5) Daniel M. Kasper, *Deregulation and Globalization: Liberalizing International Trade in Air Services* (Cambridge, MA: Ballinger Publishing Co., 1988), p. 75.

6) Kasper, p. 37. See also Melvin A. Brenner, "Airline Deregulation -- A Case Study in Public Policy Failure," *Transporation Law Journal*, Volume 16, 1988, pp. 182-3; Michael Levine, "Airline Competition in Deregulated Markets: Theory, Firm Strategy, and Public Policy," *Yale Journal on Regulation*, April 1987, p. 423; and Kahn, "Airline Deregulation -- A Mixed Bag," *Transportation Law Journal*, Volume 16, 1988, pp. 230-1.

7) Christopher Fotos, "Heavy Debt Could Put Airlines At Risk If Traffic Growth Slows," *Aviation Week and Space Technology*, March 20, 1989, pp. 203-6.

8) *Air Transport World*, "The World's Top 25 Airlines," June 1988, p. 54.

9) Kasper, p. 88.

10) *Economist*, "Pricing Open Closed Skies," November 3, 1984, p. 73; Kahn, "Surprises of Deregulation," pp. 316-22. For a particularly poignant statement of these concerns see Jonsson, p. 288.

11) Kasper, p. 76.

12) Kasper, p. 77.

13) Kasper, p. 207.

14) "New Routes Will Develop to Meet Demand for International Service," *Aviation Week and Space Technology*, March 20, 1989, p. 26.

HOW DEREGULATION WILL CHANGE THE STRUCTURE OF THE INTERNATIONAL AIRLINE INDUSTRY

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Some of the things I am going to say would have been controversial when I first started saying them three or four years ago. They are substantially less so today; and I suspect, if this meeting were to reconvene three years from now, they would be viewed as pretty much ho-hum. I will leave that, however, to our collective judgments three years hence.

By way of introduction, I served as Director of International Aviation at the United States Civil Aeronautics Board and was one of the architects of the U.S. strategy for liberalizing international aviation. Therefore many of the things that I will describe today were either initiatives that we took or the results of those initiatives. I am both an insider and outsider. As an insider, I am looking at the subject both from my days at the Civil Aeronautics Board and from my current position where I consult with major international airlines on questions such as the "impact of 1992" and what the structure of the industry is going to be in a few years. As an outsider, I look at the subject from the time when I taught at universities and studied the airline industry. So I come to this with some 20 years of both academic and hands-on experience.

Because of the time limitations, I am going to eliminate some of the detail in my presentation. I will make some assertions that I ask you to accept, at least for purposes of argument. I would be more than happy to give as much detail, as you would like, either in the question and answer period or after the presentation.

THE RISE OF MULTINATIONAL AIRLINES

By 2000, and perhaps substantially sooner, most of the world's scheduled airline services will be provided by a score or fewer of major multinational airlines. In short, ten years from now the world's commercial airline industry will be made up of fewer, larger airlines that will have global on-line service or something very much akin to it. Furthermore, these carriers, unlike the carriers today, will be multinational. They will be owned and operated as multinational firms are in other industries.

For an industry that until quite recently could be accurately described as a series of local monopolies connected by a series of equally protected international routes, this is a striking transformation. I submit to you that transformation is already well under way.

The reasons for the change are really quite clear. The economic forces unleashed by U.S. domestic airline deregulation and the companion policy on competitive

international aviation, both instituted over a decade ago, have transformed the U.S. industry in ways that have not been and could not have been contained within the boundaries of the United States. These effects, both economic and political, have spilled over into the international market forcing carriers and countries around the world to accept and adopt more liberal aviation policies than many -- perhaps most -- would have accepted voluntarily. Ironically, the same is happening in the United States after a period that constituted at least the latter half and probably fully two-thirds of the Reagan administration. That administration pursued nothing that could be even charitably described as an international aviation policy, but a policy designed to meet whatever objections carriers raised the loudest. The United States is now being forced to face once again the issue of what are we to do when our carriers want to expand abroad. As a result we are being forced by self-interest to come back to a more consistent international aviation policy.

EFFECTS OF DEREGULATION ON U.S. CARRIERS

What has deregulation set off that is leading to the effects broadly outlined above? A long exegesis on the economics of deregulation in the transportation industry is not necessary. There is not much distinction between the deregulated air transportation industry and the deregulated trucking industry. As transportation economists, you are familiar with the similarities. If I held up a diagram of an airline hub-and-spoke system but changed the title, it could just as well describe the route system of a less-than-truckload carrier. There are many other economic similarities between transportation modes. Suffice it to say that deregulation in the U.S. airline industry has demonstrated several others that should be kept firmly in mind.

