John W. Drake

Is it not likely that some of the plant capacity that is being counted when they talk about 80 percent is unusable and is, in fact, that capacity which manufacturers are actively trying to replace now, and that this helps to keep the economy going along as it is, so that 80 percent is not really a good number? Might the percentage of capacity operated that is losing money be higher?

Nariman Behravesh

That is a very good point. I would have said that it was an even stronger point a couple of years ago. We are seeing much investment activity directed at upgrading existing capacity rather than adding to it. Therefore I would say that the obsolescence of capacity is less of a problem now because so much upgrading has been going on. You are right that the numbers may be understating the amount of capacity utilization, but I still think we are far from the flash point for inflation. It is obvious that prices are not rising and part of this has to do with the fact that we are importing capacity. That, in and of itself, is a factor that is keeping prices down.

David C. Sepanen, Boeing Commercial Airplane Company

You went through your well-founded reasons why we could expect lower prices this year, but real interest rates are extremely high. If lower interest rates could be a panacea for the world economy, why do we not see lower interest rates?

Nariman Behravesh

That is a good question. We have seen lower interest rates on a nominal basis. Nominal interest rates came down some 300 basic points in the past year. The problem is that the rate of inflation has also declined in that period, which is all good news, mind you, but it has not done much for a decline in real rates. They have come down a little bit, but not a lot. Real rates are still very high by historical standards. The fundamental reason for this is a perverse policy mix: a very stimulative fiscal policy and a monetary policy that has eased a little but is still sitting on the fence. There are other reasons as well. While inflation has come down, expectations of inflation have not come down as much. People are still worried about inflation. Financial deregulation has played a part in that. Furthermore, the 1981 tax breaks that were passed for corporations actually raised the real rate of return. You would expect that to be reflected in real interest rates. The policy mix is the key. If more progress is made on the deficit, I think we will start to see easing on the real side.

Question What would be the result if the prime rate could be dropped to 6 percent today?

Nariman Behravesh

The negatives would be, primarily, lower interest income, I would think. Interest income, incidentally, has been rising at a very rapid rate in recent years. Generally a lower prime rate would be very positive for the economy. We would see the interest-sensitive sectors of the economy rebound. We would see a lot more strength in housing and investment. We would see a further decline in the dollar. It would be a very positive development if, in fact, the prime rate were to come down, but one element has got to be present, a reduction in the federal deficit.

AVIATION: TODAY, TOMORROW, AND IN 1990

George W. James, Airline Economics, Inc.

The economic outlook projected by Dr. Behravesh was certainly encouraging. A similar pattern is developing in the airline industry as we look at what happened last year, this year, and what the prospects are for next year and even the longer run.

This discussion will concentrate on what happened in 1985, take a look at 1986, and compare the three-year period, 1984-1985 and 1986, to see if developments during these years can provide some insights that will help clarify the future of the industry. Some of the structural changes in the industry that appear to be under way will also be examined.

The most important thing to do in looking at 1985 is to examine the formulas for revenues and costs. First, revenues are obtained by multiplying traffic times yield. The second part of the equation is taking capacity or available seat-miles and multiplying these by unit costs (which is cost per seat-mile) to arrive at operating expense.

These relationships are important to understand because we often fall into the trap of just looking at traffic to see profitability (i.e., traffic is improving, therefore, the carriers must be improving financially). This is not the case, of course, because if there were no charge to the passenger there would be no revenue despite a 100 percent load factor. How then do these factors work out in combination?

Under deregulation, from time to time any one of the four variables, traffic, yield, unit costs, or capacity, can become more important than the others as far as profitability is concerned. Also, no one of them can be a permanent solution to profitability. Yield cannot always increase 10 percent per year nor can costs be cut indefinitely. For example, in the first half of 1985 the real key to the profitability of the industry, some $950 million, was the increase in load factor. In the first half of the year the carriers for which load factor increases were the primary reason that their profitability improved were Air Cal, American, America West, Delta, Eastern, New York Air, PSA, Republic, Southwest, US Air, and Western.

Three carriers had better profits because yield was the key to their success: Alaska, Midway, and People Express. Unit cost decreases were the primary reason that profitability improved in the first half of the year for Northwest and Frontier.

There were also several carriers that lost money or decreased their operating profit in the first half of the year. Decreased load factors affected Aloha and Hawaii. Because of the United strike fewer people came to Hawaii. Ozark was the only carrier for which operating profit decreased because of a yield decrease. Four carriers, Pan American, Piedmont, Trans World, and United, had unit cost increases in the first half of the year, leading to a decline in their operating profitability or a loss.

