

## IMPACT OF LIBERALIZATION ON EUROPEAN AIRPORTS

Jan Veldhuis, Amsterdam Schiphol Airport

The world air transport industry is growing very rapidly. Between 1979 and 1988 world air traffic in terms of passenger kilometers grew annually at the rate of 5.5 percent. The number of freight kilometers grew even more, almost 7.5 percent annually. In the OECD area in the same period the annual growth of GNP was only about 2.5 percent and international trade 4 percent. (Figure 24)

Compared with the growth figures of sea transport these figures become even more pronounced. To and from the Netherlands sea transport of freight grew between 1977 and 1987 at 0.2 percent annually, while air transport of freight showed a growth percentage of about 6.5 percent. (Figure 25)

These figures reflect the trend of an increasing share of air transport in the total of economic and transport activity.

## TRENDS AND DEVELOPMENTS

### Economic Trends

These impressive growth figures are of course a reflection of economic trends. Increasing disposable income is one of the main driving forces behind the growth of passenger kilometers, particularly in the "leisure segment". Especially in highly developed regions where the need for basic necessities is more and more satisfied, additional income can be spent in luxury consumer goods and services. (Figure 26)

Air transport is such a luxury good and, as a consequence, has to compete with other consumer goods and services. Preferences of the consumer play an important role in this respect. Assuming these preferences are unchanged, the growth of this leisure segment will be faster than the growth of disposable income. Elasticities vary -- depending on the market segment -- from about 1.5 to 2.5. These elasticities may, however, decrease in the long run when air transport is -- as it may already be in the United States -- a normal part of lifestyle, and discretionary income will be spent to obtain more exclusive goods and services. In Europe, however, the propensity to fly compared with the United States is still very low, such high growth potentials still exist. In this context the Pacific Basin is of special interest. With a low penetration of air transport in the total consumption, but with big increases in disposable income and massive population potential, the outlook for this region is booming.

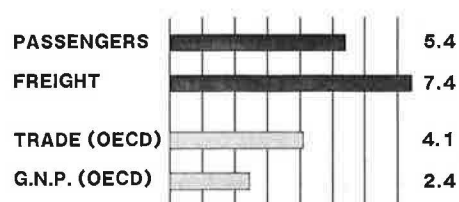


FIGURE 24 Yearly growth of world air transport, trade, and GNP, 1979-1987.

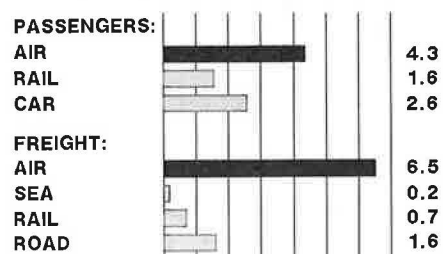


FIGURE 25 Yearly growth of transport indicators, the Netherlands, 1977-1987.

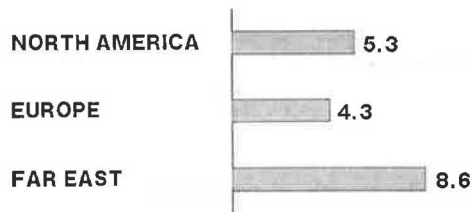
	U.S.A.	EUROPE	FAR EAST
INCOME LEVEL	++	+	-
INCOME GROWTH	+	+	++
MATURITY OF MARKET	+	0	-
GROWTH-PERSPECTIVES	+	++	+++
MARKET SIZE	+	+	++++

FIGURE 26 Economic trends: disposable income.

International trade is also contributing to the growth of air transport -- to some extent in the passenger segment but, most of all, in the freight segment. World trade is increasing rapidly. The ongoing process of economic integration leads to a development, where an increasing share of our needs will be imported and an increasing share of the production will be exported. This trend is reflected in the above-mentioned GNP growth of 2.5 percent and growth of trade of 4 percent in the OECD area. Parts of the production process will take place where one can produce cheaper and more efficiently. This process of international specialization leads to cost reductions and therefore further economic growth and to a strong development of the transport industry. Transport costs -- as part of the value of the goods -- have to be low enough to justify production at distant locations. Decrease of real transport costs as a result of productivity increases and increasing values per volume unit further contribute to this process.

