Airlines in Turbulence: Strategies for Survival

Paul Stephen Dempsey*

TABLE OF CONTENTS

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I. Importance of the Airline Industry

The commercial airline industry carries 1.25 billion passengers and

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Professor Dempsey has written more than fifty law review and professional journal articles, scores of newspaper and news magazine editorials, and six books: Aviation Law & Regulation (two volumes, Butterworth 1993); Airline Deregulation & Laissez Faire Mythology (Quorum Books, 1992); Flying Blind: The Failure of Airline Deregulation (Economic Policy Institute, 1990); The Social and Economic Consequences of Deregulation (Quorum Books, 1989); Law & Foreign Policy in International Aviation (Transnational Publishers, 1987); and Law & Economic Regulation in Transportation (Quorum Books, 1986).

Dr. Dempsey holds the following degrees: A.B.J., J.D., University of Georgia; LL.M., George Washington University; D.C.L., McGill University. He is admitted to practice law in Colorado, Georgia and the District of Columbia.

Professor Dempsey was a Fulbright Scholar, was awarded the Transportation Lawyers Association Distinguished Service Award, and was designated the University of Denver's Out-

22 million tons of cargo, about a quarter of the world's manufacturing exports based upon value.[1] The industry produces 22 million jobs (3 million directly, 7 million indirectly, and 12 million induced), and accounts for one trillion dollars a year in economic production ($250 billion directly, $250 million indirectly, and $500 billion induced).[2] If the industry were a nation, it would rank seventh in the world in economic production, just ahead of Canada.[3]

Airlines are an essential component of the tour and travel industry, arguably the largest industry in the world. One source noted its tremendous economic importance:

> [The tour and travel industry] generates more than $3.5 trillion of GNP .... It employs 127 million people or one out of every 15 workers. It accounts for 12.9% of consumer spending and provides 7.2% of worldwide capital investment, more than $442 billion a year.[4]

As an integral part of the infrastructure upon which economic growth is built — the veins and arteries of commerce, communications and national defense — a healthy transportation system offering reasonable prices and ubiquitous service to the public is vitally important to the health of the nation it serves. Progress and development in the transport sector often serve as catalysts for broader economic prosperity, both domestically and internationally.[5]

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standing Scholar. He was the first individual designated the University of Denver's Hughes Research Professor and DePaul University's Distinguished Visiting Professor of Law. Since 1979, he has been faculty editor of the Transportation Law Journal.

Dr. Dempsey is President of Americans for Sound Aviation Policy. He has served as a consultant to U.S. and foreign airlines, railroads, motor carriers, transportation labor organizations, and telecommunications companies. He also serves on the Board of Directors of Frontier Airlines.

1. *Economic Benefits Study Revisited*, ICAO REV. (Feb. 1994), at 19.

2. *Id.*

3. *Carrying the Torch Through 1992; Economics of Airline Business*, AIRLINE BUS., Jan. 1992, at 5.

4. Julius Maldutis, Industry Investment Requirements — Looking Beyond 2000, Address Before the 7th IATA High-Level Aviation Symposium (Sept. 6-7, 1993, Cairo, Egypt).

5. "Transportation is a fundamental component of economic growth. It is the infrastructure foundation upon which the rest of the economy is built." PAUL DEMPSEY, THE SOCIAL & ECONOMIC CONSEQUENCES OF DEREGULATION: THE TRANSPORTATION INDUSTRY IN TRANSITION 5 (1989). "[T]ransportation has had a profound effect upon the collective economic growth and intellectual development of man." PAUL DEMPSEY & WILLIAM THOMS, LAW & ECONOMIC REGULATION IN TRANSPORTATION 1 (1986).

Aviation is among the most profound of man's technological accomplishments. Like no other invention, it collapses the time/space continuum. Aviation shrinks the planet, intermingling the world's cultures and economies. It is an integral part of the infrastructure essential to commerce, and national defense. Aviation is mobility for the human race, facilitating travel and tourism, arguably the world's largest single industry. PAUL DEMPSEY et. al. 1 AVIATION LAW AND REGULATION § 1.01 (1993) (citing PAUL DEMPSEY, LAW & FOREIGN POLICY IN INTERNATIONAL AVIATION (1987)).

II. The Contemporary State of the Airline Industry

A. Profit (Loss)

Yet airlines have sustained enormous losses since deregulation and liberalization set in.[6] From 1977 to 1992, the global air transport industry earned gross revenue of just over $2 trillion, while operating expenses were $1.96 trillion; operating profit was 2% of revenue, and net profit was a meager 0.6% of revenue.[7] Worldwide, airlines have experienced a $15 billion shortfall over the last four years.[8]

U.S. airlines were deregulated in 1978. Paradoxically, despite the fact that the industry has become very highly concentrated under deregulation, from January 1978 through December 1993, cumulative net losses for the major U.S. airlines totaled $9.3 billion.[9] They lost $2.6 billion in 1992, and $2.1 billion in 1993, bringing the total losses to $12.8 billion since 1990.[10] The U.S. airlines alone carry a debt burden of $35 billion, or more than eight times the industry's total accumulated profit from the beginning of commercial aviation in the 1920s, until 1988.[11]

The capital needs of this industry are enormous. While the world's airlines spent $147 billion in the 1980s, the industry is projected to need $815 billion by the year 2000. Airbus, Boeing and Douglas predict the industry will need between $40 billion and $50 billion for new aircraft each year over the next decade.[12]

Moreover, according to the International Civil Aviation Organization (ICAO), the world will need between $250 billion and $350 billion in

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6. *See* Paul Dempsey & Andrew Goetz, Airline Deregulation & Laissez Faire Mythology (1992).

7. Richard Evans, *Why the World's Airlines Can't Seem to Get Enough Cash*, Global Finance, May 1993, at 48.

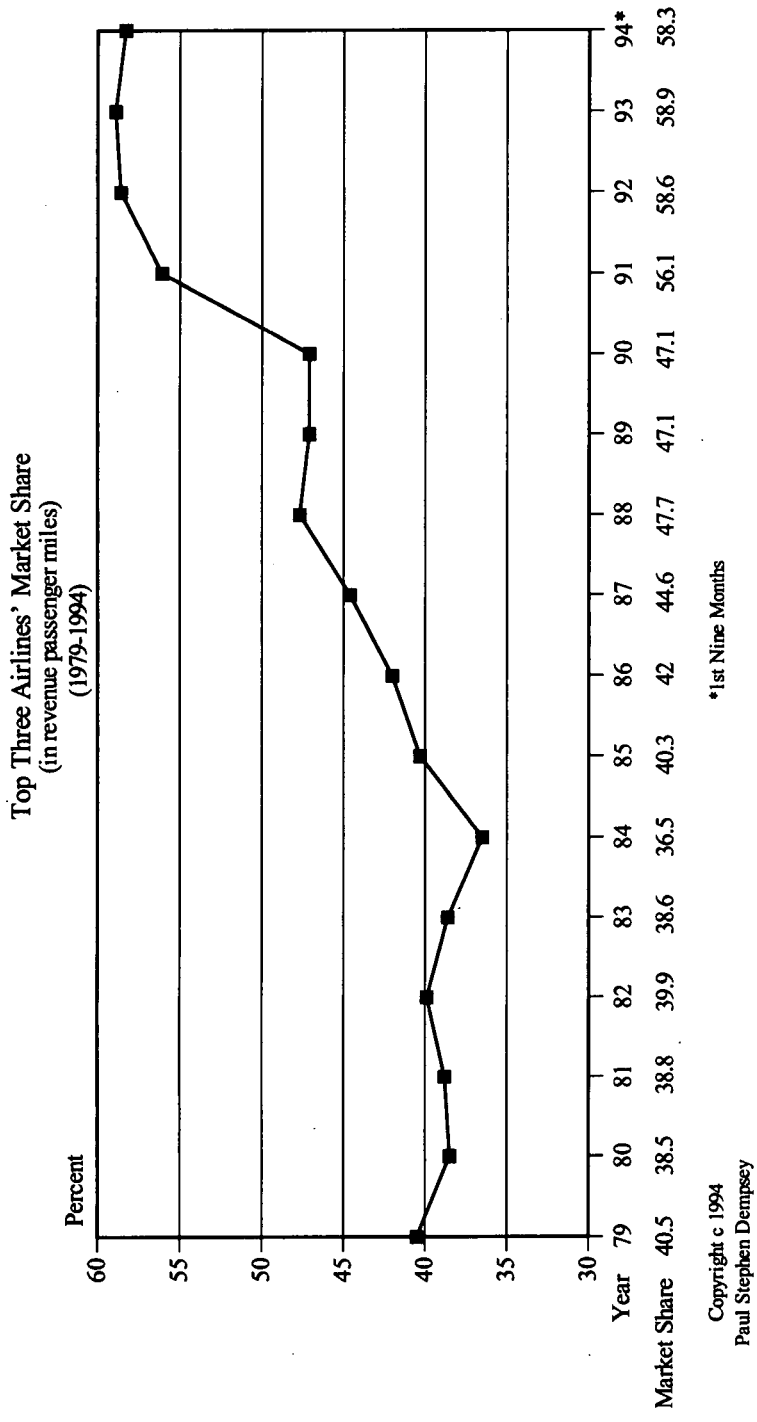
8. Pierre Jeanniot, *The Balancing Act*, IATA Rev., Mar./Apr. 1994, at 4. The world's airlines lost $6.7 billion in 1991, $4.8 billion in 1992, $2 billion in 1993, and are projected to lose another $1.5 billion in 1994. Ian Verchere, *IATA Expects World Airline Losses to Total $2 Billion*, Commercial Aviation News, Aug. 23, 1993, at 18; Julius Maldutis, *supra* note 4; *New Data Boost 1992 Losses*, Airline Bus., Supp. 1994, at 58.

9. Julius Maldutis, *supra* note 4.

10. Air Trans. Ass'n, Ann. Rep. (1994); *Little Progress On Profits*, Airline Bus., 60 (Supp. 1994). Continental enjoyed an accounting profit of $2.6 billion largely attributable to write downs of debt with the emergence of the company from Chapter 11 bankruptcy. They are projected to break even, at best, in 1994. Julius Maldutis, *supra* note 4.

11. *See* Lisa Burgess, *International Community Wants Action on Panel Report*, Commercial Aviation News, Aug. 23, 1993, at 21. Actually, the amount of accumulated profit is overstated since it has not been adjusted for inflation. Despite the popular perception, in real dollars, the airline industry has not lost all the profit it ever made since the inception of commercial aviation.

12. Philip Baggaley, Address Before the Chicago Convention 50th Anniversary Conference (Oct. 31, 1994).


Top Three Airlines' Market Share
(in revenue passenger miles)
(1979-1994)
Percent
60
55
50
45
40
35
30
Year 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94*
Market Share 40.5 38.5 38.8 39.9 38.6 36.5 40.3 42 44.6 47.7 47.1 47.1 56.1 58.6 58.9 58.3
*1st Nine Months
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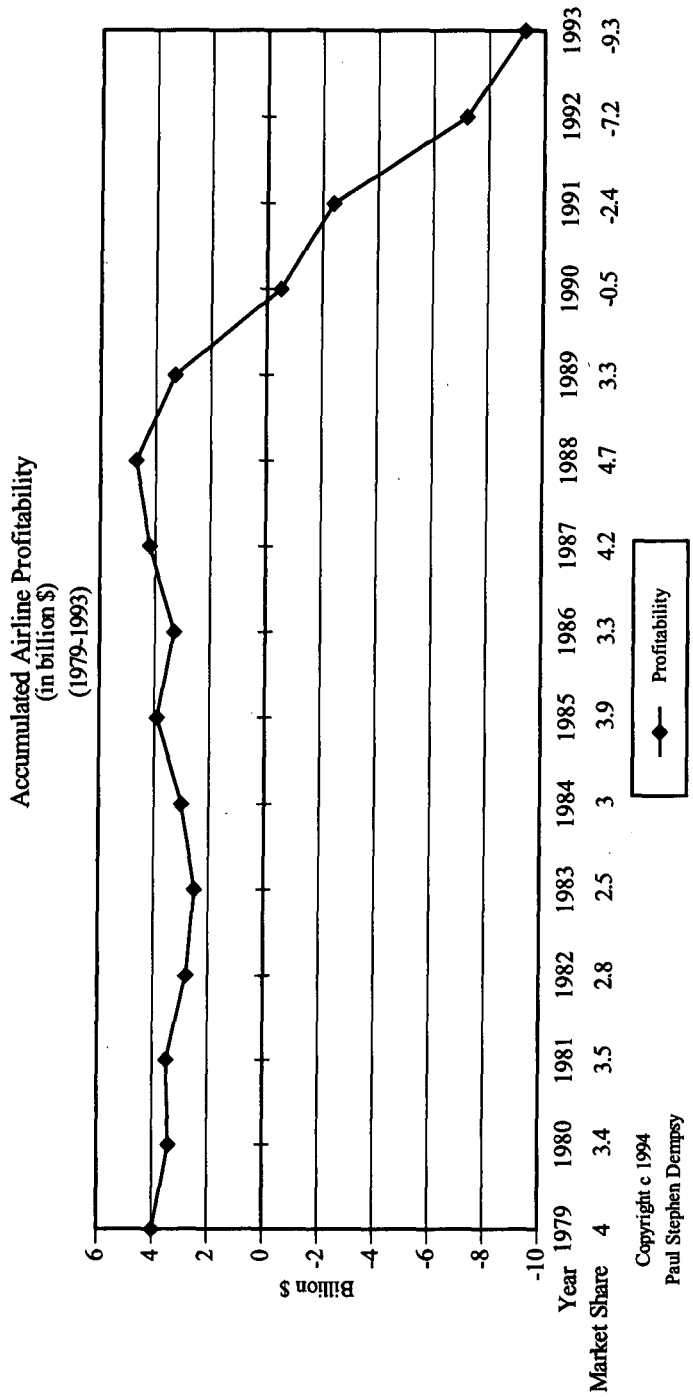
Accumulated Airline Profitability
(in billion $)
(1979-1993)
Billion $
6
4
2
0
-2
-4
-6
-8
-10
Year 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993
Market Share 4 3.4 3.5 2.8 2.5 3 3.9 3.3 4.2 4.7 3.3 -0.5 -2.4 -7.2 -9.3
Profitability
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new airport infrastructure by the year 2010.[13] Admittedly, some of that infrastructure will come from taxpayers, concessions, parking, and such. But the bulk of it must come from the airlines, directly or indirectly, in the form of landing and air traffic control fees, gate, counter and hanger leases, passenger facility charges, fuel and other taxes, and ground services fees.

The airline industry suffers from severe business risk in the form of high fixed costs, highly cyclical demand, and intensive competition; it suffers severe financial risk in the form of high debt-to-equity ratios, which increases the variability of earnings and the chances of insolvency.[14] Because of the level and intensity of business and financial risk in the industry, one would expect that airlines, in order to attract adequate investment, should earn more than other industries.[15] But in fact, airlines earn less.

Some blame the contemporary financial crisis in which airlines find themselves on the Persian Gulf conflict, the spike in fuel costs it produced, and recession. The Persian Gulf conflict and recession exacerbated, but did not create, inadequate profitability. The U.S. airline industry's net profit margin averaged a modest 2.8% from 1955-77, then collapsed to 0.7% from 1978-88, deregulation's first decade. Add in 1989-1993, and the average since deregulation drops to a *negative* 0.4%. It has been estimated that the world's airlines need operating margins of 4% just to service debt, and 6% if they are to generate sufficient profit and pay for fleet modernization.[16]

The essential question is, why has the industry been so anemic since promulgation of the Airline Deregulation Act of 1978?

B. Economic Characteristics of Commercial Aviation

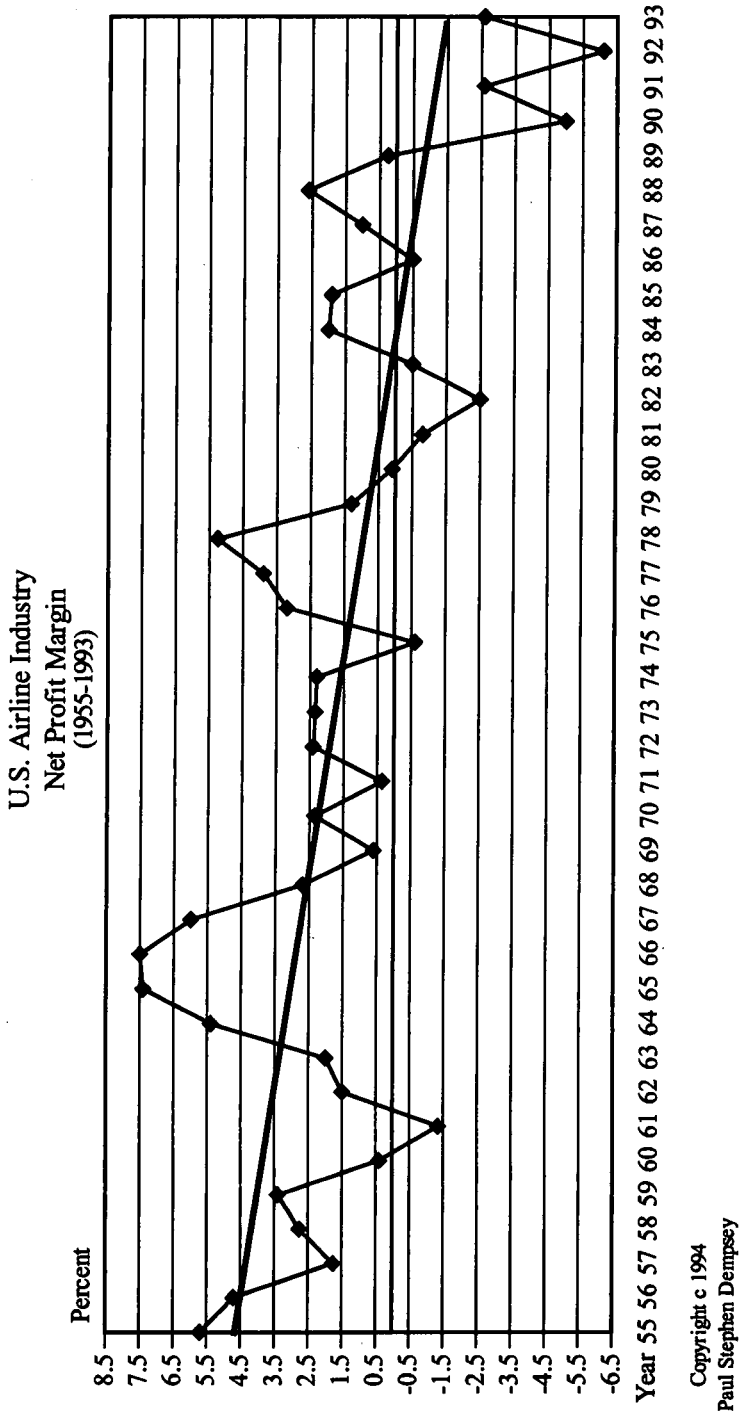
When deregulated, airlines were believed to be potentially naturally competitive, without economies of scale, scope or density, or significant barriers to entry. Thus, deregulation was deemed likely to produce neither concentration nor destructive competition, despite the allegations

13. Int. Air Transport Association, The Economic Benefits of Air Transport 20 (1992).

14. "The net result of overleverage can be explosive changes in rates of return to stockholders resulting from small changes in revenues." Richard Gritta, et. al., Business and Financial Risk in Air Transportation on Carrier Rates of Return (unpublished monograph) (1993).

15. Despite the sharp decline in the industry's profit margin since deregulation, capital continued to flow into the industry, with a proliferation of equipment leasing companies eager to purchase aircraft for airlines able to pay from robust cash flow, and from the glamour of the industry, which attracts new entrepreneurs. There are three businesses everyone seems to believe they can run — restaurants, ball clubs, and airlines.

16. Evans, *supra* note 7, at 48, 53.


U.S. Airline Industry
Net Profit Margin
(1955-1993)
Percent
8.5
7.5
6.5
5.5
4.5
3.5
2.5
1.5
0.5
-0.5
-1.5
-2.5
-3.5
-4.5
-5.5
-6.5
Year 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93
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of most airlines to the contrary.[17] According to Alfred Kahn, deregulation's principal architect, aircraft were merely "marginal costs with wings."[18]

As 15 years of experience with deregulation have revealed, the airline industry is considerable more complicated than that. Airlines are labor intensive and fuel intensive. Unlike most service industries, airlines are also capital intensive.

The airline industry exhibits a relentless tendency both to produce excess capacity and to price its product below fully allocated costs. The demand of consumers for schedule frequency produces tremendous excess capacity with no shelf life, pushing costs up. The demand of consumers for low prices and a perception that air transportation is virtually a fungible commodity drives prices down to levels which, too often, fail to cover fully allocated costs.

Airlines inevitably produce excessive capacity. Whether regulated or deregulated, from the mid-1950s to present, U.S. airlines almost have never achieved an average annual load factor exceeding 67% (and in most years load factors substantially worse than that, and domestic load factors are worse still),[19] meaning in effect, at least one-third of available inventory remains unsold.

On this point, economist Melvin Brenner notes:

> The industry has always had excess capacity, even during boom times. Over-capacity results from:
>
> a) The competitive importance of schedule frequency. Since schedule convenience is one of the most important differentiating characteristics of the airline product, all airlines strive for high scheduled frequency on every important route, and
>
> b) the fact that airlines have very high fixed costs and are therefore incentivized to fly their aircraft as much as possible, even if incremental flying does not produce enough revenue to cover fully allocated costs. Whenever a flight covers variable costs and contributes to overhead, the individual carrier is better off flying rather than not flying. However, the cumulation of the many marginally-justified schedules creates over-capacity for the industry as a whole.[20]

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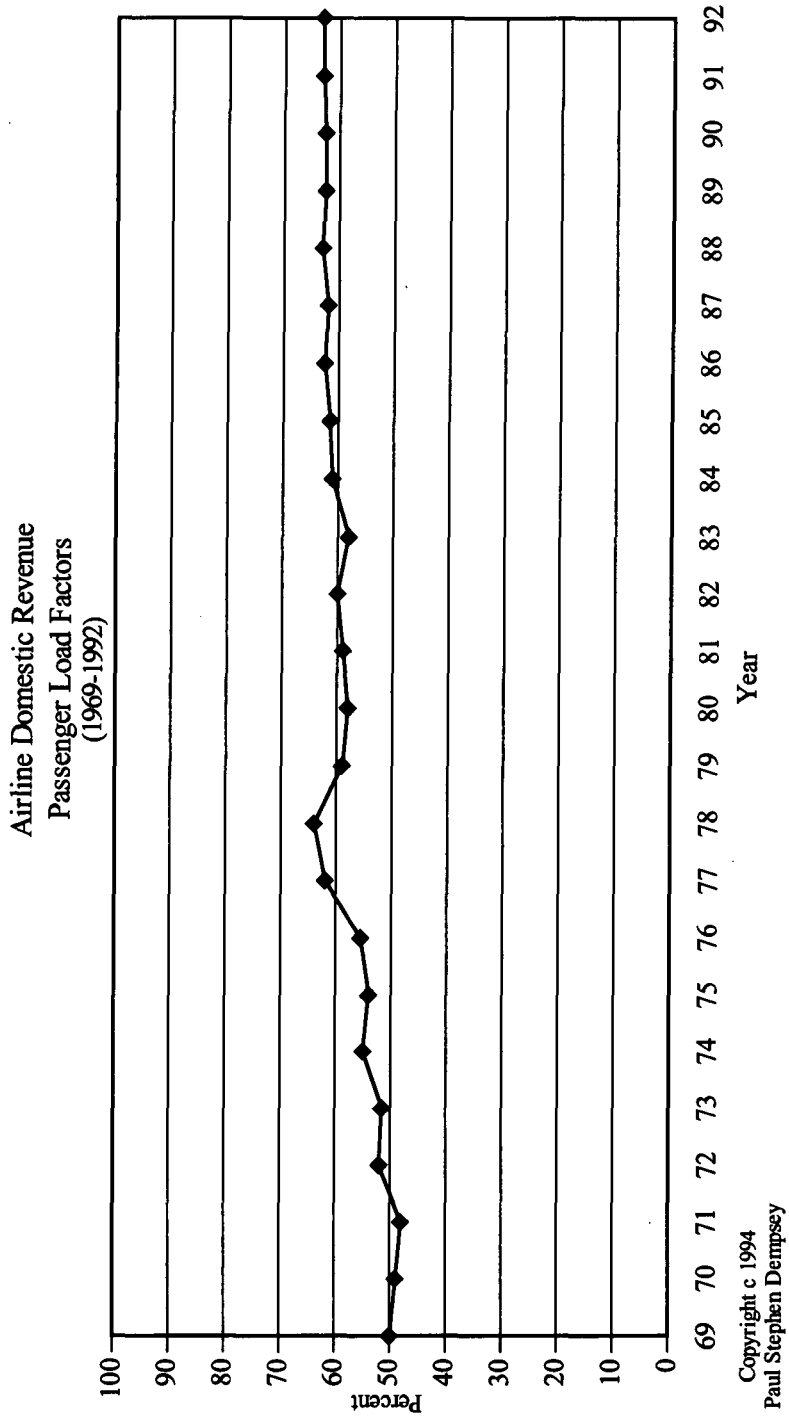
17. DEMPSEY & GOETZ, *supra* note 6, at 179-87, 221-34.

