through 2005. During this period the average aircraft size, in terms of seats, will grow. A significant market will remain for new 120-seat aircraft to serve new secondary hubs that will be developed during the forecast period.

The size of the total airline fleet is expected to grow from 8,961 at the end of 1990 to an estimated 13,730 in 2005. This 53-percent growth is based on an average world annual traffic increase of 5.2 percent, combined with slow, but steady growth in average aircraft load factor to 67.2 percent in the last five years of the forecast period.

Aircraft retirements are expected to number 4,052 during the forecast period. The majority of these retirements will take place in the class II aircraft group due to the large number of DC-9 and 727-100 aircraft in the present fleet. The forecast, in fact, shows that retirements in the class II group will actually exceed new deliveries of this type aircraft for the forecast period.

The panel felt that moderate long-term growth in the airline industry was likely. It also believed, however, that an element of caution in using this forecast is essential. A number of issues such as overcapacity and the availability of capital for aircraft replacement could have a significant effect this forecast.

AIRPORTS

The airport panel conducted a wide ranging discussion of issues effecting the aviation system in general and airports in particular. Listed below are the major observations resulting from these discussions.

· There is considerable interest in non-capital (new construction) alternatives to deal with capacity problems.

· The economic difficulties of the airline industry will be a continuing problem for airports, but a problem that is not expected to worsen.

· The growing power of airlines in the airline-airport interrelationship is of considerable concern. New mechanisms for negotiating airline-airport agreements, such as regional authorities, might bear further examination.

· Traditional airport planning has a number of shortcomings. Better strategic planning, combined with an expanded view of related issues, i.e. addressing regional and multimodal problems, is required.

· Public understanding of the value of aviation must be increased. Increased public awareness of the benefits of aviation will be a major factor in removing environmental barriers to airport increased activity.

· Financial pressures on airports are increasing with a concomitant increase in financial risk.

· Regulatory burdens placed on airports are increasing and creating new problems for airport operators. These burdens could be reduced through better planning by, and coordination with, government regulators.

PRESENTATIONS

THE OVERALL ECONOMIC PICTURE

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THE SITUATION TODAY

One has to be very humble when approaching the subject of the economic outlook. Given the events of the past couple of years and certainly the past month, it is fair to say that the age of uncertainty is upon us with a vengeance. Perhaps this age of uncertainty is best epitomized by a story that was actually told by one of its chief protagonists, none other than Mikhail Gorbachev himself.

The story, as he told it at the Conference on European Security in November 1990, is that he, Francois Mitterand, the President of France, and George Bush were commiserating about their bad lot in life. Mitterand said he really had it tough. He has 100 mistresses. One of them has AIDS. He didn't know which one. Bush said he had it worse than that. He has 100 security guards. One of them is a terrorist. He does not know which one. Gorbachev said he had it far worse than either. He has 100 economists. One of them is smart. He doesn't know which one.

As we look at the economy of the world and the United States, we can say a couple of things at the outset. One is that the United States is going through a recession which is milder than average. The world economy is going through a significant downturn which is also mild, relative to the 1982 or the 1975 experiences.

Both the U.S. and the world economies are expected to recover, but the recovery will be a relatively modest one, again by historical standards. This is small comfort for the airlines and the air transport industry because the unique nature of this particular downturn has hit them with a triple whammy.

The first, of course, the downturn in economic activity reduced traffic. That was a predictable result. But there were two other characteristics of this particular downturn that really hurt the airlines. Oil prices rose, squeezing airline profit margins. Finally, there was the scare factor. The war and all the terrorist threats that went with it clearly scared a lot of people, putting a crimp on travel. We are not yet back to pre-war traffic levels. Thus, the downturn has hurt the airlines very badly even though by historical standards the economic measures suggest that it is a relatively mild downturn.

In the longer run, we can be more optimistic. The world economy will recover, growth will resume, and the airline industry will do well in the decade to come. However, there will be some significant regional differences worldwide that should be borne in mind.

Let us break this down into three sections: first, the recent recession; second, the recovery both in the near term and the longer term for the United States and the world; and finally, the expected effects and the risks for the air transport industry. I do not pretend to be an expert in this area, but there are some obvious and logical consequences of what I am about to say about the economic outlook.

The recent recession in the U.S. economy, has been maybe half as deep as the average post-war recession. Whether measured by GNP, unemployment, or any other measure, it was not a very deep recession. The profile is not the traditional V-shaped downturn but more of a saucer-shaped depression.