In summary, the industry was profitable in the first half of 1985 mainly because of improved load factors. However, in 1984 the dominant factor was yield increase.

From January through July 1985 there was a 15 percent growth in revenue passenger miles (RPMs) and a three-point increase in load factor. In September, traffic growth was only about 6 percent, and a drop in load factor can be expected. This means that the primary factor for improving profitability in the first half of 1985 began to

disappear as we moved into the last four months or so of 1985. What about the rest of the year?

Several factors should be noted: (1) Fuel costs were still going down significantly, about 5 cents a gallon, and on a yearly basis that was nearly $600 million of savings for the industry; (2) There was still moderate growth in real gross national product (GNP), which was increasing at the 2-1/2 or 3 percent rate that Dr. Behravesh noted earlier. That kind of growth was expected in the first couple of quarters of 1985 but did not occur; (3) The decline in yields was less in the last four months of 1985 than it was in the first eight months of the year.

Thus, there may begin to be a shift in the factors affecting the profitability of the industry from load factor in the earlier part of the year, perhaps to yield or unit costs. It is important to keep these factors in mind as we look at what is happening to the industry, particularly as we look to 1986 and beyond.

Another important way of looking at industry profitability is to examine its consumer price index (CPI). This is the airline's unit costs (i.e., what it is costing them to purchase a gallon of fuel, their cost per hour of labor, and cost per ton of landing). In 1981 the airlines' CPI was up nearly 13 percent. In the first quarter of 1985 it was zero. The primary reason was that fuel costs were down and labor costs (compensation per employee) were up only about 2-1/2 percent. All other costs, the cost per commission to the travel agents, cost per ton of landing, and so forth, were up less than one percent. When you combine all of these, you have no change in CPI. That is a very positive sign for the industry.

In summarizing the 1984, 1985, and 1986 financial picture for the industry, it appears that in 1984 operating profit came to $2.3 billion and should be about $2.5, maybe $2.7, billion in 1985. In 1986 about the same results can be expected, an operating profit of about $2.5 billion.

It should be noted that the revenue part of the equation in 1984 was up 13 percent; in 1985 it should be up about 9 percent; and in 1986 it will be up about 6 percent. The reason the industry moved from losses in 1981 and 1982 and part of 1983 into a profitable situation by 1984 was a 13 percent gain in revenue and only an 8 percent gain in operating expenses.

Let us now look at what other changes have taken place in the seven years since deregulation. First, the increased availability of discount fares has allowed many more passengers to pay less than they would have otherwise. This has been the key to offering to the public the benefit of price breaks in a deregulated environment. However, comparison of what happened to full fare and discount fare prices with the Consumer Price Index from 1978 through 1984 provides a startling set of figures. The Consumer Price Index was up 58 percent in that time period. Full fare prices were up 127 percent. Discount fare prices were up 66 percent on average yet yields were up only 56 percent, less than the CPI.

Most people observe that the yield is up less than the Consumer Price Index; therefore, the public is getting a break. Yet if one looks at the parts, the full fare is up more than twice the Consumer Price Index, and the discount fare averages are up about ten points more than the Consumer Price Index. What is happening?

The answer is that we have moved from one-third of our passengers on discount fares to about 85 percent. The mix has changed. The prices offered are not better than the Consumer Price Index. In that sense, the consumer has not gotten a break. The prices taken are better than the Consumer Price Index, and in that sense the consumer has gotten a break. People living in New York, Chicago, Los Angeles, and the larger cities certainly are getting price advantages under deregulation. People living in Missoula, Montana; Laramie, Wyoming; and other smaller communities are not getting those breaks.

It is also clear that airline financial crises, including bankruptcies, have forced airline labor unions to accept lower wage scales and increased working hours compared with those that prevailed before deregulation. Another observation, which could not be made in the first three or four years of deregulation, is that the large carriers are generally doing relatively well today, while many of the new and smaller carriers have a questionable future.

It also appears safe to say that deregulation to date has resulted in greater satisfaction of accomplishment for those who are in the business; there is more ingenuity used in trying to avoid disaster, and there have been greater rewards to the successful. There also has been much creativity in such forms as frequent flyer programs, two-tier wage scales, sophisticated pricing mangement, hub-spoke route structures, and equipment financing. Most of these developments are well known and, as a group, they certainly can be classified as creative.

