

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

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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.

TABLE 1 WORLD AIRLINE OPERATING RESULTS AND CAPITAL REQUIREMENTS*

Year	International Civil Aviation Organization data (ex USSR)					AIRLINE MONITOR Projections for:			AIRLINE MONITOR Protected Capital Needs for:				% of Net Internal Funds Required - Cash Flow	
	Revenue	Pct. Chg.	Expenses	Pct. Chg.	Oper. Ratio	Net Income	Net Profit Margin	Depreciation	Cash Flow (Dep+Inc)	New Aircraft Delivered	Ground & other Equip.	Total Capital Needs		
Forecast:														
1999	486,616	11.0	462,285	11.0	24,331	12,165	2.5	24,331	36,496	56,235	6,748	62,983	172.6	26,487
1998	438,393	11.0	416,473	11.0	21,920	10,960	2.5	21,920	32,879	53,566	6,428	59,994	182.5	27,114
1997	394,949	11.0	375,201	11.0	19,747	9,874	2.5	19,747	29,621	49,976	5,997	55,973	189.0	26,352
1996	355,810	11.0	338,019	11.0	17,790	8,895	2.5	17,790	26,686	43,963	5,276	49,239	184.5	22,553
1995	320,549	11.0	304,522	11.6	16,027	8,014	2.5	16,027	24,041	41,819	5,018	46,837	194.8	22,796
1994	288,783	11.0	272,900	11.6	15,883	7,942	2.8	14,439	22,381	42,173	5,061	47,234	211.0	24,853
1993	260,165	13.0	244,555	10.6	15,610	7,805	3.0	13,008	20,813	42,456	5,095	47,551	228.5	26,738
1992	230,234	14.0	221,025	10.0	9,209	4,605	2.0	11,512	16,116	46,837	5,620	52,457	325.5	36,341
1991	201,960	2.0	200,950	0.2	1,010	(2,990)	(1.5)	10,098	7,108	41,131	4,936	46,067	648.1	38,959
History														
1990	198,000	10.6	200,500	17.1	(2,500)	(6,500)	(3.3)	9,900	3,400	28,916	4,337	33,253	978.0	29,853
1989	179,000	7.7	171,200	9.7	7,800	3,700	2.1	8,950	12,650	21,716	3,257	24,973	197.4	12,323
1988	166,200	13.1	156,000	11.6	10,200	5,000	3.0	8,310	13,310	17,437	2,616	20,053	150.7	6,743
1987	147,000	18.0	139,800	16.5	7,200	2,500	1.7	7,350	9,850	13,641	2,046	15,687	159.3	5,837
1986	124,600	11.1	120,000	11.0	4,600	1,500	1.2	6,230	7,730	13,279	1,992	15,271	197.6	7,541
1985	112,200	6.5	108,100	7.8	4,100	2,100	1.9	5,610	7,710	11,279	1,692	12,971	168.2	5,261
1984	105,400	8.7	100,300	5.6	5,100	2,000	1.9	5,270	7,270	8,433	1,265	9,698	133.4	2,428
1983	97,000	4.0	95,000	1.7	2,000	(700)	(0.7)	4,850	4,150	10,124	1,519	11,643	280.5	7,493
1982	93,240	0.3	93,400	(0.3)	(160)	(1,300)	(1.4)	4,662	3,362	8,281	1,242	9,523	283.3	6,161
1981	92,992	6.1	93,684	6.1	(692)	(1,150)	(1.2)	4,650	3,500	12,147	1,822	13,969	399.2	10,469
1980	87,676	23.9	88,310	26.1	(634)	(919)	(1.0)	4,384	3,465	11,244	1,687	12,931	373.2	9,466
1979	70,755	20.4	70,019	25.7	736	588	0.8	3,538	4,126	8,808	1,321	10,129	245.5	6,003
Summary Totals:														
1991-1999	2,977,459	10.5	2,835,931	9.7	141,528	67,269	2.3	148,873	216,142	418,156	50,179	468,335	216.7	252,193
1990-1999	3,175,459	10.5	3,036,431	10.4	139,028	60,769	1.9	158,773	219,542	447,072	54,516	501,588	228.5	282,046
1980-1989	1,205,308	9.7	1,165,794	9.4	39,514	12,731	1.1	60,265	72,996	127,581	19,137	146,718	201.0	73,722

* Actual results in millions of dollars through 1990, projections for 1991 to 1999.

