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RECENT DEVELOPMENTS IN AVIATION SAFETY: PROPOSALS TO REDUCE THE FATAL ACCIDENT RATE AND THE DEBATE OVER DATA PROTECTION

Evan P. Singer*

I. INTRODUCTION

Since the early 1980s, the commercial aviation fatal accident rate has remained statistically insignificant but relatively static. Given the projected growth in twenty-first century commercial aviation, however, a static accident rate assumes far greater significance. In fact, one study cited by the Federal Aviation Administration (FAA) found that combining the projected growth in commercial aviation traffic with a flat fatal accident rate will translate into a “major hull loss every week to ten days, somewhere in the world, by the year 2015.”¹ Many leading aviation organizations naturally describe these projections as “wholly unacceptable.”² In response, the aviation industry has attempted to reduce the fatal accident rate by developing new safety programs that focus on the collection, analysis and dissemination of aviation safety data.

Many of these initiatives have already taken form. In the United States, the National Transportation Safety Board (NTSB) has begun a crusade for mandatory installation of cockpit-view video recorders while airlines and the FAA attempt to devise two major programs designed to increase the availability and analysis of voluntarily-submitted aviation safety data: the Air-

* The author wishes to thank the many aviation professionals who contributed their time and knowledge in order to make this paper a success.
line Safety Action Partnership Program (ASAP) and the Flight Operations Quality Assurance Program (FOQA). The industry hopes that data retrieved from these programs can then be shared across cockpits, airlines and international borders to help reduce the fatal accident rate.

Similar programs are underway in Europe as well. For example, the FOQA program being developed in the United States is modeled after a similar program operated for decades at British Airways. More recently, the European Civil Aviation Conference and Joint Aviation Authority combined forces to initiate the ECAC/JAA Aviation Safety Action Program. And third, the International Civil Aviation Organization (ICAO) recently promulgated “a series of recommendations designed to strengthen aircraft accident prevention through enhanced reporting systems and more efficient sharing of safety-related information.”

Ultimately, the aviation industry anticipates that these programs will help reduce the fatal accident rate and therefore increase air safety. In principle, these programs strive to provide concerned industry professionals and overseers with better information that, viewed in the aggregate, forms trends and patterns upon which airlines and governmental regulators can act. In sum, airlines hope that informational awareness will provide early detection of potential problems, thereby avoiding future airline accidents and losing fewer lives.

Several obstacles stand in the way of successfully implementing these programs, however. First, many industry organizations believe the NTSB proposal for mandatory cockpit-view video recorders is misplaced as a reactive, post-accident investigatory tool rather than a proactive accident-prevention tool. These criticisms of proposed cockpit video monitoring, however, are the professed benefits of the ASAP and FOQA programs. Second, industry professionals desire statutory safeguards for retrieved data, since any incentive to voluntarily submit data would be negated by a regulatory policy of “kill the messenger.” Moreover, industry groups argue for statutory protection to quell the misuse or misappropriation of the data for purposes or parties

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other than those responsible for enhancing air safety, such as the news media or potential post-crash litigants.

Though these obstacles present significant challenges to the industry, many of these proposals will likely become a reality in the coming months and years. This Comment provides a summary of four recent proposals and the resulting debate. In so doing, this Comment is divided into three broad areas composed of ten sections. First, the Comment examines the statistical, technological and regulatory environment in which the recent proposals have been made, including a discussion of cockpit voice recorders. Building from that framework, this Comment next examines the first proposal, cockpit video monitoring. And finally, this Comment examines the three remaining proposals that rely primarily on voluntarily-submitted aviation safety data: the Airline Safety Action Partnership (ASAP), the Flight Operations Quality Assurance program (FOQA) and the Global Aviation Information Network (GAIN).

II. STATISTICAL BACKGROUND

A. RECENT AND PROJECTED GROWTH IN COMMERCIAL AVIATION

Despite its relative infancy as a form of transportation, commercial aviation has experienced nearly exponential growth since the late 1990s. In 1982, a commercial airliner departed an airport in the United States slightly over five million times. In 1999, however, more than eleven million commercial airliners took to the sky. Flight hours have also dramatically increased from under seven million in 1982 to over sixteen million in 1999. And, according to the NTSB, "[a]t the nation's 10 busiest airports, aircraft operations have increased by 44 percent, on average, in the last 10 years, and are projected to grow by another 27 percent in the next 10 years."

The growth rate of commercial aviation in the twenty-first century is expected to, quite literally, take off. In the United States, for example, the Department of Transportation expects

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6 Id. (listing 11,160,000 airline departures in 1999).
7 Id.
commercial aviation enplanements to grow from a 1995 level of 544.8 million to 925.6 million in 2008, an increase of nearly 70%. In November 2000, NTSB Chairman Jim Hall cited the following statistics in his remarks to the Global Airline Industry Program:

By 2010, domestic enplanements will grow from 561 million to over 850 million; the domestic commercial air carrier fleet will increase from just over 5,000 aircraft to more than 7,500 aircraft; the worldwide fleet [will] double in size to 20,000 aircraft by 2010; and the number of our citizens traveling by air will increase from 126 million to 230 million.10

International organizations make similar projections. As of October 23, 2000, the International Air Transportation Association (IATA) predicts the annual average growth rate for scheduled international passenger traffic will hit 5.6%.11 According to IATA, this means that by 2004, “the number of passengers on international scheduled services will rise by over 150 million . . . to a 2004 level of 643.1 million.”12

B. THE FATAL ACCIDENT RATE

For the last ten to twenty years, the commercial aviation accident rate has remained relatively unchanged.13 According to NTSB statistics, in 1982 scheduled air carriers14 suffered 0.058 fatal accidents per 100,000 departures, while in 1994 the rate had changed little to 0.051 fatal accidents per 100,000 departures.15 The International Civil Aviation Organization (ICAO) has observed a nearly identical international trend.16

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9 Table 12, Bureau of Transportation Statistics, U.S. Department of Transportation, 1997.
10 Hall Remarks, supra note 8.
12 Id.
14 Air carriers operating under 14 C.F.R. § 121 [hereinafter Part 121].
15 Table 6, supra note 5. See also 1999 Annual Report, supra note 1.
16 ICAO, Annual Report of the Council – 1999, at 10 (1999), available at http://www.icao.org [hereinafter ICAO Annual Report] (showing that since 1980 the worldwide number of fatal accidents per 100,000 million landings has varied between 0.1 and 0.2).
In the last several years, however, the fatal accident rate appears to be in decline. In the United States, for instance, air carriers suffered 0.018 fatal accidents per 100,000 departures in 1999, down from 0.051 fatal accidents in 1994.\textsuperscript{17} The worldwide rate seems to be declining as well, in 1999 hitting its lowest annual rate in twenty years.\textsuperscript{18}

III. TECHNOLOGICAL AND REGULATORY BACKGROUND: COCKPIT VOICE RECORDERS

To fully understand the current debates over data collecting devices and potential statutory protection of their work product, it is necessary to begin with an overview of the technological and regulatory framework applicable to current devices, such as the cockpit voice recorder (CVR). It is within this framework that future programs, such as the cockpit video recorders and voluntary-data collection and analysis, will operate.

A. HISTORICAL DEVELOPMENT OF COCKPIT VOICE RECORDERS

According to a paper published by Dennis Grossi of the National Transportation Safety Board, airborne recording devices, including cockpit voice recorders, have been placed in airline cockpits for decades.\textsuperscript{19} The Civil Aviation Authority\textsuperscript{20} issued the first flight data recorder\textsuperscript{21} regulation in 1957, mandating the installation of crash-protected flight recorders in transport category aircraft by July 1, 1958.\textsuperscript{22} Since that time, the regulation of airborne recorders has mirrored technology's ability to record more and more parameters,\textsuperscript{23} including voice communications.

\begin{itemize}
  \item \textsuperscript{17} Table 6, \textit{supra} note 5.
  \item \textsuperscript{18} ICAO Annual Report, \textit{supra} note 16, at 10.
  \item \textsuperscript{19} For a meticulous history of aviation data recorders, see Dennis R. Grossi, \textit{Aviation Recorder Overview}, available at http://www.ntsb.gov/NTSB/query.asp (last visited Sept. 1, 2002).
  \item \textsuperscript{20} The Civil Aviation Authority (CAA) and the Civil Aeronautics Board (CAB) are predecessors of the Federal Aviation Administration. \textit{Id.}
  \item \textsuperscript{21} A Flight Data Recorder (FDR) electronically monitors and records aircraft performance characteristics such as speed, heading, altitude, and engine thrust. See Grossi, \textit{supra} note 19. See also http://www.ntsb.gov/aviation/CVR_FDR.htm (last visited Sept. 1, 2002).
  \item \textsuperscript{22} Grossi, \textit{supra} note 19.
  \item \textsuperscript{23} See 14 C.F.R. § 121.344 (1997) (requiring all transport airplanes manufactured after Aug. 18, 2000 to carry an FDR able to record at least fifty-seven parameters, and airplanes manufactured after Aug. 18, 2002 to record at least eighty-eight parameters). See also Grossi, \textit{supra} note 19, at 4.
\end{itemize}
To that extent, the FAA mandated the installation of cockpit voice recorders in transport aircraft in 1966.\textsuperscript{24}

In response to recent technological developments, in 1999 the NTSB recommended that the FAA strengthen its airborne recorder requirements. On March 9, 1999, the NTSB recommended that all newly manufactured airplanes should carry both a CVR and FDR fitted with two combined voice and data recorders, one recorder located as close to the cockpit as practical and the other as far aft as practical.\textsuperscript{25} The NTSB also recommended that by 2005, all existing aircraft should be retrofitted with a 2-hour solid-state CVR that is fitted with an independent power supply capable of operating the CVR and area microphone for 10 minutes when aircraft power to the CVR is lost.\textsuperscript{26} In theory, the FAA has agreed to these recommendations and is currently authoring a Notice of Proposed Rule Making on the subject.\textsuperscript{27}

B. Protection of Cockpit Voice Recorders by U.S. Law

The United States Code places two restrictions on the availability of information obtained from a cockpit voice recorder. First, federal law prohibits the NTSB from publicly disclosing "any part of a cockpit voice recorder recording or transcript of oral communications by and between flight crew members"\textsuperscript{28} that the Board finds irrelevant to the accident or incident.\textsuperscript{29} Second, federal law prohibits litigants from compelling discovery of information obtained from a cockpit voice recorder. Importantly, 49 U.S.C. § 1154 specifically protects any recording obtained from a CVR\textsuperscript{30} as well as any portion of the transcript that the NTSB "has not made available to the public."\textsuperscript{31} Only a determination by the court, based on an in camera review of the data, that the information sought is so vital that its absence would preclude the moving party from a fair trial, will non-public portions be made available.\textsuperscript{32} There is no exception to the protection of the audio recording.

\begin{itemize}
\item\textsuperscript{24} Grossi, supra note 19.
\item\textsuperscript{25} NTSB, Safety Recommendation A-99-16 through 18 (Mar. 9, 1999).
\item\textsuperscript{26} Id.
\item\textsuperscript{27} See Grossi, supra note 19, at 5.
\item\textsuperscript{28} 49 U.S.C. § 1114(c) (1994).
\item\textsuperscript{29} Id.
\item\textsuperscript{30} 49 U.S.C. § 1154(b) (1994).
\item\textsuperscript{31} Id. § 1154(a)(1)(A).
\item\textsuperscript{32} Id. § 1154(a)(2)(A).
\end{itemize}
Courts have generally upheld the protections against discovery of cockpit voice recordings, including challenges based upon the Freedom of Information Act (FOIA). One court, for example, upheld the NTSB's decision to withhold the CVR tape from a plaintiff who brought suit after the crash of United Airlines Flight 585 at Colorado Springs, Colorado. The plaintiff in McGilvra sought to compel the release of the CVR tape pursuant to FOIA. The court, however, found that 49 U.S.C. § 1114(c) falls within "subsection (A) of FOIA's Exemption 3" and therefore concluded that the NTSB "properly denied the plaintiff's FOIA request."

