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The FAA v. the NTSB: Now That Congress Has Addressed the Federal Aviation Administration's Dual Mandate, Has the FAA Begun Living up to Its Amended Purpose of Making Air Travel Safer, or Is the National Transportation Safety Board Still Doing Its Job Alone

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THE FAA v. THE NTSB: NOW THAT CONGRESS HAS ADDRESSED THE FEDERAL AVIATION ADMINISTRATION'S "DUAL MANDATE," HAS THE FAA BEGUN LIVING UP TO ITS AMENDED PURPOSE OF MAKING AIR TRAVEL SAFER, OR IS THE NATIONAL TRANSPORTATION SAFETY BOARD STILL DOING ITS JOB ALONE?

LEA ANN CARLISLE*

I. INTRODUCTION

AFTER THE MAY 1996 crash of Valujet Flight 592 in the Florida Everglades, a media frenzy took place scrutinizing and criticizing the Federal Aviation Administration for the possible part it played in the disaster. The Secretary of Transportation, Frederico Pena, eventually called for Congress to re-examine the FAA's "dual mandate," a provision in the Federal Aviation Act of the 1950s, which gave the FAA the purpose of promoting civil aviation while regulating safety issues. These conflicting purposes are an obvious problem once one realizes that for every proposed safety regulation, the FAA must weigh the cost of implementation and determine if it is worth the financial strain on the airlines. More often than not, the FAA decided the change was not worth the financial cost, even with the NTSB's strong recommendation and support for the new regulation, until a major air disaster forced it to declare otherwise.

Congress amended the Act in October 1996, removing the language "promoting" aviation and adding in several provisions emphasizing safety. The question is, has the FAA changed its ways? This comment will explore the history of the FAA, including how it came to emphasize market growth and finances over

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the public's safety; the impact of major air disasters in the late 1990s including Valujet Flight 592, TWA Flight 800, and American Airlines Flight 1420 in Little Rock—a so-called "survivable crash" that still claimed the lives of nine people; and the FAA's stance on safety regulations and time-table for recommending new safety changes since the supposed elimination of the "dual mandate" three years ago.

II. THE HISTORY OF THE FAA

A. CREATING THE FEDERAL AVIATION ADMINISTRATION

The FAA came into existence more than fifty years after the Wright brothers first launched their airplane in 1903 in Kitty Hawk, North Carolina. By 1909, they had a contract with the military, and the advent of World War I boosted the industry as the military made vast improvements in aircraft design and the fighter ace was born. Although there was just one U.S. airplane manufacturer at this early stage, the aviation industry continued to grow quickly, and in 1914, the first commercial flight featuring a paying passenger occurred between Tampa and St. Petersburg, Florida.

The 1920s saw huge industry growth in Europe as the continent rebuilt after the war, and the first airmail routes sprang up in the States. The first industry accident involving scheduled flights also occurred when two airplanes collided in midair while following the same road to their destinations, in opposite directions.

In 1926, the Air Commerce Act was passed in response to industry demands for regulation and safety concerns. By decreeing that the Post Office could hire private flyers to deliver the mail, it played a major part in developing the companies still involved in the aviation industry today. For instance, the Chicago-to-Oakland mail run was awarded to a lumber supplier named William Boeing, who began to build his own planes to fly the route.

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1 See Mary Schiavo, Flying Blind, Flying Safe 45 (1998).
2 See id. at 46.
3 See id.
4 See id.
5 See id.
6 See Schiavo, supra note 1, at 46.
7 See id. at 47.
8 See id.
The most important characteristic of the Air Commerce Act "was its commitment to promote the development and stability of commercial aviation."\(^9\) It gave the Secretary of Commerce the duty "to encourage air commerce by attracting capital, creating appropriate laws, and establishing civil airways and navigational facilities."\(^10\) It was this which set the stage for the FAA's commitment to promote commerce rather than safety.\(^11\)

With such promotion and growth of the aviation industry, regulations were badly needed. Initially, the Post Office inspected planes and set up training programs for pilots.\(^12\) As accidents and crashes increased, the airlines tried different tactics to reassure consumers, such as promising that each flight attendant was a nurse.\(^13\) Various states began passing a myriad of laws specifying safety requirements, but no federal safety program was established until the 1958 Federal Aviation Act, strongly advocated by President Dwight D. Eisenhower, which created the Federal Aviation Administration.\(^14\)

Yet, the 1958 Act continued to focus on promoting the industry, putting safety second. Under Title 1 of the Act, entitled "General Provisions," section 103 contained a "Declaration of Policy" for the FAA's Administrator that:

In the exercise and performance of his powers and duties under this Act, the Administrator shall consider the following, among other things, as being in the public interest:

(a) The regulation of air commerce in such manner as to best promote its development and safety and fulfill the requirements of national defense;

(b) The promotion, encouragement, and development of civil aeronautics;

(c) The control of the use of navigable airspace of the United States and the regulation of both civil and military operations in such airspace in the interest of the safety and efficiency of both;

(d) The consolidation of research and development with respect to air navigation facilities, as well as the installation and operation thereof;

\(^9\) Id.

\(^10\) Id.

\(^11\) See Schiavo, supra note 1, at 47.

\(^12\) See id.

\(^13\) See id.

\(^14\) See id. at 47-48.
(e) The development and operation of a common system of air traffic control and navigation for both military and civil aircraft.\textsuperscript{15}

Industry promotion held just as prominent a position, if not more so, than safety in this statute. Title III of the Act created the Federal Aviation Administration, and section 305, entitled “Fostering of Air Commerce,” directed the Administrator “to encourage and foster the development of civil aeronautics and air commerce in the United States and abroad.”\textsuperscript{16} No special section existed stating that safety was a primary concern beyond just the general defense of the nation.\textsuperscript{17}

The 1994 version of this Act is similar, though safety concerns may be a bit more prominent almost forty years later. A look at various parts of 49 U.S.C. § 40101 shows that the problem of the dual mandate might have been addressed at least two full years before the 1996 Valujet tragedy, yet the clash between safety and commerce still existed.

(a) Economic Regulation – In carrying out Subpart II . . . , the Secretary of Transportation shall consider the following matters, among others, as being in the public interest and consistent with public convenience and necessity:

1. assigning and maintaining safety as the highest priority in air commerce.
2. before authorizing new air transportation services, evaluating the safety implications of those services.
3. preventing deterioration in established safety procedures, recognizing the clear intent, encouragement, and dedication of Congress to further the highest degree of safety in air transportation and air commerce, and to maintain the safety vigilance that has evolved in air transportation and air commerce and has come to be expected by the traveling and shipping public.
4. the availability of a variety of adequate, economic, efficient, and low-priced services without unreasonable discrimination or unfair or deceptive practices.\textsuperscript{18}

(c) General Safety Considerations – In carrying out subpart III . . . the Administrator of the Federal Aviation Administration shall consider the following matters:

\bibliographychapter
\bibitem{16} \textit{Id.} at 876.
\bibitem{17} \textit{See id.} at 876-7.
\bibitem{18} 49 U.S.C. § 40101(a) (1994).
(1) the requirements of national defense and commercial and general aviation.
(2) the public right of freedom of transit through the navigable airspace.
(d) Safety Considerations in Public Interest – In carrying out subpart III... the Administrator shall consider the following matters, among others, as being in the public interest:
(1) regulating air commerce in a way that best promotes its development and safety and fulfills national defense requirements.
(2) encouraging, and developing civil aeronautics. . . .19

Thus, it is clear what Congress held as important—commerce, and so the FAA was created with this as its primary focus, regulating an industry without really moving beyond the role of accountant and advisor except when absolutely necessary and when public outcry demanded it.

B. THE FAA'S ACTIONS REGARDING PUBLIC SAFETY ON AIRCRAFT UNDER THE "DUAL MANDATE."

In 1995, U.S. News and World Report examined the FAA's actions regarding safety issues, focusing on four areas in particular: "certification of new airplanes and trouble-shooting in planes already flying, pilot fatigue, use of unapproved parts to repair airliners, and FAA safety inspections."20 The study found that when considering implementing safety regulations, the FAA sided with the airline's position that new provisions were unnecessary or too costly more often than finding that the cost was worth saving the lives of the traveling public.21 According to former FAA top security official Billie Vincent, "The industry . . . really own[s] the FAA."22

What evidence supports such an allegation, hinging on the implied corruption of an important government agency? Take a look at the FAA's history of implementing safety regulations only after repeated incidents and deaths – earning it the nickname the "tombstone agency."23 Part of the problem, besides the "dual mandate," is the lack of power given to the National

19 Id. § 40101(c)-(d)(2).
21 See id.
22 Id.
23 Steve Liewer, Death in a Survivable Crash: Many Planes Are Still 'Lethal Environments,' FT. LAUDERDALE SUN-SENTINEL, June 6, 1999, at 1G.
Transportation Safety Board. The NTSB’s job is to investigate air disasters and inform the FAA of any recommendations, which may aid in preventing a repeat disaster. The FAA must implement the changes, however, as the NTSB has no statutory authority to enforce its own recommendations. Thus, the weight of rejected safety measures, which, if implemented sooner, could have saved lives or prevented air disasters, lies solely with the FAA.

The FAA is required to consider the cost to the airline industry of any regulations implemented, but do they too often ignore the cost of human life to save a few bucks? “In rejecting NTSB recommendations, the FAA has repeatedly weighted economics over safety concerns.” An example is the issue of smoke detectors. In 1975, the NTSB recommended that smoke detectors be installed in airplane lavatories, but the FAA failed to act. In 1984, an Air Canada jet had a fire break out in a lavatory over Kentucky, causing the deaths of twenty-three passengers. As a result, the FAA finally required the detectors on all planes. The NTSB made a similar suggestion in 1988 involving the installation of smoke detectors in older planes, such as the Valujet DC-9, which crashed in the Florida Everglades. The FAA felt that the costs would outweigh the benefits and failed to implement the recommendation that may have, in fact, saved the Valujet aircraft and passengers.