The airlines are exercising much tougher purchasing practices with their aircraft manufacturers, with their fuel suppliers, with their labor unions, with their money suppliers, and with all others who provide services and supplies to the industry. Still, there have been many more heartaches, failures, and recoveries and longer hours of work with more management maneuvering and shakeups.

What about the future? First, there is going to be a continuing, growing consolidation. Fewer new carriers are now entering this industry. The 1984 figures show that four major carriers had approximately two-thirds of the industry operating profits and had 102 percent of the net profits. That came about because the rest of the industry, taken as a group, suffered a loss even though some of these carriers had profits.

What has brought about this reversal? Why do the large carriers now find themselves in a much better position than do the smaller carriers? They have implemented markedly improved cost control, including labor and fuel costs. They have been strengthened by their hub-spoke operations that hold on to passengers throughout their trip; they have developed creative marketing programs to take advantage of their size and their route network; and they have learned how to avoid overly destructive fare wars.

Initially what they did when a competitor came into their market was to drop their prices across the board on a system basis. Now they do it through capacity control. If another carrier comes in and offers lower fairs in ten percent of their markets, generally through capacity control, the larger carriers discount only on the competitive routes and only on part of their capacity. It requires, of course, much more sophisticated yield management and capacity control, but they have learned how to do that.

The industry is becoming an oligopoly that will be dominated by just a few carriers. Certainly the contraction in the number of major carriers will continue but there will still remain a number

of carriers with special niches in the market. The twelve major carriers will one day be down to six to eight and have 85 to 90 percent of the market. Some 20 to 30 other carriers will find special positions to serve the medium-sized and small markets. That gives 25 to 30 carriers all together whereas now there are 98.

It is interesting to observe what has happened to the industry in terms of numbers of Section 401 or certificated scheduled carriers. In 1978, when deregulation went into effect, there were 36 of them. If you counted all that have existed since 1978, and if they were all still alive, there would be 200. Because we only have 98, the casualty rate is 50 percent.

The largest casualties have occurred in the new entrants group. There have been 94 new entrants since 1978; fifty-eight of them are no longer operating.

Which carriers are going to survive? Any answer is purely a guess. A better question is what are the broad characteristics of the carriers that will survive. One good measure is that the large carriers that survive will be those that are not overexpanding in capacity because they know that new aircraft are expensive. They are doing it in a balanced fashion. They can observe that carriers like Braniff and Air Florida had terrible financial difficulties largely because they expanded too fast and too soon. Managing rapid expansion is very dangerous in this competitive environment. Even People Express has faced that problem over the past year.

Another characteristic of surviving carriers will be that they are prepared for the entry of new carriers or old carriers with subsidiaries with much lower costs. The established carrier will meet this competition through several processes related to its large size, including the hub-spoke routes, the frequent flyer programs, and the computerized reservation systems. Also, the surviving larger carriers will continue to keep pressure on fuel, labor, commissions, and other costs. They will not relax once they get those costs down, which they are close to doing.

Another characteristic of the carriers that will survive is an economic one, and that is that they will know the cyclical nature of demand throughout the business cycle, and they will know price elasticity in order to maximize their revenue. Some current data clearly illustrate this point. In the first half of 1985 full fare yield was up 5.2 percent and RPMs were down 16 percent. The revenue change was a loss of 11 percent. However, discount yields went down 6 percent and stimulated demand, RPMs, to rise 18 percent. The revenue growth was a plus 12 percent. The carriers that understand these moves and how they will change when you are at the trough of the business cycle, on the upward side, at the peak, or on the downward side will survive.

Another characteristic for survival will be strong labor relations. Although this sounds obvious it is essential to ensure cooperation when it is needed. Good labor relations must be built now, when the industry financial situation generally is good, so carriers can hold it when the financial situation worsens. Many carriers have found that it was almost impossible to rebuild relationships that had been damaged in earlier periods when they were in financial trouble. They have been able now to salvage quite a bit of that through stock equity, bonuses, board of directorships, job security commitments and so forth. That also puts them in a better competitive position on the unit cost side.

There are some other developments that may be worth mentioning. First, the major carriers that will survive are those that learn how to tie their route structures downward and upward. By downward is meant getting commuter agreements that give them an assured tie-in, a feed to take greater advantage of the hub they have built; by upward is meant a move into the international area. The hub-spoke key has to be tied into the international area because it will provide important economies of scale by using the hub for foreign travel. Many carriers, for example Delta in Atlanta, and American in Dallas, are taking advantage of this.