### Trends in Air Transport Industry.

The European air transport industry has also benefitted from these factors. Since 1977, however, European air carriers recorded the slowest growth relative to the non-European carriers. Average growth of European carriers in the passenger market reached only 4.3 percent yearly, while North American carriers -- despite an already more mature market -- reached 5.3 percent on average. The best performance was by the Asian Pacific carriers who experienced a growth rate of 8.6 percent in that period. (Figure 27)



**FIGURE 27 Trends in yearly growth of passenger traffic by region of carrier registration, 1979-1988,**

The environments in the several regions were quite different. In the Pacific Basin economic conditions were booming, and this may explain the high growth. More interesting is the considerable growth in North America. The last ten years were characterized by turbulent developments. Deregulation led to heavier competition, considerable price reductions, and finally to a small number of relatively cost-efficient major carriers. In Europe, however, the environment through 1988 was still regulated, with few incentives for carriers to compete in the intra-European air transport market. One of the lessons from these figures is that deregulation has contributed to a considerable growth in passenger kilometers.

### Regulated Environment for Airports

The position of the main European airports has been a protected one. Most member states have their own, often state-owned, home carrier. Scheduled traffic between the states is regulated in pooling agreements, mostly on the basis of equal share for the respective home carriers operating from their home bases. Hub-and-spoke systems have always existed in Europe, but with little competition, except in the hinterland, where accessibility to airports may affect airport choice. In the case of Amsterdam airport, this hub is used by KLM to

carry fifth-freedom transport with a transfer in Amsterdam. The only markets where competition exists to a certain extent are the charter and the intercontinental market, where European carriers -- and so airports -- are competing among themselves and with their intercontinental partners. Because the scheduled European transport of Schiphol makes up about 50 percent of the total (and for most European airports even more), competition is limited.

The basis on which these European hubs existed was quite different compared to that in the United States after 1978. European hubs have evolved for political reasons with no competitive justification and are protected by a bilaterally guaranteed market of the home carrier. U.S. hubs, however, have proven to be competitive after ten years of heavy competition.

### Environment After Liberalization

A liberalization process is now going on in Europe, and the first major steps have already been made. In 1988 a first-step liberalization package was adopted. It provided some flexibility in fares, some limiting of the guaranteed passenger capacity, and a modest start with so-called fifth-freedom transport. In December 1989 the so-called "Package 2" was adopted, where guaranteed capacities will decrease further and eventually disappear by 1993. The process will be much slower than in the United States, where many restrictions were lifted from one day to another in the Deregulation Act of 1978.

Many political and cultural problems have to be overcome. The position of the European carriers will no longer be guaranteed, and step by step a more competitive climate will be introduced in the European markets. One of the very likely impacts will be lower prices in the very high priced intra-European air transport market. This will force European carriers to seek cost reductions in order to meet market requirements. Cost reductions can be attained by larger scale, either by using larger planes or by cooperation -- in whatever form -- with other airlines. The use of larger planes will lead to considerable economies of scale, but new technology, where small aircraft have economies roughly equal to big ones, afford another option. Cooperation with other airlines is more likely. Whatever form is chosen, a rearranging of the suboptimal network structure is likely. Another factor is important in this context. The process of international specialization makes high demands upon the reliability and efficiency of transport and particularly air transport. Hub-and-spoke systems enable airlines to reach cost reductions as well as the necessary economies of scope for meeting

the requirements of the just-in-time concept of many industrial companies. As stated before, hubs have always existed in Europe. The question, however, is whether these hubs are optimally located in this new environment. Intraeuropean liberalization is only one aspect, and a location in the heart of Europe is not the only important factor. Maybe even more important for an airline is a location where it can successfully compete with other carriers for global transport flows.

For airports these developments have great import. The position of the airports in the future networks will partly depend upon the strategy of the airlines operating at those airports, but other factors -- to be discussed in the section below -- are important as well. Options vary between a central position in an intercontinental network, with adequate feed from and to the immediate region and the continent as a whole (a hub airport) to a position outside the main intercontinental flow with some feed to other main airports (a spoke airport). These options are extremes, and intermediate positions may exist for airports. Increasing competition between airlines (and thus also between airports), where every spoke in the network contributes to the force of the network as a whole, will be a strong determinant of the choice between an intermediate position and a position outside the main intercontinental flow.

## THE FUTURE OF SCHIPHOL AIRPORT

### Goals

Amsterdam Schiphol Airport already has a substantial share of the global transport flow. Intraeuropean scheduled traffic in 1988 reached 7.8 million passengers and intercontinental scheduled traffic about 4.1 million. Together with charter traffic (2.7 million) the total number of passengers was 14.6 million, of which 99.5 percent consisted of international traffic. In Europe only London, Paris, Frankfurt, and Rome (all airports with considerable domestic flows) reached higher volumes. (Figure 28) Freight turnover was 575,000 tonnes and aircraft movements 187,000. In the same year there were about 31,000 jobs at the airport and about 54,000 airport-related jobs outside the airport.

