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AVIATION ACCIDENT INVESTIGATION: FUNCTIONAL AND LEGAL PERSPECTIVES

C. O. MILLER*

THIS ARTICLE is a product of the author's twenty-five years of experience in the area of aviation accident investigation, and has been prepared to provide insight into the legislative history of the civil aviation accident investigation process, and into its current procedures and problems. Special attention is given to the issue of "probable cause" in aviation accidents. While this study is aimed principally at members of the legal profession, it is hoped that it also will be of assistance to those persons and agencies charged with accident investigation responsibilities.

AVIATION DYNAMICS AND THE LEGISLATIVE HISTORY OF INVESTIGATION

The Birth of Air Transportation

Powered flight had its origin three quarters of a century ago when the Wrights took to the sky in 1903. Aviation as a medium for air transportation did not first appear until after World War I. Surplus pilots and aircraft, along with budding technology, were by-products of the war. Classic Yankee ingenuity resulted in the commercial application of the airplane to various areas, including barnstorming, aerial photography, advertising and crop dusting.¹ While transportation of cargo and passengers on a scheduled basis

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¹ N. KOMONS, *BONFIRES TO BEACONS*, ch. 1 (U.S. Gov't Printing Off., 1978).

had begun in the United States in 1914,² it was not until the early 1920's that several fixed base operators began what would be known today as air taxi operations. The turning point occurred when the Department of the Post Office developed air mail routes with operational if not financial success.

The initial moves toward federal regulation of aviation did not happen easily. However, major groups of aviation enthusiasts foresaw little growth in the transportation of people and cargo unless accident prevention could be enhanced, a goal federal regulation could promote. The Air Commerce Act of 1926³ was the first federal law in the United States to govern civil aviation. The Act granted broad authority to the Secretary of Air Commerce, under the Department of Commerce, to ensure a high level of safety and to "investigate, record and make public the causes of accidents in civil air navigation."⁴ By 1927, when record-keeping began, United States civil aviation involved 1,572 certified airmen, 2,740 certified aircraft and 1,036 civil airports. Twenty-five air carrier accidents occurred in that year; four were fatal, killing five persons. General aviation experienced 253 reported accidents; 95 were fatal, killing 146 persons.⁵

In the early 1930's, a transition in the industry from the use of war surplus aircraft to sleek twin-engine low-wing transports was made. Transcontinental air travel became something other than fortuitous arrival at the intended destination somewhere near the scheduled time. By 1937, the number of certificated airmen had risen to 17,681, the number of civil aircraft to 10,836, and the number of airports to 2,229. The number of air carrier accidents totalled 42, five of which were fatal, and general aviation experienced 1,900 accidents, 184 of which involved fatalities. The total number of deaths was only 237 (52 in air carrier accidents and

² *Id.* at 16.

³ Pub. L. No. 69-254, 44 Stat. 568 (1926).

⁴ *Id.*

⁵ These and similar data were derived from annual reports by Federal civil aviation authorities, initially the Commerce Department, later the Civil Aeronautics Administration (CAA), the Federal Aviation Administration (FAA) and the National Transportation Safety Board (NTSB). Usually entitled *STATISTICAL HANDBOOK OF CIVIL AVIATION*, these reports can be reviewed readily at the FAA Library, 800 Independence Ave., S.W., Washington, D.C. Data cited in this paper is selected primarily from the 1964 edition and editions issued within the past two years.

184 in general aviation), not a bad record considering the primitive equipment and facilities utilized and the general lack of understanding of the hazards of flight.

Nevertheless, public interest in aviation accidents was heightened by losses of prominent persons, including Knute Rockne's death in 1931 and that of Will Rogers and Wiley Post in 1935. Events such as the Hindenberg crash in 1937 also captured the public's attention. Modifications to the Air Commerce Act were made in 1934 and in 1937 to strengthen the accident investigation process. The Secretary of Commerce was specifically authorized to hold public hearings to inquire into the facts and circumstances surrounding aircraft accidents, to subpoena and to examine witnesses and documents, and to make public statements regarding the causes of the accidents.⁶ The amendments to the Act also prohibited use of the Secretary's reports in any suit or action arising from any accident.⁷

In 1937, pursuant to the Air Commerce Act, the Secretary adopted administrative regulations establishing procedures for aviation accident investigation.⁸ These regulations established within the Department of Commerce a five-member accident investigation board composed of three department employees and two distinguished persons, the latter functioning only as advisors. Regulations pertaining to investigative responsibility, public hearings and use of reports in litigation remained unchanged.

The most significant accident of the 1930's for the aviation industry was the May 6, 1935 crash which took the life of Senator Bronson M. Cutting of New Mexico. Cutting was a passenger in a TWA DC-2 traveling from Albuquerque, New Mexico to Kansas. The plane, the victim of uncoordinated weather reporting and unreliable navigation equipment, crashed in a small Missouri town.⁹

⁶ Air Commerce Act of 1926 as amended by Pub. L. No. 73-418, 48 Stat. 1113 (1934).

⁷ *Id.* § 2(e).