Commuter agreements are growing rapidly. There were 40 of them in June 1985; by October 1985 there were 48. Since June American and Piedmont have added two more, and Continental, Eastern, United and Northwest have added one. US Air has the largest number with eight.

Hubs are another area to watch. Right now there are 37 large hubs operating or planned in the United States; 19 carriers serve these 37 hubs. American and United have the largest number, four each. American has Chicago, Dallas-Fort Worth and plans Nashville and Raleigh-Durham. United is at Chicago, Denver, San Francisco and Seattle. Except for Denver, not one of the 25 major cities represented by these 37 hubs has more than two carriers using that airport as a hub.

To sum up, consolidation will bring about an industry with six to eight large carriers and 20-25 smaller ones. There is one flag of caution in this scenario. It must be recognized that government control is not over. In spite of the fact that there have been seven years of deregulation, this industry still consists of three parts: the airlines, the airports, and the airways. They have to work in combination with one another. One of them is deregulated, the other two are not and never will be. A year ago there was widespread government control of congested airport and airway capacity. This did not occur this year because United was on strike and never increased capacity as planned. The congestion problems are still there, and will be to a much larger degree next summer. Government is also involved in the airline distribution system, in interlining of tickets and baggage handling, in consumer protection, in the antitrust laws, and in international routes and prices.

Some might say that government regulates other industries in a similar way, through consumer protection and antitrust. That is true. Still, other industries do not have airports and airways, or something similar, as a unique part of their system, and that is the primary reason there will still be more government control than in most other industries in the future.

If the free market survives into the 1990s the remaining air carriers will still offer all of the benefits of deregulation. They will show more financial stability than we have seen, and the industry will not have as many cyclical movements as before. The surviving carriers will continue to offer many discounts, although they will not be quite as complex as those we have seen. They will be designed to fill the ever-present marginal seats that, by the nature of the business, cannot be escaped. Carriers will have continued cost controls in place. They will have maximum seat usage and discounting and other measures necessary in order to meet the ever present threat of outside, new competition which, of course, will exist in a deregulated environment.

In conclusion, prospects are optimistic that we are going to see an industry with much more stability five years from now than we have seen in the past five years. The industry of the future will be capable of offering even better service than it has in the past. But there is still some turmoil left that we will have to go through before we get to that point.

DISCUSSION

James E. Gorham, James E. Gorham Associates

A paper presented to the Transportation Research Board Committee on Aviation Economics makes a pretty good case for opportunities for additional traffic growth in the introduction of non-hub service, and service direct to points many of which are moderately large and have lost service or do not have much direct service. Also, we have seen considerable indication that some of the regional airlines, as they move into larger equipment, may bypass major hubs and offer more direct service. Do you see this as a significant growth opportunity?

George W. James

At present smaller communities and even some medium-sized communities are not receiving as good service as larger communities. On that basis, I think there is that opportunity. On the other hand, I think those carriers, and in this case they would be commuters or regionals, will still have to have some kind of a tie-in with the major hubs as a feed to a major carrier. This does not mean that because you are providing service into a major hub you cannot at the same time provide service to smaller cities peripheral to those major hubs. The carriers who do both are the ones that are going to be surviving in the next five years.

Bernard F. Hannan, National Aeronautics and Space Administration (NASA)

You talked almost entirely about operating profit. At the very end you did mention that the stronger carriers, the ones that survive, will have managed to refinance some of their debt, to lower their interest rates. Could you comment on what you would see as the profit trend being after net financial costs because many people here are from vendors. They want to sell these carriers capital goods that they are going to buy after they pay off their financial costs. How much are they going to really have left for capital?

George W. James

What you are asking is how well the carriers might be doing on the bottom line, as opposed to the operating level. They actually have shown in the first half of the year that they nearly doubled their net profit over one year ago; in the operating profit area, they were about equal to last year. So, in that sense, at least for the data we have this year, they have done better on the bottom line.