18. Said Kahn, with characteristic irreverence, "I really don't know one plane from the other. To me they are just marginal costs with wings." BARBARA STURKEN PETERSON & JAMES GLAB, RAPID DESCENT: DEREGULATION AND THE SHAKEOUT IN THE AIRLINES 77 (1994).

19. Domestic load factors for U.S. carriers ranged between 60.5% and 62.6% between 1987 and 1993, while international load factors ranged between 65.6% and 67.0% during the same period. Julius Maldutis, Q. GLOBAL AVIATION REV. 2d Quarter 1994, 10-11. The Association of European Airlines reported load factors between 56.7% and 63.8% during the same period. *Id.* at 15.

20. Melvin Brenner, Program for Improving Airline Outlook 5 (unpublished monograph) (1993).


Airline Domestic Revenue
Passenger Load Factors
(1969-1992)
Percent
100
90
80
70
60
50
40
30
20
10
0
69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92
Year
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Moreover, that capacity has no shelf life. Once a scheduled flight pulls back from the jetway, any empty seats are lost forever. Seeking to sell as much of that perishable inventory as possible, carriers offer the price of the lowest price provider in an effort to grasp an ascending and, too often, elusive break-even load factor and preserve market share. As another source noted, "In a high fixed cost, price sensitive, commodity type business such as this, excess capacity has a devastating effect because it motivates carriers to fill aircraft by cutting prices. Other carriers are forced to match, and fare wars erupt."[21]

Excessive capacity coupled with perishable inventory leads to variable cost pricing. The incremental costs of adding a passenger to a scheduled flight are nil (e.g., a bag of peanuts, and a cup of Coca-Cola). But industry costs are disproportionately fixed, with fixed costs comprising between 80% and 90% of total costs. Airlines also suffer from the problem that most of their costs are joint costs, spread over an array of originating, destination and connecting passengers and freight moving throughout their networks. Thus, actual costs are obfuscated and difficult to ascribe to particular passengers.

In the long run, carriers must recover their fixed costs or face bankruptcy (as scores of airlines have learned). But the collectively irrational behavior exhibited by airlines before regulation in 1938 and after deregulation in 1978 causes cost and price to fail to achieve equilibrium at a level which covers fully allocated costs and allows an adequate profit. In the absence of government oversight, the inherent primordial economic characteristics of the airline industry propel it to engage in below cost pricing. This explains the fact that industry profitability declined sharply after deregulation.

One major U.S. airline described the phenomenon this way:

> Airline seats are a perishable commodity whose costs include a very high proportion of fixed charges. As a result, there has always been a financial incentive for airlines to sell seats that would otherwise depart empty for any price that exceeds variable costs, i.e., expenses for passenger ticketing, baggage handling, food service and incremental fuel.
>
> As simple and reasonable as this sounds, prices based on variable costs cannot, in the real world, be limited to seats that would otherwise depart empty. The highly competitive airline marketplace ensures that whatever price is set will be made available for a large percentage of all seats, including many that could have been sold at higher fares.
>
> The problems associated with variable cost pricing become particularly acute when demand for air travel slackens. The lead time for new aircraft orders is two to three years, and airlines cannot quickly reduce their capacity without putting planes on the ground, a move that invariably means losing

21. J.P. MORGAN SECURITIES, THE U.S. AIRLINE INDUSTRY 15 (1993).

> business to their competitors and — because fixed costs continue — forces up average unit costs. Thus, in periods of reduced economic activity, there are many more empty seats, a circumstance that leads to heightened temptation on the part of airlines to fall into the variable cost pricing trap.[22]

Because industry costs are disproportionately fixed, selling seats at a loss often sacrifices less revenue than parking aircraft in the desert, because parked planes still generate costs but produce no revenue. Hence, excessive capacity (which the industry inevitably produces) too often remains aloft even when the highly cyclical demand curve turns downward.

C. Demand

Demand for air transport services has always been highly cyclical, with greater or lesser demand depending on time of day, day of week, and season, and depending upon broader market fluctuations, year to year. We know, for example, that discretionary, leisure traffic picks up in the Summer, thereby allowing the industry to enjoy higher load factors for the third quarter.

When the economy is growing and consumer confidence is strong, demand grows, improving airline load factors, and allowing carriers to raise yields and profitability. When the economy falls into recession, unemployment grows, and consumer confidence declines, individuals postpone discretionary travel, and airline load factors, yields and profitability suffers. One source notes the hyper-cyclical nature of airline performance on a macro-economic basis:

> On the macro-economic level, we have a hyper-cyclic situation. Our lows are lower and longer — and our highs are lower and shorter — than the general economy.
>
> During good economic times, new entrant airlines proliferate, skimming off enough passengers to damage the established airlines. Then when an economic downturn hits, the new-entrants declare bankruptcy and operate in Chapter 11 or go out of business altogether, but always manage to prevent the established airlines from making much of a profit.[23]

Traditionally, passenger traffic has grown at about 2.25 times the rate of GDP growth; thus, if the world economy grows by 2%, passenger demand should grow by 4.5%. World air travel growth averaged 7.4% a year during the boom 1983-89 period.[24] But worldwide, traffic fell 4% in 1991, the first decline since records have been kept.[25]

Many experts predict that global passenger demand will average 5-

22. AMR Corporation 1992 Annual Report 12 (1992).
23. Randolph Babbitt, *Saving the Golden Goose*, Air Line Pilot, Feb. 1995, at 10, 11.
24. Evans, *supra* note 7, at 48.
25. Airline Bus., 1992, at 72.

6% annually over the next two decades,[26] although it will be spread unevenly, with intra- and inter-Asian markets growing at 8-9% annually,[27] and North American, transatlantic, and European markets growing at only 4% annually.[28] Some analysts predict that traffic will have to grow about 8% in order for the U.S. airline industry to achieve profitability, something it is not likely to do.[29]

U.S. domestic traffic growth has been virtually flat since 1987,[30] which is remarkable in light of the unrealistic and destructive price wars of the era, and the fact that recession did not begin to set in until 1989-90. This raises the frightening possibility that the domestic passenger market may have matured. One source notes, "the big US and European markets have not reached maturity yet, but the rate of growth has been falling ever since the double-diget growth of the 1960s."[31]

Dr. Julius Maldutis advanced four reasons which may explain why U.S. domestic passenger growth is stagnant:

> • Some in the academic community are beginning to raise the question, Is it a mature industry? In 1994, 255 million Americans flew, making 460 million trips. How many more times can you travel? That's one possible answer.
> • The second possible answer is globalization. Every U.S. company buys, sells or competes in the global arena. Perhaps the business traveler to Cleveland didn't disappear but now is going to Copenhagen to buy the milling machine; namely, a diversion from domestic to international [travel].
> • The third possibility: At the end of 1993, the United States had 15,000 video teleconferencing centers. In my company, every Monday morning, we have a general sales meeting that is televised to all our branch offices around the globe. IBM is demonstrating a PC that has a video camera, and now all IBM executives can be in a video teleconference via their computers. Or the

26. *See Economic Benefits Study Revisited*, ICAO REV., Feb. 1994, at 19.

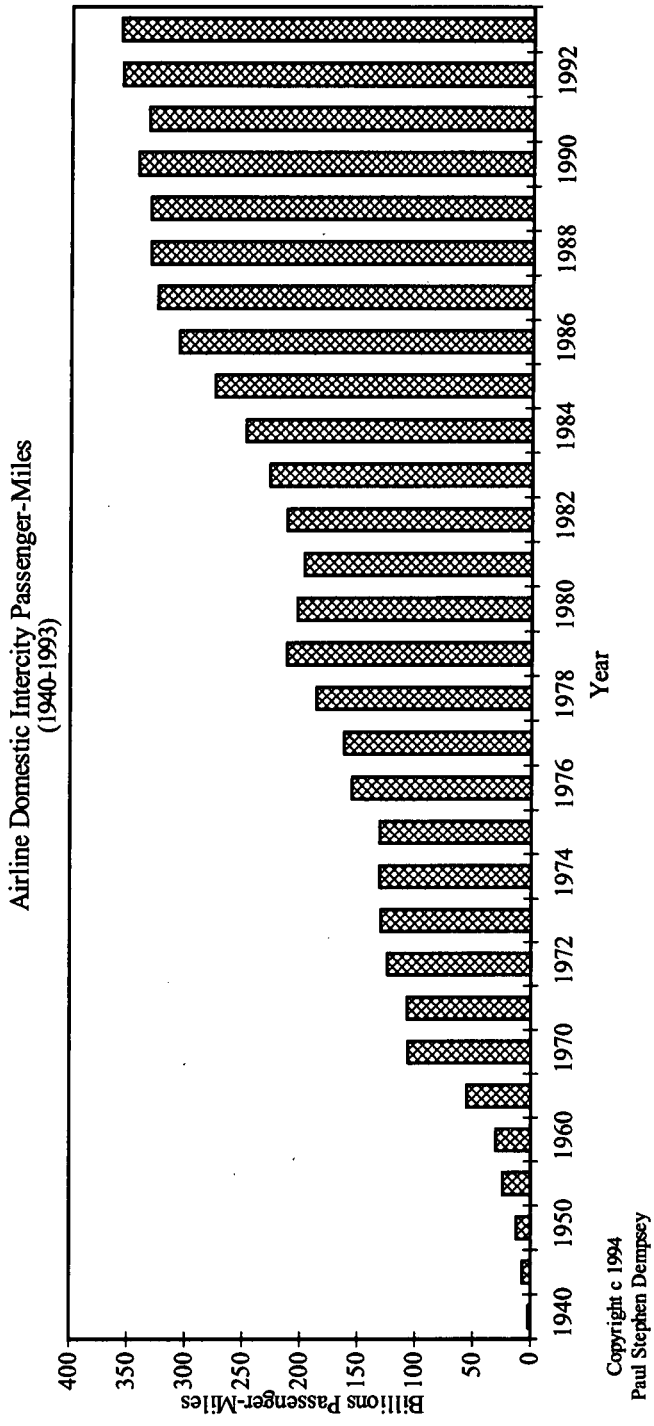
27. The Asia-Pacific region is growing fastest. In 1990, it accounted for about 31% of the world's total market, and 132 million passengers. By the year 2000, IATA estimates the region will account for 189 million passengers, or 39% of the world's total; by 2010, it will account for 375 million passengers, or 51% of the world's total. IATA predicts that the doubling of traffic in the region over the past six years will be repeated, with China, Malaysia, Thailand and Indonesia expected to be growing fastest. *Asian-Pacific*, AIRLINE BUS., 1992, at 55. For Asian markets, the Orient Airlines Association predicts 7.5% traffic growth through the year 2000; IATA predicts between 7% and 8.6% growth through the year 2010; OECD predicts 8.5% traffic growth in the Asia/Pacific region during the next two decades; and McDonnell Douglas predicts 9.7% through the year 2010. *See Has the Asian Bubble Burst?* AIRLINE BUS., Oct. 1993, at 7; and *Air Traffic to the Year 2003*, ICAO REV., Oct. 1994. No matter who is making the predictions, all are tremendously optimistic for the Asian-Pacific passenger market. Seven of the ten most profitable airlines in the world in 1993 operate in this region. *Airline Business 100 Data*, AIRLINE BUS., Supp. 1994, at 59. The year before, twelve of the twenty most profitable airlines were domiciled in the Asian-Pacific Region. *Has the Asian Bubble Burst?* AIRLINE BUS., Oct. 1993, at 7.

28. OECD, NEW POLICY APPROACHES TO INTERNATIONAL AIR TRANSPORT 4 (1992).

29. EVANS, *supra* note 7, at 53.

30. Maldutis, *supra* note 4.

31. EVANS, *supra* note 7, at 52


Airline Domestic Intercity Passenger-Miles
(1940-1993)
Billions Passenger-Miles
0
50
100
150
200
250
300
350
400
1940
1950
1960
1970
1972
1974
1976
1978
1980
1982
1984
1986
1988
1990
1992
Year
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> chief executive of an engine manufacturer says that he has constructed two video teleconferencing centers and now has no employees who need to travel between East Hartford and the Florida plant. Thus, technology may be affecting intracorporate business travel.
>
> • But the fourth reason is perhaps the most important reason of all in assessing what is happening to the airline industry. In the last four years 1.6 million Americans have been restructured. . . . One and a half million white-collar, middle-management frequent flyers have lost their jobs. To me, this is the fundamental cause of the airline industry's difficulty. The lack of growth is a function of the fact that corporate America is undergoing vast structural change, and this vast structural change is affecting the airline industry travel market.[32]

Many small businesses simply have been priced out of the passenger market by aggressive yield management, and no longer fly. With corporate downsizing constricting the white collar labor force and trimming travel budgets, and communications technologies improving robustly, business travel fell to 37% of traffic in 1992, and 48% in 1993.[33] In the late 1980s, business traffic accounted for between 52% and 60% of domestic traffic and 75% of revenue.[34] The shift of demand to the price-sensitive leisure market will relentlessly erode carrier yields.

This appears to be a global phenomenon, reflected in the reduction of the number of first and business class seats by, for example, KLM, British Airways, Japan Airlines, ANA, American Airlines and Northwest.[35] If the sharp decline in business traffic is other than a short-term aberration, the airline industry is in very serious trouble.

Airlines have conditioned consumers to hold unrealistic expectations of what a ticket should cost, and to withhold discretionary spending until price wars erupt, as they eventually and inevitably do. All carriers fly essentially the same aircraft, and increasingly, most offer less service, and thus, relatively little service differentiation; hence most consumers view air travel (unlike hotel rooms) as a fungible commodity. As economist Robert Kuttner observed, airlines are

> a highly capital-intensive industry with a standard product [which] cannot stand pure price competition — for all the profits would soon be competed away. Airlines dwell not in an Adam Smith world but in a world more reminiscent of economist Joseph Schumpeter's model in which 'efficiency' de-

32. Julius Maldutis, *Why Aren't the Airlines Profitable?*, AIR LINE PILOT, Jan. 1995, at 26, 27-28.

33. Maldutis, *supra* note 4; Julie Schmit & Del Jones, *Jittery Airlines Need Business Travelers*, USA TODAY (Int'l Ed.), May 23, 1994.

34. EVANS, *supra* note 7, at 51.

35. *See* James S. Hirsch, *First-Class Cabins Are Shrinking On a Growing Number of Jets*, WALL ST. J., Dec. 21, 1993, at B1.

pends more on technical advances than on price wars.[36]

Foreign markets, while growing steadily, are increasingly protectionist and militant. Foreign governments view U.S. firms as dumping excess capacity abroad and endangering their national flag carriers. For example, while the U.S. may not care about Pan Am's survival, the government of France cares dearly about the survival of Air France. On grounds that U.S. airlines were providing excessive capacity in the market, France renounced the U.S.-France bilateral aviation agreement on May 4, 1992, and it expired one year later. Thailand renounced its bilateral for similar reasons.[37] The Australian Department of Transport moved to restrict the number of fifth-freedom passengers Northwest could carry between Osaka and Sydney. Friction has also erupted in U.S.-Japanese aviation relations, a market dominated by Japanese passengers by a 6 to 1 margin, but where U.S.-flag carriers fly 60%-70% of the capacity.[38]

Increased privatization and mergers will enhance the competitive prowess of foreign carriers. Many emerge from privatization with relatively clean balance sheets and route structures built by decades of paternalistic care. More than 40 foreign airlines have proposed or completed partial or full privatization.[39]

D. Price

Despite widespread allegations that deregulation resulted in billions of dollars in consumer savings, the truth is that prices were falling faster before deregulation than after it. Inflation adjusted yields declined 2.5% annually from 1950 to 1978; they fell only 1.7% a year after 1978.[40] In the decade preceding 1978, fuel adjusted real yields fell 2.7% annually; in the decade following promulgation of the Airline Deregulation Act of that year, fuel adjusted yields declined only 1.9% a year.[41]

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36. Robert Kuttner, *Flying in the Face of Reason: Why the Skies Need Re-Regulating*, Bus. Wk., May 3, 1993, at 18.

37. For a discussion of conflict resolution under bilateral air transport agreements, see Paul S. Dempsey, Law & Foreign Policy in International Aviation (1987).

38. Jennifer Cody, *Japan, U.S. Tussle Over Airlines' Rights*, Wall St. J., June 7, 1994, at B1.

39. Maldutis, *supra* note 4.

40. Edmund Greenslet, World Airline Capital Requirements, Address Before the Chicago Convention 50th Anniversary Conference (Oct. 31, 1994).

41. Dempsey & Goetz, *supra* note 6, at 243-63, 281-95. Moreover, a yield measure of pricing in the post-deregulation era overstates the consumer benefits because hubbing has made traveling more circuitous for most passengers — they fly more miles today to get from A to B through H. The linear route pre-deregulation systems were generally in a somewhat straight line. Plus, the yield number includes frequent flyer redemptions, which did not even exist pre-1978. These factors make it even more remarkable that yields fell more slowly since deregulation than before it.

Today, the airline industry prices in a highly schizophrenic way — we see evidence of monopoly, monopsony and variable cost based destructive competition side by side, as we would expect to see in any deregulated public utility. Ninety-three percent of passengers pay an average of only about 30% of the full fare.[42] The full fare has risen to such prohibitive levels that only those who absolutely must will pay it (only 10% of passengers do).[43] Inequitable distortions in the pricing system force tens of thousands of people who would fly at a reasonable price simply to stay home.

Pricing at concentrated, gate and slot constrained airports is monopolistic, as the U.S. General Accounting Office (GAO) has well documented.[44] But not enough monopolies yet exist to cover the industry's fixed costs and offset steep discounting in competitive markets. Moreover, the Fortune 500 exert monopsony power to play carriers off against each other for corporate discounts at the discretionary traveler level, without the restrictions, a level which often fails to cover fully allocated costs.

Computer reservations systems and computer software will enable increased decoding of the effort of yield managers to obfuscate the availability of the cheapest seats. Carriers will continue to follow each other down as price wars erupt to sell excessive inventory, because of the factors described above. As one observer noted, "fare wars are like city buses; if you miss one, there'll be another in 15 minutes."[45]

E. Capacity

While some excess capacity will disappear with the collapse of sev-

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Prices were falling faster before deregulation than after because costs were not declining the way they were before. In fact, poor profitability led to more leasing, which increased 300% as a portion of operating expenses in the 1980s, while travel agent commissions increased 700% (again, as a percentage of carrier operating expenses). Interest payments ascended because of more debt. Equipment and labor utilization declined because of hubbing. The average size of larger and larger aircraft (with corresponding declining ASM costs) grew until the early 1980s, then plateaued, largely because carriers needed 737 and equivalent stage length and seat capacity aircraft to feed hubs. These changes (plus the lack of a breakthrough technological revolution the equivalent of jets at Boeing and Douglas in the past 15 years) help explain why the decline in yields slowed post-deregulation.

By perpetuating the myth that consumer benefits are enormous, the airlines postpone the day when our government can take any sensible measures to rescue the industry from its financial collapse. *Id.*

42. Julius Maldutis, Airline Update: It's About Time! 9 (1994).

43. Maldutis, *supra* note 4.

44. U.S. General Accounting Office, Airline Competition: Higher Fares and Less Competition Continue At Concentrated Airports (1993).

45. Carl Quintanilla, *Air-Fare War Is Proving to Be A Battle of Wits*, Wall St. J., June 14, 1994, at B-1.

eral major airlines and the downsizing of others, many used aircraft and skilled labor simply are recycled into the fleets of new entrants and growing carriers. For example, Delta sold a large number of DC-9s, only to see them re-emerge in Atlanta in the fleet of low-cost ValuJet.

Moreover, financing is available via the equipment manufacturers both for new entrants and carriers emerging from Chapter 11. While the leasing companies may have been disciplined from the profligate decade of the 1980s, public sources of capital, in the form of state and local contributions and guarantees, have become increasingly available — to TWA (from Missouri), Northwest (from Minnesota), United (from Indiana), and American (from North Carolina). Foreign airlines also continue to inject significant capital into U.S. firms to take advantage of the domestic feed they provide into their lucrative long-haul wide-bodied international networks (e.g., KLM-Northwest, British Airways-USAir, and Air Canada-Continental). For a growing number of airlines, labor has also become the lender of last resort (e.g., TWA, Northwest, and United). Moreover, further constriction of the industry is impeded by the bankruptcy laws (unlikely to be changed), and the antitrust laws (likely to be more vigorously enforced).

These factors ensure that neither enough marginal carriers nor significant excessive capacity will disappear soon, depriving the surviving carriers of traffic at adequate prices to cover their fully allocated costs plus a reasonable profit. All the while, the balance sheets of most established major network carriers will continue to deteriorate.

F. Airline Balance Sheets

Since deregulation, the balance sheets of U.S. airlines have been polluted with enormous debt, caused by grossly inadequate profitability and, at some airlines, leveraged buy-outs [LBOs].[46] Total debt to capital ratios now exceed 65% at virtually all the major U.S. airlines, and would be worse still if long-term operating leases were capitalized. Wall Street has downgraded that debt to "junk" status, if only because it has no lower category. As Wall Street analyst Julius Maldutis aptly noted, if the airlines were savings and loan institutions, the government would put them into receivership and liquidate them.

Philip Baggaley of Standard & Poor's concluded that the prospectus for returning the major U.S. airlines to investment grade was grim:

> The required operating margins are well above any historical performance and the required new equity actually exceeds the total market capitalization of these companies. Basically, the problem is that airlines are carrying a much heavier burden of debt and leases now than they were in the 1980's.

46. Dempsey & Goetz, *supra* note 6, at 11-40.

> For example, AMR had about $6 billion of debt and leases in 1988, their operating margin high point. The total now is about $18 billion![47]

Similarly, Felix Rohatyn of Lazard Freres estimated in 1993 that the U.S. airline industry would need to earn $15 billion annually each and every year through the year 2000 just to improve their balance sheets to a 50/50 debt/equity ratio.[48] That is a level of profitability the airline industry has never attained.

At this writing, fuel costs and interest rates are relatively benign, but they will not always be. Nonetheless, even when the economy improves, debt service will consume much of potential operating profit. The recommendations of the U.S. National Commission to Ensure a Strong Competitive Airline Industry for meaningful tax reform will not likely be implemented by a Congress already fearful of its own debt burden.[49] Carriers will continue to bid up travel agent commissions in an effort to buy traffic.[50] The potential for spinning off short haul feeder routes and ancillary services (as United proposed in 1993) will be met with labor antagonism and a consequential deterioration of service.[51] Some carriers have used Chapter 11 to trade debt for equity (e.g., Continental and TWA). Trading wage and work rule concessions for equity (as TWA, Northwest and United have done, and USAir and American would like to do) seems the primary opportunity for reducing costs.[52] And in fact, the comparative lower cost advantage thereby given TWA, Northwest and United likely will cause American, Delta and USAir to follow suit or risk eventual extinction.

New equipment has been deferred (although this creates a problem for phasing out Stage Two aircraft), and more than 700 aircraft have been parked in the desert. It is doubtful that auxiliary services in the long term can be profitable if the core airline is weak, although American Airlines is moving forcefully in that direction. While hubbing enhances network and marketing efficiency, it sacrifices operational efficiency and squan-

47. Baggaley, *supra* note 12.

48. Babbitt, *supra* note 23, at 13.

49. *See* THE NATIONAL COMMISSION TO ENSURE A STRONG COMPETITIVE AIRLINE INDUSTRY, CHANGE, CHALLENGE AND COMPETITION (1993).

50. As a portion of total operating expenses, travel agent commissions rose 308% between 1980 and 1990. PAUL S. DEMPSEY et. al., 1 AVIATION LAW & REGULATION § 2.19 (1993).

51. As one commentator noted, "The only other option [to trading equity to labor for wage and work rule concessions] is slash-and-burn restructuring with labor war and significant disruptions of the national travel system." Joseph Conn, *Expert: United Plan Sets Pattern for Others*, DENVER POST, Dec. 28, 1993, at 4C.

52. In late 1993, United reached an agreement with its pilots and machinists whereby labor would take 52% of voting equity in exchange for $5.1 billion, partly in terms of wage and work rule concessions. In mid-1993, employees at Northwest surrendered billions of dollars in wage and work rule concessions for 37.5% of the airline. Earlier, TWA, emerging from bankruptcy, gave employees 45% of equity in the airline for significant concessions.

ders productivity in equipment, fuel and labor utilization, and is being reevaluated at Continental and United Airlines.