Other examples of FAA inaction include de-icing measures and the installation of radar and improved lighting on runways. De-icing can occur in two ways: on the ground before the plane takes off and in the air, usually in preparation for landing. Ground de-icing involves applying liquids containing chemicals like glycols and tolyltriazoles, which bind to metal, thereby clinging to an aircraft and preventing a buildup of ice and snow. De-icing fluids also may be applied in flight to the

25 See id.
26 See id.
27 See Liewer, supra note 23.
28 Pounian, supra note 24.
29 See id.
30 See id.
31 See id.
32 See id.
wings of an aircraft to dissolve ice buildup so that wing flaps can be extended. The FAA refused to require stricter de-icing measures until public pressure forced the issue after a USAir jet crashed at LaGuardia in 1992, killing twenty-seven passengers.\textsuperscript{34} Even in 1998, Chairman James Hall of the National Transportation Safety Board called the FAA’s response to icing incidents “disappointing.”\textsuperscript{35}

Although the NTSB made the recommendation in 1985, the FAA only addressed the implementation of radar and special lighting on runways after forty-six people died in two crashes, one involving the collision of two Northwest planes in Detroit in 1990, and the other involving a USAir jet which landed on a commuter plane in Los Angeles.\textsuperscript{36}

In each of these incidents, the problem has been addressed, but only after the unnecessary loss of life most probably due to delayed implementation. Other NTSB recommendations have yet to be addressed by the FAA. An example is the delay in requiring updated “black box” recorders on aging Boeing 737s.\textsuperscript{37} Two serious crashes involving 737s, which had mysteriously rolled upside down, occurred in both 1992 and 1994.\textsuperscript{38} Because of the limited data available, the cause of neither crash has been identified, and investigators may have to wait for another tragic accident involving a 737 with an updated black box to learn how to prevent future accidents.\textsuperscript{39}

Although the FAA has addressed particular issues in these areas, other issues still remain. Further problems have continued involving de-icing. An NTSB report on the crash of a Comair flight from Covington, Kentucky to Detroit in January 1997 stated as the cause of the accident:

the Federal Aviation Administration’s failure to establish adequate aircraft certification standards for flight in icing conditions, the FAA’s failure to ensure that a Centro Tecnico Aerospacial/FAA-approved procedure for the accident airplane’s de-ice system operation was implemented by U.S.-based carriers,


\textsuperscript{35} \textit{Enhanced Scrutiny of Process Seen As Key To Improved Safety}, Air Safety WK., Sept. 28, 1998.

\textsuperscript{36} See Pounian, \textit{supra} note 24.

\textsuperscript{37} See id.

\textsuperscript{38} See id.

\textsuperscript{39} See id.
and the FAA’s failure to require the establishment of adequate minimum airspeeds for icing conditions, which led to the loss of control when the airplane accumulated a thin, rough accretion of ice on its lifting surfaces.\textsuperscript{40}

The NTSB concluded that the plane, an Empresa Brasileira de Aeronautica (EMB-120),\textsuperscript{41} had most likely been clear of ice until it reached an altitude of 4000 feet when it began to pass through clouds of precipitation, allowing ice to form over the plane.\textsuperscript{42} In addition, the pilots had completed the descent checklist, including de-icing the propeller and activating the windshield heat, before reaching this altitude.\textsuperscript{43} The plane’s flight performance demonstrated problems in both lift and drag during the descent to 4000 feet, “consistent with a combination of thin, rough ice accumulation on the impingement (including both upper and lower wing leading edge surfaces), with possible ice ridge accumulation.”\textsuperscript{44} Icing research tunnel tests conducted by NASA, known as IRT tests, showed that when an EMB-120 wing is exposed to weather conditions similar to those experienced by the Comair flight, the wing developed small ice ridges along the de-icing boot tube segment seamlines.\textsuperscript{45} NASA’s computational studies found that these ice strips acted as “stall strips, creating more disrupted airflow over the airfoil’s upper surface, further decreasing the lift produced by the airfoil, and resulting in a lower stall AOA [angle of attack] than the rough ice accretions alone.”\textsuperscript{46} The NTSB concluded that the Comair flight gradually gathered a thin layer of rough ice on the front edge of the de-icing boot surfaces, and that this ice may have been imperceptible to the pilots.\textsuperscript{47}

For many years airplane manufacturers have placed de-icing boots, which cause ice that forms on the protected surfaces of the airframe to fall away, along the front edge of aircraft wings.
that are to be certified to fly in icy conditions. De-icing boots have historically kept the leading edge of an aircraft's wings and tail free from ice as long as they are operated properly. However, when prematurely activated, they might cause ice formation in the shape of an inflated de-icing boot, and cause "ice bridging," which makes de-icing of the plane's surface during flight impossible. This is what occurred during the flight of the crashed Comair plane.

The NTSB determined that if the FAA had required the airplane manufacturers to conduct tests with a small amount of ice on the de-icing boots during ice certification testing, they might have uncovered the lack of an adequate safety margin between the performance speed and the stall speed of the aircraft. The NTSB had made recommendations to the FAA in 1994 regarding changes to icing certification testing, which were not really addressed, although the FAA had implemented a three-phase plan, which could satisfy the need for the changes.

The FAA has also refused to address design flaws in aircraft. For instance, the MD-11 wide-body had a problem with the flaps that expand from the front of the wings during takeoff and landing, known as "slats." When a lever was accidentally hit during flight deploying the "slats," the plane began making wild pitching motions, and two passengers were killed in the resulting accident. After eleven other incidents, the FAA finally required the problem to be permanently fixed.

Another possible design problem involved Boeing's new 777. Under protest by FAA engineers, senior officials declined to require Boeing to perform tests of the 777's thrust reversers and allowed Boeing to simply submit data collected during earlier tests. In addition, the FAA certified the plane only a few days

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48 See id. at 8.
49 See id.
51 See id. at 27.
52 See id. at 28. According to FAA personnel, this plan would not result in new rules until January 2000, six years after the recommendations were made, three years after the Comair crash.
53 See Hedges et al., supra note 20.
54 See id.
55 See id.
56 See id.
after engineers resolved concerns about the possibility of severe vibrations in the plane's massive engines.\footnote{57}{See id.}

In both cases investigated in 1995 by \textit{U.S. News}, the FAA dismissed concerns by saying that the planes met regulations.\footnote{58}{See Hedges et al., \textit{supra} note 20.} Both Boeing and McDonnell-Douglas also claimed that the planes were safe and met FAA regulations.\footnote{59}{See id.} There is a real problem here. If companies can simply claim that they meet the FAA's regulations when there is a questionable event involving plane design, that is one thing. But for the FAA to also claim compliance with regulations as an excuse for not requiring what seems to be a reasonable test or design change, implies there are both serious problems with the regulations (perhaps they need to be updated in the face of new technology) and with the agency's motives and responsibilities regarding the safety of new aircraft.

Part of the FAA's lack of enthusiasm for adopting new safety regulations may be the fault of the tort system.\footnote{60}{See Pounian, \textit{supra} note 24.} The Federal Tort Claims Act states that the United States is liable for any:

negligent or wrongful act or omission of any employee of the government while acting within the scope of his office or employment, under circumstances where the United States, if a private person, would be liable to the claimant in accordance with the law of the place where the act or omission occurred.\footnote{61}{Federal Tort Claims Act, 28 U.S.C. \textsection 1346(b)(1) (2000).}

However, Congress provided a safety feature, a discretionary-function exemption for the FAA,\footnote{62}{See Pounian, \textit{supra} note 24.} for any government agency regarding:

(a) Any claim based upon an act or omission of an employee of the Government, exercising due care, in the execution of a statute or regulation, whether or not such statute or regulation be valid, or based upon the exercise or performance or the failure to exercise or perform a discretionary function or duty on the part of a federal agency or an employee of the Government, whether or not the discretion involved be abused.\footnote{63}{Federal Tort Claims Act, 28 U.S.C. \textsection 2680(a).}

This means that adopting new safety regulations can be done at the FAA's discretion without threat of liability from accidents that could have been prevented had a safety regulation been

\begin{footnotes}
\item[57] See id.
\item[58] See Hedges et al., \textit{supra} note 20.
\item[59] See id.
\item[60] See Pounian, \textit{supra} note 24.
\item[62] See Pounian, \textit{supra} note 24.
\item[63] Federal Tort Claims Act, 28 U.S.C. \textsection 2680(a).
\end{footnotes}
adopted and implemented in a timely fashion. Obviously, if the FAA had the threat of liability for such accidents, it would have a great incentive for taking quick action, rather than waiting for the bodies to stack up.

Unfortunately for the general public, this is not the case. In fact, in 1984, in the case of *United States v. Varig Airlines*, the Supreme Court issued a ruling that exempted the FAA from suits involving the duty to inspect. In *Varig*, fire broke out in the lavatory of a Boeing 707 on its way to Paris from Rio de Janeiro. Although the plane landed safely, most of the passengers died from asphyxiation on thick, black smoke or toxic gases produced by the fire, and most of the fuselage was destroyed. While the FAA had imposed safety regulations regarding aircraft design and maintenance, it had placed the burden for compliance with the regulations on the manufacturers, and retained only the duty to conduct spot-checks on the manufacturers to see if they were complying.

The Court stated:

> It is the nature of the conduct, rather than the status of the actor, that governs whether the discretionary function exception applies in a given case. Moreover, the legislative history discloses that such exception was plainly intended to encompass the discretionary acts of the Government acting in its role as a regulator of the conduct of private individuals. When an agency determines the safety procedures of private individuals, it is exercising discretionary regulatory authority of the most basic kind.

The Court also extended the exception to the FAA inspectors, as they were “specifically empowered to make policy judgments regarding the degree of confidence that might reasonably be placed in a given manufacturer, the need to maximize compliance with FAA regulations, and the efficient allocation of agency resources.” The Court reasoned that although they took risks in making these decisions, the risks were taken in order to ad-

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64 See Pounian, *supra* note 24.
66 See McMichael v. United States, 751 F.2d 303 (8th Cir. 1985) (distinguishing from *Varig* a case where the government placed safety inspectors in a plant on a permanent basis and finding liability for the government under the FTCA).
67 *Varig*, 467 U.S. at 798 (quoting the FTCA).
68 *Id.* at 819-820.
69 *Id.* at 820.
vance FAA purposes and were specifically authorized in the regulations, therefore falling into the discretionary exception.\textsuperscript{70}

Just consider for a moment that if a government agency can make discretionary decisions about public safety and avoid liability when those decisions are bad and cost lives, what keeps the government agency doing its best to make good decisions? Absolutely nothing. In \textit{Varig}, the FAA could determine when to make spot-checks and how many to make each year. The inspectors had no duty to look at every plane, or even to look at more than one plane. Because the inspection schedule was not specified, the government was not liable when this program failed, a plane burned, and killed most of the people on board. The court talks about the agency furthering its purpose, but if its purpose is to make decisions that ensure, or at least attempt to ensure the safety of the public, why should it not be held responsible for those decisions when they are bad? How can we make the FAA inspect more planes, more often, when we cannot do anything if it does not? Obviously, in order to have a real remedy, no safety inspection or enforcement program should be left to the whim of the FAA, or any agency. A system of checks and balances is necessary to ensure that the job gets done, and safety programs need to be specified so that when they fail or are improperly conducted, the blame can be placed on the proper parties.

\textbf{C. \textit{REMOVAL OF THE "DUAL MANDATE."}}

In 1994, 259 people died in six crashes. The NTSB allocated some of the blame for five of the tragedies to the FAA's inaction or lack of enforcement.\textsuperscript{71} As mentioned before, the Valujet tragedy might be placed in this category.

