

November 12, 1986

WHAT DEREGULATION HAS MEANT FOR AIRLINE SAFETY

INTRODUCTION

The mid-air collision of an Aeromexico jet and a private airplane over Los Angeles this August reopened the question of airway safety. Is the air traffic control system overwhelmed by the increase in air traffic? Is the FAA properly monitoring the aviation industry? Most important, is airline industry deregulation prompting airlines to cut corners on safety and so endanger traveling Americans?

When President Jimmy Carter signed the Airline Deregulation Act of 1978, he brought to an end 40 years of economic regulation of the U.S. airline industry. Deregulation has since proved to be remarkably successful: more Americans now fly on more airlines at a lower cost than ever before. The total gain to travelers from deregulation has been estimated at about \$6 billion per year.¹

Critics of deregulation, however, have argued that these benefits have been achieved at the cost of airline safety.² They maintain that, as deregulation stimulated increased competition in the industry, airlines began to cut back on maintenance and safety. The increase in air fatalities in 1985--the worst year in worldwide aviation history--seemed to give credibility to such arguments.

1. Steven Morrison and Clifford Winston, The Economic Effects of Airline Deregulation (Washington, D.C.: Brookings Institution, 1986), p. 1.

2. See, for instance, John Nance, Blind Trust (New York: William Morrow and Co., 1986).

The critics' arguments, however, are misleading. Safety has not deteriorated since deregulation. In fact, in every category of air travel, from major airlines to small private planes, safety has improved--in terms of number of accidents and number of fatalities. The safety issue seems to be a red herring for those who wish to relax competition in the airline business and return it to the good old days when established airlines could make money merely by satisfying federal regulators, rather than travelers.

Policy makers, of course, must not be complacent about air safety. The Federal Aviation Administration must continue to enforce strictly the air safety rules and impose tough penalties on airlines that violate them. To improve safety further, the nation's air traffic control system must be reformed. Under bureaucratic federal control, necessary improvement and expansion of the system has been hampered unnecessarily. Transferring the system from government hands to the private sector would improve significantly an already highly safe air travel system by spurring technological development and reducing delays.

Next year the Airport and Airway Improvement Act, the law authorizing capital expenditures for the current system, as well as the aviation taxes that now fund it, will expire, presenting Congress with the opportunity to begin this important reform.

THE JURY IS IN ON THE 1978 DEREGULATION ACT

From 1938 to 1978, interstate airlines were one of the most regulated industries in the U.S. Almost every aspect of interstate air travel was controlled by the federal government. Each airline was required to obtain approval from the federal Civil Aeronautics Board (CAB) for each route it intended to travel, each city it would serve, and each ticket price it would charge. Air safety was regulated by a separate federal agency, the Federal Aviation Administration (FAA).

Criticism of this system emerged as early as the 1960s, as economists argued that the regulatory system hurt consumers, rather than protecting their interests. In effect, regulation had created a government-enforced airline cartel, leading to massive inefficiencies and artificially high prices for travelers. Recognizing these problems, the CAB began to loosen its regulatory grip in the mid-1970s, under the leadership of CAB chairman John Robson. This process accelerated under Carter's CAB chairman, Alfred Kahn.

The biggest changes came with the 1978 Airline Deregulation Act. It first phased out all CAB controls on routes and prices and then, in 1984, abolished the CAB. Significantly, safety regulation was unchanged by the act.

Deregulation has been a nearly unqualified success. The evidence:

- o Airfares are lower. Adjusted for inflation, airfares have fallen by an average of 6 percent since deregulation.³ More important, it has been estimated that prices are 39 percent lower than they would have been without deregulation.⁴
- o More Americans are flying. The number of passengers on U.S. airlines has jumped over 50 percent since 1978.⁵
- o More airlines provide service, giving more choice to Americans. In 1978, only 41 airlines offered scheduled passenger service. Today, despite a large number of mergers in the industry, there are 175 carriers. By contrast, the CAB almost never permitted new carriers to enter the market--rejecting 79 straight applicants between 1950 and 1974.⁶
- o Freed from the need to obtain government approval to restructure routes, airlines have increased their efficiency and allowed price reductions. Most notable, the "hub and spoke" system has become commonplace, whereby airlines route their passengers through certain "hub" airports, enabling their equipment and staff to be used more efficiently.