Despite the conventional wisdom, deregulation has not resulted in increased industry productivity.[53] In fact, hubbing, the dominant megatrend on the deregulation landscape, appears to have reduced efficiency and productivity in labor and equipment utilization, increased airport congestion, modestly increased travel circuity, and has been a catalyst for the purchase of smaller aircraft, ending the pre-deregulation trend toward larger and larger aircraft.[54] As one source observed, "Overall in the ten years after 1983, despite deregulation and intensified competition, neither cabin crew nor flight crew productivity appear to have improved in North America!"[55]

Some contend that the success of Southwest is proof positive that good management will harness costs and resolve these problems without the need for governmental intervention. Southwest thrives on a comparative advantage that other airlines cannot achieve because of existing labor agreements and their tenacious commitment to hubbing, CRS, travel agents, and other costly overhead. The success of 4% of the U.S. industry, predicated in part on artificial comparative advantages created by the labor laws, and the Wright Amendment (yields in the Southwest dominated Dallas-Houston market exceed 20 cents a mile),[56] should not dictate national policy for the 96% of the industry which is collapsing, and upon which most Americans must rely. If we could wave a magic wand and give all airlines Southwest's cost structure, the industry eventually would compete away its profit, for the reasons described above. This author told Southwest's Herb Kelleher that if every airline had his cost structure, they would still find a way not to make a profit. He did not disagree.

III. Survival and Growth Strategies

After more than a decade of deregulation, several survival strategies have emerged. Listed below are several.[57] They are neither listed in order of importance, nor are they of equal value. But generally speaking,

53. "Any business that produces an ever smaller amount of physical product for each dollar of cost had better be able to raise its prices at will. Needless to say, this is not an option generally available to the airlines." ESG Aviation Services, 7 The Airline Monitor 5 (Sept. 1994).

54. *See* Dempsey & Goetz, *supra* note 6, at 317-18.

55. Rigas Doganix, Fariba Alamdari & Andrew Lobbenberg, *Who is Lean & Mean?*, Airline Bus., Nov. 1994, at 22, 31.

56. Aviation Daily, Sept. 23, 1994, at 493. In the Southwest dominated Chicago-Detroit market, yields are nearly 30 cents. *Id.*

57. Not to take all the credit, several of these characteristics, or derivations of them, have been identified by other sources, including Airline Economics, Inc.

the more of them an airline possesses, the better its chances for survival in the ruthlessly Darwinist environment unleashed by deregulation and liberalization.

A. Operational Alternatives

1. Route Strategies

a. STRATEGICALLY LOCATED HUB-AND-SPOKE NETWORKS — Before deregulation, while Atlanta (for Delta) and Pittsburgh (for Allegheny, now USAir), were moderately concentrated, no airline dominated more than 50% of the market (measured by gates, passengers, or takeoffs and landings) at any major airport in the United States. Today, dominant airlines control more than 60% of the market (sometimes more than 90%) at 17 major airports. The infrastructure of gates and landing slots at the major airports has been consumed by the megacarriers, leaving little room for significant new entry.[58]

One source notes:

> A product of deregulation, the hub system was initially a great success. It enabled more airlines to envelop huge geographical regions like giant spiderwebs, snare passing traffic and expand market share. By replacing linear routes, it multiplied customers flight options — and customers. American Airlines, for example, has 455 daily departures from Dallas/Fort Worth International Airport compared with 137 in pre-hub 1979. Hubs also integrated remote cities into a national and international route network.[59]

Strategically located hubs are designed to allow the carriers to blanket the nation with ubiquitous service. For example, United has hubs at Chicago, Denver, San Francisco, and Washington, D.C. (Dulles). American Airlines established hubs at Chicago, Dallas/Ft. Worth, Nashville, Raleigh/Durham, and San Juan. Delta has hubs at Atlanta, Dallas/Ft. Worth, Salt Lake City, and Cincinnati. America West hubs at Phoenix and Las Vegas.

In contrast, TWA has a domestic hub only at St. Louis (and an international gateway at New York-Kennedy). Before its demise, Pan Am dominated no domestic airport. Among the airlines which have fallen into bankruptcy, only Continental had multiple strategically located hubs — at Houston, Denver, Cleveland and Newark (the latter it acquired from People Express on its death bed).[60]

What are the characteristics of an airport that make it an attractive

58. 88% of the gates at the nation's 66 largest airports are leased to airlines, and 85% of the leases are for exclusive use. *Intelligence*, Aviation Daily, Aug. 20, 1990, at 323.

59. James Hirsch, *Big Airlines Scale Back Hub-Airport System to Curb Rising Costs*, Wall St. J., at 1.

60. Continental no longer maintains a hub in Denver.

venue for a hub? A prudent airlines seeks these attributes: (1) an interior point geographically situated for flow from several directions, particularly east to west, since that is the routing of most business traffic (the most lucrative share of the market); (2) a large population base to enhance high-yield origin and destination (O&D) traffic, preferably white collar (again, because business travelers pay more for air transportation); and (3) preferably, no nearby hubs or competing airports dominated by another airline.[61]

Hubbing is advantageous for a number of reasons. It allows enhanced marketing opportunities via the geometric proliferation of the number of possible city-pair markets which can be served. Thus, significant networking economies may be achieved via hubbing. Moreover, consumption of airport infrastructure can translate into higher yields. Yields at concentrated airports are more than 20% higher per mile for passengers who begin or end their trips there than at unconcentrated airports.[62] Hubbing also results in a yield premium for connecting traffic, particularly in the large majority of city-pair markets not served nonstop. Some hub carriers have learned to focus on this high-yield connecting traffic, and avoid the local price wars.[63]

Airlines with more gates, takeoff and landing slots (at capacity constrained airports), and/or code sharing agreements charge significantly higher prices than those without, according to the GAO. In fact, flights at airports where majority-in-interest clauses reduce expansion opportunities result in 3% higher fares; flights at slot controlled airports result in 7% higher fares; and carriers with code-sharing arrangements charge 8% higher fares.[64]

In 1988, the eight largest airlines owned 96% of the landing and takeoff slots at the four slot-constrained airports (i.e., Chicago O'Hare, Washington National, and New York's Kennedy and LaGuardia). In 1985, before the U.S. Department of Transportation decreed these public resources could be bought and sold in the market, the eight largest airlines controlled only 70% of the slots.[65] An airline which doubles the number of its gates enjoys a 3.5% increase in fares.[66]

These yield advantages are achieved because of a broader economic

61. PAUL DEMPSEY et. al. 1 AVIATION LAW AND REGULATION § 2.12 (1993). *See also* J.P. MORGAN SECURITIES, THE U.S. AIRLINE INDUSTRY 17 (1993).

62. *See* GENERAL ACCOUNTING OFFICE, AIRLINE COMPETITION: HIGHER FARES AND REDUCED COMPETITION AT CONCENTRATED AIRPORTS (1990).

63. Maurice Myers, Address Before the Salomon Brothers Transportation Conference (Nov. 17, 1994).

64. DEMPSEY et. al., *supra* note 61, at § 5.05.

65. GENERAL ACCOUNTING OFFICE, AIRLINE COMPETITION: INDUSTRY OPERATING AND MARKETING PRACTICES LIMIT MARKET ENTRY 4 (1990).

66. *Id.* at 6.

principle, the "S Curve," which posits that the dominant carrier in terms of frequency and capacity in any market will enjoy a disproportionate share of the traffic in terms of higher load factors and higher yields.[67]

International carriers also employ their gateways as venues for sixth freedom connecting traffic. For example, KLM puts enough capacity on the North Atlantic to transport the entire population of the Netherlands to the United States in a single Summer. Most of the traffic is funnelled through its hub at Amsterdam Shiphol, from or to points beyond.

Several sources have criticized hubbing as inefficient for short-haul operations, because of the increase in delay and congestion, which has a debilitating effect on labor and aircraft productivity. They point to Southwest's average of 20.4 minutes of ground time, compared to American's 50.3 minutes.[68] Southwest's half hour less ground time translates into enhanced aircraft utilization, 22% higher than the industry norm.[69] Moreover, the absence of banking flights into congested hub airports also results in more efficient use of ground personnel. The following chart provides comparisons of aircraft utilization of selected major carriers:

MAJOR AIRLINES' AIRCRAFT UTILIZATION PER DAY[70]
(1993, in hours flown)

Airline	Average Stage Length	Daily Aircraft Utilization
Southwest	380	10:55
America West	637	10:35
United	826	9:44
USAir	518	9:44
Delta	626	9:35
Continental	793	9:29
American	835	9:25
Northwest	705	9:08
TWA	695	9:01

Despite the growth and profitability of Southwest Airlines and its linear route clones, American Airlines' Chairman Robert Crandall argues,

> hubs will continue to be the most efficient way, in most markets, of providing the frequent time-of-day choices travelers like even more than they like nonstop service. In fact, intense competition between multiple carriers of-

67. Barbara Beyer, Address at the International Conference on Aviation & Airport Infrastructure, Denver, Colorado (Dec. 5-9, 1993).

68. SH&E, The Facts About American vs. Southwest 47 (unpublished study prepared on behalf of APA, Sept. 13, 1993). Southwest's average stage length is 380 miles, compared to American's 807. *Id.* at 49.

69. SH&E, *supra* note 68, at 48-49.

70. Mead Jennings, *Staying At the Top*, AIRLINE BUS., Mar. 1994, at 28, 31; *see also* SH&E, *supra* note 68, at 49.

> fering very frequent service to many destinations via multiple hubs tends to make most nonstop service unfeasible.[71]

He continues:

> One of our greatest strengths is a huge and well-integrated domestic and international route system centered around our six hubs. This hub-and-spoke system allows us to serve thousands of markets, thus generating a large network revenue benefit. . . .
>
> While a hub-and-spoke system is admittedly more expensive to operate than a comparably-sized system of point-to-point routes, the system's incremental costs are more than offset by its enormous revenue benefits. For example, we estimate that there are fewer than 500 city pair markets in the United States big enough to adequately support point-to-point jet service. However, our hub-and-spoke system makes it possible for American to effectively serve over 10,000 markets — and realize a large revenue per available seat mile premium relative to point-to-point carriers.[72]

Nevertheless, hubbing sacrifices equipment and labor utilization and consumes more fuel than a linear route system in markets sufficiently dense to support nonstop service. Clearly also, the United States is over-hubbed by duplicative parallel route networks connecting virtually every conceivable city-pair market. To trim costs and reduce capacity, carriers have begun to down-size or close hubs, as United has done at Washington Dulles airport (while retaining it as an international gateway), American has done at San Jose and Raleigh-Durham, and Continental has done at Denver.

b. LINEAR ROUTE SYSTEMS — As noted above, the only profitable U.S. major airline, Southwest, embraces a point-to-point linear route system, which allows more productive equipment and labor utilization, and more efficient fuel consumption than does a hubbed operation. Southwest avoids congested airports, focusing instead on secondary airports in many markets, thereby allowing a quick turn around time (15 minutes is the goal).

Think of an aircraft as a $30 million to $180 million factory that produces consumer goods — in this case, seats. A factory that runs more hours per day produces more seats. Southwest's planes sit on the ground only 15-20 minutes. United's sit at its hub airports for 45-55 minutes, during which time they produce no product. Southwest also enjoys enhanced asset utilization by using its gates 10-12 times a day compared to United's six times a day.

A few of the megacarriers appear interested in following Southwest's lead, with Continental inaugurating CALite and United launching U-2, or

71. Robert Crandall, *The Hub Debate*, American Way Magazine.

72. AMERICAN AIRLINES CORPORATION, 1993 THIRD QUARTER REPORT 2-3 (1993).

"United Express." Nonetheless, one source predicts that hubs will continue to dominate air transportation:

> While there is increasing demand for point-to-point services and carriers willing to offer them like Southwest, Continental Lite and a number of new entrants, the actual amount of traffic carried on the flights is only about 6 to 7 percent of the total traffic. Most city pairs are too small to justify point-to-point service so the maximum growth in traffic will probably never exceed 20 percent of the total traffic. Thus, at least 80 percent of all passengers are still expected to utilize hub services into the foreseeable future.[73]

c. REGIONAL FEEDERS AND FRANCHISEES — Many airlines rely on smaller feeder carriers to bring passengers from smaller communities to connect with their long-haul systems. As a rule, these regional carriers operate smaller turboprop or piston aircraft painted in megacarrier colors and logo, and do not pay union wages. Baggage is interlined, and code-sharing falsely suggests to the consumer that single-firm seamless service is being provided. Several of the major carriers have turned over short-haul traffic to these regional feeders.

d. INTERNATIONAL ROUTES — The global air transport market is growing, and many international markets are quite lucrative. Although traffic is temporarily down on the North Atlantic, airlines which serve the North Pacific and Latin American market enjoy the most attractive yields. Both Northwest and United earn a disproportionate share of their total income from international markets. Between 1987 and 1989, Northwest earned between 68% and 91% of its total operating profit from international markets, while United earned between 24% and 34%.[74] Many industry analysts predict international markets will grow faster than domestic markets during this decade.

With the collapse of Pan Am and Eastern, and the bankruptcy of TWA, the larger domestic U.S. carriers have replaced them in major international markets. Thus, United Airlines purchased Pan Am's transpacific, Latin American and Heathrow routes. American Airlines purchased Eastern's Latin American routes (earlier acquired from Braniff), and TWA's Heathrow authority. Delta bought Pan Am's European routes (absent Heathrow).

Many of these markets enjoy higher yields because governments limit the number of carriers which may be designated to serve them. Many nations have rejected the U.S. policy of "open skies."[75]

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73. Beyer, *supra* note 67.

74. M. Jedel, Post Deregulation Strategic Employment Relations Response of the Successful, Surviving Major Domestic Airlines: A Story Not Fully Told 42 (unpublished manuscript 1991).

75. *See* PAUL S. DEMPSEY, LAW & FOREIGN POLICY IN INTERNATIONAL AVIATION (1987).

2. Fuel Efficient Fleet of Standardized Aircraft

Fleet simplification allows a reduction in the inventory of spare parts, as well as maintenance and training costs, and thereby improves the cost, speed and efficiency of aircraft maintenance. Southwest flies only the Boeing 737. Flying a single aircraft type not only allows Southwest to enjoy enhanced worker productivity vis-a-vis its competitors, it also allows Southwest to realize lower maintenance costs, some 25% less than the industry average.[76]

Until recently, United flew predominantly Boeing aircraft. In November 1993, United took delivery of its first Airbus A-320s, acquired under very favorable terms, including a walk away lease. Not long before, United boasted that buying planes from a single manufacturer, Boeing, promoted "commonalty within the fleet which assures significant long-term operational efficiencies."[77]

Newer aircraft have higher acquisition costs, but lower operational costs. Newer aircraft are more fuel efficient, allow enhanced labor productivity, and cost less to maintain. They are also more reliable.

But inadequate profitability in the 1980s caused the U.S. fleet to degenerate into the oldest in the developed world. Thirty-one percent of the U.S. fleet now exceeds the economic design goals originally set by the manufacturers.[78] Aircraft more than 20 years old now make up a quarter of the U.S. fleet.[79]

Economics now determines when aircraft are retired.[80] Spending $3 million to husk kit a 25-year-old plane is more economically rational than spending $35 million on a new aircraft.[81] As one observer noted, "with the harrowing airline economics of the early-1990s, the trouble and expense of keeping old planes aloft comes down to a simple maxim: If it's broke, fix it."[82]

The following chart reveals average fleet age for selected major airlines:

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76. James Kling, The Status of Southwest Airlines' Competitive Advantage 17 (unpublished manuscript 1993).

77. UNITED AIRLINES, CORP., ANNUAL REPORT 7 (1990).

78. GENERAL ACCOUNTING OFFICE, TESTIMONY OF KENNETH MEAD BEFORE THE SUBCOMM. ON AVIATION OF THE HOUSE COMM. ON PUBLIC WORKS AND TRANSPORTATION: MEETING THE AGING AIRCRAFT CHALLENGE (Oct. 10, 1989).

79. Jeff Cole & Susan Carey, *Airlines Are Keeping Aging Planes Aloft, Testing Repair Rules*, WALL ST. J., Nov. 3, 1994, at A1.

80. *Id.*

81. *Id.* at A15.

82. *Id.*

AVERAGE AGE OF FLEET[83]

Carrier	Number of Aircraft	Average Age (Years)
American	667	7.7
Continental	316	15.0
Delta	565	9.1
Northwest	358	15.8
Southwest	178	7.3
United	544	9.8
USAir	443	10.4

TWA's fleet is 18.3 years old on average, while America West's is a youthful 7.7.[84] By the time Pan Am collapsed in December 1991, its fleet had grown to a geriatric 18 years.[85] In contrast, British Airways' fleet is 8.0 years old,[86] Swissair's is 7.3 years old, Qantas' is 5.9 years, and Singapore Airlines is but 4.9 years young.[87]

Merged airlines have been forced to deal with the problems of consolidating huge fleets of aircraft of inconsistent types produced by several manufacturers, which increase the cost of maintenance and require multiple inventories of spare parts.

In the United States, deregulation led to an unprecedented number of mergers and acquisitions during its first decade. As a consequence, Continental, which consolidated Texas International, New York Air, People Express and Frontier under a single roof, experienced this problem of blending an eclectic collection of disparate aircraft fleets and corporate cultures, causing costs to soar and service to decline. Northwest flies the fleets of North Central, Southern and Hughes Airwest, which merged to form Republic, which Northwest acquired.

In contrast, airlines which grow from within (such as, for the most part, United) save maintenance cost and aircraft down time by incrementally growing with relatively standardized fleets. Nonetheless, American, Delta USAir, and Northwest each fly eight different aircraft types.[88]

The U.S. Congress has mandated the retirement of Stage 2 aircraft by January 2, 1999. As of May 1990, the airlines with the highest percentage of aging Stage 2 aircraft were: Eastern (70%), Northwest (65%), Pan

83. Julius Maldutis, Q. GLOBAL AVIATION REV. 2d Quarter 1994.

84. JULIUS MALDUTIS, *The U.S. Airline Industry 1993-99: Aircraft Fleet Analysis* (Jan. 28, 1994).

85. DEMPSEY et. al., *supra* note 61, at § 2.01.

86. Julius Maldutis, *British Airways Plc — The Crown Jewel*, Aug. 23, 1993, at 5. British Airways is also pursuing a fleet modernization and simplification program. *Id.*

87. Otto Loeppe, Address at the Salomon Bros. Transportation Conference (November 18, 1994); James Strong, Address at the Salomon Bros. Transportation Conference (November 18, 1994).

88. Kling, *supra* note 76.

Am (58%), USAir (55%), TWA (55%), Continental (52%), and Midway (85%).[89] In contrast, only 31% of American's fleet consists of Stage 2 aircraft.[90]

As noted above, deregulation also produced the hub-and-spoke phenomenon — the dominant megatrend on the deregulation landscape. Hubbing requires that airlines fly passengers more miles in smaller aircraft with more takeoffs and landings. Indeed, hubbing led many airlines to cancel orders for wide-body aircraft in the early 1980s, and either fly their existing jets or place orders for narrow-bodied planes. The average seat mile costs for a wide-bodied aircraft like a Boeing 747 are significantly lower than that of a narrow-bodied plane like a Boeing 737 or 727. Yet hubbing bleeds off the traffic that might otherwise support more long-distance nonstop wide-bodied service.

3. Low Debt

The operating losses engendered by deregulation created enormous debt. Despite reduced wages, airline operating expenses increased 94% during deregulation's first six years.[91] During deregulation's first decade, the industry suffered a 74% decline in its profit margin to a mere 0.9% — until now, the worst financial period in the industry's history.[92]

Deregulation also freed corporate raiders, like Frank Lorenzo (at Continental and Eastern), Carl Icahn (at TWA), and Alfred Checchi (at Northwest) to laden airlines with suffocating debt. As a percentage of total capitalization, Eastern's debt climbed from 79% of total capitalization in 1980 to 473% in 1988, its last year before bankruptcy.[93] TWA's debt soared from 62% in 1980 to 115% in 1989.[94] Continental's rose from 62% in 1980 to 96% in 1989.[95] Pan Am's debt soared from 62% in 1980 to 273% in 1989.[96] Congressman Byron Dorgan aptly noted, "I'm not so alarmed if they load up a lipstick company with debt and it fails. But if you do that to an airline, it's a real blow to the public interest."[97]

Unfortunately, low debt has subjected some airlines to leveraged buy outs. Low debt suggests there are lots of assets owned which can be sold

89. Memorandum from Samuel K. Skinner to Congressman James Oberstar (Oct. 25, 1990).

90. AMERICAN AIRLINES CORP., ANNUAL REPORT 27 (1990).

91. GENERAL ACCOUNTING ACCOUNTING OFFICE, COMPETITION: HIGHER FARES AND REDUCED COMPETITION AT CONCENTRATED AIRPORTS 24 (1990).

92. *US Airline Deregulation a Financial Disaster, AFN Study Shows*, COMMUTER REGIONAL AIRLINE NEWS, Apr. 8, 1991, at 8.

93. AVIATION DAILY, Feb. 13, 1991, at 297.

94. *Id.*

95. *Id.*

96. *Id.*

97. Randall Smith, *Trump Bids $7.54 Billion to Acquire American Air*, WALL ST. J., Oct. 6, 1989, at A3.

to pay off the debt assumed during the acquisition. For example, Northwest had one of the lowest percentages of aircraft leased (4%) in the industry prior to its leveraged buy-out.[98] The Checchi group put up $40 million, while persuading KLM to put up $400 million (since written down to zero on KLM's books), while Northwest was saddled with more than $3 billion in debt.[99] The LBO so loaded Northwest with debt that, in order to avoid Chapter 11, Northwest deferred aircraft deliveries, convinced banks to defer loan payments, and convinced labor to take deep wage cuts in exchange for stock. But by 1994, despite several profitable quarters, Northwest was still struggling to refinance $4 billion in debt, with a $1.7 billion note due in 1997.[100]

In order to thwart potential LBOs, some airlines have sold aircraft and leased them back, a strategy which reduces the inventory of aircraft which could finance an LBO, but nonetheless increases the long-term costs of doing business, whether the debt shows up on the books of the airline or not.

The following chart reveals the total debt/total capitalization ratios and percentage of fleet leased for selected major airlines:

DEBT/CAPITALIZATION RATIONS AND LEASED AIRCRAFT/TOTAL AIRCRAFT PERCENTAGES (1993)[101]

Airline	Debt/Capitalization	Leased/Total aircraft
American	64.78%	47%
Continental	77.60%	86%
Delta	68.03%	47%
Northwest	156.37%	44%
Southwest	34.90%	51%
United	84.96%	55%
USAir	113.49%	47%

TWA leases 68% of its fleet, while America West leases 78% of its.[102] In contrast, British Airways leases only one third of its fleet.[103] Among major U.S. airlines, operating leases rose from 35% of total capital in 1987, to 55% in 1992.[104] If the long-term operating leases were put on the airlines' balance sheets, they would look considerably worse than

98. AVIATION DAILY, November 6, 1986.

99. DEMPSEY et. al., *supra* note 61, at § 2.07.

100. Steven Lifin & Carl Quintanilla, *NWA May Turn to Modest Loan Plan, As Larger Credit Is Said to Worry Banks*, WALL ST. J., Oct. 17, 1994, at A4.

101. Maldutis, *supra* note 19.

102. Julius Maldutis, *The U.S. Airline Industry 1993-99: Aircraft Fleet Analysis* (Jan. 28, 1994); Julius Maldutis, *The U.S. Airline Industry, 1992-98* (July 14, 1993).

103. Maldutis, *supra* note 86, at 11.

104. J.P. MORGAN, THE U.S. AIRLINE INDUSTRY 25 (1993).

they already do. Most of the airline industry has already had its debt downgraded to junk.

4. Conservative Growth

Few airline executives have been successful in restraining themselves from growing too rapidly. Sir Freddie Laker started Skytrain, made a bundle of money flying from London to New York, found himself on the cover of Time magazine, then bought one DC-10 after another until he found himself in bankruptcy. Donald Burr made a bundle of money flying low-cost low-frills service out of Newark, found himself on the cover of Time magazine, then bought Frontier Airlines, Britt, and PBA, until he too found himself in bankruptcy.

Southwest Airlines grew by two cities a year with one type of aircraft (the Boeing 737) flying a linear route system until 1993, when it announced the purchase of Morris Air, hubbed in Salt Lake City, for $128.5 million, and placed a $2.5 billion order for 63 Boeing 737X aircraft to be delivered between 1997 and 2000, the largest order in the 22 year-old carrier's history.[105] Southwest entered seven new cities in 1994, increasing its available seat miles [ASMs] 29% in the fourth quarter of that year.[106] It remains to be seen whether this aggressive growth strategy will in the long run be successful, with the emergence of non-union low cost Southwest clones (e.g., Kiwi and Reno Air), as well as major carriers restructuring to compete in low-cost Southwest-type operations (e.g., CALite and U-2).

5. Low Wages/Flexible Work Rules

Some airlines have broken unions and thereby reduced costs. Continental and TWA are prime examples. Although Continental has lower labor costs than any other major airline (its available seat-mile cost is 8.35 cents, among the lowest in the industry),[107] not even that has kept it out of bankruptcy. Labor acrimony, enhanced by the tactics of its former chairman, Frank Lorenzo, cost it dearly in the 1980s.

