

The Failure of FAA Regulation

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I. Introduction

The recent attacks against the United States raised several questions concerning our national security. The government's main purpose according to the U.S. Constitution is to provide for national defense. Therefore, how was it that hijackers were able to compromise the nation's security with box cutters at a time when the federal government had spent \$1.5 trillion over the past five years for military purposes (Higgs 2002)? The answer can be found in the bureaucracy of the Federal Aviation Administration. Not only has the FAA compromised the nation's security, but it has also been the unseen source of flight delays and airline inefficiencies. The FAA was created in 1958 to insure aviation safety and to provide a nationalized system of air traffic control. However, over its long history it has become a federal bureaucracy that compromises safety and hinders the incorporation of new technology in the industry. The regulations imposed by the FAA have not only failed to keep Americans safe, but have cost Americans countless delays due to the inefficiencies created by an overly bureaucratic system.

The U.S. airline industry has been under some kind of regulatory control almost as long as there has been air travel. The Federal Aviation Agency, which later became the Federal Aviation Administration, was created in 1958 with the passage of the Federal

Aviation Act. At the time, it was thought that an independent federal agency was needed to run a nationalized air traffic control system and to standardize safety requirements for air travel (Burkhardt 1967). The FAA's key functions under Title 49 in the United States Code remain the same. The agency is to regulate aviation safety and security in order to develop and maintain a safe, secure, and efficient air traffic management system. The FAA claims that it is an institution of nearly 50,000 people dedicated to providing "a safe, secure, and efficient global aerospace system that contributes to national security and the promotion of U.S. aerospace safety (FAA Strategic Plan 2001)." If this is the mission of the FAA, then it has failed in nearly every respect since its inception.

The basic knowledge problem, as developed by Mises, Hayek and Kirzner, improves our understanding of the core problem of any central planning done by a government agency. The knowledge problem stems from the fact that a planner, especially a central planner, may fail to achieve an attainable goal because of the inadequacies of the planner's knowledge. Central planners are usually unaware of their own ignorance concerning the facts relevant to their social plans. Because the central planner cannot know everything about the problem he is confronted with, his knowledge must take the form of what he thinks he knows about the dispersed bits of knowledge that can be obtained. He uses these bits of dispersed knowledge to implement his social plan, but he may be unaware of other bits of knowledge that could have been relevant to achieve an objective. It is highly unlikely that a central planner can always know where to find, or how to look for, all the necessary bits of dispersed information known in the economic system relevant to a problem at hand. This is most problematic since it makes it impossible for the central planner to be fully cognizant of the nature of, or of the

amount of gaps in, his own knowledge. The tragedy of central planning toward industrial policy is that even the best-intentioned central planner is unaware of the knowledge problem, which is the ignorance of his own ignorance (Kirzner 1992).

While the mission of the FAA may be to provide a “safe, secure, and efficient global aerospace system” (FAA Strategic Plan 2001), the agency will not achieve its mission because a central planner cannot provide a comprehensive plan directed at the immediate attainment of the final goals. Put simply, the agency does not possess the knowledge needed to best address those objectives. However, “the insoluble knowledge problem confronted by central planners tends to dissolve through the entrepreneurial-competitive discovery procedure” (Kirzner 1992). Therefore, the basic knowledge problem is central to understanding the failure of the FAA to implement a strategy to obtain efficiency and safety in the air travel industry and its elimination is the policy most likely to result in real progress being made.

II. The History of Regulatory Control

Before the creation of the FAA, the Civil Aeronautics Board (CAB) had the power to force the cartelization of the airline industry. The CAB was granted the authority to assign certain routes to particular airlines and to control the fares charged on those routes. This control strictly limited competition and kept airfares well above those that would have been maintained in a free-market. The CAB’s rationing of routes favored certain firms and kept possible competitors from entering the industry. Fortunately for air travelers, the Airline Deregulation Act of 1978 deregulated routes, flights, and price controls imposed by the board. The Airline Deregulation Act

eliminated the Civil Aeronautics Board by phasing it out over a six-year time span. After the CAB was disbanded, what regulatory control that remained was left to the FAA (Rothbard 1995). The Airline Deregulation Act of 1978 allowed market forces in a large segment of the air-travel system (pricing and routing controls), but it failed to free up the infrastructure on which the airlines operate daily, the airports and the air traffic control system (Poole and Butler 1999).