For Schiphol Airport this environment will change. The airport is not centrally located in Europe, but this disadvantage is not too serious with respect to the intercontinental transport flow.

The objectives of Schiphol Airport are twofold. First, as a private company, profitability must be high enough to finance future expansions and to earn an adequate

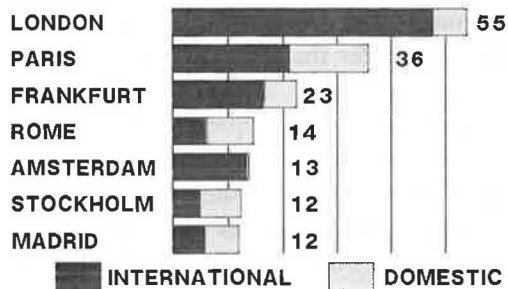
return on investments. But, second, there is also a public objective, which is to offer the home market a suitable and high-quality transport product with many destinations and high departure frequencies. High quality transport product with connectivity to all parts of the world is often a critical factor for the success of plant location decisions. In the Europe of the 1990s, where multinational companies will be very mobile, such factors will be of critical importance in regional economic development. Therefore, in 1988 the Government of the Netherlands, where the transport sector is relatively large (some 7 percent of GNP), issued a major policy document on infrastructure planning to the year 2015. In this policy the importance of the two main ports (Rotterdam as a seaport and Amsterdam as an airport) is emphasized.

Those two objectives -- private and public -- are met by one Schiphol objective: maintaining and even improving the position of Schiphol as a main international distribution center by means of the so-called "main port strategy".

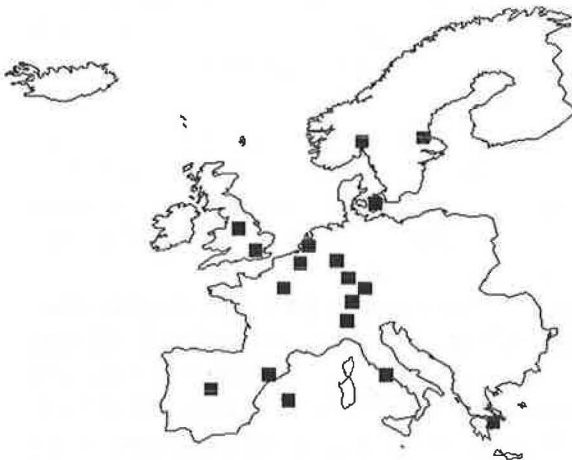
However, the home market for Schiphol is, like other big airports in its neighborhood, too small to justify such a high-quality transport product. Additional transfer traffic must be attracted to build up to a critical level. This has been the policy of KLM for a long time, and it will be sustained in the future. As an example, in the late 1970s Schiphol was promoted as "London's third airport".

### Transfer Markets

As a process, transfer is suboptimal. Passengers prefer direct connections, rather than having to transfer at busy airports with all the risks of missed connections. Moreover, the big European cities generate enough traffic volume to justify direct connections with sufficient frequencies. (Figure 29) Even between big and smaller cities direct connections will be possible using new technology. It is only between smaller cities in Europe, where direct connections are not feasible, that possibilities exist to attract transfer traffic, but the volumes are relatively small. So, in the long run, intraeuropean transfer markets will be small, but in the short run -- especially in the period following liberalization in Europe when heavy competition may result in low prices in the market -- they may have some attractive prospects.



**FIGURE 28** Passenger traffic at main European airports, millions, 1987.



**FIGURE 29** Positioning of 20 largest European airports, 1987.

However, intercontinental transfer markets (connection between overseas points and European cities) have a larger potential. Between many such city pairs direct connections are not feasible, and European airports can compete by means of their home carriers for shares in those markets. For Schiphol these markets will be attractive, and intra-European transfer markets cannot be neglected because they can be used as instruments to improve synergy with intercontinental markets.

#### Benefits and Risks of the Main Port Strategy

A high-quality transport product is an instrument to improve the economic structure of the region surrounding the airport. As already stated, indirect airport-related employment in 1988 was estimated at about 54,000 jobs. These indirect jobs are partly suppliers of the airport, but many are also found at enterprises for which location near a major airport is an important business factor. Thus, the main port strategy of an airport can be an important contributor to the

economic development in the airport region. This strategy however requires a high-capacity airport.

