The Impact Of Disaster Litigation On Airline And Aircraft Technology

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A firm conclusion that disaster litigation has had an impact on airline and aircraft technology seems unlikely. The data necessary to make such a conclusion seems non-existent. However, we trial lawyers specializing in disaster litigation like to think that, in addition to making a recovery for a specific client or group of clients, a greater social purpose is being served in attacking a product defect or an unsafe procedure.

In the auto industry, it seems easier to reach a conclusion that consumer unrest and litigation has made an impact. Ralph Nader's *Unsafe At Any Speed* (1965) initiated the current national interest in product safety. There, Mr. Nader claimed that the 1960 - 1963 Chevrolet Corvair (the sporty rear-engine compact that was one of General Motors' best sellers) was a menace to life and limb because GM had ignored one of its own leading engineers, Maurice Olley, whose written report had warned of the inherent hazards of this type of rear-engine auto. As a result of this revelation and countless private lawsuits, the Corvair automobile was taken off of the market. The New York Times, in an August 17, 1970 editorial, concluded:

> Today, Mr. Nader's book, *Unsafe At Any Speed*, is recognized as one of the most important investigatory studies of the last decade. But only five years

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ago its revelations caused GM to look into the personal life of the author instead of looking under its own hood.

Perhaps the most widely publicized product safety case is *Grimshaw v. Ford Motors* (1981) in which a woman was killed and her child was severely burned when their Ford Pinto exploded into flames after being struck from behind by another car. Testimony revealed that high-ranking Ford officials knew of the serious problems associated with the location and design of the gas tank and of the low cost required to redesign the vehicle. Because the company decided to continue production of the car after it caused at least twenty-seven deaths and twenty-four serious burn injuries, a substantial jury verdict was returned against Ford. Thereafter, Ford Motor Company took the lead in redesigning its gas tanks as well as other components of its automobiles, so that Ford has been an advertising leader in "safety first" for American automobiles.

Auto manufacturers now advertise the crashworthiness of their vehicles. Cadillac states that "crush zones in the front and rear of every Cadillac absorb energy in the event of a collision. The engine is also designed to rotate downward in a frontal collision to help protect you and your family." Do you believe that was a voluntary decision by the Board of Directors, or that the Federal Government mandated such safety changes? In 1968, in *Larson v. General Motors*, the Eighth Circuit Court of Appeals held that in a head-on collision where the steering column of a Chevy Corvair was shoved into the driver, General Motors had breached its duty to protect accident victims. The following year, where the roof of a Buick collapsed, crushing the passenger, *Dyson v. General Motors*, in response to a jury verdict, held that "it is the obligation of automobile manufacturers to provide more than a moveable platform capable of transporting passengers from one point to another." That case encouraged our auto industry to provide safety cages to protect us in our motor vehicles. Door impact beams were found by a jury to be required to protect passengers from lateral impacts in *Dawson v. Chrysler Corp* (1980). Therefore, front, back, top and side protection all has resulted from product safety lawsuits by private parties represented by private trial lawyers.

With regard to aviation litigation, however, one must wonder whether or not it is the litigation that brings about changes or the magnitude of the disaster in and of itself. A defective toaster causing a fire, or a car crash, does not get the same headlines of a DC-10 crashing at Sioux City, Iowa. However, one must conclude that air transportation has become safer because of private lawsuits. New fabric for aircraft seat covers was developed so that if they burn, toxic fumes will not asphyxiate the passengers causing death. The Varig Boeing 707 crash in 1973 near Orly Airport at Paris was an important case from the standpoint of air safety.

The investigation of this accident and, we believe, the resulting litigation in the United States, resulted in a very intensive study of materials used in passsenger cabins. The FAA adopted stricter standards so that there is now less danger of turning the passenger cabin into a gas chamber. The "no smoking" signs you now see in the lavatories of all airliners and the announcement which is given to the passengers before takeoff, were put into place because of what was learned from the 1973 Varig accident. There are still some improvements to be made in passenger oxygen equipment and cabin venting systems, but it is unlikely that we will see a repetition of the Varig gas chamber. In that particular case, a fire started in the lavatory's paper receptable and burned the plastic wall coverings and other materials resulting in acrylic hydro-carbon material being circulated throughout the airplane. The smoke contained a poison gas — carbon monoxide and cyanide. The crew put their oxygen masks on and successfully landed the aircraft in a farm field short of the airport; but, when they opened the cabin door to give their passengers the good news and start the evacuation, they found, to their horror, that all the passengers were slumped lifeless in their seats, fatally overcome by poisonous fumes. The pilots had not lowered the passengers' oxygen masks because this would have caused an immediate flow of oxygen in the cabin area and might have fed the combustion. The pilot's own masks were of the demand type, which does not feed oxygen until the wearer inhales. Thus, the pilots were able to use their masks but they had to deny their passengers the life-saving flow of oxygen. But, one must wonder what litigation has done to remove the hazard of flying in a DC-10. On March 3, 1974, the first crash of a fully loaded jumbo jet, a Turkish Airlines DC-10 carrying 346 people, occurred near Ermenonville, just outside of Paris. The aircraft climbed through 11,000 feet when the rear cargo door, which was not properly latched, blew out. The air pressure in the cabin, pushed through the flooring of the passenger cabin severing and jamming vital control cables and ejecting some passengers through the hole. The aircraft subsequently went into a nose-dive, crashing into the ground killing everyone aboard.

