more passengers in more markets, and as they each expand, the competitive overlap increases. This suggests that we can expect greater consumer benefits as alliances continue to evolve and expand.

Charts 5 and 6 show for the Northwest and Delta alliances the relative changes in local O&D traffic in their gate-to-gate markets compared with passengers that connect at one or both gateways. Chart 5 shows that Northwest's connecting traffic has rapidly outpaced traffic in its gate-to-gate markets from the very time those carriers received antitrust immunity in early 1993. (This continuous upward trend in Northwest's traffic growth subsided for several weeks, in the third quarter of 1998, when the airline experienced a work interruption that limited flight operations.) Chart 6 shows the same for Delta subsequent to its receipt of antitrust immunity in 1996.

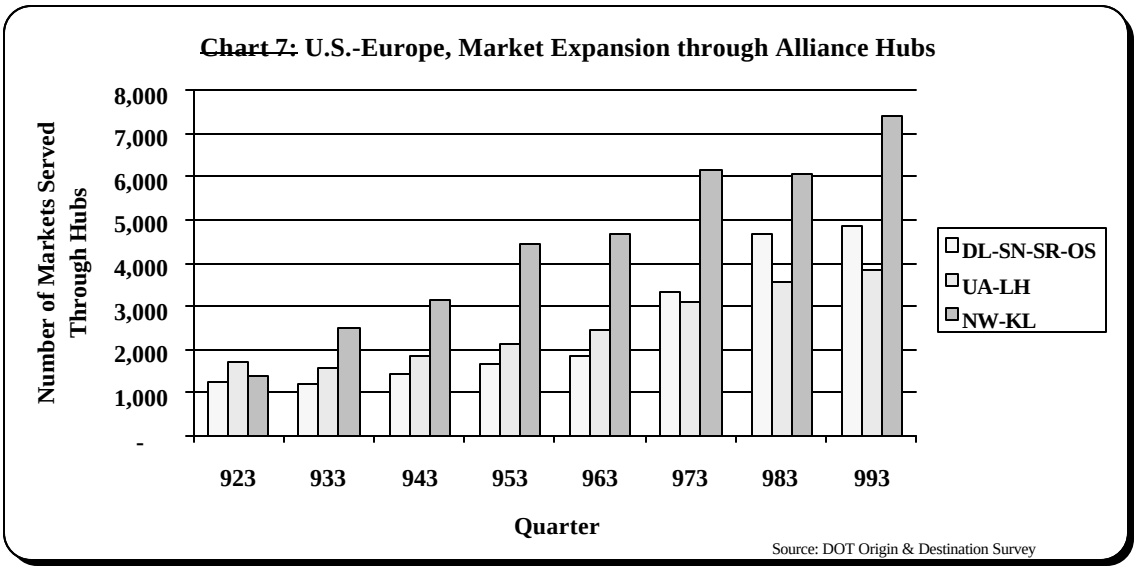


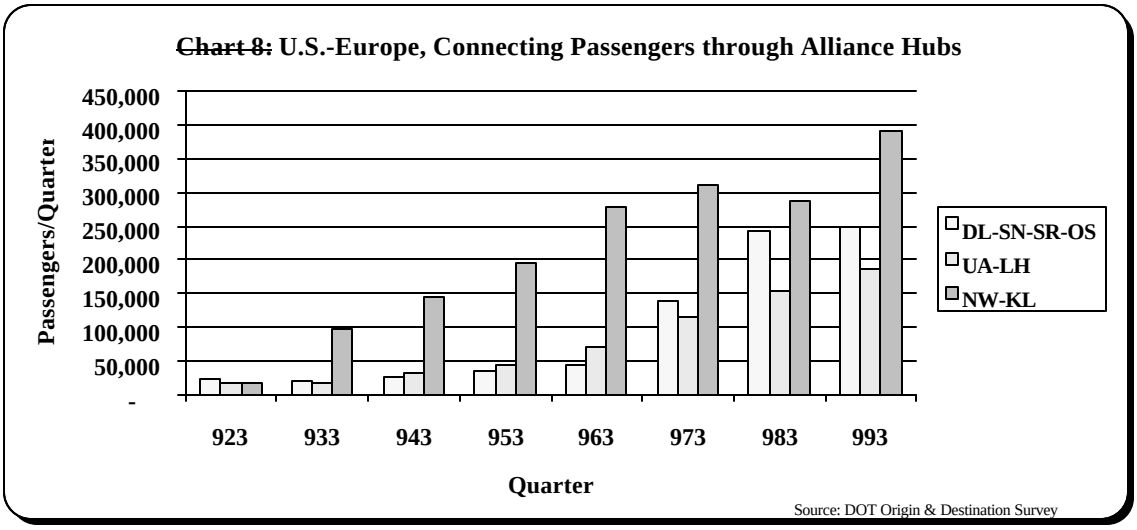




***A major component of alliance traffic growth stems from expanding the reach of networks.***

Charts 7 and 8 provide additional information on how the alliances are expanding. Chart 7 shows the number of individual city-pair markets in which each alliance carried passengers during the 3rd quarter of each year, and Chart 8 shows the changes in numbers of connecting passengers carried, also for the 3rd quarter of each year.

These charts illustrate the power of effectively linking large multinational networks to form geographically broad alliances. In a vast majority of instances, the number of passengers carried in any particular city-pair market is very small.