First, contrary to much of the earlier economic studies of the air transportation industry in a regulated environment, we have discovered in the last 10 or 12 years that there are, indeed, very significant economies of scale in the airline industry.

Second, and probably more importantly, there are economies of scope. Hence, we see substantial networks emerging with economies that cannot really be captured in the traditional or classic sense of economies of scale, but represent economies of scope. Indeed, some of them fall into the area of purely customer convenience. An example of the latter would be the advantages of a carrier who provides service to a variety of destinations from a single point such as say, United operating out of Chicago. There is a tremendous marketing advantage to being able to offer this kind of service. A travel agent or an individual traveler can simply pick up the phone in Chicago and call United. The chances are very good (which is to say somewhere in excess of 90 percent) that if it is a domestic market, United will fly there from Chicago, and there is no need to call any farther.

The result has been the emergence of a series of substantial national and increasingly international route networks. For those of you who followed the airline industry prior to deregulation, you may recall that in the original Civil Aviation Act of 1938 and subsequent amendments there was discussion of something called the National Air Transportation System. The theory was that this transportation system would be set up and managed by the Federal Government. What emerged was a three-level system made up of what we used to call trunk carriers, second-tier or regional carriers, and commuter or third-tier carriers. These levels were integrated, interestingly enough, by the route authority allocated by the Civil Aeronautics Board, such that there was "a national air transportation system" that provided service to many places. You could get there from here, but how you did it was not determined by airline management decisions about where the traffic was going to flow and how they wanted to serve it. Rather, airline managers could tell you where the traffic might want to flow, but each then had to figure out how to get a share of the traffic and hand off no more than necessary to other carriers.

Since deregulation we now have a national air transportation system. In fact, we probably have six or seven. They are the large, multihub, networks run by single carriers. These networks, as we fairly quickly discovered, can also serve international operations. I say fairly quickly because it took the domestic airlines about five or six years from the time the industry was officially deregulated to get their domestic hubbing situation under control -- to get the bugs out, to get through a very severe recession, and to notice that the same reasons a hub-and-spoke network centered in New York or Chicago was attractive for domestic service also made it attractive for international operations. There was no reason that an airline, which could build a strong hub and provide service to domestic points that would not otherwise justify such service without the hub, could not use the same leverage to build strong international service.

On the U.S. side of the industry, where the market shares of Pan Am and TWA have dropped by roughly a third in the last 10 or 11 years, you don't have to look very far to see what has happened. American is on a growth spurt--Dallas, Raleigh-Durham, Chicago, Kennedy--and now is in the process of purchasing route

rights from Eastern at Miami to Europe and from Miami to Central and South America. Delta has shown a similar growth in service--first at Atlanta, some from Dallas, then from Cincinnati. Even U.S. Air has belatedly gotten into the act, first picking up the Piedmont authority from Charlotte and later this year, in fact in a couple of months, instituting non-stop service from Pittsburgh to Frankfurt. In other words, we are seeing international spokes being added to domestic hubs with the same kind of leverage or ability to draw traffic.

There is another effect of deregulation that we ought not lose sight of, and it really goes directly against what, in my view, is the very wrong-headed notion of "survival of the fattest". In fact, it has turned out to be exactly the opposite. It *is* survival of the fittest. One element of fitness that has become very, very important is the ability to handle affairs in financial and capital markets. Under the old regulated system, capital costs were fairly well controlled. The way you financed capital investment was controlled, and route structures were controlled. When the industry was deregulated, it was not deregulated solely in the product marketplace. Deregulation opened up a wealth of opportunities to compete in financial marketplaces. Indeed, some of the more successful carriers are those who have shown themselves more adept in financial and capital transactions. The U.S. airlines that have survived the deregulation process are a lean and efficient set of carriers, certainly in comparison to carriers from most other places in the world. In the United States we have seen the emergence of six or seven large national, increasingly international, and soon to be global systems serving a huge domestic market, both geographically and in terms of passengers, traffic, and revenue.