⁸ Civil Air Regulations, 14 C.F.R. § 91.0-91.37 (1939) (note especially §§ 91.2, 91.21, 91.34). Instrumental in this effort were Professors J. H. Wigmore and Fred D. Fagg, Jr., of the Northwestern University School of Law. Prof. Wigmore later became the leading scholar in the evidence segment of law. Dr. Fagg became the President of the University of Southern California (1947-1957), a position from which he was able to endorse the first university-level training in aircraft accident investigation.

⁹ N. KOMONS, *THE CUTTING AIR CRASH* (F.A.A. 1973).

The political furor following this accident was unparalleled in any prior air transportation mishap. The Cutting crash resulted in the recognition of the importance of the airways system within the United States and of the organized use of qualified personnel protected from political influence in investigations. The Department of Commerce attempted to refine its regulatory and investigative processes, but Congress began to look for a more effective aviation statute after losing one of its colleagues.¹⁰ The hoped for solution was the Civil Aeronautics Act of 1938¹¹ which repealed large portions of the Air Commerce Act and consolidated all aviation functions into an agency called the Civil Aeronautics Authority.

The "Authority" was composed of three departments: the formal Civil Aeronautics Authority itself; a five-member group whose chairman was appointed by the President; an Administrator, an independent executive within the "Authority;" and an independent Air Safety Board. The promulgation of safety rules and economic regulations was to be performed by the five-member group in a quasi-legislative, quasi-judicial fashion.¹² Airport construction and maintenance, air traffic control, and other operational functions were to be directed by the Administrator.¹³ The Air Safety Board was to investigate accidents and make determinations of probable cause, release its findings to the public, recommend measures to prevent accidents, and make the rules necessary to fulfill all of these functions. The members of the Air Safety Board were presidential appointees; one member was required to be an active airline pilot at the time of his appointment.¹⁴ The Board was to operate independently of the other two departments of the "Authority,"¹⁵ a concept which has continued to the present.

From the beginning the Act of 1938 was beset with organizational problems and difficulties with interpersonal relationships. There was a conflict in the basic term "Civil Aviation Authority" because it was used in two different senses. In certain paragraphs

¹⁰ *Id.* at 79-80.

¹¹ Civil Aeronautics Act of 1938, Pub. L. No. 75-706, 52 Stat. 973 (1938).

¹² *Id.* §§ 201(a), 205.

¹³ *Id.* §§ 201(b), 302(a).

¹⁴ *Id.* § 701(a). All three of the first Air Safety Board appointees were pilots and Air Corps Colonels. Chairman Thomas Hardin was an airline pilot. Sumpter Smith was a civil engineer and C. B. Allen was a journalist.

¹⁵ *Id.* § 702(a).

of the Act it meant the five-member board, while in others it denoted the agency as a whole. Furthermore, the law created overlapping rule-making and adjudicative functions.¹⁶

Regarding accident investigations, a Commerce Department memorandum stated:

The chief weakness of our present accident investigation lies in the fact that the investigatory body has no power to change any safety rules. All it can do is to report the probable cause of the accident to the rule-making body and make *recommendations* for changes in the safety rules designed to prevent similar accidents in the future. The rule-making body, the Authority, may accept or reject such recommendations. (emphasis in the original)¹⁷

Accordingly, in order to provide remedies for the above defect and to simplify the lines of reporting to the President through the Department of Commerce, Reorganization Plans III and IV were adopted in 1940.¹⁸ Two separate agencies were established, the Civil Aeronautics Board (CAB) and the Civil Aeronautics Administration (CAA). Both were placed under the control of the Department of Commerce; however, the CAB was placed there for "administrative housekeeping purposes only."

[T]he Civil Aeronautics Board shall exercise its functions of rule-making (including the prescription of rules, regulations and standards) adjudication, and investigation independently of the Secretary of Commerce . . . ; [t]he budgeting, accounting, personnel, procurement and related routine management functions of the Civil Aeronautics Board shall be performed under the direction and supervision of the Secretary of Commerce . . .¹⁹

The Air Safety Board was abolished, but its investigative function remained intact through the continuation of a Bureau of Safety. Further, the rule-making function governing the operation of the

¹⁶ BUREAU OF THE BUDGET, SUMMARY OF CIVIL AERONAUTICS STUDY . . . CONFIDENTIAL MEMORANDUM (1940).

¹⁷ Memorandum from Undersecretary of Commerce E. J. Noble to Secretary Hopkins, Memo in Support of the Aviation Provisions of Reorganization Plans III and IV (Apr. 23, 1940).

¹⁸ THIRD PLAN ON GOVERNMENT REORGANIZATION, H.R. Doc. No. 681, 76th Cong. (1940); FOURTH PLAN ON GOVERNMENT REORGANIZATION, H.R. Doc. No. 692, 76th Cong. (1940) [hereinafter cited as FOURTH PLAN]; Pub. Res. 75, 76th Cong., 2d Sess. (1940).

¹⁹ See F. ROOSEVELT, FOURTH PLAN ON GOVERNMENT REORGANIZATION, *supra* note 18, at § 7(C).

civil aviation system became part of the CAB, together with the economic regulatory function. This approach was to continue until passage of the Federal Aviation Act of 1958.²⁰

The Post-World War II Era

During the years between the beginning of World War II and the beginning of the Korean conflict, aviation in the United States grew at a tremendous rate. The number of civil aircraft rose four-fold, and the increase in certificated airmen was even greater. Technological developments produced remarkable improvements in the capacity of the air transportation system. However, the system became more difficult to operate because of increased complexity. Accidents began to occur, again becoming the catalyst for changes in the administration of aviation and in the accident investigation laws.