Yet, by linking large numbers of cities on each side of the Atlantic with broad scale networks in their respective regions, thousands of city-pair markets are served by each alliance. Collectively, the addition of small numbers of passengers in a huge number of markets results in a large increase in total traffic. As the respective alliances continue to expand, so do the markets and consumers that benefit from competitive service. By the third quarter of 1999, two or more of these alliances carried more than 800,000 passengers in well over 3,000 individual city-pair markets.

Charts 9 and 10 continue to focus on the three strategic alliances, based on annual data for the calendar years indicated. Chart 9 provides additional detail on traffic growth trends by broad market sector, and Chart 10 provides the same detail in a comparison of alliance carriers with other carriers.

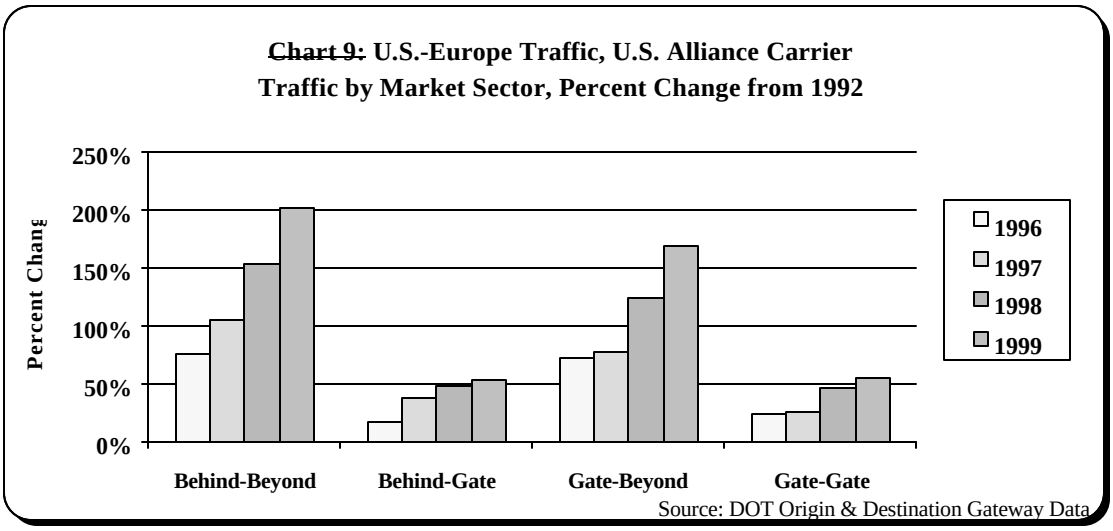
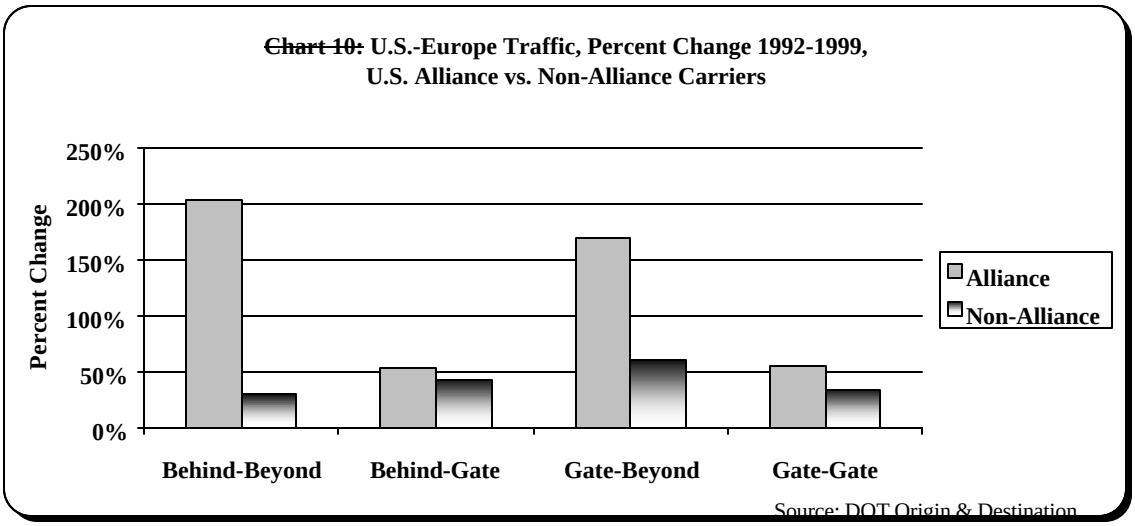