THE SAFETY RECORD

Has this tremendous economic gain come at safety's expense? Yes, insist many critics of deregulation. Former Braniff pilot John Nance charges in his 1986 book Blind Trust that: "The ultimate cost of those \$99 airline tickets may be measurable in more than services lost and leg room sacrificed. The true cost may be paid in passenger lives..."⁷ The seemingly poor airline safety record last year and the extensive media coverage made many Americans conclude that Nance might be right. With 1,430 fatalities on scheduled commercial flights

3. General Accounting Office, Deregulation: Increased Competition Is Making Airlines More Efficient and Responsive to Consumers, November 6, 1985, p. 21.

4. Morrison and Winston, op. cit., p. 15.

5. Unless otherwise noted, all statistics are from the U.S. Department of Transportation.

6. Elizabeth Bailey, David Graham, Daniel Kaplan, Deregulating the Airlines (Cambridge, Massachusetts: MIT Press, 1985), p. 222 n.2.

7. Nance, op. cit., p. 9.

worldwide, last year was the worst year, in terms of fatalities, in airline history. Based on this, many lawmakers have called for the reimposition of regulation on the U.S. airline industry.

Yet the majority of these fatalities occurred on foreign airlines, such as Japan Air Lines, still under the full economic regulation, and even the ownership, of their governments. In the U.S., last year's fatalities were lower than in 1977, a year before the deregulation act was passed, even though over 100 million more passengers flew on U.S. carriers. Just one year's figures, moreover, can say little about safety because of sharp year-to-year variations. Example: while U.S. major scheduled carriers experienced 197 fatalities in 1985, only four lives were lost in 1984. So far, no U.S. carrier has suffered a fatal accident in 1986.⁸

Valid air safety conclusions can come only from the pattern over several years. The record since 1978 demonstrates that air safety has improved markedly. As Table 1 indicates, in the seven years before deregulation, U.S. commercial aviation experienced a total of 1,574 accidents.⁹ In the seven years since deregulation, there have been 1,423 accidents, despite a heavy increase in traffic. In the seven-year period before deregulation, there were 2,776 air fatalities--since deregulation there have been only 1,923.¹⁰ In percentage terms, accidents since the Airline Deregulation Act have decreased by about 10 percent, and fatalities by over 30 percent.

The improved safety record since deregulation is even more striking when the increase in air traffic is taken into consideration. From 1972 to 1978, there were 2.35 accidents per 100,000 aircraft hours flown. But since 1978, the rate has fallen to 1.73 per 100,000 aircraft hours--a 26.4 percent reduction--and the fatal accident rate has decreased by 26.9 percent. Other measures of safety all tell the same story. For instance, the accident rate for major scheduled airlines, calculated by the number of departures, has been cut in half since deregulation--from 10 accidents per ten million departures to five per ten million.

Nor has the improvement in safety been confined to any particular type of aviation. Scheduled airlines, unscheduled airlines, air taxis, commuters, and small private planes all have seen their

8. There has been one fatal accident this year involving a foreign carrier in the U.S., the August 31 collision of an Aeromexico jet with a private plane outside of Los Angeles.

9. An accident is defined as any occurrence between the time passengers board and disembark from an airplane that results in death, serious injury to a passenger, or substantial damage to the aircraft.

10. Including all scheduled and unscheduled airlines, commuters, and air taxis.

Table 1
**COMMERCIAL AVIATION ACCIDENTS
 BEFORE AND AFTER DEREGULATION**

ALL COMMERCIAL AVIATION	1972-1978	1979-1985	Percentage Change
Total accidents	1,574	1,423	-9.6
Fatal accidents	349	311	-10.9
Fatalities	2,776	1,923	-30.7
Accident rate*	2.35	1.73	-26.4
Fatal accident rate	0.52	0.38	-26.9
MAJOR SCHEDULED AIRLINES (Part 121 scheduled airlines)**			
Total accidents	214	132	-38.3
Fatal accidents	34	20	-41.2
Fatalities	1,265	804	-36.4
Accident rate	0.54	0.27	-50.0
Fatal accident rate	0.09	0.04	-55.6
CHARTER AIRLINES (Part 121 Nonscheduled airlines)**			
Total accidents	24	27	+12.5
Fatal accidents	5	6	+20.0
Fatalities	589	334	-43.3
Accident rate	1.55	1.44	-7.1
Fatal accident rate	0.32	0.32	0.0
AIR TAXIS AND COMMUTERS (Part 135 operations)***			
Total accidents	1,336	1,264	-5.4
Fatal accidents	310	285	-8.1
Fatalities	922	785	-14.9
Accident rate	5.20	3.95	-24.0
Fatal accident rate	1.25	1.04	-16.8

Source: Department of Transportation.