There are at least two reasons for this. First this is a recession in which export growth has stayed quite strong and acted as a cushion for many businesses, the aircraft industry being one of them. Second, many U.S. industries, having learned some hard lessons in the 1970s and 1980s, have maintained very tight control over their inventories. This downturn has not been accompanied by the kind of inventory swings seen in past recessions where inventory reductions compounded or worsened the depth of the recession.

It is important to bear in mind that there was a slowdown in the works even before the recession started. On a worldwide basis, for example, growth was about four percent in 1988. This year, it is only about one percent.

In the United States the slowdown started in 1989. Since the second quarter of 1989, we have not had a single quarter of growth above two percent in the United States. That is very low growth, even for the United States. Thus, the slowing trend had already set in for a variety of reasons. The Federal Reserve had tightened credit because of inflation fears. Further, high debt levels, not only in the government but also in the private sector were constraining spending. Third, there were huge problems in the financial sector, where the shake-out still continues and constrains growth. Finally, because of our trade problem, manufacturing has had to go through a restructuring, which has placed additional constraints on growth.

I could go on, but the point is that there are a number of long-term structural factors that have slowed the U.S. economy. The recession, itself, was probably triggered by the oil shock. The combination of higher oil prices and the scare factor was enough to plunge the country into a recession. However, we were already in a very slow growth period which made the economy very vulnerable to shock. We got a shock, we went into a recession, we are now coming out of that recession. And just to steal some of my thunder from later on, we are going to come back on a slow growth profile. There is nothing that suggests that growth in the U.S. economy will be anything other than modest.

If we look at the world, the picture is similar, but there are some differences. The United States is not the only country to tighten monetary policy; similar steps have also been taken in Germany and Japan. This has had the effect of slowing down growth worldwide. In many major countries, as in the United States, there has been fiscal contraction and very tight budget policies. The major exception to this trend among economically advanced nations is Germany, which I will touch on in a moment.

There is also some special problems worldwide. In Japan, speculation in the stock market had brought about a huge rise in stock values. The recent collapse in stock prices has made Japan more vulnerable. Growth will slow down in Japan, but not enough, so far as I can tell, to bring on a full-fledged recession. In Germany unification has meant higher interest rates, higher inflation, and higher unemployment in what was formerly East Germany, This has imposed costs on Germany that it will have to pay off in the next few years. And, last but not least, there are huge problems in the Soviet Union and Eastern Europe which, if nothing else, add to the uncertainty that we are facing. In Eastern Europe, the recessions are very deep. There have been reductions in output of 5 to 15 percent.

THE COMING RECOVERY

As we look ahead, we can expect a modest recovery, especially in the United States. However, we still have a lot of old problems: high debt levels both in the private and public sectors, turmoil in the financial markets, and the restructuring of the economy toward more export-led growth.

The Near Term

Many people are wondering if, indeed, there is going to be a recovery. There are a number of analysts who are concerned about a double-dip recession scenario, where we come out of the recession for a very brief period and then plunge back in before eventually recovering. I am rather skeptical about this scenario for a number of reasons. The most important is that the Federal Reserve seems very committed to getting this recovery on its feet. It has been lowering interest rates and will likely lower them a little more in the next few months. Inflation has come down quite a bit. Inventories are low. Exports are still in good shape. This suggests that the recovery, while modest, is likely to continue.

There are signs now that the U.K. is coming out of its recession. While Germany will go through a difficult period, it is likely to be able to avoid a recession and muddle through its difficulties. It is a powerful and resilient economy, and it will likely not drag down the rest of Europe. Eastern Europe and the Soviet Union have huge problems, and their economies will continue to contract for a while before they start their recoveries.

I am much more optimistic about Japan and Asia. Despite the problems in Japanese financial markets, Japan is an extremely resilient country. Japanese manufacturing has been spared many of the problems that the financial sectors have gone through, and we can be fairly confident that -- although growth will slow down -- Japan will not go through a full-fledged recession. The rest of Asia is growing briskly and continues to be one of the brightest spots in the world economy

The Next Ten Years

Over a longer period, the next 10 years, the picture changes somewhat. The expectation for U.S. is growth to remain relatively modest -- maybe 2.5 percent average annual growth throughout the decade. I am a little more optimistic about growth prospects at the end of the decade. Productivity could be higher in the United Staes, both in manufacturing and services.