The odd part of this is that a cargo door blew out of an American Airlines DC-10 in June 1972 near Windsor, Ontario. And, although the aircraft suffered control problems, the pilot's skill and the fact that he only had 56 passengers on board, saved the aircraft. As a result of this incident, McDonnell Douglas designed a fix for the latching mechanism for the rear cargo door. It was expected that the FAA would issue an Airworthiness Directive (AD), ordering all operators to make the modification immediately. However, McDonnell-Douglas was in competition with other manufacturers and did not want a frightening AD on its record at that point. McDonnell-Douglas convinced the FAA they would take care of the

problem and, according to their "gentlemen's agreement", McDonnell-Douglas would issue a service bulletin to its customers and would supply them with modification kits. This agreement was entered into just four days after the Windsor, Ontario incident. The strange thing was that with regard to the Paris DC-10 crash, McDonnell-Douglas evidently had not even implemented its own three-step modification in its factory. More mystifying was the fact that the company announced that the records showed that the modification had been made to the Turkish Airlines DC-10, but investigation of the aircraft wreckage showed that the modification had not been made.

Massive litigation was started on behalf of many of the survivors centered in California before Judge Peirson Hall. An excellent account of this litigation can be found in the book entitled *Lawsuit*, by Stu Speiser, where he chronicles the events of this litigation from the time of the accident to the time of settlement. In this case, the final amount paid by the manufacturer in settlement of the claims was approximately $62,000,000. Strangely, this was approximately the same figure that was given by the FAA as the cost of modifying every jumbo jet to prevent catastrophic floor failure and damage to an aircraft by reason of an opening of a cargo door in flight. The $60,000,000 cost of making all jumbo jets' floors safe would be shared by the entire industry. It was known and publicized after the Windsor blow-out that the floors needed strengthening and, indeed, the National Transportation Safety Board (NTSB) had recommended such modifications in 1972. The question is why didn't the FAA order the floor modifications in 1972? I don't have an answer. Yet, even the accident didn't prevent the United Air Lines Flight 811 cargo door blow out in 1989 on a Boeing 747 soon after take off from Hawaii. The plane landed with the loss of fewer than ten lives, but near heart attacks for scores of others.

We must remember that in the aviation industry we are dealing with executives who are highly motivated to produce a safe airplane. Their marketplace will react quickly to known dangers, as happened later on in 1979 when the engine pylon on a DC-10 cracked and ripped the engine off the aircraft shortly after take-off in Chicago. Their own training and ideals should rule out laxity when it comes to safety. Yet, unfortunately, if a fault is found in an initial design there is a strong impetus to sweep it under the rug and hope, like many other human errors, that it will never be discovered. As was stated in the Sunday London Times, written in the book, DESTINATION DISASTER, the story of the Turkish DC-10:

> Corporations, especially the large and complex ones with which we have to live, now appear to possess some of the qualities of nation states, including, perhaps an alarming capacity to insulate their members from the moral consequences of their actions.

The Turkish DC-10 disaster is a clear case for the deterrent of civil

litigation to break through that corporate insulation to establish personal responsibility for aviation safety. It seems quite certain that if the Windsor incident had ended in a crash, the Turkish DC-10 crash would never have occurred since litigation would have forced attention on this matter far beyond any industry self-examination that existed and that permitted the Turkish DC-10 to get airborne over a year later without the necessary fix to the cargo door latching mechanism. The courtroom makes public that information which otherwise is shared only by the regulated and regulator, notoriously a closed, somewhat incestuous group.

