INTERNATIONAL AVIATION DEVELOPMENTS:

GLOBAL DEREGULATION TAKES OFF
(First Report)

U.S. Department of Transportation
Office of the Secretary
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INTERNATIONAL AVIATION DEVELOPMENTS

Global Deregulation Takes Off

Executive Summary:

The *United States International Air Transportation Policy Statement* developed in 1995 to facilitate international aviation recognizes that the trend toward expanding international airline networks is an inevitable response to the underlying network economics of the airline industry. Since adopting that policy, the Department of Transportation, together with the Department of State, has successfully negotiated numerous open skies agreements. These have led to major changes in how international service is provided today.

This report provides a broad picture of how immunized alliance development has affected traffic and fares in the transatlantic market. The report shows that multinational alliances are playing a key role in the evolving international aviation economic and competitive environment. They are providing improved, more competitive services in literally thousands of markets. And alliances have provided a way for carriers to mitigate the limitations of bilateral agreements, ownership restrictions, and licensing and control regulation. As a consequence, they are:

- Stimulating demand.
- Leading pro-competitive changes in industry structure.
- Providing consumers the benefits of substantially lower prices.

Multinational alliances have fueled enormous increases in connecting traffic, both in markets that have historically suffered from poor quality interline service and virtually no competitive benefits, but also by providing service alternatives in markets that already have the benefit of seamless service by other individual airlines. They are just one important way that the airline industry has responded to aviation liberalization and the evolving competitive environment. They are also the only practical way to provide better service to thousands of passengers in long distance, low-density international markets.

Two other matters must be addressed as a preliminary matter. First, it must be emphasized that this report does not assert that alliances are de facto pro-competitive. It is fundamentally important to consider all aspects of an alliance and the market configuration in which it is set to operate. Each alliance must be examined on a case-by-case basis. Furthermore, the trends and conclusions identified in this report are, by definition, broad and require further study. We are at the very early stages of global aviation liberalization. We are also mindful that international aviation and its competitive dynamic are constantly changing and we will continue to monitor the development of alliances within the context of aviation liberalization to evaluate their effect on the aviation industry and consumer welfare.

Second, much of the rationale that supports alliances between U.S. and foreign airlines does not apply to alliances between U.S. airlines. International alliances are demand driven, particularly in large market sectors that have historically been subjected to inferior, noncompetitive service. Interline service accommodates only a small fraction of U.S. domestic passengers. Alliances between domestic airlines are not needed to overcome regulatory constraints, and the additional market access does not compare

with that provided by an end-to-end alliance with a foreign airline. The domestic market is by far the largest market for each of our airlines, and the domestic networks of the large airlines substantially overlap. Apart from the competitive implications, new market access for an individual airline's passengers is much more limited. Unlike alliances with foreign airlines, which allow the partners to establish their first seamless services in most markets they subsequently serve jointly, the vast majority of markets could be operated seamlessly by either carrier. In fact, one or the other already does provide online service in most markets for a vast majority of passengers.

Background

This is the first in a series of reports that examine the effects of international air transportation developments. This report will focus on transatlantic markets because of the liberalization that has been achieved and the structural changes that have occurred to date as a result in that important component of the global airline system.

This report provides a broad picture of how the airline industry has reacted to the relaxation of regulatory constraints and the effects on traffic and fares. The report specifically addresses some of the effects of the larger immunized alliances, but does not attempt to attribute those effects to any particular feature of the alliances, such as antitrust immunity. There are successful alliances that have operated without antitrust immunity.

Future reports will explore developments in other broad market sectors, examine continuing evolutionary changes, and eventually investigate all international entities in more depth than presented in this report.

To assist us in our efforts to understand international aviation developments, we welcome comments on this report as well as suggestions regarding specific issues or tendencies we should examine and particular analyses we could undertake in future reports. We request that such comments be filed electronically at Alliance.Comments@ost.dot.gov. Such comments may be made public.

Introduction

Air transportation is a large and growing part of the word's economy. The Air Transport Action Group estimated the global economic impact of air transport at over $1 trillion in 1994, accounting for 24 million jobs – 3.3 million employed by the industry, 7.4 million by related industries, and 13.3 million induced in other sectors of the economy. This organization forecast that by 2010 the economic impact would approach $2 trillion, accounting for over 30 million jobs.

According to a study by the World Travel and Tourism Council, travel and tourism is the world's largest industry directly and indirectly driving more than 10% of global jobs, GDP, and investment.

Clearly, the development of an efficient global air transportation system has enormous consequences not just for consumers, but for local, national, and world economies as well. The United States' own domestic deregulation, and the international liberalization experience to date as we will illustrate in this report, clearly demonstrate that the

development of the global aviation market can be either significantly enhanced by removing government imposed restrictions or hindered by the failure to do so.

The Department of Transportation, working with the Department of State and other federal agencies, developed the *United States International Air Transportation Policy Statement* in 1995 to facilitate the development of international aviation. That policy recognizes that the trend toward expanding international airline networks is an inevitable response to the underlying network economics of the industry and seeks to enable U.S. airlines to become early and significant players in this globalization process. Our foremost international aviation goal, after safety, is opening up international markets to the forces of competition.

The airline globalization process is being driven by economic demand and airlines' desire to enhance their competitive positions through better access to as many markets and passengers as possible in the most efficient way possible.

Airlines, like other global network industries such as telecommunications, are in many ways on the cutting edge of the truly global economy. They face the challenge of providing services to customers around the world who primarily fly from a home base where they live and work to a myriad of domestic and international destinations. In order to compete profitably by satisfying the increasingly global needs of customers, airlines must offer passengers as many destinations around the globe as possible.

Historically, the vast majority of international markets have been underserved due to a combination of restrictive bilateral agreements and the resulting lack of competition. Until recently, the bilateral focus has been on 3rd and 4th freedom services, that is, travel between the countries that are signatory to a particular bilateral agreement, augmented by limited ability to serve points beyond. Now, however, developing airline networks require market access not just between two countries, but also to large catchment areas behind one or both countries. Our agreements are still bilateral, but the traffic is not.