The way to characterize European prospects is, on the one hand, promising in terms of what could happen but also fraught with risks, most of which relate to absorbing and reintegrating Eastern Europe and the Soviet Union into the Western European structure. The liberalization process that has occurred in Eastern Europe and now more recently in the Soviet Union has forced the hand of the European Community to broaden its base and perhaps become less protectionist. The long-term prospects for Germany are very bright. Even the long-run (10-year) prospects for Eastern Europe look good. In 10 years' time, countries like Hungary, Czechoslovakia, and Poland will be in reasonably good shape. The Soviet Union has a much longer road to go and many more problems than the other former Soviet Bloc countries.

Throughout the next decade we will see very fast growth in Japan and Southeast Asia. Other regions, like the Middle East, will probably do fairly well.

What does all this mean for the air transport industry? The expected economic growth worldwide is certainly consistent with something close to a doubling of traffic in the next decade. Clearly, there will be regional differences. In Europe traffic may only grow by about four percent annually. In Asia we could see annual growth as high as eight percent.

RISKS AND PROBLEMS

I have spoken about the age of uncertainty and the moderately optimistic outlook for the U.S. and world economy. Now I want to focus on risks, both short-term and long-term.

Economic Uncertainty

In the short run it is possible, although not very likely, that recovery in the United States could falter for a number of reasons. If growth outside the United States slows down and our exports to the rest of the world with it, the U.S. recovery could be in jeopardy for the next year. The restructuring of manufacturing and the shake-out in various financial industries could prove to be too painful and could have a ripple effect throughout the economy. The financial crises and the credit crunch could spread. Any of these factors could bring about an end to economic recovery and trigger a double dip.

In Japan a financial collapse, while unlikely, is not out of the realm of possibility. In Germany it is always possible that unification could derail. And last, but again by no means least, the problems in the Soviet Union -- economic and political -- could easily spread to the rest of Europe, bringing an untold set of problems.

Shortage of Capital

In the longer run, there are two more risks that would have important ramifications for the airline aircraft manufacturing industries. First is the concern that has been expressed recently about a worldwide capital shortage. The restructuring of Eastern Europe, the rebuilding of Kuwait, and the capital demands in the Third World suggest that there will be pressures on the supply of capital. Right now, capital shortage is not of great concern, but it is certainly possible as we enter the middle of the decade that shortage of capital could exert upward pressure on real and nominal interest rates, which in turn could create financing problems for the airlines.

Protectionism

The other long-term risk is much more troubling because it already has created friction worldwide and could continue to be a source of difficulties. I refer to trade frictions. Here, everybody is to blame. The Europeans in certain industries have a fortress mentality. They are unabashedly willing to subsidize industries, including the aircraft industry. Europeans are quite willing to condone forms of protection for what they call national and European champion industries. Agriculture is one of the most flagrant examples.

Japan is just as much to blame. The Japanese have a rather mercantilious mentality, and they seem unwilling to give up on their export drive. I will not belabor the point here. I am not a Japan basher; but on the other hand, I think there is a lot the Japanese could do to further the process of multilateral trade. The United States is also clearly not blameless, in that we have turned away from being a champion of free trade to what I call a sulker, a whiner, and a little bit of a spoilsport. We tend to say that because we are not able to sell our goods the way we used to, we are going to take our ball and go home. That is a very dangerous position for us to take.

Trading Blocks

There is a tendency these days to say that it is okay for the world to coalesce in the trading blocks. This is wrong, especially from the perspective of the airline and aircraft manufacturing industries.

If the world does form trading blocks, one implication would be that Boeing would not be able to sell as effectively in Europe or Japan. I doubt Boeing would be terribly happy with that. The same could be said about airline expansions. If we move toward a world of megacarriers, the future growth of United, Deltà, or American Airlines would be heavily constrained by the formation of trading blocks.

It would be a mistake, both for U.S. multinationals and European and Japanese industries to acquiesce to trading blocks. The erection of barriers and creation of spheres of influence would limit trade growth, and with it economic growth.

Other Risks

Finally, just a few words on the inherent risks to the air transportation industry. Clearly, trade frictions are high on the list because they could create serious problems for airlines and the airplane manufacturers. Financing problems resulting from a capital shortage are also risks that could arise in the 1990s.

One other area of concern that I have not mentioned due to lack of time is environmental issues, not only in the United States, but also in Europe and maybe eventually in Asia as well. Noise pollution and air pollution could create serious problems and challenges for the aviation industry.

In addition to the external risks enumerated above, commercial aviation also faces the internal risk of congestion of airports, airways, and air traffic control facilities that could constrain growth as severely as any of the economic factors I have mentioned.