Probably one of the strongest arguments in favor of the conclusion that litigation has an impact on aircraft and airline technology is the insistence by most defense firms representing the aviation industry, upon the issuance of protective orders and confidentiality agreements to prevent disclosure of information in aircraft product litigation. Many disaster cases usually have an allegation of a product defect affecting numerous plaintiffs. The issues are generally technical and complex and most all of the important documents are in the exclusive possession of the manufacturer. Thus, the technique which many defendants resort to is an attempt to limit the access to the documentation and to limit the use of the information to the specific case in question. Obviously, in a disaster case, the multidistrict litigation procedures will usually sweep in almost all of the cases and, therefore, at least to those affected by the specific accident, that information is accessible. However, quite frequently in private airplane accidents and certainly in other accidents, where there are relatively few victims, the request for confidentiality is used as a way to limit the exposure of the manufacturer. The U.S. Senate held hearings on the subject of Confidentiality Orders in May, 1990. Before that, a bill had been introduced in the House of Representatives by the Honorable Cardis Collins, of Illinois, stating, "One of the most questionable, if not unethical practices in product liability suits today is the use of court orders to bar public disclosure of manufacturer's information concerning product safety." Certain cases were referred to in those comments, one of them being that "A serious design defect in the heating system of the Chevy Corvair, first discovered in the mid-1960s, was not disclosed until 1971 because of a protective order."

Similar orders were also entered in the Dalkon Shield cases. Hence, it would appear that litigation does force, in many cases, information to be divulged that, without the court involvement, would never see the light of day.

In 1988, the Office of Technology Assessment (OTA) of the U.S. Congress prepared a report regarding aviation safety in a competitive environment. The statistical data presented showed clearly that over the years the risk of injury or death has steadily declined for airline passen-

gers. These statistics also showed that the fatality rate per million passengers enplaned for Federal Aviation Regulation (FAR) Part 121 (14 CFR 121) scheduled airlines was one-eighth of the fatality rate per million passengers enplaned as for FAR Part 135 scheduled airlines. For Part 135 non-scheduled carriers, the fatality rate was thirty-six times that of the Part 121 scheduled carriers. These statistics were for the years 1975 through 1987.

The primary purpose of accident investigation is to determine the probable cause of the accident and to recommend preventative measures. Data show that most accidents involve a complex congruence of multiple events and causes. The OTA reports one finding that only twenty-eight percent of large jet transport accidents could be atttributed to a single probable cause. The report also classified the causal data as follows: pilot, personnel, aircraft, weather and miscellaneous. The findings also showed that sixty percent of the fatal accidents of scheduled passenger carriers are initiated by human error and human error is a causal factor in over seventy percent of these accidents. The data also showed that where aircraft component failure was involved, it initiated thirty-five percent of the total accidents of Part 121 scheduled passenger carriers, but just eighteen percent of the fatal accidents. In short, many of the component failures, because of redundancy, did not cause a crash involving fatal injuries. The Sioux City United Air Lines DC-10 number 232 two engine failure, however, clearly is an initiating failure of an aircraft component, as well as the cause of the fatalities and injuries resulting from that engine disintegration. The other obvious one is the DC-10 accident in Chicago in 1979 when the engine came off the left wing and the aircraft rolled over on take-off, killing everyone on board. The other one that we have already discussed is the Turkish Airlines crash where the failure of the latch on the aft cargo door caused major destruction of the control capabilities of the aircraft, resulting in a fatal accident.

Of course, we are also all aware of the fact that the introduction of the jet engine resulted in a major decline in engine failures on commercial aircraft and improvements have continued to reduce the percentage of in-flight shut downs of jet engines.

An accepted maxim through the aviation industry is that safety begins at the top. It is generally accepted that senior corporate officials set the safety framework within their organization by the policies they set. The OTA reports that, although airline and government officials alike profess a willingness to pay any price for safety, in reality this is not a practical approach. While safety is an important passenger concern, convenience and cost dictate much of the air transport industry policy. Again, it is frequently very difficult to determine what corporate actions and cost savings have a clear cause and effect relationship to an accident.

In short, it is truly impossible to make an educated estimate of the impact that litigation has on air carrier safety. We can only hope that it plays an important role in being a watch dog on the industry itself, as well as the Federal Aviation Administration, in improving safety. In the four major causal factors in commercial aviation accidents, litigation can be important. The four main factors are human performance, weather, aircraft component failure and the air traffic environment. Certainly, litigation can highlight where human performance has failed and where improved training procedures could make a difference in improving human performance generally. Also, with regard to weather, litigation has paid an important part in stressing the methods of dealing with wind shear. The Delta-Dallas 1986 accident involved a courtroom shoot-out between Delta Airlines pilot training and operational techniques and the United States air traffic control policies and performance relating to wind shear and information leading to the conclusion that wind shear exists. I can point to no statistics, but I am sure that the microscopic examination given to the causal factors in the Delta-Dallas accident have improved procedures both of the air traffic control system, as well as the airlines' training of their crew members and the performance of their crew members.