Until airlines began to link networks, the vast majority of city-pair markets in connecting market sectors could only be served with interline services. Such service has had limited competitive effectiveness because it does not meet the customer's needs of convenient schedules, frequency, and through check-in, and other service features. Interline service is therefore difficult to market and involves little lasting commitment to seamless customer service by the partners. Carriers, in turn, are reluctant to invest the time and money to enhance such service.

The airline industry, in response to consumer demand, sees the enormous growth potential for the over-regulated and under-served international market, and individual airlines are trying to position themselves to participate in that growth. The resulting development of large strategic alliances, together with code sharing and other marketing arrangements is changing the structure of the airline industry and is generating new pressures to overcome the limitations of restrictive bilateral agreements. They have provided a way for carriers to mitigate the limitations of bilateral agreements, ownership restrictions, and licensing and control regulation.

Multinational alliances are playing a key role in the evolving international aviation economic and competitive environment.

Apart from legal and infrastructure constraints, no airline, however strong, is able to efficiently provide service with its own aircraft and crew to every destination its customers require. Using the transatlantic market as an example, there are several hundred cities in the U.S. and also in Europe that will never have the benefit of nonstop service. There are literally thousands of transatlantic city-pair markets that can indeed only be served by connecting services, many of which that can only be served by multiple connections. Thus, fully serving the transatlantic market unilaterally would require the development of offshore hubs, an economic and operational impossibility in any acceptable time frame.

Yet our domestic experience, and, indeed, the development of hub-and-spoke systems around the world, demonstrates that the airline industry, by its very nature, is a network industry and that network competition produces far better service at lower prices in the vast majority of markets. Carriers have learned that hub-and-spoke network systems are an efficient way to serve most city-pair markets – particularly longer-distance, less-dense markets. In addition to economic realities, infrastructure constraints, bilateral constraints, and ownership and control limitations preclude individual airlines from building global systems.

Airline alliances, therefore, are the only practical way to provide improved, more competitive services to such markets. This explains the growth in transnational alliances, as airlines around the world link their networks to capture the enormous efficiencies of larger networks and produce and market improved service to an ever-wider array of city-pairs.

Alliances with foreign airlines provide a number of other important advantages, such as market presence, experience, and expertise of the partners in their respective homelands. Airlines typically possess advantages in their home market through their local knowledge, the development of sound relationships with input suppliers, and specialized marketing knowledge and distribution channels. These advantages diminish as an airline moves operations away from its home market to areas where it competes with other airlines that have their own home market advantages.

Other important alternatives will supplement global alliances and compete with them.

Networks that are more regional in scope will continue to offer competitive service in many markets by using large international destinations as spokes to the various continental networks. We see many examples of this today in transatlantic markets. USAirways' code-share arrangement with Deutsche BA at Munich, Germany has, for example, resulted in very strong traffic growth between those carrier's respective networks. This is consistent with the U.S. domestic experience where smaller networks effectively compete with the broad national networks.

Our domestic experience has also shown that not all markets can be most efficiently served by networks. Low-cost point-to-point service is likely to evolve in international markets as well. This process has already begun, and is likely to rapidly expand as the international marketplace opens up and expands the opportunity for small new airlines to

develop such service and even linear systems. Indeed, new ways of competing may well evolve in international markets, given the differing characteristics of many international markets compared with U.S. domestic markets. Again, we base this on our own domestic experience that conclusively demonstrates the ability of private industry to react to marketplace demands and competitive necessities.

The Positive Benefits of Alliances To Date

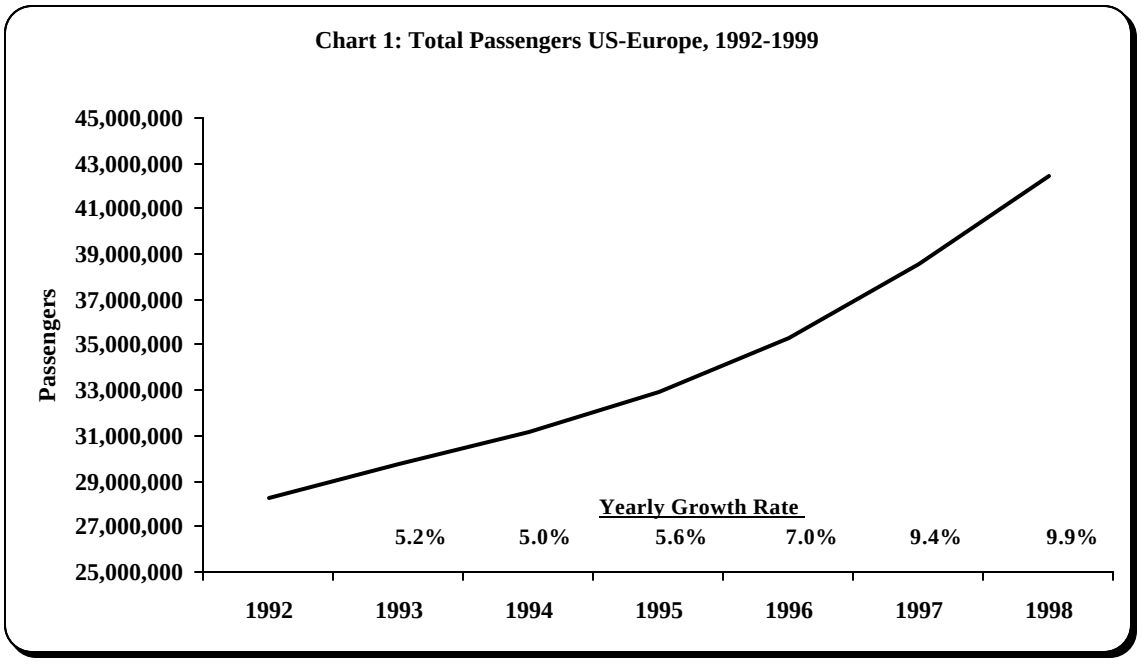
The overwhelming balance of evidence demonstrates that international deregulation resulting from open skies agreements has greatly expanded the well being of consumers. The evidence also shows that broad-based immunized alliances have been an important component of open skies related developments.