LIBERALIZATION ABROAD

In contrast, the rest of the world basically is characterized by small domestic markets, a high degree of regulation, and restrictive international agreements -- all making it exceedingly hard for national carriers to achieve the kinds of efficiencies required to undertake cost-cutting and service expansion to match U.S. carriers. Lo and behold, starting in the early 1980s, instead of just competing with TWA and Pan Am (and remember the latter was without a U.S. domestic system by regulatory design), foreign carriers found themselves head-to-head with carriers that used to feed them traffic at U.S. gateways--Kennedy on the east coast and San Francisco and occasionally Los Angeles on the west coast. U.S. carriers did not have a great incentive, if they were going to fly to London themselves, to hand off a passenger at Dallas to British Airways or British Caledonian. Obviously, if you pick up a passenger in Austin and he wants to go to London, you want to take him to London. It is to your economic advantage to do so. This created pressures, both inside foreign governments and foreign carriers and externally in their relationships with the United States.

If you look at the change in domestic aviation regulation around the world in the last decade, it is staggering. You have markets ranging from the United Kingdom to the People's Republic of China and Australia, all of which have undertaken either complete or substantial opening up of their domestic markets to increased competition. Even Japan, which has been a classic example of a regulated market, is increasingly opening up its markets.

Moreover, these same countries, for many of the same reasons, are looking to liberalize their international arrangements. Whether they like the idea or not, they need bigger markets with freer access and more liberal provisions so they can put together effective, efficient, competitive route networks. A classic case is the Scandinavians, the first country I ever had to deal with at the CAB. In 1978 you could not possibly interest them in a liberal aviation agreement -- absolutely off the radar screen, no way. In the mid-1980s, a complete reversal. They concluded that a small nation or a set of small nations on the periphery of Europe, without an assured access to a European market, and indeed without any assurance that the European market would turn out to be a European market, they needed to have a better set of route agreements and more access if they were going to survive. They came back to the United States and proposed a liberal agreement, at which point the United States said, "My God, we can't do that!, We have got to go back and think about it", which is basically where things stand right now.

But the pressure is on. Foreign governments have mounted pressure against the U.S. to try to get their bilateral agreements changed. They have discovered that as U.S. feed evaporates because U.S. carriers are hubbing at interior gateways and taking traffic abroad directly, European and other foreign carriers need access to these internal points. How do they get it? They try to get more gateways in the United States so they can serve the traffic directly. This approach has severe limits, because the viability of these gateways often depends solely on the amount of feed that a carrier can provide. Because of cabotage restrictions, foreign airlines cannot carry domestic traffic. Given the economics of operating airplanes, they cannot afford to put a fleet of airplanes in the United States to collect enough local traffic for

the one or two flights a day that most carriers run; nor could the U.S. carriers, for that matter, afford to do it in most places in Europe. The capital cost of a fleet would swamp the additional revenues they would generate on the traffic. So, even though foreign carriers have pushed for additional gateways, that has not been enough. They're starting to press for cabotage rights and most recently, and again, equally predictably, the right to acquire substantial ownership interest in U.S. airlines.

INSTITUTIONAL FORCES

This has led to an institutional problem. If the United States were to consider granting to foreign airlines full or fuller access to internal U.S. traffic, the political dimension of the economy would dictate (as I believe would economic self-interest) that the United States seek comparable access for U.S. carriers abroad. In other words, if British Airways gets to come in and play in the U.S. market, the United States should have equivalent rights in British Airways' markets. The problem, of course, is that when the United States says to British Airways you are now authorized to carry any traffic you can get between Los Angeles and New York, we can deliver on that commitment. When the British government says to the United States government, you have the British government's authority to carry all the traffic you can between Paris and London, the British government can't deliver. The French must also go along with it. We can grant internal rights in the United States, as could the British in Great Britain, but there's not much there folks. Great Britain is a much smaller island, and there is not as much traffic. It is not a good political trade, it won't work.

So, we have an institutional problem: What can the United States get in return for granting broader access here? Those of you who have followed recent events in the airline industry know that lurking behind this is also the question of how much investment can be permitted by foreign carriers in a U.S. carrier.

Basically the United States is left with a dilemma. Even as the United States decides it wants to start negotiating more market-opening agreements, it has found it very difficult to come to grips with the institutional basis of a trade. The British cannot give us enough to justify us giving them what they want. The only solution is to put together some kind of broader aggregation of rights on the European side. If the European Community were to come together, access to the internal European market would be roughly equivalent to access of the internal U.S. market. This would seem to set the stage nicely for an exchange of route rights that would open things up.