While deregulation was left incomplete, air transport markets benefited greatly from the new freedoms firms had to set prices and develop route structures. In the decade after this partial decontrol, employment in the industry grew by 32 percent and passenger travel increased by 55 percent. Along with these increases, the real cost of travel dropped by about 17 percent on the major routes and by somewhat less in smaller markets. The second decade after this deregulation brought even more benefits, with ticket prices more than 20 percent lower in real terms and total passengers served up from 275 million to 600 million since 1978 (Button 1998). Consumers saved some \$19.4 billion per year thanks to the lower fares brought about by a more competitive marketplace (Poole and Butler 1999).

Beyond these gains, there has been no real reduction in safety standards. Air travel is known to be a relatively safe form of transportation, and the long-term trend of accident frequency has fallen over the years. Major U.S. airlines, in the fifteen years before deregulation, averaged about one accident resulting in death for every 830,000 flights. In the fifteen years after deregulation, the airlines averaged about one fatal accident for every 1,400,000 flights. In other words, the safety of air travel actually improved after decontrol as the fatality rate decreased by 41 percent (Button 1998).

The elimination of the CAB led to a more efficient air travel system with the development of hub-and-spoke networks. Deregulation allowed firms the freedom to focus on the development of their own operations and gave them the ability to explore better operating systems. When route structures were controlled, the airlines were coerced into operating in linear systems where route awards were given on east-west or north-south corridors. With decontrol, the airlines began to employ a hub-and-spoke delivery system that offered greater flexibility and generally utilized their equipment more efficiently. They found that consumers were better off in terms of travel ease and frequency of flights offered, even though most routes required one stop. Through the entrepreneurial-competitive discovery process, the airlines found out that they were more efficient and could provide their service and, at the same time, substantially reduce their costs by adopting this new delivery system.

The hub-and-spoke delivery system has become the standard by which the major airlines operate today. Major U.S. airlines have hub airports in certain cities, and the airlines network passengers through these hub airports to their final destinations. The hub-and-spoke system results in cost savings to airlines by allowing them to operate at greater capacity employment. This has been demonstrated with load factors rising substantially from what they were during regulatory control. Hub airports also allow more destinations to be served nonstop (Bailey 2001). In addition, the airlines have been able to centralize aircraft maintenance and to use their employees more efficiently at their hubs. Because the hub-and-spoke system allows airlines to fill more seats per flight, and enables their planes to be used more hours each day, the airlines' cost per passenger has fallen. As a result, average ticket prices have been lowered as firms compete for

customers. Finally, the hub-and-spoke system has given customers more flight time options between frequently traveled city-pair routes (Borenstein 2001).

III. The Current Situation: Problems Associated with Continued Regulatory Control

A. The Air Traffic Control System

Although the development of the hub-and-spoke system has contributed to greater airline efficiency, there remain tremendous inefficiencies in the industry as indicated by recent data showing that over half of the flights in the U.S. are not on time (Carey 2000). Why has this problem arisen and what, if any, solution can be found to remedy it? The problem essentially stems from the remaining regulatory control. If airlines were fully free, then those with continuing delay problems would be eliminated by more efficient carriers entering the market. The problem is that the airline industry is not operating in a truly free market. The FAA has been given monopoly power over the air traffic control system and over the airports. Thus, government ownership and control of both the airports and the air traffic control system provide the reason for these continuing problems (Poole and Butler 1999).