The Department has undertaken various analyses of the impacts of airline alliance development. As indicated at the outset, this particular report provides a broad picture of how the airline industry has reacted to the relaxation of regulatory constraints in transatlantic markets, and the effect this has had, to date, on competition and consumers.

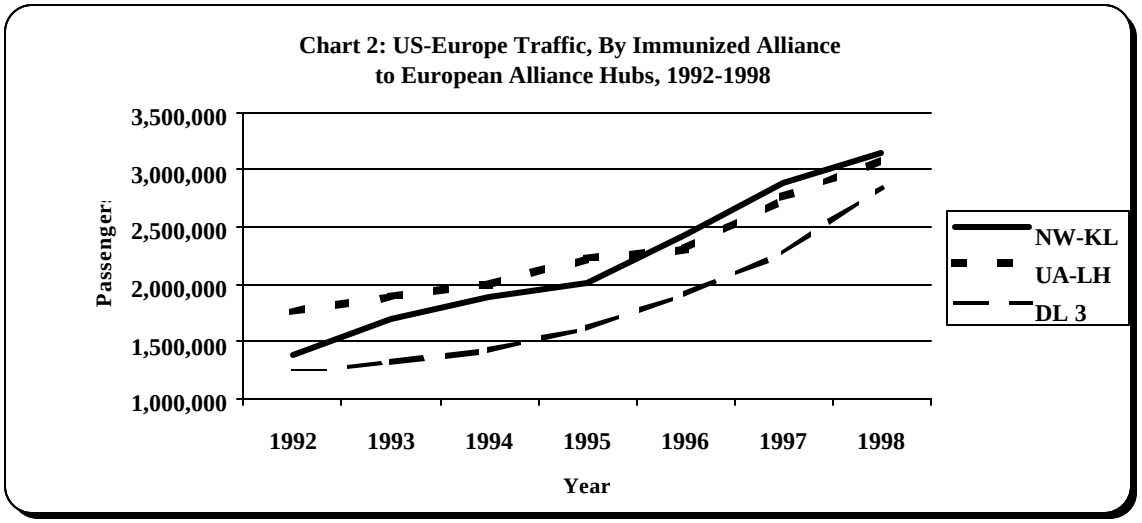
This report uses a four-step process for examining transatlantic alliance development. First, we use segment traffic data to demonstrate changes in traffic flows between the U.S. and Europe. Second, we use origin and destination data reported by U.S. carriers to demonstrate that the increased traffic flows over the alliance gateways are predominantly in connecting markets, or where we would expect the growth to occur if it is, indeed, stimulated by linking networks. Third, we use origin and destination data to also demonstrate that much of the increased traffic moving over alliance gateways is not diverted traffic, but new traffic in markets that have historically suffered from poor service and inadequate competition. Fourth, we have examined fare changes in transatlantic markets, distinguishing between different market sectors, and between countries that have open skies agreements with the U.S. and those that do not. The results of this multi-step process follow.

Multinational Alliances are Stimulating Demand:

Chart 1 shows the total number of passengers flowing between the U.S. and European gateway cities for calendar years 1992 through 1998. Note that following growth of about 5% per year through 1995, the growth rate sharply increased in 1996 and then accelerated in 1997 and 1998. Two of the three immunized alliances received that authority in the spring of 1996. We are also aware that other factors have contributed to this growth, including the development of more limited code-share alliances, non-alliance expansion by some individual airlines, and global economic considerations. But each of these factors was facilitated by open-skies agreements that enabled airlines to react to marketplace demands.



The traffic growth by the immunized alliances has been remarkable, as illustrated in Chart 2. 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. The data are illustrated by calendar year from 1992, the year before the first alliance received immunity, and 1998. These data reveal a number of relevant facts.



For Northwest and KLM traffic has increased throughout this period. This illustrates that alliance development is a long-term process. Also, those carriers' growth accelerated after the Delta and United alliances received immunity and began experiencing their own traffic increases. This suggests a strong reaction to the new competition by those alliances, and is evidence that the traffic growth achieved by those alliances was not merely diversion from existing carriers or alliances. In view of the relatively small local market between the U.S. and Amsterdam, the very rapid growth in traffic for this alliance

also suggests that the majority of the increase is in connecting market sectors, growth that was made possible by linking the carrier's respective alliances.

An examination of Northwest's traffic and capacity data confirm this. Comparing pre-alliance data (CY 1992) with calendar year 1998 shows that Northwest's T-100 segment traffic moving between its U.S. gateway cities and Amsterdam increased more than 9-fold, or by almost 1 million passengers annually. Northwest's nonstop local origin and destination traffic moving between these same U.S. gateways and Amsterdam increased by only 120,000 during this same period, and most of this is from other carriers' U.S. hub gateways where Northwest now offers competitive service to Europe.

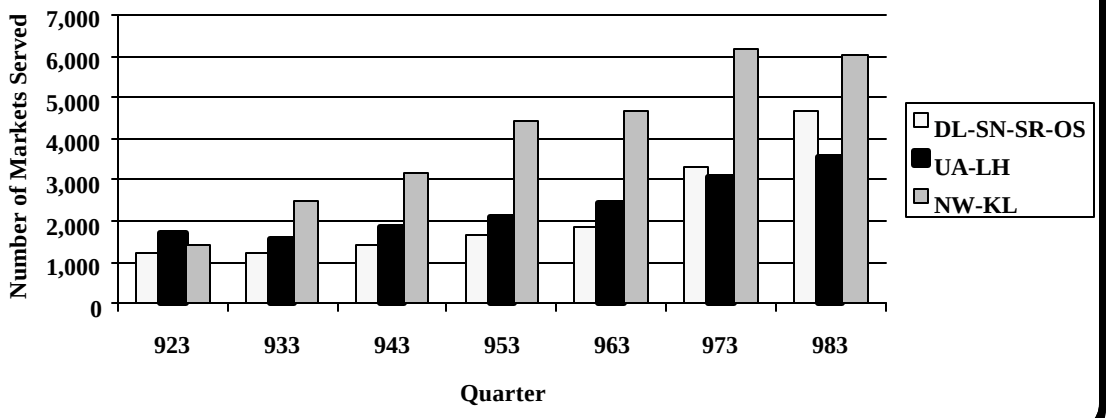
For each of the other two alliances, note that their traffic growth substantially increased after the airlines began fully implementing the alliances after receiving immunity. An earlier jump in growth for United and Lufthansa, in 1994, was the result of those carriers' code share arrangement at that time. It is interesting that after an initial spurt, that growth tapered off until they received immunity in early 1996. The fact that all three alliances are experiencing very strong growth rates is suggestive that a large portion of their new traffic is not merely diverted from other carriers.

