

# Aircraft Marketing In an Era of Deregulation

by  
J.A.F. Nicholls  
Associate Professor  
College of Business Administration  
Florida International University

*The deregulation of commercial aviation has had far-reaching effects on all aspects of business. In the Spring 1984 issue, the author explored some of the changes in the domestic airline industry. This article discusses the effects of deregulation on another group — those who manufacture commercial aircraft.*

Individuals working in the hospitality industry are well aware of certain phases of the impact of airline deregulation on their business. The 1978 act deregulating commercial aviation in the United States was nothing short of revolutionary. Indeed, it was so revolutionary that Alfred Kahn, former Carter administration official and chairman of the Civil Aeronautics Board (CAB) who led the fight to deregulate airlines, now believes that deregulation may have spawned unfair competition. As he sees it, particular air fares may have been set at rates that, in antitrust terminology, might be called “predatory,” overpriced in some markets, underpriced in others.<sup>1</sup>

In effect, deregulation originally allowed airlines to set fares, schedules, and routes within very broad limits. Since 1983 air fares have been free of government regulation, and beginning in 1985, the CAB made provision to phase itself out.<sup>2</sup>

The fare and route changes, especially with the entry of nimble, low-overhead, low-cost, new air carriers, have been, perhaps, the most widely discussed and most visible effects of the government’s deregulation efforts. The distress and occasional bankruptcy of the giant carriers — like Braniff and Continental — has made the pages of leading business publications. The effect of all this on the hospitality industry is well known.

On the other hand, the effect of deregulation and increased competitiveness on the manufacturers of commercial aircraft — the airframe and aeroengine producers — is rather less well known. The term “fleet planning” is one which refers to an airline’s selection process for the number and type of aircraft it chooses to fly. This process is crucial not only to the buyers, the airlines, but also to the sellers, the airframe and aeroengine makers. It is this process that has been so heavily impacted by domestic deregulation in the United States, the heavy discounting of international air fares, and the long lead times

in airplane production.

The design, development, prototype, and, finally, production of a new aircraft constitutes an enormous gamble by airframe and aeroengine producers. From inception to production takes five or six years.<sup>3</sup> The enormity of this commitment was described by Robert Carlson, president of United Technologies Corporation (UTC) and former head of UTC's subsidiary, Pratt & Whitney.<sup>4</sup> Carlson's scenario indicated that 100 designers, 250 engineers, and 150 draftsmen would be needed to have an initial test rig operating by July 1986 if they began on January 1, 1985. The first engine will be running by January 1987, having cost \$150 million. More prototypes will be needed so that certification can be obtained and the first production engine delivered to the airframe manufacturer by June 1989, at the cost of some \$600 million. After another 18 months of development, and a further \$100 million of production costs, the first aircraft is delivered to the first customer about January 11, 1991. During all that time, six years, no cash has been coming into the engine producer; \$700 million has been spent, and, with interest costs on borrowed funds, this sum probably amounts to \$1 billion or more. Even this is not the end to the spending commitment. Between 1991 and 1993 another \$120 million will be spent in custom tailoring the engine to the needs of individual airline customers, and \$30 million a year will be spent thereafter.

Only after 12-18 years and the production of a minimum of 1,200 engines will the engine manufacturer break even. No wonder Carlson warned: "If you're a beginner, let me strongly suggest the stakes are too high and the risks too great."<sup>5</sup>

The airframe supplier has a similarly extended and costly development and production process to undertake before receiving any return on its enormous outlays either. In the case of the airframe manufacturer, costs run upwards of \$2 billion, although the time involved is 18 months to two years less than the enginemaker's and 400-600 aircraft sales are needed to break even.

### **Competitive Suppliers Do Exist**

This discussion does not take into consideration, of course, the fact that airframe or engine manufacturers are not monopolists. They compete for sales in an industry that is highly oligopolized. In the free world there are three suppliers of airframes, two American, Boeing and McDonnell Douglas, and one, a European consortium, Airbus. For engines, there are three suppliers, too. General Electric and Pratt & Whitney are the Americans and Rolls-Royce the English entry.

These closely-knit aircraft oligopolies are fiercely competitive. Each player in the high-stakes games knows his competitors' every move. Like all oligopolies the game is intricate, interdependent, and, ultimately, zero-sum. The last point, a relatively new development, is frightening since the marketplace is not large enough for all players to be able to make a profit. Volume is the only way for aircraft manufacturers to recoup their enormous commitment of time, money, and other resources.