Before the 1996 crash, Valujet appeared to be a great success story. Founded in 1993, it had grown from two planes on eight routes to fifty-one planes with 320 routes in just a few years.\textsuperscript{72} Yet, Valujet seemed to be troubled by its wild growth. In 1995, Valujet bid for a Department of Defense (DoD) contract to transport DoD personnel.\textsuperscript{73} DoD investigators found problems with almost every aspect of Valujet, from management to inspections to records and documentation, and filed a condemning

\textsuperscript{70} See id.
\textsuperscript{71} See Hedges, \textit{supra} note 20.
\textsuperscript{72} See Schiavo, \textit{supra} note 1, at 7.
\textsuperscript{73} See id. at 11.
report of Valujet: "'The company does not yet meet the DoD Commercial Air Quality and Safety Requirements.'" 74 Essentially, Valujet was not good enough to shuttle government employees, but could freely transport the unsuspecting public. 75

Perhaps if Valujet had been tightly regulated, its growth would not have spiraled out of control. In 1994, Valujet made fifteen emergency landings, a statistic which increased to fifty-seven in 1995. These emergencies were directly proportionate to its growth. 76 Before the Everglades tragedy in 1996, Valujet had already made fifty-nine emergency landings—in fact, "[f]rom February through May of 1996, Valujet would have an unscheduled landing almost every other day." 77

Other problems with Valujet included planes over-shooting runways, landing gear mishaps, an engine explosion that injured seven people with shrapnel and an ensuing fire, a plane put back into service with damaged engine housing, an emergency chute that inflated inside the cabin, a shorted-out microphone preventing the pilot from communicating with Air-Traffic Control, sudden depressurization of a cabin in flight, and the use of duct tape to fix problem spots on planes. 78 Particularly disturbing was the story about a mechanic who used a hammer and chisel to fix a delicate engine part, and later that same engine had to be shut down in flight. 79 Valujet pilots took off in weather that would ground other flights, 80 probably because of the company policy that prevented pilots from getting paid unless they finished a flight. 81 Some planes had chronic maintenance issues, such as a used DC-9 that suffered a string of serious problems, including: "a malfunctioning fuel anti-ice valve, faulty gears, a loose oil cap causing a drop in oil pressure, smoke and fumes seeping into the cabin during taxiing, loss of pressure during an emergency landing, landing gear that wouldn't retract after takeoff, broken piston rods, [and] leaking tail seals." 82

74 Id.
75 See id.
76 See id. at 12.
77 SCHIAVO, supra note 1, at 12.
78 See id. at 14-15.
79 See id. at 15.
80 See id. at 14.
81 See id. at 7.
82 SCHIAVO, supra note 1, at 15.
In February 1996, prompted by a visit from the office of the Department of Transportation’s Inspector General, the FAA staff in Atlanta evidently wrote such a disturbing report on Valujet, describing accidents and problems, that the memo was buried until the Everglades disaster forced it into the public view.\footnote{See id.} While the memo prompted the FAA to take some action, rather than grounding the airline, the FAA issued a warning to Valujet and continuously denied publicly that there were any problems.\footnote{See id. at 16-17.} On May 11, 1996, Flight 592 crashed in the Florida Everglades, killing all 110 on board.\footnote{See id. at 18.} Almost ironically, the DC-9 involved in the crash was the same plane with chronic maintenance problems discussed above.\footnote{See id. at 20.}

The FAA spent weeks after the crash declaring that all airlines were safe, and that there was nothing wrong with Valujet.\footnote{See id.} After the crash, the FAA began daily inspections of Valujet and soon could no longer deny that there were serious problems with the airline. The airline was finally shut down in part because of “‘serious deficiencies’ in Valujet’s maintenance.”\footnote{See \textsc{Schiavo}, supra note 1, at 21-2.} Slowly, high-ranking FAA officials began to admit that the agency bore some responsibility for the condition of Valujet.\footnote{Id. at 25.} Even David Hinson, the FAA Administrator, said, “‘Yes, we bear some responsibilities in this case.’”\footnote{See id.} Valujet may be one of the most profound examples of taking action only after it is too late. The simple fact that Valujet had an accident rate fourteen times that of the major airlines\footnote{Id. at 29.} should have been enough to convince someone that there was a problem before a major disaster occurred.

The NTSB figured out the cause of the crash fairly quickly.\footnote{See \textsc{Schiavo}, supra note 1, at 26.} Two weeks after the crash, the NTSB sent the FAA a report stating “‘[p]reliminary evidence indicates that five cardboard boxes containing as many as 144 chemical oxygen generators . . . had been loaded in the forward cargo compartment shortly before departure.’”\footnote{Id.} The memo noted that it was a class D cargo com-
partment, which was not equipped with smoke or fire detection equipment to alert the crew to a problem. The NTSB went on to state “a fire should not be allowed to persist in any state of intensity in an airplane without the knowledge of the flight crew.” Bluntly put, “[a] fire detection system should be required in class D cargo compartments.” A later report from the House Committee on Transportation and Infrastructure revealed that this recommendation was “rejected by the FAA because they believed the gain in safety would not justify the cost of requiring all aircraft to install such systems.”

In the wake of the media attention from the Valujet crash, the FAA became a target of public outrage because of its apparent priority for promoting the airline industry over safety concerns. Finally, in the summer of 1996, Secretary of Transportation Pena asked Congress to delete the “dual mandate” from the statute authorizing the FAA. Yet, that is not exactly what occurred.

On October 9, 1996 Congress passed Public Law 104-264, also known as the Federal Aviation Reauthorization Act of 1996, which addressed and amended various troublesome provisions of the statute governing the aviation industry. Basically, all this did was change the wording from “promoting” to “encouraging” aviation, while inserting a few safety concerns.

The statute now reads:

(d) Safety concerns in public interest. – In carrying out subpart III . . . , the Administrator shall consider the following matters, among others, as being in the public interest:

(1) assigning, maintaining, and enhancing safety and security as the highest priorities in air commerce.

(2) regulating air commerce in a way that best promotes safety and fulfills national defense requirements.

(3) encouraging and developing civil aeronautics.

(4) controlling the use of the navigable airspace and regulating civil and military operations in that airspace in

\[94\] See id.
\[95\] Id.
\[96\] Id.
\[97\] SChIaVO, supra note 1, at 26.
\[98\] See id. at 33.
\[99\] See id.
\[101\] See id.
the interest of the safety and efficiency of both of those operations.

(5) consolidating research and development for air navigation facilities and the installation and operation of those facilities.

(6) developing and operating a common system of air traffic control and navigation for military and civil aircraft.

(7) providing assistance to law enforcement agencies in the enforcement of laws related to regulation of controlled substances, to the extent consistent with aviation safety.\textsuperscript{102}

If it seems that Congress finally tried to do something about the problem, note the fine print: "[We] do not intend for the enactment of this provision to require any changes in the FAA's current organization or functions. Instead, the provision is intended to address any public perceptions . . . that the promotion of air commerce by the FAA could create a conflict with its safety . . . mandate."\textsuperscript{103}

So now the question is, has this slight change in wording really had any effect? The FAA is still concerned with commerce, only now they are supposed to regulate it safely. Who enforces this change? The answer is probably the FAA itself, but they have already shown that the agency's priorities are skewed; possibly the Inspector General; possibly Congress; possibly public opinion; possibly no one.

A better question is, how does the NTSB fit into the picture and why doesn't this agency have any power over the FAA?

III. THE NATIONAL TRANSPORTATION SAFETY BOARD

A. Go Team

In 1967, the National Transportation Safety Board was formed to pursue independent investigations of all United States civil aviation accidents and major accidents in other transportation areas, such as rail, highway, marine, and pipeline.\textsuperscript{104} Yet, it has no regulatory or enforcement powers and is not affiliated with the Department of Transportation or the FAA.\textsuperscript{105} Information provided by the NTSB regarding its investigations cannot be

\textsuperscript{102} 49 U.S.C. § 40101(d) (2000).
\textsuperscript{103} Mary Schiavo, Mary Schiavo's Safety Wish List, AIR SAFETY WK., May 18, 1998.
\textsuperscript{105} See id.
used as evidence in a court of law; the sole purpose of this agency is to improve transportation safety. In addition, if the NTSB determines that criminal activity is involved in an incident, the FBI takes over the investigation, and the NTSB only provides requested support.

To investigate the 2,000 or so aviation accidents or incidents per year, along with the approximately 500 accidents involving other varieties of transportation, the NTSB designates parties to operate on each investigation. By law, the FAA is automatically a party, and other corporations or agencies may be designated depending on their areas of expertise and according to the NTSB's complete discretion. Lawyers and those who operate in other legal positions are not permitted to be parties in an investigation.

If an investigation is really large, such as with TWA Flight 800, investigative groups, consisting of specialists from the parties, may be established. Each group is headed by a group chairman and may look into such areas as "structures, systems, powerplants, human performance, fire and explosion, meteorology, radar data, flight data recorder and witness statements."

Since safety is the primary function of the Board, safety deficiencies are often addressed before an investigation is complete, and may have nothing to do with the final determination of the cause of the crash. For instance, in the case of the crash of a DC-10 in Sioux City, Iowa in 1989, the Board issued four separate safety recommendations before the investigation was complete.

An important question to ask is, if safety is essentially the sole purpose of the NTSB's mandate, why has this agency no enforcement power? Why should it issue numerous safety recommendations based on investigations of actual crashes to just be ignored by the FAA, the body of power? Perhaps it has no en-

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106 See id.
107 See id.
108 See id.
108 See id.
112 See Nat'l Transp. Safety Bd., About the NTSB, supra note 104.
113 Id.
114 See id.
115 See id.
forcement authority so that its recommendations will not be tainted by an abuse of power, or by the financial considerations that have made the FAA essentially impotent, or at the very best crawling along at a snail’s pace. If, however, it takes numerous crashes to make the FAA sit up and listen to a recommendation that the NTSB made years before, this does not seem to be an efficient use of time or knowledge.