At least one other court has not only limited access to the cockpit voice recorder, but found the entire NTSB accident report to be inadmissible. While this extremely protectionist attitude presents the minority view, courts almost uniformly find only the factual portions of NTSB accident reports are admissible.

C. INTERNATIONAL PROTECTIONS

American jurisprudence corresponds with general international sentiment: cockpit video recordings should be protected by law. In Canada, "[e]very on-board recording is privileged and . . . no person . . . shall knowingly communicate an on-board recording or permit it to be communicated to any person." Moreover, the privilege afforded by Canadian law includes the production of any on-board recording (or evidence

35 Id. at 102-3.
37 Most courts only admit into evidence the factual portions of NTSB accident reports. See e.g., Am. Airlines v. United States, 418 F.2d 180 (5th Cir. 1969) (upholding limited admissibility of only factual portions); Berguido v. Eastern Air Lines, Inc., 317 F.2d 628 (3d Cir. 1963) (limiting admissibility to factual portions of the NTSB accident report and excluding any conclusions of probable cause); In re Air Crash at Charlotte, North Carolina on July 2, 1994, 982 F. Supp. 1071, 1075 (D.S.C. 1996) (finding that courts have "routinely admitted the factual portions of investigative reports generated after an airline disaster" and doing the same).
38 "On-board recording" is defined to include "a recording of voice communications originating from, or received on or in, the flight deck of an aircraft." Canadian Transportation Accident Investigation and Safety Board Act, S.C. 1989 ch. 3, § 28(1)(a) (1989) (Can.).
39 Id. at S.C. 1989, ch. 3, § 28 (2).
thereof) in "any legal, disciplinary or other proceedings."\textsuperscript{40} The United Kingdom recently adopted a similar position that, subject to limited exceptions, no "relevant record shall be made available . . . to any person for purposes other than accident or incident investigation."\textsuperscript{41}

The International Civil Aviation Organization also asserts a protective attitude in Annex 13, which governs aircraft accident investigations. According to Chapter 5.12 of Annex 13:

The State conducting the investigation of an accident or incident, where it occurred, shall not make the following records available for purposes other than accident or incident investigation, unless the appropriate authority . . . determines that their disclosure outweighs the adverse domestic and international impact such action may have on that or any future investigations:

d) cockpit voice recordings and transcripts from such recordings.\textsuperscript{42}

While some countries\textsuperscript{43} have yet to statutorily prevent unauthorized use of cockpit voice recordings, a significant percentage of the world's most prominent aviation organizations and countries, including the United States, have legislation aimed at protecting information obtained by a CVR. Having surveyed the modern treatment of cockpit voice recorders under both U.S. and international law, we can now turn to the first proposed safety initiative: the cockpit view video camera.

\textbf{IV. THE PROPOSAL FOR MANDATORY COCKPIT VIDEO RECORDERS}

\textbf{A. TECHNOCAL FEASIBILITY}

Video technology is not a recent development, even with respect to its use in aviation. It has been used in conjunction with airplane simulators for flight crew training purposes as well as for scientific research. For example, one study concerning sleep deprivation of flight crews and its affect on their performance

\textsuperscript{40} Id. at S.C. 1989, ch. 3, § 28 (2)(b).

\textsuperscript{41} Civil Aviation (Investigation of Air Accidents and Incidents) Order 2000 (SI 2000 No. 1345) (May 17, 2000).


\textsuperscript{43} For example, Austria, Denmark, Sweden and Switzerland do not protect information obtained from cockpit voice recorders.
collected video data from a Boeing 747-400 simulator. Moving the camera from the controlled simulator environment to an uncontrolled cockpit, however, presents a new set of both technological and economic problems. And, while video technology has historically been unable to overcome these obstacles, modern digital technology appears to have made the leap into technological and economic feasibility.

As the leaders of the cockpit-view video recorder movement, the NTSB has championed these technological improvements. In his testimony during the Egypt 990 hearings, NTSB Chairman Hall highlighted several of the recent technological advances, including “video compression technology, solid state memory, and the availability of high quality, inexpensive cameras.” At least one other expert now believes that in the future, all the airborne recorders will be combined into “combi” units, recording audio, data and video in a single “Black Box.” And, importantly for post-crash analysis, Chairman Hall noted that “[s]olid state technology coupled with video compression techniques will now permit the storage of video recording in a crash hardened recorder.” Given these developments, the NTSB now believes that it has become “technically and economically feasible” to capture and record “images of what is happening inside the cockpit.”

B. The Original Proposal: USAir Flight 427

The National Transportation Safety Board originally proposed installing cockpit-view video recorders after investigating USAir (now US Airways) Flight 105 in 1989. According to the

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45 Issues Arising Out of the Egypt Air Crash, 106th Cong. 85 (2000) (statement of Jim Hall, Chairman, National Transportation Safety Board) [hereinafter Hall Testimony]. See also Mike Horne, Future Video Accident Recorders (1999) (“[R]ecent developments in Digital Video Recording technology can be used in the aerospace environment to achieve the aims of air accident investigators.”).

46 Hall Testimony, supra note 45.

47 Id.

48 Hall Remarks, supra note 8, at 5.

49 Id. See also Safety Recommendation A-99-16 through 18, supra note 25 (stating that “[v]ideo recording of the cockpit environment on newly manufactured airplanes is now technologically and economically feasible.”).

50 NTSB, USAir Flight 105: Boeing 737-200, N283AU; Kansas City International Airport, Missouri; September 8, 1989. Aircraft Incident Report NTSB/AAR-90/04 (1990) [hereinafter USAir 105].
The NTSB report, the crew commenced a premature descent while on an instrument approach to Kansas City International Airport in instrument meteorological conditions. The airplane eventually struck and severed four electrical transmission cables located approximately 7,000 feet short of the landing runway threshold. No persons onboard the airplane were injured, and although suffering a dual hydraulic system loss, the airplane executed a successful missed approach and landed safely at nearby Salina, Kansas.

The Board's investigation into the cause of the incident, however, was significantly hampered because of a limitation on the recording length of the installed cockpit voice recorder. According to the Board, "[b]ecause USAir 105 flew for more than 1 hour after the incident, no CVR record of conversations that occurred during the incident was retained." Consequently, the Board stressed the need for "longer playing CVRs, which can record cockpit sounds for as long as 2 hours" as well as potential "long-playing video recordings."

In making its case, the Board first cited several then-recent accidents in which it believes a cockpit video recorder would have been helpful. Two such incidents included a runway overrun by a Piedmont Airlines Boeing 737 in 1987, as well as a 1988 accident involving a Delta Airlines Boeing 727 which crashed because the flaps were incorrectly set for takeoff. In both cases, the Board surmised that a cockpit-view video recorder would have facilitated the determination of possible crew actions that remained ambiguous on the CVR recording (such as whether the crew set the wing flaps correctly and/or properly armed the spoilers).

Second, although the USAir Flight 105 investigation did not present the NTSB with this problem, the Board nonetheless argued that cockpit video monitoring could help overcome problems arising from a new generation of electronic flight in-

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51 Id. at 36.
52 Id. at Executive Summary.
53 Id.
54 Id. at 50. See also 14 C.F.R. § 125.227(d) (1988) (requiring CVRs to record no less than thirty minutes of elapsed time before erasing).
55 USAir 105, supra note 50, at 50.
56 Id. at 51.
57 Id.
58 The aircraft involved in USAir Flight 105 was N283AU, a Boeing 737-200A, delivered to USAir in 1983. See id. at 7.
While traditional round-dial gages typically freeze upon impact and therefore provide investigators with pre-impact information such as airspeed, descent rate and/or engine thrust settings, next generation "glass" cockpits have no memory and provide the investigator with little evidence of the computer display's status up to, or at the time of, an air accident. In essence, the computer and monitors simply go blank, leaving little (if any) evidence of the pre-impact information provided to the flight crew. Post-crash investigation consequently becomes more difficult. In response, the Board concluded "as the introduction of aircraft with electronic 'glass' cockpit instrumentation to line service continues, the value of cockpit video recordings will increase as an aid to investigators attempting to determine the status of the cockpit instrumentation presented to the flightcrew." Given the current trend of fleet modernization among U.S. airlines, the Board's renewed recommendation for cockpit-view video recorders is hardly surprising.

C. A RENEWED CALL: PART 135 OPERATORS

Despite concern about "glass cockpits" and avionics modernization, the NTSB did not initially revitalize its crusade for cockpit-view video recorders in the context of "glass cockpit" airplanes. Instead, slightly over eleven years after the USAir 105 investigation, the NTSB proposed the mandatory installation of cockpit-view video recorders in generally smaller, air taxi and charter airplanes operated under 14 C.F.R § 135 (hereinafter Part 135).

Once again, the Board's recommendation stemmed from a series of accident investigations, this time involving Part 135 operators. According to the NTSB, these investigations were hindered by the loss of flight recorder data due to the interruption of aircraft electrical power. Specifically, the Board cited the

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59 A "glass cockpit" refers to a modern airplane cockpit dominated by large computer screens, such as the "Next Generation" Boeing 737 or Airbus A320, instead of the traditional "round-dial" gages of earlier airplanes, such as the Boeing 727 or Boeing 737-200A. See Safety Recommendation A-99-16 through 18, supra note 25. See also USAir 105, supra note 50, at 51.
60 See Horne, supra note 45, at 3.
61 USAir 105, supra note 50, at 51.
63 Id.
crash of a Cessna C-208B\textsuperscript{64} as an example of aircraft "not equipped with a conventional CVR or FDR [that] have, on average, 140 accidents or incidents per year, resulting in more than 100 fatalities per year."\textsuperscript{65} Because these airplanes lack airborne recording devices, accident investigation and analysis becomes difficult.\textsuperscript{66}

On February 8, 2000, the NTSB officially recommended that the FAA incorporate proposed standards\textsuperscript{67} for a crash-protective video recording system into a technical standards order\textsuperscript{68} and then:

Require, within 5 years of a technical standards orders’ issuance, the installation of a crash-protective video recording system on all turbine-powered, nonexperimental, nonrestricted-category aircraft in 14 Code of Federal Regulations Part 135 operations that are not currently required to be equipped with a crashworthy flight recorder device.\textsuperscript{69}

The FAA officially responded to the NTSB recommendation in a letter dated May 3, 2000.\textsuperscript{70} In the letter, the FAA “agree[d] with the intent of [the] safety recommendation, but [could not] commit to the timeframe requested by the Board.”\textsuperscript{71} In contrast to the Board’s sense of urgency, the FAA argued for further research before it would make regulatory changes. According to the FAA, “the issue of installing of crash-protective video recording equipment . . . and the appropriate timeframe for the instal-

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\textsuperscript{64} According to the NTSB accident investigation, N12022 crashed about 18 nautical miles southwest of Montrose, Colorado, killing all nine persons aboard. The flight was operated by the U.S. Department of the Interior. See NTSB, Accident Report DCA98MA002, available at http://www.ntsb.gov.