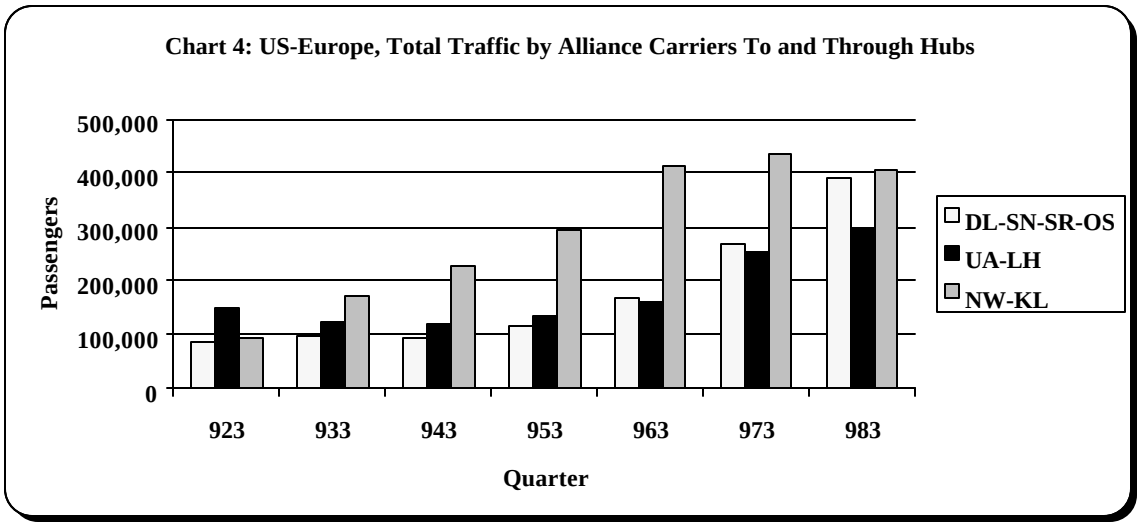
Multinational Alliances are Rapidly Expanding

This leads into our further examination of the question of whether new alliance traffic is merely traffic that has been diverted from other airlines as some observers suggest. It is worth pointing out that even if all new alliance traffic had been diverted from other carriers, economists would say that the passengers had benefited since they elected a new service option. But the data show that not all passengers were diverted from other carriers; indeed, that much if not most of the new traffic represents traffic that is new to the system. Charts 3 through 12 assess this aspect of alliance growth.

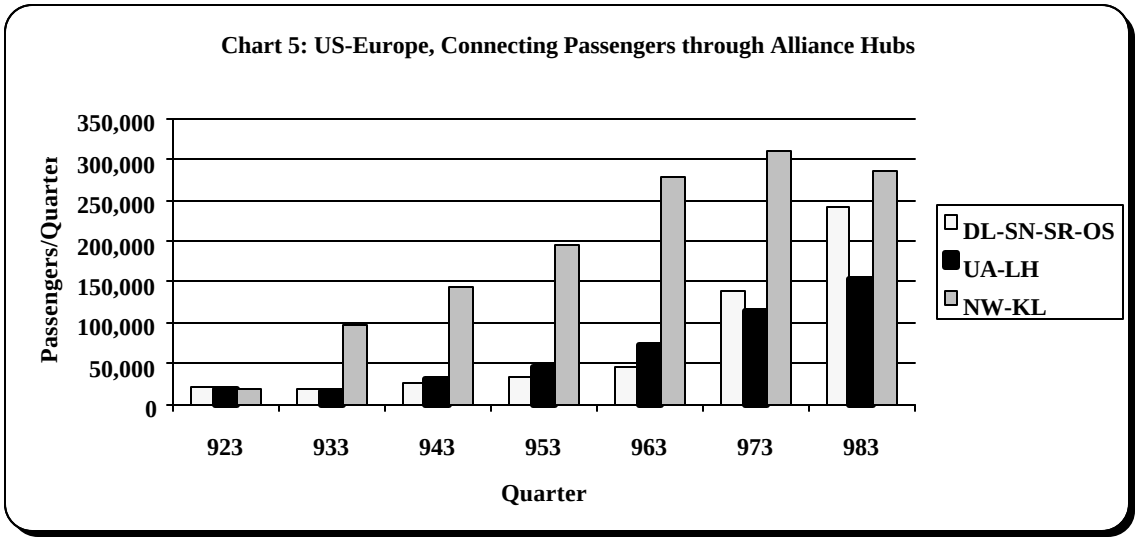
Charts 3 through 5 reflect the development of the three alliances in terms of number of markets served, total passengers, and passengers connecting between the alliance partners from 1992 through 1998, using the third quarter of each year. The increases are truly phenomenal, and, in the case of Delta and United, are clearly linked to their receipt of immunity and full alliance implementation. (The declines shown for Northwest and KLM for the third quarter of 1998 likely reflect the Northwest labor dispute.)