The point is that earnings were going down in any event. Earnings went down from 1988 to 1989. Earnings were going down in 1990, long before Desert Shield and Desert Storm began. The fuel factor simply came in as the *coup de grace*. Coming late in the year, too late to be offset by any operational or price changes to recover those costs, it put the kiss of death on the year. The fact is the conditions were already present to produce a lousy earnings year for the industry, and that is what we had.

Traffic growth was slowing down, and this may indeed relate to sluggish economic growth during preceding two years. Certainly there is some evidence of that in world and U.S. traffic growth. For the past three years, through the end of this year (including projections for the last four months) U.S. domestic traffic growth will have increased only 0.7 percent over a three-year period. This comes awfully close to stagnation. The world's growth has slowed down considerably. It slowed from 11 percent in 1987 to 7 percent and then to 5 percent by 1989. As things stand today, with four months of the year to go, 1991 will almost assuredly be a down year in world airline traffic. This has never happened before. Never in the history of this industry has traffic on a worldwide basis declined from the previous year. I can remember. I have been in this business long enough to recall when the trend of uninterrupted growth stopped in the United States a decade ago. 1981 was the first year U.S. traffic ever declined. 1991 will be the first year that world traffic declines. Whatever the causes, and they were many, and we will keep probing for them, the fact is that airline traffic growth has been slowing down for the past five years.

Interestingly enough, load factors have not declined appreciably. In other words, capacity was trimmed back in concert with the traffic slowdown. Expenses were not tailored so well. Unit costs obviously were going up, but we really get to the meat and potatoes of this thing when we look at yield. The yield increase through this whole period has been inadequate. For several years yield was going up in nominal terms, something on the order of six percent -- in real terms about one or two percent. The yield increase dropped off in 1990, and probably will again in 1991 to something over two percent in nominal terms, which amounts to a negative figure in real terms.

Down in real terms is not bad, as that is one of the main drivers of traffic growth long term. Reduced real yield has long been one of the major sources of improved traffic trends in the airline industry. But combined with the kind of cost management we see, the result is inadequate profits.

These costs are reflective of excessive optimism on the part of airline managements, not only in this country but throughout the world. Some of that same optimism

is reflected on the order books of Boeing, Airbus, and McDonnell Douglas. It was also reflected in the rate of expansion of employment and the infrastructure of the airlines. The words of Bob Crandall yesterday may signal a slowdown, if not a halt, in the plans of one of the more aggressive companies. Whether it proves to be a harbinger of things to come we will find out. I hope so because this optimism has been in part responsible for the decline in yield. Part of being aggressive is trying to build a traffic base in the face of a slowing economy. One way to do that is to offer more attractive prices.

The fact that it has not worked particularly well up to this point has not prevented the industry from continuing the practice aggressively. Thus, the picture is slowing traffic and inadequate yield growth, both putting pressure on the revenue stream over the last two years. At the same time, the continued expansion mentality on the part of management caused overall costs to rise at an excessive rate. Even before fuel prices went up, rising costs led quite naturally to the decline in earnings. The decline became a disaster when the rise in fuel price hit.

Let me move to a slightly less tangible but no less significant element of this whole equation -- the consolidation that has been going on in the U.S. industry. Here we are starting to talk about something that has implications for the world as well as for the United States. I do not suggest that there was any grand strategy, Machiavellian or otherwise, on the part of the management of the three giant U.S. companies. But I do think their own reading (or misreading) of their long-term best interest produced the consequences we face today.

Aggressive growth was part of the original plan. Crandall was its greatest spokesman, the others followed along. That, in itself, put pressure on those not able to match the capital spending stream of the giant airlines. As we faced the crisis of late 1990, something unexpected occurred. The fuel increase, which always in the past had been accompanied by a dramatic improvement in the price of the product, did not happen.