In each investigation, the NTSB conducts months of tests and analyses before issuing a final report.\textsuperscript{116} Parties to the investigation do not participate in the analysis of data or in writing the report, but can submit their findings and safety recommendations to the Board.\textsuperscript{117} The Board then conducts deliberations over the final report in a public meeting in Washington, D.C., in which non-NTSB personnel are not allowed to participate.\textsuperscript{118}

\section*{B. The NTSB's Most Wanted}

In 1990, the NTSB began issuing a list of the most wanted transportation safety improvements, including recommendations for boating, aviation, automobiles, trains, and transportation of hazardous materials.\textsuperscript{119} On this list for aviation were recommendations for the prevention of airport runway incursions (now number one on the list), implementing aircraft structural fatigue testing (removed May 1995), brake wear limits and brake performance for transport aircraft (removed May 1995), ground proximity warning systems (removed May 1992), and aviation pilot substance abuse identification (removed July 1991).\textsuperscript{120} Other concerns and recommendations have been added and removed since 1990, including commuter airline safety, which was added in May 1995 and removed in April 1996; background checks for pilots, added in April 1996 and removed in May 1998; and fires in cargo compartments, added in May 1997 after Valujet and removed in May 1998.\textsuperscript{121}

Of the 11,161 safety recommendations issued by the NTSB from 1967 to February 12, 1999, 36.3\% regarded aviation is-

\begin{itemize}
\item See id.
\item See id.
\item See id.
\item See id.
\end{itemize}
sues. The area with the next most recommendations involved marine concerns, with 2,158 recommendations, 19.3%. Recommendations can be classified into thirteen different categories:

- CEX, closed — exceeds recommended action;
- CAA, closed — acceptable action;
- CAAA, closed — acceptable alternative action;
- CUA, closed — unacceptable action;
- CUAS, closed — unacceptable action/superceded;
- CR, closed — reconsidered;
- CNLA, closed — no longer applicable;
- CS, closed — superceded;
- OAA, open — acceptable response;
- OAAR, open — acceptable alternative response;
- OUR, open — unacceptable response;
- ORR, open — response received;
and OAR, open — await response.

For the 3,703 recommendations made by the NTSB to the FAA between 1967 and 1999, the FAA closed 3,303, four of which were classified as CEX, 2,576 as CAA or CAAA, and 527 as CUA or CUAA. Only 400 remain open, 219 of which are classified as OAA or OAAR, thirty-eight as OUR, and thirty-five are awaiting a response. Overall, for the period between 1967 and 1999, the FAA has an 83.2% acceptance rate of the NTSB’s recommendations, second only to MARAD, the U.S. Maritime Administration with a 100% acceptance rate. For the last five years, the FAA has an 88.04% acceptance rate of the 714 recom-

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123 See id.
126 See id.
127 See id.
mendations issued,128 well above the general acceptance average of the eight agencies considered (FAA, FHWA, NHTSA, FRA, RSPA, FTA, USCG, and MARAD) of approximately 82.3%.129

The current list as of May 1999 contains three major aviation warnings: airport runway incursions, the concern of explosive mixtures in fuel tanks on transport aircraft, and airframe structural icing.130 An examination of the complete list of recommendations, however, lists the FAA as a recipient of the warning and request in six of the ten, including the additional suggestions for automatic recording devices, child/youth safety, and human fatigue and hours-of-work policy.131

1. Runway Incursions

The first aviation area of concern on the current list, left over from the original list made in 1990, relates to accidents between aircraft on runways.132 The request regarding airport runway incursions provides for safer control of aircraft on the ground.133 Safety recommendation A-91-29, dated June 21, 1991, resulted from an accident in January 1990 in Atlanta, Georgia, but was first addressed in recommendation A-79-42 after three near collisions between June 1978 and February 1979.134 The NTSB’s goal is to find a warning system analogous to the alert system used to issue a warning when airborne planes risk collision, but that would alert controllers and crew to impending ground collisions.135

After the NTSB issued a runway incursion study in 1986, the FAA took various measures to reduce the number of incidents, resulting in a downward trend in accidents, which reached a low


133 See id.

134 See id.

135 See id.
A reversal has occurred, however, illustrated by a comparison of 186 incidents in 1994, increasing to 277 in 1996 and to more than 300 in 1997. Concern over runway incursions reached such a level that in 1998, the FAA announced that it had “adopted a focused priority safety agenda,” known as “Safer Skies.” This program uses Area Surface Detection (ASDE) radar and AMASS (Airport Movement Area Safety System) technology, and works with airlines and the aviation community to develop education programs designed to reduce the incursion rate. ASDE radar provides a controller with a radar-based image of the airport with little symbols representing each aircraft. The AMASS system is essentially a software add-on.

This sounds great doesn’t it? The FAA is addressing the problem. But are they really? The NTSB remains concerned that the testing and development of the breakthrough AMASS technology at various airports is running into delays. They do not say why they think there are delays. Maybe they just know the FAA well enough to be suspicious. The FAA maintained that it would meet the August 2000 completion date for the tests it originally promised, if it did not have any more “unexpected technological problems.” This meant having the system installed at thirty-four airports by August 2000. According to the NTSB, the FAA said in a letter dated April 6, 1999 that:

The FAA anticipates having the independent operational test and evaluation (of AMASS) conducted in July 1999, the deployment decision in September 1999, and the last production system operational by August 2000. In parallel with current testing efforts, the FAA and NATCA have agreed to conduct a quick human factors review of AMASS during April 1999. The agency still anticipates that all 40 production systems can be operational.

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136 See id.
138 Id.
139 See id.
141 See id.
143 Id.
144 See James T. McKenna, FAA Gains Ground on Update Problems, AVIATION WK. & SPACE TECH., Sept. 27, 1999, at 49.
by August 2000. However, this date could be jeopardized should significant unanticipated changes of enhancements be required following the review.\textsuperscript{145}

Interestingly, the FAA issued this letter despite the fact that only three AMASS systems had been delivered by 1999, although the FAA and Northrop Grumman had been working on this program since 1990.\textsuperscript{146} Unfortunately, the NTSB has not updated their web site regarding this issue, but a variety of newspaper articles from October 1999 reported that the NTSB's fears were founded, as the FAA apparently had another two-year delay with the AMASS project, which now will not be ready until 2002.\textsuperscript{147} AMASS was originally scheduled for implementation in 1992, but has been fraught with budget problems, technical difficulties, and a general lack of organization and coordination.\textsuperscript{148} Another problem is the actual system itself, which is essentially radar aimed at the ground. This means the signals can be blocked or deflected by any number of things, such as buildings and other ground clutter.\textsuperscript{149} According to Bill Blackmer, the head of the Air Traffic Controller Union's Safety and Technology Department, "Shooting radar at the ground is not the best idea."\textsuperscript{150} In addition, AMASS has had problems with both its software and with providing false alarms, and ASDE has problems with blind spots and double images.\textsuperscript{151}

Runway incursions rose to 325 in 1998, and fifty-nine people have died in five runway crashes over the last ten years.\textsuperscript{152} Obviously, something must be done, and it seems that even the FAA has finally realized this. According to Steven Zaidman, the FAA's Associate Administrator for Research and Acquisitions, "I


\textsuperscript{146} See McKenna, FAA Gains Ground on Update Problems, supra note 144.


\textsuperscript{148} See Phillips, New FAA Radar System Has Yet to Take Flight, supra note 147.

\textsuperscript{149} See FAA Collision-Prevention Program Delayed; New Radar System Now Scheduled for 2002 Deployment, supra note 140.

\textsuperscript{150} Id.

\textsuperscript{151} See id.

\textsuperscript{152} See Phillips, New FAA Radar System Has Yet to Take Flight, supra note 147.
think the FAA bit off more than it could chew. I think it was too much."153

The airline accident with the highest death toll resulted from a runway incursion in 1977, when a KLM 747 collided with a Pan Am 747 in the Canary Islands, killing 538 people.154 The collision was the exact type of incident AMASS is designed to prevent.

A more recent incident on April 1, 1999 at Chicago’s O’Hare International Airport involving two passenger aircraft, an Air China 747 and a Korean Air 747 with a combined total of 387 crew and passengers, highlighted the continuing and potential devastation of such a ground collision.155 According to the NTSB, while the Air China craft was leaving the runway, a controller cleared the Korean Air flight for takeoff, resulting in the Korean Air flight crossing between twenty-five to fifty feet over the top of the Air China plane.156 About fifty-six percent of runway incursions involve “pilot deviations,” and the rest are considered “operational errors” blamed on controllers, vehicles, or pedestrians who wander into restricted areas.157 There are reports that make this O’Hare incident even scarier, such as the allegation that the Air China pilots became confused and the plane wandered back on the runway in front of the Korean Air flight,158 not that they just had not managed to leave the runway, as the NTSB reported.

An even more recent occurrence makes the O’Hare incident sound petty. Early in December 1999, the crew of a US Airways plane (Metrojet Flight 2998—Metrojet is a discount carrier owned and operated by US Airways) refused a flight controller’s instructions to take off on a foggy night in Providence, Rhode Island.159 Apparently, a United Airlines 757 landed on the runway and was given instructions to get to the terminal, but became confused and ended up back on the original runway.160 A Federal Express cargo jet took off on this runway and passed directly over the lost United jet. Although it is unclear how

153 Id.
155 See Phillips, New FAA Radar System Has Yet to Take Flight, supra note 147.
156 See id.
157 Id.
158 See id.
160 See id.
close the planes were, the sound of the FedEx plane taking off can reportedly be heard clearly on a tape of the United crew telling the control tower that they were concerned about their location. After hearing the United crew’s concerns, the US Airways crew refused to takeoff until the United flight reached the terminal, frustrating the controller. The weather was such that it was not possible to see the runways from the control tower or to see one end of the runway from the other end. Had an AMASS system been in place, it likely would have supported the US Airways crew’s concerns about taking off in such a situation.

Another incident occurred on November 22, 1999 at LAX when a United Airlines flight had to lift abruptly to miss an Aeromexico plane that had “blundered” onto the runway in front of it. The United 757 evidently passed only about sixty feet above the Aeromexico flight.

A report in Air Safety Week in August 1999 listed airports with the greatest number of runway incursion incidents – these airports are both large and small. The magazine, however, made note of Dallas-Fort Worth International Airport, one of the largest and busiest in the country which made this list. DFW’s record is two to three times better than the other airports on the list, possibly due to its widely-spaced, parallel runways.

With reports such as these, it is no wonder that a system addressing runway incursions has made it to the top of the NTSB’s most wanted list. What is surprising is that the FAA has not managed to actually do anything about the problem, and has not really made any progress on its attempts until the last few months. The FAA has finally consolidated all of its programs addressing runway incursions under one director, who has the authority “to cross organizational boundaries that have often defeated programs in the past.” John Mayrhofer is the new director of this program, and he claims that runway incidents have started a new decline, hopefully due in part to the FAA’s work on this matter. While no radar systems are yet in place, the

161 See id.
162 See id.
163 See id.
164 See Phillips, supra note 159.
165 See id.
167 Phillips, supra note 159.
168 See id.
FAA has worked on implementing “education and training for pilots and controllers, . . . surface-detection radar and . . . airport signage.” These actions are definitely steps in the right direction, but another problem has surfaced with all the delays: will the new AMASS system be adequate for present-day airports with the huge increase in air traffic over the past decade? Even the FAA admits there is a problem, and “officials have said that the system may never live up to its original promise.”