The efficiency gains made by the airlines due to the decontrol of prices and route structures has put pressure on the air traffic control system, which is critical to the day-to-day operations of the air travel system in the United States (Poole and Butler 1999). As the National Commission to Ensure a Strong and Competitive Airline Industry stated, "In the history of American business there has never been a major commercial industry whose minute by minute operating efficiency was capped by the daily operating

efficiency of the federal government – except for the airlines” (Kahn 1993). Because the Department of Transportation and the FAA are managed in a top-down bureaucratic style, the development and the implementation of technological modernization of the air traffic control has been minimal at best (Poole and Butler 1999). The FAA as it exists today is unable to provide “the industry with the state-of-the-art air traffic control system that it badly needs (Kahn 1993).” A study by Jenkins and Frechtling has found that up to half of all airline delays are potentially due to the antiquated air traffic control system employed by the FAA (Poole 1993). As a result, it has been estimated that airlines lose about \$3 billion a year in fuel and crew time because of delays imposed by a poor traffic management system. This does not include the several billion dollars lost in the value of passengers’ time (Poole 2001).

Poole identified five principal problems with the current air traffic control (ATC) system. First, because the ATC system is part of the FAA, it receives its funding through annual congressional appropriations which are unpredictably tied to the federal budget process. The variability in ATC funding makes long-term planning for capital investments difficult. Second, the FAA is subject to in-depth oversight by several congressional committees due to the industry’s public visibility. In addition, because the agency is part of the executive branch, it is subject to oversight by both the Department of Transportation and the White House’s Office of Management. This results in conflicting priorities. Third, FAA employees are recruited and trained by a “one-size-fits-all” civil service system that was intended for bureaucratic desk jobs. However, the business of maintaining and improving the complexities of a high-tech air traffic control system is not well suited for such bureaucrats. Fourth, the ATC system has severe

procurement problems and has to go through a great deal of bureaucratic red tape to make any kind of purchases to improve the system. The ATC's modernization programs are predictably years behind schedule and always over budget. Finally, the roles of safety regulator and operator of the air traffic control system conflict with each other. As safety regulator, the agency is responsible for promoting safety, but since the ATC system is critical to that objective, in reality the FAA is basically regulating itself. The FAA has a regulatory role over the industry, but it also has to advance the health of the industry by improving the ATC system at the same time (Poole 1993).

The arbitrary safety regulations imposed by the FAA combined with its inability to incorporate new technology, are the central reasons why inefficiencies remain. Most flights continue to transverse the country on a limited number of straight-line paths, which are set by areas of ground-based beacons called vort. The straight-line paths are additionally constrained by a safety regulation, known as the in-trail separation rule, which sets a minimum distance between aircraft in the landing queue. The regulation was implemented so that the turbulence from the wake of the lead aircraft would be avoided. The in-trail separation rule diminishes the capacity of an airport runway from 60 operations per hour (its theoretical maximum) to around 40 operations per hour.

Global Positioning Systems (GPS) provide a new technology that already exists and could allow many more planes to approach a single runway from several directions at the same time rather than in long, straight lines. This would allow planes to avoid the wake of other aircraft by never traveling in their paths. GPS would also allow pilots to select their routes in flight, which would open up a wide array of alternative options. The GPS technology could increase capacity at major congested airports by 50 percent and

could greatly expand the available air space needed to accommodate the growing amount of air traffic (Poole and Butler 1999). The GPS technology exists today and has been implemented in the private sector on products such as automobiles and even golf carts. If the GPS technology can give precise yardage for golfers, just imagine how useful it would be in locating and navigating air traffic. Because the FAA is bogged down in bureaucracy, GPS navigation in aviation remains a futuristic dream as the agency's current plan aims to have such a system fully operational by 2007 (FAA Strategic Plan Supplement 2001). The current plan notwithstanding, GPS integration by 2007 is probably just a hopeful guess by the FAA and will likely not be realized until years later.

If air traffic control were privately controlled, economic incentives would drive technological change and this system would be quickly adopted. As an investor-owned firm, the air traffic control system would be able to raise capital in financial markets in order to fund an investment that could easily be paid for from the revenues that would be gained by charging airlines user fees (Poole 1993). Firms would be motivated by the profit incentives of entrepreneurial insight to discover and implement new technology quickly and effectively. More than fifteen countries have switched from government controlled air traffic control systems to commercialized systems over the past fifteen years. They have reaped "the benefits of faster technological modernization, reduced delays, and lower costs over time (Poole and Butler 1999)." Because of central planning, the entrepreneurial-competitive discovery process has been displaced by a central plan that kills the market's ability to get past the basic knowledge problem associated with adopting a more efficient ATC system (Kirzner 1992).