The airline industry is a service industry. Happy employees can give

105. John Keahey & Steven Oberbeck, *No-Frills Southwest Airlines Buys Morris Air*, SALT LAKE TRIBUNE, Dec. 14, 1993, at A-1; Jeff Cole & Bridget O'Brian, *Boeing Wins Huge Southwest Air Order, Giving 737 Upgrade Plans a Green Light*, WALL ST. J., Nov. 18, 1993, at A2. Southwest flew to 37 cities; Morris flew 21 Boeing 737s to 22 cities, and employed 2,000. Bridget O'Brian, *Southwest Air to Buy Morris for $129 Million*, Wall St. J., Dec. 14, 1993, at A3. Southwest will also take over $50 million in Morris' debt. Southwest has not purchased an airline since it acquired Muse Air in 1985 for $40.5 million in cash and $20 million in stock. *Id.* at A10.

106. Herb Kelleher, Address to the Salomon Bros. Transportation Conference (November 18, 1994).

107. Jane Levere, *Continental's Aim: Profitability*, COMMERCIAL AVIATION NEWS, Aug. 23, 1993, at 3.

passengers a lovely trip, and lure them back for another, and another. Angry, embittered employees can do the opposite.

Other airlines convinced unions to settle for two-tier wage rates, with the "B" scale at entry grade. American, United, and Delta are examples. During the 1980s, more than half of the pilots and flight attendants at American, for example, were on the "B" scale. Some of the flight attendants at the two-tier airlines, earning between $950 and $1,220 a month,[108] qualified for food stamps.

In most service industries, salaries account for a disproportionate share of operating costs. But low wages do not guarantee survival. People Express collapsed despite its rock bottom wages. Continental and Midway, also with relatively low wages, fell into bankruptcy (although Continental emerged from Chapter 11, for the second time, in 1993).[109]

As a percentage of operating expenses, Delta has among the highest labor costs of any major airline.[110] Yet Delta thrived under deregulation, at least prior to the bout of indigestion it suffered with the acquisition of Pan Am's transAtlantic routes.

In the United States, employment-at-will leaves industries free to lay off newly hired employees. Of course, the most recently hired employees are the poorest paid, meaning that layoffs increase average wages per employee.

Nonetheless, that flexibility cannot be achieved in Europe, where unions seize airports in protest (leading to the ouster of Air France Chairman Bernard Attali), or Japan, whose tradition guarantees employment for life. Nonetheless, some foreign airlines have achieved productivity improvements and modest wage concessions. For example, Lufthansa convinced its workers to accept a one year pay freeze and pilots to fly 75 hours per month (as opposed to the prior limit of 53 hours per month).[111]

Because of the high value of the Yen, Japanese labor costs are exceptionally high. Japan Airlines has frozen new hiring and pay increases while out-sourcing labor from low wage nations like Thailand and Singapore, and relatively lower wage nations like Germany and the United Kingdom. For example, a Thai flight attendant is paid only about 10% of the salary of a Japanese flight attendant, but is well paid for comparable jobs in Thailand. So as to ensure that acrimony does not breed between

108. *Flight Attendant Work Force Grows 10 Percent, Salaries Mostly Unchanged*, AVIATION DAILY, Feb. 12, 1991, at 285.

109. Continental has the lowest labor costs, as a percentage of operating expenses, of any major U.S. airline. AVIATION DAILY, Feb. 11, 1991, at 276.

110. *Id.*

111. Robert L. Rose & Susan Carey, *The Frugal Skies: Money-Losing Routes Prompt Big Carriers To Mull Radical Steps*, WALL ST. J., Oct. 19, 1993, at A1, A6.

cabin crew members on the same flight, the Thai attendants are given only five-year contracts.

Before its demise, Pan Am hired low-cost Yugoslavian flight attendants. United Airlines employs Taiwanese flight attendants.

Although carrier staffing levels are not always comparable, because of currency valuation, fleet compositions, stage lengths, social welfare benefits, and so on, the data are nonetheless quite interesting:

NUMBER OF EMPLOYEES PER 1,000 REVENUE PASSENGER KILOMETER AT SELECTED AIRLINES (1993)

Air France	1.22
Lufthansa	1.18
British Airways	.76
American Airlines	.74
Delta Airlines	.66
United Airlines	.60
Singapore Airlines	.41
Japan Airlines	.39
All Nippon Airways	.39

These data explain why Air France attempted to lay off 4,000 employees in late 1993.

As a rule of thumb, most U.S. airlines have about 100 employees per aircraft. Southwest had close to 90. TWA reduced its number of employees to aircraft from 156 in 1993, to 116 in 1994.[112]

6. Superior Service

Safety first, then punctuality, appear to be the primary objectives of air transport service for most airlines, although economic imperatives may sometimes conflict with these worthy goals.

In the United States, declining profitability under deregulation has caused a nearly universal degeneration of airline service, so consumers have been taught not to expect much. Consumer polls reveal Americans rate foreign airlines higher than U.S. airlines. When USAir consumed Piedmont, its loyal customers were most concerned with whether USAir would continue Piedmont's practice of giving passengers the full can of Coca-Cola, rather than just a cup. That one example reflects how far consumer expectations have fallen.

The point is, today, it does not take much service to stand out as being better. Consumers can be, and too often are, turned off by late arrivals and departures, dirty planes, inedible food, and embittered em-

112. Jeffrey Erickson, Address to the Salomon Bros. Transportation Conference (November 16, 1994).

ployees. The three largest airlines — Delta, United and American — typically are rated higher than other domestic airlines in terms of service. One poll ranked them 17th, 19th and 20th, respectively, among the world's twenty best airlines.

TWA's service deteriorated horribly with the labor animosity created during Carl Icahn's ownership of the company, and his breaking the backs of the flight attendant's union with a strike in 1986. After Icahn, TWA sought to restore service and differentiate its product by offering enhanced leg room, removing 8% of its seats. It worked. J.D. Power & Associates named TWA the top domestic carrier for long flights.[113]

Nonetheless, for short flights, customers appear willing to forego service. Southwest offers rock bottom fares for short flights with no meals, and makes a profit doing it.

7. Auxiliary In-Flight Services

Movie theaters apparently merely break even on admissions vis-a-vis film rental, making their profit on soft drinks, pop corn and candy. Hotels also find revenue centers in restaurants, liquor, pay television, telephones, and room and valet services.

Airlines have slowly learned that the captive passenger strapped to his seat can be a source of income, offering alcohol, headsets and movies, duty free products, telephones, as well as catalog sales, for a price. The in-flight magazine and video entertainment also offer a source of advertising revenue. Only Laker Skytrain and People Express explored the possibility of selling food, although this seems a natural source of potential revenue, particularly if the food is good. In the future, individualized interactive video will allow carriers to generate revenue from passengers playing video games, scanning computer libraries, communicating with their offices, word processing, or, on international flights, gambling. We may also see some effort to convert the baggage compartment and the upper deck into sleeping berths on long-distance flights.

8. Auxiliary Non-Flight Services

American Airlines has turned to its various non-flight subsidiaries as profit centers, generating revenue from computer reservations systems, education, consulting, and such. The economies of scale associated with aircraft maintenance, ground handling and catering services have long been profit centers for airlines. Air freight is also a growing profit center for combination carriers.

113. Michael J. McCarthy, *TWA, Out of Bankruptcy Court, Struggles to Take Off*, WALL ST. J., July 27, 1994, at B6.

9. Bundled Travel Services

The tour and travel industry is the largest in the world. Air transportation is one major piece of that industry. Hotels and automobile rentals are two of the other major pieces. On virtually all business or vacation trips, a passenger needs air transportation, a hotel, and, often, a rental car.

Several airlines have purchased hotels in the past (e.g., TWA owned Hilton International; Pan Am owned Intercontinental; Air France owned Meridien). United Airlines' Richard Ferris blundered by trying to assemble a travel network of hotel chains and car rental chains under a single roof, called "Allegis." Airline people seem not to know how to run hotel and car rental companies any better than hotel and car rental executives know how to run airlines. That was one mistake Ferris made. The other was his wholesale failure to integrate the companies from both a marketing and operational standpoint.

Suppose one airline had the foresight to bring travel under a single umbrella, offering integrated one-stop shopping, discounts with affiliated hotel and car rental companies, and seamless service. Newspaper advertisements would offer bundled air-hotel-automobile discounts.

Suppose a customer called an airline's reservations agent to book a flight, and was asked,

> "Will you also be needing a hotel or rental car? Since you booked your flight on our airline, we can give you a 20% discount at the following hotels, and another 20% discount at the following car rental agencies. Moreover, when you arrive at your destination, you can go straight to your hotel. We will collect your bags at the airport and deliver them later in the afternoon to your hotel room. Or if you prefer, we'll put them into the trunk of your rental car."

A passenger could enjoy one-stop shopping with the belief he was enjoying a discount on affiliated product lines, and be free of the enormous hassles of bags. He could take his golf clubs or skis, but be spared the burden of heavy lifting.

In the same way that business travelers become addicted to particular product lines because of frequent flyer mileage, business travelers might applaud a system which would permit them to go straight from their destination airport to their business meetings, allowing their bags to catch up with them later that afternoon at the hotel.

All airlines recognize that consumers detest handling bags. They provide as much in-cabin baggage space as possible. They ensure swift and efficient baggage transfer between themselves and their commuter and code-sharing affiliates. Yet remarkably, no scheduled airline offers

baggage transfer from their aircraft to hotels or automobile rental companies.

Integration would have to take place along marketing and operational lines. Joint advertising and joint discounts are easy. The operational dimension is the trickiest and most critical, because passengers also detest lost bags. So, monitoring would be essential, perhaps coupled with employee rewards for excellence.

But the economies of scope are manifest. Airlines already employ a platoon of baggage handling personnel at every airport. Computer technology would allow tagging at check-in of those bags going to specific hotels or car rental companies. The tags could be florescent orange, if necessary. Car rental companies already have reservations and operations personnel who could collect bags and put them into the trunks of cars. Hotels already have vans and porters to collect bags. The vans could be sent to meet each incoming flight, and the hotel concierge could guide the passengers to the van in the way tour groups are met.

Like most of the innovations airlines have inaugurated, if successful, it will be copied. Therefore, to get the jump on competitors, the first to embrace seamless travel service should identify those hotel chains and car rental companies which business travelers prefer most, and lock those up in an equity and marketing marriage, whereby they trade, say, a block of airline stock for an equally valued block of hotel and/or car rental stock. That would allow each to earn a profit on the other's business, enjoying significant mutual synergistic marketing advantages.

Customers would get what they have always wanted. They could sit back and relax and leave the least pleasant parts of journeys to the airline, for which they would express their gratitude and loyalty in repeat business to increase load factors and core business. The affiliated hotels and car rental companies would also prosper, and the dividends earned on their stock should reflect it.

B. Marketing Alternatives

1. Frequent Flyer Programs

The widespread service permitted by multiple hubs allows airlines to enjoy economies of density, and better market their product to the most lucrative customer, the business traveler. For example, United Airlines serves all 50 states, not because each is profitable, but because it can hold itself out as satiating the ubiquitous geographic needs of business travelers.

Airlines offer to fill passengers' business needs, luring them with rewards of free travel to exotic destinations; actually, airlines are encouraging business fraud. Suppose, for example, a distributor of copying paper

offered to sell a business executive paper at a price 25% higher than his competitors, but promised him two free first class airline tickets to Hawaii if he bought the distributor's paper all year long. Wouldn't the business executive be defrauding his company if he purchased the higher priced paper? Yet that is precisely the type of inducement that airlines offer business travelers addicted to their frequent flyer programs. Once addicted, many business travelers select (and bill their companies for) the higher priced flight on the airline satiating their desire for free travel. Indeed, 75% of travel agents report that their business customers chose to fly a particular airline more than half the time because of their membership in a frequent flyer program.[114]

While stimulating traffic in the short term, the long-term costs of such programs is significant. The number of non-revenue passengers have been growing steadily, and now comprise 6% of all traffic.[115] The cost of administering the programs is also significant. Carriers have responded in two ways. First, using yield management, they have severely constricted the availability of seats for frequent flyer mileage redemption. Second, they have unilaterally changed the award rules, generally increasing the number of miles needed for free travel.[116]

2. *Computer Reservations Systems*

Eighty percent of flights are booked through travel agents, and 95% of agents use one of the airline-owned computer reservations systems.[117] According to the GAO, an airline which owns its own computer reservations system stands between a 13-18% better chance of selling its product through its system than does a competitor.[118] American Airlines pioneered them, with SABRE. United owns a majority interest in Galileo. Continental owns SYSTEM ONE, which it took from Eastern for a good deal less than its fair market value. TWA, Northwest and Delta share the combination of PARS and DATAS II (now named WORLDSPAN).

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114. GENERAL ACCOUNTING OFFICE, AIRLINE COMPETITION: INDUSTRY OPERATING AND MARKETING PRACTICES LIMIT MARKET ENTRY 4 (1990).

115. James S. Hirsch, *Tracking Travel*, WALL ST. J., Feb. 15, 1994, at B-1.

116. James S. Hirsch, *Airlines Will Devalue Frequent-Flier Miles Next Year*, WALL ST. J., Apr. 25, 1994, at B1. Arguably, this is a patent breach of contract with passengers who were encouraged to buy air travel to earn miles under one set of rules, and subsequently be told that the airline has no intention of meeting its commitments.

117. GENERAL ACCOUNTING OFFICE, AIRLINE COMPETITION: HIGHER FARES AND REDUCED COMPETITION AT CONCENTRATED AIRPORTS 27 (1990). Airlines attempt to induce travel agents to book flights with them by offering commission overrides, which offer economic inducements for exceeding quotas. A poll of travel agents reveals that more than half of them "usually" of "sometimes" select a carrier in order to obtain override commissions. *Id.* at 29.

118. GENERAL ACCOUNTING OFFICE, AIRLINE COMPETITION: IMPACT OF COMPUTERIZED RESERVATIONS SYSTEMS (1986).

Computer reservations systems have created a sophisticated and expedient means of exchanging pricing proposals, and have facilitated implicit price fixing.[119] They also produce extraordinary profits for their owners, far beyond the rents which could be exacted in a fully competitive market.

3. Sophisticated Yield Management

Airlines have learned that by watching passenger demand carefully, they can shrewdly manipulate the number of seats for which restricted discounts are offered on a regular basis, and fill seats with passengers paying the maximum price. That explains the phenomenon of tens of thousands (40,000 to 100,000) of rate changes each day.

Yield management has become a principal means of yield improvement, with some carriers segmenting markets in up to 25 categories.[120] Successful yield management can increase revenue by between 2-5%, and for on-line connections within an airline's hub, up to 7%.[121]

Consumer groups complain that by offering cut-rate fares for only a relatively small number of seats, airlines are engaging in "bait-and-switch" advertising.[122] The bewildering array of fares has also increased transactions costs for consumers.

C. Cost Containment

The non-union low-cost carriers are the driving force in the industry. Therefore, established major airlines have been compelled to focus on cost containment and reduction.

Some sources maintain that there are three ways to improve carrier profitability — "cutting costs, increasing sales (and market share), and improving yields."[123] To achieve the equivalent bottom line improvement, an airline would need to slash costs 10%, increase sales by 25%, and improve yields by 5%.[124]

1. Operational and Equipment Costs

Some major airlines have studied the Southwest Airlines linear route model and have begun to emulate it. Continental inaugurated CALite,

119. *See* Arsa Q. Nomani, *Travel: Fare Warning: How Airlines Trade Price Plans*, Wall St. J., Oct. 9, 1990, at B1.

120. *The Balancing Act*, Airline Bus., Special Issue 1992, at 17.

121. *Id.* at 19.

122. *See* Edward A. Cowan & Alison Leigh Gargan, *Mirage of Discount Air Fares Is Frustrating to Many Fliers*, N.Y. Times, Apr. 22, 1991, at 1.

123. *The Balancing Act*, Airline Bus., Special Issue 1992, at 17.

124. *Id.*

initially serving 14 cities in the Southeast in a linear route operation.[125] USAir responded with "Project High Ground," designed to increase aircraft utilization by significantly reducing ground time.[126] The "quick turn" strategy (designed to emulate Southwest's 15-minute ground turnaround) should improve productivity and lower operational costs.

Like Continental, United formed U-2, or "United Express," as a low-wage, short-haul (less than 750 miles) airline within an airline, threatening that if labor failed to conclude an agreement allowing United to create it, the carrier would turn over short-haul domestic routes to low cost, non-union regional feeders.[127] United estimates the agreement will allow it to reduce operating costs in short-haul markets by about 30%, close to Southwest's approximately seven cents a mile.[128]

Carriers have also responded to the decline in profitability by slashing new equipment purchases. American Airlines cut $5.6 billion in new aircraft, Northwest slashed $3.7 billion in aircraft orders, while United Airlines cut $3.6 billion in aircraft, and $5.5 billion in capital spending overall.[129] Many U.S. firms are parking existing aircraft in the desert to reduce capacity.

This is a global trend. Even the Pacific Rim (among the few remaining bastions of serious traffic growth, governmental protectionism, and modest profitability), has seen its carriers defer or cancel scores of new aircraft. Thai Airlines will take delivery of only 18 of the 23 aircraft it ordered over the next five years. Philippine Airlines is negotiating delayed delivery of six Airbus 340s. Garuda Indonesian Airlines halted plans to purchase 48 wide-bodied Boeing and Airbus aircraft. Malaysian Airlines cut domestic flights, froze hiring, removed surplus aircraft and deferred new deliveries. Only Singapore Airlines (frequently the world's most profitable carrier) has not announced cuts or delays in aircraft orders.

Some carriers have announced they will "hushkit" their aging aircraft (to satiate federal noise requirements), rather than replace them. Thus, Northwest intends to hushkit 40 of its DC-9s whose average age is

125. Michael J. McCarthy & Bridget O'Brian, *Fare Combat: Lean, Nimble Airlines Head East, Targeting Region's Plump Prices*, WALL ST. J., Feb. 28, 1994, at A-1.

126. *Id.* at A-6.

127. Robert L. Rose & Susan Carey, *The Frugal Skies: Money-Losing Routes Prompt Big Carriers To Mull Radical Steps*, WALL ST. J., Oct. 19, 1993, at 1.

128. Michael J. McCarthy, *UAL Estimates Buyout of United to Hurt Profit at First, Boost It Beginning 1996*, WALL ST. J., Apr. 13, 1994, at A-4.

129. *The Balancing Act*, AIRLINE BUS., 1992, at 16; *US Cuts With Confidence*, AIRLINE BUS., May 1993, at 11; Julius Maldutis, *Northwest Airlines Corp. — More Europe and Less Orient*, Apr. 25, 1994.

24 years, so as to be able to fly them another 15 years.[130]

Others have reduced seat pitch to "shoe horn" more passengers on board. A decade ago, USAir put 145 seats on its 727-200 aircraft; today, the same planes seat 163. United added five rows of seats to its DC-10-30s during the last decade, increasing the number of seats from 232 to almost 300.[131] TWA tried to differentiate its service by reducing the number of seats to add leg room, but it was costly. Taking four of the seats off a 141 seat MD-80 results in a $87,603 annual revenue loss.[132]

Generally speaking, and assuming market demand generates comparable load factors, there are enormous economies of scale and lower costs achievable for an airline flying relatively larger aircraft longer distances, vis-a-vis flying smaller aircraft shorter distances. In other words, the per passenger ASM costs ordinarily are lower for larger aircraft than smaller aircraft. And airlines enjoy a cost taper the longer the stage length of the flight.

Thus, Comair and Mesa Airlines, flying turboprop planes with an average stage length of between 150-200 miles, face an ASM cost of between 17-19 cents per mile, far above that of the major airlines.[133] This requires charging higher yields in short-haul markets, which is often achievable because of the dearth of competition.[134]

Fuel costs constitute a sizeable portion of operating costs, and are largely governed by events beyond the control of airline executives. The spike in fuel costs caused as a result of Saddam Hussein invading Kuwait added about $3.6 billion to the operating expenses of the world's airlines between August 1990 and March 1991.[135] While fuel costs rose significantly during the Persian Gulf crisis, they were nonetheless lower in actual and real terms than they were a decade earlier. Between 1981 and 1984, the actual cost per gallon of aviation fuel ranged between $0.79 and $1.04 per gallon, while in real terms (adjusted for inflation) it ranged between $1.04 and $1.47.[136] In contrast, aviation fuel sold in 1990 for only $0.77 per gallon, and in 1991 for $0.67 per gallon.[137]

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130. Susan Carey, *Northwest Airlines Plans to Renovate Some DC-9s Rather Than Replace Them*, WALL ST. J., Aug. 9, 1994, at A2.

131. Michael McCarthy, *Airline Squeeze Play: More Seats, Less Leg Room*, WALL ST. J., Apr. 18, 1994, at B1.

132. *Id.*

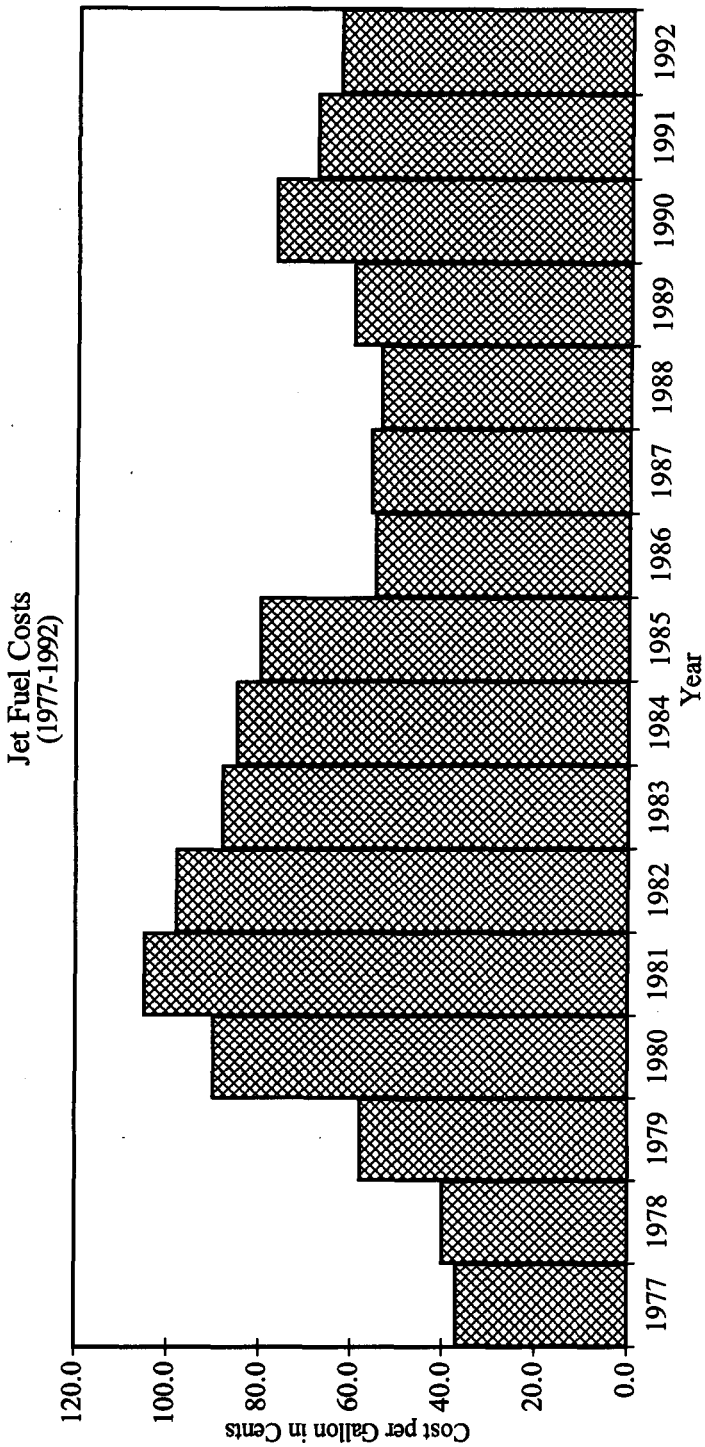
133. Larry Risley, Address to the Salomon Bros. Transportation Conference (November 17, 1994).

134. PAUL S. DEMPSEY, THE SOCIAL AND ECONOMIC CONSEQUENCES OF DEREGULATION 195-216 (1989).

135. *The Balancing Act*, AIRLINE BUS., 1992, at 14.