2. De-icing

The recommendation regarding airframe structural icing has been issued twice, on August 15, 1996 and November 30, 1998. It is classified as an acceptable response to the problem, and the file is open, awaiting response from the FAA. The original recommendations regarding icing on aircraft structures, which arose from a 1981 NTSB study, sat in an Open-Unacceptable Response (OUR) file awaiting some sort of action for over fifteen years. The current recommendations stem from two aircraft incidents: American Eagle Flight 4184, which encountered in-flight icing conditions and suffered a loss of control in Roselawn, Indiana on October 31, 1994; and Comair Flight 3272, which encountered in-flight icing conditions and suffered an “uncontrolled collision” with the ground in Monroe, Michigan on January 9, 1997.

The first part of these recommendations address icy conditions specifically. A-96-54 recommends that icing criteria published in 14 CFR sections 23 and 25 be revised and that icing certification be expanded “to include freezing drizzle/freezing rain and mixed water/ice crystal conditions, as necessary.” A-96-55 requests revisions of the Federal Aviation Regulations’ icing certification requirements “to specify the numerical methods to be used in determining median volumetric diameter and liquid water content during certification tests.”

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169 Id.
170 Id.
172 See id.
173 See id.
174 See id.
175 Id.
The recommendations then address the problems with the certification of aircraft to fly in icy conditions. A-96-56 requests a revision of icing certification testing to ensure that planes are tested in all conditions for which they are certified to operate, or that they at least prove somehow that they are capable of flying in those conditions.\textsuperscript{177} It also requests that if such proof cannot be provided, flight crews should be given the means for determining when outside conditions exceed those in which the aircraft can be safely operated.\textsuperscript{178}

A-96-69 suggests the research and development of on-board systems that can detect freezing drizzle and rain and alert the flight crew to such weather, as well as to the resulting ice buildup.\textsuperscript{179} A-98-99 requests that ice research, development, and implementation of these revisions be made immediately.\textsuperscript{180}

A-98-100 requests that turbo-prop planes, which are currently certified to fly in icy conditions, have their certifications reviewed and undergo additional testing to keep their certification.\textsuperscript{181}

The FAA has made some response to each individual recommendation, classifying A-96-54 and A-96-55 as Open-Acceptable Response (OAR), and evaluating "severe ice roll control . . . of 14 CFR Parts 23 and 25 aircraft equipped with pneumatic deicing boots and unpowered ailerons that are used in regularly scheduled passenger service in the United States," as well as issuing airworthiness directives for eighteen of those aircraft in response to A-96-56 and A-96-69.\textsuperscript{182} With regard to A-98-99, the FAA wrote the NTSB another letter stating that it was already addressing the issues raised in this safety recommendation in actions taken for other recommendations so that it would not do anything further in response.\textsuperscript{183} This same letter also stated that the FAA would not do anything regarding turbo-propeller driven aircraft until the ice certification regulations were revised and the situation was reevaluated.\textsuperscript{184} Does anybody have any idea how long that might take? The NTSB evidently does.

\textsuperscript{177} See id.
\textsuperscript{178} See id.
\textsuperscript{179} See id.
\textsuperscript{180} See id.
\textsuperscript{182} Id.
\textsuperscript{183} See id.
\textsuperscript{184} See id.
The FAA requested that both A-96-56 and A-96-69 be closed due to its completed and future planned actions, but the NTSB refused to do so, commenting that because of "FAA's slow progress on similar icing safety recommendations issued by the Safety Board in 1981 and [due] to the importance of these recommendations, the Safety Board will continue to monitor the FAA's progress on these issues."\(^{185}\)

Another interesting response of the FAA to these recommendations was its refusal to prohibit planes from flying in icy conditions, for which the aircraft have not been proven to be safe, because "compliance would require the flight crew to know exactly where the icing conditions exist for which the airplane has not been tested."\(^ {186}\) The FAA rationalized this with the statement, "'Given the absence of technology, the FAA does not believe an adequate means exists that would provide pilots with the tools to determine positively where icing conditions exist that exceed the limits for aircraft certification.'"\(^ {187}\)

Ok, so pilots are not able to tell the exact places in the sky where icy conditions exceed the perimeters of safety for the aircraft they are flying. That is understandable. But does that mean that they should be allowed to just fly through anything? What about issuing guidelines regarding the termination of a flight in hazardous icy conditions or guidelines on how to avoid such conditions? If such guidelines already exist, why does the FAA not refer to them in response to this recommendation, if for no other reason than to refresh everyone's memory, or at least make it look as though the FAA has thought about the problem a little before dismissing it with a few sentences? In any case, at least the NTSB seems to feel that whatever the FAA has done, or says it is going to do, it is either not enough or is unlikely to occur. Unfortunately, just because one agency realizes another's responses are inadequate does not mean the problem is fixed, or even being taken seriously by the FAA, which is the only entity that can do anything about the risk and the problem. All the NTSB can do is identify problems and hope someone listens.

\(^ {185}\) Id.
\(^ {187}\) Id.
3. Explosive Fuel Tanks

This recommendation stems from one of the most well-known aviation tragedies in recent history. A plane mysteriously explodes a few miles off the coast of East Moriches, New York on its way to Paris in July 1996.188 Wild theories are proposed: terrorists shot a missile, the Navy shot it down, a bomb exploded. Everyone is surprised when none of those theories pans out. Instead, TWA Flight 800 was the victim of explosive fumes in the plane's empty center fuel tank.

The NTSB's recommendation, issued December 31, 1996, states:

A-96-175

Pending implementation of design modification, require modification in operational procedures to reduce the potential for explosive fuel-air mixtures in the fuel tanks of transport category aircraft. In the B-747, consideration should be given to refueling the center wing fuel tank (CWT) before flight whenever possible from cooler ground fuel tanks, proper monitoring and management of the CWT fuel temperature, and maintaining an appropriate minimum fuel quantity in the CWT.

A-96-176

Require that the B-747 flight handbooks of TWA and other operators of B-747s and other aircraft in which fuel tank temperature cannot be determined by flight crews be immediately revised to reflect the increases in CWT fuel temperatures found by flight tests, including operational procedures to reduce the potential for exceeding CWT temperature limitations.189

After the NTSB made recommendation A-96-175, it conducted flight tests, which showed that risks of explosive vapors in the fuel tanks could be reduced by fuel management and limited use of air conditioning packs.190 In response to this study, the FAA formed an Aviation Rulemaking Advisory Committee (ARAC), the majority of the members Boeing and Airbus em-

189 Id.
190 See id.
ployees, to examine the fuel tank issues. This group determined that "operational changes would not eliminate flammable conditions in some flight conditions" and [so they] did not recommend adoption of operational changes." They did, at least, determine that the flammable state of vapors in fuel tanks should be reduced from thirty percent to around six percent. In addition, while the FAA has created a new Special Federal Aviation Regulation that requires the development of fuel tank inspection and maintenance programs, as well as airworthiness directives for fuel pumps and reviews of certification, it still has done nothing to develop procedures that can reduce the possibility of combustible fuel-tank mixtures. Because of the FAA's inaction with regard to this threat, the NTSB classified A-96-175 as Open-Unacceptable Response (OUR) in July 1997.

The NTSB also found that the TWA Flight Handbook for the B-747 stated that "pack operation," the use of air conditioning packs, could raise CWT temperature between ten and twenty degrees Fahrenheit. Boeing flight tests in August 1996, however, showed that the temperature could rise forty degrees, and NTSB tests in July 1997 found temperature increases over sixty degrees. The FAA seems to have ignored these test results and did not announce that any corrections in the Flight Handbook should be made. Because of this lack of response,

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191 See id.

192 Id. There is a serious problem with the makeup of this group, also known as the Fuel Tank Harmonization Working Group (FTHWG). See id. For one thing, if you want to really evaluate a problem like this, you need people besides the engineers and management of the companies that made the faulty item. Not only do they not want to have to implement anything that might be costly to their operations, they do not want to admit that they were wrong, either with their designs, maintenance instructions, or materials, because that means admitting that they are responsible for the lives that were lost due to their mistakes or oversights. While it is useful to have some of these people on a group doing such a study, it would be more convincing and effective to have disinterested, but informed, parties make a decision that extra precautions were not necessary, rather than the people who could be viewed as shouldering a large portion of the blame for the accident.


194 See id.

195 See id.

196 See id.

197 See id.
A-96-176 has also been designated Open-Unacceptable Response since July 1997.198

IV. AFTER VALUJET

A. HAZMAT REGULATIONS

Although the NTSB wrote a report strongly advising the installation of smoke detectors in class D cargo holds, this recommendation was soon overshadowed and replaced by controversy regarding the issue of banning hazardous cargo on passenger flights—not that hazardous cargo was anything new. In 1973, a PanAm flight was diverted from New York to Boston "when the crew reported smoke in the cockpit."199 The plane was unable to land due to dense smoke and crashed, killing all three crew members.200 Although the NTSB was unable to determine the exact cause of the crash, it suspected that nitric acid packed in sawdust may have begun leaking in the cargo hold.201 In 1986, a DC-10 landed in Chicago from Hawaii and everyone disembarked.202 Shortly afterward, a fire started from what the NTSB determined was the mishandling of oxygen generators, destroying the plane.203 The NTSB then began to recommend that the FAA ban hazardous cargo on commercial airlines, but the FAA rejected this idea as being too inconvenient for the airlines in exchange for the small benefit it might provide to the public.204 That same year, the FAA did, however, decide that the way to address the problem of fires in cargo or baggage compartments was to require airlines to test the compartments and make sure that their liners could withstand a fire, [and] make sure the fire cannot burn through the cargo-hold liner . . . . But the FAA rejected a requirement for fire detection systems in class D cargo compartments [because] . . . the danger of a cargo fire was "beyond the scope of its rulemaking notice."205

Other incidents involving hazardous materials on commercial jets continued. In February 1988, an American Airlines jet ex-

199 SCHIAVO, supra note 1, at 26-27.
200 See id. at 27.
201 See id.
202 See id.
203 See id.
204 See SCHIAVO, supra note 1, at 27.
205 Id.
experienced smoke in the passenger cabin.\textsuperscript{206} The NTSB determined that “hydrogen peroxide solution (an oxidizer) and a sodium orthosilicate-based mixture” had been loaded into the same compartment of the plane, and a fire had started after the peroxide began to leak.\textsuperscript{207} The cargo compartment did not contain the fire, and the floor of the passenger cabin eventually became hot and soft, although no one was injured.\textsuperscript{208} In 1992 and 1993, fires broke out in planes shipping oxygen generators that had not been declared as hazardous material.\textsuperscript{209} In 1993, the FAA responded to the NTSB’s urging for fire detection equipment in aircraft by stating that “it did not believe that fire/smoke detection systems would provide a significant degree of protection to occupants of airplanes” and the 350 million dollars needed to install the detectors would not be justified.\textsuperscript{210}

Three years later, oxygen generators placed next to tires in the class D cargo hold of Valujet Flight 592 started a fire that took the unwary crew by surprise right before they plunged into the Everglades.\textsuperscript{211} Two weeks after the crash, a temporary ban on shipping oxygen generators in commercial aircraft was issued by the Department of Transportation’s Research and Special Program Administration, and the FAA finally issued a warning of its own.\textsuperscript{212} It made no mention, however, of smoke detectors, promising only “swift enforcement action” against anyone who tried to ship oxygen generators as cargo on passenger aircraft.\textsuperscript{213}