Now, the reason I do not deal with the bottom line too often in forecasting is that accountants get hold of figures between the operating profit and the bottom line, and they do lots of things with them. You can look at Eastern, Republic and Western for example, and know that many analysts were giving up on those three carriers. They were not recommending them as investments and looked upon them as having insurmountable problems. Now many analysts look upon those three as being investments for the future because of remedial steps they have taken. In the cases of Republic, they moved from about five or six hubs down to a manageable three in Memphis, Detroit and Minneapolis. Eastern struck some very fine labor bargaining contracts with their unions and gave them a share of the business. Western has learned ways to make the Salt Lake City hub much more efficient than it was previously.

Bernard F. Hannan

I would like to ask David Raphael a question, and Dr. James, you may want to throw something in at the end. This is an area that is near to our heart in NASA. What do you see as happening in the telecommunications area, and do you think it will have any effect at all on air travel?

David E. Raphael, Bank of America

Very simply, I think the telecommunications area is going to go through a major change of state in about the next three years. Satellite technology is developing rapidly with lower costs, more powerful satellites, and smaller solid-state earth stations. By 1988 we will see a dramatic drop in long distance telecommunications costs, due to widespread use of satellites and fiber optics. If this can be translated into commercial markets, I believe that the effect will be positive on air transportation. Telecommunications, according to our studies, are more synergistic and more complementary and less of a barrier to air travel. I think we have seen that in the last fifteen years.

George W. James

I think that that question is also related to a lot of legislative complexities, even to the point of antitrust issues. The breakup of AT&T certainly relates to that, and you also have the carriers now trying to find better ways of marketing through the computerized reservation system. I agree with Mr. Raphael. I think this is going to receive increased attention as we move along, but the carriers are not really able to position themselves on it yet, because the telecommunications field is so disheveled at the moment that it is hard to find out which way to plan.

Question

Will that process, will that technical long-run probability flatten down the cyclical nature, and if so, the profitability effect, say, the high profitability that we have seen in the past, and if so what will be the response of the airlines? I have the feeling that if it comes to a situation were there are only, say 30 to 40 airlines, that there will be cuts.

George W. James

Once you effect some degree of consolidation you will have more stability in the profit picture than you have had in the past. I do not mean that it will be without some fluctuation, but it will not fluctuate as much as it did previously. Profits will settle into a more stable pattern. Also, competition will still exist with six to eight large carriers and the feeders, that you will still have on almost all major routes. There should be at least two major competitors on each route, and they will be fierce competitors in that

process. That will be one form of competition. The second form will be the ever-present threat of new competitors entering the market. The rapidity with which new carriers have been created in this deregulated environment and the speed with which they have moved has been surprising. People Express, a new carrier since deregulation, will move into the major classification in 1985; it will be among the top 12 or 13 carriers in terms of revenue in the United States. That is rapid growth and market penetration.

The carriers with the hub-spoke operations, for example, are learning again the economies of scale. They want to use those hubs for commuter feed in; they want to use them for international, as well to feed in the much longer domestic hauls. Delta had to ground its L-1011s in their domestic operations because of deregulation. Now they are preparing them for use in international operations to go to Shannon and other places in Europe. What they lost on one hand because of the competitive threat under deregulation they are now able to take advantage of as they use that hub for international operations.

Question

You said that orders for equipment would be on a more even scale, and I did not understand.

George W. James

I think that what we have seen in the past is in the franchised and regulated environment. The carriers generally knew they were going to survive regardless, and when anybody ordered new equipment everybody followed. This resulted in 15 to 20 percent increases in capacity in a year in which the economy was at the trough of the business cycle. Consequently load factors dropped, and so did profitability.

I think now they understand the business cycle better. I think now they are not going to order new equipment just because a competing carrier is ordering new equipment. I think they will be much more hesitant and more discriminating in the kind and the volume of equipment that they order in the future to fit their needs and their plans. They can fit them better because they now have more options to expand or contract than they had when they were regulated. They can get out of markets or they can go into markets which they could not do before, not spontaneously.

In 1968 there were about 430 aircraft delivered which was peak. There used to be years when 350 to 440 aircraft were delivered per year, and if you look back twenty or twenty-five years, the peaks have been getting lower. The highs have been getting lower all along with time, and I think it is partly because of management and the excess capacity problems during all the unprofitable years, the break-even load factor versus the actual load factor. Most forecasts now by manufacturing firms and some of the security analysts are showing much, much lower deliveries of aircraft, by United States and worldwide, not just because there have been one or two manufacturers that have slowed down or gone out of business but because there is better management of demand for aircraft as well as for yield. So I am expecting that in the next ten years deliveries will average between 200 and 300 aircraft per year maximum, and it will probably never go above 350.