The "Pearl Harbor of commercial aviation" occurred in early 1952 with the crash of two transports within three weeks near Newark, New Jersey, followed by two other crashes in the greater New York area. Fourteen of the sixty-eight deaths occurred on the ground.²¹ On June 30, 1956, the accident labeled the "no greater evil" accident occurred when a TWA Constellation collided with a United Airlines DC-7 over the Grand Canyon, resulting in a loss of 128 lives. That accident followed a prophetic warning about the potential of losing "120 people in a single accident" which had been made by Carl Christianson, Director of Safety of United Airlines, at a Flight Safety Foundation seminar in Taxco, Mexico in November, 1955. Other prominent aviation officials also had voiced similar concerns early in 1956; hence, when the accident occurred the cries from the media were inevitable, for example: "How many more people will have to be killed in mid-air collisions before the government and the airline industry will take effective action . . ."²²

The CAB's Bureau of Safety (BOS), which had rule-making authority and accident investigation responsibilities, responded by promulgating more positive air traffic control rules. These immediately

²⁰ 49 U.S.C. §§ 1301-1542 (1976).

²¹ S. ROCHESTER, TAKEOFF AT MID CENTURY (U.S. Gov't Printing Off. 1976) [hereafter cited as ROCHESTER].

²² AV. WEEK & SPACE TECH., July 16, 1956, at 21. See also ROCHESTER, *supra* note 21, at 318.

encountered resistance from the United States Air Force which considered restriction of airspace operations detrimental to its mission. After a series of "bloody sessions" among various interest groups and the Air Force regarding the rules, the debate became politically moot when, on April 21, 1958, a United States Air Force F100 collided with a United Airlines DC-7 near Las Vegas, Nevada, killing the two military pilots and forty-seven persons aboard the transport. A month later a National Guard T33 collided with a Capital Airline Viscount outside Washington, D.C., killing all eleven occupants of the Viscount.

Pressure had been building on the federal government throughout the 1950's as the airways system and the entire bureaucracy were failing to keep pace with the burgeoning scope and technology of aviation. By 1957 there were over 700,000 certificated pilots, over 90,000 aircraft and 6,400 airports.²³ Four to eight fatal air carrier accidents had been occurring annually since the beginning of the 1950's. While the maximum loss of life in any year was only 177 (1955), the potential for massive aviation accidents was frightening. In addition, general aviation was suffering 3,500-4,000 accidents in this period, killing six to seven hundred people per year. Even this field predominated by the private pilots had its high visibility accidents; the president of Braniff Airlines was killed in a light plane accident in January, 1954.²⁴

The jet era, which heralded the beginning of supersonic flight, also arrived in the 1950's. This era signalled a greater challenge to the beleaguered civil aviation community which was already failing to cope adequately with safety matters, at least in the eyes of the public. Thus, when the aforementioned accidents drew public attention and spawned Congressional furor, comprehensive legislation became inevitable. The Federal Aviation Act of 1958 was the result.²⁵

The Federal Aviation Act of 1958

Passed in record time,²⁶ the Federal Aviation Act addressed

²³ See note 5 *supra*.

²⁴ *Id.*

²⁵ Federal Aviation Act of 1958, Pub. L. No. 85-726, 72 Stat. 731 (1958).

²⁶ This Act was passed August 14, 1957, but had an amendment attached requiring the Administration to submit by January 15, 1959, "a program of reorganization establishing an independent aviation authority, following the ob-

several major issues. For purposes of this paper, however, the only question is how many of the functions of the CAB, if any, were to be assumed by the new agency. A consensus was eventually reached that the rule-making function should be deleted from the CAB's authority. This idea was based upon the argument that the FAA's administration of the aviation system would be incomplete without the rule-making function since the direction of actions and their enforcement are fundamental management prerogatives.

An intensive debate also occurred concerning the organizational location of the accident investigation function. It was argued that investigators might be slow to criticize their own past efforts in rule-making when subsequent accidents adversely reflected on their credibility. Hence, under Title VII of the Act²⁷ the CAB was given the air safety investigation responsibility which granted them the authority to make rules and regulations governing notification and reporting of accidents; to obtain assistance from other government agencies, including the FAA, as necessary; and to determine the facts, conditions and circumstances and the probable cause of accidents. The CAB also was to make recommendations to the FAA Administrator that, in its opinion, would tend to prevent similar accidents in the future; to conduct special studies pertaining to the prevention of accidents; and to preserve and otherwise examine aircraft parts and property involved in an accident and, in the case of fatal accidents, to have autopsies conducted. It also was to direct investigations when civil and military aircraft were both involved.²⁸

The FAA was given a specific role in air safety investigations to discharge its rule-making and enforcement duties properly, to monitor the performance of its employees and to protect the gov-

jectives and conclusions of the Curtis report." The Federal Aviation Act was introduced in the Congress May 21, 1958, and was signed into law by President Eisenhower Aug. 23, 1958. See *Hearings on Airways Modernization Bd. before the Senate Comm. on Interstate & Foreign Commerce*, 85th Cong., 2d Sess., 30-37, 39-46 (1957). The Act was passed quickly because of background studies conducted by the Curtis Committee in its development of the Airways Modernization Act.