B. Protectionist Regulation

Along with privatizing the ATC system, the government can increase the efficiency of the airlines by repealing the protective privileges (or hindrances) that have been extended to U.S. air carriers. The elimination of the anti-trust regulations that prevent airlines from enacting their own scheduling and merger negotiations is a step that needs to be taken. A strict subjectivist approach to economic efficiency would hold that any voluntary agreement among human actors is purposeful. Mergers and acquisitions are thought to be economically efficient because they attempt to accomplish selected ends such as promoting greater productivity and profitability by incorporating plans consistent with those ends. A plan for a merger or acquisition will be efficient if the means incorporated in the quest of chosen ends are in line with those ends. Government prohibition of such voluntary market agreements, from this strict subjectivist approach, would produce a clear-cut reduction in the efficiency of social organization that could be had by the actions of entrepreneurs. The government hinders the competitive process with legal restrictions that impose barriers to exchange and entry. These barriers have harmed consumers by barring suppliers from engaging in mutually beneficial exchanges and business agreements (Armantano 1990).

The government's protectionist policy for the U.S. airline industry is a good example of how such lawful restrictions of voluntary market agreements hinder economic efficiency. While the current ATC system accounts for some inefficiency (Poole 1993), evidence indicates that there are strong economic incentives for more carriers to enter domestic airline markets. In fact, there are many other carriers eagerly wanting to enter U.S. markets today. However, because they are either foreign owned and/or controlled,

they are not allowed to do so under current U.S. law. Foreign carriers are denied cabotage on routes inside U.S. borders. In addition, U.S. law limits the amount of foreign investment in airlines that operate domestic flights. Shareholders from other countries cannot own more than 25 percent of the voting stock in a domestic airline or more than 49 percent of the equity (Button 2000). Since few investors in the U.S. are willing to take the risk of starting a new airline because of the sunk costs associated with entering this market, the level of competition is diminished. The sunk costs of entry connected directly of the scale of entry necessary to compete are very high in the airline industry (Borenstein 2001). Therefore, the current restrictions on foreign competition are essentially anti-competitive.

Allowing foreign entry into the U.S. airline market would result in a number of benefits to American air travelers. First, the added competition among airlines would insure lower fares and more options for travelers. It would eliminate the remaining monopoly power that domestic carriers currently have by allowing foreign carriers to compete with them. Second, technological and organizational progress would be driven by the increased competition among air carriers generally. Airlines would be forced to provide better services in order to maintain their standing in the industry. Third, opening the U.S. airline market to global competition would lead to greater deregulation of international routes. This would make international travel more efficient. It would also put the U.S. in a better position to negotiate the further liberalization of foreign markets for freer trade. Finally, the airlines would have access to a deeper capital market, which would alleviate problems in economic downturns. U.S. carriers would be able to merge with foreign ones in times of crisis and avoid filing for bankruptcy. This makes the

airlines more efficient and less susceptible to the highly elastic demand that the airlines face in times of economic recession (Button 2000).

Beyond the problems associated with international competition, under the current anti-trust restrictions, airlines are unable to collaborate on scheduling at airports because it is thought that they would engage in anti-competitive practices (World Airline News, Mar. 2001). The inability for airlines to communicate with each other for scheduling purposes has resulted in countless delays at congested hub airports due to the over scheduling of flights and the limited capacity of the airports (World Airline News, Aug. 2001). A repeal of this regulation would allow the airlines to communicate with one another in order to coordinate their flight plans with respect to the schedules of other firms and with respect to the corresponding capacities of the airports involved in their schedules.