Airlines increased prices, you recall, in response to the fuel price increase. They actually announced price increases in the full fares. But in the end, none of it came through. All of it was dissipated in more and more aggressive discounting to match with relentless consistency every discount fare proposed by every troubled airline trying, however it could, to raise some form of operating capital to survive for another day, week, or month. The giants gave them absolutely no breathing room. They sat right on top of their fares, and they kept the pressure on. Not only did they keep it on, they intensified it. The statistics on yield indicate that the

number of people using discount fares has now soared to 96.5 percent of all travellers. It cannot go much farther.

The percentage of discount fares had hovered around 90 percent for a long time. In 1991 it just exploded. What does this mean? Somebody out there is offering discount fares to more people, particularly the business traveller. Think about it. Those last few percentage points at the margin can only come from one place. It comes from business travellers making late or last-minute travel decisions. That is about all that is left in the full fare category anyway. What is happening is that airlines are making more and more discounts of some kind available to business travellers.

More is going on than can be accounted for by the actions of a Midway, America West, Continental, or someone like that. Discounting has been enthusiastically supported and sustained by the large carriers because they could, to put it brutally, smell blood in the water. They saw their competitors in trouble, and they were not going to give them an inch.

It worked. We have five airlines in bankruptcy, one is liquidated. The others may have to combine with each other or with somebody in order to survive. Two of the remaining airlines that are not in bankruptcy are shrinking in size. One has sold a major piece of its assets. With these sales the major point of the whole game has been accomplished. To return to what I said earlier, domestic traffic has not been growing for three years. But in that time Delta is up 22 percent and American is up 17 percent. United is only up two percent, but that is a different story. What the giants have done is to grow by taking market share away from the weaker players. This process can go only so far, and it has probably gone about as far as it can go.

THE OVERSEAS STRATEGY

If the major airlines were going to continue on an aggressive expansion track, they had to find a new place to expand. The domestic market was saturated, both as a result of maturity and as a consequence of the geographical spread of the companies involved. Airlines did not really have more niches to go into; and if they were going to keep growing, they had to find new opportunities. These opportunities were overseas.

The only problem was that the overseas routes were owned by someone else. In effect, the stronger airlines sized up the situation and siezed the opportunity. You shake the tree hard enough and the apples you want fall off. Then you pick them up and put them in your pocket.

I am being grossly simplistic, but this is effectively what happened. The conditions were created to cause these international assets to fall into the hands of the dominant airlines. The only significant international asset not controlled by the big three is the Pacific Division of Northwest, and that is probably not available. The only other operation of any consequence is the South American Division of Pan Am, but to all intents and purposes that is now part of Delta.

Having now achieved the control of the assets that give the opportunity to grow in the decade of the 1990s by expanding overseas business, the time has come, I believe, for the giants to stop shaking the tree. What does that mean? It means that the pressure on the weak players no longer serves any great purpose, and it actually could hurt the big three more than it could help them. The one imperative that follows from the growth strategies pursued by these companies is the need to invest.

What you have before you (table 1) is a world operating statement through the 1990s as I perceive it. The investment figures are taken directly from a forecast that I made for the commercial aircraft market, plus a factor added for investment in ground equipment. From this we deduce how much annual capital spending will be required for the world industry. It comes out to about \$468 billion for the nine years, 1991 through 1999. The amount that is needed from external capital is shown on the log scale chart. (Figure 1)

There is a slight dip in the spending stream as a consequence of the shortfall in cash flow last year and this year. It is nowhere near as bad as in the early 1980's, and it will recover faster. But for all that, it is not possible for American Airlines or any other airline to invest at the rate they plan on the basis of the cash flow figures for 1990 and 1991. It just will not wash. You cannot get there from here. Either the cash flow will have to improve, or the capital spending stream will decline. Crandall said as much yesterday. Basically he said that, if earnings are not better, American Airlines will have to spend less. By my estimate this means a \$500 million cut in a \$21 billion five-year plan.

It is interesting, that \$21 billion five-year plan. The estimates I have made for the major airlines show that American, without resorting to external capital, will be able to spend \$43 billion on new equipment between 1991 and 1999. American's five year plan called for \$21 billion. I estimate American will need more than double that amount for nine years.