²⁷ Federal Aviation Act of 1958, Pub. L. No. 85-726, 72 Stat. 731 § 701 (1958).

²⁸ *Id.* § 302(e)(1).

ernment in the event of tort liability actions.²⁹ The Act further provided that the CAB reports relating to an accident or investigation would not be admissible as evidence or usable in any suit or action for damages growing out of the accident.³⁰ Finally, a provision of the Act which has never been used to date allowed appointment of a special Board of Inquiry, including two members appointed by the President, to investigate accidents involving "substantial questions of public safety in air transportation."³¹

The ink on the FAA Act was hardly dry when the CAB was forced to request the Administrator of the Federal Aviation Agency to investigate certain aircraft accidents for a temporary period.³² The limited size and resources of the CAB (less than 150 people) made this step necessary, a paradoxical action in view of the arguments which had taken place six months earlier over which agency should handle investigations. Essentially, the CAB was to conduct the field investigations of all air carrier accidents and of all fatal general aviation cases. The Board retained its right to "take back" any of the accidents it had "delegated" should public interest so dictate. The CAB firmly maintained its role in determining the probable cause of *all* accidents and in specifying the form by which the FAA would submit its factual findings. With some slight modifications, this procedure has continued to this date.³³

Subsequent to the enactment of the Act, the public and the media were confused over which agency had what functions. Administrators of the FAA would sometimes preempt the Board in publicly announcing the probable causes of accidents. The Board was also criticized on occasion for pressuring manufacturers to make service changes.³⁴ These problems have never disappeared completely. However, the roles of the FAA and the investigating body of the CAB did stabilize as time passed.

The Department of Transportation Act of 1966

The next major event related to civil aviation accident investi-

²⁹ *Id.* § 701(g).

³⁰ *Id.* § 701(e).

³¹ *Id.* § 703.

³² CAB Pub. Notice PN-13 (1958).

³³ See 42 Fed. Reg. 8379 (1977).

³⁴ 108 Cong. Rec. 12,877-78 (1962) (remarks of Sen. Magnuson).

gation was the passage of the Department of Transportation (DOT) Act of 1966.³⁵ It required all of President Johnson's legislative acumen to push the Act through Congress. Formal signing of the bill took place on October 15, 1966, and the Department's existence became official on April 1, 1967.³⁶ The investigation of aviation accidents, however, continued to encounter problems. Alan Boyd's³⁷ planning task force shifted the CAB's BOS into the new DOT. Through the efforts of Senators Monroney and Magnuson, however, the BOS was transformed into the Bureau of Aviation Safety (BAS) under the newly-formed National Transportation Safety Board (NTSB or Board).

Originally, the NTSB was intended to be a quasi-judicial group to determine the various causes of accidents and to hear appeals in certificate and penalty cases. It was to depend entirely on the existing administrative agencies for the needed investigative findings. As it turned out, personnel from the BAS comprised the overwhelming majority of the staff assigned to the NTSB for several years, and BAS procedures and those of the CAB began to spill over into other areas.

From its inception, the NTSB was composed of five presidential appointees whose rule-making authority regarding aviation accident investigation followed the investigative provisions of the FAA Act which were essentially unchanged after the formation of the DOT. The Bureau of Aviation Safety under the NTSB continued to function much as it had under the CAB.

The investigative task of the NTSB soon became a formidable one. The wide-body jets were introduced in late 1969, producing still another dimension in the complexity of investigations. The growth of aviation had continued, and in 1969 the airman population reached 989,803, 720,000 of whom were considered "active." The number of certificated aircraft grew to 190,749, including approximately 3,000 air transports. The number of airports had grown to 11,050. Sixty-four air carrier accidents occurred in 1969, ten of which were fatal, resulting in 158 deaths.

³⁵ Department of Transportation Act of 1966, Pub. L. No. 89-670, 80 Stat. 931 (1966).

³⁶ P. Kent, *Safe, Separated and Soaring*, 9 History of Federal Aviation Civil Aviation Policy, 1961-1972 (unpublished report prepared for the FAA).

³⁷ Alan Boyd later was to become the first Secretary of Transportation.

General aviation experienced 4,767 accidents and the deaths of 1,495 people.³⁸ The air taxi business began to be a major identifiable segment of general aviation. Large numbers of multi-engine aircraft and jet aircraft also had found their way into the "light plane" market.

The Independent Safety Board Act of 1974

Consumerism struck the aviation field in the early 1970's. Strong public reaction, enhanced by media coverage, followed each air tragedy. Products liability litigation forced general aviation manufacturers to assume participatory roles in NTSB investigations, roles previously experienced only by the FAA, airlines and air carrier aircraft manufacturers. In addition, a political scenario affecting air safety developed. First, the NTSB's Executive Director was replaced in 1971 by a person of minimal government and executive experience associated with the Nixon White House staff. Subsequently, a severe conflict developed between this new "General Manager" and the then civil service Director of the Bureau of Aviation Safety.³⁹ This conflict related to the quality and timeliness of NTSB reports and to the role of the Director vis-a-vis the General Manager in technical matters regarding the investigation process. The General Manager demanded improvements in "productivity," in the form of shortened times for the submission of reports, in accordance with White House directives. The Director opposed these impractical requirements based upon his concern for a critical problem with the quality of reports and with the continuing legislative and Safety Board mandate to determine probable cause in *all* aviation accidents. Additionally, the Director's requests which asked for additional resources or authority to select only certain accidents for investigation were denied.