\textsuperscript{65} Safety Recommendation A-99-60, supra note 62.

\textsuperscript{66} Investigation of N12022 proved especially difficult since the flight was operated under Visual Flight Rules (VFR) from an airport without an air traffic control tower. Further, the flight attempted no further communications with an air traffic control facility. See NTSB, Accident Report DCA98MA002, supra note 64.


\textsuperscript{69} Id.


\textsuperscript{71} Id.
lation should be submitted to the Radio Technical Commission of Aeronautics (RTCA)\textsuperscript{72} Future Flight Data Collection Committee for consideration.”\textsuperscript{73}

The NTSB, however, contends that although generally beneficial,\textsuperscript{74} RTCA is an inappropriate forum for the Part 135 operators issue. In its May 8, 2000 letter to the FAA, the NTSB emphasized that it considers the Part 135 issue a time-critical one, and RTCA’s ten to fifteen year projection period will not support this immediacy. In any event, since all parties currently await the RTCA report, the FAA has not yet proposed any regulation, expedited or not, requiring Part 135 operators to install cockpit-view video recorders in their aircraft.

D. PROPOSALS FOR PART 121 OPERATORS—THE EGYPT AIR 990 HEARINGS

The crash of Egypt Air Flight 990\textsuperscript{75} awoke the dormant cockpit view-video recorder debate with respect to transport category airplanes operating under 14 C.F.R. § 121 (“Part 121”), a debate resting fairly quietly since the USAir Flight 105 investigation. According to information obtained from its cockpit voice recorder, Flight 990 First Officer El Batouty repeated the phrase “I rely on God” eleven times in the final two minutes of the doomed flight.\textsuperscript{76} At the same time, it appears that the autopilot was manually disconnected, the engines shut down, and the airplane nosed over into an extremely steep dive.\textsuperscript{77} Although the NTSB has not officially determined the probable cause of the

\textsuperscript{72} According to its website, RTCA is a private, non-profit corporation that responds to requests from the FAA Administrator to “develop[ ] consensus-based recommendations regarding communications, navigation, surveillance, and air traffic management . . . issues.” RTCA is composed of “over 200 government, industry and academic organizations” and its committees are staffed by volunteers. The NTSB and FAA jointly sponsor the Future Flight Data Collection Committee. See http://www.rtca.org (last visited Sept. 1, 2002).

\textsuperscript{73} FAA Response, supra note 70.

\textsuperscript{74} In fact, NTSB Chairman Hall co-signed the letter authorizing RTCA to research the use of cockpit-view video cameras. See Hall Testimony, supra note 45.

\textsuperscript{75} Egypt Air Flight 990, a Boeing 767-332ER en route from New York City to Cairo, crashed during the early morning hours on October 31, 1999, near Nantucket Island, Massachusetts. All persons on board were killed. See Public Docket, Egypt Air 990, NTSB, available at http://www.ntsb.gov/events/EA990/default.htm (last visited Sept. 1, 2002).


\textsuperscript{77} Public Docket, supra note 75.
many in the aviation community have interpreted the data as consistent with a successful suicide attempt by First Officer El Batouty.\textsuperscript{79}

Approximately five months after the Egypt Air 990 crash, the U.S. House of Representatives’ Committee on Infrastructure and Transportation’s Subcommittee on Aviation held a hearing on issues arising out of Egypt Air 990, including the implementation of cockpit video recorders.\textsuperscript{80} Building on its Part 135 recommendation of two months prior, the NTSB acknowledged a lack of conclusive evidence supporting pilot suicide, but nonetheless used the opportunity to “build support for cockpit video recorders.”\textsuperscript{81}

As is now its habit, the NTSB once again attempted to establish a series of accident investigations demonstrating the need for cockpit-view video recorders. This time, however, NTSB Chairman James Hall cited not only the crash of Egypt Air 990, but also Swissair Flight 111\textsuperscript{82} as well as the now infamous ValuJet Flight 592.\textsuperscript{83} According to Chairman Hall, had a cockpit-view video camera been installed on ValuJet 592, it might have “provided critical information about the exact smoke and fire conditions present in the cockpit during the last few minutes of the flight.”\textsuperscript{84} With respect to Egypt Air 990, Chairman Hall surmised that the NTSB “believes that electronic cockpit imagery would help resolve issues surrounding the flight crew’s actions in the cockpit that resulted in the changes in the aircraft’s controls as well as the circumstances that prompted those actions.”\textsuperscript{85}

\textsuperscript{78} The NTSB has ruled out mechanical failure and weather-related causes. \textit{Id.}

\textsuperscript{79} Despite the NTSB’s findings, Egyptian experts have concluded that mechanical failure, and not pilot suicide, caused the crash of Egypt Air 990. \textit{See} Public Docket, \textit{supra} note 75.

\textsuperscript{80} U.S. House of Representatives Comm. Rep., \textit{supra} note 74.


\textsuperscript{84} Hall Testimony, \textit{supra} note 45.

\textsuperscript{85} \textit{Id.}
Secondly, the NTSB advanced its "glass cockpit" argument to keep pace with the technological improvements of flight deck avionics: the installation of controller-pilot data link (CPDL) communications. The Board believes that as the possibility (and probability) of non-voice data-link communications increases between airplanes and air traffic control, the ability of the present-day cockpit voice and flight data recorders to monitor and record those transmissions will be limited. For that reason, Chairman Hall testified that "the video recording of the cockpit CPDL display would be an acceptable and cost effective means" of recording that data for post-crash investigators.

E. After Egypt Air—The Crusade Continues

Any doubt concerning the importance of cockpit video monitoring to the NTSB has been dispelled in recent months. In a series of speeches and presentations during the final months of 2000, NTSB Chairman Hall repeatedly campaigned for mandatory installation of cockpit-view video recorders. For example, in remarks to the ICAO Air Navigation Committee in November 2000, Chairman Hall commended the committee's support for modernizing flight data recorders, including cockpit-view video recorders. As Chairman Hall recognized, "I have spoken out at every opportunity about the need for video recorders in the cockpits of our commercial aircraft. I hope that you will continue to work toward that goal. Video recordings are not a luxury—they are a necessity..." Eight days later, Chairman Hall also shared the NTSB belief that "cockpit image recorders are the next natural step in on-board recorders" with the Global Airline Industry Program. After once again arguing that technological advancements make cockpit video monitoring feasible as well as necessary, Chairman Hall summarized the NTSB position as follows: "The idea is not to replace the CVR or FDR, or duplicate information already recorded, but to capture information that is not already recorded. That would enable us to more easily determine causes of accidents and implement solutions to improve safety."

86 Id.
88 Id. (emphasis added).
89 Hall Remarks, supra note 8.
90 Id.
V. THE RESPONSE TO COCKPIT VIDEO MONITORING

A. THE FEDERAL AVIATION ADMINISTRATION

Thus far, the FAA has not required the installation of cockpit-view video recorders in either Part 121 or Part 135 aircraft. Instead, the FAA has decided to await the results of increased research that it hopes will produce reasonable technical standards. FAA Associate Administrator for Regulation and Certification, Mr. Thomas McSweeny, summarizes the FAA position as: "At the present time, the FAA does not mandate the use of video recordings in the cockpit of any aircraft. However, we have taken steps to initiate a discussion within the aviation industry on a future role for video technology in flight data collection."

As it did in response to the NTSB Part 135 recommendation, the FAA has submitted the Part 121 cockpit video monitoring issue to the RTCA for consideration. The FAA has asked the Future Flight Data Collection Committee of RTCA to "explore and develop future concepts for flight data collection technologies for use in both accident investigation and accident and incident prevention." According to Mr. McSweeny, the FAA believes that "the use of the RTCA is a proper forum for the discussion of these issues" and has requested RTCA produce a report that "reflects a ten- to fifteen-year look-ahead at anticipated data collection needs and technologies that leverage new and emerging technology." The FAA, NTSB, and the industry at large await the RTCA reports.

B. THE AIRLINES' RESPONSE

While airlines generally concede that in the future video recorders probably will aid accident investigation, the current industry response to cockpit video monitoring has been less than enthusiastic. Representing the airlines before the Senate Subcommittee, the Air Transport Association of America, con-

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91 Issues Arising Out of the Egypt Air Crash, 106th Cong. 85 (2000) (statement of FAA Associate Administrator Thomas McSweeny) [hereinafter McSweeny Testimony].
92 See supra note 72.
93 McSweeny Testimony, supra note 91.
94 Id.
95 Id.
96 Id.
97 The Air Transportation Association of America (ATA) represents the major U.S. passenger and cargo air carriers. According to ATA, ATA members "transport approximately 95% of the passengers and goods transported by air on U.S.
ceded that “at some point cockpit video recorders will perhaps be the norm” but cautioned that “we are not yet ready to use them properly.” On one hand, ATA appreciates the potential benefits of video technology, and points out that as video technology has overcome potential problems (such as adapting to the dynamic lighting conditions of an airplane cockpit—simulated or real), many airlines have begun to incorporate “video cameras in flight simulators to record . . . training sessions.”

On the other hand, however, ATA raises two principal objections to current proposals for mandatory cockpit-view video recorders. First, ATA makes a temporal argument, cautioning that cockpit video monitoring remains a tool of accident investigation and not prevention. Consequently, cockpit video recorders do not save lives but rather posthumously examine the causes of death. However important accident investigation is to air safety, ATA nonetheless argues that the industry should concentrate on developing proactive programs designed to minimize the chance of the crash, rather than reactive programs designed to examine the causes of the crash. Only preventative measures, according to ATA, maximize the industry’s return on safety. “If we had but one dollar to spend on safety, it would be spent of [sic] prevention not investigation and it would be a dollar well spent.”

Second, before ATA lends its support to mandatory cockpit-view video recorders, it requires increased statutory protection for the information recorded and preserved by the cameras. Such protection is needed, according to ATA, because of the “unfortunate history of abuse” of airborne recorder information by unintended non-aviation, information recipients, such as the recent television broadcast of portions of the audio tape capture.