Moreover, Delta and United will both have to spend at the rate of \$40 billion. The total is \$123 billion of supportable capital spending over nine years. That is just over 25 percent of the total world airline capital

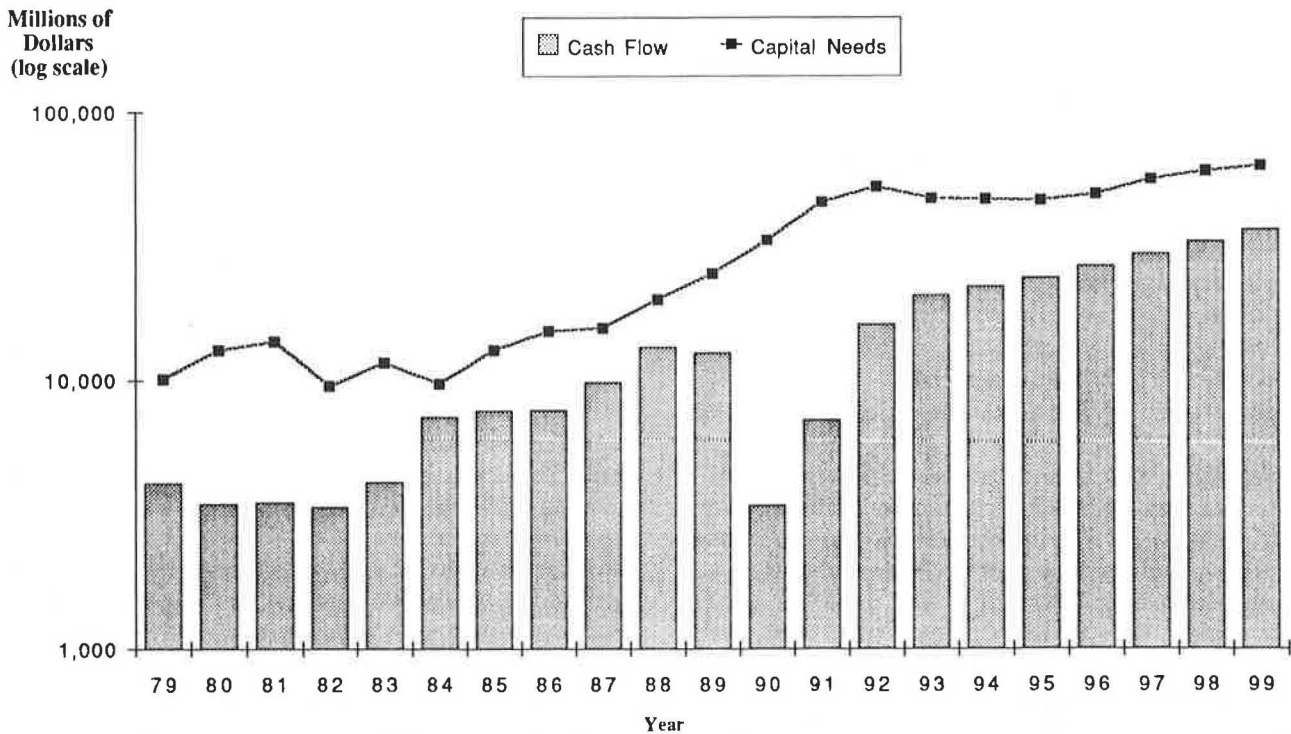


FIGURE 1 Cash flow of ICAO Airlines vs. capital requirements (actual through 1990 and estimates through 1999)

spending for the nine years shown in Table 1. These three companies last year accounted for 18.5 percent of the world's airline traffic. Those of you who are economists and financial analysts will readily agree that the driver of market share is capital investment. If investment in new assets is at a certain rate, market share will tend to move toward that rate. If an airline is investing 25 percent of the world's capital expenditures by all airlines, sooner or later its market share will get awfully close to 25 percent.

This means that if the industry grows, somewhere around 5.5 percent annually through 1999, the big three U.S. carriers will grow at a compound rate of 9.2 percent. Most of that growth will be in international markets. Having acquired those markets, they intend to exploit them. However, they cannot exploit them if they don't spend that capital; and they cannot spend that capital if they don't have a cash flow to support it.