Martin J. Bollinger, Data Resources Incorporated

You talked about consolidation in the airline industry and suppliers. How about the other side of the market equation with the growing sophistication of corporate travel and the possibility of different kinds of mission structure-block purchases? What is the potential for consolidation of buyers for the airlines' services, and what effect might that have?

George W. James

That is a very delicate point, and most of the time what we hear publicly is not necessarily what may be said privately. The best way to describe it is that the airline distribution system for ticket sales is nowhere near its potential as far as computerizing is concerned, and that we are going to see a lot of changes in that area, in ticketing and distribution in the future. I am not familiar enough with it to know what shape it likely will take. I just believe it will change.

Question

Do we really see any prospect of getting load factors up much higher than they are today?

George W. James

The load factor in 1984 for the United States system was 59.4 percent. We think that it will be close to 62 percent or 63 percent in 1985, and possibly dropping back a couple of points to about 60 percent in 1986. We will not get the kind of RPM growth in 1986 that we got in 1985. We have gotten down as low as about a 53 percent load factor in peacetime. Most of the time under regulation we were in the fifties, the midfifties. A load factor in the 60 percent range is a deregulation phenomenon, largely due to the discount fare offerings and getting that marginal revenue into the plane finally.

I believe that we are not going to see load factors of 70 percent or more as a permanent level at any time in the future. I think probably we will range between 60 percent and 65 percent, which is some improvement over the regulated period but not up to where a lot of people figure we should be and wonder why we cannot get there. You still have that seasonality problem. You have peak periods during the day, and you have days of the week that are more traveled than other days, and you still have the scheduling problem. You have got to get the aircraft into position. All those things do not allow you to get much higher than that.

I agree with the forecasts about the twin-engine aircraft, that is, smaller aircraft will continue to move in. At one time we thought everything had to be wide-body, the three- or four-engine type, but in the last five or six years there has been a great growth of two-engine aircraft. So that would tend to keep the load factor going down lower. I can remember forecasts of 75 percent and 80 percent, thinking that in some distant future one would get there, but I do not think it is possible because of the very strong growth of twin-engine aircraft.

Gordon Gilbert, Business and Commercial Aviation

Since corporations many times will buy an airplane for their own private use as an alternative means to airline traveling, I do not know who to direct the question to, but do you foresee the changes in the airline industry that each of you outlined as being a factor that will increase the sale or decrease the sale and usage of corporate airplanes?

George W. James

I will make a few comments. That has been difficult to predict, even more so than air cargo which was almost unpredictable. It really has to do with the views and the opinions of corporations and how they view corporate aircraft. Many companies went that way, as you know, because they felt that they had more control over their operations. They could fly to a sales meeting, or whatever, any time they wanted and did not have to concern themselves with commercial aviation. With the tremendous amount of deregulation in other industries as well as more competition, and the banks are certainly concerned about getting costs under control, I think that there has probably been reduced interest in corporate aviation because it is just too expensive to have aircraft sitting there and not being used 85 percent of the time, or whatever. I think it is probably going to come back in terms of profitability of the industry itself, and maybe Dr. Behravesh can speak to that. I think it is tied directly to how well companies are doing and how well the marketing environments are doing.

Nariman Behravesh

Basically I think most corporations use corporate jets for either the corporate executives or for sales people or what I call fixers, people who go out and fix things. My belief is that fixers are out in the market in a recession far longer and for further periods of time than the other two, primarily because they fix the equipment you have already got out there. I see it really tied more closely to corporations' profitability than to aviation's. Commercial aviation serves that market very, very well for executives, for fixers and for marketing people, and the question really is, are there going to be enough aircraft there to provide it?

George W. James

In the first and second year of the Iranian fuel crisis, about 1980, 1981, because of the increased cost of fuel, the airlines tried to flow through about 25 to 30 percent increases in yield, linked with the fact that under deregulation many of them were abandoning their short-haul flights. United did that, for example, and as a consequence the corporations were reading that to mean they had better get their own aircraft because they could not rely on the schedules we used to have. Now, that situation has reversed itself some because the increased competition has kept fares down, and at the same time the carriers have gone back into many of these areas they had dropped. I believe that that has meant relatively less demand for corporate aircraft than there had been about four or five years ago. Competition is still going to be there, fare competition will be strong and scheduling will still be very abundant in the hub-spoke setup.