Chart 3: US-Europe, Market Expansion through Alliance Hubs



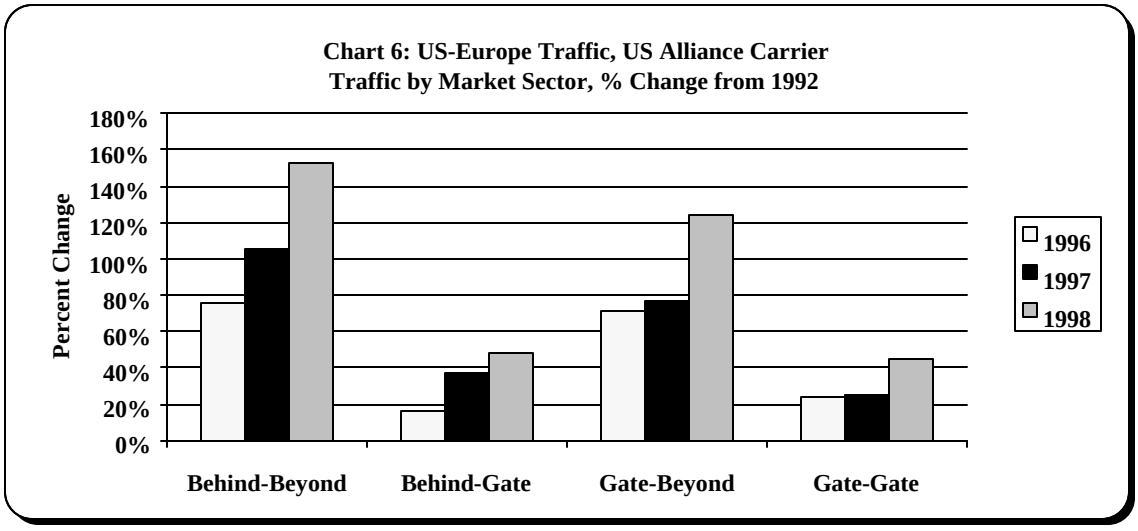


For each of the alliances, while overall growth is quite strong, it is particularly pronounced for connecting passengers. In fact, in the case of each alliance, about 90 percent of the markets in which the alliance partners carried passengers averaged one passenger or less per day. Yet those markets accounted for 25 to 35 percent of total passengers. This what networks do – move small numbers of passengers in large numbers of markets; passengers that collectively support substantial volumes of service much of which would not otherwise be economically viable.



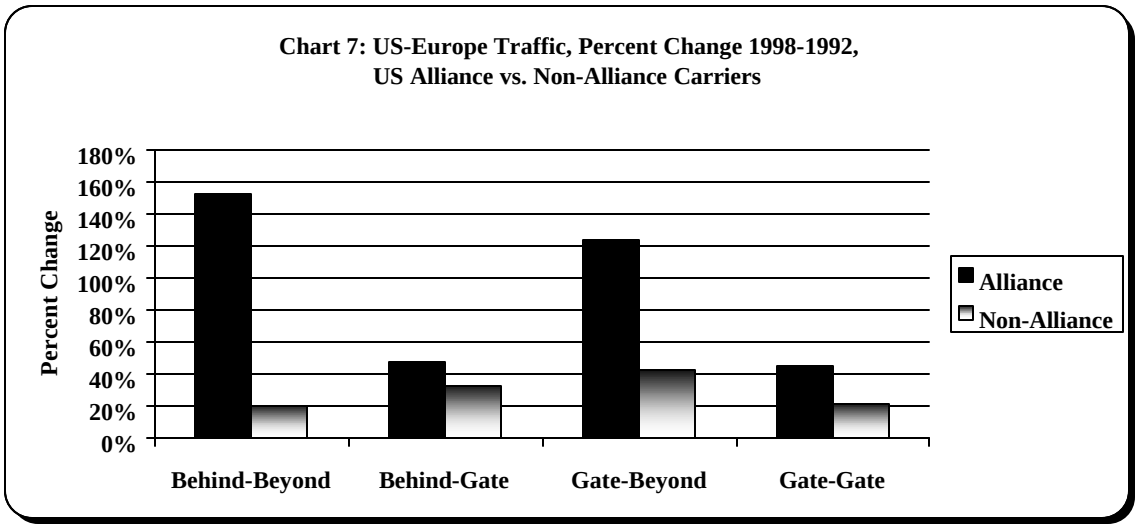
This has important implications for industry structure. As these alliances have expanded geographically, they have also overlapped each other more and more. In the third quarter of 1995, two or more of these alliances carried just over 300,000 passengers in the same city-pair markets. By the third quarter of 1998, two or more of these alliances carried almost 800,000 passengers in over 3,000 overlap city-pair markets. This is strong evidence that the alliances are developing a more competitive industry structure. We cannot tell from this information to what extent the growth reflects better service, and to what extent the growth reflects more competitive prices. We address the latter question later.

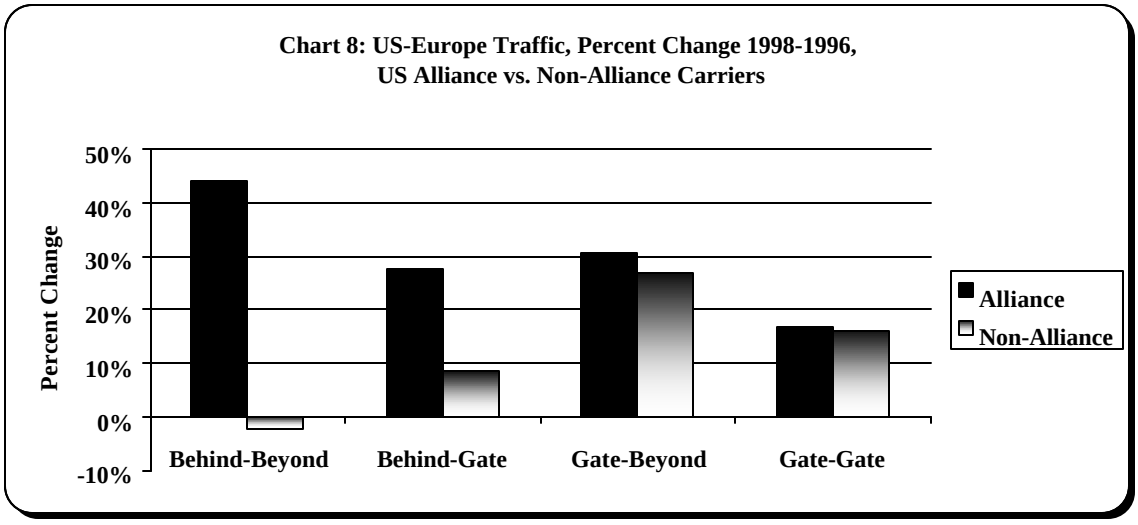
Chart 6 provides more evidence that newly stimulated traffic accounts for a large proportion of alliance growth. This chart compares traffic growth for the three alliances between 1992, on the one hand, and 1996, 1997, and 1998, on the other. The comparisons are made by four broad market sectors. These are behind-gate-beyond-gate markets, (for passengers that move from behind a U.S. gateway to beyond a European gateway), behind-gate to gate markets, gate to beyond-gate markets, and gate-to-gate markets. The results are striking in three respects. First, the two connecting market sectors that involve passengers moving beyond European gateways have increased at spectacular rates. Second, with the exception of the behind-gate market sector in 1996, each connecting market grew at a faster rate for each of the last three years than did traffic in the gate-gate markets. Third, the rate of growth is increasing across the board, but particularly in the connecting market sectors. This is significant when tied back to the long-term growth trend for Northwest and KLM. Alliance development is a long-term process, which suggests that alliance development is still in the infant stage, and that we can anticipate continued expansion of alliance services to the benefit of consumers for years to come.