136. Flint, *Don't Blame It All On Fuel*, AIR TRANSPORT WORLD, Feb. 1991, at 32.

137. Julius Maldutis, *Airline Update* — November 1993 4 (1993).


Jet Fuel Costs
(1977-1992)
Cost per Gallon in Cents
120.0
100.0
80.0
60.0
40.0
20.0
0.0
Year
1977
1978
1979
1980
1981
1982
1983
1984
1985
1986
1987
1988
1989
1990
1991
1992

2. Labor Costs

Some have blamed "bad management" for the industry's woes, while others blame "greedy labor." As one economist alleged:

> It's not the fault of deregulation, as some critics claim. The basic problem is that, despite a tumultuous 15 years of labor relations since deregulation, very little has really changed. Unions still hold the upper hand in bargaining power at major airlines, leading to high labor costs, low productivity and lots of red ink.[138]

Many new non-union airlines enjoy significant comparative cost advantages vis-a-vis established carriers. Arguably, labor costs are among the most potentially controllable operating costs,[139] leading troubled airlines to focus on wage and staffing reductions and productivity improvements via work rule changes. For example, Delta has announced an ambitious target of 7.5 cents per mile in three years, dubbed "Project Leadership 7.5," which would slash its costs by 19%, much of it achieved by draconian (20%) cuts in its work force.[140] Delta enjoys more flexibility to out source work and cut jobs than many of its rivals because the company is not highly unionized, although such a radical change will radically alter the traditional Delta corporate culture of labor-management cooperation.[141] Continental has already achieved unit costs of 7.56 cents a mile, although it suffers a problem on the pricing side of the equation.[142]

Some carriers have taken strikes to attempt to coerce labor to surrender concessions in wages and work rules. Frank Lorenzo's Continental took a strike in 1983, then his Eastern Airlines took a strike in 1989. Dick Ferris' United Airlines took a pilots strike in 1985. Carl Icahn's TWA took a flight attendant's strike in 1986. Bob Crandall's American took a flight attendant's strike in 1993. In each case, the carrier paid a terrible price as embittered employees sabotaged service and thereby dissuaded high-yield business traffic.

The contemporary trend is for carriers to persuade labor to take wage and work rule concessions for equity. As a result, labor now owns 45% of TWA,[143] 27% of Northwest, and 55% of United,[144] while USAir

138. Frank J. Dooley, *Fewer Jobs: Why Airlines Crash*, WALL ST. J., Mar. 30, 1994, at A16.

139. J.P. Morgan Securities, *The U.S. Airline Industry* 22 (1993).

140. Bridget O'Brian, *Delta Air to Pare Up to 15,000 Jobs, Or 20% of Staff, in Big Restructuring*, WALL ST. J., Apr. 29, 1994, at A3.

141. *Id.*

142. *See* Bridget O'Brian, *Continental Air Ousts Its Chief, A 'Lite' Backer*, WALL ST. J., Oct. 26, 1994, at A3.

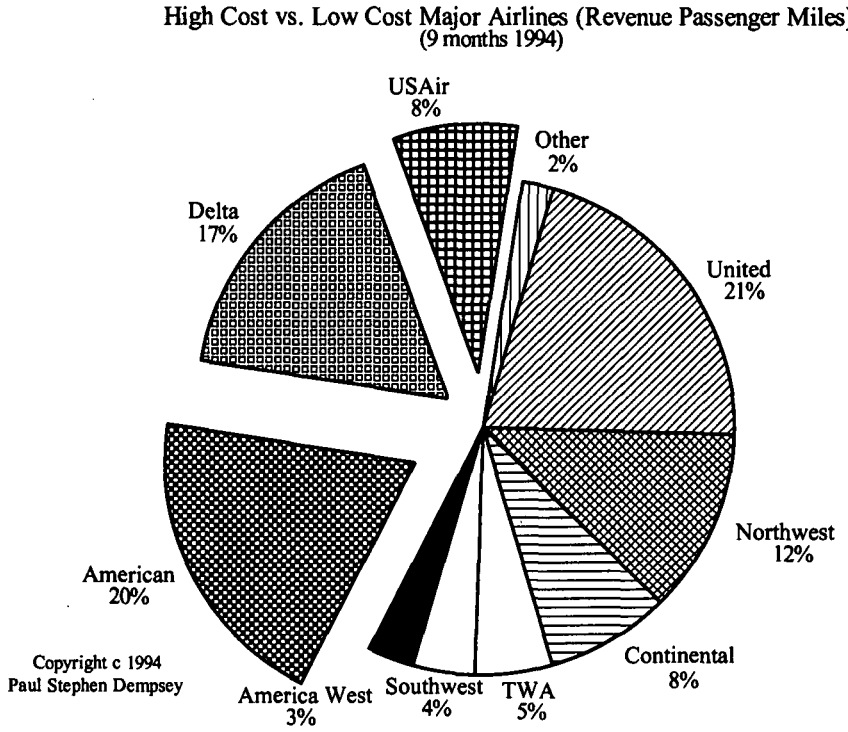
143. Michael J. McCarthy, *TWA, Seeking Savings, to Cut Up to 3,000 Jobs*, WALL ST. J., Aug. 4, 1994, at A3.

has tried to do the same.[145] The following chart reveals the exchanges of wage and work rule concessions at the major airlines:

WAGE & WORK RULES FOR EQUITY AT MAJOR AIRLINES[146]

Airline	Value of Concessions	Equity
Northwest (1993)	$886 million over 3 years	33%
TWA (1993)	$600 million over 3 years	45%
United (1994)	$8 billion over 12 years	55%

As a consequence of union busting and union "partnering," most of the U.S. airline industry is now dominated by low-cost carriers.



American Airlines, which faces low-cost competitors on 40% of its routes, seeks $750 million in wage cuts and productivity gains from its unionized employees, and has restructured 16,000 non-union workers by

144. Carl Quintanilla, *United Airlines to Hire 1,700 by Year End*, WALL ST. J., Aug. 17, 1994, at A3, A4.

145. Richard Gibson, *USAir Pilots' Plan to Trade Pay Cuts for an Equity Stake Draws Resistance*, WALL ST. J., Aug. 4, 1994, at A5.

146. AMERICAN AIRLINES, CORP., SECOND QUARTER REPORT 2-3 (1994).

offering early retirement to some, and contracting out services.[147] In January 1993, low-cost rivals competed on 8% of American's routes; in January 1994, the figure was 25%.[148] USAir management rejected an offer by pilots for $2.5 billion in concessions over five years in exchange for 25% of the airline's common stock and $700 million in new preferred stock.[149]

The following chart identifies labor costs, operating expenses, and operating revenues per available seat mile for selected carriers:

AIRLINE COSTS AND REVENUE[150]
(in cents, per available seat mile (1992))

Airline	Labor Costs	Operating Expenses	Operating Revenue
America West		7.14	6.84
American	3.37	8.81	8.65
Continental		8.26	7.78
Delta	3.79	9.39	9.09
Northwest		9.00	8.51
TWA		8.82	8.17
United	3.69	9.26	8.76
Southwest	2.48	6.95	7.82
USAir		10.79	10.53

Southwest's total costs are 24% less than the industry average, which is remarkable, given the relatively short stage length of its flights. By 1994, America West had lowered its ASM costs to 7.03 cents per mile,[151] while Contiental had lowered its costs to 7.56 cents per mile.[152]

147. Bridget O'Brian, *AMR's Profit In 3rd Quarter Jumped 74%*, WALL STREET J., Oct. 21, 1994, at A8.

148. Bridget O'Brian, *AMR's Bid for Savings from Unions Faces Rocky Flight*, WALL ST. J., Oct. 19, 1994, at B4.

149. Carl Quintanilla & Judith Valente, *USAir Labor Talks Will Be Restarted by a Facilitator*, WALL ST. J., Oct. 26, 1994, at A12.

150. Adam Bryant, *Marketplace Has Big Airlines Charting Unfamiliar Skies*, DENVER POST, Dec. 5, 1993, at 4H; SH&E, The Facts About American vs. Southwest 23, Sept. 13, 1993 (unpublished study prepared on behalf of APA); James Cling, The Status of Southwest Airlines' Competitive Advantage 14 (1993) (unpublished monograph on file with the author). Operating expense data are for October 1, 1991, to September 30, 1992. For updated data, see Jane Levere & Mead Jennings, *Staying at the Top*, AIRLINE BUS., Mar. 1994, at 28, 31.

151. Maurice Myers, Address to the Salomon Bros. Transportation Conference (Nov. 17, 1994).

152. Gordon Bethune, Address to the Salomon Bros. Transportation Conference (Nov. 17, 1994).

These costs compare quite favorably with major foreign carriers:

Operating Costs of Selected Foreign Airlines[153] (1993, in cents per available seat mile)	
Japan Air Lines	18.6
British Airways	12.0
Air Canada	11.6
Qantas Airways	10.6

Labor costs typically range between 30-40% of total operating expenses for the European carriers. In 1990, labor expenses accounted for 33% at American Airlines and 21.7% at Singapore Airlines.[154] Asia-Pacific airlines are about 30% more productive than European airlines.[155] But one source noted, "The competitive advantage of low labor costs in the Asia-Pacific region, buttressed by higher yields, congestion and supportive regulators, is now being eroded by the inflationary pressures of economic growth and the differentials which that growth has generated."[156] Another predicts, "The perennial profit-makers, like Singapore Airlines, Thai International and Cathay Pacific, will see their cost advantage over other world regions eroded as economic growth fosters inflation and living standards and wages spiral upwards."[157]

Some airlines have responded to the burden of wages and employee benefits by contracting out, or "out-sourcing" services. For example, Japan Airlines and All Nippon Airways, burdened with high labor expenses exacerbated by a strong Japanese Yen, have based aircraft abroad to serve regional routes with low cost local cabin crews.[158] United contracted out sky cap and janitorial services, and sold its flight kitchens to Dobbs, which gave it $120 million, allowing it to avoid a $71 million investment in upgrading and expanding kitchens, and to enjoy a $320 million savings over 7 years. The 5,200 employees may seek a job with Dobbs, albeit at significantly lower wages. American Airlines claims that if it had the same labor costs as Continental, it would have saved $1.7 billion in 1992; if its labor costs were as low as Southwest's, it would have saved $1.1 billion that year.[159]

153. Philip Baggaley, Address Before the Chicago Convention 50th Anniversary Conference (Oct. 31, 1994).

154. Douglas Cameron & Phillip Shearman, *The Balancing Act*, Airline Bus., Jan. 1992, at 14.

155. *Id.*

156. *Id.*

157. Tom Ballantyne, *Success Breeds Its Own Problems*, Airline Bus., 53 (Jan. 1992).

158. Cameron & Shearman, *supra* note 154, at 16.

159. Commercial Aviation News, Sept. 20, 1993, at 4.

3. Marketing Costs

Marketing costs increased 20% among the world's airlines during the 1980s.[160] Travel agent commissions have grown enormously, rising more than 308% as a percentage of U.S. airlines' operating expenses during the 1980s.[161] Before deregulation, travel agent commissions consumed 4.2% of airline operating expenses, or a total of $883 million; by 1993, commissions had grown to 11.3%, for a total of $7.5 billion.[162] Northwest reported average commissions of 38% in the trans-Pacific market in 1991.[163]

One source observed:

> The lesson of deregulation — that carriers compete on fares rather than quality — has an inherent contradiction. The pressures to lower costs to compete on price run counter to the rise in marketing costs to retain and expand the customer base. This has generated a new school of thought, which says that cost-cutting cannot be a priority when the increasingly sophisticated marketing carries such an inflated price tag.[164]

Some carriers, such as Delta and Southwest, have taken the "bull by the horns" and unilaterally rolled back travel agent commissions, and embraced ticketless travel.[165] The downside risk was that travel agents might collectively retaliate by steering passengers to more generous carriers, although Northwest, American, United and USAir followed Delta's lead promptly thereafter, negating the likelihood of business shifting.

Ticketless travel will put airlines on par with hotels, which take a credit card number over the telephone, and give customers an oral confirmation number, usually with no written supplementation. Travel agents will be forced to charge consumers directly for their services, and many marginal ticket agents will go belly up. Until consumers have direct access to CRSs, they will incur significant transaction costs in calling around to find which airline offers the most convenient flight at the lowest price.

D. Global Marketing & Equity Alliances

1. Global Marketing Alliances

Cabotage restrictions prohibit foreign airlines from plying the domestic trade. They may be avoided in various ways, including "sharing codes, making 'blocked space' arrangements for both passengers and

160. Cameron & Shearman, *supra* note 154, at 16.
161. Dempsey et al., *surpa* note 61, at § 2.19.
162. Babbitt, *supra* note 23, at 10, 12.
163. Cameron & Shearman, *supra* note 154, at 16.
164. *Id.*
165. James Hirsch, *Delta Air Caps Its Commission On Ticket Sales*, Wall St. J., Feb. 10, 1995, at A2; Jane Levere, *Paperless Journey*, Airline Bus., Jan. 1995, at 18.

cargo, obtaining an ownership interest in a U.S. carrier, making arrangements between U.S. and foreign carriers covering computer reservations systems, and setting up joint frequent flier and marketing programs."[166]

Hence, several major international marketing alliances have emerged:

1. Code Sharing and Blocked Space Relationships
2. Computer Reservations Systems
3. Frequent Flyer Programs

a. Code-Sharing, Blocked Space, & Funnel Flights

Code-sharing has become an increasingly popular means of connecting airline networks in a way to enhance marketing opportunities and, it has been argued, provide a seamless product. For example, a passenger seeking to travel from Ithaca, N.Y., to Brasilia, Brazil, could fly on a series of United Airlines through flight numbers under a code-sharing relationship whereby TW Express would pick the passenger up in Ithaca and deliver him to New York Kennedy Airport, United would pick him up at Kennedy and fly him to Rio de Janiero, and TransBrasil Airways would take him on to Brasilia.[167] Only one passenger every other month takes such a journey, but they can do it all on under the United code-sharing umbrella.

"Blocked space" arrangements involve the leasing or reservation of a specific number of seats by one passenger airline for its passengers to be flown in aircraft operated by another airline. They allow airlines the advantage of offering on-line connections and the potential to draw greater traffic as a result of having one carrier listed in the computer reservations systems, on timetables, and in advertisements, rather than two connecting carriers. For example, Northwest might enter into a blocked space agreement with KLM whereby Northwest would sell up to a specified number of seats on the KLM Minneapolis-Amsterdam flight to Northwest's customers.

"Funnel flights" involve a single flight number and ticket coupon for change-of-gauge operations, whereby passengers are transferred from one aircraft to another.

"Code sharing" and "funnel flights" are two airline practices that have become more widespread in recent years, and more widely condemned in the press.[168] As early as 1988, Thomas Plaskett, chairman of

166. Schraft & Rosen, *Cabotage or Sabotage?*, AIRLINE PILOT, Oct. 1987, at 29.

167. *See* UNITED AIRLINES, SECOND QUARTER REPORT 2 (1993).

168. Air Canada has a marketing alliance with United, which increased passenger connections between the two airlines by 171% in its first four months. David Carr, *Canada's Airline Conundrum*, AIRLINE BUS., May 1993, at 50. KLM has a code-sharing agreement with North-

Pan Am, prophetically described "code sharing" as an "ominous trend" that could be injurious to consumers and to airline competition.[169] In mid-1994, the Wall Street Journal observed, "a growing number of critics claim that network arrangements actually deceive consumers, narrow their choices and possibly raise ticket prices."[170] Both of these practices are driven by the opportunities for consumer deception afforded by fraudulently manipulating the computer reservations systems.

Among the most powerful and ubiquitous computer systems in the world are those owned by the airlines. "They reduce the planet to microbits of electrons, allowing us to move about Mother Earth with ease, and book a flight, hotel room, or rental car anywhere we can imagine."[171]

What a pity that this information stream is becoming so horribly polluted.

An extremely limited number of consumers have direct access to one of the major computer reservations systems — Sabre, Apollo, Worldspan, or System One. Instead, most consumers must rely on an intermediary in purchasing an airline ticket, usually a travel agent, to render accurate, complete and objective information regarding the schedule, price, availability and routing of specific flights. The travel agent, in turn, must rely on the integrity of the computer reservation system to which he or she is connected. The CRS must rely on the integrity of the information sup-

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west, acquired as a result of a $400 million investment in the U.S. carrier, which because of Northwest's anemic performance, has been written down on KLM's books to zero. British Airways has a code-sharing agreement with USAir, acquired as a result of its $300 million investment in the carrier. United has entered into a code sharing relationship with Lufthansa.

Iberia signed a code-sharing and block sheet agreement with Carnival Airlines, effectively giving it one-stop service from Spain to New York, Chicago, Los Angeles, Houston and New Orleans through a Miami hub. David Cameron, *Iberia Turns Florida Keys*, AIRLINE BUS., May 1993, at 10. Yet soon after creating it, Iberia announced it was retrenching, and considering eliminating the Miami hub. Carlta Vitzthum, *Iberia Retrenches; Costs Cut After Years of Growth*, WALL ST. J., Sept. 24, 1993, at B5D. Nonetheless, it plans to continue participation in the fast growing Latin American market, where it enjoys a 35% market share and equity interest in three local carriers. *Id.* Iberia owns 30% of Aerolinas Argentinas, 37.5% of Ladeco Chilean Airlines, and 45% of Viasa Venezuelan International Airways. Ian Verchere, *Iberia Airlines' Shakeup Extends to South America*, COMMERCIAL AVIATION NEWS, Sept. 13, 1993, at 11. Since 1992, Iberia has trimmed its work force by 5,000, to 24,000 employees. Vitzthum, *supra*, at B5D.

China Airlines has a code sharing relationship with TWA allowing through ticketing from Asia through the gateways of San Francisco and Los Angeles to New York. Qantas has a similar relationship with Canadian Airlines.

169. Jennifer Dorsey, *Plaskett Sees Threat from Foreign Code-Sharing*, TRAVEL WEEKLY, June 20, 1988, at 8.

170. Susan Carey, *Cross-Border Linkups Bring Airlines Range But Uncertain Benefits*, WALL ST. J., June 7, 1994, at A1.

171. Paul S. Dempsey, *Airlines' Polluted Information Stream Harmful to Consumers*, HOUSTON CHRONICLE, Oct. 2, 1994, at 5C.

plied by the scores of participating domestic and international airlines.[172]

The upstream polluter poisons the river for those who drink downstream. Corruption of the information provided by the carriers distorts the CRSs, which in turn, causes the travel agents to provide erroneous information to consumers, who are thereby deprived of choices they prefer, creating a dysfunctional market injuring not only consumers, but also competing airlines offering equivalent or superior service alternatives. DOT approval of "code sharing" and "funnel flights" legitimates such carrier corruption of flight information.[173]

Even before price, most consumers choose an airline, first, based on scheduling convenience (i.e., which airline offers a flight on the date and time the consumer wants to travel to his or her selected destination).[174] Once date and time are established, the consumer turns to convenience, usually with the following priorities:

1. NONSTOP SERVICE. Nonstop flights are preferred over flights with one or more stops (because flights which stop inevitably consume more origin-destination travel time);
2. THROUGH-PLANE SERVICE. Single plane service is preferred over connecting flights (because of the inconvenience and delay of changing planes, often at a crowded hub airport, coupled with the increased possibility of missed connections and lost baggage);
3. ON-LINE CONNECTING SERVICE. Single carrier connecting service is preferred over connecting carrier service (for all the reasons stated above, as well as the uncertainty of the quality of service on the connecting carrier, and the possibility of being transferred to inferior aircraft);
4. INTERLINE SERVICE. Connecting carrier service is preferred over non-interline connecting service (because interline agreements allow "seamless service" — through joint-line ticketing and baggage transfers); and
5. NON-INTERLINE CONNECTING SERVICE. Non-interline connecting carrier service is the least desirable of all (because absent an interline agreement between the carriers, passengers are forced independently to book their connections, with no joint rates or through ticketing, and must collect their own bags and transfer them between connecting aircraft).[175]

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172. THOMAS DICKERSON, TRAVEL LAW § 2.05[6] (1993).

173. Paul S. Dempsey, *Airline Code-Sharing Flying Out of Control*, ROCKY MTN. NEWS, Oct. 10, 1994, at 55; Paul S. Dempsey, *Airlines' Polluted Information Stream Harmful to Consumers*, HOUS. CHRONICLE, Oct. 2, 1994, at 5C.

174. 20.3% of U.S. residents select a carrier based on schedule, while only 13.8% choose one based on price. AVIATION DAILY, Oct. 3, 1991, at 23; reprinted in DEMPSEY et. al., *supra* note 61, § 2.24.

175. *See El Al Asks DOT to Resist Northwest's Call for Trade Sanctions*, 53 TRAVEL WEEKLY Mar. 3, 1994, at 6.

Yet the practices of "code sharing" and "funnel flights" obfuscate the service actually being provided, inducing consumers to purchase an inferior product from that which they prefer. "Funnel flights" deceive consumers into believing they are purchasing product #2 (through-plane service), when they are actually being sold product #3 (on-line connecting service). "Code sharing" deceives consumers into believing they are purchasing product #3 (on-line connecting service), when they are in fact being deceptively sold product #4 (interline service). By giving the appearance of an on-line connection, it appears to be a superior travel option. And although the DOT has promulgated rules requiring "code sharing" flights be listed with an asterisk and that passengers be so informed, at least a third of consumers are not told what airline they are actually flying.[176]

Moreover, the computer reservations systems are programmed by their megacarrier owners to give a significant display preference to a domestic on-line connection over a domestic interline connection — in effect, superior shelf space.[177] This is true even for a pseudo on-line connection, such as a code sharing arrangement with an independent airline. As one source noted, "Even with an asterisk, it beats being consigned to the third screen."[178]

By listing the same flight several times, "code sharing" and "funnel flights" consume the finite number of lines available on the computer reservations screen — valuable shelf space.[179] Multiple listings of the same flight combinations squeeze out superior service offerings on each of the major CRSs — Sabre, Apollo, Worldspan and System One. International code shares show up on the CRSs once under the U.S. flag carrier's code (e.g., Northwest's, or NW), once under the foreign-flag carrier's code (e.g., KLM, or KL), and once again as an asterisked interline trip in which the two connect, with all three sometimes consuming the entire first page of the CRS display screen.[180] Funnel flights show up in the CRS as many as three separate times as well, shoving alternative

176. Mead Jennings, *U.S. Tries to Clarify Codes*, AIRLINE BUS., June 1994, at 12.

177. *See Economics, Code Sharing Threaten Survival of Commuter Airlines*, AV. WEEK & SPACE TECH., Apr. 27, 1987, at 57.

178. Bill Poling, *International Code Sharing Heats Up*, TRAVEL WEEKLY, Apr. 7, 1988, at 59.

179. *See* Daniel Pearl, *Airlines Squawk Over Screen-Hogging*, WALL ST. J., June 14, 1994, at B1.

180. It would be the equivalent of Coca-Cola and Pepsi agreeing to sell a joint Pepsi-Coke mix, with Coca-Cola selling it as Coke2, Pepsi-Cola selling it as Pepsi2, and both selling it as Pepsi-Coke, consuming three times the super market shelf space of competing products, and squeezing some of those competitors off the shelf. Thus, even though many consumers might prefer pedigree "Big K" Cola to the cross-bred Pepsi-Coke combination, "Big K" may be nowhere to be found.

competitive offerings onto the second page of the CRS screen, where they collect computer dust.

Because of the pressure of time, most airline ticket sales are made by travel agents from the first page of the computer reservations screen — it is widely acknowledged that more than 70% of all flights are sold from the first page of the screen. By relegating competitive service offerings to inferior display on computer reservations systems (the second or third page of the CRS), these practices deceive consumers and damage competing airlines, even though their "interlining" options, or even "on-line" options, may be as good as, or in some respects superior to, the "code sharing" and "funnel flight" alternatives with which they compete.

Code-sharing raises not only consumer deception problems, it poses significant competition problems as well. Domestically, most megacarriers refuse to code-share or enter into joint fare relationships with independent jet carriers, instead insisting their code-share partners fly no jet equipment.[181] Their refusal has relegated numerous small and medium sized communities across America to inferior turboprop or piston air service. Aside from the social consequences of the deterioration of rural air service, such discriminatory treatment by megacarriers in favor of affiliates and against independent carriers also raises serious antitrust concerns under the "essential facilities doctrine."[182]

"Funnel flights" raise similar concerns. This author was in the TWA international terminal at John F. Kennedy Airport in New York recently, and was astounded that, notwithstanding the laws of physics, the departure screens displayed two or three flights boarding simultaneously (at precisely the same gate and time) to various nonstop destinations across the Atlantic.

This author attempted to reconstruct a bit of what he saw from TWA's May 1, 1994, timetable. TWA appears to funnel at least the following flights through JFK in New York:

181. Continental Airlines is the notable exception, which has entered into a major code-sharing relationship with America West Airlines.

182. *See* ROBERT HARDAWAY & PAUL DEMPSEY, *Airlines, Airports and Antitrust: A Proposed Strategy for Enhanced Competition*, 58 J. AIR L. & COM. 455, 498-506 (1992).

Destination	Flight Number	Origin
Athens (via Paris)	800	New York
Athens	880	New York
Athens	880	San Antonio (via New Orleans)
Frankfurt	740	New York
Frankfurt	740	Seattle
Frankfurt	758	St. Louis
Frankfurt	742	Kansas City
Lisbon	900	New York
Lisbon	910	San Francisco
Lisbon	912	Kansas City
Madrid	904	New York
Madrid	914	Los Angeles
Madrid	905	Washington, DC (Nat'l Airport)
Milan	842	New York
Milan	842	San Francisco
Milan	850	Los Angeles
Rome	840	New York
Rome	886	San Francisco
Rome	844	St. Louis
Rome	854	Kansas City

There are probably more, and TWA is probably not the most egregious of the abusers. But it may be at least dismaying for a passenger in San Antonio, who is issued a single ticket coupon for flight 880 to Athens, Greece, to find himself not only stopping in New Orleans, but also changing planes in New York. Before funnel flights, he would have received two ticket coupons for two separate flights (designated by two separate flight numbers), one from San Antonio to New York, and the other from New York to Athens. For its part, TWA can pretend to offer single-plane service straight through from San Antonio to Athens. And if a passenger does end up connecting to flight 800 from New York to Athens, he will find himself stopping in Paris en route, perhaps changing aircraft again.