Along with this and other internal problems, increasing friction was developing among the FAA, DOT and the NTSB concerning NTSB recommendations and FAA responses. While this development had received some attention from Congressional committees, the Paris DC-10 accident on March 3, 1974, caused concern to focus on this issue and on the issue of undue influence by the

³⁸ See note 5 *supra* and accompanying text.

³⁹ M. JOHNSTON, *THE LAST NINE MINUTES* (1976).

executive branch on the supposedly independent NTSB.⁴⁰ Further, NTSB functions were being interfered with by DOT administrative personnel, and the Board had begun to appear to lack independence in the eyes of the public.

The result of these conflicts was the Independent Safety Board Act of 1974⁴¹ which was formally implemented on April 1, 1975. The Act stated that the Safety Board could not be expected to perform its investigative and oversight functions "unless it is totally separate and independent from any other department . . . of the United States."⁴² The Act continued and refined the Board's authority which had been derived from the DOT and FAA Acts. It also broadened the Board's investigative authority in other areas of transportation,⁴³ defined procedures for responses to NTSB recommendations,⁴⁴ and required that no less than two members of the Board be persons who have been appointed in the field of accident reconstruction, safety engineering, or transportation safety.⁴⁵

One significant result of the Act, besides enlarging the NTSB function in other areas, was a major reorganization of the Board in 1976. The Bureau of Aviation Safety as it had existed since 1938 disappeared. That Bureau and the Bureau of Surface Transportation Safety were replaced by separate organizations related to Accident Investigation, Technology, Plans and Programs and Administration. The Plans and Programs Bureau has since been abolished. An Aviation Accident Division is now the highest ranking division devoted exclusively to aviation.⁴⁶

While the Independent Safety Board Act was the latest of the major legislative efforts directly affecting aviation accident investigation, several other acts also merit special attention. They in-

⁴⁰ P. EDDY, E. POTTER & B. PAGE, *DESTINATION DISASTER* 142 (1976); SEN. COMM. ON COMMERCE, *REPORT ON THE OVERSIGHT HEARINGS & INVESTIGATION OF THE DC-10 AIRCRAFT*, 93d Cong. 2d Sess. (1974).

⁴¹ Independent Safety Board Act of 1974, Pub. L. No. 93-633, 89 Stat. 2156 (1975).

⁴² *Id.* § 302(2).

⁴³ *Id.* § 304(1).

⁴⁴ *Id.* § 307.

⁴⁵ *Id.* § 303(b)(1).

⁴⁶ This division is headed by a GS-15, whereas the previous senior aviation level was a GS-18. "GS" refers to Career Civil Service General Schedule ratings, of which 18 is the highest designation.

influenced the scope of the investigative process and detailed the procedures to be followed by the investigative bodies.

Federal Tort Claims Act

Under the Federal Tort Claims Act (FTCA),⁴⁷ passed in 1946, the Federal Government became liable for claims "for money only, . . . on account of damage to or loss of property or on account of personal injury or death caused by the negligent or wrongful act or omission of any employee of the Government while acting within the scope of his office or employment"⁴⁸ Certain exceptions were provided, however, such as the discretionary function exception:

The provisions of this title shall not apply to: (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 that statute 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 employee of the government, whether or not the discretion involved be abused.

Since the FAA performs operational tasks within the aviation system and regulates that system, the FTCA opened a new avenue for litigation. For example, causes of action have been based upon the negligent operation of the air traffic control system. Suits also have been brought for damages caused by CAB/FAA personnel operating government aircraft.⁴⁹ In recent years even the discretionary function exception to liability has been challenged in one major aviation case, *Clemente v. United States*.⁵⁰ In that case, the First Circuit Court of Appeals overruled the district court's judgment for the plaintiff which had been based upon alleged negligence in the FAA's inspection function. The trend, however, is expected to be contrary to that opinion, with increased governmental liability rather than total protection under the discretionary function exception.⁵¹

⁴⁷ Pub. L. No. 79-601, 60 Stat. 842 (1946).

⁴⁸ *Id.* § 410(a).

⁴⁹ *United Air Lines, Inc. v. Wiener*, 335 F.2d 379 (9th Cir. 1964).

⁵⁰ *Clemente v. United States*, 426 F. Supp. 1 (D.P.R. 1977).

⁵¹ K. DAVIS, *ADMINISTRATIVE LAW* 209 (6th ed. 1977).

Freedom of Information Act

The first of four "open government" acts, the Freedom of Information Act (FOIA)⁵³ has recently had an impact on the Safety Board's investigation procedures. The FOIA was passed in 1966 and was reinforced by amendments in 1974 which imposed time limits for responses and threatened disciplinary action against its violators. The FOIA has increased the public availability of NTSB and FAA records.