*Accident rates are calculated in terms of accidents per 100,000 flight hours.

**Part 121 airlines are defined as those with aircraft with more than 30 seats or freight carriers with payload capacity of more than 7,500 lbs.

***Part 135 carriers operate aircraft with 30 seats or less, or payload capacity of 7,500 pounds or less. Prior to 1975, commuter and air taxi statistics were not recorded separately.

accident and fatality rates decrease since 1978. Among major airlines, for instance, there were 214 accidents in the seven years before deregulation, but only 132 since. Fatalities decreased from 1,265 to 804. Similarly, air taxis and commuters¹¹ have lowered their accident rates 24 percent, while nonscheduled (charter) airlines saw a 7.1 improvement in safety since 1978. Accident rates for "general aviation," which mostly involves small, private planes have also decreased--from 12.08 accidents per 100,000 flight hours in 1978 to 8.56 in 1985.

Many factors affect accident rates, such as improvements in collision warning systems and changes in air traffic control procedures. Thus, safety has improved even for categories of aviation, such as charters, which were not fully under CAB control. Nevertheless, the figures show that deregulation has not been associated with decreased safety. In a recent study at Washington University, St. Louis, economists Richard McKenzie and William Shughart find that, when other factors are taken into account in evaluating the statistics, deregulation has had no measurable impact on air safety.¹²

ARE AIRLINES REDUCING MAINTENANCE?

Although many critics of deregulation now concede that accidents have not increased, they are shifting their argument, claiming that the financial pressures caused by increased competition encourage airlines to cut costs by cutting corners on maintenance. This, they say, steadily increases the risks in flying and the chances of accidents in the future.

According to the FAA, airline expenditures on maintenance functions, in fact, did increase, on average, less than the rate of inflation from 1978 to 1984. But all this may mean is that competition

11. Until 1975, the FAA did not tabulate data for these two categories separately.

12. Richard B. McKenzie and William Shughart II, Has Deregulation of Air Travel Affected Air Safety?, Center for the Study of American Business, Working Paper No. 101, June 1986.

has spurred airlines to improve the efficiency of maintenance work. Since 1978, for example, labor costs have been decreasing throughout the industry as airlines have forced their unions to revise wasteful work rules. Other changes, including the introduction of newer aircraft with lower maintenance costs, increased use of computers, and the greater use of "contract" maintenance (whereby one airline utilizes the excess maintenance capacity of others) have brought down maintenance costs.

There is no evidence, moreover, of maintenance "corner cutting." Studies suggest that financial pressures on airlines have little, if any, effect on safety efforts. In a 1979 study for the Civil Aeronautics Board by the Public Research Institute, economists David Graham and Marianne Bowes found no systematic relationship between an airline's profitability, liquidity, or debt level and the amount it spends on maintenance.¹³ Comparing financial performance with safety, they found no correlation between safety and four out of the five measures of finances and a minimal correlation for the fifth. This year, the Department of Transportation updated the Graham-Bowes study, using the same methodology as in the original study. Again, no relationship between a firm's finances and its maintenance efforts was found.¹⁴

KEEPING AVIATION SAFE

The argument that greater competition leads to a decrease in safety assumes that a safety record is not an important consideration when travelers choose an airline. In practice, however, airlines know that to stay competitive, and hence profitable, they dare not put their passengers in danger. As every businessman knows, the only way to make money is to give customers what they want--and airline passengers want safety.¹⁵

The costs of losing a reputation for safety are enormous--and well understood by airlines. A single fatal crash can cost an airline hundreds of millions of dollars due to liability claims and lost future business from anxious travelers. Air Florida never recovered

13. David Graham and Marianne Bowes, Do Finances Influence Airline Safety, Maintenance, and Service?, The Public Research Institute, April 16 1979. The four measures of financial performance were the liquidity ratio, leverage ratio, income/equity ratio, and the market/book equity ratio.