Airlines are also subject to anti-trust regulation any time a merger or acquisition takes place. Section 7 of the Clayton Act prohibits any merger or acquisition “where in any line of commerce in any section of the country, the effect of such acquisition may be substantially to lessen competition, or tend to create a monopoly” (Shenefield and Stelzer 1993). The problem with the anti-trust laws imposed on the airlines, or any other business for that matter, is that the laws are arbitrary by nature and can be enforced at any time for any reason (Hudgins 2001). The Department of Justice claims that the Merger Guidelines they have set up give an understandable outline for determining if a transaction is probable to reduce competition. Their merger analysis begins by identifying the applicable markets in which the merging firms compete, and identifying the other firms that also compete in those markets to see if there are reasonable

substitutes. The Department of Justice's competitive concerns in the airline industry are not restricted to mergers that eliminate a hub competitor that already exist, but also extend “to block acquisitions that would have eliminated potential hub competitors” (Bingaman 1996). The Clayton Act not only involves actual anti-competitive effects but also those that might occur as a result of the merger. The statute makes no distinction between whether the resulting firm had realized market power or has merely set the stage for market power by getting significant market shares (Shenefield and Stelzer 1993). The airlines that have been “indicted under the anti-trust laws were not abusing customers,” but the laws have been inclined “to protect competitors and reduce efficiency throughout the market” (Armantano 1990). U.S. airlines not only have to contend with a limited source of capital due to protective restrictions, but they also have to be wary of arbitrary anti-trust litigation brought about by proposed mergers and acquisitions.

C. Safety

While government regulation has brought about several efficiency problems in the airline industry, nothing has raised more doubts about the FAA’s ability to insure aviation safety as the recent air attacks of September 11th. People flying on airlines want to obtain services that are safe and have dependable quality. Consumers would like to have advanced assurance of quality and safety, but can the FAA provide regulations that assure quality-and-safety in the industry with a top-down bureaucratic style (Klein 1998)? Obviously, based upon the events of September 11th, the evidence indicates that the current system has major flaws in it and that providing safety assurance is uncertain. One of the major problems is that both the airlines and the FAA are responsible for providing

safety. The airlines can blame the FAA and say that they were only following the orders, and the FAA can blame the airlines for not enforcing their regulations well enough.

When everyone is in charge of security and safety, it often means that no one is in charge of security and safety (Hudgins 2001).

The airlines failed to prevent the attacks of September 11th because the FAA does not allow them to protect their property except in federally approved ways. Box cutters were the most deadly weapons on the planes used in the attacks that day because the FAA prohibited the pilots from arming themselves. As a result, the hijackers were easily able to commandeer the aircraft. If the pilots or crew had access to superior weapons, then they could have used them to exercise the force necessary to protect their lives and the airlines' property. However, "Title 14, Code of Federal Regulations, Part 108.11 only allows armed planes with the approval of the FAA" (Tucker 2001). Because the FAA has not allowed guns on planes since the end of Nixon's sky marshal program in 1973, airplanes have been susceptible to hijackings for years. Again, the basic knowledge problem of the central planner accounts for the FAA's failure to adequately provide for safety. The FAA administrator, Jane Garvey reported to the New York Times (September 25, 2001) that guns on planes were not even considered or never would have been before the attacks of September 11 (Tucker 2001).

Institutional changes need to be made in order to provide better incentives for security liability (Poole and Butler 2001). The airports, which are government owned, need to be privatized and put in charge of their own security. This has been done in several other countries where the airports are legally liable for any security lapses (Hudgins 2001). This would create a vested interest for airports to provide the best

security possible because they would be financially liable for their failures. Airports would have an incentive to hire innovative firms that would provide more efficient and effective forms of security (Murphy 2001). Because of the basic knowledge problem, we do not know what the best security measures are for airports. However, we do know that they can become known more readily through the competitive entrepreneurial-discover process (Kirzner 1992).

The problem with the industry today is that the FAA is getting more involved in aviation safety and security instead of less involved. The FAA responsibility for the safety problems in the industry stems from its monopoly over the air traffic control system and from its commitment to a perimeter security system at the airports and to its weapons policy on aircraft. Government-imposed monopolies only assure resistance to innovation while maintaining what are essentially inefficient operation methods.

The reason why the ATC system compromises safety and security is the same reason why it is operationally inefficient. The ATC system has been the source of safety hazard for years. The ATC system currently uses archaic radar and 1960's mainframe computers that run on vacuum tubes. The equipment is so antiquated and prone to failure that the FAA has to preserve safety margins by "artificially increasing the spacing between flights, imposing ground holds, and using other techniques that reduce system capacity" (Poole 2001). The obsolete ATC equipment, along with the increase in air traffic since 1978, has been the source for a growing trend of collisions and near misses on runways (McKenzie 2001). The FAA's monopoly of the ATC system has tended to undermine the safety of all those who are involved in air travel.