So, assuming that, I assume those conditions will still exist, and therefore I do not believe that there will be as much incentive in the next four or five years to purchase corporate aircraft as there was in the first two or three years of this decade.

Bernard F. Hannan

I also suggest that when Dr. Behravesh's tax reform comes along there may be a change in status. If frequent flyer programs are taxed or corporations feel that they want to gobble up the benefits of that, that might change the interest, and there might be some modest growth, but I quite agree that corporate jet use is really more a function of the company's own policies.

Question

I know of at least one major corporation in the United States, perhaps there are others, that is going to larger corporate aircraft for European flights. We have seen a greater usage of overall corporate aircraft and total flight hours, even though the number of aircraft is not increasing. Obviously the airlines do not like to hear this because it is a competitive type thing. It is seats that they are not getting, but contrary to what perhaps has been said, we see a greater increase in corporate aviation coming along. Perhaps the bottom line is an indicative factor, but again, it is a lot of attitude, and it is in competition with the airlines. I would like to know if any further studies have been done because, although corporate aviation has a relatively small role in aviation compared to commercial airlines, it certainly involves a majority of the major corporations in the United States.

George W. James

Related to that, take the example of a corporate aircraft feeding into a major hub and then you fly commercial. You need to keep in mind that commuters are generally the ones that corporate jets are competing with, and the commuters and the short-haul feeds are often drawing as much as 40 cents a mile or yield as compared with only about 13 cents or so in the commercial airline industry as a whole. So, the economics of whether or not to buy a corporate aircraft for that purpose is entirely different when you look at a 40-cent yield versus a 13-cent yield.

Daniel A. Dixon, Pratt & Whitney, Canada

You talked earlier about the multitude of agreements between commuter airlines and majors, and also the increased profitability of the major airlines. Realizing that a lot of the commuter airlines have weak financial structures, how willing do you see the major airlines to being a source of capital infusion for the new equipment commuters will be required to purchase in the next five or ten years?

George W. James

These arrangements can differ widely. In some cases the larger carrier, Piedmont for example, is essentially going to acquire Empire. In that case they are part of the airline. So the decision on helping with new equipment is the same as it would be for helping the rest of the airline. Other arrangements, agreements with the commuters, may involve nothing more than just agreeing to schedule themselves to come in at certain times so that it is a feed into the airline, the major airline. So it ranges widely - some of the things that, also, can occur are maintenance agreements. Large carriers will do their maintenance for less than it might have been done by somebody else, or they get the use of the gate space to get into that hub, a busy hub like Chicago or La Guardia. I do not think you can answer that in general terms, unless you would say that there would be certain instances where the larger carriers certainly will be helping the smaller commuter carrier with capital acquisitions, and other cases where they would not.

Daniel A. Dixon

Wouldn't you say that the existence of such arrangements for a particular commuter as opposed to no such arrangements with another would help their ability to borrow?

George W. James

Certainly it would help their ability to borrow, and it would help their ability to meet other competition on those same routes. Right now the commuter industry is very much alarmed with regard to what is going to happen to those commuters that do not have some form of commuter agreement with a major airline. That is a problem that has grown in just the past year. It was working again at the periphery earlier, but as I have tried to say, there has been growth in just about three months from 40 to 48 agreements or 20 percent growth. I think that pace is going to continue for a while until the commuter industry is consolidated.

David Hygate, Rolls-Royce, Ltd.

Given the recent high traffic growth, both here and the rest of the world, what sort of overcapacity do you think is left in the world fleet of aircraft?

George W. James

I will be very happy to answer that if you tell me what overcapacity is. I do not mean to be smart, but that is a tough question. I do not know if anyone has ever addressed or had a good definition for overcapacity. Is it less than a 60 percent load factor?

David Hygate

What I mean is given the ability of various airlines to increase utilization or increase seating configurations of some aircraft and take that against the increase in traffic, what is left before people have to start buying more equipment?

George W. James

I think that this 60 to 63 percent where we find ourselves currently, and next year, linked with a profitable condition that airlines are now in, is enough to stimulate some additional purchases of equipment. The situation may be somewhat different for the foreign carriers. Their load factors are declining, and their financial situation is worsening at this point. They were profitable last year, likely not to be profitable this year, and are forecasting losses in 1986, as a group. That is what the International Air Transport Association (IATA) is forecasting, so that the motivation or incentive for that group of carriers to place new orders is much less than for United States carriers.