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98 Frenzel Testimony, supra note 97.
99 Id. In contrast to cockpit video monitoring, however, the video tape is promptly erased after a post-training debriefing. Id.
100 Note that ATA rejects the NTSB’s contention that cockpit-view video cameras will provide invaluable but otherwise unattainable information to accident investigators. According to ATA, “We would acknowledge that a video recording of the Egypt Air accident, and possibly the Swiss Air accident, would be helpful to investigators . . . . It’s a stretch however to assume that a camera aimed and focused on the instrument panel is going to provide the golden nugget that solves the mystery. And yet, some believe that to be the case.” Id.
101 Frenzel Testimony, supra note 97.
102 Id.
tured by the cockpit voice recorder from American Airlines Flight 965. ATA reminded Congress that the “use of the recording should be limited to the events surrounding the investigation and not to enhance TV ratings.” ATA posits that if the media recognizes the entertainment value of voice recordings, its ambition to obtain video recordings would be overwhelming. Unfortunately this ambition provides little, if any, benefit to air safety and therefore is unacceptable to ATA.

C. THE LOUDEST AND MOST EMPHATIC RESPONSE: THE PILOT UNIONS

The most vehement objection to mandatory cockpit-view video recorders comes from pilot unions, such as the Air Line Pilots Association (ALPA) and the Coalition of Airline Pilots Association (CAPA). Testifying during the Egypt Air 990 hearings, both pilot organizations rejected any proposal for mandatory cockpit video monitoring, concluding that however well-intentioned, cockpit-view video recorders are a misguided attempt to increase air safety.

First, both unions join ATA in arguing for enhanced proactive, rather than reactive safety initiatives. Citing recent initiatives such as the White House Commission on Aviation Safety and Security (the “Gore Commission”) and the National Civil Aviation Review Commission, ALPA President Woerth argued that:

The current industry thrust, and rightly so, is towards a proactive approach (incident identification & analysis), instead of traditional reactive approach (accident investigation). In other

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104 Frenzel Testimony, supra note 97.

105 According to its website, the Air Line Pilots Association (ALPA) represents over 67,000 pilots flying for 51 different airlines in the United States and Canada. See http://www.alpa.org (last visited Sept. 1, 2002.) Members include pilots at Delta Air Lines, United Airlines and Northwest Airlines. The Coalition of Airline Pilots Association (CAPA) forms a consortium of member organizations to increase bargaining and lobbying power. See http://www.capapilots.org (last visited Sept.1, 2002). Id. Its members make up the flight crews at airlines such as American Airlines, FedEx, United Parcel Service and Southwest Airlines. See http://www.capapilots.org (last visited Sept.1, 2002).

words, provide the air transportation industry with the tools to detect & remedy the unsafe and undesirable trends that will eventually result in accidents, and thereby prevent the next accident without having to wait for the 'smoking hole.'107

CAPA echoed Captain Woerth's sentiments, arguing that the FAA should "mandate equipage of aircraft with systems and devices that enhance safety—that help prevent accidents or save lives and reduce injuries in the event of an accident."108 CAPA further argued that given the current backlog of proactive safety initiatives currently before the FAA, the agency should act on those initiatives before considering any new, reactive safety measures. In sum, the "strained regulatory resources should be devoted to completing [the] rulemakings that will save lives before even considering the video camera question."109

Second, both organizations reject the notion that even as a reactive tool, cockpit-view video recorders enhance aviation safety. In fact, ALPA unambiguously discards the notion that "video monitoring... of flight deck crews will make any contribution at all toward increas[ing] air safety."110 For support, ALPA relies on the 1999 conclusion of the International Civil Aviation Organization's Accident Investigation Group (ICAO AIG) that cockpit video cameras were not "technically warranted."111 CAPA goes even further, rejecting the cockpit-view video camera not only as a potential benefit to safety but even as a benefit to accident investigators. According to Chairman Miller, CAPA does not "believe [cockpit-view video cameras] would provide additional information that would be sufficient to make a probable cause determination for accidents whose cause could not otherwise be determined."112 Instead, CAPA argues that since modern flight data recorders are now able to record an enormous number of parameters, the FDR provides the acci-

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107 Woerth Testimony, supra note 106.
108 Miller Testimony, supra note 106.
109 Id.
110 Woerth Testimony, supra note 106.
111 Id.
112 Miller Testimony, supra note 106. CAPA makes two principal arguments to refute the utility of cockpit video monitoring, each one using the same accidents cited by the NTSB. Id. First, CAPA reminds the NTSB that a video camera will display little in a smoke-filled cockpit, such as in ValuJet 592. Id. Second, CAPA questions how a cockpit video recorder will solve the problems associated with electrical power outages. Id. "For power outages, the way to solve the problem would be to ensure a back-up power source for the existing recording devices, not to require new recording devices subject to the same problems." Id.
dent investigator with the same information as a cockpit-view video camera, just in a different form.

Given those conclusions, it is not surprising that pilot organizations attack proposed cockpit monitoring as an unwarranted, potentially “egregious invasion of privacy.”\textsuperscript{113} According to ALPA, a balance must be struck “between a flight crew’s individual right to privacy and the collective benefits for aviation safety.”\textsuperscript{114} And cockpit-view video recorders, by providing little (or no) potential benefit to air safety, therefore necessarily impede upon a flight crew’s right of privacy. Like ATA, however, pilots appear to define privacy in terms of data protection, particularly from media broadcasts as well as using video data to aid the potential criminal prosecution of pilots.

First, pilots argue that unless protected, cockpit video recordings could provide the media with a top story to satisfy its “viewers’ voyeuristic appetite.”\textsuperscript{115} Unfortunately for Ted Koppel, pilots argue that national broadcasts fail to enhance air safety. As CAPA Chairman Miller stated:

What we fear is that, however well-intentioned the NTSB may be in making its proposal, cockpit videos will wind up on the evening news... or on the internet, with millions of viewers gawking at pilots in the cockpit struggling to control an aircraft under the most difficult conditions imaginable.\textsuperscript{116}

Both organizations rely on their collective experience with current cockpit voice recorders (CVR) as support for measures designed to prevent the “release of the imagery for inappropriate purposes”\textsuperscript{117} Like ATA, pilots contend that the recent national television broadcast of the CVR from doomed American Airlines Flight 965,\textsuperscript{118} described by Captain Woerth as “an outrage to many pilots in this country,”\textsuperscript{119} demonstrates the need for statutory protection. Because of incidents such as American 965, ALPA has concluded that the “public, and that includes most of the media, has neither the background knowledge, the analytical skills, nor the incentives to help us much with the

\textsuperscript{113} Woerth testimony, supra note 106.
\textsuperscript{115} Miller Testimony, supra note 106.
\textsuperscript{116} Id.
\textsuperscript{117} Woerth Testimony, supra note 106.
\textsuperscript{118} See supra note 103.
\textsuperscript{119} Woerth Testimony, supra note 106.
painstaking, complex, and often frustrating task of furthering aviation safety."\(^{120}\) And given that pictures are worth more than a thousand words, pilots have "no confidence that we can completely prevent video abuses and inappropriate releases."\(^{121}\)

Second, pilots raise concerns about the use of video recordings to aid post-accident litigation, including the criminal prosecution of pilots. While neither group contends that airline flight crews should receive immunity from prosecution\(^{122}\) or be "held blameless when they make mistakes,"\(^{123}\) both ALPA and CAPA argue that recorded data has been used "improperly and unwisely, to aid the prosecution."\(^{124}\) As CAPA noted, "one of the strongest proponents of video recorders at NTSB’s symposium was a plaintiff’s lawyer who said, in essence, that ‘video cameras will make it easier to make my case.’"\(^{125}\)

Although the criminal prosecution of pilots remains extremely rare in the United States, pilots argue that the possibility is not totally impossible, particularly given the recent trend towards criminalizing aviation accidents. The most infamous recent example of a post-crash criminal investigation involves Valujet Flight 592, which crashed after departing Miami, Florida, killing all aboard.\(^{126}\) The NTSB concluded that improperly loaded oxygen generators had exploded in the cargo hold, igniting a fire that consumed the aircraft and debilitated the flight crew.\(^{127}\) In July 1999, the United States Attorney’s Office filed a twenty-four count indictment against those responsible for loading the generators, primarily for falsifying records\(^{128}\) and violating hazardous materials regulations.\(^{129}\) And although the U.S. Attorney’s office did not prosecute the flight crew operating Valujet 592, ALPA supports its argument by citing at least one

\(^{120}\) Fenwick, supra note 114.

\(^{121}\) Worth Testimony, supra note 106.

\(^{122}\) "Most airline labor agreements indemnify pilots from financial liability.” See Fenwick, supra note 114.

\(^{123}\) Id.

\(^{124}\) Id.

\(^{125}\) Miller testimony, supra note 106.


\(^{127}\) Id.

\(^{128}\) Many of the charges for falsifying documents had nothing to do with the Valujet accident. Id.

\(^{129}\) Id.
instance, following a USAir\textsuperscript{130} flight that slid off the runway at New York’s LaGuardia Airport,\textsuperscript{131} in which the “District Attorney, for a time intended, to prosecute the flight crew.”\textsuperscript{132} Thus, although no District Attorney has yet decided to indict a flight crew, pilots nonetheless do not want to add fuel to the fire by providing prosecutors with video evidence.

Furthermore, pilots argue that outside the United States there exists an even stronger trend towards criminalizing aviation accidents, including prosecuting flight crews. For instance, ALPA maintains that it has witnessed a growing trend among “numerous European, African and Asian countries . . . of criminally prosecuting pilots, and recorded data has been used to aid the prosecution.”\textsuperscript{133} Specifically, ALPA cites a recent case from New Zealand, in which the court held that the international standards set forth in ICAO Annex 13\textsuperscript{134} did not bind New Zealand courts and consequently provided police with access to the CVR audio tape as part of the criminal investigation.\textsuperscript{135}

D. The Limits of Statutory Protection

Pilots appreciate, however, that aircraft mobility poses a significant problem to any proposed and Congressionally adopted statutory protections of recorded data. As exemplified by the American Airlines Flight 965 incident in Cali, Colombia, any data retrieved from a U.S. registered aircraft that crashes outside the United States is protected only to the extent of the local law. In the case of Flight 965, the “release and subsequent airing of [the CVR audio tape] was not a violation of any Colombian . . . law.”\textsuperscript{136} Because of American 965 as well as other experiences with cockpit voice recorders, pilots consequently worry

\textsuperscript{130} Now known as US Airways.
\textsuperscript{132} Fenwick, supra note 114.
\textsuperscript{133} Id.
\textsuperscript{134} The International Civil Aviation Organization (ICAO) is the international aviation arm of the United Nations. Almost all modern nations are signatories to its conventions, including the United States and New Zealand. As part of its role, ICAO promulgates standards, including those for accident investigation, which are found in Annex 13 of the Chicago Convention.
\textsuperscript{136} Woerth Testimony, supra note 106.
that "[b]eyond our shores, the sanctity of the CVR (and by extension, cockpit video recordings)" remains in doubt.