In addition to the safety and security problems arising due to the ATC system, the FAA is also undermining safety by promoting a perimeter shield at airports and obfuscating issues of liability. In a free market situation, consumers would not have to keep up with the safety records of airlines. The airlines' insurance providers, the ones with the most liability, would have a vested interest in monitoring their clients. Insurance companies would have to check to make sure that the airlines kept up with their safety standards. If certain airlines did not do so, then they would consequently suffer direct financial penalties in the form of larger insurance premiums (Murphy 2001). The FAA has no financial liability in the airlines and cannot provide the best safety standards for this reason. Wildavsky (1988) put the matter this way: "Safety results from a process of discovery. Attempting to short-circuit this competitive, evolutionary, trial and error process by wishing the end – safety – without providing the means – decentralized search – is bound to be self-defeating" (288). Since the FAA does not have the profit incentive, nor is it held liable for failure, its safety and security programs will be destined to fall far short of those likely to be adopted by private institutions (Klein 2001).

Clearly, there are also several problems associated with incorporating passenger screening into a federal bureaucracy. First, federalizing passenger screening does nothing about regulating the access to the rest of the airport by private employees of the airport. Federal investigators have been known to be able to get around the perimeter security of airports and onto the tarmac one out of three times in the past. Second, under a federal civil-service bureaucracy, the ability to attract and keep competent workers is limited as well as the ability to incorporate new technology. Even if new technology can be incorporated, it is difficult to fire civil workers whose jobs would be eliminated by that

technology. Third, under the federal government's one-size-fits-all security plan it will be difficult to accommodate all airports because of their varying sizes and designs (Poole 2001). Most of all, central planning will most assuredly fail to provide the best security system because of the basic knowledge problem the central planner faces (Kirzner 1992).

The recent federalization of airport security under the FAA will turn out to be a new source of compromised safety and efficiency in the industry. The current plan of the U.S. government is to federalize passenger-screening operations and to employ a perimeter security strategy like the one that failed on September 11th. The only difference is that the new system will be more thoroughly owned and operated by the federal government. Hence, it will be even more bureaucratic. The government's one line of defense is to protect the "outer ring" of the airports before travelers get to their gates. Once travelers pass through metal detectors and their baggage clears the X-ray machines, they are considered to be in a "weapons-free zone" and "safe" inside the perimeter. Each traveler who passes through the perimeter is assumed to be a potential hijacker and treated equally under this system. Treating everyone as a potential terrorist makes perimeter security tremendously inefficient in terms of the time and money it takes to provide daily enforcement. The FAA's elimination of curbside check-ins and the assignment of equal marginal risk to each traveler will also do nothing to increase the chances of catching a potential terrorist (Anderson 2001).

The airports and airlines should be able to enter voluntary contracts that determine who is liable in the case of security lapses. When private firms determine that on their own accord, insurance companies can underwrite the contracted liabilities. Both the airports and the airlines would have to provide an adequate amount of safety and security

based on the requirements of the insurance companies. The airports and airlines would either have to hire firms to provide these safety and security measures or provide it themselves. Consumers would not have to worry about quality and safety assurances because the insurance companies would have a vested interest in making sure that certain standards were being met. The airports and airlines would have a vested interest in providing quality safety because the underwriters of the risk would penalize them financially in the form of higher insurance premiums if they did not do so. Competition and the entrepreneurial-discovery process in the free market would drive all the firms involved to provide the most effective and efficient safety measures at the lowest cost to the consumer. However, since the FAA mandates the imposition of its own safety and security system and is not financially liable for its failure, there is little likelihood that its system will either be safe or secure. The FAA has no real incentive to change its plan even in the face of overwhelming evidence that it failed. In fact, the perverse nature of any bureaucracy is that it can lobby to expand its size and control when a failure occurs, even if its central planning was the reason for the failure. As long as there is an FAA in charge of the efficiency and safety of the aviation industry, there will most assuredly be ever increasing flight delays and disasters like the one on September 11th. Such a state of affairs is one of the unfortunate outcomes of that tragedy.