Chart 9 shows that the increase in connecting traffic in the two beyond European gateway market sectors continues to be phenomenal. The lesser increase in behind U.S. gateway traffic is not surprising since the U.S. network carriers' hubs were more developed when the alliances were formed, and U.S. carriers have competed vigorously for traffic in those markets for years. The stronger growth in beyond European gateway markets reflects both the further development of European hubs, greatly assisted by traffic flows from the U.S., both in terms of the number of markets they serve and increased network capabilities enabled by the development of stronger connecting banks. It is also important to relate the rapid growth in the beyond European gateway markets shown here to the information provided in Chart 1, which shows such large fare reductions in these same market sectors since 1996. The markets that were the most poorly served in the absence of alliances would appear to be benefiting the most from the better, more competitive service made possible by the liberalization efforts that have enabled alliances to flourish.

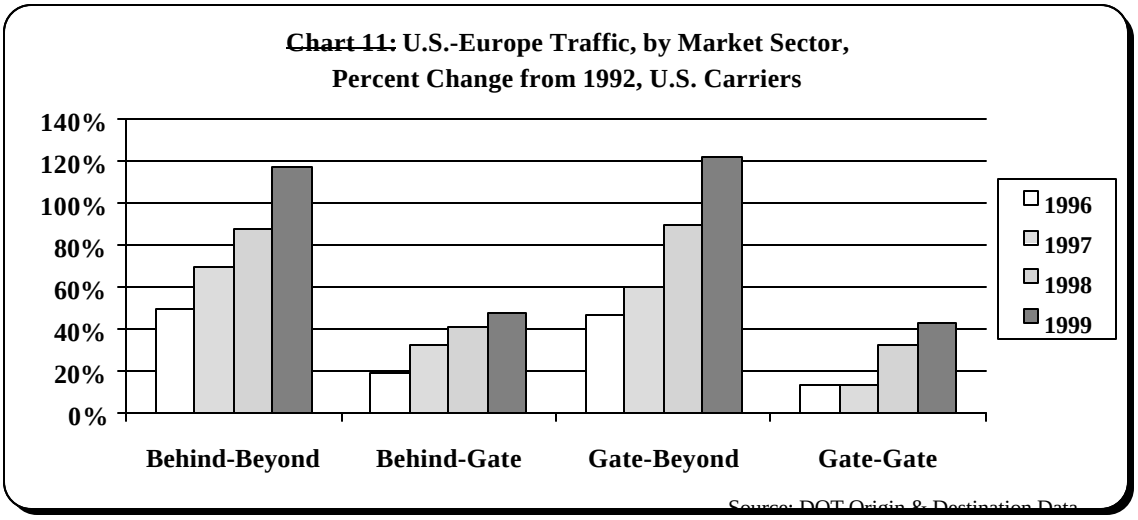


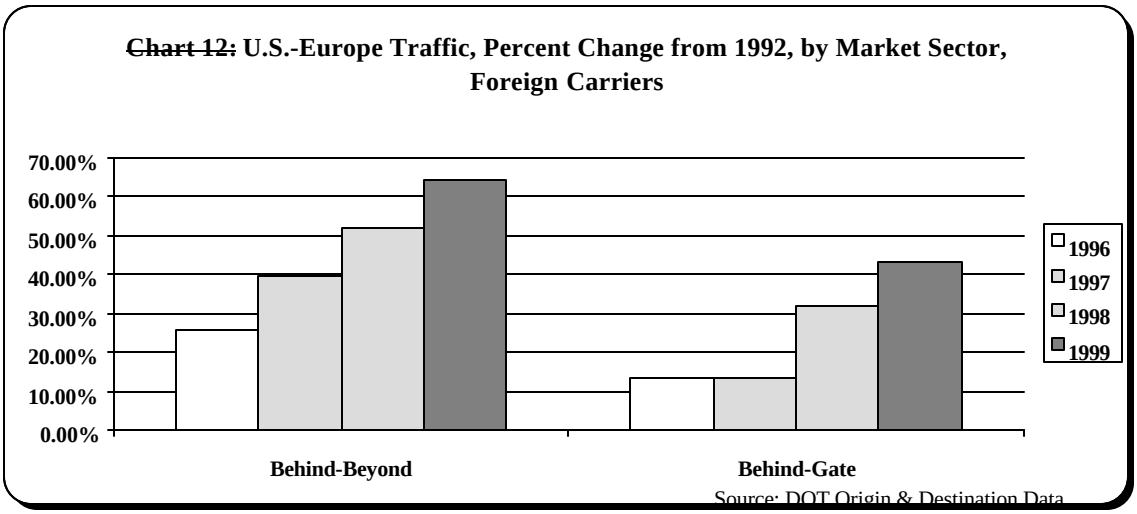
***Traffic on both alliance and non-alliance carriers have increased dramatically, demonstrating that deregulation and airline alliances have not simply re-allocated traffic among carriers but have stimulated additional demand. Increased supply (capacity) is a critically important component of consumer benefits in deregulated markets.***

The comparison of alliance carrier results with other carriers in Chart 10 demonstrates that even non-alliance carriers are experiencing traffic growth. Although this growth is certainly modest relative to alliance carriers, this is further evidence that much of the increased alliance traffic is new, rather than merely traffic that has been diverted from other carriers.