A LOOK AHEAD

The need, I suggest, will be the mother of the event. Yields will go up because those who are in a position to control these markets will not be as obsessed as they

have been with matching every price that any small airline throws into the market. It does not matter what price Midway offers; they cannot hurt United. And they never could, and yet United has been matching them right down the line. That will stop, and we will see a significant shift in yield.

There will not necessarily be a price increase. What the airlines will do is tighten up and change the discount mechanism that forms the bulk of the price structure. In the process yields will go up, cash flows will improve, and capital spending will take place.

The recent yield strategy has been a tactic in an ongoing long-term market strategy. This tactic has fulfilled probably the wildest dreams of its creators. Now it will change because continuing to use it threatens the strategy. If the strategy of growth is threatened by the inability to spend, then airlines are going to change the tactics that inhibit spending. What we will see over the decade of the 1990s, and this is reflected in the forecasts in table 1, is a slightly better overall rate of return in the airline business on average. The aggressive growth plans of the U.S. carriers will put pressure on the international carriers, particularly in Europe. However, it will not be a type of competition characterized by price wars.

The infrastructure friction between Europe and the United States is greater, and the Europeans do not have the ability to use price as it is used in the U.S. domestic market. The competition will be much more involved with control of traffic flow. The big three U.S. carriers with their domestic base intact and their cash flow engine operating will, as a consequence, force major readjustments in the European airline scene. Europe has never had the U.S. style of competition that they are now experiencing in their markets. London is getting it full bore today. Lufthansa is screaming about Delta's rights in Frankfurt. They never screamed about Pan Am's rights in Frankfurt. The reason is simple. Delta's rights in Frankfurt are a threat; Pan Am's never were. Delta can do something with these rights; Pan Am could not.

This will be a force more powerful than government friction, and it will change the aviation scene in Europe. The change may be reluctant, and it may be resisted vigorously, but I do not see how it can be avoided.

So, this is the picture as I see it. The biggest event of the last six to nine months has been the transfer of international assets from the weak airlines to the strong. Nothing will color the 1990s more than this.

QUESTIONS AND ANSWERS

Question: A big part of the profitability improvements that you show is based on a 1992-1993 reduction of growth in airline expenses. Do you attribute that entirely to the yield management by the discount fare structure, or do you see any other structural changes in airline expenses such as British Airways recent move away from vertical integration of all of its internal products and services such as the engine repair?

Mr. Greenslet: I did not dwell on that, but expenses must be more tightly controlled in the next couple of years. It does not have to do with yield directly, but radical surgery on expenses as a reaction to 1990 will help. From that point on, it is a revenue-driven recovery, not an expense-controlled recovery. It is a jump in the revenue stream that relates to yield. Producing enough revenue in the recovery side of the cycle to boost earnings is the first step. Then it is a matter of managing yield to stay in a favorable position through the decade.

Question: A two part question. First, do you see this yield improvement taking place before the demise of Midway, America West, and others? Second, will the majors continue to sit on the weaker airlines until they are not a problem any more?

Mr. Greenslet: It is hard to say exactly when they will start to ease up. I believe they will begin very soon, perhaps by early 1992. Crandall basically signalled the change yesterday. He was sending a message, not so much to Midway and others like them, but to United and Delta. What he said in effect was we have the world in our hands, and it is up to us either to make it or to screw it up. If we continue down this track, we are not going to achieve what we want. It is not in the power of Midway or anyone like them to prevent us. We are not going to wake up one morning and find that yields are up 10 percent just like that. It is going to be a slow process that will start by the first of the year.

Question: The second part of the question. With improved yields or higher prices, will there be new entrants in the last part of this decade?

Mr. Greenslet: No. There is no room in this country for a new entrant. There are no niches meaningful enough for them to serve. When I say there will be higher prices, it is going to be hard for the consumer to recognize them because the fares may not change a whole lot. The consumer will get a discount fare that is just a little bit higher than the discount fare available before. If consumers are very sharp, they will notice they are paying more, but the airlines are going to do their best to obscure it.

Question: I would like to go back to the earlier presentation on economics. I do not really agree with the 2.5 percent growth rate for the U.S. economy. However, on a per capita basis, it suggests incomes rising only about 1.5 percent per year. If you think yields are going to go up significantly, how do you reconcile that with the continued growth of traffic?