It may also be a bit surprising for a Seattle passenger on flight 740 bound for Frankfurt, to find himself in New York not only changing airline terminals and planes, but boarding at a gate with three other flights at precisely the same departure time on to the same wide-bodied aircraft bound for Frankfurt.[183] For its part, TWA can hold itself out as providing single-plane service to Frankfurt from New York, Seattle, St. Louis, and Kansas City, when in fact, only the New York-Rome service is single-aircraft. Moreover, and perhaps more importantly, TWA fills valuable shelf space in the computer reservations systems with four separate flights and flight numbers to Rome, when in fact, it flies only a single jet

183. Richard J. Newman, *Direct Flight? Hah! You May End Up in an Unexpected Airport — or on an Unexpected Carrier*, U.S. NEWS & WORLD REP., Aug. 15, 1994, at 58.

across the Atlantic to Rome. Again, that is not to say that TWA is the worst perpetrator of such practices. Even airlines which would prefer not to, find they must commit such practices to remain competitive with other airlines which engage in them.

Many consumers have traditionally assumed that a single ticket coupon with a single flight number means flying in a single aircraft (with or without stops), but without changing planes. For the overwhelming majority of flights, each change of plane carries a separate flight number and separate ticket coupon. Many consumers prefer not to have to get off the plane and sit and wait, and wait, and wait, at a crowded hub airport, while the airline gets another chance to lose their bags or cause the passenger to miss a connecting flight.

Only a very limited number of consumers enjoy direct access to the CRSs; the overwhelming majority do not. If they did have direct access to one of the computer reservations systems, they would not have to rely on a frazzled travel agent to peel through the several pages of the displays (now cluttered with multiple code sharing and funnel flight listings) to determine whether what fictitiously appears to be the single-plane service in fact connects with other aircraft, how long and where the connection transpires, to what kind of aircraft they will be transferred, and (in a code-sharing situation), the identity of the connecting carrier. More importantly, they could determine whether there was a real nonstop or single-plane alternative on another airline. But direct CRS access is probably years away from most consumers.

Not only do code sharing and funnel flights deceive consumers, they also injure competing airlines. In reviewing the impact code sharing had on small competing independent regional airlines, Professor Clinton Oster found "there seem to be few, if any, markets where an independent can maintain its market share in competition with the code-sharing partner of a major jet carrier."[184] He further found that "when a code-sharing partner prevails in a market, service levels generally seem to drop."[185] William Britt, founder of Britt Airways (at one time the nation's largest regional airline), complained that independent regional air carriers cannot survive when their competitors adopt the codes of the major airlines.[186]

In fact, since the dawn of commercial aviation, all of the purported consumer advantages of "code sharing" have been available under traditional forms of carrier interlining — scheduling, ticketing and baggage

184. Bill Poling, *Code Sharing Threatens Independents*, TRAVEL WEEKLY, Jan. 5, 1987, at 2.

185. *Id. See also* Robert Moorman, *Dilemma of Independent, Non-Aligned Regionals*, AIR TRANSPORT WORLD, July 1988, at 89.

186. Bill Poling, *DOT Adviser Revises Data On Ill Effects of Code Sharing*, TRAVEL WEEKLY, Dec. 25, 1986, at 1.

coordination — all the essential elements of so-called "seamless service."[187] "Code sharing" merely advances interlining to the point of producing consumer deception, purporting to offer consumers something more than they are actually being sold. "Funnel flights" deceive consumers into believing they will not have to change planes, when in fact, they must. Many consumers are thereby denied the competitive alternative of a nonstop flight via a competing airline.

Moreover, interlining to a code share partner may lead to travel via a carrier or type of aircraft consumers would otherwise prefer to avoid. Domestically, a "code sharing" relationship typically funnels consumers into commuter affiliates flying small aircraft below the weather.[188] Internationally, it can result in being funnelled into a third-world airline flying old Soviet aircraft.[189]

Among the parties which have pointed out the pernicious effects of "code sharing" and "funnel flights" to both the Civil Aeronautics Board and the U.S. Department of Transportation during the past decade have been the following:

American Airlines: The funnel flight "masquerade means that many passengers who will in fact be required to change planes are induced to purchase a product in the belief that they will not be required to do so. . . . It is surprising that a practice so deceptive on its face has been tolerated for so long."[190]

American Airlines: Code-sharing is an "unfair practice that deceives, misleads, and confuses consumers in violation of Section 411 of the Federal Aviation Act."[191]

American Airlines: "The purpose and effect of [code-sharing] is to clutter CRS display screens and relegate competitive travel alternatives to lower screen positions than those they would otherwise occupy."[192]

Association of Retail Travel Agents: The DOT should promulgate a rule prohibiting "screen padding."[193]

American Society of Travel Agents: "The effect of double or sometimes even triple listing the same flight option is to clutter CRS screens."[194]

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187. *See* Robert Moorman, *supra* note 185, at 89.

188. *See* Richard Newman, *How Safe Are Small Planes?*, U.S. NEWS & WORLD REP., Nov. 14, 1994, at 68.

189. *See* Alex McWhirter, *Codes of Misconduct*, BUSINESS TRAVELER, Mar. 1994, at 16.

190. DOT Docket 47546, 1991. This petition was supported by British Airways and Lufthansa. *See also* American Airlines petition in CAB Docket 41875, 1983.

191. DOT Docket 49223, 1994.

192. DOT Docket 49260, 1994.

193. 57 Fed. Reg. 43780, 1992.

194. DOT Docket 49260, 1994.

British Airways: "it is intrinsically deceptive for two carriers to share a designator code."[195]

European Civil Aviation Conference: Code-sharing is "screen padding" and "manipulation of flight categorization."[196]

Senator Wendell Ford: Code-sharing is "inherently dishonest," and "a legal way of advertising one product, but then selling another."[197]

North American Airlines: "code-sharing relationships preclude smaller carriers from competing for important international feed traffic."[198]

Donald L. Pevsner: "all single-coupon ticketing for two or more flight sectors is inherently deceptive."[199]

TACA International: Funnel flights are deceptive and unfair methods of competition.[200]

United Air Lines: "the sharing of designators is misleading and deceptive and should not be permitted."[201]

USAir: Multiple listing reduces "the proportion of competitive flights displayed."[202]

Notwithstanding these widespread concerns and despite the broad-based nature of the opposition, including formal petitions for rulemaking, the DOT has taken little meaningful action to protect the consuming public or injured competitors from these unfair and deceptive practices. Remarkably, the Clinton Administration's DOT appears more inclined to support these practices than its predecessors, with its continued rhetorical praise of such practices.

According to the U.S. General Accounting Office, the DOT approved 39 international code-sharing arrangements between 1987 and February 1993. Between February 1993 and March 1994, the DOT approved 89 such agreements.[203] Moreover, the international integration made possible by "code sharing" promises to reduce competition in international markets, transforming the airline industry into a small number of global megacarrier alliances.

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195. DOT Docket 42199, 1984. *See also* comments of KLM in DOT Docket 42199, 1984.

196. Letter to DOT Ass't Sec. Jeffrey Shane (April. 16, 1987).

197. Letter to DOT Secretary Pena (Nov. 3, 1993).

198. Letter to DOT Office of International Aviation (Jan. 28, 1994).

199. DOT Docket 47546, 1993. Mr. Pevsner first called for truth in flight listings in 1983, CAB Docket 41217, 1983.

200. DOT Dockets 49512 and 49513, 1994. These petitions were supported by Aviateca and NICA.

201. CAB Docket 42199, 1984. *See also* comments of United Air Lines in CAB Docket 41875, 1983.

202. DOT Docket 43918, 1986.

203. *DOT Assesses International Code Sharing, Plans Rulemaking On Notification*, AVIATION WEEKLY, May 6, 1994, at 203.

Globalization is a euphemism for cartelization. We did not see meaningful competition between Continental and Eastern when Frank Lorenzo dragged them under a single roof. Nor will we see meaningful competition between Northwest and KLM now that they are commonly owned and blending marketing under a bilateral which confers unprecedented and wholly indefensible antitrust immunity, condoning unprecedented pooling — a bilateral air transport agreement concluded, by the way, only months after Northwest gave George Bush's committee to reelect the President $100,000.00.

In summary, the fundamental problems of such marketing alliances as code-sharing and funnel flights are:

1. Their success relies upon their ability to flood the computer reservations system screens with duplicative information so as to deceive the consumer into purchasing a product that may be different than that he or she prefers;

2. Discriminatory alliances between airlines reduces or eliminates competition between them and diverts traffic from competitors, thereby leading to higher levels of concentration.

Two major international aviation organizations have provided leadership in this area. The U.N. International Civil Aviation Organization has finalized a CRS code of conduct which requires that: (1) "funnel flights" be treated as connections; (2) "code sharing" trips be listed as offline connections; (3) such combinations should not be listed more than once under different codes or flight numbers; and (4) displays should clearly indicate when a single flight number itinerary involves a change in aircraft, change in airport, or involves "code sharing."[204] The European Civil Aviation Conference has adopted a CRS code of conduct requiring all "code sharing" or "funnel flight" trips specifically be designated as such, rather than on-line and direct flights, respectively.[205]

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204. Nadine Godwin, *ICAO Finalizes CRS Code of Conduct*, TRAVEL WEEKLY, Dec. 22, 1988, at 4.

205. *European Aviation Group Expected to Adopt Code on Res Displays*, TRAVEL WEEKLY, Mar. 9, 1989, at 10; Nadine Goodwin, *ECAC To Issue CRS Regulations*, TRAVEL WEEKLY, Apr. 21, 1988, at 1. All of this could be rectified very simply. All DOT need do is promulgate a common sense rule under section 411 of the Federal Aviation Act requiring that every separate flight have a separate flight number and separate ticket coupon, and that there be no multiple listing of flights in the computer reservations systems.

The U.S. Department of Transportation has a statutory responsibility to protect the public against unfair and deceptive competitive practices and unfair methods of competition. 49 U.S.C.A. § 41712 (West 1994). This responsibility makes it imperative that the DOT immediately inaugurate a rulemaking which, at minimum, should:

1. Eliminate all multiple-listing of flights in computer reservations systems; and

2. Require that all consumers be fully informed, orally by the travel agent, and in writing (preferably with the issuance of a separate ticket coupon for each flight in the itinerary), of the true

b. Computer Reservations Systems

Foreign alliances with U.S. airlines began in the 1980s with shared frequent flyer programs, then entered computer reservations systems, code-sharing, and finally turned to outright equity ownership. The following charts revel the alliances of the two dominant European computer reservations systems, and a major Asian CRS.

EUROPEAN COMPUTER RESERVATIONS SYSTEMS PARTNERS

Galileo	Amadeus
United (38.0%)	Texas Air
British Airways (14.7%)	Air France
KLM (12.1%)	Lufthansa
Swissair (13.2%)	Iberia
Alitalia (8.7%)	SAS
USAir (11.0%)	
Air Canada (1%)	
Olympic (1%)	

ASIAN COMPUTER RESERVATIONS SYSTEM PARTNERS

Abacus
ANA
Cathay Pacific
Malaysia Airlines
Singapore Airlines
China Airlines
Royal Brunei
(and a small share of WORLDSPAN)

c. Frequent Flyer Programs

Several Asian frequent flyer alliances have emerged, including one between Korean Air Lines, China Airlines and Philippine Airlines. Cathay Pacific, Singapore Airlines, and Malaysia Airlines also announced plans to launch a joint Asia Frequent Flyer program.[206] Ansett is affiliated with Singapore Airlines, All Nippon Airways, and United Airlines.[207]

identity of the actual carrier providing the service, the number of stops, changes of aircraft, and types of aircraft.

Continued inaction will cause a cancerous proliferation of such fraudulent practices as even more carriers (even those which philosophically oppose "code sharing" and "funnel flights") clutter the CRSs with multiple flight listings of their own as a competitive defense mechanism, thereby causing inordinate traffic congestion on the Information Superhighway.

206. *Ansett Welds Asian FFPs*, AIRLINE BUS., May 1993, at 16.

207. *Id.*

Some of the major U.S. airline frequent flyer relationships with foreign carriers are as follows:

American Airlines
Canadian Airlines International
Cathay Pacific
Qantas
Singapore Airlines
TWA

Continental Airlines
Aer Lingus
Alitalia
Austrian
Cayman Airways
Iberia
KLM
LanChile
SAS

Delta Air Lines
Air New Zealand
Japan Airlines
KLM
Lufthansa
Singapore Airlines
Swissair

TWA
Air India
Air New Zealand
Philippine Airlines

United Air Lines
Air France
Alitalia
British Midland
Iberia
KLM
Lufthansa
Sabena
Swissair

USAir
Air France
British Airways
Finnair
Lufthansa
Philippine Airlines
Swissair

2. Global Equity Alliances

a. U.S. Equity Alliances

Foreign airlines have exhibited a tenacious interest in penetrating the U.S. passenger market — the largest market in the world. In the last few years, KLM bought a huge piece of Northwest; SAS purchased a chunk of Continental; Singapore Airlines and Swissair each acquired a slice of Delta; and British Airways unsuccessfully sought a share of United Airlines, and subsequently purchased a large slice of USAir. The following chart depicts the substantial foreign airline interests in U.S. flag carriers:

FOREIGN AIRLINE OWNERSHIP OF U.S. AIRLINES

Foreign Airline	Percentage Ownership	U.S. Airline
SAS	18.4%	Continental*
Swissair	5 %	Delta
Singapore Airlines	5 %	Delta
Ansett Airlines	17 %	America West*
Japan Air Lines	20 %	Hawaiian Airlines*
KLM	49 %	Northwest*
British Air	15 %	United**
British Air	24.6%	USAir
Air Canada	27.5%	Continental

* investment written down to zero
** proposed; later withdrawn

The equity interests by Scandinavian Airline System [SAS] in Continental Airline Holdings was inspired by the U.S. carrier's need for a substantial infusion of new capital. From SAS's perspective, the Texas Air alliance gave it new feed into its transatlantic routes; SAS moved its international hub from New York Kennedy Airport to Newark, where Texas Air's Continental and Eastern could provide domestic feed.[208] Swissair's and Singapore Airlines' interest in Delta appears to have been inspired by different reasons — the desire of Delta to have a friendly partners poised to fend off LBOs, and to align itself with two of the world's carriers renowned for a high quality product.

But most are motivated by foreign airlines' interests in creating operating and market alliances. Thus, they invest "dumb equity," accepting sub-optimal returns because they anticipate synergistic revenue on the passenger feed U.S. airlines promise them, and the diminution of competition thereby created.

As a practical matter, however, much of the foreign investment in U.S. airlines has been an economic failure. SAS wrote its investment in Continental down to zero. KLM has watched its investment in Northwest

208. *Repeating Mistakes*, J. COMMERCE, Aug. 30, 1989, at 8A.

deteriorate. Ansett must worry as America West languishes in bankruptcy. Japan Air Lines can hardly be enthused about the state of Hawaiian Airlines.

Not only are foreign airlines affiliating with U.S. carriers. Other international aviation alliances and acquisitions are emerging, including, as we shall see, British Airway's acquisition of British Caledonian, and Air France's purchase of UTA. The following, rather incomplete, chart reveals several of the major ownership interests of foreign airlines:

CROSS OWNERSHIP AGREEMENTS BETWEEN FOREIGN AIRLINES [209]

Purchaser	Percentage Ownership	Target
Air France	1.5%	Austrian Airlines
Air France	71%	UTA
Air France	37%	Air Inter
Air France	2%	Austrian Airlines
American	8%	Air New Zealand
ANA	10%	Austrian Airlines
Cathay Pacific	35%	Dragonair
Delta	3%	Singapore Airlines
Delta	5%	Swissair
Iberia	35%	Viasa
Iberia	85%	AerolineasArgentinas
Japan Air Lines	8%	Air New Zealand
KLM	15%	Air UK
Qantas	20%	Air New Zealand
SAS	5%	Swissair
SAS	35%	Lan Chile
SAS	25%	Airlines of Britain
SAS	16%	CTA
Singapore	3%	Swissair
Swissair	10%	Austrian Airlines
Swissair	5%	SAS

b. European Equity Alliances

One source predicts that the "European airline industry will consolidate into four, perhaps five, large systems to achieve economies of scale and to successfully compete against other global airline combines."[210] Market Darwinism has led each airline to fear for its survival, and to extend its route network via alliances to insure it will be one of the remaining megacarriers in the next century.

209. Testimony of Helane Becker (vice president, Lehman Brothers) Before the Subcomm. on Aviation of the House Comm. on Public Works and Transportation (Feb. 6, 1991), at 5. *Going Steady*, ECONOMIST, July 22, 1989, at 60; *Overlapping Airlines: Recent Investments*, WALL ST. J., July 23, 1991, at A8.

210. Maldutis, *supra* note 4.

(1) THE BRITISH AIR GROUP
British Airways
British Caledonian (absorbed)
USAir (25%)
Qantas (25%)
Air Russia (31%)
Deutsch BA (49%)
TAT (49%)
Dan Air (100%)
Brymon (40%)

Geographically, British Airways [BA] is the world's largest scheduled international passenger airline, serving 72 nations with a total of 155 destinations and transporting 28 million passengers.[211] It was fully privatized in 1987. British Airways is the leading carrier in the U.S.-U.K. market, flying nearly 40% of the seats (up from 29% in 1985).[212]

BA has been profitable each year for the last ten. Various sources have attributed its success, vis-a-vis its European cousins, to: (1) its protected position under the U.S.-U.K. bilateral; (2) its superior origin and destination market, resulting in better yields; (3) its superior route structure; (4) pre-privatization write off of the Concorde; (5) its greater flexibility as a privatized company; (6) its culture of cost-consciousness; (7) enhanced labor and asset utilization; and (8) targeted marketing.[213]

British Airways has been on a major expansion program, buying equity in a host of regional carriers around the world. BA spent $300 million for 24.6% voting stock in USAir, and is implementing code sharing arrangements, to give it access to 65 U.S. destinations via ten U.S. gateways.[214] In 1993, it spent $666 million for 25% of Qantas Airways (which absorbed Australian Airlines, and invested in Air New Zealand and Air Pacific).[215] BA owns nearly half (and holds an option to buy the other half) of TAT, France's largest independent airline, with 20% of the landing slots at Orly Airport, Paris' principal domestic airport, and routes to 32 domestic and four international destinations.[216] BA also acquired the assets of Dan-Air, based at London Gatwick Airport, and entered into a new franchising agreement with CityFlyer Express, both of which will operate under the British Airways name.[217] In 1992, British Airways ac-

211. Maldutis, *supra* note 86, at 2.
212. *Id.* at 9.
213. Ron Katz, *The Fine Art of Profit*, AIRLINE BUS., Jan. 1994, at 24.
214. Maldutis, *supra* note 86, at 3.
215. *Id.* at 3; Evans, *supra* note 7, at 48, 53.
216. Maldutis, *supra* note 86, at 3, 7.
217. *Id.* at 4.

quired nearly half of Delta Air, renamed Deutsche BA.[218] In addition to the carrier's regional routes, it has been given authority to fly from Berlin to Munich, Stuttgart, Cologne, Dusseldorf, and Moscow.[219] BA owns nearly a third of Air Russia, which will begin service from Moscow in 1995 or 1996.[220] As a Qantas executive observed, "You can expect us to hunt as a pack."[221]

BA has been described as having one of the best management teams in the airline industry: "Management can be characterized as aggressive and demanding. It will, however, be challenged to integrate its far flung airline investments into a cohesive integrated operating entity."[222] Another source observed, "The real test will be whether BA's internal cost discipline, and its competitive edge, will be transposed onto its partnerships."[223]

But BA also inherited a route system from a paternalistic British government intent on protecting a BOAC which unified a far flung Empire. This included a dominant position at London's slot-constrained Heathrow Airport, at which only two U.S. carriers have been permitted entry. As Guy Kekwick observed, "The incumbents at Heathrow do enjoy near-monopoly profits from their positions at what is the leading international airport in Europe, if not the world."[224]

(2) THE AIR FRANCE GROUP

Air France
UTA (absorbed)
Air Inter (wholly owned)
Sabena (partially owned)
CSA (partially owned)
Air Canada (marketing alliance)
Aeromexico (marketing alliance)
Vietnam Airlines (marketing alliance)
Servair (catering)

Air France merged with UTA and integrated domestic service though Air Inter, allowing it to dominate the hub at Charles de Gaulle Airport in Paris. It invested equity in Sabena (Air France and other private investors bought 37.5%, blocking any rival at Brussels) and CSA

218. Evans, *supra* note 7, at 48, 53.
219. Maldutis, *supra* note 86, at 7.
220. *Id.* at 7.
221. James Strong, Address to the Salomon Bros. Transportation Conference (Nov. 17, 1994).
222. Maldutis, *supra* note 86, at 17.
223. Ron Katz, *The Fine Art of Profit*, AIRLINE BUS., Jan. 1994, at 24.
224. Erik Ipsen, *British Airways Is Flying High, But Troubles Loom*, INTERNATIONAL HERALD TRIBUNE, May 24, 1994, at 9.

(among the more promising east European carriers), and entered into marketing agreements with Air Canada, Aeromexico and Vietnam Airlines, thereby avoiding "the pitfall of equity involvement in heavily loss-making but well positioned carriers."[225] Air France sold its Meridien Hotel group.

(3) THE ALCAZAR GROUP

In 1989, SAS, Swissair and Austrian Airlines created a loose confederation called European Quality Alliance.[226] With KLM, they reached tentative agreements to form a single system, with KLM, SAS and Swissair each owning 30%, and Austrian Airlines owning 10%. The system would revolve around the hubs of Amsterdam, Copenhagen, Geneva, Zurich, Oslo, Stockohm and Vienna. In 1992, the four carriers had revenues of $16 billion (making it the world's largest airline in terms of total sales), but lost a combined $365 million.[227] It was estimated a merger would save the carriers about $1.12 billion a year.[228]

However, merger talks collapsed in late 1993, with Swissair preferring a U.S. partnership with Delta Airlines, and KLM preferring Northwest.[229] KLM invested $400 million in Northwest in the mid-1980s.[230] Swissair also owns 5% of Delta Air Lines, and Delta owns 5% of Swissair.

(4) LUFTHANSA

Lufthansa owns Condor, its charter arm, established Lufthansa Express, a low cost no-frills subsidiary, and Lufthansa CityLine, a regional operation, and purchased equity in Austrian based Lauda Air (26%) and Luxembourg based Luxair.[231] Lauda Air's costs are just 14% of total revenue (compared with 30% for Austrian Airlines). Lauda has begun operating at London Gatwick Airport, serves Sydney, Melbourne, Hong Kong, and Bangkok, and operates code sharing services with Lufthansa into Los Angeles and Miami.[232] In late 1993, Lufthansa concluded a code-sharing relationship with United.[233]

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225. *French Polish AirFrance Group*, AIRLINE BUS., May 1, 1993, at 25-27.

226. Evans, *supra* note 7, at 48, 53.

227. Jacqueline Gallacher, *Alcazar: A Fortress in the Sky?*, COMMERCIAL AVIATION NEWS, Aug. 23, 1993, at 3, 21.

228. Brian Coleman, *Four Airlines' Bid in Europe to Unite Fails*, WALL ST. J., Nov. 22, 1993, at A8.

229. *Id.* at A8.

230. David Phelps & John Oslund, *Can High-Stakes Game Save Northwest?*, MINNEAPOLIS STAR TRIBUNE, Nov. 16, 1992.

231. Evans, *supra* note 7, at 48, 53; Gallacher, *supra* note 227, at 4.

232. Gallacher, *supra* note 227, at 4.

233. Jane Levere, *Wall St. Doubts Delta's Trans-Atlantic Projections*, COMMERCIAL AVIATION NEWS, Sept. 13, 1993, at 16.

c. North American Alliances

In Canada, carrier profitability has plummeted since the Mulrooney Administration imposed deregulation.[234] PWA lost a record $748 million in 1992.[235] Air Canada's long term debt-to-equity ratio rose to 9:1, and was expected to reach 25:1 by the end of 1993.[236] Nationair, a Montreal based charter carrier went bankrupt.[237]

Air Canada has purchased 27.5% of Continental Airlines.[238] AMR has an agreement with Canadian Airlines parent PWA to invest $195 million to buy 33% of the carrier.[239] AMR expects to earn $15 billion in services from the relationship over the next 20 years.[240]

E. Raising Capital

In the 1960s, the world's airlines spent $20 billion on capital equipment, raising 40% from internal cash flow and the rest from the capital market. In the 1970s, the industry spent $48 billion on capital equipment, raising 52% from cash flow. In the 1980s, the industry spent $143 billion on capital equipment, raising 51% from internal cash flow, much of the rest financed by leasing companies. From 1990 to 1993, capital spending totaled $127 billion, but cash flow covered only 17% of that. It has been projected that cash flow will cover only 37% of capital spending throughout this decade, while capital expenditures will double to $511 billion by the year 2003.[241] Edmund Greenslet noted,

> The really critical question is whether the airlines can, over time and on average, reverse the decline in net profit margins. . . . [I]n the end it will be capital, and the need for cash flow to support it, that is likely to be the primary driver of airline economic trends in the 1990s and beyond.[242]

Other sources project the world's airlines will need about $815 billion by the end of the decade, compared with $147 in the last decade.[243] However, enormous losses suffered under deregulation and liberalization have so polluted the balance sheets of many of the world's airlines that it will be difficult to finance investment out of earnings or raise new eq-

234. *See* Paul S. Dempsey et al., *Canadian Transport Liberalization*, 19 Transp. L.J. 113 (1990).