More than a year after the crash, the FAA finally proposed and instituted a requirement that old cargo holds must be installed with fire detection equipment by 2001.\textsuperscript{214} The progress on the installation of this equipment, however, has been slow. With a little over one year remaining before the deadline, only about eleven percent of the affected planes had the safety up-

\textsuperscript{206} See id.
\textsuperscript{207} Id.
\textsuperscript{208} See id. at 27-28.
\textsuperscript{209} See Schiavo, supra note 1, at 28.
\textsuperscript{210} Id.
\textsuperscript{211} See id. at 28-9.
\textsuperscript{212} See id. at 29.
\textsuperscript{213} Id.
\textsuperscript{214} See Airliners Still Carry Hazardous Materials, Florida Today, Sept. 7, 1999, at 03A.
grades in place.\textsuperscript{215} About 1000 DC-9s and almost that many 737s still needed to be converted.\textsuperscript{216}

Although hazardous materials have now been banned on passenger planes, they still seem to show up. Oxygen generators have either been intercepted or have flown on passenger jets an estimated twenty times since the Everglades crash.\textsuperscript{217} Some of the enforcement problems may include the possibility that inspectors are not as well trained as they are thought to be and the fact that violations of the ban can take up to two years to process.\textsuperscript{218} In addition, the large fines threatened are usually greatly reduced, and airlines have not exactly jumped at the requirement to install new equipment on old planes, particularly those that would likely be retired before the deadline.\textsuperscript{219}

Obviously, banning is not enough, and enforcement issues need to be seriously addressed. In addition, one would think that airlines would not be so reluctant to comply, considering that the installation of smoke detection equipment and the proper handling of hazardous materials are relatively small measures to take when one considers the implications and repercussions another Valujet-type wreck would cause. It is, in fact, in the best interest of everybody to comply: airlines save planes and their reputations, passengers are safer, and the FAA does its job and gains respect.

If the FAA were to shorten the time-span allowed for compliance, and then actually impose and enforce costly penalties for non-compliance, airlines might take action. Of course, cost is an issue, and the FAA is unlikely to impose and enforce a costly program under time-pressure that could damage the airlines’ profit margins, even if the dual mandate has been eliminated.

One area the FAA has handled well is spot inspections at national airports. A recent inspection at DFW uncovered approximately twenty violations of the hazardous materials ban on passenger planes and of procedures for handling hazardous materials. Yet, while the inspection is good, the question remaining is what will be done about the violations and will penalties be enforced?

\textsuperscript{216} See id.
\textsuperscript{217} See Airliners Still Carry Hazardous Materials, supra note 214.
\textsuperscript{218} See id.
\textsuperscript{219} See id.
In mid-1999, the FAA did issue over $1.2 million in fines to fifteen different companies because of hazmat violations.\textsuperscript{220} Regulations violated included “improper packaging, improper classifying, and allowing untrained employees to ready packages for shipping.”\textsuperscript{221} The materials that were being shipped featured such products as “a variety of explosives, corrosives, oxidizers, and flammable gases,”\textsuperscript{222} all which either leaked or emitted potent fumes while being loaded onto the planes.\textsuperscript{223} Explosives and corrosives? Really, one can not help but wonder what these companies were thinking, as well as what the FAA was thinking by merely issuing fines for such a violation. One might hope that the companies would be shut down or at the very least not be allowed to package or load cargo onto planes without constant scrutiny and some sort of training. However, the fact that the FAA actually did issue fines, in light of its consistent refusal to enforce regulations, does say something – hopefully, that things are changing at the FAA.

Another measure that might be helpful, though regrettably expensive, would be education programs for crews who handle the hazardous materials, detailing the problems and risks of not following safety procedures. Again, however, enforcement of a required program, as well as evaluation and implementation, is an issue.

On September 2, 1999, smoke in the cockpit forced an Air-Tran DC-9 to make an emergency landing in Atlanta.\textsuperscript{224} Air-Tran is the renamed Valujet Airlines, and since it is considered a new airline, it is undergoing “heightened scrutiny” during its first five years in business as a result of the FAA’s Certification Standardization & Evaluation Team (CSET).\textsuperscript{225} The CSET program was established in late 1996, partly as a result of the Valujet tragedy.\textsuperscript{226} Obviously, something more must be done.

\textbf{B. Legal Repercussions}

Three years after the 1996 Valujet tragedy, the blame is still being passed around. On July 13, 1999, the Miami-Dade County

\textsuperscript{221} Id.
\textsuperscript{222} Id.
\textsuperscript{223} See id.
\textsuperscript{224} See \textit{Under Watchful Eye}, \textit{Air Safety Wk.}, Sept. 13, 1999.
\textsuperscript{225} See id.
\textsuperscript{226} See id.
State Attorney made history by indicting SabreTech on 110 counts of murder and manslaughter for falsely labeling the oxygen canisters that caused the fire as empty and loading them without required safety caps, which should have prevented the tanks from exploding.\(^{227}\)

In addition, a federal indictment was issued for three SabreTech employees “on charges of conspiracy, making false statements and mislabeling and mishandling hazardous material.”\(^{228}\) The U.S. Attorney’s office in Miami also included twenty-four federal counts against SabreTech.\(^{229}\) The three men, Eugene Florence, Mauro Valenzuela, both mechanics, and Daniel Gonzalez, SabreTech’s Vice President of Maintenance and Repairs, could have faced a total of $2.7 million dollars in fines and up to fifty-five years in prison if they were convicted.\(^{230}\)

While the 1996 crash set off a surge of requests for hazmat training for airline employees, that trend died down.\(^{231}\) Now a new concern has arisen. The indictments have had significant effects on the insurance industry. Under Florida law, the case may result in punitive damages, putting a new pressure on airline insurers.\(^{232}\)

Various parties found it ironic that although the NTSB also placed blame for the crash on the FAA for failing to supervise Valujet properly, as well as on the airline itself for failing to supervise its subcontractor, only SabreTech was being charged.\(^{233}\) Kenneth Quinn, counsel for SabreTech and, ironically, former Chief Counsel for the FAA, stated that “[f]or obvious reasons, the federal government is not going after itself criminally for failures to oversee Valujet properly, to mandate smoke detection and fire suppression systems, and to aggressively combat the dangers posed by hazardous materials for more than a decade – all errors that could have prevented this tragedy.”\(^{234}\) While SabreTech may have reason to be defensive as it faces a $2.25 million dollar fine and is out of business because of the inci-


\(^{228}\) \textit{Mechanics License Reinstated After Valujet Crash, Fla. Today}, July 15, 1999, at 03B.


\(^{230}\) See \textit{id.}

\(^{231}\) See Krause, \textit{supra} note 220.

\(^{232}\) See \textit{Lloyd’s List Int’l}, \textit{supra} note 227.

\(^{233}\) See Krause, \textit{supra} note 220.

\(^{234}\) Tripp, \textit{supra} note 229.
dent, Quinn does have a point. Is the government helping the FAA pass on responsibility and place blame elsewhere so that its own shortcomings might be overlooked? What would it take to punish the FAA for its inaction, mismanagement, and poor job performance? Fines certainly would not be a plausible punishment. Another question that has been raised is, why did it take so long for charges to be brought? Essentially, the facts leading up to the crash of Flight 592 have been known since 1996, yet it took three years to take action against any parties, and even then, only one party was singled out. Two have, effectively, been exonerated of any wrongdoing by being left out of the indictments.

James Landrum, a relative of a crash victim who happened to be a flight attendant for another airline, also criticized the omissions: “These indictments, in their current form, target minimum-wage workers, while the well-documented, illegal actions of Valujet management are not even addressed. This amounts to nothing more than punishing schoolyard drug users, while absolving the drug lords.” Landrum’s statement refers to Valenzuela’s contention that he was given orders to sign the form allowing the oxygen canisters to be loaded on Flight 592.

The situation regarding the reinstatement of Eugene Florence’s mechanic’s license is even more disturbing: Florence, as well as Valenzuela, lost his license due to the Valujet crash, but “won it back” barely a year later. A license or certificate allows a mechanic to sign off on cards indicating that an assignment has been completed; these cards are required at every step of a

\[\text{See Krause, supra note 220.}\]
\[\text{See News Briefs, Air Safety Wk., July 19, 1999; see also Let Punishment Be Painful, Air Safety Wk., June 12, 2000, at 2000 WL 4446579 (listing Mary Shiavo’s recommendations for SabreTech’s fines and restitution regarding the Valujet crash).}\]
\[\text{See Valujet Suspects Surrender, Three Men Deny Responsibility for Airliner Crash, Fla. Today, July 16, 1999, at 06B. A federal judge ordered SabreTech to pay two million in fines, less than half of the possible maximum, and nine million in restitution for the part it played in the Valujet Flight 592 crash. See David Cazares, SabreTech Fined $11 Million, Ft. Lauderdale Sun-Sentinel, Business, Aug. 15, 2000, at 2000 WL 22190645. Two of the three SabreTech employees indicted were acquitted of the federal charges, while the third remains a fugitive. See id. The state criminal trial for the 110 murder and manslaughter charges filed against SabreTech is set for October 2000. See id.}\]
\[\text{Mechanic’s License Reinstated After Valujet Crash, supra note 228.}\]
maintenance project. Without a license, a mechanic can hold only low-level positions in the aviation industry.

One of the indictments charged that Florence falsely signed off on work cards representing that steps had been taken on maintenance assignments, which were not performed. Mechanics only have to wait one year before seeking reinstatement of their license, and Florence regained his on May 9, 1998 before the conclusion of the criminal investigation. The FAA's regional legal staff provided no information on whether the indictments would affect Florence's reissued license.

Few would dispute the idea that a mechanic under criminal investigation should not be able to regain his ability to supervise projects, particularly when the reason that he lost the license granting him that privilege in the first place is the direct cause of the criminal investigation. A relative of one of the victims of Flight 592 called Florence's reinstatement "frightening and distressing." Again, any system that allows this kind of loophole contains obvious flaws, which need to be addressed and eliminated.

C. SAFETY INSPECTIONS, ATOS, CSET

According to Mary Shiavo, the former Inspector General of the Department of Transportation, airline safety standards really began to decline in 1978 following the deregulation of the airline industry, causing airlines to "adopt business practices sacrificing safety for profitability." Schiavo, a major critic of the FAA as discussed earlier, also placed blame on that agency for the declining safety standards. In addition, with the huge growth in the aviation industry, predictions have surfaced of increased airline accidents - the White House Commission Report on Aviation Safety predicted up to one major airline disaster a week by 2007 if industry growth continues at the present rate.