References

Anderson, W.L. (2001) 'Why the Show of Force Won't Work', *Daily Articles*, Auburn: Ludwig von Mises Institute.

- Armantano, D.T. (1990) *Antitrust and Monopoly*, New York: Holmes & Meier Publishers, Inc.
- Bailey, E.E. (2001) 'Airline Deregulation Confronting the Paradoxes', *Regulation: The Cato Review of Business & Government*, Washington: Cato Institute.
- Bingaman, A.K. (1996) 'Consolidation and Code Sharing: Antitrust Enforcement in the Airline Industry', *Department of Justice*, Washington: U.S. Department of Justice.
- Burkhardt, R. (1967) *The Federal Aviation Administration*, New York: Frederick A. Praeger, Publishers.
- Button, K.J. (1998) 'Opening U.S. Skies to Global Airline Competition', *Trade Policy Analysis*, Washington: Cato Institute.
- Federal Aviation Administration (2001) *FAA Strategic Plan*, faa.gov.
- Federal Aviation Administration (2001) *FAA Strategic Plan 2001 Supplement: Performance Planning and Achievement*, faa.gov.
- Higgs, R. (2002) 'Defending the Homeland', *The Free Market*, Auburn: Ludwig von Mises Institute.
- Hudgins, E.L. (2001) 'Airlines in the Aftermath', *Daily Commentary*, Washington: Cato Institute.
- Hudgins, E.L. (2001) 'Perspectives', *Regulation: Cato Review of Business & Government*, Washington: Cato Institute.
- Kahn, A.E. (1993) 'Change, Challenge, and Competition: A Review of the Airline Commission Report', *Regulation: The Cato Review of Business & Government*, #3, Washington: Cato Institute.
- Kirzner, I.M. (1992) *The Meaning of Market Process: Essays in the Development of Modern Austrian Economics*, London: Routledge.
- Klein, D.B. (1998) 'Quality and Safety Assurance: How Voluntary Social Processes Remedy Their Own Shortcomings', *The Independent Review*, v. II, n. 4,
- McKenzie, R.B. (2001) 'Making Sense of the Airline Safety Debate', *Regulation: The Cato Review of Business & Government*, Washington: Cato Institute.
- Murphy, R.P. (2001) 'The Source of Air-Travel Insecurity', *Daily Articles*, Auburn: Ludwig von Mises Institute.

- Poole, R.W., Jr. (2001) 'Commercializing Air Traffic Control', *Regulation: The Cato Review of Business & Government*, Washington: Cato Institute.
- Poole, R.W., Jr. (1993) 'How To Spin Off Air Traffic Control', *Reason Public Policy Institute*, Los Angeles: The Reason Foundation.
- Poole, R.W., Jr. (2001) 'Learn from Experience on Airport Security', *The Heritage Foundation Backgrounder*, Washington: The Heritage Foundation.
- Poole, R.W. Jr. and Butler, V. (1999) 'Airline Deregulation: The Unfinished Revolution', *Regulation Magazine*, vol.22, no.1, Washington: Cato Institute.
- Poole, R.W., Jr. and Butler, V. (2001) 'Fixing Airport Security: 21st-Century Strategies for 21st Century Threats', *Reason Public Policy Institute*, Los Angeles: The Reason Foundation.
- Rothbard, M.N. (1995) *Making Economic Sense*, pp. 187-192, Auburn: Ludwig von Mises Institute.
- Shenefield, J.H. and Stelzer, I.M. (1993) *The Antitrust Laws: A Primer*, Washington: AEI Press.
- Tucker, J. (2002) 'Hijacking is Theft', *The Free Market*, Auburn: Ludwig von Mises Institute.
- World Airline News*, Mar. (2001) 'Hutchison Bill Addresses Scheduling Collaboration, Environmental Reviews', Phillips Publishing International, Inc. and Gale Group.
- World Airline News*, Aug. (2001) 'Revisions To Senate Delay Bill Alleviate Airline Collusion Concerns', PBI Media, LLC. and Gale Group.