The key paragraphs of the FOIA relate to the nature of the material which is to be made available for inspection and copying;⁵³ the procedures to be followed in that activity, to be promulgated by the agency; and steps to be taken in the federal courts if the information is not made available after such procedures are followed.⁵⁴ The Act details certain information which is excepted from its provisions, including information regarding internal practices of agencies, "privileged or confidential" trade secrets, and "interagency or intra-agency memorandums or letters which would not be available by law to a party other than an agency in litigation with the agency."⁵⁵ These exceptions have become the subject of dispute in aviation accident investigations.

Federal Advisory Committee Act

The Federal Advisory Committee Act (FACA)⁵⁶ is the second of the four "open government" Acts. Its impact on aviation accident investigation has been minimal as the Safety Board has elected not to form any committees under its provisions. Beginning in the early 1970's, informal suggestions were made regarding the institution of a NTSB-Aviation Advisory Committee to provide communication with the Safety Board concerning aviation accident investigation procedures and problems. However, the administrative workload demand under the FACA (agenda lead-times, publishing of proceedings, etc.) was deemed by the Board to be excessive in comparison to the potential benefits. The Board instead held meetings

⁵³ 5 U.S.C. § 552 (1976).

⁵³ *Id.* § 552(a)(2), (3).

⁵⁴ *Id.* § 552(a)(3)-(6).

⁵⁵ *Id.* § 552(b).

⁵⁶ Federal Advisory Committee Act of 1972, Pub. L. No. 92-463, 86 Stat. 770 (1972).

with aviation groups, allowed staff participation in seminars, and authorized the BAS to conduct one major meeting in 1975 to exchange aviation investigation ideas with industry.⁵⁷

Privacy Act

The main provision of the Privacy Act⁵⁸ forbids disclosure of information about an individual to any person without that individual's consent, except in accordance with one of eleven clauses of the Act. The second of these clauses allows disclosure of information due to requests under the FOIA, thus suggesting that personal data found in accident records could be revealed without the consent of the individual in question unless one of the FOIA exceptions was applicable.⁵⁹ This interpretation is relatively academic when considering NTSB reports of aviation accident investigations. The NTSB does not code or otherwise classify accident information by the name of individuals. Parties involved in an accident are identified in the body of a report and the report dockets are available upon request. However, unlike criminal or regulatory violation files, NTSB material is not classified as to the people involved in the accident. Questions under the Privacy Act have not yet been raised at the NTSB in connection with accident investigation.⁶⁰ The two areas in which questions could arise are: (1) those involving airmen's records or comments related thereto which are analyzed and made part of the NTSB docket, and (2) those involving transcripts of cockpit voice recordings made in accordance with administrative rules developed well before the passage of the Privacy Act in 1974.

Government in the Sunshine Act

The 1976 Government in the Sunshine Act (GSA)⁶¹ was enacted to provide public visibility to the proceedings of quasi-judicial bodies such as the NTSB. The effect of this Act has been to open Safety Board meetings at which accident reports are dis-

⁵⁷ Report of the Bureau of Aviation Safety/Industry Meeting, Aircraft Accident Investigation in Downingtown, Pa. (September 29, October 2, 1975) [hereinafter cited as Report of the Bureau].

⁵⁸ Privacy Act of 1974, 5 U.S.C. § 552a (1976).

⁵⁹ *Id.* at § 552a(b).

⁶⁰ Interview with Fritz L. Puls, General Counsel of the NTSB (March 21, 1979).

⁶¹ Pub. L. No. 94-409, 90 Stat. 1241 (1976).

cussed. However, the media, parties and others interested in particular cases may simply observe; they are not allowed to participate. Agendas and transcripts of the meetings are published, providing a record heretofore unavailable to the public. As a practical matter, numerous meetings between the staff and the chairman or individual board members precede the public session. Further, in a large majority of the cases, the final acceptance of the Board reports ultimately occurs in the members' offices.

The "open meeting" provisions of the GSA apply only to those sessions where there will be "deliberations of at least the number of individual agency members required to take action on behalf of the agency. . . ."⁶² In addition wide discretion is given to the members of the agency to limit the information which will be included on the agenda for discussion at the public meeting. For example, under the "practices of an agency" exception of the Act, it would be possible for the Board to preclude or limit discussion of the adequacy of its investigative procedures as illustrated by a particular case.⁶³ Such a situation has been witnessed by this author, although it was not clear whether the limited discussion was the function of a decision of the Board or simply the result of unwillingness of the staff to present all issues to the Board.⁶⁴

Airline Deregulation Act

Ostensibly, the Airline Deregulation Act (ADA),⁶⁵ the most recent piece of significant aviation legislation, would seem to have little direct bearing on accident investigation beyond strengthening the need for such investigations. The CAB is directed to maintain safety "as the highest priority in air commerce"⁶⁶ and to recognize "the clear intent, encouragement, and dedication of the Congress to the furtherance of the highest degree of safety in air transportation . . . which has come to be expected by the traveling

⁶² *Id.* § 552b(a)(2).

⁶³ *Id.* § 552b(c)(2).