Alliance Expansion Has Fueled System Growth.

Charts 7 and 8 reinforce the suggestion that rapid growth in connecting markets reflects





new traffic. Similar to Chart 6, these charts compare traffic by the four broad market sectors, but distinguish between the three alliance carriers and other U.S. carriers. Chart 7, which compares the change in traffic between 1992 and 1998, shows that even the non-alliance carriers experienced strong growth in all four market sectors. Chart 8, which compares 1996 and 1998, or the two years following the grant of immunity for two alliances, shows growth overall for the non-alliance carriers. Although the results are not positive in certain market sectors for the non-alliance carriers, and may suggest that they did indeed suffer some diversion to the alliance carriers, the rather phenomenal growth for the alliance carriers nevertheless indicates substantial new traffic overall.

The fact that the strongest traffic growth is in the least developed market sectors is evidence that alliances are not merely diverting traffic from other carriers. There is, however, further compelling evidence. Charts 9, 10 and 11 are structured after Chart 3, but include all traffic included in the Origin and Destination Survey of Airline Passengers reported by U.S. carriers. These are passengers traveling across the Atlantic between the U.S. and Europe, Africa, the Middle East, and Asia. Chart 9 reflects those passengers that were carried across the Atlantic by U.S. carriers, and Chart 10 reflects those passengers that were carried across the Atlantic by foreign-flag carriers (this

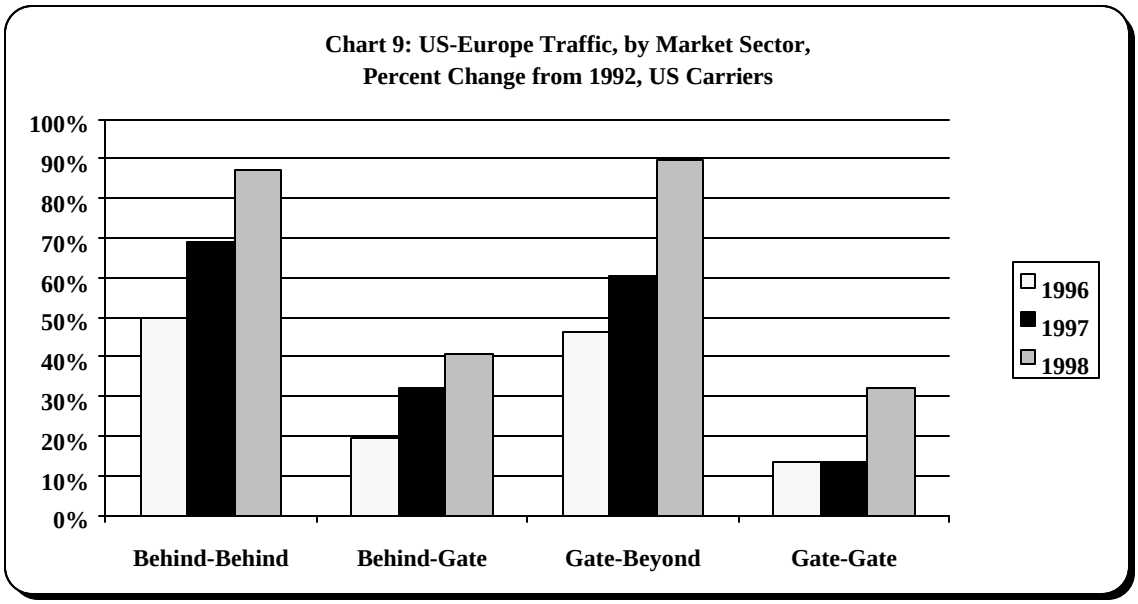
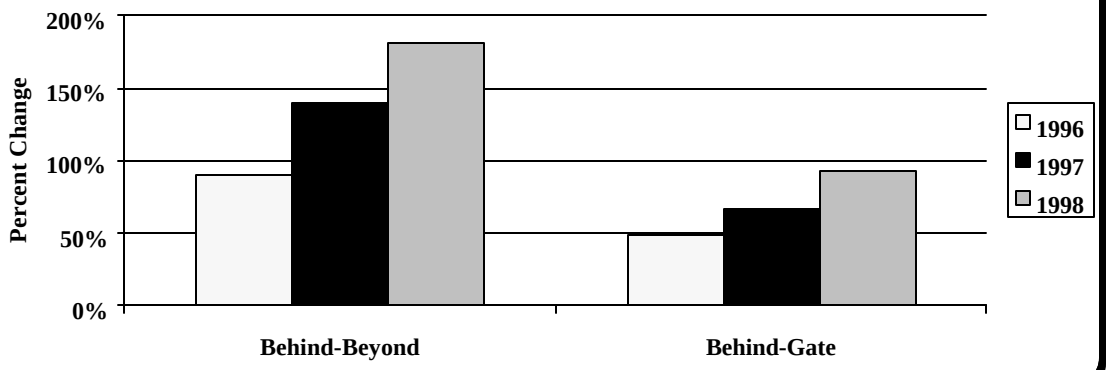


Chart 10: US-Europe Traffic, by Market Sectors, Percent Change from 1992, Non-US Carriers



comparison is limited to the two market sectors for which we receive complete foreign carrier data). This shows that, even on an industry basis, the predominant traffic growth has been in the same connecting market sectors as alliance growth. Without question, alliances are developing new traffic in connecting markets.