14. Peter Belenky, Preliminary Investigation of the Statistical Relationship between Airline Finances and Maintenance, 1976-1984, May 7, 1986.

15. See, John Doherty, "Crashing for Dollars?", Reason, June 1986, p. 48.

from the negative publicity following the 1982 crash of one of its airplanes into the Potomac River in Washington, D.C. Manufacturers are also hurt. After the 1979 crash of a DC-10 in Chicago, McDonnell Douglas' stock valuation plummeted about \$200 million.¹⁶ For years, the company had to fight the inference that the DC-10 might not be as safe as competing planes.

In addition to the commercial incentives to maintain a high safety level, the Federal Aviation Administration vigorously enforces federal regulations. In 1984, for example, the FAA began a stepped-up program of meticulous "white glove" inspections of airlines, examining all aspects of the airline operations. When FAA has found violations, it has imposed record fines. American Airlines has had to pay \$1.5 million, and Pan Am \$1.95 million, while Eastern Airline is contesting a \$9.5 million fine. The FAA also has grounded airlines when safety is at issue. In one month in 1984, the agency grounded three airlines: Provincetown-Boston Airlines, American Central Airlines, and South Pacific Airways.

Curiously, such penalties are cited by some opponents of deregulation as evidence that flying is becoming less safe. The same reasoning would conclude that an increase in speeding fines after a police crackdown means that speeding has become a bigger problem than before the police action. What the increase in penalties does show is an increase in enforcement. If the FAA had reduced its intensity of inspection and turned a blind eye to violations, penalties would have decreased. Would critics of deregulation then conclude that safety had improved?

The FAA has been expanding its inspector staff. Throughout the late 1970s and early 1980s, the number of federal inspectors declined. But beginning in 1984, the Department of Transportation (DOT) earmarked more money for the force. By next fiscal year, DOT plans to have 2,010 inspectors on duty, almost exactly the 2,012 on duty in 1979, and an increase of almost 700 in two years. Furthermore, safety standards are being strengthened. Example: last month the National Transportation Safety Board recommended a tightening of standards for commuter airlines, including more training and testing of pilots, and improved cockpit equipment.¹⁷ DOT is expected to approve most of these changes.

16. Andrew Chalk, "Market Forces and Airline Safety: The Case of the DC-10," Economic Inquiry, January 1986, pp. 43-60.

17. Michael Specter, "Tougher Rules Urged for Small Airlines," The Washington Post, October 1, 1986.

REFORMING THE AIR TRAFFIC CONTROL SYSTEM

Another major aspect of commercial aviation that has come under recent criticism is the air traffic control system. This system controls the flow of air traffic between major airports across the country and has been operated for the federal government by the FAA and its predecessor agencies since 1936. Though unchanged by the 1978 economic deregulation of the air industry, it was thrown into turmoil in 1981 when air traffic controllers were dismissed for violating their contracts by striking. The August Aeromexico accident again focused public attention on air traffic control.

Critics point to a seeming increase in the number of near mid-air collisions over the last few years as evidence that the system has deteriorated. According to the FAA, there were 311 near collisions in 1983, increasing to 589 in 1984, and 758 in 1985. These figures, however, are not a reliable gauge of the quality of the system. Their accuracy and meaning can vary widely from year to year, depending on how many incidents were actually reported by pilots to the FAA. Before 1985, moreover, the agency had significant problems with consistency in the methods it used to process information, making statistics before that time generally unreliable.

A sounder measure of air traffic risk is the number of actual mid-air collisions over the years. There the trend is clear: it is decreasing. While 35 collisions occurred in 1978, there were 24 each in 1985 and 1986, the second lowest numbers in two decades. Collisions involving commercial jetliners, moreover, are almost nonexistent. The Aeromexico accident was the first such collision since 1978.