⁶⁴ The NTSB met August 17 and September 11, 1978, in response to a petition of the Allied Pilots Association re American Airlines B727 accident at St. Thomas, V.I., April 27, 1976.

⁶⁵ Federal Aviation Act of 1958, 49 U.S.C. §§ 1301-1584 (Supp. II 1980), as amended by the Airline Deregulation Act of 1978, Pub. L. No. 95-504, 92 Stat. 1705 (1978).

⁶⁶ *Id.* § 1302(a)(1).

and shipping public.”⁶⁷ Implicit in the new Act, however, is an anticipated proliferation of carrier operations to new terminals, along with a marked increase in commuter and air taxi operations. Because of this expansion of operations and the continued concern for safety, more pressure will be applied to the NTSB to investigate all accidents and incidents occurring in such operations. Thus more aircraft operators need to become familiar with aviation accident procedures and technology lest their rights be compromised by their own ignorance.

Aviation Safety Status Today

Preliminary figures for 1978 indicate that the number of certificated airmen now exceeds three quarters of a million. There are approximately 2,500 air carrier transports in use and nearly 200,000 general aviation aircraft. Airports number close to 15,000. Air carriers in that year experienced twenty-five major accidents, which killed a total of 163 persons. General aviation suffered 4,609 accidents (795 fatal accidents), resulting in 1,690 fatalities.⁶⁸ The potential for accidents is increasing constantly. There has been, however, a stabilization of some of the statistical indices, a tribute to the aviation system.

Nevertheless, the risk and exposure of aviation accidents is measured by more factors than the mere number of events. Such factors include the size and complexity of the vehicles involved and fatality density. Due to the increase in aircraft size, the number of fatalities occurring in any given event rose dramatically in the 1970's.⁶⁹ Hence, while the overall number of accidents is not startling compared to the figures of ten or twenty years ago, the number of people that potentially can be killed at one time and at one place is staggering. Moreover, aircraft are now being developed which have the capacity of carrying over 650 persons. To be sure, neither aviation nor legislation have ceased to be

⁶⁷ *Id.* § 1302(a)(2).

⁶⁸ See note 5 *supra*.

⁶⁹ On September 4, 1971, 111 people were killed in the largest single plane loss ever experienced by a U.S. carrier to that time; on March 3, 1974, 346 people were killed in the Paris DC-10 crash; on March 27, 1977, 573 people were killed in a ground collision of two B-747's in Tenerife; on September 25, 1978, 144 people were killed in San Diego, setting a new American record for single plane and mid-air collision loss; on May 25, 1979, 273 people were killed in the Chicago DC-10 crash.

dynamic. The only question is: "Which crash or crashes will trigger the next furor?" Indeed, such furor is probably going on at this time.

CURRENT RULES AND PROCEDURES REGARDING CIVIL AIRCRAFT INVESTIGATION

Rules Adopted by the National Transportation Safety Board

Pursuant to authority granted to the CAB in Title VII of the FAA Act of 1958,⁷⁰ and transferred to the NTSB in the DOT Act of 1966⁷¹ and in the Independent Safety Board Act of 1974,⁷² the following rules pertaining to civil aircraft accident investigation have been promulgated.⁷³

PART 800—*Organization and Functions of the Board and Delegations of Authority*

This rule discusses the organizational structure of the National Transportation Safety Board and describes the Board's primary function as "the promotion of safety in transportation" and its primary responsibility to "the investigation, determination of facts, conditions and circumstances and the cause or probable cause of . . . all accidents involving civil aircraft."⁷⁴ The Bureau of Accident Investigation conducts the investigations, recommends that public hearings and depositions be held, and prepares public reports for submission to the Board which include a determination of the probable cause of each accident. The Bureau participates in foreign accident investigations pursuant to Annex 13 of the Chicago Convention.⁷⁵ The Bureau also proposes safety recommendations in an attempt to prevent future accidents. The Bureau of Technology provides technical and analytical services to the Bureau of Accident Investigation and other entities.

Support for the basic investigative task is provided by the Office of General Counsel, the Office of Public Affairs, and the

⁷⁰ Pub. L. No. 85-726, 72 Stat. 782 (1958).

⁷¹ Pub. L. No. 89-70, 80 Stat. 931 (1966).

⁷² Pub. L. No. 93-633, 88 Stat. 2156 (1974).

⁷³ 49 C.F.R. §§ 800-850.35 (1979).

⁷⁴ *Id.* § 800.3 (1979).

⁷⁵ ICAO, INTERNATIONAL STANDARDS AND RECOMMENDED PRACTICES, ACCIDENT INVESTIGATION, Annex 13 (4th ed. 1976) [hereinafter cited as ICAO, STANDARDS AND PRACTICES].

Bureau of Administration. The Office of the Managing Director, which assists the Chairman in his role as executive and administrative head of the Board, coordinates and directs the activities of the entire staff.⁷⁶ Another support organ, although not directly related to accident investigation, is the Office of Administrative Law Judges. This Office conducts all formal proceedings which arise under Title VI of the FAA Act of 1958 involving the suspension, revocation or petitions for reissuance of airman's certificates.