QUESTIONS AND ANSWERS

Question: Would you comment on the effects of the 1986 tax law changes on the economy?

Dr. Behravesh: I did not like the 1986 tax law changes, and I will tell you why. At a time when we wanted to restructure the national economy toward investment and exports and away from consumption, the tax incentives had exactly the opposite effect.

However, I also have to say that the effect was not large. There is very little evidence that changes in tax law were even remotely responsible for the current recession. The new tax laws clearly had an effect on investment in 1986 and 1987, but by 1988 investment was very strong. Even in 1989 it was strong. Thus, while I have problems with the tax law as long-term policy, it was not a driving force behind the recession.

Question: I find your economic forecast conservative. An annual GNP growth rate of 2.5 percent would be the lowest in 30 or 40 years. Please explain your assumptions.

Dr. Behravesh: My assumed GNP growth rate is about 2.25 to 2.5 percent. Three driving forces underlying this assumption are labor force growth, productivity growth, and the price of petroleum. Labor force growth is slowing down, largely for demographic reasons. There may be some pick-up in productivity growth. The key is what is going to happen to the services industry as a result of restructuring. I also expect that the price of oil will increase at a rate higher than inflation -- from the present $22 per barrel to perhaps $30 or even $35 by the end of the decade.

Question: Most economists seem to focus on the depth of the U.S. recession rather than its length. We have had six quarters of negative growth and two quarters of slow growth before that. Combining that with the six months that you expect for an upturn, we will have had two and one half years of substandard growth. Is that mild in comparison to previous downturns?

Dr. Behravesh: The answer has to be no at some level. It may help to approach your question in a different way by comparing the unemployment rate now with that which we would have in a condition of "full employment". Our actual unemployment rate has been above the full employment rate, but it has not spiked as it did in past recessions. Still, it has been above the full employment rate and is likely to remain there for some time. The reason is very clear. The Federal Reserve Board has engineered such an outcome in an attempt to get inflation down. It has been a very clear policy goal of the Federal Reserve Board to keep growth low in an attempt to hold inflation down, and they have met with some success.

But to answer your question, you are absolutely right. We have been operating at a level well below our potential for some time, and I expect we will, in some average sense, continue to do so for several months to come.

FINANCIAL CONDITIONS AND ISSUES IN THE AIRLINE INDUSTRY

Edmund S. Greenslet
ESG Aviation Services

I am going to pick up some of the ideas expressed by the previous speaker about the broad economic scale. My intent is to relate these remarks more closely to the industry that we all pay a lot of attention to and that we are all here to discuss -- the airlines and the aircraft manufacturing industry.

I do not think there is a better place to start than to observe that, if this is a mild recession, you certainly cannot tell it by looking at the airline industry. In fact, the economic state of the airline industry is by a wide margin the worst it has ever been.

Go back to the early 1980s, the most recent recession period. The operating margin for the world's airlines at the trough of that recession was a shortfall of 1.4 percent in operating revenue. The operating loss for the world's airlines last year was 3.3 percent of revenue, more than twice the margin of loss in a recession that was arguably substantially milder. Not only was the 1980 recession milder but so was the rise in fuel price. Everybody loves to talk about the fuel price factor, and most airline managements were delighted to have fuel price go up because it gave them something to point the finger at and say don't blame me for all these lousy results, look at what happened to fuel.

Fuel in 1990 went up, but it came back down again early in 1991. Even while it was going up, it was nothing like the early 1980s and the mid-1970s. Those fuel price increases were order of magnitude greater than the fuel price increase of late 1990, and yet the devastation on the earnings front was substantially greater.

This suggests that there might be more to this story than meets the eye. It might also suggest that airline managements are not being totally candid when they point to higher fuel cost as the causative force. As recently as yesterday, Bob Crandall blamed fuel price along with a couple of other things for the reduction in American Airlines' capital spending plans. We will get back to this point a little later.

WHERE THE INDUSTRY IS TODAY

I want to walk through the recent results and cite some of the contributing causes that were of no small moment in bringing us to the present situation. Then I will examine some of the consequences. The handout that you just received (table 1) displays key economic indicators that I will refer to as we go along.

Obviously fuel played a role. Nobody denies that. The jump in fuel prices did hurt financial results severely in the fourth quarter of 1990. But I must point out that during 1989 and 1990, all costs other than fuel were increasing more rapidly than revenue. This is true on a world basis, as well as in the United States. If we take the fuel factor out, neutralize it completely, we still find excessive growth of overall operating expenses that exceeded the growth in revenue by a significant margin.