Even if that were to come to pass, a number of problems would remain. One is the difference between the wide open regulatory system in the United States and that in Europe, where even though the commission continues to press, the right to establish new airlines or to enter new routes is very restricted. Second, a number of airlines are state-owned or subsidized. As a market opens up and competition becomes freer, questions arise about how to compete in a wideopen free-for-all if you have state-owned or state-subsidized airlines. There is also a variety of restrictions on "doing business" -- things like computer reservation systems, ground handling monopolies, monopoly of other airport services, sometimes by the local flag carrier with whom one is in competition. Finally, there is the problem of infrastructure. For example, if we negotiate an agreement with the Japanese, we could authorize them to fly to New York or Kansas City or to Chicago -- pick the most congested airport that takes international service. We grant those rights, and they get the slots to fly as many flights as they want. U.S. carriers, if they could get rights to go to Japan, will get very restricted access, because the Osaka Airport is closed to new entrants. Narita Airport is almost closed to new entrants, and any increase is permitted only on a very tight and incremental basis. Despite these problems, European airlines are frantically figuring how they can get into the U.S. market, whether by code sharing, by investment, or by some other means. Some very creative legal approaches are being discussed that would permit foreign carriers to operate in the United States, arguably within the provisions of the Federal Aviation Act, and U.S. carriers to operate in Europe on the same basis. The carriers, in other words, are not going to wait for governments to get things sorted out. The perceived gains are large enough and the competitive pressures are strong enough to stimulate a large amount of activity by U.S. and foreign carriers, largely behind the scenes.

What are the options? There are really three. One would be for the United States to wait for the European Community to get its act together and then sit down and deal with the Community. In many ways, this would be a simpler negotiation because the Community would then act in the way the Federal Government does in this country; and, it could speed negotiations greatly, particularly if the Commission continued to exert its jurisdiction by negotiating directly with the United States.

The difficulty is that it is not clear how quickly Europe is going to "get its act together." 1992 is close at hand. There is a fierce resistance in some quarters in the Community to further liberalization. Nonetheless, it appears that the liberalization will proceed. The real

question is whether the Community's competition policy is going to prevent the large incumbent carriers in Europe from dividing up the market, tying up all of the available hubs and airports and slots, before the market is officially open to new competition. Right now it is about a 50-50 proposition, with the Commission now considering a couple of very critical cases involving agreements that European carriers have entered into that would, in effect, divide up the market.

The second option would be to look to the General Agreement on Tariffs and Trade (GATT) to put trade in air services under the trade and goods regime as discussed at the Uruguay round. The problems here are many. To start with, two fundamental GATT principles of most favored nation and national treatment, if applied in the air services, would have perverse effects. They would discourage countries from exchanging agreements and would encourage free riders. That is, instead of encouraging countries to liberalize, they would encourage countries to hold out and try to take the benefit of liberal negotiations conducted by others, say between the United States and Great Britain. National treatment raises a somewhat different, but related issue. National treatment simply says we will treat your carriers in the United States the same way we treat our carriers and vice versa. This means that a foreign carrier could then come in and be treated as any U.S. citizen -- get a license, start an airline, buy an airline, whatever. On the other hand, if a U.S. airline got national treatment in, say, France, it would mean that a U.S. airline or citizen would have exactly the same right to be told no that a French citizen now has. Whatever your views are on the economics of that kind of a trade, I can tell you what the political economics are: it's a non-starter.

Finally, there is a third option, one that is starting to get increased attention in the United States. It is called a liberal plurali-lateral. I wish I could claim that the idea is mine. It isn't. The genesis is an idea actually proposed by the Dutch government to the United States about ten years ago. The essence of the agreement is something like this. The United States would initiate negotiation with a set of liberal trading partners. Obviously, the government of the Netherlands felt it would be included in those negotiations. Ideally, one would like to get her Majesty's Government involved. Even though the U.K. is not particularly liberal in air services, it is a very important country. The Federal Republic of Germany, and perhaps one or two others, would also be involved. The objective would be to come up with an agreement that did not start with the lowest common denominator as in GATT multilateral talks where participants bargain, on the basis of "I'll give up this restriction on access if you give up that restriction." Instead, the participants would say "we are a group of liberal trading partners who plan to negotiate a very open regime and if anybody else wants to come in, they are more than welcome, but they must meet the same liberal conditions that we, the initial trading partners, have agreed to." This is a variation of what has been described in trade terminology as the "super GATT" type of regime.

DEVELOPMENTS ON THE HORIZON

This approach has a number of advantages, but the negotiations would not be easy. Far from it. However, negotiations among a smaller group of more liberal countries would be far easier and simpler than those among a larger, more diverse group. Considering the distribution of air traffic by country and who controls it, it does not take a very large group of countries to put together this kind of a regime. With a relative handful of countries, the vast majority of scheduled airline traffic could be covered; and, from there, it would be a relatively easy matter to bring other nations on board as they felt comfortable in accepting limits on national ownership, subsidies, or whatever. Obviously, such things would all be precluded under such a regime.