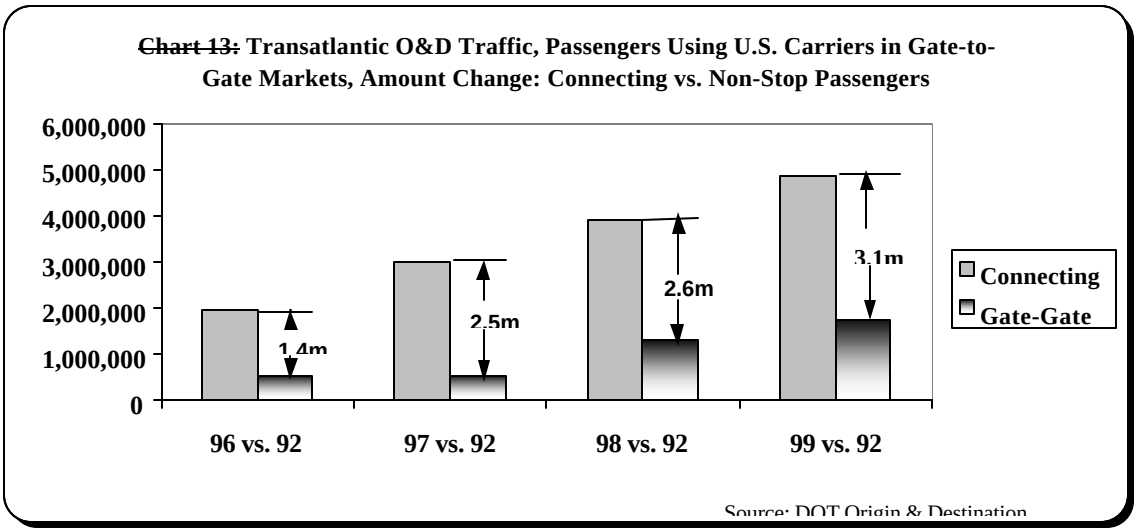
Charts 11, 12, and 13 continue to focus on traffic by the four broad market sectors, but reflect industry-wide data rather than data that is limited to the alliance carriers. The point of this information is twofold. First, demonstrating increased traffic on an industry basis removes any doubts about whether alliance growth reflects new traffic or is merely traffic diverted from other carriers. Second, this information shows that, if anything, traffic growth in the historically underserved connecting market sectors is not showing any signs of losing momentum, but is accelerating.

These charts include all passengers traveling across the Atlantic from U.S. cities to Europe, Africa, the Middle East, and Asia. Charts 11 and 12 show those passengers that were carried across the Atlantic by U.S. carriers and foreign-flag carriers, respectively. Chart 12 is limited to the two market sectors for which we receive complete foreign carrier data.






While Charts 11 and 12 show unprecedented relative growth in connecting market sectors, Chart 13 shows very large actual growth in actual numbers of passengers.

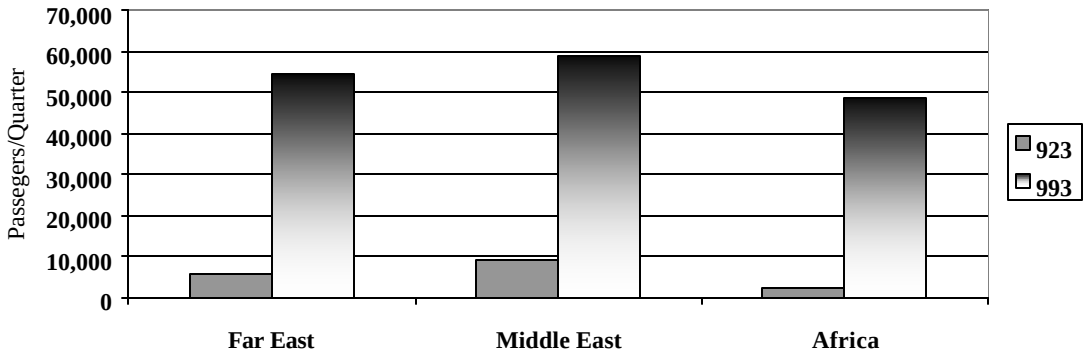



One of the noteworthy points of Chart 13 is that, though gate-to-gate traffic has started to show significant gains in 1998 and 1999, the increases in connecting passengers continue to far outpace that growth. Indeed, this trend accelerated during 1999. Again, tying the trends in this chart to the increasing rate of fare declines that were experienced during 1999 confirms various other indications we see in the data; namely, that alliance development across the Atlantic will continue to the benefit of consumers.

***International airline alliances have improved service in historically underserved regions of the world and, as a result, have stimulated additional demand for air transportation in those markets.***

As we did in our first report, Charts 14 and 15 narrow the focus to the U.S., on the one hand, and Africa, the Middle East, and the Far East, on the other. We combined detailed information for the Northwest/KLM alliance and the alliance between Delta and its partners, via their respective European network gateways. This illustrates the tremendous benefits gained by more distant areas served across the Atlantic which had very limited service by the U.S. carriers' alliance partners before the formation of their alliances. Improved, more complete service to longer distance, generally lower density markets is a fundamental and primary benefit of developing broad-based multinational alliances. No other operating system can effectively serve such markets, yet multiple alliances can each do so, resulting in not only better service but competitive benefits as well.