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239 See id.
240 See id.
241 See id.
242 See id.
243 See Mechanics License Reinstated After Valujet Crash, supra note 228.
244 Id.
245 Air Passengers Must Look After Their Own Safety: Shiavo, JAPAN TRANSP. SCAN, Aug. 2, 1999.
246 See id.
247 See Paul Richfield, Outlook: Regulations and Certification, the FAA's Challenge: Lower the Accident Rate While Keeping Pace With Technological Intake, BUS. & COM. AVIATION, Aug. 1, 1999, at 92.
So what is the FAA doing to improve informed opinion of its actions and of aviation safety?

Under its ‘Safer Skies’ program, the FAA has pledged “to reduce the commercial aviation accident rate by 80 percent, and the general aviation accident rate by 15 percent by 2007.” In order to reach this goal, the agency claims to be addressing the six most prevalent causes of airline disasters: “controlled flight into terrain (CFIT), pilot loss of control, runway incursions, uncontained engine failures, approach and landing accidents, and weather.”

According to the FAA’s Deputy Associate Administrator for Regulation and Certification, Margaret Gilligan, “Safer Skies is an integrated effort to analyze all the accidents, prioritize them and intervene. . . . We’re looking for trends that we couldn’t find when we examined accidents individually.’” In addition, the agency created the Certification Standardization and Evaluation Team (CSET), a new approach to oversee all new airlines seeking certification. CSET provides FAA field offices with technical knowledge regarding airline operations, the lack of which was one of the problems identified in the agency examination after the Valujet crash.

The FAA has also instituted a program called “One Level of Safety” in order to increase oversight of regional carriers in an effort to hold them to the same safety standards as the major commercial airliners. In addition, the FAA is planning to dabble more in accident investigation, “challeng[ing] the NTSB’s limited budget and non-regulatory status.” The goal is to do on-site investigations of all general aviation accidents, and eighty percent of all non-fatal accidents. In the past, most of the FAA’s accident investigation involved only a phone call, but as Gilligan put it, “‘[We] think there’s more to learn if the inspector sees it for himself.’

Other areas being addressed include increasing random drug and alcohol testing, restructuring the method for selecting and

248 Id.
249 Id.
250 Id.
251 See id.
252 See Richfield, supra note 247.
253 Id.
254 See id. It only took the FAA forty years to figure out that a real-life picture is worth a thousand words over the phone.
training air traffic controllers, and possibly limiting commercial sightseeing flights over national parks.\footnote{255}

So it sounds like the FAA has undertaken several great programs to address chronic problems in the aviation industry. But are they going to be able to achieve any of these goals?

A report released in July 1999 by the General Accounting Office (GAO), “the investigative arm of Congress,” focused on the FAA’s Air Transportation Oversight System (ATOS).\footnote{256} The FAA launched ATOS in 1998 in order “to replace thousands of spot inspections with a more systematic analysis of the ten major carrier’s operations.”\footnote{257} The “‘thousands of spot inspections’” refer to the FAA’s Performance Tracking and Reporting System (PTRS), the predecessor of ATOS.\footnote{258} Essentially, the ATOS program is designed to allow FAA inspectors, who once would have spent their time with major airlines, to focus their scrutiny on regional carriers and start-up airlines.\footnote{259} ATOS is a direct result of the criticism levied toward the FAA after the Valujet crash.

The GAO report characterized the ATOS program as a “‘significant promise for helping the FAA overcome deficiencies in its past approach to aviation safety inspections.’”\footnote{260} However, the GAO also reported that ATOS was “plagued with a lack of clear guidance from headquarters, high turnover, a lack of experience and training, and an overly ambitious implementation schedule.”\footnote{261} Essentially, the FAA needed to “take a step back and regroup.”\footnote{262} The FAA protested the GAO’s “unnecessarily

\footnote{255} See id.
\footnote{256} Corrections Urged to Safety Inspections, AIR SAFETY Wk., July 12, 1999.
\footnote{257} Id.
\footnote{259} See New Safety Inspection Program Announced Fewer Inspectors for the Ten Largest Airlines as FAA Plans to Redeploy Staff to Other Carriers, AIR SAFETY Wk., May 18, 1998.
\footnote{260} Corrections Urged to Safety Inspections, supra note 256. Actually, despite the GAO’s opinion, I do not feel that analyzing the typical way airlines do things to see if they present dangers is better than the traditional FAA policy of imposing fines after infractions of regulations. What is there to guarantee that the airlines are doing things the typical way? Nothing. How would the FAA know? It wouldn’t. Airlines could get lax and start taking shortcuts, and the FAA would never know until disaster struck. Even just a slow degradation of policy could lead to disaster if no one is around to catch the problem. In addition, under ATOS, there is no enforcement, no way to keep the airlines acting within policy. So, not only would the FAA have no idea about a change, but there is nothing to keep an airline from changing its practices.
\footnote{261} Id. See also Jennifer Michels & Tricia A. Holly, Dateline: Washington, TRAVEL AGENT, July 26, 1999, at 103.
\footnote{262} Corrections Urged to Safety Inspections, supra note 256.
negative tone” in the report, although the agency did agree substantively with the contents.263

The GAO evaluation might be considered generous in light of all the problems it found with the ATOS program. For instance, some of the ATOS inspectors lacked licenses to fly the aircraft they inspected or to perform flight checks of the pilots.264 Some of the inspection reports omitted basic information like the name of the airline, the model of the planes, or the pilot identification numbers.265 Inspectors might also be doing their work with the wrong standards — the GAO found that the FAA had issued inspectors weight and balance limits for commuter airline standards to investigate and inspect the weight and balance of the major airlines.266 In addition, the ATOS database is not compatible with a pre-existing database, the Safety Performance Analysis System, which holds analyzed data from the PTRS program.267 A serious shortage of inspectors has also plagued the program; one team had eleven members out of twenty-eight reassigned but not replaced.268

Further proof of an ongoing problem regarding mismanagement of ATOS was uncovered recently at a NTSB hearing on the crash of American Airlines Flight 1420 in Little Rock. S. C. Valentine, the FAA’s principal operations inspector for American Airlines under the ATOS program, commented that he did not have enough inspectors to do his job.269 “‘We were understaffed before ATOS.’”270 Apparently, due to a hiring freeze, he was missing over a third of the staff necessary to adequately cover the airline and did not have anyone who could analyze the data his staff had gathered.271 Analyzing data is ATOS’s main strategy for avoiding spot inspections of the major airlines.

263 See id. This protest may uncover a key problem within the FAA, that of characterization. Perhaps the FAA feels that by not discussing problems in a negative way, the problems will not be negative. Then again, maybe the FAA just does not understand, or refuses to acknowledge, how serious some of its problems really are.

264 See id. This omission could make a complete inspection quite difficult.

265 See id.

266 See id.

267 See Corrections Urged to Safety Inspections, AIR SAFETY Wk., July 12, 1999.

268 See id.

269 See News Briefs, supra note 258.

270 Id.

271 See id. A member of the NTSB, who was present at the hearings, reportedly asked Valentine how the data was being analyzed with the staff shortages and received the answer, “Simply put, it's not.” Id. Valentine went on to inform the NTSB that he was “shifting and targeting resources based on his long experience...
These deficiencies are serious; these problems have a direct impact on the efficiency and the effectiveness of the ATOS program, as well as its usefulness. The FAA's defense to the GAO's report was that it expected initial problems because of its aggressive implementation of ATOS, but that it felt these problems were worth it to get the program fully working sooner.\textsuperscript{272} The lack of qualified inspectors seems to be an ongoing problem, both before Valujet and for over a year since the implementation of ATOS. The FAA needs to understand that just because it implements a program that is designed to fix the deficiencies of the agency, does not mean the program will fulfill its purpose when it suffers from serious implementation and planning problems such as those listed above. Not until the FAA wakes up, acknowledges the problems, and fixes them, can ATOS live up to its full potential.

An important project, which has been the focus of the FAA, has been undertaken with the European Joint Aviation Authority (JAA) to standardize "ground proximity warning systems, icing protection, rain and hail ingestion, and common type certification standards for new aircraft."\textsuperscript{273} Standardization has become particularly important, especially with regard to language.

Currently, English is the official worldwide aviation language, but there are many instances where the use of other languages or poor English has caused confusion and dangerous situations. Over 300 incident reports involving language difficulties have been filed by air traffic controllers and pilots—some resulting in crashes and "serious safety incidents."\textsuperscript{274} The crash of American Airlines Flight 965 into a mountain on approach to Cali, Colombia significantly involved a language barrier between the English-speaking pilots and Spanish-speaking air-traffic controller, as evidenced by the flight data recorder.\textsuperscript{275}

\textsuperscript{272} See Corrections Urged to Safety Inspections, supra note 256.
\textsuperscript{273} See Richfield, supra note 247.
\textsuperscript{275} See id.
Since the FAA has no authority outside the U.S., the International Civil Aviation Organization (ICAO) is responsible for recommending to foreign airlines that they use English or improve their language skills. Unfortunately, the ICAO has no enforcement authority and currently does not consider language to be a significant issue.\textsuperscript{276} The FAA does, however, have authority in United States airspace. Yet, according to Ron Morgan, the FAA’s Director of Air Traffic Control, there is no major problem with language discrepancies in the U.S.\textsuperscript{277} According to Morgan, the FAA only found twenty-five aviation problems related to language over a ten year period.\textsuperscript{278} However, another examination of the same data by “Dateline” NBC found more than 300 incidents—twenty-seven of those involved near mid-air collisions.\textsuperscript{279} While the examinations may have been conducted with differing standards for the definition of an “incident,” the discrepancy between the two examinations is still profound and disturbing.

Ninety-five of these language-related cases occurred at or near U.S. airports.\textsuperscript{280} At the very least, it is interesting to note that in order to fly into the United States, foreign pilots must only complete a form certifying that they hold a pilot’s license in their home country and that they can speak English.\textsuperscript{281} They simply check “yes” on the form in response to the question, “Do you read, speak and understand English?”\textsuperscript{282} Most of the problems have involved U.S. pilots or English-speaking pilots flying into other countries.\textsuperscript{283} According to the NASA Aviation Safety Reporting System, some of the most problematic airports in the last ten years include Aeropuerto Internacional Benito Juarez in Mexico City with twenty incidents; Charles de Gaulle Airport in Paris, France with twelve incidents; and a number of airports each with six incidents—Orly Airport in Paris, France; Chiang Kai-Shek Airport in Taipei, Taiwan;
Kimp'o International Airport in Seoul, South Korea; and Eldorado Airport in Bogota, Columbia. A significant number of incidents have also incurred at airports located in Los Cabos, Mexico; Tokyo, Japan; Guatamala City, Guatamala; and Montreal, Canada.