Mr. Greenslet: I am not sure domestic traffic will grow. It has been static for three years. Domestic U.S. traffic growth might not be more than three to four percent.

Question: The same problems affect international operations. Last year U.S. airlines lost over \$400 million on international services. It is not that much better than the domestic picture.

Mr. Greenslet: Last year increased fuel cost was a big part of that loss. But the traffic growth potential, particularly for the carriers that will be doing the investing and expanding, has been substantial. They all have had very healthy traffic growth through all of this time. Over time the yield improvement required is not necessarily going to be more than the inflation rate.

We are not talking about real yield necessarily going up much if at all. Real yields may be flat. But that would be equivalent to a nominal yield increase of four percent or so at most unless we have a much more radical improvement in the long-term inflation rate than we presently are counting on.

So on the domestic side, yield increase of three percent and traffic of three percent means a six percent growth in revenue. As an industry average, this may be all one can get. American, Delta, and United, might do better than that for a period of time.

Passenger revenue has a long history of growing in proportion to increases in GNP and disposable personal income except in the 1980s when it flattened out and actually declined. There was some small recovery toward the end of the 1980s and into the 1990s but not much. During the 1980s while the airlines were working out strategies to deal with deregulation, there were great price advantages to the consumer, and the airline industry stopped growing for the first time. It has not resumed since. There is some slight evidence that growth might resume, but it is not certain. The 1990s could continue a trend that could truly be described as a mature industry, i.e., an industry that is not an increasing as a share of either GNP or consumer spending.

AIRPORT AND AIRLINE SECURITY

Wilfred A. Jackson

Association of Airport Councils International

We are going to shift gears. We are not going to talk about the economics of airlines but something that has an economic impact on the airline, and certainly on the travelling public, you and me and all those who buy tickets. I want to speak about security.

Security is something that airline presidents do not like to talk about. Certainly when the security chief of an airline comes to the president with another expense, the president sometimes gets somewhat upset because security is not a profit center. There is nothing that he can do in this area to increase his bottom line. All it does is drain cash flow even more than some other parts of his endeavor, such fuel and labor costs.

OVERVIEW OF SECURITY

Passenger Screening

Back in the 1960s and 1970s civil aviation was plagued by hijackings. It was sometimes known as the homesick Cuban period. A number of Cubans had come to this

country and found that the easiest way to get back to their own country was to hijack an airplane. It was pretty easy to do. Very few airplanes were ever hijacked using a real, live weapon such as a pistol. Most of them were hijacked more by threat than by actual violence.

But the Federal Aviation Administration came to the fore, and several measures were taken. Sky marshals were put on airplanes, and this tended to deter hijacking somewhat. FAA also established the pre-board screening program that we all live with today.

The passenger screening became the responsibility of the air carrier, on the rationale that anything that goes on board an airplane should be the responsibility of the owner and operator of the aircraft. Initially, the FAA and the Federal Government bought the equipment used for passenger screening. Later, as the responsibility flowed over to the air carriers, it became their responsibility to furnish the necessary equipment.

As the passenger screening required by FAA became more and more prevalent throughout the country equipment had to be put into terminals in several places. A single pre-board screening site was never going to be adequate at most airports. One of the difficulties experienced with installing pre-board screening facilities was that the air terminals were not built to accommodate them. As an example, here close to home, look at Dulles Airport. I have lived in this area for approximately 20 years, and I am not sure that the people at Dulles have yet determined where would be the best place to locate the pre-board screening. At present, in order to go to the main restaurant, you have to go through pre-board screening. If you happen to have a lot of change in your pocket, you have to remove it in order to get to the restaurant.

The new terminals being built today around the country are planned with the requirement for pre-board screening in mind. All of the terminals built since the mid-1970s, I would venture to say, have been designed to accommodate pre-board screening, but it still remains an expense to the air carrier.

Screening Airline and Airport Personnel

In the 1980s, we had some other developments in the field of aviation security. We had terrorists who used explosive devices on aircraft. We also had one individual, a former employee of PSA airlines, bypass the screening point by using his airport identification, get on board with a weapon, and destroy the aircraft. He destroyed it by first killing his former boss, then the crew of the aircraft, and consequently everyone on board including himself.