235. *Canada's Airline Conundrum*, Airline Bus., May 1, 1993, at 50, 53.

236. *Id.*

237. *Id.* at 50.

238. *Id.*

239. *Id.*

240. *Id.*

241. Edmund Greenslet, World Airline Capital Requirements Address to the Chicago Convention 50th Anniversary Conference (Oct. 31, 1994).

242. *Id.*

243. Maldutis, *supra* note 4; *Ranking - Skies in 1992*, Airline Bus., April 2, 1992, at 16.

uity.[244] Interest expenses at IATA carriers totaled $3.7 billion in 1992.[245]

Troubled carriers have a few alternatives to raise capital:

1. *Asset Sales.* Many airlines have cannibalized assets to stay aloft. Pan Am sold its Intercontinental Hotel chain, its Manhattan skyscraper, its transPacific and London Heathrow routes to raise operating capital.[246] TWA sold its Hilton International Hotel chain, Century 21 real estate company, and Spartan Foods.[247] Air France sold its 57% interest in Meridien Hotels.[248] Airline assets are often worth more capitalized than operating.

2. *Additional Investment From Existing Investors, Debt Holders, or Equipment Manufacturers.* Northwest approached KLM, unsuccessfully, about injecting more capital into the U.S. carrier. The equipment manufacturers assisted Continental's exit from bankruptcy by injecting capital and trading debt for equity.

3. *New Investors.* The airline industry still attracts the wealthy seeking a piece of a high-profile glamour industry. The defiance of gravity, the sweaty palms some passengers get on takeoff or landing, the magnificence of cutting edge technology, images of exotic destinations, the prestige of owning a franchise fewer in number than the National Football League, and the opportunity to become lord of a city whose hub it dominates have always attracted men with huge egos.[249] Even rapidly descending Pan Am was able to tap the capital markets with new stock issuances in the 1980s, despite its red ink.

4. *New Airline Partners.* As noted above, several foreign airlines have gained feed from the world's largest passenger and air freight market by buying equity in U.S. carriers. For example, British Air effectively turned USAir into a regional feeder airline, funnelling short-haul connecting traffic into its lucrative, long-haul, wide-bodied, transAtlantic system, to be fed throughout its beyond-Heathrow network.

5. *Trading Labor Concessions for Equity.* Wage and work rule concessions were traded for equity at Eastern Airlines in the 1980s, and at TWA, Northwest and United in the 1990s.

6. *Government Assistance.* From 1977 to 1992, governments gave $3 billion to state-owned airlines.[250] Although the U.S. industry is privately owned, the U.S. National Commission to Ensure a Strong Competitive

244. *Ranking - Skies in 1992, supra* note 243, at 16.

245. Ian Verchere, *IATA Expects World Airline Losses to Total $2 Billion*, COMMERCIAL AVIATION NEWS, Aug. 23, 1993, at 18.

246. DEMPSEY & GOETZ, *supra* note 6, at 129.

247. *Id.* at 137.

248. *Air France Sells Meridien*, AVIATION DAILY, Sept. 15, 1994, at 439.

249. DEMPSEY & GOETZ, *supra* note 6, at 11.

250. EVANS, *supra* note 7, at 48.

Airline Industry recommended that several taxes be rolled back on U.S. airlines, and that the Strategic Petroleum Reserve be tapped to aid airlines when fuel costs rise significantly. Congress exempted aviation fuel from a new 4.3 cents a gallon gasoline tax until October 1996.[251] The state of Minnesota agreed to sell $250 million in bonds on behalf of Northwest Airlines to finance construction of a maintenance facility in Duluth, and $100 million for a engine repair facility in Hibbing.[252] The federal government also authorized the sale by airlines of billions of dollars of public assets in the form of landing slots and international routes. These are indirect forms of taxpayer subsidy.

This phenomenon proceeds robustly abroad, where most airlines enjoy significant governmental ownership, and a paternalistic relationship which forbids airline collapse. The following chart reveals governmental ownership in the major airlines of western Europe:

GOVERNMENT OWNERSHIP OF MAJOR EUROPEAN AIRLINES[253]

Airline	Government Stake (%)
Aer Lingus	100
Air France Group	99.38
Alitalia	84.9
Austrian Airlines	51.9
British Airways	0
Iberia	100
KLM	38.2
Lufthansa	59.16
Olympic Airways	100
Sabena	88
SAS Group	50
Swissair	20.4
TAP Air Portugal	100

In 1991, the Belgian government wrote off $250 million in debt for its flag carrier, Sabena.[254] In 1992, Spain injected $922 million into Iberia.[255] In 1993, the Portuguese government granted $230 million in aid to TAP Air Portugal.[256] Air France and Olympic Airways also turned to their

251. Lisa Burgess, *International Community Wants Action on Panel Report*, COMMERCIAL AVIATION NEWS, Aug. 23, 1993, at 21.

252. Debra Werner, *Northwest Airlines, Minnesota Put Maintenance Hubs Back on Agenda*, COMMERCIAL AVIATION NEWS, Aug. 23, 1993, at 10.

253. *Ranking - Skies in 1992, supra* note 243, at 74.

254. George Richmond, *Sabena, Labor Agree on $152 Million Lifeboat*, COMMERCIAL AVIATION NEWS, Aug. 23, 1993, at 3.

255. Vitzthum, *supra* note 168.

256. *Public Approval*, AIRLINE BUS., May, 1993, at 12.

governments for billions of dollars of subsidies.[257] Nonetheless, governmental assistance is becoming more difficult under the EEC's state aid rules.

Recently privatized carriers enter the market with a significant comparative advantage — relatively clean balance sheets, and therefore have superior access to the capital markets. For example, the Philippine government wrote off $560 million of Philippine Airlines debt before its privatization in 1992.[258] It was little problem for recently privatized British Airways to tap the capital markets to finance major equity investments in USAir and Qantas.

V. Airport Infrastructure in the 1990s

Airlines and airports are inextricably intertwined. Neither can survive without the other. Both join forces to provide seamless service to the passenger. Airports are the hearts that pump the circulatory system in which airline routes serve as veins and arteries. In a less metaphorical sense, airlines are the airports' most important customers. Airports are the essential venue for funnelling passengers into the air transportation network.

With the growth in passenger and freight demand, major new airports are being built around the world:

Major New Airports of the 1990s

Airport/ Opening Date	Projected Cost (US $billion)	Runways	Passengers (millions-1992)
Munich/1992	$7.1	2	13
Osaka (Kansai)/1994	$15	1 (3)	24
Denver (Int'l)/1995	$4.8	5 (12)	31
Macau/1995	$0.9	1	2
Seoul (Yongjong)/1997	$4.4	2	21
Hong Kong (Chek Lap Kok)/1997	$12+	1 (2)	23
Kuala Lumpur (Sepang)/1998	$3.5	1 (2)	
Bangkok (Nong Ngu Hao)/2000	$3.9	2 (4)	16

In addition, Athens, Greece, is planning a new airport at Spada to open in 1997, and Oslo, Norway, is planning a new airport at Gardermoen. Many other airports are undergoing expansion:

257. Brian Coleman, *SAS Turns Around With Pretax Profit During First Half*, Wall St. J., Aug. 18, 1994, at A14.

258. *Ranking - Skies in 1992*, *supra* note 243, at 16.

MAJOR ASIAN AIRPORT EXPANSION IN THE 1990s

Airport	Expenditure	Passengers (millions-1992)
Tokyo (Haneda)	$1.5 billion	43
Tokyo (Narita)	$0.7 billion	. 22
Bangkok (Don Muang)		
Beijing		
Shanghai		
Wuhan		
Liangjiang		
Guangzhou		
Shenzhen		
Hanoi		
Ho Chi Minh City		
Danang		
Penang		

The 19th Century was Europe's, the 20th America's, and the 21st Century shall be Asia's. Much of the new airport infrastructure investment will be in Asia over the next decade and a half. The Asia-Pacific region is the world's fastest growing air transport market.[259] Seven of the ten most profitable airlines in 1993 were Asian; five of the ten least profitable were U.S. carriers.

Over the next two decades, the world air transport market is projected to grow between 5% and 6% a year, although North America is anticipated to grow at only about 4% a year.

Projections of passenger growth in the Asia-Pacific market are astounding. The Orient Airline Association predicts 7.5% through the year 2000. The International Air Transport Association [IATA] predicts between 7% and 8.6% through 2010. The Organization for Economic Cooperation and Development [OECD] predicts inter-Asian traffic growth of between 8% and 9% over the next two decades. The U.N. International Civil Aviation Organization [ICAO] predicts between 9.3% and 10.8% between 1993 and 1995. McDonnell-Douglas predicts 9.7% through the year 2010. And the People's Republic of China [PRC] is anticipated to enjoy traffic growth in the range of 13.6% and 14.7%.

IATA predicts that Asia-Pacific, which in 1990 accounted for 31% of the world's total passengers (132 million), will by the year 2000 account for 39% (or 189 million), and by 2010 51% (or 375 million), thereby displacing North America as the world's busiest commercial aviation market.

In 1991, China's passenger and cargo volume grew by 28%, in 1992,

259. Demand for air transportation in the Asia-Pacific region grew 12.1% per annum between 1985 and 1990. International Air Transport Association, ASIA/PACIFIC AIR TRAFFIC GROWTH & CONSTRAINTS 3 (1994).

33%, and in 1993, 20%. This has placed enormous strains on the capital requirements of the commercial aviation sector, and caused serious safety and operational problems.

The PRC has concluded that its airlines and airports need capital and operational expertise, and has recently opened both to foreign investment. The CAAC will designate two of its airlines for foreign investment/operations, allowing foreign investment up to 35% and foreign voting rights up to 25%.[260]

Among the most intriguing opportunities which appear to be on the table is the possibility of setting up a joint venture to build an airport in China. Construction costs on mainland China are a fraction of what they are anywhere else in the world. It has been predicted that, by the end of this decade, the east coast region of China will have 22 new airports, and 10 of the region's existing airports will have been upgraded and expanded.[261]

The capital requirements of new airport infrastructure development are enormous. Both IATA and ICAO concur in their projections that, worldwide, $250 billion will be spent for airports between now and the year 2010, of which $100 billion will be required for the Asia-Pacific region alone.[262]

Of course, the construction of additional airport capacity is of direct concern to the primary tenants, the airlines. From the airlines' perspective, airport expansion has a positive, and a negative, component.

On the positive side of the ledger, demand driven expansion of capacity can reduce congestion and delay, leading to enhanced utilization of aircraft and labor, and reduced consumption of fuel. New infrastructure can enhance carrier efficiency and productivity in serving a growing customer base. The U.S. Federal Aviation Administration predicts that, absent infrastructure expansion, serious delays at more than 30 of the nation's largest airports will cause $1.1 billion in additional airline costs by the year 2001.[263]

The growth in flights and passengers can create congestion on the land side (in terms of surface access), air side (in terms of runway, tarmac and air space), and in the terminal. Some of that can be resolved with better utilization of scarce resources, such as technological advances in

260. *Airlines Clear Path for Foreign Investment*, CHINA DAILY, May 27, 1994.

261. Peter Trautman, The Need for New Airport Infrastructure, Address Before the International Conference on Aviation & Airport Infrastructure, Denver, CO (Dec. 6, 1993).

262. Oris Dunham, *Infrastructure Constraints — Deeds Not Words*, 7th IATA High-Level Aviation Symposium in Cairo, Egypt 109 (1993).

263. Federal Aviation Administration, AVIATION SYSTEM CAPACITY ANNUAL REPORT (1993) at 5.

aircraft navigation, or peak period pricing. Ultimately, it can cause airports to expand terminals and add runways, and new airports to be built.

On the negative side of the ledger, while some airport infrastructure costs are borne by passengers, taxpayers, and concessionaires, and the sale and lease of real estate, most of the cost of new and expanded infrastructure must be borne by the airlines (in the form of landing fees, terminal fees, aircraft parking fees, gate and hangar rental, ground handling services, air traffic control charges and fuel taxes) and their passengers (in the form of passenger facility charges, parking and tolls).

From the perspective of the airports, user costs are a relatively modest portion of airline operating expenses — a mere 4.1% of total airline average annual operating costs since 1978.[264] But from the airlines' perspective, whose net profit margins in the U.S. ranged between 2-3% before deregulation, and collapsed to less than 1% since, even a modest economic burden is an onerous one.

During the 1980s, airline user charges constituted between 70% and 90% of airport revenue (although other sources insist that passenger carriers pay only about a quarter of airport costs, about the same as concessions).[265] ICAO predicts an average 9% annual increase in airport landing and associated charges, and an average 12% annual increase in route facility charges, through the end of this decade.[266] What is clear is that in recent years, airport and route charges imposed upon airlines have grown faster than most other operating expenses, and the ability of airline operating revenue to digest them.[267]

And while airport capital equipment needs will total between $250 billion and $350 billion by the year 2010 (with much of that paid, directly or indirectly, by the airlines), airline capital needs worldwide (mostly for new aircraft) will, by some estimates, total $815 billion by the year 2000. Given the inadequate profitability of the airline industry since deregulation, these capital requirements will be difficult to achieve.

Economic recession dampens passenger demand, thereby relieving some pressure on the infrastructure, and squeezing airline profits, making it more difficult for carriers to bear the cost of airport development. It is said of airlines that they order aircraft in good times and take delivery in bad. Of airports, it can be said that construction is begun in good times, and completed in bad.

One short term alternative to raise capital for new airport infrastructure is to privatize them. While private developers usually bear a higher

264. Dunham, *supra* note 262, at 109.

265. Robert Tompkins, "Infrastructure Capacity Financing Through User Charges," Address before IBC Conference at Hong Kong (October 28, 1993).

266. *Id.*

267. *Id.*

cost of capital vis-a-vis the government, and lack the government's eminent domain powers, private firms, driven by a profit motive, often produce a product (here, airport services) with fewer employees, and greater economy and efficiency. The privatized British Airports Authority has proven that real estate and concessions can be developed into a significantly enhanced revenue stream. Nonetheless, airports are a monopoly bottleneck, and unless regulated, have the ability to extort monopoly rents from their customers (primarily the airlines).

Sir Walter Raleigh observed that he who controls the seas, controls the trade. He who controls the trade controls the wealth. He who controls the wealth controls the world. These days, airways have replaced the oceans, and airports have replaced seaports in importance. Airlines are too numerous to be profitable in mature markets. But airports are the bottlenecks through which passengers and high-valued cargo must flow. Thus, it would be imprudent to privatize them without regulatory supervision of carrier charges.

Other alternatives to building new airport infrastructure includes enhancing use of existing facilities via better rationing (e.g., peak period landing fees, to move demand to less congested parts of the day), and improvements in navigational and aircraft technologies (e.g., larger and STOL aircraft).

VI. The Prospectus for Government Reform

A. Public Policy

To his credit, Alfred Kahn recently conceded that the economic theories upon which deregulation was predicated were wrong, the predictions of deregulation's proponents were therefore wrong, and the industry may well exhibit a tendency to engage in destructive competition.[268] While economic regulation was imperfectly administered and created some distortions (including excessive service competition), it nevertheless created an environment in which destructive competition was avoided. Profits were by no means robust (as noted above, the industry's

268. Anthony Velocci, Jr., *Kahn Tells Airlines: Sit Tight, Cut Costs*, Av. Wk. & Space Tech., Aug. 16, 1993, at 40. When asked what he might have done differently if he could turn back the clock, Kahn said, "I would recognize the danger of excessively exuberant investment, overcapacity and destructive competition was greater than we evaluated it at the time." *Id.* at 41. "I knew a lot about communications and not much about airlines. That was the main reason I tried to proceed very gradually with deregulation. I read studies by serious academic scholars of the industry, and it was clear to me they underestimated the benefits of airline deregulation, including the advantages of scale and the advantages of hub-and-spoke operations." *Id.* at 44. For recent assessments of the theories upon which deregulation was predicated, *see* Dempsey & Goetz, *supra* note 6; Paul S. Dempsey, The Social & Economic Consequences of Deregulation (1989).

average profit margin averaged 2.4% from 1960-77, below that of all manufacturers, which typically earn between 4-6%), but they were significantly better than they have been during the 15 years since deregulation (when they fell to a negative 0.4%). In the early-1970s, neither the infusion of tremendous wide bodied capacity, recession, nor the sharp and unprecedented rise in fuel costs precipitated by the Arab Oil Embargo of 1973 bankrupted a single airline.

The National Commission's report emphasized that, adjusted for inflation, airline ticket prices have fallen during the last 15 years.[269] Of course, that could be said for any 15 year period since the inauguration of commercial aviation in the 1920s. Allegations of consumer savings resulting from deregulation have been grossly overstated.[270] It is remarkable that deregulation's proponents find a solid correlation between falling prices and deregulation, but find no relationship whatsoever between deregulation and falling profits.

Again, regulation was imperfect. But some forget that under regulation, real consumer prices were falling, wages and productivity were rising, safety was improving, traffic was growing, concentration was declining, and profit, by no means robust, kept balance sheets respectable and equipment new. In the mid-1970s, regulatory reform was well on the way to curing many of the distortions in the system — enhanced pricing and entry flexibility allowed carriers to rationalize operations, tap the elasticities of demand to fill seats which otherwise would have flown empty, and enjoy respectable profitability. But full deregulation has unleashed the industry's inherent primordial tendency to engage in destructive competition.

B. Economic Theory

In an earlier section, we examined the economic characteristics of commercial aviation, and described its catastrophic economic results since deregulation. Here, we briefly examine economic theory as it pertains to the question of regulation and deregulation.

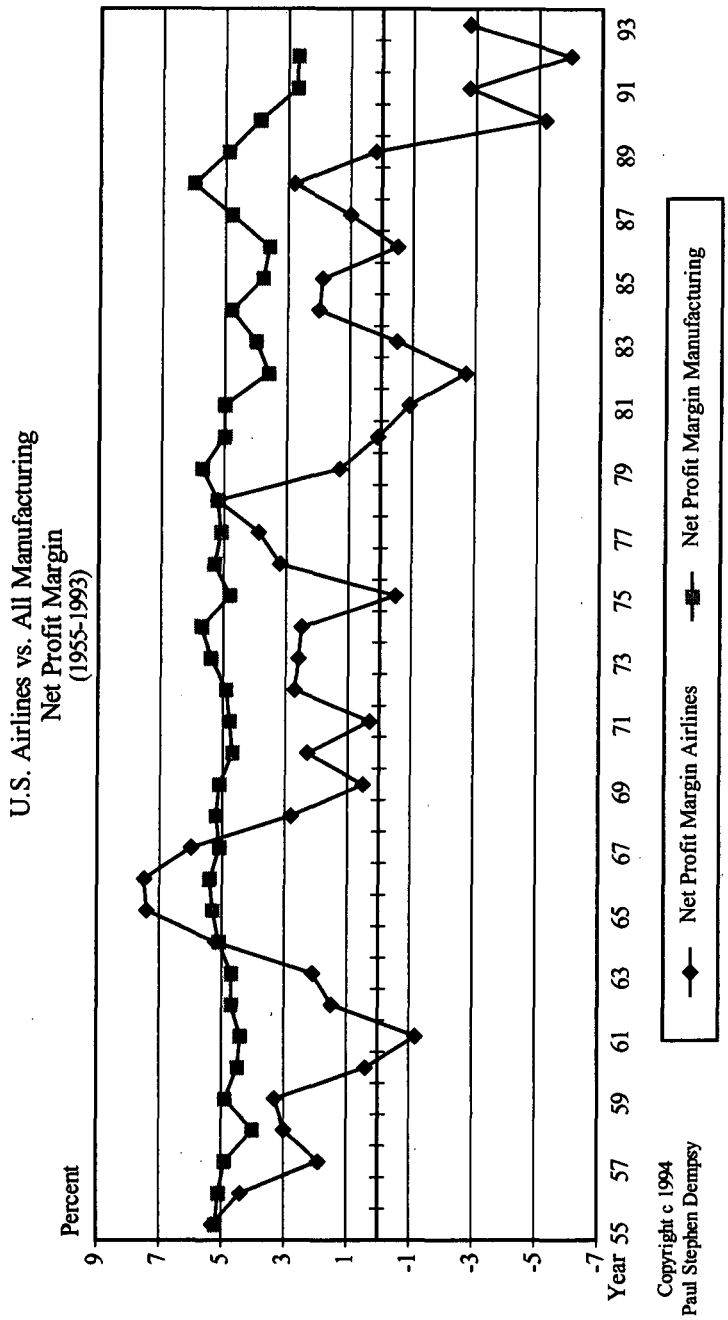
The phenomenon of destructive competition has long been recognized as an appropriate rationale for government regulation.[271] In fact, destructive competition was a primary rationale for airline economic regulation in the 1930s.[272] In the mid-1970s, Stephen Breyer (now a U.S.

269. *See* The National Commission to Ensure a Strong Competitive Airline Industry, Change, Challenge and Competition 1 (1993).

270. Dempsey & Goetz, *supra* note 6, at 243-63, 281-95.

271. *See e.g.*, Paul Dempsey, *Market Failure and Regulatory Failure As Catalysts for Political Change: The Choice Between Imperfect Regulation and Imperfect Competition*, 46 Wash. & Lee L. Rev. 1 (1989).

272. *See* 1 Dempsey et. al., *supra* note 50, § 1.03.


U.S. Airlines vs. All Manufacturing
Net Profit Margin
(1955-1993)
Percent
9
7
5
3
1
-1
-3
-5
-7
Year 55 57 59 61 63 65 67 69 71 73 75 77 79 81 83 85 87 89 91 93
Net Profit Margin Airlines
Net Profit Margin Manufacturing
Copyright c 1994
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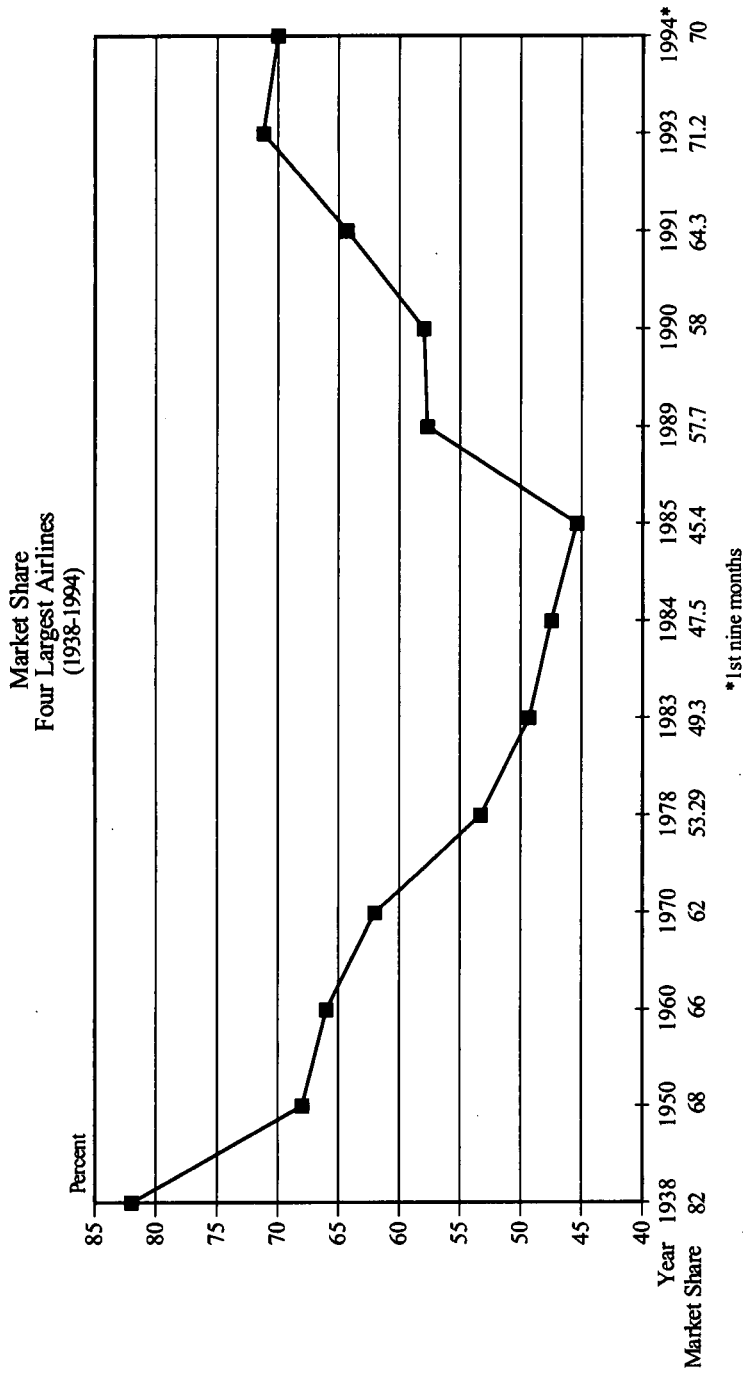
Market Share
Four Largest Airlines
(1938-1994)
Percent
85
80
75
70
65
60
55
50
45
40
Year 1938 1950 1960 1970 1978 1983 1984 1985 1989 1990 1991 1993 1994*
Market Share 82 68 66 62 53.29 49.3 47.5 45.4 57.7 58 64.3 71.2 70
* 1st nine months

Supreme Court Justice) was an architect of Congressional airline deregulation as an aide to Senator Ted Kennedy. In reviewing the allegation that "competition would force the airlines to charge prices that covered only variable, but not fixed, costs," Justice Breyer concluded that there was no evidence that destructive competition did (prior to regulation) or would (subsequent to deregulation) occur.[273]

As Chairman of the Civil Aeronautics Board, Alfred Kahn also dismissed allegations that deregulation would lead the industry to engage in destructive competition. But by 1993, with the benefit of more than a decade of real world experience with deregulation, he appears to have changed his mind. When asked about whether his vision of deregulation in the late 1970s included the steep financial nose dive that resulted from it, Kahn said, "No. I talked about the possibility that there might be really destructive competition, but I tended to dismiss it. And that certainly has been one of the unpleasant surprises of deregulation."[274]

One need only revisit Alfred Kahn's 1972 treatise on economic regulation to find a definition of an industry which exhibits the tendency to engage in destructive competition. Wrote Kahn:

> The major prerequisites [of destructive competition] are fixed or sunk costs that bulk large as a percentage of total cost; and long-sustained and recurrent periods of excess capacity. These two circumstances describe a condition in which marginal costs may for long periods of time be far below average costs. If in these circumstances the structure of the industry is unconcentrated — that is, its sellers are too small in relation to the total size of the market to perceive and to act on the basis of their joint interest in avoiding competition that drives price down to marginal cost — the possibility arises that the industry as a whole, or at least the majority of its firms, may find themselves operating at a loss for extended periods of time.[275]

Kahn described the post-deregulation airline industry almost perfectly.