Pilots should take solace, though, in the fact that international regulatory bodies also recognize the problems associated with domestically legislating data protection. In 1999, the International Civil Aviation Organization’s Accident Investigation Group (ICAO AIG 99) sought to modernize the international standards for protecting sensitive, post crash safety data. In particular, the AIG sought to strengthen the protective language of Annex 13 to the Chicago Convention, which provides those international standards. Unfortunately, the AIG could not arrive at a satisfactory consensus, and candidly doubted its authority to set international standards designed to displace each member country’s domestic legislation.

Jurisdictional issues notwithstanding, even if ICAO successfully promulgates international standards, compliance with those standards is far from guaranteed. As ALPA President Woerth notes, not all nations are ICAO signatories, and even if they are, any country can opt out of an ICAO international standard by filing a Notification of Difference. Thus, nations can easily disregard ICAO standards of data protection, thereby opening up the door to misappropriation. Whatever the shortcomings, however, pilots nonetheless argue that while stronger statutory protection should begin at the domestic level, protective ICAO standards are needed to complete the circle of domestic and international data protection.

E. New Legislation

Despite potential gaps in international regulation, the United States has arguably taken the first step to introducing cockpit video monitoring. In April 2000, Senator John McCain (Rep., Ariz.) introduced the National Transportation Safety Board Amendments Act of 2000 to the Senate Floor. Although the

137 Id.
138 See, e.g., Caj Frostell, discussing possible language changes and amendments to Chapter 5.12 of Annex 13 to be proposed at the 1999 meeting, Statement on International Symposium on Transportation Records (May 4, 1999) available at http://www.ntsb.gov/events/symp_rec/proceedings/May_4/Session-III/Frostell_transcript.htm. ICAO standards are commonly called SARPs, or “Standards and Recommended Practices.”
139 Woerth Testimony, supra note 106.
140 Id.
141 See 146 CONG. REC. S2617 (daily ed. Apr. 12, 2000), at 52628.
bill primarily reauthorized federal funding for the NTSB, the bill also included language "requested by the Safety Board to require the withholding from public disclosure of voice and video recorder information for all modes of transportation comparable to the protections already statutorily provided for cockpit voice recorders." Senator McCain found that this language provided "an important step in ensuring that . . . recorders are properly protected from unwarranted disclosure or alternative use."

On November 1, 2000, President Clinton signed the NTSB Reauthorization legislation into law. Consequently, the language requested by Senator McCain, airlines, and pilots now statutorily protects both voice and video recorders from inappropriate use, including discovery in civil or criminal litigation. Thus, perhaps the first step to introducing cockpit-view video recorders is now behind us.

VI. PROACTIVE SOLUTIONS—AN INTRODUCTION

A. BACKGROUND

As discussed in the preceding section of this Comment, one of the principal objections to cockpit video monitoring comes from its ability to function only as a reactive, rather than a proactive safety measure. In essence, groups such as ALPA and ATA contend that since cockpit video monitoring becomes useful only after the airplane has crashed, it does little to save lives. And, while these groups concede that accident investigation does play some role in improving air safety, these groups instead advocate proactive safety programs that strive to prevent the accident from happening at all.

To that end, the aviation industry is developing safety programs designed to facilitate the collection, analysis and dissemination of voluntarily submitted safety data. Analyzing this data hopefully will enable safety officials to discern and correct any trends, conditions and/or procedures that might adversely impact air safety long before lives are lost. The two most prominent examples are the Airline Safety Action Program (ASAP)

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142 Id. at 99 (emphasis added). See also 49 U.S.C. § 1114(c) and 49 U.S.C. § 1154(b).
143 146 Cong. Rec. S2617 at 52628.
144 See Pub. L. No. 106-424, 114 Stat. 1883 (Nov. 1, 2000), amending 49 U.S.C. § 1114(c) to include "cockpit voice or video recorder" and 49 U.S.C. § 1154(b) to define 'recorder' as including "voice or video recorder." (emphasis added).
and the Flight Operational Quality Assurance (FOQA) program. ASAP, originally developed as a joint program between American Airlines and the Allied Pilots Association, encourages American Airlines employees to voluntarily submit safety data by providing immunity for any admitted regulatory violations as long as no criminal activity, intentional acts, or substance abuse is involved. FOQA is similar to ASAP, but collects data from the airplanes themselves using a variety of on-board recorders such as Digital Flight Data Recorders (DFDR) and Quick-Access Recorders (QAR). The airline then scrutinizes the data to predict potential problems and therefore refine airplane and flight crew performance and training. In sum, airlines hope that ASAP and FOQA will allow them to proactively correct problems before a fatal accident occurs to “see it before you see it on CNN.”

B. The CVR of Data Collection—The Aviation Safety Reporting System

Although the programs examined by this Comment are recent in scope, the aviation industry has emphasized immunized safety and operational data collection for over twenty-five years. In 1975, the FAA instituted the Aviation Safety Reporting System (ASRS) and designated the National Aeronautics and Space Administration (NASA) to oversee its implementation and management. The goal of ASRS is to provide a “cooperative safety reporting program [that] invites pilots, controllers, flight attendants, maintenance personnel, and other users of the National Airspace System (NAS) . . . to report to NASA actual or potential discrepancies and deficiencies involving the safety of . . .

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148 Brandt, supra note 3.
149 For more information (including representative examples of submitted ASRS reports as well as access to ASRS publications such as Callback), please see the ASRS homepage at http://www.asrs.arc.nasa.gov (last visited Jan. 13, 2001).
150 Because of NASA oversight, pilots commonly refer to ASRS reports as “NASA reports.”
aviation operations." It is hoped that ASRS information permits the FAA to "take corrective action . . . to remedy the defects or deficiencies in the [National Airspace System.]"

Recognizing that the program's success largely depends on the "free, unrestricted flow of information," ASRS provides regulatory incentives to encourage voluntary submission. First, any information identifying either the submitting party or another party named in an ASRS report will be de-identified. Second, and perhaps more importantly, the FAA imposed regulatory limitations on using submitted reports in enforcement actions against industry certificate holders, such as pilots. Specifically, 14 C.F.R. § 91.25, entitled "Aviation Safety Reporting Program: Prohibition against the use of reports for enforcement purposes," states: "The Administrator of the FAA will not use reports submitted to the National Aeronautics and Space Administration under the Aviation Safety Reporting Program (or information derived therefrom) in any enforcement action except information concerning accidents or criminal offenses which are wholly excluded from the program."

Therefore, federal regulations allow only two exceptions to ASRS immunity—accidents and criminal investigations. The FAA has added a third exception, however, that prohibits ASRS immunity from deliberate actions.

Like its recent progeny, supporters argue that ASRS reports provide valuable information to flight crews and airlines. To aid the flow of information, NASA collects the ASRS reports and disseminates them to industry groups, as well as publishes a monthly magazine highlighting several of the previous month's submissions.

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152 Id. For example, 3,292 ASRS reports were submitted in November 2000, with 2,388 coming from airline pilots. See the January 2001 edition of Callback, available at http://www.asrs.arc.nasa.gov/callback_issues/cb_257.htm.

153 A.C. No. 00-46D, supra note 151.

154 Id. at para. 1.

155 See id. at para. 8.


157 See A.C. No. 00-46D, supra note 151, at para. 9(c)(1). Note that paragraph nine does not apply to air traffic controllers. Instead, FAA Order 7210.3 governs ATC personnel.

158 See the Callback website for more information, at http://www.asrs.arc.nasa.gov/callback.htm.
VII. THE AIRLINE SAFETY ACTION PROGRAM (ASAP)

A. DESCRIPTION

Building on the ASRS program, in 1994 American Airlines and the Allied Pilots Association (in conjunction with the FAA) created the American Airlines Safety Action Partnership (ASAP).\(^{159}\) According to Capt. K. Scott Griffith,\(^{160}\) ASAP electronically collects and analyzes information voluntarily submitted by individual American Airlines employees.\(^{161}\) And like ASRS, ASAP is designed to provide "non-punitive" corrective action to prevent accidents and incidents, as well as measure overall system performance.\(^{162}\) In a recent affidavit, Captain Griffith described how American Airlines analyzes and utilizes ASAP data:

Upon submission, the de-identified reports are reviewed on a weekly basis by a joint committee comprised of representatives from American, FAA and APA who in turn issue pilot advisories, procedure changes and individual skill enhancement recommendations, with an eye toward evaluating changes in flight and training procedures and implement[ing] other corrections that may prevent further incidents.\(^{163}\)

To encourage American Airlines employees to file ASAP reports, ASAP reports are entitled to the same immunities as an ASRS report as well as similar administrative solutions (rather than certificate actions).\(^{164}\)

Support for ASAP among American's flight personnel seems strong. As of November 1998, over 17,000 reports had been submitted under ASAP.\(^{165}\) For example, one American Airlines pilot related his recent use of the ASAP program:

We read back, "descend and maintain FL230 [23,000 feet]. "I heard the controller say it and heard the F.O. [First Officer] read it back. Out of FL290 [29,000 feet] the controller said, "Ameri-


\(^{160}\) Captain Griffith is the American Airlines Managing Director of Flight Operations Safety as well as the original architect of the ASAP program.

\(^{161}\) Id.

\(^{162}\) Id.

\(^{163}\) In re Air Crash Near Cali, Colum. on Dec. 20, 1995, 959 F. Supp. 1529, 1531 (S.D. Fla. 1997) (citing the affidavit of Scott Griffith), aff'd and vacated on other grounds, Cortes v. Am. Airlines, 177 F.3d 1272 (11th Cir. 1999).

\(^{164}\) Id.

\(^{165}\) Griffith Slides, supra note 159.
can XXX, what is your altitude?” We replied, “Out of 290 for FL230.” The controller said, “Stop at FL290.” We responded, “Roger, leveling at FL290.” The controller then commanded, "American XXX, turn left to 230.” At the time, there was a similar call sign military jet that we could not hear because it was on U.H.F. Because I knew what we heard and what we’d read back, I sent in an ASAP.\(^{166}\)

Furthermore, though ASAP initially applied only to American Airlines flight crews, the program has been subsequently expanded to include the dispatch and maintenance departments as well.\(^{167}\)

**B. The FAA’s View of ASAP**

Support for ASAP is not limited to American Airlines employees. In March 2000, the FAA demonstrated its support for ASAP by issuing Advisory Circular No. 120-66A, which provides all airlines with the regulatory requirements for obtaining agency approval of ASAP programs.\(^{168}\) In particular, the FAA reveals its support for ASAP by affirming the potential benefits of ASAP and, more importantly, outlining the regulatory protections for submitting parties. According to the FAA, ASAP benefits air safety by encouraging “voluntary reporting of safety issues and events that come to the attention of employees of certain certificate holders.”\(^{169}\) And just as the original ASAP program provided immunity to most inadvertent violators, the FAA affords industry professionals the ability to “identify and report safety issues to management and the FAA for resolution generally without fear the FAA will use those reports to take enforcement action against them.”\(^{170}\)

With much more detail, however, the Advisory Circular outlines the degree of protection afforded ASAP reports. In general, the FAA will refrain from using the content of an ASAP report to “initiate or support any company disciplinary action, or as evidence for any purpose in an FAA enforcement ac-

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\(^{166}\) Email interview with Captain, American Airlines (Jan. 10, 2001) [hereinafter Interview with American Airlines Captain]. To coincide with the immunities afforded this pilot by ASAP, his identity and the flight number have been removed for purposes of this paper.