One of the biggest problems that we have at this time, and where the system is bound to break down, is in the air traffic control area. The recent USAir-Skywest collision on the runway in Los Angeles and the Detroit runway collision support that conclusion. Air traffic control safety, in my judgement, is the weak link. The OTA report that I referred to indicates that the rate of pilot error caused accidents has remained constant for quite a few years. It is questionable whether gains in aircraft mechanical reliability and understanding and coping with severe weather will outweigh the decline in air traffic control safety, as the system becomes choked with a large number of movements of aircraft. Unfortunately, litigation can do little to force the U.S. government to change its air traffic control or to improve it. However, public outcry generates support for tax dollars which can be spent to increase air traffic control safety. The OTA report also concluded that civilian aviation in the United States lacks a long-term human performance research and development program, but that enhancing human performance is a top priority.

If nothing else, disaster litigation has kept a focus on placing the cost of deaths and injuries as a result of air transportation placed upon the parties best able to afford that cost, namely the air carrier and the manufacturer of the aircraft, as well as the air traffic control system or the U.S. Treasury. Having kept this cost placed squarely on the shoulders of these parties has obviously been a motivation to continually improve the procedures to avoid fatalities and injuries. Therefore, even though there are no hard data upon which we can rely to prove that litigation has brought

about a product improvement, procedural improvement or training improvement, it seems clear that our legal system has placed a premium on fault. That premium is to subsidize the impact of the fault.

The future of commercial aircraft technology and airline operations will include the development and use of new electronic systems, new aircraft engines, new composite materials, and even new types of aircraft, such as the tilt rotor and hypersonic aircraft. Although safety will always be in mind, the primary force will be the desire to improve travel for the greater numbers that will demand same, and to increase the speed of travel. These advanced technologies will present significant challenges to the government in terms of certification and flight safety. However, it is clear that our legal system will continue to demand that the burden of any injuries or deaths resulting from the failures in this new technology will be borne by those who are providing same. We are hopeful that our judiciary, as well as our juries, will be able to cope with this information and continue to resolve these disputes in a manner which is fair to all parties. Strict liability, of course, has played an important part in the product responsibility cases. This will be especially true in the future where advanced materials are used and where new engine designs are incorporated in high speed aircraft. Also, those who are reaping the benefit of using the new technology in vertical take-off and landing aircraft and short take-off and landing aircraft will pay the price for any failures of this new technology.

I believe our legal system can cope with this and, in fact, probably will incorporate a greater reliance on expertise to educate the jury, as well as the greater use of computer enhanced video depictions of aircraft crashes, as well as greater video displays of testimony and other information relating to such things as air traffic control, crashworthiness, and weather phenomena.

In short, I don't believe it is necessary to justify our legal system on the ground that litigation in some way enhances airline performance or aircraft technology. That is not the purpose of our litigation system. Although our litigation system of adversarial representation and jury determination has defects and problems, it has been written that Winston Churchill's appraisal of democracy fits: "It's the worst system, except for all the others that have been tried from time to time."

Some people confuse the weaknesses of human nature with those of the legal system. Dishonesty, stupidity, infidelity, recklessness, and greed are human failings. Lawyers must deal with providing relief from these. Because of that, I believe society likes to lay the blame for much of the human failings on lawyers. Legal rights are not self executing, and people do not always tell the truth when money is at stake. Centuries of experience have shown that the best way to achieve justice is to have both

sides present the strongest possible case represented by their attorney and let an impartial group decide who should prevail.

It is true that Americans have become more litigious as the years have gone by. The lawyer population has more than tripled in the almost thirty years that I have been practicing law. Contrary to popular opinion, statistics show that personal injury law suits are not the culprit for the clogged civil docket of our courts, but rather business law suits have increased many fold. Personal injury law suits have increased at the same rate as our population has increased. Lawyers don't invent disputes, they can only be called upon to assist in enforcement of legal rights. The United States places a high value on attempting to achieve perfect justice and, consequently, we have a high lawyer population. Currently, we have one lawyer for approimately 250 people.

Many people attack our jury system as a ponderous method of obtaining justice. However, I feel that juries are particularly adept at handling intangible concepts such as good faith, reasonable care, dangerous design and assessment of damages suffered by an individual. Although the use of a jury probably slows down a trial, it is the last opportunity for our citizens to participate directly and personally in self government. Most of our government is turned over to bureaucrats; however, the real power of democracy rests in the jury system.

People complain of multi-million dollar awards. However, most of the multi-million dollar awards today are in commercial litigation, corporation suing corporation. Notwithstanding that, our court system does provide for the review of verdicts that are the result of passion and prejudice, and if our appellate courts are doing the proper job, then that infrequent anomaly where a jury does get caught up in the passion of a case, can be cured.

In conclusion, it is my firm belief that our civil justice system, which is designed simply to determine the relative rights of a victim vis-a-vis, an alleged tort feasor, does that job better than any other system. In addition, there is a beneficial side effect, both naturally and intentionally, when a specific accident results in litigation that uncovers data which leads to the enhancement of safety, not only in the aviation industry, but virtually all other walks of life.