Chart 11 illustrates absolute rather than relative changes in the number of passengers. This shows that growth in connecting passengers has far outpaced growth in local nonstop passengers traveling in gate-to-gate markets. While this does not distinguish between growth in historically underserved connecting markets and increased connecting passengers in markets that already received single-carrier service, either represents benefits for consumers.

Chart 11: Transatlantic O&D Traffic, Passengers Using US Carriers in Gate-to-Gate Markets, Amount Change: Connecting vs. Non-Stop Passengers

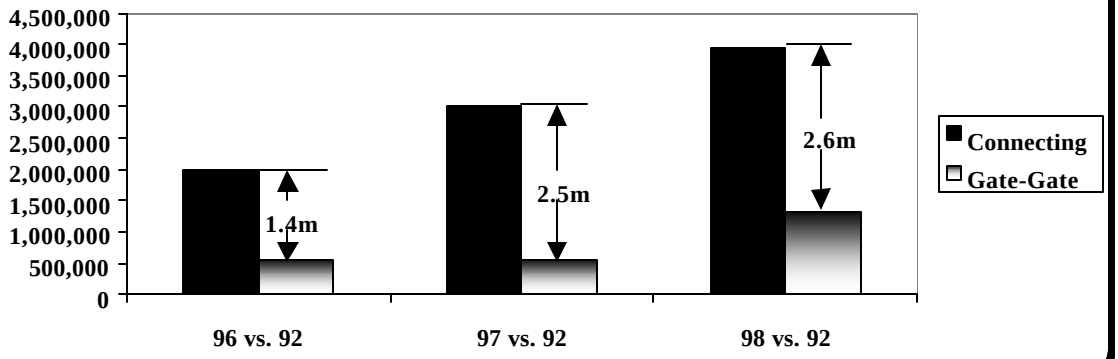
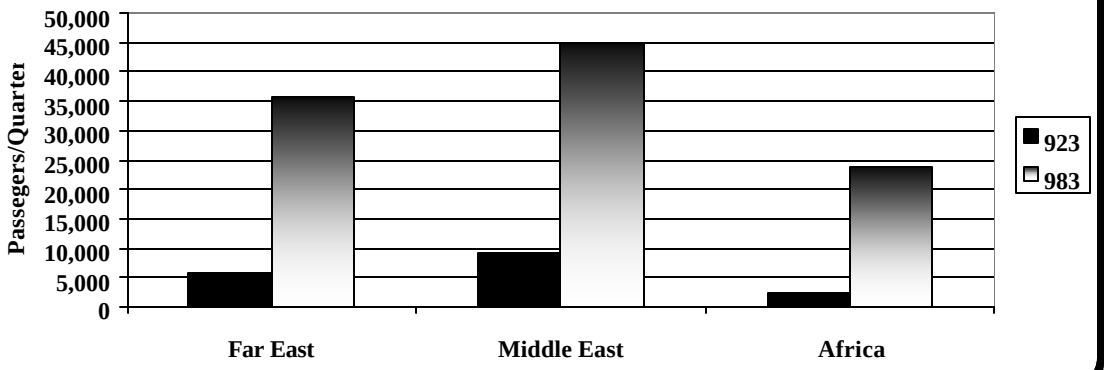


Chart 12 is another illustration of how alliances have resulted in new passengers in connecting markets. In this chart we have identified the growth in traffic between the U.S., on the one hand, and Africa, the Middle East, and the Far East, on either the Northwest/KLM alliance or the alliance between Delta and its Atlantic Excellence partners, via their respective European network gateways. This particular increase in

Chart 12: Passengers Flowing Over Alliance Gateways, Delta Partners and Northwest- KLM, 1992 vs. 1998

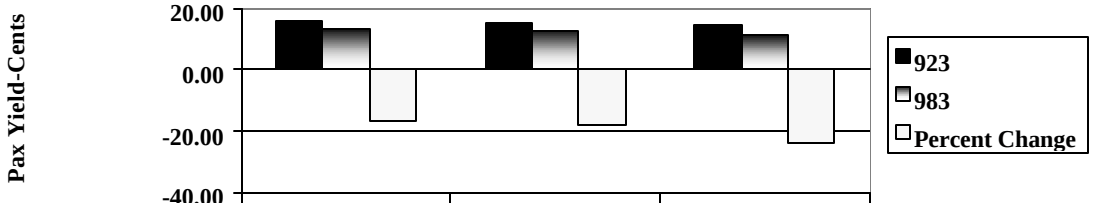


traffic is important because it illustrates the so-called network halo effect. It likely is the direct result of linking alliances. For example, new traffic flows from the U.S. aided KLM's ability to expand its Amsterdam hub service to these more distant regions. This increased the network efficiency of the Amsterdam hub and has likely been a factor in that alliance deciding to expand service to additional U.S. gateways, including Northwest's smallest domestic hub, Memphis, but also non-Northwest hub cites (New York and Washington). In addition to the increased network benefits for transatlantic passengers, expanding Amsterdam hub is a benefit to domestic European passengers.

Open Skies Bilaterals Have Resulted in Major Fare Benefits for Consumers

We now turn to the question of the fare effects of alliance development. Chart 13 compares changes in average yields, unadjusted for inflation, between 1992 and 1998, for the same markets and passengers contained in Chart 12. The large decline in average yields over this six-year period has not been adjusted for changes in market mix, which would likely have some effect on yields, but the reductions are nevertheless impressive. There are several possible reasons for the changes reflected in Chart 13. First, the development of immunized alliances and other code-share arrangements have enabled airlines to offer more complete pricing structures. Carriers are reluctant to do

Chart 13: Change in Fares (Pax Yield-Cents) of Passengers Flowing Over European Alliance Gateways, Delta Partners and Northwest-KLM, 1992 vs. 1998



	Far East	Middle East	Africa
923	15.88	15.56	14.62
983	13.17	12.78	11.10
Percent Change	-17	-18	-24

this on a purely interline basis, and, as a consequence, some of the lower, more restrictive discount fares typically are not made available. In addition, once such pricing schemes and improved seamless services are in place between alliance partners, the carriers are then able to market those areas. As more multinational networks serve these markets, increased competitive pressures probably result in price benefits to consumers. And liberalization has allowed carriers to significantly expand capacity across the Atlantic. Apart from other influences, increasing supply has the effect of encouraging more travel by price-sensitive passengers.