While the numbers indicate no deterioration in air safety, there is much that can be done to ensure that the air traffic control system can handle an expansion of traffic without jeopardizing safety. The FAA has been notoriously slow, for instance, in adopting new technologies and methods and investing in the resources necessary to keep up with the rapidly expanding aviation industry. And even though the system is funded by its users through landing fees and taxes on aviation fuel, necessary funding is often held up in the congressional appropriations process. There is, for example, a bulging \$4.3 billion surplus in the aviation trust fund. Essential changes in the system, moreover, can often be entangled in red tape. The current ten-year program to improve the computer capability of the system, for instance, is just four years old but already a year behind schedule. And it is expected that changes in the rules concerning private plane travel near major airports, announced by the FAA after the Aeromexico disaster, will not gain final approval for at least another 18 months.

Typical of the FAA's troubles in adopting new methods is the trouble the agency had in developing an airborne collision avoidance system, which would warn pilots when they are on a collision course.¹⁸ Critics point out that, although the FAA recently announced that it soon will require planes to carry a collision avoidance system that it designed itself, a privately developed system has been available for over a decade. The reason for the delay: FAA bureaucracy. The privately developed system could have made many FAA ground stations obsolete and even led to a reduction in the number of controllers needed. Thus, one aviation industry official says, the FAA figured "We might get the [collision avoidance] system, and we'd be a smaller agency."¹⁹

The basic problem is that the FAA is a government bureaucracy. It simply cannot operate the system as well as could a private enterprise. What is needed to make the system more efficient and even safer is to take the air traffic control system out of the stifling hands of the federal bureaucrats.

It has been suggested that one way to do this would be to provide air traffic services through a federally chartered and monitored corporation operated and largely financed by the airlines themselves. This is proposed by the Air Transport Association.²⁰ This would be a step forward because day-to-day operation of the system would be removed from political control, allowing its managers to concentrate on serving the public. Yet such a corporation ultimately still would be responsible to politicians, limiting its effectiveness.

A better approach would be to provide air traffic services through a private corporation. This would remove political pressures on the system's operations and budget. Under a plan developed by Reason Foundation President Robert Poole, the system would be owned by the users themselves, such as airlines, private pilots, and perhaps even air traffic controllers. The operation of individual control centers, however, would be contracted out to other firms on a

18. See, Daniel B. Wood, "New Devices Could Mean Safer Skies," Christian Science Monitor, September 4, 1986; and John Doherty, "Collision Course," Reason, June 1982.

19. James R. Carroll, "FAA Misled Congress on Safety System", Long Beach Press-Telegram, October 26, 1986.

20. See, Air Transport Association of America, Federal Corporation Approach to the Management and Funding of the Air Traffic Control System, September, 1985; and National Academy of Public Administration, The Air Traffic Control System: Management by a Government Corporation. A Study for the Air Transport Association of America, March, 1986.

competitive basis. This would create a strong incentive to provide the best service possible.²¹

Basic reform of this kind is necessary to enable the control system to handle expanding air travel while maintaining safety. The airlines respond to market conditions, moving capital and manpower in response to customer demand. Yet the system for controlling air traffic, a vital part of the industry's infrastructure, responds to political and bureaucratic conditions. It is divorced from the market, and does not respond quickly to it. This hinders growth and improvement in the industry, imposing costly delays and reducing the development of safety innovations. By moving air traffic control into the private sector, this inherent conflict can be resolved, allowing the system to better serve travelers, while accelerating the pace of air safety improvements.

CONCLUSION

The Airline Deregulation Act of 1978 has brought enormous benefits to travelers, ranging from lower prices to better and more abundant service. At the same time, safety has not been compromised. In the eight years since deregulation became law, accident and fatality rates have dropped substantially.

Nevertheless, federal officials, together with the airline industry, must continue to seek ways of ensuring the safety of air travel. The evidence suggests that the way to do this is to: 1) maintain tight federal inspection standards, while recognizing that it is in the airlines' self-interest to improve safety; and 2) reduce the pressure on the air traffic control system by transferring it from the federal bureaucracy to the private sector. The evidence also reveals that re-regulation is no answer. It would deny travelers their consumer clout while adding nothing to safety.

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21. See Robert W. Poole, Air Traffic Control: The Private Sector Option, Heritage Foundation Backgrounder No. 216, October 5, 1982; and Poole, Privatizing The Air Traffic Control System, Reason Foundation Issue Paper, forthcoming.