Comment

Capacity is also a factor of how old some of the aircraft are. If fuel prices remain low, as Dr. Behravesh is suggesting, then there is even more reason for them not to replace aircraft because fuel costs are lower; the economics of used aircraft are lower and so forth, but if growth were to be slower, then the capacity of the older aircraft would certainly be in excess. However, the forecasts that I have seen and that I have made are showing more growth during the 1988 to 1990 period, a sizable re-equipment of the fleet, internationally as well as domestically. I understand orders look pretty brisk. So the beginning of that curve is starting to turn upward.

Question

There has been some consideration given recently to abolishing the investment tax credit presently available for commuter operators. If that tax credit is abolished, what effect do you think it will have on the industry? Do you think there will be an increased shake out of operators or do you think the commuter operators will be able to save themselves and find other means of financing?

George W. James

I have not looked at that with regard to the commuters at this point, but in the June Airline Quarterly that we turned out, there were some figures that estimated the loss to the United States scheduled airlines, the Section 401 carriers. If you assume that the investment tax credit ended the first of January, there was sbout a $400 million impact on the scheduled airlines as a whole, and that is a disincentive, obviously, to purchase new aircraft. But I do not have any feel for the commuters. I do not know what their levels of equipment investment are or what their outstanding orders are at this point. Obviously they would be considerably less than that $400 million impact just indicated. It might be on the order of $50 million, but I am just picking a figure out of the air relative to the rest of the industry.

Question

The airlines have been able to, and for that matter, most aviation companies have been able to fund new equipment by accelerated depreciation and by being able to sell their older equipment at good residual values. Today the airlines are using this equipment for a very long, practical economic life to the extent the equipment may be at the point of exhaustion and at a very low point in terms of equipment value. At the same time, as they extend the economic life of that equipment, the price of new equipment keeps climbing. As the airlines continue to extend the economic life of their aircraft they will be able to shelter less and less of their income. Also, their stockholders have to have a return on investment and a certain amount of that cash is going to go back to the stockholders if they attempt to do any equity financing in the future. My question is where is the capital in the future going to come from to invest in new equipment. Also, we are seeing accelerated research and development going forward in terms of our navigational equipment and communications equipment. Certainly that cash in terms of going into the older equipment is not going to be there to borrow on it, and it is only going to be there for new equipment, and if new equipment is going to be, fewer pieces are going to be sold. How is that going to affect that section?

George W. James

I hope we have made a record of that question because that is a very informative question. I am being complimentary to you because you have covered a lot of very good points. Let me see if I can come up with two good answers. One, your primary question is where is the money going to come from in the future? You have first to give credit to the airlines that during the period of all the difficult financial situations and the record losses they experienced in 1980, 1981 and part of 1982, they became very creative in their financing of new equipment. This financing included the safe harbor leases that they were able to get through Congress for a while, and the financial leases that

they already had to the point where they actually got for the first time a major aircraft manufacturer, McDonnell Douglas initially, to come up with five-year leases. American did that, and then TWA and Delta followed with Boeing, so that for the most part initial capital was not needed by the airlines to get that equipment. Now, in some cases that has led to some new orders, and they have gotten more profitable. They are now buying it. So it was a good deal for both sides.

That sort of thing will continue in the future, if we got into the kind of problems you are talking about. I am not so sure what will happen three to five years from now. We still have to go back to what I said earlier. We will find that the six to eight major carriers that will represent the consolidation will be more profitable than each has been in the past. From the standpoint of either their bottom line or their return on their investment or their net profit margin, they will be in a better position to get equity capital and certainly in a better position to acquire debt for purchases of these new aircraft than they have been previously. I do not know if the problem will exist to the same extent four or five years from now that it has in the past.

Comment

We operate a fleet of 30 helicopters and we are also a corporate charter operation. We have had manufacturer financing, and I can tell you right now that there is a great reluctance on the part of manufacturers, certainly in our sector, to go forward with additional manufacturer financing because they themselves are feeling the crunch of the low orders. In terms of safe harbor, that is history. And there is a great reluctance on the part of limited partnerships at this point to go forward because of the question of what is going to happen in terms of tax reform. There is one other thing. Banks have become very concerned with residual values and equipment values because there has been a lot of equipment that has gone back. What was a great asset in the past and what they called the blue chip investment has suddenly become a dredge in many cases in the small banking industry, and certainly to a great extent in some of the larger banks that have had to take back the equipment and found that there were no markets for it.