\(^{167}\) Griffith Slides, *supra* note 159.

\(^{168}\) See A.C. No. 120-66A, *supra* note 146.

\(^{169}\) *Id.* at para. 1.

\(^{170}\) *Id.* at para. 1(b).
The general policy notwithstanding, however, ASAP reports provide varying grounds of immunity from FAA enforcement actions. First, ASAP provides no protection for intentionally unsafe activity, criminal activity, or activity those results from the use of controlled substances or substance abuse. In the alternative, ASAP provides total protection only when the ASAP report is the only source of information for the alleged violation. If independent evidence of the violation exists, an ASAP report limits the FAA to addressing any potential violation with administrative action rather than through certificate action (such as revocation and/or suspension). Two typical forms of administrative action are warning notices and letters of correction. Returning to the example above, the American Airlines pilot received the following administrative resolution to his ASAP submission:

Usually, [ASAP reports] are cleared up in about a week or two. Mine didn't clear up for a month. I actually had an FAA [inspector] give me a [training] check from Orlando to DFW. Same leg [as the incident], but later in the month. A real nice guy, he said he was just giving a routine line check. He slipped up, however, when I told him that I'd had a problem on this [radio] frequency in the beginning of the month. He said "I know." He got all red in the face, but there was a call on the radio and we started our descent and he didn't elaborate. Pretty funny. The ASAP [report] was cleared up the next day with no letter or anything in my file.

C. ASAP: THE COURT’S PERSPECTIVE

Although most courts have not addressed ASAP program protections, at least one court recently adopted a protectionist attitude towards ASAP reports, holding that they should be entitled to a “qualified privilege.” In a pre-trial consolidation of over one hundred and thirty lawsuits filed against American Airlines in the aftermath of American Flight 965, the court denied the plaintiff steering committee’s requests for discovery of docu-

171 Id. at para. 11(a).
172 Id. at para. 11(c).
173 A.C. No. 120-66A, supra note 146, at para. 4(a).
174 Id.
175 Interview with American Airlines Captain, supra note 166.
176 See In re Air Crash, Near Cali, Colum. 959 F. Supp. at 1531. See also Frederick P. Alimonti, Recent Developments in Aviation Liability Law, 64 J. Air L. & Com. 29, 45 (1998).
177 See supra note 103.
ments prepared by American Airlines in conjunction with the ASAP program. After rejecting American’s first assertion that the “self-critical analysis” privilege protected discovery of the documents, the court determined that ASAP documents should be entitled to a federal common law “qualified privilege,” rebuttable only by a showing of substantial need and undue hardship.178

For support, the court applied four factors that the U.S. Supreme Court has required to recognize a new federal common law privilege.179 Following Jaffee, the district court first considered whether the privilege is “rooted in the imperative need for confidence and trust,”180 and found that the airline, the pilots, and the FAA all had legitimate private interests in protecting the ASAP materials.181 Second, the court concluded that the new privilege would “serve public ends,”182 since there exists a “powerful and compelling” public interest in improving air safety.183 Third, the court considered whether the evidentiary detriment caused by an exercise of the privilege is modest184 and found that since ASAP protects only inadvertent and/or incidental violations, any intentional or dangerous violation would remain discoverable.185 And lastly, since it was not aware of any similar state privilege, the court concluded that denying a federal privilege would not frustrate a parallel privilege adopted by the states.186 As a result, the court determined that American Airlines had met its burden of proving that the ASAP documents were entitled to a qualified privilege.187

Although initially rejected in In re Air Crash, New Cali Columbi a second federal court accepted American’s “self-critical analysis” privilege argument. In an employment discrimination claim brought by retired pilots challenging an airline policy that prevented them from assuming positions as Flight Engineers,188 the

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178 In re Air Crash Near Cali, Colum., 959 F. Supp. at 1530.
180 Jaffee, 518 U.S. at 9.
181 In re Air Crash Near Cali, Colum., 959 F. Supp. at 1534.
182 Jaffee, 518 U.S. at 10.
183 In re Air Crash Near Cali, Colum., 959 F. Supp. at 1534.
184 Jaffee, 518 U.S. at 13.
185 In re Air Crash Near Cali, Colum., 959 F. Supp. at 1535.
186 Jaffee, 518 U.S. at 13.
188 Federal regulations require an airline pilot to retire on her sixtieth birthday. See 14 C.F.R. § 121.383(c) (1978). However, many pilots remain in the cock-
court held that "safety reports" prepared by American Airlines should be entitled to 'self-critical analysis' privilege. In *Tice*, American Airlines satisfactorily established the four elements required to obtain the self-critical privilege. In particular, the court noted that "the flow of internal airline safety information would be somewhat curtailed" if discovery of these documents were allowed. Consequently, the only courts to consider airline safety data prepared by programs such as ASAP have both concluded that the data is entitled to at least a "qualified" privilege, if not a more protective one.

VIII. FLIGHT OPERATIONS QUALITY ASSURANCE (FOQA)

A second major data collection and sharing program currently in development is the Flight Operational Quality Assurance (FOQA) program. Based largely upon a successful program developed in the 1970s and operational at British Airways for more than ten years, FOQA involves the routine collection and subsequent analysis of flight data generated by onboard recorders, such as the quick-access recorder (QAR).

There is little doubt as to FOQA's potential benefits. Even the FAA considers FOQA as "one of the most promising industry initiatives with [a] realistic potential to reduce accidents." Ad-
itionally, in an FAA-sponsored study, the Flight Safety Foundation concluded that “FOQA must proceed in the United States” and that its implementation would “have a more positive impact on [commercial airlines operating under] Part 121 operational safety than any other human factors program included in the FAA’s research and development plans.”

Despite its promise, FOQA has languished as a demonstration project, probably in large part due to the fierce battle raged by airlines and pilots to protect the data retrieved through FOQA. This section of the Comment examines the development of FOQA in the United States and the current battles preventing its full implementation.

A. DEVELOPMENT AND SUCCESS

As noted above, European airlines have utilized data retention and analysis programs for decades. In contrast, the United States did not formally propose a FOQA program until a 1995 Department of Transportation sponsored Aviation Safety Conference, previously relying on agency enforcement as its principal safety tool. Confronted with the projected growth in commercial aviation traffic, it became clear that enforcement alone would be “unlikely to achieve the further reductions in the accident rate that are needed.” The industry therefore turned its attention to proactive, preventative safety measures such as FOQA.

Proposed data retention and analysis programs like FOQA became popular for at least three reasons. First, and as noted above, similar programs had achieved widespread success throughout Europe. Second, FOQA fits neatly into the modern technological and regulatory framework, since current regulations require airlines to install flight data recorders on airliners and retain the data retrieved for at least sixty days after some accidents or incidents. Third, and perhaps most importantly,
The Boeing 777, for example, continuously processes approximately 60,000 parameters, of which 2,000 are recorded by British Airways. FOQA became a reality when the FAA initiated a three-year demonstration project to investigate the costs and benefits of a FOQA program. Three airlines originally partnered with the FAA in the demonstration (United Airlines, US Airways, and Continental Airlines) and a fourth joined three years later (Alaska Airlines.). From the FAA, partner airlines received much of the software and equipment, including quick-access recorders. Other airlines (such as Delta, Northwest, Southwest and Trans World Airlines) though not full partners and thus not actively participating in the demonstration project, attentively monitored its progress.

The FOQA demonstration received high praise as participating airlines reported significant safety benefits. For example, Continental Airlines now captures over 1,000 parameters per second from its “Next Generation” Boeing 737s, and has used the data to review and identify possible causes for unstabilized approaches at certain airports and runways. Using that information, Continental assembled a “top-10 list of airports where FOQA data showed unstabilized approaches,” and disseminated that information to its flight crews through recurrent training, notations on navigational publications and articles in flight crew magazines. As a result, “in just one year, the air-

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200 See Holtom, supra note 194.
201 Id.
203 Id. at 25 (Appendix I).
204 Id. at 24.
205 Id.
206 Continental Airlines extensively flies several “Next Generation” Boeing 737 models, including the -700 and -800 series airplanes. For more information, see Continental’s website at http://www.flycontinental.com (last visited Jan. 13, 2001).
207 According to Continental FOQA Manager (and First Officer) Al Baldwin, FOQA computers note when an airplane approaches the airport with an excessive rate of descent, such as greater than 1,000 feet per minute when less than 500 feet above ground. See GAO Study, supra note 195, at 28 (entitled “Airlines Report Benefits from FAA FOQA Demonstration Project.”).
208 Id.
209 Id.
port where the most unstabilized approaches had occurred now has dropped off our top-10 list.\textsuperscript{210}

Continental flight crews share in the high praise for FOQA. For example, one Continental Airlines pilot described FOQA as “the most impressive thing we have here. I use it \textit{all the time} on the line. I especially like the FOQA heads up when the other guy will be flying the approach. I keep a closer eye on him at some places.”\textsuperscript{211} Furthermore, in making its case against cockpit video monitoring, the Coalition of Airline Pilots\textsuperscript{212} (CAPA) vigorously argued that the industry should concentrate on proactive safety measures, including FOQA.\textsuperscript{213} Testifying before the Aviation subcommittee, CAPA President stated: “We are aware of the FOQA program pioneered by United Airlines that uses flight data recorder readouts to discern operational trends and focus on correction of problems before they result in accidents. Such a pro-active program focused on accident prevention is very helpful.”\textsuperscript{214}

United Airlines, the first and largest demonstration partner,\textsuperscript{215} also has successfully employed FOQA. United Airlines believes FOQA can improve its total system performance by enabling the airline to monitor the “full flight” (i.e., flight crew, aircraft and air traffic control) instead of isolated incidents.\textsuperscript{216} For instance, United uses FOQA data to monitor “taxiing speed or taxiway roughness,” thereby informing air traffic control when taxiways need repaving.\textsuperscript{217} Moreover, United has used F.O.Q.A data to investigate and create new approach procedures into Monterey, California and New York’s LaGuardia Airport.\textsuperscript{218}

\textsuperscript{210} Id.
\textsuperscript{211} Email interview with Jeff Ragusa, First Officer, Continental Airlines (Jan. 16, 2001) (email correspondence on file with author).
\textsuperscript{212} One member of the CAPA coalition is the Independent Association of Continental Pilots, which represents the interests of Continental Airlines flight crews. See supra note 105.
\textsuperscript{213} Miller Testimony, supra note 106.
\textsuperscript{214} Id.
\textsuperscript{215} By 2000, United planned to have over 200 aircraft equipped with quick access recorders, including Boeing 737-500s, Boeing 777s, its Airbus A320 series aircraft, and all new aircraft currently on order. See GAO Study, supra note 195, at 29.
\textsuperscript{216} Comments of Captain Jeff Bayless, manager of FOQA at United Airlines, reprinted in GAO Study, supra note 195, at 29.
\textsuperscript{217} Id.
\textsuperscript{218} Id.
Lastly, even the FAA praises FOQA as a safety tool. In a recent article, FAA Associate Administrator for System Safety, Christopher A. Hart, stated that “We’re already seeing the effects from individual activities at [U.S. and foreign] airlines in terms of improving their safety margins, and as these experiences are shared I think it will increase safety margins worldwide.” Whether recognizing potential safety benefits translates into regulatory support, however, is the topic of the next section.