In all of this, the slightest misjudgment can be fatal. For example,

in attempting to supply the Lockheed TriStar, or L-1011, as it is also known, with its power source, Rolls Royce promised technologically advanced engines at a rock-bottom price. Rolls went into receivership, its aeroengine division being rescued by the British government. Lockheed, in turn, produced its TriStar in the early '70s in direct competition with McDonnell Douglas's widebodied DC-10. As a result, both companies fought a war of attrition for a market in the 1970s that could not support each of them. Neither lived up to its sales or profits potential. When Lockheed closed its TriStar production line last year, withdrawing from the civil aircraft market, it had sold 244 aircraft; McDonnell Douglas had delivered 360 by that time and virtually closed its production lines, too, except for a few outstanding military orders for KC-10, cargo-tanker versions.<sup>6</sup>

### **New Competition Exists**

The emerging competitor to the industry leader Boeing and the distant, although still gritty, McDonnell Douglas is Airbus Industrie, the relatively recent arrival on the international scene. Airbus Industrie is a consortium owned by four western European partners. France and West Germany, the original partners, each have a 37.09 percent share; Britain has 20 percent and Spain 4.2 percent. Essentially, the corporation was founded in order to combat the European fear of an American monopoly in the world commercial aircraft industry. European aircraft such as the BAC 1-11, the Caravelle, the Concorde, Mercure, and the Trident had never been able to enjoy production runs to equal those of their competitors in the United States. Until the advent of the Airbus A-300 model, European producers had averaged production runs of under 100, compared to the 450 of American producers.<sup>7</sup> In effect, the European planes had been tailored to meet the needs of the flagship carriers of their producing countries — Air France in the case of the Caravelle and the Mercure, British Airways for the BAC 1-11 and the Trident. Their design features were too specific and specialized to hold much attraction for customers beyond their original ones.

Airbus Industrie represents a European attempt to change this insulated approach by pooling resources and suborning nationalistic competition to combat American colossi before a permanent American monopoly emerges, with consequent loss of jobs and technology.

The production process for the Airbus A-300 and A-310 aircraft is very unusual. Portions of the Airbus models are made in different countries. The larger portions, such as wings, are made in Britain and the fuselages in West Germany, then ferried on a continuing basis to the final assembly area in Toulouse in southern France. The enormous transport planes that do this ferrying are known as "Super-Guppies." Some of the Airbus is even manufactured in the United States.<sup>8</sup>

The sale of the wide-bodied A-300 to Eastern in late 1977 was the first European sale to a trunk carrier since the Vickers turboprop 15 years earlier.<sup>9</sup> Formerly, before the advent of Airbus, American producers had sold 95 percent of the commercial aircraft in the non-communist world. Of the three remaining airplane suppliers in the west, Boeing has sold more than 4,000 commercial jet aircraft, McDonnell

Douglas over 2,300 and Airbus over 400.<sup>10</sup> What has happened now, though, is that Boeing is no longer on the cutting edge of design. Its best selling aircraft, the 727, has finally completed its production last year, after racking up sales of 1,832, the best in history. Delivery of the 747 has slowed, and the 757 and the 767 are just under way. There is no new competition for the Airbus A-320. Boeing has produced the 737-300 recently and projects the 737-400 to counteract the A-320. This technological fact, allied to the fragmentation of the domestic airline system in the U.S., is causing Boeing some consternation.

### **Domestic Deregulation Has Impact**

Deregulation of the domestic airline system has affected the aircraft business, both airframes and engines, in two ways. First, it has fragmented the airline industry by permitting the entrance of numerous low cost carriers. Virtually anybody who can afford to lease an aircraft or put a down payment on a used one can join the fray. Readers may have seen the report on two University of Miami MBA students who with their faculty advisor decided to start their own airline. The proliferation of airline competitors like Midway, Jet Express, Southwest, etc. has split the decision makers in purchasing new aircraft. Since deregulation, the number of U.S. airlines has tripled to about 130 currently.<sup>11</sup>

The real long-term nightmare for aircraft suppliers is that the giant carriers, domestic and international, may become obsolete in the new era of competition, being cut back in size and replaced or augmented by smaller carriers, none of which is capable of placing an order large enough to launch a new plane. Fortunately, this danger is still distant since Boeing had sufficient large orders from Eastern (27), British Airways (19), and, particularly, Delta (60), to start production of its new 757, as did Airbus for its A-310. Of course, if the large carriers survive, Eastern and Pan Am, in particular, weathering their current financial problems, then the airframe and engine makers' fears will have proved groundless. The giant carriers which remain will be considerably leaner and more efficient. There is some indication that this may happen, since the big carriers seem to be coming to grips with their new competitors, learning to meet the same areas as their newer competitors but counterpunching with increased flights. In the past few months, it has been the new entrants who have been facing increased financial problems.<sup>12</sup>

Second, the major carriers have seized on the opportunities offered by deregulation to drop many of their low-density routes (except where they feed a hub-and-spokes operation) to concentrate on higher density, longer-haul routes.<sup>13</sup> This rationalization process has included a movement toward greater efficiency through standardization of aircraft fleets. Again, this has placed tremendous pressure on the aircraft manufacturers through the increased tendency for the airlines to rely on a single airframe and engine manufacturer so as to increase maintenance efficiency.