For the convenience of airport users, transfer traffic involves many aircraft movements in short time periods. However, many aircraft movements with a high percentage of transfer traffic implies smaller destinations and so smaller planes, thereby consuming a great amount of runway capacity per passenger. There is also a market risk. Home-market traffic is relatively captive, but transfer traffic is not. Large investments have to be made for a relatively unstable market segment, and this will have a negative impact on profitability.

Finally there is an environmental risk. The main port strategy involves high environmental costs. These costs must be -- and can be -- controlled. The replacement of noisy aircraft with Stage 3 aircraft is ongoing and will contribute in great amount to control of noise around the airport.

Despite all these risks Schiphol continues to follow the main port strategy because it contributes in an optimal way to the airport's objectives. The possibilities of realizing this strategy will be outlined in the section below, where some critical success factors for airports in the 1990s are discussed.

#### FACTORS AFFECTING AIRPORT DEVELOPMENT

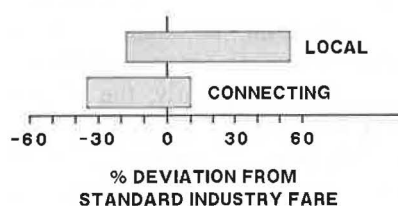
Several general economic trends and their effects on the air transport industry have already been discussed. In Europe economic trends have been -- and will remain -- the main, if not the determining, factors for development of airports. In the 1990s, however, developments in the air transport industry will be of increasing importance, not only for airlines but also for airports. The important question is how to realize airport-specific objectives in this new environment. Some of the important determining factors for airports are outlined below.

##### Home Carrier

A strong and competitive home carrier is one of the most important factors in realizing the main port strategy. Here it is necessary to distinguish between a main port and an "empty hub". An empty hub is an airport that is not the home base of a major airline but serves as an operational hub for a major carrier based elsewhere. Examples in the United States are Nashville and Raleigh-Durham, secondary hubs for American Airlines which has its home base in Dallas. The transport product at such empty hubs may be of high quality, but their chances to successfully pursue a main port strategy may be somewhat lower.

Home carriers at an airport like Schiphol provide about 55 percent of direct airport employment in the region. Non-home carriers with about 35 percent of the passenger volume provide only 5 percent of direct employment. Moreover, hub operations by non-home carriers are much more footloose, which gives the traffic base at an empty hub a somewhat unstable character that makes the airport less attractive for potential business development in the surrounding area.

In the long run, however, there is a certain risk in putting too much emphasis on a single home carrier. Experience in the United States teaches that home carriers with a substantial market share at a hub obtain higher than average yields in origin-destination traffic flow at that hub. (Figure 30) This can lead to a monopoly situation with high barriers for new entrants.



**FIGURE 30** Average yields for local and connecting passengers at hubs, first quarter 1987.

### Infrastructure

Accessibility is a crucial factor. Airports advertising themselves as main distribution centers must have good landside accessibility. In Europe congestion around cities and airports has increased in the 1980s. New solutions must be found to deal with these congestion problems. Around Schiphol many landside movements by passengers and airport employees are by private car. In both categories only 20 percent is by public transport. Policies are now being considered to increase the share of public transport for passengers and employees to about 40 percent by 2000. Many investments in new rail infrastructure are expected, but incentives for using public transport also have to be reviewed.

A special aspect of the landside access problem is the labor market. Housing for employees too close to the airport is not desirable because of noise problems. On the other hand, especially for parttime employees, locations too far from the airport are undesirable not only because of landside congestion, but also because it increases inflexibility of the labor market. Creative planning of new housing locations in close cooperation with local and national housing and public transport authorities is essential.

### Airport Capacity and Quality

For the air transport market a yearly growth of 5 to 6 percent is forecast through the year 2000, with growth at a somewhat lower level afterwards. For airports choosing a main port strategy, enormous investments are required. Except in Munich, new airports in Europe will probably not be built in the coming decade, and the required capacity must be found at the existing airports. The environmental issue makes expansion of capacity at existing airports difficult. The availability of capacity that can be exploited without unacceptable environmental impact will become a very important strategic factor for European airports during the next decade. More crucial, however, is the European air traffic control system. Airspace capacity in Europe is inefficiently utilized by the existing ATC system, but the solutions depend more on political than technical factors.

Airport quality also is an important factor. Travelling from Amsterdam to Washington requires a transfer at another airport, and many choices may be open. Other variables (such as travel time and costs) being more or less equal, the choice depends upon rather subtle variables, such as connecting time, comfort, reliability, and availability of tax-free shopping.