Another individual who may have explained why airlines tend to engage in individually rational, but collectively irrational, behavior is Garrett Hardin, a student of population and environmental problems. In his powerful essay, "The Tragedy of the Commons", Hardin wrote:

> Picture a pasture open to all. It is to be expected that each herdsman will try to keep as many cattle as possible on the commons. Such an arrangement

273. *See* OVERSIGHT OF CIVIL AERONAUTICS BOARD PRACTICES AND PROCEDURES: HEARINGS BEFORE THE SUBCOMM. ON ADMINISTRATIVE PRACTICE AND PROCEDURE OF THE SENATE COMM. ON THE JUDICIARY, 94th Cong., 1st Sess. 60-61 (1975).

274. Velocci, *supra* note 268, at 41.

275. ALFRED KAHN, II ECONOMICS OF REGULATION 173 (1972). *See also* ALFRED KAHN, II ECONOMICS OF REGULATION 209-20 (1988) (Kahn discusses destructive competition and the post-regulation airline industry in detail).

> may work reasonably satisfactorily for centuries because tribal wars, poaching, and disease keep the numbers of both man and beast well below the carrying capacity of the land. Finally, however, comes the day of reckoning, that is, the day when the long-desired goal of social stability becomes a reality. At this point, the inherent logic of the commons remorselessly generates tragedy.
>
> As a rational being, each herdsman seeks to maximize his gain. Explicitly or implicitly, more or less consciously, he asks, "What is the utility to me of adding one more animal to my herd?" This utility has one negative and one positive component.
>
> (1) The positive component is a function of the increment of one animal. Since the herdsman receives all the proceeds from the sale of the additional animal, the positive utility is nearly +1.
>
> (2) The negative component is a function of the additional overgrazing created by one more animal. Since, however, the effects of overgrazing are shared by all the herdsmen, the negative utility for any particular decision-making herdsman is only a fraction of 1.
>
> Adding together the component partial utilities, the rational herdsman concludes that the only sensible course for him to pursue is to add another animal to his herd. And another . . . . But this is the conclusion reached by each and every rational herdsman sharing a commons. Therein is the tragedy. Each man is locked into a system that compels him to increase his heard without limit — in a world that is limited. Ruin is the destination toward which all men rush, each pursuing his own best interest in a society that believes in freedoms of the commons. Freedoms in a commons brings ruin to all.[276]

Substitute airlines for herdsmen, aircraft for cattle, and the airways and airports for the commons and you can see how the airline industry propels itself toward destruction, particularly in a market in which consumers which value frequency.

Hardin points out that the tragedy of the commons can be avoided where private property rights exist. The problem is dividing the skies into parcels of property. In international markets, the bilateral air transport agreements effectively do that by limiting the number of entrants.

C. Politics

Despite the tens of thousands of employees who have lost their jobs, and investors, lenders and equipment manufacturers who have been stiffed, and a growing number of consumers disenchanted by inequitable pricing and deteriorating service, today the political will for reform is weak. It has become politically incorrect to challenge deregulation, or advocate increased government oversight. We live in an era where the

276. Garrett Hardin, *The Tragedy of the Commons*, SCI., Dec. 13, 1968, at 1243.

conventional wisdom is that government can do no good, and the market can do no wrong.

In the mid-1980s, the industry and conservative "think-tanks" turned on a tremendously effective propaganda machine which convinced much of the public that airline deregulation was a phenomenal success, largely because of grossly overstated estimations of consumer benefits. Remarkably, the industry refuses to turn off that propaganda machine. Airline executives had a marvelous opportunity to request meaningful oversight before the National Commission to Ensure a Strong Competitive Airline Industry, but declined, insisting it focus instead largely on peripheral issues, rather than on the central causes of the industry's collapse. This stems from a distrust of government, a failure to understand that a model other than classic price and entry regulation is possible, and frankly, a dose of hubris.

To recommend a taxpayer bail out (i.e., tax relief) and selling off our airlines to foreign citizens, as that Commission did, would seem a confession that aviation policy of the past 15 years has been a failure. But because several of its members were architects of deregulation, that Commission was paralyzed from addressing the failure of deregulation.

D. International Aviation

The U.S. Department of Transportation seems infatuated with the notion that "open skies" (a/k/a exporting deregulation abroad) ought ubiquitously to govern air transport. Some foreign governments view this as naive,[277] for they perceive deregulation as the catalyst for the financial collapse of much of the U.S. airline industry (with good cause).

Consistent with this theological devotion to "open skies," DOT's approval of code-sharing (despite the manifest consumer deception and the deleterious impact on independent regional airlines) appears motivated by the desire to facilitate foreign ownership, a means of providing capital to U.S. airlines financially ravaged by deregulation and LBOs — both caused by a bankrupt U.S. aviation policy. The quid pro quo is code-sharing (giving foreign airlines indirect access to rich domestic U.S. feed), liberal bilateral rights of access (with direct non-stop access to interior U.S points, and generous fifth-freedom rights), and in at least one instance, antitrust immunity so that the two carriers (i.e., KLM/Northwest) can agree both to merge marketing, cease competing, and remarkably, pool traffic and revenue. Foreign investment is far more attractive to for-

277. Most sensible nations look at U.S. government transport ministers as hopelessly naive, and they are right. While the U.S. government may care little about the well being of Pan Am or Eastern, the government of France cares dearly about the survival of Air France. Hence, renunciation of bilaterals is the response to a perception that U.S. carriers can make no money in their deregulated domestic markets, and are dumping capacity in international markets.

eign airlines if the foreign carrier can control the North American feed into their relatively lucrative wide-bodied long haul networks.

While propping up airlines collapsing because of the failure of U.S. domestic aviation policy, foreign ownership poses four potential problems: (1) given that the U.S. relies on the civilian commercial airline fleet for needed lift capacity in time of international conflict under the CRAF program, it may have a deleterious effect on national security; (2) it eliminates competition in foreign markets; (3) it pollutes the integrity of bilateral air transport negotiations; and (4) it may potentially endanger domestic aircraft production.[278]

"Open skies" is more likely to get U.S. carriers unlimited access to Singapore Changhi or Amsterdam Shiphol than London Heathrow or Tokyo Narita, or a totally multilateral regime of free, unlimited entry abroad.[279] Small countries, like Austria, Switzerland and Iceland, with little domestic passenger feed, are more than happy to trade access to a little for access to a lot.

U.S. aviation labor unions have declared war against lifting of the cabotage prohibition. They are fighting the wrong battle. Even if the United States gave away cabotage tomorrow and received nothing in return, little would change. The foreign airlines are not so foolish to invest billions of dollars setting up a route network in a nation where almost every airline suffers from chronic economic anemia. Moreover, the most desirable airport infrastructure in the United States has been consumed.

All we would likely see from elimination of cabotage would be the elimination of some closed door restrictions on foreign carrier flights that serve two points in the U.S. Thus, a European carrier with a through flight from Europe to Los Angeles via New York could pick up a few passengers in New York. The competitive impact would be but marginal, as is our competitive impact on fifth freedom flights in Europe. The trans-oceanic schedule does not allow much in terms of threatening competition.

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278. PAUL S. DEMPSEY, *The Disintegration of the U.S. Airline Industry*, 20 TRANSP. L.J. 9, 36-42 (1991); Paul S. Dempsey, *The Sky Ought to Be the Limit*, N.Y. TIMES, Jan. 26, 1991, at 25.

279. Some U.S. airline executives define open skies to include a prohibition of code-sharing and state aid, and that it be pursued multilaterally or not at all. The qualifications are lost on most listeners.

One might recall that Graham Claytor, until recently the CEO of Amtrak, went up to Capitol Hill and repeatedly advocating "economic self-sufficiency" in the same breath as "for a capitalized Amtrak." Congress heard only the first phrase and ignored the second. Amtrak now runs 50 year old equipment made by a manufacturer which has been out of business for 15 years. It's maintenance yard has to make parts from scratch — there are no spare parts to buy. You can imagine what that does to maintenance costs and equipment down-time.

Many in the industry praise deregulation as magnificent and advocate that it should be pursued on a global scale. Any qualifications on what is meant by open skies are lost on the unsophisticated, and as we both lament, the unsophisticated dominate DOT.

Foreign carriers secure adequate access to the world's largest passenger market (the U.S.) via foreign control and code-sharing, risking only a few hundred million dollars if they decide to buy control. They invest dumb equity, expecting synergistic revenue on the feed the U.S. carriers provide into their wide-bodied long-haul networks. When Sir Colin Marshall dictates that USAir must shed itself of its London routes, and that the ALPA proposal for equity ownership is unsatisfactory, he de facto controls USAir, despite the unmistakable legislative prohibition.

As a rule, U.S. airlines enjoy their highest load factors, highest yields, and highest profits in the most heavily regulated international markets, and suffer their lowest load factors, lowest yields, and lowest profits in the "open skies" domestic markets. U.S. flag carriers perform best in the Latin America and Pacific markets, which are relatively tightly regulated. U.S. carriers transport only about 15% of the passengers in the open skies U.S.-Netherlands market, and about 20% in the open skies U.S.-Korea market.

Exporting "open skies" to the international arena will, in the long term, export the severe overcapacity we face domestically, created by overlapping hub and spoke networks, while profitability is eroded by new entrants. Open skies will result in that duplicative network capacity played out on a global scale, coupled with low-cost Laker Skytrains, Virgin Atlantics, and People Expresses emerging in a host of international markets.

In the short term, U.S. airlines might eat the lunch of some of the European and Japanese carriers (although airport capacity constraints in Europe will themselves deny U.S. carriers significant new entry). They enjoy a comparative labor cost advantage in both arenas.

But in the long-term, in an open skies environment, the Asian tigers might well eat the lunch of the U.S. flag carriers because of their comparative cost advantage, as well as their relatively higher service levels. Business travelers already rate Asian carriers as the best. This results from a cultural and attitudinal difference in the level and type of cabin service that U.S. airline management cannot expect to exact from U.S. cabin crews. For obvious reasons, employee-owned companies will have a difficult time hiring third world cabin and cockpit employees. All the major U.S. airlines will eventually succumb to employee ownership.

Code-sharing will deprive U.S. carriers of the comparative advantage of on-line domestic feed from the world's largest market — North America. But over the next two decades, Asia will become the largest passenger market. In an open skies regime, Asia inherits the earth, as it has in most major industrial sectors.

Regarding state-aid, the objection of the United States seems somewhat hypocritical. For example, the U.S. objects to the government of

France pouring billions of francs into Air France, and yet ATA repeatedly calls for rolling back taxes. Whether the government hands airlines the money, or takes less away, the net effect is the same.[280] The 4.3% per gallon exemption in aviation excise fuel taxes, coupled with low fuel costs, was an enormous factor in producing the modest profitable third and fourth quarters the industry just enjoyed.[281]

Certainly, subsidized airlines need not make a profit in order to survive. Nor are they vigorous price competitors. Most subsidized and government-owned carriers are lethargic and inefficient. But, as we see at British Airways, paternalistic governments have established ubiquitous global route networks, and are willing to engage in subtle forms of protectionism (e.g., capacity restrictions at Heathrow).

Privatization of industry is a global phenomenon driven in part by ideology, and in part by the fiscal needs of governments having a more difficult time satiating the social welfare needs of their constituents. In most western industrialized nations, the aging population is growing and consuming more resources, while the number of taxpayers are declining. Flushing out capital from state owned industries offers politicians a band-aid, which postpones the higher taxes and lower benefits which must eventually come.

In the airline sector, the privatized airlines usually proceed through a downsizing of employment, a streamlining of operations, and perhaps most significantly, emerge triumphant with a clean balance sheet.

After 15 years of deregulation (a/k/a domestic open skies), the balance sheets of U.S. carriers have been polluted with enormous debt. If British Airways wants to raise $400 million on the capital markets to control USAir, no problem. If USAir entered the capital markets to find $400 million on its own, the junk interest rate would be prohibitive.

From a purely Machiavellian perspective, U.S. carriers are better off with sluggish governmentally owned and subsidized competitors than with more privatized British Airways.

With most major airlines suffering chronic economic malaise, some have bemoaned the absence of a U.S. aviation policy. With commendable dedication, Transportation Secretary Federico Pena has attempted to chart a new course in aviation policy.

Unfortunately, the path he chose suffers from two fundamental mis-

280. Moreover, the airline industry is sucking at the state and local teats in North Carolina, Minnesota, Indiana, Missouri and Colorado.

281. Samuel Buttrick of Kidder, Peabody, pointed out that 70% of U.S. airline gains in the first half of 1994 were attributable to lower fuel prices. Julius Maldutis of Salomon Brothers observed that in spite of the $313 million profit the industry earned in the third quarter of 1994, they posted only a $68 million profit for the first nine months, and would likely lose $300 or more for the year; *see also* Babbitt, *supra* note 23, at 10.

understandings and misconceptions, and a generous dose of naivete. In the long term, the policies now being pursued by Mr. Pena may do serious harm to our airlines.

First, Mr. Pena has spent much time in recent months negotiating "open skies" bilateral agreements with nations the size of their postage stamps, offering them virtually unlimited access to the United States (the largest and richest source of passenger and freight traffic in the world) in exchange for . . . what? The opportunity for U.S. carriers to fly to any airport in countries like Luxembourg, Iceland, Switzerland, and Austria. While these are splendid nations, the air traffic opportunities they offer U.S. carriers are miniscule compared to the opportunities the vast U.S. passenger and cargo market offer their airlines.

Further, Mr. Pena has offered foreign carriers direct access to U.S. traffic via anticompetitive marketing and equity relationships with U.S. carriers, which feed traffic into the lucrative long-haul, wide-bodied foreign carrier networks.

Such a naive approach is inconsistent with Congressional policy as expressed in the International Air Transportation Competition Act of 1979, which provides that, in negotiating bilaterals, the Department of Transportation may allow "opportunities for carriers of foreign countries to increase their access to United States points *if exchanged for benefits of similar magnitude for United States carriers* . . . ." The opportunity for a U.S.-flag airline to fly to Luxembourg is hardly the equivalent of allowing a Luxembourg carrier to fly to New York, Chicago and Los Angeles.

Second, there is, has been, and continues to be a long standing priority given to the interests of the passenger carriers vis-a-vis the cargo carriers. Since World War II, the entire framework of bilateral air transport agreements negotiated between the United States and foreign nations has been predicated on a route structure designed to move people.

But the routings are vastly different. People prefer to move from A to B nonstop if they can. Most bilaterals focus on point-to-point passenger routings.

Although highly time sensitive, air freight is less particular about its routing. A circuitous movement from A to hub to B annoys cargo less than it does passengers. Freight can sit quietly on tarmacs, and needs little entertainment, food, or warmth. Cargo doesn't mind overnight circuity in the flight path. While a passenger would be loathe to fly from Dublin to New York via Frankfurt, freight does not seem to mind.

Consolidating freight from numerous origins allows aggregate load factors to take advantage of the economies of scale of larger aircraft. Thus, an A to B route structure (e.g., Dublin to New York) is antithetical to the efficiency of air cargo operations.

Moreover, the economies of scope in the movement of freight are profound. Thus, a U.S. cargo jet flying from Dublin to Frankfurt (where packages coming from all over Europe headed for the United States are consolidated) can easily accommodate another package or two to Rome, or Budapest, or Copenhagen. The additional costs are nil. The additional revenue goes straight to the bottom line.

Freight is also much less sensitive to price than about half of the passenger market, which consists of discretionary traffic. Freight must move to market. People do not have to fly to vacation destinations, and if the price is too dear, they stay home, or drive the kids to Wally World.

The all-cargo carriers do compete with the passenger combination airlines, which carry freight, along with bags, in the belly of their planes. But given their route structures, the passenger carriers are a somewhat poor competitor for the large cargo carriers, which are well integrated with surface carriers for a seamless movement from origin to destination.

Freight has always taken a back seat to passengers in U.S. bilateral negotiations. The international aviation system was designed primarily to accommodate bilateral passenger aviation needs.

The only way to responsibly pursue international aviation negotiations is pragmatically, with hard bargaining for meaningful rights of access for our airlines. The U.S. International Air Transportation Competition Act of 1979 calls for

> the strengthening of the competitive position of United States air carriers to at least assure equality with foreign air carriers, including the attainment of opportunities for United States air carriers to maintain and increase their profitability, in foreign air transportation . . . [and] opportunities for carriers of foreign countries to increase their access to United States points if exchanged for benefits of similar magnitude for United States carriers or the traveling public with permanent linkage between rights granted and rights given away.[282]

That is what the law requires, and that is the way aviation negotiations should be conducted. Platitudes by DOT Secretaries and airline executives about open skies and the enormous consumer benefits of deregulation will only result in more U.S.-Netherlands type bilaterals (wholly inconsistent with the statutory goals quoted above, as well as U.S. antitrust policy), and postpones the day when we find a meaningful solution to the deterioration of the U.S. airline industry.

What, then, should drive U.S. international aviation policy?

First, pragmatism. Bilateral negotiations should be pursued pragmatically, rather than ideologically, as the law requires. We should bargain hard for access by U.S. carriers, and surrender only that for which

282. DEMPSEY et. al., *supra* note 50, § 10.18.

there is a roughly equivalent quid-pro-quo. Platitudes about "open skies" coupled with signing new one-sided bilaterals with small nations with little traffic potentially erodes the long-term vitality of U.S. airlines.

Further, the U.S. Department of Transportation could do more to address the day-to-day operational barriers in foreign markets, including limited airport access, inadequate terminals and hangar space, restrictions and delays in processing cargo, restrictions on ground handling and currency remittances, and discriminatory charges, fees and taxes. Our DOT should aggressively defend the rights of U.S. airlines to compete abroad, with the threat of imposing sanctions on the airlines of nations which discriminate against U.S. carriers, and where necessary, the implementation of the threat.

Second, air cargo rights should be negotiated separately from passenger rights, and preferably on a multilateral basis, in which the U.S. sits down with all the major nations in a region and hammers out an agreement which creates a multidirectional distribution network geared to the way freight moves, allowing the carriers to take advantage of their inherent economies of scale and scope with a maximum of efficiency and productivity.

All that requires a fundamental re-thinking of U.S. aviation policy, embracing pragmatism and common sense over ideology. Transportation is the fundamental catalyst for shrinking the planet, allowing the economic system to fulfill its global destiny. Prudent government policy can much enhance both the free flow of commerce and the economic well being of the airlines of our nation.

In the final analysis, the U.S. Department of Transportation is entrusted with protecting the public interest. The public interest should be broadly defined, to include the interest of shippers, passengers, airlines, and their employees, lenders, creditors and investors. With that as its goal, a course correction along the lines succinctly described here would be in the best national interest.

E. The Future

Ultimately, unless the government provides the oversight necessary to enhance pricing stability and rationalize capacity, when all the dust settles, we will be left with fewer, but horribly injured, airlines.[283] In the United States, several major airlines will gradually collapse into liquidation, but the process likely will be so slow and the few survivors so weak that a Penn Central or Amtrak-type solution will not be implausible. However, the federal government's ability to provide a bail out will be circumscribed by its own excessive debt burden and a reluctance to re-

283. Gritta et. al., *supra* note 14.

peat the catastrophic bail out of the deregulated savings and loan industry. If the survivors are able to reap monopoly rents on a widespread basis, the public outcry will be for imposition of public utility type regulation. Alternatively, the free marketeers will call for surrender of cabotage to allow foreign entrants to discipline the few surviving U.S. carriers, and the cycle will begin anew.

Government is a highly imperfect institution, but we must reluctantly concede it is sometimes a necessary companion, particularly to correct for market failure in industries essential to the vitality of the nation as a whole.[284] With more competitors, we can have less government; but with fewer competitors, we will need more government. Thus, injecting modest governmental oversight now to provide some measure of stability to pricing and allow a rationalization of capacity will stem the implosion of this important infrastructure industry, so vital to commerce, communications and national defense.

VII. The Airline Industry in the Next Decade

Predicting the future is a fool's game. Nonetheless, current trends suggest several possible results by the turn of the Century:

1. Improved communications technologies will erode the business traffic base of airlines, leaving them gradually, but increasingly, more reliant on discretionary traffic, which is highly price sensitive.
2. Both the number and market share of Southwest-clone low-cost, low-priced, linear route carriers will grow, although these carriers ultimately will not account for more than a fifth of the total U.S. air passenger market. Such growth will plateau, for the number of city-pair markets which can support nonstop service is finite.
3. The United States will be served by many fewer than its current 17 interior hubs.
4. The surrender of wage and work rules by labor for equity at Northwest, TWA and United may give them a competitive cost advantage that the remaining major airlines will be forced to replicate. Labor will control or own significant equity in most of the major network U.S. carriers, which must restructure their costs if they are to grow, and survive. But workers will be disappointed if they expect to earn meaningful dividends from their airline stock portfolios.
5. Several major domestic network carriers will have collapsed or merged, leaving the industry more highly concentrated. This trend will be accelerated should fuel costs or interest rates rise significantly.
6. While the U.S. domestic market will not grow at the rates at which it

284. Dempsey, *supra* note 271, at 1.

grew in the 1980s, international aviation will grow robustly, particularly in the Pacific Rim.

7. With mergers and bankruptcies, the number of major international carriers will shrink, each having strategic alliances with network carriers and pseudo-carriers on other continents.

8. The U.S. government will have to face up to its obligation to provide responsible oversight of this essential infrastructure industry to enable it to rationalize capacity and stabilize pricing. History is prologue. These words were said by a former President of the Air Transport Association:

> Since air transport was launched into meteoric growth . . . of [the] private capital devoted to it . . . there remains today scarcely 50 percent. Since the beginning of air transport, a hundred scheduled lines have traversed the airways in a struggle to build this newest avenue of the sky. But today scarcely more than a score of those companies remain. The industry has been reduced to the very rock bottom of its financial resources. . . .
>
> There are only two ways whereby the necessary capital can be provided to this industry. One is the way toward which the governments of foreign lands increasingly tend — the way of mounting governmental subsidies, whereby public funds are poured without stint into air transport. The other way is the traditional American way, a way which invites the confidence of the investing public by providing a basic economic charter that promises the hope of stability and security, and orderly and intelligent growth under watchful governmental supervision.[285]

These words are as true today as when they were first spoken, only a few months before Congress passed the Civil Aeronautics Act of 1938, which for four decades allowed the U.S. airline industry to grow and prosper, and establish what was once universally acclaimed as the "world's finest system of transportation."

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285. DEMPSEY et. al., *supra* note 50, § 1.03.