Accordingly, manufacturers have been forced to develop families of aircraft to meet the airlines' varied requirements of route length, pas-

senger density, etc. Boeing's family of new 757s, 767s, and, possibly, 777s, following established 727, 737, and 747 lines, is no coincidence. Neither is Airbus' competitive A-300s, A-310s, and A-320s. McDonnell Douglas is attempting to keep pace through its various stretched versions of the DC-9 and the Super 80s, 82s, 83s, and 90s. In the case of McDonnell Douglas, the company is, essentially, attempting to develop its proven DC-9 technology, rather than run the risk of committing itself to \$2 billion or more for a new airframe to compete with the A-310 and, later in this decade, the A-320. It is an interesting strategy, forced on McDonnell Douglas by the imperatives of the market and the high and costly risks involved. If it fails, however, McDonnell Douglas will be locked out of the commercial airline business well into the 21st century.

### **The Scramble Is Competitive**

What has happened, as a result, is that the engine manufacturers have, to a significant degree, become the pawns of their airframe manufacturers, who, in turn, are dependent on the poverty-stricken airlines. In their desperate search for volume, the sale of every single aircraft is important to the airframe and engine manufacturers. Competition for these sales has spilled out from the deregulated domestic market and become a world-wide phenomenon. No longer are sales within the United States sufficient to guarantee a production run that recoups outlays and insures profitability for the two American producers. Sales to Airbus' European bastion and, in particular, the newly emerging third world markets are vital to American manufacturers' continued financial health and vitality.

Dramatic tales of intrigue and espionage have surfaced about aircraft sales in the last few years. One of the first starting places was the concept of a new 150-seat aircraft, first broached by Airbus in the early 1980s. At the time, it was a logical concept. Of the world's fleet of 6,000 or so commercial aircraft, more than 10 percent were over 16 years of age, while 30 percent were over 12 years old. With noise repression regulations coming into force in the United States in 1985, in Britain in 1986, and in Europe at large in 1988, most of these old planes — early model 707s, DC-8s, BAC 1-11s, VC-10s, and Tridents — would be phased out since their low-bypass engines do not meet the new standards. These aircraft are single aisle planes that could naturally be replaced by a 150-seat aircraft. Except for the projected Airbus A-320, due in the late '80s, new aircraft have not been forthcoming. Boeing and McDonnell Douglas have both offered stopgap aircraft rather than risk new development and production commitments. In Boeing's case it is the 737-300, to be followed by the 737-400, and in McDonnell Douglas' case, the super 80 series.

This is the aircraft battle for the rest of the century: the older, updated technology of Boeing and McDonnell versus the new technology of Airbus. In the meantime, the little victories, the hand-won fights, go on. These are where the current aircraft sales battles lie. For example, Boeing and Airbus have battled on many fronts, one of the recent ones being Thailand where the victor would win two air-

craft orders. The bidding war waged to and fro with first Airbus, then Boeing, then finally, Airbus going ahead. At first Airbus seemed to hold the edge until General Electric said it could not deliver the engines it had promised.

Pratt & Whitney stepped forward with its engines. Then the price cutting started. The larger H-310 was going for \$63 million, the smaller 767 for \$53 million. Then the two airlines bid for Thai Airline's old fleet of DC-8s, offering competitive exchanges, in effect covering the prices of the planes to \$56 million and \$46 million, respectively. The situation became murky as both groups increased their competition. At the end of it all, after close infighting, Airbus and General Electric won the contract.<sup>14</sup> Other ferocious infighting is in sight. The end result is an industrial shootout.

### References

<sup>1</sup>"Competition Too Cut-Throat?" *The Economist*, (January 12, 1985), pp. 60-1.

<sup>2</sup>Roy J. Sampson, Martin T. Farris, and Donald L. Strock, *Domestic Transportation: Practice, Theory, and Policy*, (Boston, Mass.: Houghton Mifflin Co., 1985), pp. 458-9.

<sup>3</sup>Alexander T. Wells, *Air Transportation*, (Belmont, Calif.: Wadsworth Publishing Co., 1984), pp. 407-14.

<sup>4</sup>The discussion which follows is based on "Destination Uncertain: A Survey of Civil Aviation," *The Economist*, (May 23, 1983), p. 10.

<sup>5</sup>*Ibid.*, p. 8.

<sup>6</sup>*Ibid.*, p. 10.

<sup>7</sup>*Ibid.*

<sup>8</sup>Wells, *op. cit.*, p. 410.

<sup>9</sup>Paul Bidermann, *The U.S. Airline Industry*, (New York: Praeger, 1982), p. 66.

<sup>10</sup>"A Dashed New Idea," *The Economist*, (February 9, 1985), p. 68.

<sup>11</sup>*Ibid.*

<sup>12</sup>"World Airlines: Take Your Pick," *The Economist*, (August 25, 1984), p. 21.

<sup>13</sup>*Ibid.*, p. 15; Wells, *op.cit.*, p. 409.

<sup>14</sup>"The Air War," *The Wall Street Journal*, (March 20, 1984), p. 1.