B. Current issues facing FOQA

Given the resounding air safety benefits articulated by participating airlines, it seems strange that FOQA has not been implemented by non-participating airlines. There must be some impediment preventing the full-scale rollout of FOQA programs. With little doubt, that impediment (as it has been for each safety initiative examined in this Comment) is the required level of protection for FOQA data. In fact, a 1993 Flight Safety Foundation study of FOQA identified “protection of data from use for other than safety and operational-improvement purposes” as the single greatest obstacle facing FOQA. A blow-by-blow history of the battle for FOQA data protection follows.

1. Statutory and Regulatory Protection

As part of the 1996 Federal Aviation Reauthorization Act, Congress added 49 U.S.C. § 40123 to limit the ability of federal agencies to disclose “voluntarily-provided safety or security related information.” According to the legislation, voluntarily-submitted safety information should remain undisclosed if the FAA determines the information conforms to the requirements of the statute. Principally, information should not be disclosed if the FAA determines that the information contributes to the FAA’s safety and security responsibilities, withholding the infor-

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220 Furthermore, one source estimates that a FOQA program operational on 100 aircraft could save an airline over $2 million annually. See GAO Study, supra note 195, at 7 (Table 4). For example, Alaska Airlines hopes that by fine tuning fuel burns, FOQA will save the airline $267,000 in annual fuel costs and $99,000 in brake wear. Presentation slides, Capt. Terry Clark, Alaska Airlines, Just a Few of the Anticipated Cost Benefits of FOQA (1998).

221 GAO Study, supra note 195, at 7.


information is consistent with those responsibilities, and disclosing the information would "inhibit the voluntary provision" of that type of information.224 Because the legislative history specifically refers to data-sharing programs such as FOQA, Congress clearly intended § 40123 to apply to these types of initiatives.225 Moreover, Congress recognized that absent statutory protection, "[t]here will be a reluctance to share such information if it will be publicly released because it could easily be misinterpreted, misunderstood, or misapplied."226 But Congress did not implement any specific protections, instead calling on the FAA to develop a program.227

The first FAA response came in the form of a December 1998 notice from FAA Administrator Garvey, outlining FAA policy regarding disclosure of information obtained through FOQA.228 In the notice, Administrator Garvey described the FAA as generally "committed to limitations on the use of FOQA information for enforcement purposes."229 More specifically, the FAA will refrain "from using deidentified FOQA information to undertake enforcement actions except in egregious cases, i.e., those that do not meet the conditions listed in section 9, paragraph c of the Advisory Circular 00-46D governing the Aviation Safety Reporting Program."230

Seven months later, the FAA issued its second response to 49 U.S.C. § 40123 in the form of a Notice of Proposed Rulemaking (NPRM).231 In the NPRM, the FAA proposed to add Part 193 to the Code of Federal Regulations, designed specifically to protect voluntarily submitted safety data.232 The NPRM also made clear that because the FAA considered § 40123 an exception to a general governmental emphasis on disclosure, FOQA data would be protected only if it met five statutory requirements.233 First, the information must be provided voluntarily.234 Second, the infor-

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224 See id. § 40123(a)(1)-(2).
226 Id.
227 See 49 U.S.C. § 40123(b) ("The Administrator shall issue regulations to carry out this section.").
228 Garvey Notice, supra note 194, at 67505.
229 Id.
230 Id. See also A.C. 00-46D, supra note 151.
232 Id.
233 Id. at 40473.
234 Id. at 40474 (proposed 14 C.F.R. § 193.5(b)(1)).
mation must be safety or security related. Third, disclosing the information would “inhibit the voluntary provision of that type of information.” Fourth, receipt of the information contributes to the safety and security responsibilities of the FAA, and fifth, that information is “consistent with the [FAA’s] safety and security responsibilities.”

Unfortunately, the industry greeted the NPRM with significant opposition. In their respective comments, the Air Transport Association of America, Continental Airlines, and the Air Line Pilots Association uniformly criticized the NPRM as a misguided attempt to promote voluntary information exchange, the net effect of which would be to trigger the “opposite and unintended effect.” As a result, they argue, the NPRM contradicts the intent of § 40123 as well as Administrator Garvey’s original FOQA policy. In sum, the aviation industry found the NPRM full of holes, through which Congress’ good intent disappeared.

Generally, the objections were twofold. First, industry groups feared that proposed Part 193 imparted “broad and arbitrary exceptions to disclosure protection” through which the government and the public could access protected data. For one, ATA objected to the “unnecessary notice and comment procedure” as well as the FAA’s willingness to comply with subpoenas. ATA argued that instead of compliance, the FAA should “take the position that it will not [disclose] such information in response to a subpoena and, further, that it will take appropriate steps to prevent such information from being disclosed, such as filing a motion to quash.” Continental Airlines reiterated that concern by arguing that the NPRM’s regulatory structure incorrectly emphasizes disclosure, rather than non-disclosure. Instead, Continental “would have preferred to see a regulatory requirement or at a minimum a strong presumption in favor of protection of voluntarily provided data and information.”

235 Id. (proposed 14 C.F.R. § 193.5(b)(2)).
236 1999 FOQA NPRM (proposed 14 C.F.R. § 193.5(b)(3)).
237 Id. (proposed 14 C.F.R. § 193.5(b)(4)).
238 Id. (proposed 14 C.F.R. § 193.5(b)(5)).
239 See supra note 97 (describing the Air Transport Association of America).
241 Id.
242 Id. at 2.
243 Id. at 3.
244 Id. at 4.
Underlying these objections lingers the fear that FAA policy will allow access to protected data through the Freedom of Information Act (FOIA). Generally, the FOIA sets forth a policy of broad disclosure of government documents "to ensure an informed citizenry, vital to the functioning of a democratic society" unless "legitimate governmental and private interests could be harmed by release of certain types of information." Many in the aviation industry argue that FOQA and ASAP data should be excluded from FOIA requests as "trade secrets and commercial or financial information obtained from a person and privileged or confidential." Unfortunately, Congress has not included FOQA data in "Exemption Four" to the FOIA. And while the legislative history of § 40123 might support its inclusion, Congress left the ultimate decision to the FAA. And as demonstrated, industry organizations remain concerned that the FAA will not protect FOQA data from FOIA requests.

Second, industry groups objected to provisions authorizing disclosure of data for FAA surveillance and enforcement activities. The ATA found these provisions contrary to both the policy stated in the 1998 Notice from Administrator Garvey as well as the plain language of § 40123. ALPA argued that "to complete the circle of protection, the [regulation] preventing governmental misuse of FOQA and ASAP data must be enacted." Continental Airlines joined ATA and ALPA, vividly describing its position:

We are disappointed and disheartened by the FAA's apparent decision to take voluntarily provided sensitive proprietary internal information and use it as a vehicle for surveillance and in connection with various prosecutions. It appears that the FAA is more interested in using this information as a tool in applying its enforcement 'sledge-hammer' instead of utilizing what could be extraordinary access to voluntarily provided internal sensitive proprietary information as a safety enhancement tool . . . .

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248 5 U.S.C. § 552 (b) (4) ("Exemption 4."); see also Griffith Slides, supra note 159.
249 See H.R. Rep. No. 104-714, supra note 225; see also GAO Study, supra note 195, at 11.
250 GAO Study, supra note 195, at 5.
252 Id.
In sum, while many industry groups approved of the Rule's intent and spirit, its operation nonetheless caused them to come away "extremely disappointed . . . and discouraged."253

2. The Year 2000 Legislation and a New N.P.R.M

On April 5, 2000, President Clinton signed H.R. 1000, the Wendell H. Ford Aviation Investment and Reform Act for the 21st Century (also known as AIR-21).254 While the Ford Act has been hailed by many as generally watershed legislation, it also specifically impacts FOQA data. In particular, Section 510 reads:

Not later than 60 days after the date of the enactment of this Act, the Administrator shall issue a notice of proposed rulemaking to develop procedures to protect air carriers and their employees from enforcement actions for violations of title 14, Code of Federal Regulations, (other than criminal or deliberate acts) that are reported or discovered as a result of voluntary reporting programs, such as the Flight Operations Quality Assurance Program and the Aviation Safety Action Program.255

Pursuant to its plain language, § 510 requires the FAA to issue proposed regulations that enact the protections created by the statute. The FAA did so in July 2000, issuing a NPRM that proposed amending FAA enforcement procedures.256 In the NPRM, the FAA sought to balance the competing needs for trend analysis by airlines as well as allowing the FAA to take corrective action, if needed.257

To balance these objectives, the FAA NPRM first outlines procedures through which airline FOQA programs can gain government approval, including requiring airlines to submit aggregate FOQA data (although generally not the underlying data) to the FAA.258 The FAA will require, however, access to underlying FOQA data in two circumstances: when needed to promulgate a new safety rule or when needed to support remedial enforce-

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256 See FOQA NPRM, supra note 147. FAA enforcement procedures are codified at 14 C.F.R. § 13 (2000).
257 FOQA NPRM, supra note 147.
258 Id. at 18.
The NPRM, however, prohibits the FAA from using FOQA data in a punitive enforcement action, thereby creating the remedial-punitive distinction that industry groups so heavily criticize in their comments.\footnote{Id. at 20 (foreseeing only the "remote" possibility of using FOQA data to support remedial enforcement activities).}

In addition, the FAA proposal retained the ability to discover and release FOQA data in a number of circumstances. Despite disapproving comments after the 1999 NPRM, the FAA may use FOQA data to correct actions that constitute willful misconduct or on-going and uncorrected safety issues.\footnote{Id. at 19-21.} Perhaps more importantly, "[n]othing in the proposed rule would preclude the FAA from exercising its subpoena authority, and the proposed rule would not preclude a court of law from ordering the release of FOQA data or information where appropriate."\footnote{FOQA NPRM, supra note 147, at 24.} And last, the NPRM would not prohibit the use of FOQA data in a criminal prosecution.\footnote{Id.}