Following is more revealing evidence of the price effects of liberalization and resulting alliance expansion. In order to illustrate important fare trends without violating the confidentiality of the data we have collected the transatlantic fare information into the four broad market sectors used in other graphs in this report. These are gateway-to-gateway markets (G-G), behind gateway-to-gateway markets (B-G), gateway-to-beyond gateway markets (G-B), and behind gateway to beyond gateway markets (B-B). A description of the methodology used in this analysis is attached.

Fare information for each of these market sectors is further segmented to distinguish between passengers that traveled between the US and open-skies countries and between the US and other countries across the Atlantic. We have also removed the effects of changes in traffic mix between the two years by using actual fares reported for each period, but weighting the various city-pair markets for both periods by 1998 traffic levels.

The following chart, Chart 14, compares such information for calendar years 1996 and 1998 (nominal fares, not inflation-adjusted fares). We use 1996 as our base period because it was during 1996 that two of the three immunized transatlantic alliances were approved, and 1996 also represents the end of a period of escalating prices in transatlantic markets. To further protect the confidentially of the information the chart only reveals changes in prices, and not fare levels.

Chart 14: Transatlantic Markets, Changes in Average Fare, 1998 vs. 1996

	BB	BG	GB	GG	Total
Open Skies	-17.5	-14.0	-15.9	-11.1	-13.7
Non-Open Skies	-3.5	-6.0	-5.3	0.7	-2.7

The relative changes from market sector to market sector are consistent with what we would expect to see as a consequence of forming alliances to link networks.

First, the open-skies markets, the deregulated markets where airlines have pricing and scheduling freedom, show much more favorable price trends.

Second, we would expect the less favorable to consumer results to be in the gateway-to-gateway markets where the formation of alliances reduces the number of nonstop competitors. The fare reductions that have nevertheless occurred may reflect a number of compensating factors, such as more connecting service competition (from other alliances), greater pricing flexibility, or the effects of added capacity in response to new traffic stimulated in connecting markets.

Third, we would expect the least affected connecting market sector to be the behind to gateway sector, since our industry has competed vigorously in these markets for years with their well developed hub gateways.

Fourth, and conversely, we would expect to see somewhat greater fare reductions in the gateway to beyond gate sector since the European gateway hubs are still developing. Alliance growth has greatly facilitated the development of European hubs, so we would expect to see competition increase more (and fares further decrease) over those gateways as a consequence.

Fifth, the behind-beyond market sector is where service and competition have suffered the most over the years, so this is where we would expect to see the greatest competitive benefits as a consequence of alliance development. As indicated, we know that continuing alliance expansion is resulting in rapid growth in the number of overlap markets.

Finally, the reductions in the three connecting market sectors of non-open skies countries are also expected. While those markets are not deregulated, alliances nevertheless provide additional, competitive access to such markets.

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METHODOLOGY FOR INTERNATIONAL FARE COMPARISONS

We first identified gate-to-gate markets between the U.S. and Europe/Middle East/Africa using T-100 and T-100(f) data. Gate-to-gate markets were defined as those city-pairs that experienced at least 100 departures during calendar year 1998. The other market sectors flow from this. Behind gateway cities are those U.S. cities that are not a gateway to any city in Europe/Middle East/Africa. Beyond gateway cities are those European/Middle Eastern/African cities that are not a gateway to any city in the U.S. Thus, the behind gate-beyond gate market sector is comprised of city-pair markets that involve non U.S. gateway cities and non European/Middle Eastern/African cities.

Two types of markets do not obviously fall into one of the four market sectors. The first are markets that consist of U.S. gateway cities and European/Middle Eastern/African cities where nonstop service did not exist during 1998. Thus, Memphis had nonstop service to Amsterdam, but not the other European gateway cities such as Frankfurt. We placed all such markets in the behind-gate market sector. While a case can be made that some should have been placed in other market sectors, we elected not to try to devise an approach to do so. The second group is gate-to-gate markets that are served nonstop only by foreign flag carriers, such as Phoenix-London, which is served nonstop by British Airways. The problem with such markets is that only U.S. carriers report Origin & Destination information, which means that the only pricing information we have for these gate-to-gate markets is for connecting passengers. We nevertheless left such markets in the gate-to-gate sector since our carriers connecting prices reflected in the O&D survey are probably influenced by the pricing policies of the foreign carriers on their nonstop services.

Based on this market sector methodology we developed fare information for all of the city-pair markets in each market sector. We use as our base period calendar year 1996 information. It was during 1996 that two of the three immunized transatlantic alliances were approved, and 1996 also represents the period when a several year trend of increasing fares across the Atlantic ceased. Fare levels turned down during 1997 and are further down during 1998. Our analysis compares the most recent O&D information available, calendar year 1998, with calendar year 1996. Our data source is O&D information taken from Data Base Products.

Because our goal was to compare fare changes, we eliminated city-pair markets for which passengers were reported for only one of the comparison periods. After eliminating city-pairs with small passenger volumes our analysis included information for more than 16,000 city-pair markets.

The last step in developing our city-pair groupings for comparative analysis was to separate the origin and destination markets in each broad market sector between those that involve open skies countries and those that do not.

Finally, we removed the effects of changes in traffic mix between the two years by using actual fares for each period, but weighting the various city-pair market groupings for both periods by 1998 traffic levels.

DATA SOURCES

I. Charts 1 and 2:

- T-100 and T-100(f) data per Data Base Products *Onboard International* File.

II. Charts 3-5, 12, and 13:

- Origin-Destination Survey of Airline Passenger Traffic per Data Base Products *Gateway* File.

III. Charts 6-11:

- Origin-Destination Survey of Airline Passenger Traffic.

IV. Chart 14:

- Origin-Destination Survey of Airline Passenger Traffic perData Base Products *O&D Plus* File.