The next year or so is going to be very interesting in the United States and very critical to what happens in international aviation over the balance of the decade. I say this for several reasons. One, it has become increasingly clear that the traditional U.S. flag carriers -- Pan Am and TWA -- are increasingly less viable. It is likely that ten years from now, if the name Pan Am has been saved (and it may not be), it will be part of somebody else's airline. It could happen sooner rather than later.

TWA is approaching a similar situation for somewhat different reasons, some of which have to do with ownership interest and desire to put corporate funds in different kinds of investments. Another reason is that it is difficult to see how a carrier with a single hub can compete on a nationwide basis the way TWA is trying to do. Thus, the viability of two mainstays of U.S.-international aviation is increasingly in question. Indeed, TWA has agreed to sell American its Chicago-London route, which is perhaps a sign of things to come.

The third factor that will make the next year or so interesting is the question of foreign investment. In the European Community today, it may be possible for a U.S. airline to acquire control of a European airline without that airline losing its status as a citizen of the European Community. The European governments would make it easy, but there are at least two airlines in the United Kingdom already that are not controlled by

citizens of the member states. The United States has a restriction on foreign investment that is more or less 25 percent, depending on how the Secretary of Transportation feels on a given day, but at least that is what the Act says. Investment rights will become an issue because U.S. carriers --particularly the strong ones, the five or six core carriers that are likely to be survivors -- are anxious to expand abroad and because it is very difficult for them to do so. Far and away, the most effective entry vehicle for U.S. carriers abroad is likely to be investment, that is, buy in and integrate those operations as time goes on into their existing U.S. operations. It will be extremely difficult for U.S. airlines to pull that off if we do not also permit foreign carriers to buy into U.S. carriers. Therefore, in the next year or o, we are going to see proposals to amend the Federal Aviation Act that would permit the United States to negotiate, probably subject to some conditions, increased foreign investment and maybe complete foreign ownership of U.S. air carriers. One of these conditions will be reciprocity for U.S. investments abroad.

By 2000 the airline industry will be more concentrated, but it will also be far more competitive, as the U.S. market has become for the five largest domestic carriers. While market share is an interesting number, it is not very informative. Considering city pairs, which is where competition actually takes place, the number of city pairs receiving competitive service from more carriers in 1989 than in 1978, is far greater than the number of city pairs where competitive service has declined. If a city pair had two-carrier service in 1978, the chances are it has three, maybe four, carriers serving it today. On a city-pair basis, fewer carriers are competing in more places. In my view, this is a trend that will develop around the world.

TURBULENCE ON THE AIRWAYS: A REGIONAL AIRCRAFT MANUFACTURER'S PERSPECTIVE

Claxton Lovin, British Aerospace

Turbulence on the airways aptly describes the ongoing structural changes within international aviation. Dictionary definitions confirm that the word turbulence appropriately describes the events which have been happening within the air transport industry recently and which will continue to be influential in the future.

The words "storm or roughness" may be severe, but I will try to show that "commotion" or "having irregular variations in the course of time" are particularly suitable in defining the factors shaping our business.

The most prominent factors creating turbulence and bringing with it an associated change to the structure of international air transport can be grouped into four main categories: congestion, political reform, legislation, and strategic posturing. (See Figure 44).

I will talk in more detail about each of these factors. In my conclusion I will attempt some predictions about the aviation scene once these influences have run their course.

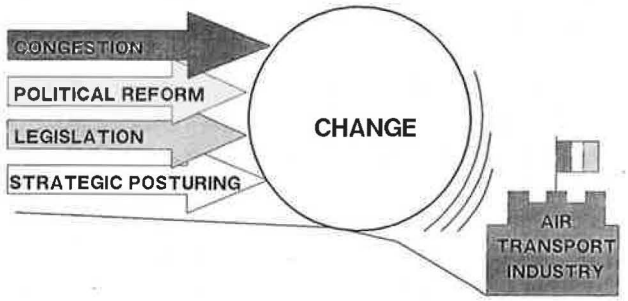

FIGURE 44 Causes of turbulence.

CONGESTION

Congestion of airports and airspace worldwide has been the subject of much debate recently and is perhaps the most important factor that could constrain the growth of air transport. It certainly will require changes in the way this industry functions. In Europe alone, estimates by the Association of European Airlines show that in 10 years over half of the 46 main airports will be heavily congested (See Figure 45). This is not unique to Europe however. Many examples worldwide spring to mind such as Sydney, Australia; Narita, Japan; Hong Kong;