### Policy of The European Commission

The policy of the European Commission will have great impact. Proposals for the "point of entry" concept, where passengers originating from outside Europe and transferring to a final destination at an European airport have to check in again, will reduce the "transfer quality" of these hub airports. Moreover, these airports will have to split their capacity into a "European" and a "noneuropean" terminal, with resulting decreases in efficiency and financial losses. Proposals to abolish duty-free sales for intra-European flights will have further negative financial consequences for airports.

### Other Transport Modes

Development of a high-speed rail network in Europe will have a strong impact on airports. In 1981 the first high-speed rail line was opened between Paris and Lyon, resulting in a 50-percent reduction of air traffic between those cities. New lines from Paris to Bordeaux, Brussels, Amsterdam, London and Cologne/Frankfurt are planned, with further extensions expected in the long

run. Although loss in air traffic between these main cities is likely, it may also contribute to the solution of the capacity problem. If high-speed rail networks have connections at airports, they can be excellent feeders for intercontinental air transport flows, and the competitive position of airports and the airlines serving them may even improve. Further integration of rail and air, with respect to price and unification of the travel product, may improve the quality of transportation. If so, the high-speed rail network may not be a competitor, but a complement to the air transport system.

#### **OSAKA KANSAI INTERNATIONAL AIRPORT**

Senator Hoesi Kato,  
Osaka Prefectural Government, Japan

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#### **BACKGROUND**

I have been involved in local politics for 25 years. For the last 10 years I have focused my activities on the development of the plan for the Kansai International Airport and related regional development. What I am going to tell you today is not the government's position, but my personal view.

Until now, the Atlantic Ocean has been the center of activities for people, goods, and information. But, the Pacific region is becoming very important, and indeed it may have surpassed the Atlantic in some activities. This trend is going to continue. This was reflected in the US-Japan aviation negotiations which took place toward the end of the 1980s where a major issue was landing rights in the Asian-Pacific region.

Japan has been often mentioned as a major economic power in the Asian-Pacific region. While we have 43 airports which allow takeoffs and landings of jet airplanes, only three international airports, namely New Tokyo Airport, Tokyo Narita Airport, and Osaka Airport, can currently accommodate a jumbo jet. Even these three airports have very strict curfews which prohibit flying in and out at certain nighttime hours. At the moment we have requests from 37 countries to land in Japan, but we cannot accommodate their requests because of limited airport capacity.

Osaka was built in 400 AD and therefore historically precedes Tokyo by 1200 years. Osaka is in the center of Kansai area that includes Osaka, Kyoto, Kobe, and Nara. In a residential area of 9.2 million acres, we have a population of 23 million and a GNP of \$400 billion. This is equivalent to the GNP of Canada.

#### **CONCLUSION**

European airports will find themselves in a challenging position in the 1990s, much more than during the last two decades. Liberalization and increased competition is only one aspect. Capacity developments will not be easy, and environmental problems may be severe. Close cooperation between airlines, airports, other transport modes, and public authorities is necessary to further airport development and give new impulses to regional economic development.

Our goal to develop Osaka as a truly international city of the 21st century. To that end, we must have an airport with the capacity to provide for movement of people, goods and information. Currently, the Osaka airport operates under very stringent conditions, such as time constraints between the hours of 7:00 a.m. and 9:00 p.m. Additionally, there is a limit on the number of operations. We can accommodate only 370 flights per day, and of these only 250 jet flights. The Osaka airport is overused. It handles about 135,000 flights per year. Because of the location in a highly populated area, we cannot expand the area of the airport any further.

This is the background for the planning of the new Kansai International Airport.

#### **PLANNING FOR KANSAI INTERNATIONAL AIRPORT**

The plan for the new airport came into being because we have a very difficult from noise pollution problem at the present Osaka Airport. In 1966, it became clear that a totally new airport was necessary. At the same time we wanted to pursue this project as a strategy for revitalizing the Kansai area. By 1974 we had about 10 candidate locations. Finally we chose a current site, which is offshore of the southern part of Osaka Bay.

Planning for the airport did not begin until 1981. Why did it take so long time to start? Two reasons: First, because of the two oil crises, the government's fiscal situation was very tight. Second, in 1971, a candidate from the communist party won the governorship of Osaka with support of the anti-pollution movement. He had two terms as governor and for eight years, the Osaka economy worsened continuously. Although the government and the business world were very much aware of the need for construction of the new airport, no one could do anything.