Principally because of those exceptions to non-disclosure, the aviation industry did not accept the NPRM with open arms. This time, in fact, several leading groups submitted a Joint Comment criticizing and attacking the proposed rule as suffering from the same defects as proposed Part 193.\footnote{See Joint Comments, FAA Docket No. 2000-7554-5 (Sept. 28, 2000). The organizations represented by the Joint Comment are: the Air Transport Association, the Aerospace Industries Association, the Air Line Pilots Association, the Coalition of Airline Pilots Association, the Independent Association of Continental Pilots, and the Regional Airline Association. Together, the groups represent almost every major airline and its pilots, along with other industry groups.} In particular, the Joint Comment found that like its predecessor, the new NPRM failed to satisfactorily protect FOQA data as well as the parties submitting that data, while exceeding the authority Congress granted the FAA to encourage FOQA programs.\footnote{Id. at 3-4.} As the Joint Comment concludes, the fears of disclosure, "will stifle, rather than encourage, industry participation in this vital safety program."\footnote{Id. at 2.}

Beyond renewing previous objections, the Joint Comment attacked the proposal to use FOQA data for FAA enforcement ac-
Echoing criticisms from the first NPRM, the Joint Comment reminded the FAA that the “real purpose of FOQA programs is to enhance safety rather than provide the FAA with new tools for enforcement actions.”\textsuperscript{268} In fact, the Joint Comment noted that not only is the NPRM “written in tone and terms of an enforcement tool,” but putting the proposed FOQA program guidelines within the FAA enforcement jurisprudence, 14 C.F.R. § 13, demonstrates the FAA attitude towards FOQA data as one of enforcement.\textsuperscript{269}

In addition, the Joint Comment argued that any emphasis on enforcement contradicts the intent of § 510, as evidenced by both its plain language and legislative history. Concerning its plain language, the Joint Comment notes that § 510 does not qualify “enforcement action” with either ‘remedial’ or ‘punitive’ as the FAA does in the NPRM.\textsuperscript{270} An unqualified term, it argued, “allows only one reasonable construction: the FAA is barred from pursuing any and all administrative enforcement actions based on information developed as part of a FOQA program.”\textsuperscript{271} Second, the Joint Committee points out that the legislative history also does not support a ‘remedial v. punitive’ distinction, since neither the House or Senate version of the section makes a similar distinction.\textsuperscript{272} In fact, the Senate Amendment proposed that the protections “applie[d] to all enforcement actions for violations of the FARs that are reported or discovered as a result of voluntary reporting programs.”\textsuperscript{273} The Joint Comment therefore concluded that using FOQA data for enforcement actions, as supported by the FAA’s ‘remedial vs. punitive’ distinction, is inappropriate and inconsistent with § 510 and alters the policy articulated in the 1998 Notice from FAA Administrator Garvey.\textsuperscript{274}

The Joint Comment’s second major objection to the NPRM stems from FAA proposals to mandate the collection of FOQA data. Without ambiguity, the Joint Comment states that it is “unalterably opposed to these proposals.”\textsuperscript{275} The Joint Com-

\textsuperscript{267} Id.
\textsuperscript{268} Id.
\textsuperscript{269} Joint Comments, supra note 204.
\textsuperscript{270} Id. at 3-4.
\textsuperscript{271} Id. at 4.
\textsuperscript{272} Id. at 4-5. See also H.R. Rep.106-513, 106th Congress, 2d Session (2000).
\textsuperscript{273} Joint Comments, supra note 264, at 4 (emphasis in original).
\textsuperscript{274} Id. at 5-6.
\textsuperscript{275} Id. at 8.
ment believes that requiring airlines to submit data exceeds any previously authorized Congressional power, and Section 510 does nothing to alter that authority. In contrast, during the demonstration project the FAA could only request FOQA data.

In sum, the Joint Comment argued that the NPRM falls far short of Congress's intent in § 510. Unless modified to reflect those intentions as well as the issues addressed by the Joint Comment, the industry feels “it is unlikely that even the airlines operating demonstration programs will participate.”

IX. APPLYING FOQA AND ASAP: THE GLOBAL AVIATION INFORMATION NETWORK

A. Introduction

To achieve the ultimate goal of “zero accidents,” in May 1996 FAA Administrator David Hinson recognized that the aviation industry would need to adopt a “new safety information paradigm” that emphasized data collection, analysis and dissemination. Reflecting “major advances in information management technology” (such as FOQA and ASAP) this new paradigm required that the industry “develop a significantly improved operational early warning capability that is sensitive enough to detect and alert the aviation community to existing and emerging problems.” Realizing that capability, though, depended largely upon the ability of airlines to share safety information. Consequently, to facilitate the data sharing between airlines, Administrator Hinson proposed the Global Analysis and Information Network.

B. Overview of GAIN

According to the FAA, GAIN (renamed from the global Analysis and Information Network to the Global Aviation Information Network) is a “voluntary, privately owned and operated network of systems that collect and use aviation safety information about flight operations, air traffic control operations, and mainte-

276 Id.
277 Id. at 7.
278 Joint Comments, supra note 264, at 6.
280 Id. at 21523.
281 Id.
nance to improve aviation safety worldwide.\textsuperscript{282} One aspect of GAIN, therefore, sets it apart from many other safety programs: the FAA neither owns nor operates GAIN. Instead, GAIN is guided by a Steering Committee composed of aviation industry organizations (including the FAA), that make GAIN a privately operated, international aviation information network.\textsuperscript{283} And though the FAA Office of System Safety (OSS) has served as the principal GAIN proponent, even the FAA believes that private ownership will enhance GAIN's potential safety benefits by enabling airlines to fly more safely and cost-effectively.\textsuperscript{284}

1. \textit{Governmental Support}

GAIN is not without government involvement, however. For one, although the FAA does not serve as a full member of the GAIN Steering Committee, it does serve as an "ex-officio" member of the Steering Committee.\textsuperscript{285} Additionally, in June 2000 the GAIN Steering Committee proposed to form a Government Support Team (GST) to "further advocate the goals of the GAIN program and reduce impediments to sharing safety information."\textsuperscript{286} Initial GST membership includes "civil aviation authorities and accident investigation boards from seven countries" as well as ICAO and the Joint Aviation Authorities Europe (JAA).\textsuperscript{287} Some degree of government support, therefore, appears crucial to GAIN's eventual success.

In particular, the GAIN Steering Committee believes that government involvement is crucial to reducing the regulatory impediments that stand in the way of data sharing. Consequently, the Steering Committee assigned that task specifically to the GST.\textsuperscript{288} In response, the GST immediately established

\textsuperscript{282} GAIN Overview, supra note 1, at 1.
\textsuperscript{283} GAIN Proposal, supra note 279, at 21525. See also Global Aviation Information Network (Aug. 2000) at http://www.gainweb.org [hereinafter GAIN]. For example, Steering Committee members include (among others), Northwest Airlines, British Airways, Boeing, Airbus, the Air Line Pilots Association, the National Air Traffic Controller Association, U.S. Navy Aviation Safety, and the International Association of Machinists.
\textsuperscript{284} Gain Overview, supra note 1, at 5. See also Edward H. Phillips, \textit{Uninhibited Data Sharing Called Key to Improving Airline Safety}, \textit{Aviation Wk. & Space Tech.}, Oct. 23, 2000 available at www.gainweb.org/GAIN\_Information/avweek\_article\_oct00.html.
\textsuperscript{285} GAIN, supra note 283.
\textsuperscript{286} \textit{Id.} See also \textit{GAIN Government Support Team}, at http://www.asy.faa.gov/gain/govt\_support\_team/govt\_supp\_team.htm (last visited Sept. 1, 2002).
\textsuperscript{287} GAIN Government Support Team, supra note 286.
\textsuperscript{288} \textit{Id.} See also GAIN, supra note 283.
"eliminat[ing] legal and organizational barriers that discourage the collection and sharing of safety information" as one of its three main areas of focus. To accomplish this task, in 2001 the GST will work to "identify legal and organizational impediments to safety information collection and sharing, as well as existing solutions."

2. A Familiar Song: Data Protection

As demonstrated by the GST emphasis on removing regulatory impediments, the Steering Committee has identified data protection as crucial to the success of GAIN. In fact, in January 1998 the FAA OSS enumerated unauthorized data misuse as one of the biggest problems facing the GAIN program. Specifically, the OSS listed four ways the data could be misused, including use for enforcement (either by the government or an employer), public disclosure of the information, use of the information to support criminal charges, and use of the information to support civil litigation. As a reader of this Comment will recognize, these four misuses of safety data have been identified as potentially impacting every safety initiative discussed in this Comment. Overcoming these obstructions (like all programs based upon the collection of sensitive safety data) remains crucial to the viability and prosperity of GAIN. As Administrator Hart maintains, "[a]nything that blocks the [informational] pipeline we're using to get information to improve safety is very pertinent to GAIN" and to a great extent, ultimately determines the program's success.

X. CONCLUSION

For decades, the aviation industry has debated the appropriate degree of protection to afford aviation safety data. From cockpit voice recorders in the mid-twentieth century to pro-

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286 Gain Government Support Team, supra note 286.
288 Id. Thus, it appears that the FAA could be playing both offense and defense: contemplating the "misuse" of FOQA data for non-safety, enforcement purposes while working as a member of the GAIN GST to reduce and alleviate those "misuses." In any event, the recommendations of the GST are eagerly awaited.
290 Id.
posed advanced flight data recording in the twenty-first century, airlines and pilots have long advocated protecting data before implementing safety programs on a system-wide basis. Not surprisingly, proposals that rely on voluntary submission of data trigger particularly heated arguments, as aviation professionals attempt to guard against a "kill the messenger" attitude from government regulators, the plaintiff's bar, and/or the news media.

On the other side of the debate, however, reside parties interested in alternative uses for the data. According to this argument, scrutinizing safety data to monitor airline safety performance is a legitimate use of the data and not a "misuse" as claimed by pilots. Some degree of public and/or agency disclosure is necessary, therefore, to ensure that airlines fly as safely as possible. In sum, these groups argue that by keeping a watchful eye, they also contribute to improving air safety.

Today the debate rages without a clear-cut winner, although the tide may be turning towards increased data protection, as evidenced by recent federal legislation aimed at protecting video and FOQA data. Regardless, the only winner should be the programs themselves, since improving the availability of detailed safety information has an unprecedented capacity to improve air safety. This is particularly true in the case of proactive programs such as FOQA, ASAP and GAIN. There is merit in recognizing an unsafe procedure, a confusing approach plate, or an airport that could be particularly tricky long before the problem manifests itself in the loss of life. Not only are lives saved, but once the source of a potential problem is recognized, it can be permanently removed from the system. With these goals in mind, all parties involved should arrive at an ultimate solution that facilitates the growth and development of the new safety initiatives. For it is these programs and not the individual parties, that provide the greatest potential for reducing the commercial aviation fatal accident rate.