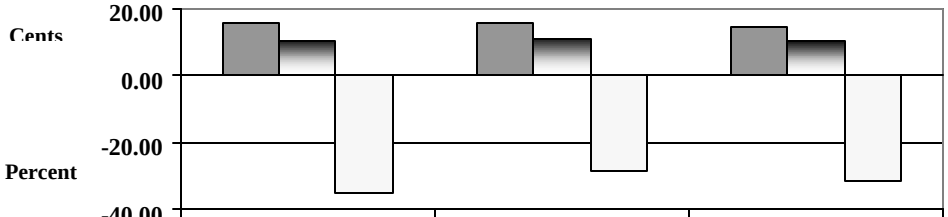
**~~Chart 14:~~ Passengers Flowing Over Alliance Gateways, Delta Partners and Northwest-KLM, 1992 vs. 1999**




Source: DOT Origin & Destination Gateway Data

As we have indicated, the greatly improved service by the European alliance partners from their domestic hubs to cities in Africa, the Middle East, and the Far East is significantly attributable to the traffic flows from the U.S. as a consequence of their alliances. The resulting traffic gains are, by any measure, quite remarkable. And again, as shown in Chart 15, remarkable price reductions occur simultaneously with the large traffic gains. Thus the cycle repeats itself—better service, freedom to establish and market complete pricing structures, and competitive incentives to maximize service and price initiatives.

**~~Chart 15:~~ Change in Fares (Pax Yield-Cents) of Passengers Flowing Over European Alliance Gateways, Delta Partners and Northwest-KLM, 1992 vs. 1999**




| | Far East | Middle East | Africa |
|---|---|---|---|
| 923 Yield (Cents) | 15.88 | 15.56 | 14.62 |
| 993 Yield (Cents) | 10.32 | 11.08 | 9.96 |
| Percent Change | -35 | -29 | -32 |

Source: DOT Origin & Destination Gateway Data

One last look at the ability of global networks to provide excellent, competitive service on a broad scale is based on service between individual U.S. cities and Europe. The three strategic transatlantic alliances that existed in 1999 compete extensively in large numbers of U.S. markets. Two or more of the alliances compete at more than 200 U.S. cities, and all three alliances compete at 138 U.S. cities.

Focusing on the latter demonstrates the immense consumer benefits attributable to alliance development. Comparing 1999 traffic between these cities with 1995 traffic, or the period immediately preceding the formation of the last two strategic alliances in early 1996, shows double digit annual growth for 56 of the cities, and total growth of more than 25 percent for another 29 cities. The data show that the benefit of this strong growth is widespread, with cities represented in all but seven states. The data also show that large traffic increases are virtually always accompanied by major reductions in price (unadjusted for inflation). Significantly, the traffic growth and price reductions, in a vast majority of instances, are even more positive to small historically underserved cities in Europe than to larger European cities. Most of these cities are not hub cities or even large cities, attesting to the ability of global networks to better serve small markets. Three examples follow:

Birmingham, Alabama: Traffic increased by 39 percent and fares declined by 16 percent. Between Birmingham and small cities in Europe, traffic doubled (up 99 percent), and fares declined by 34 percent.

Portland, Oregon: Traffic increased by 61 percent and fares declined by 12 percent. Between Portland and small cities in Europe, traffic more than doubled (up 138 percent) and fares declined by 33 percent.

Sioux Falls, South Dakota: Traffic increased by 65 percent and fares declined by 31 percent. Between Sioux Falls and small cities in Europe, traffic more than doubled (up 117 percent) and fares declined by 33 percent.

This second report on international aviation developments updates the broad picture outlined in our first report of how the airline industry has reacted to air transport deregulation and the attendant effects on traffic and fares. Future reports will examine developments in other market sectors, explore additional changes as they occur, and eventually investigate additional international entities in greater depth as the effects of international liberalization and airline globalization take hold in countries with whom we have more recently concluded open skies agreements.