The FAA claims to be working toward an agreement with ICAO regarding worldwide English standards, but has no idea when that standard might become the norm. According to Tom Kramer, a pilot for a major airline who has been working for the pilots union to establish worldwide standards, "We started this project on a global standard for aviation English ten years ago. It's ten years later and we haven't changed a thing."

### D. Repair Stations

A hot new topic in aviation safety involves maintenance problems. Due to economic pressures, many airlines no longer perform much of their own maintenance, instead contracting out to repair stations, which consist largely of contract labor. In addition, many technicians today have less experience, providing further problems with maintenance.

The NTSB began a one-year investigation of these maintenance stations in 1999, partly induced by the July 1999 indictment of SabreTech, the repair station which contracted for much of Valujet's maintenance at the time of the Flight 592 crash, and three of its employees. Other incidents related to contract maintenance have included an engine that dropped off a 747 during takeoff and the crash of a regional airliner due to missing screws on the horizontal stabilizer of the craft. The

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285 See id.
286 See id.
287 Id.
289 See id.
290 See id.
291 See id. Improper maintenance has resulted in a variety of dangerous incidents. In 1992, a Delta Airline's 737 lost its right engine after takeoff at an altitude 200 feet. Luckily, there were no injuries. The subsequent investigation showed that a maintenance impropriety resulted in the inadvertent application of lubricant to the aft cone bolt, which, as a result, developed a fatigue crack and caused the engine to fall off the plane in flight. Id. Another incident involving a Lineas Aereas Privadas Argentinas 737 featured an engine that caught fire during
horizontal stabilizer is the part on the plane's tail that allows the nose of the plane to move up or down—the failure of this key piece has been implicated in the crash of Alaska Airlines Flight 261 in January 2000.292

Between 1990 and 1996, a thirty percent increase occurred in the aviation work performed by repair stations.293 During this same period of time, the Service Difficulty Report (SDR) database showed a 500 percent increase of "inadequate quality" maintenance performed by third-party repair stations.294 Between 1985 and 1996, one out of every five major aircraft accidents that occurred involved poor maintenance as a contributing cause.295 Despite these statistics, contracting agreements between repair stations and airlines have continued to increase. By 1999, fifty percent of all aviation maintenance was performed by parties other than the airlines.296

Some airlines or companies contract out to repair stations because of the idea that the experts best perform heavy maintenance.297 Major companies that outsource their maintenance work include Southwest Airlines, which contracts out about half of its heavy maintenance, and Federal Express, which contracts out about eighty percent of its maintenance work.298 As Tony Quillen, Southwest Airlines' Director of Heavy Maintenance stated, "Our core business is carrying passengers."299 In contrast, the core business of a maintenance station is, after all,

293 See Oversight of Maintenance & Repair Facility Practices Under Examination, supra note 288.
295 See id. Eighty-five major accidents occurred during these years. See id.
296 See id.
298 Id.
299 Id.
maintenance. The important element is to contract with a reputable station that is good at its specialty.

An opposing view also exists, as shown by United Airlines, which contracts out less than twenty percent of its heavy maintenance work. United feels that by avoiding heavy reliance on repair stations, it provides for a stable workforce with more flexibility to respond to new airworthiness directives. As Yvonne Daverin, United's Quality Assurance Director, stated, "'Over the years, we have developed our own core competencies.'"

While outsourcing maintenance work can save costs, some problems arise when the mechanics also provide the quality assurance. In addition, a repair station with a contract to work on the 737s of two different airlines may be faced with totally different maintenance plans. A 737 that flies many short runs each day, such as with Southwest Airlines, needs completely different maintenance than a plane that makes long flights across the country each day. As a response to these concerns, the FAA has begun to perform maintenance inspections more frequently. According to R. A. Horn, Senior Vice President of Maintenance and Technical Services for one of the country's largest contract maintenance companies, TIMCO, the repair stations themselves have improved quality assurance by changing the process "'from a paper review process to looking at the work in progress.'"

Bart Crotty, an independent consultant who has conducted audits of many repair stations, feels that the problems lie mainly with the FAA and with small airlines (15-20 planes) relying on small Part 145 repair stations (employing 100-200 people). These companies typically do not have good safety training pro-

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500 See id.
501 See id.
503 See id. Most of the carrier's maintenance crews consist of "certified airframe and powerplant (A & P) mechanics," who get paid quite a bit more than the uncertified mechanics who make up most of the Part 145 repair stations' crews. Id. The question is why is the FAA is letting uncertified mechanics perform this important safety work on passenger aircraft?
504 See id.
505 See id.
506 Id.
507 See Oversight of Maintenance & Repair Facility Practices Under Examination, supra note 288. Less than one in five of the smaller repair stations have safety programs in place. See id.
grams in place. In addition, Crotty has found that the FAA has problems with the number and quality of their inspectors, who often do not have travel budgets large enough to allow them to go into the field for inspections.\textsuperscript{308} The FAA also does not require periodic retraining of mechanics the way it does for pilots and flight attendants.\textsuperscript{309}

Part 145 of the Federal Aviation Regulations certifies third-party repair facilities.\textsuperscript{310} In 1999, after criticism resulting from the Valujet crash, the FAA proposed rewriting Part 145.\textsuperscript{311} While the rewrite is necessary to address new technology, "a serious flaw in the proposal is the fact that it totally ignores the variety of scope and operations of the majority of the 4,509 FAA-licensed repair stations,"\textsuperscript{312} according to the National Air Transportation Association's (NATA) Vice President Andy Cebula. Only seven percent of all repair stations fit the profile of SabreTech, which was implicated in the Valujet crash.\textsuperscript{313} Yet, the FAA rewrite would affect all stations with the same restrictions and regulations.

NATA also contends that the rewrite would extend FAA authority into areas controlled by other government agencies.\textsuperscript{314} For example, the FAA intends to require inspectors to check heating, ventilation, and lighting in maintenance facilities. This typically falls under the jurisdiction of the Occupational Safety and Health Administration (OSHA).\textsuperscript{315} In any case, it sounds as if the FAA is at it again, addressing a problem too late, after the tragedy has occurred, with too broad a scope to be effective.

V. EVERYBODY WINS

From this overview, it appears that the FAA has many problems to address. While the agency has implemented programs to deal with some of these issues, management and ad-

\textsuperscript{308} See id.

\textsuperscript{309} See id. This really makes no sense. The person serving you a soda and peanuts needs retraining, but not the guy responsible for making sure the plane works despite constant changes and advances in aircraft technology?


\textsuperscript{311} NATA is Sharply Critical of FAA's Part 145 Proposal, supra note 311.

\textsuperscript{312} See id.

\textsuperscript{313} See Tripp, supra note 311.

\textsuperscript{314} See id. supra note 311.

\textsuperscript{315} See id.
administration problems continue to plague the efforts to fix past mistakes. Valujet woke everyone up. The NTSB keeps them awake. Now it is up to the FAA to get up and take action.

What could help? Giving the NTSB some sort of enforcement power would certainly help. The FAA could no longer lose itself in bureaucratic pileups, studies, and negotiations with another agency, as true to its purpose as the NTSB is, involved. If the FAA cannot recognize the problems, let the NTSB set the agency's agenda—assign problem areas and priorities to be addressed, and then allow the FAA to investigate and enforce regulations in these areas. The NTSB already knows where the problems lie. Why force the FAA to do cumulative work figuring out where the problems are when this has already been proven to slow down the process?

Two major complaints about the FAA are the time it takes to fix safety issues and the lack of qualified investigators to find and enforce regulations in the field. Bypass these problems by using the NTSB's analysis to jump to the root of the problems more quickly. Use the personnel or funds for those personnel, who sit around trying to figure out what the agency should do, to hire and train investigators. Of course, general inspections still need to be done to look for violations that do not fall into a breaking news category, but, obviously, having both the responsibility for general inspections and addressing new safety issues is too much for the FAA to handle right now. Giving the NTSB part of the responsibility, even temporarily, would release some of the pressure on the FAA. If the agency could just get one program to run efficiently and effectively, this would be a great accomplishment and certainly a stepping-stone to getting the FAA back on the right track. ATOS is a good plan to accommodate the agency's current assets and resources, but it would be even better if this sort of plan was unnecessary because there were enough investigators to go around.

There are, of course, many arguments for leaving the NTSB exactly the way it is. The main argument is to keep it free from the corruption and skewed priorities that have overtaken the FAA. This is an excellent concern. Putting the NTSB in charge should only be a temporary solution at most, and probably should not even be considered as a solution. Instead, the FAA should be completely restructured. Congress needs to make a law that will force the FAA to do its job—keeping the public safe in planes. Effective leaders need to be installed in the positions of power within the agency. A system of checks and balances
needs to be set up—whether it is some element of the NTSB that makes sure the FAA is taking action, a congressional sub-committee, a new agency that simply watches over the FAA, or the Department of Transportation’s Inspector General.

The FAA needs to look at its own priorities. Worrying about the success of the aviation industry should no longer be a consideration. The aviation industry is successful—a look at the growth and even at the accident rate and predictions is strange but true evidence of this success. The goal should be safety. Addressing chronic problems like runway incursions and de-icing, making logical changes and restrictions for aircraft certification and even employee certification, requiring adequate testing and proof of an aircraft’s capabilities, whether approving a new design or certifying a craft for flight in new conditions—are all logical steps to improving aviation safety. The NTSB has identified all of these as problem areas. Now someone just needs to take action.

In addition, while a program like Safer Skies is a step in the right direction, the FAA needs to look at why the agency’s other programs are not effective. For example, delays in addressing problems, poor training of inspectors, too few inspectors, poor organization and implementation, reducing fines for violations or not imposing fines at all are all examples of ineffective operations. Delays are the major problem—it takes so long to get a program into action that by the time it is implemented, the program uses outdated technology or is incapable of handling the situation. Perhaps this is why the FAA moved to implement Safer Skies so quickly. Unfortunately, speed cannot make up for poor organization or implementation. Speed will only compound these problems. The FAA needs to address all of these issues, and Congress needs to give it the means to do so with funds, personnel, and support.

316 Fines need to be made so expensive that no company can afford to violate regulations. Of course, then we end up with companies who figure they just cannot afford to be caught violating these regulations. We need to come up with a solution to this catch-22. The solution may be getting enough inspectors out there so that no company has the chance to violate the regulations—though this is entirely dependent on the FAA getting itself into shape. Maybe getting companies to watchdog each other and getting employees to keep an eye on their employer’s policies would work. Although probably impractical, I personally think that any company who is going to violate the hazmat regulations after all the publicity about the dangers of these violations and the Valujet tragedy, should be put out of business.
Airlines also can get involved to improve safety – by complying with recommendations or airworthiness directives in a timely manner, insuring adequate aircraft maintenance, and establishing programs ensuring both employee and customer satisfaction. A great safety record is an excellent way to keep customers happy and retain their patronage. The FAA can still fulfill its historical purpose by altering the agency’s actions to focus on safety. Customers will be happy and eager to fly. And everybody wins.