Certain delegations of authority by the Board are also contained in Section 800. For example, the Managing Director makes the final determination regarding the withholding of material from public copying. In addition, he appoints and supervises the Board personnel.⁷⁷ The General Counsel approves testimony by Board personnel and supplies editorial input for Board reports.⁷⁸ The Director of the Bureau of Accident Investigation has the authority to initiate investigations and to disclose factual information discovered in those investigations.⁷⁹ Board investigative employees⁸⁰ have the authority to sign and issue subpoenas, to administer oaths and to take depositions.

An Appendix to Part 800 contains the current request to the Secretary of Transportation for assistance which "delegates" the fact-finding authority in certain aircraft accidents to the FAA.⁸¹ This authority extends to all accidents which involve rotorcraft, aerial application aircraft, amateur-built aircraft and restricted category aircraft, and fixed-wing aircraft weighing 12,500 pounds, except where rotorcraft and "under twelve five" accidents involve fatalities. The NTSB has retained investigative authority over accidents involving all Part 135 (Air Taxi) operations, all air carrier accidents, and all mid-air collisions. Provisions in this section also allow the NTSB to retain authority over certain other cases and permit it to ask the FAA to investigate certain accidents not otherwise delegated to the FAA.⁸²

⁷⁶ 49 C.F.R. § 800.22 (1979).

⁷⁷ *Id.*

⁷⁸ *Id.* § 800.24.

⁷⁹ *Id.* § 800.25.

⁸⁰ *Id.* § 800.27.

⁸¹ 42 Fed. Reg. 8379 (1977).

⁸² *Id.*

PART 801—*Public Availability of Information*

Citing the Freedom of Information Act⁸³ and the NTSB's enabling legislation,⁸⁴ this rule details the policy, administration, time limits, records and exemptions applicable to public requests for information. Many of the provisions are pertinent to aviation accident investigation. The rule delineates the policy of making "information available to the greatest extent possible." It mandates the existence of a "Public Inquiries Section" and a "public reference room to aid review of docket and recommendation material." It states that factual documents assembled during an investigation normally are available for sixty days after an accident. The determination of probable cause normally is made within six months after the accident. Also discussed are the Quarterly Index of the Board's opinions and orders in safety enforcement cases and the administrative staff manuals which affect the public, neither of which are exempted under the Freedom of Information Act.⁸⁵ Requests for records should be made under Freedom of Information Act procedures as outlined in the rule. Failure to follow proper procedures will only delay response. The Safety Board possesses an excellent reputation for servicing requests from the public promptly. Difficulties usually occur because individuals do not understand or respect the Board's procedures.

PART 802—*Rules Implementing the Privacy Act of 1974*

This rule merely amplifies the Privacy Act. It has not been exercised up to this date with regard to aviation accident investigation records. Requests for information should be made in writing to the Director of the Bureau of Administration, or in person to the office where the records are located. A "System Manager" makes the initial decision regarding the availability of the records and responds to the individual making the request.⁸⁶ Subsequent procedures for review or appeal also are detailed in this rule.

⁸³ 5 U.S.C. § 552, as amended by Pub. L. No. 93-502, 88 Stat. 1561-64 (1974).

⁸⁴ Independent Safety Board Act of 1974, 49 U.S.C. §§ 1901-1907, 88 Stat. 2166 (1974).

⁸⁵ 5 U.S.C. § 552, as amended by Pub. L. No. 93-502, 88 Stat. 1561-64 (1974).

⁸⁶ 49 C.F.R. §§ 802.7, 802.8 (1979).

PART 804—*Rules Implementing the Government
in the Sunshine Act*

This rule applies to “deliberations of three or more Members which such deliberations determine or result in the joint conduct or disposition of official NTSB business” It does not include meetings related to “notation voting or similar consideration of business” or to the releasing or withholding of information. The public is invited to attend open meetings, but may not participate; the NTSB also will make available transcripts of the non-exempt portions of meetings.⁸⁷

Announcements of the meetings appear in the Federal Register and are displayed prominently on the premises occupied by the NTSB at least one week before each meeting. Extensive procedures are involved to document the reasons for conducting closed meetings. The permissible reasons for holding closed meetings parallel those stated in the Privacy Act. Considerable discretion remains regarding which subjects will be reviewed. For example, a “meeting may be closed and information pertinent to such a meeting . . . may be withheld if the Board properly determines that such a meeting . . . is likely to . . . disclose information the premature disclosure of which would be likely to significantly frustrate implementation of a proposed action of the NTSB”⁸⁸ Despite these limitations, the rationale behind certain accident investigation findings is now more visible to the public than prior to the passage of the Government in the Sunshine Act.

PART 805—*Employee Responsibilities and Conduct*

One problem area frequently encountered in aviation accident investigations is the real or imagined preferential treatment given by the NTSB investigators to one of the parties to the investigation. The Board’s policy regarding this matter is firmly stated in this rule:

Members and employees shall avoid any action, whether or not specifically prohibited by the regulations in this part (805), which might result in or create the appearance of: . . . (2) Giving preferential treatment to any person⁸⁹ . . . (4) Losing complete inde-

⁸⁷ *Id.* § 804.10

⁸⁸ *Id.* § 804.5.

⁸⁹ “Person” means an individual, a corporation, an association, a firm or any other organization or institution. 49 C.F.R. § 805.735-2 (1979).

pendence or partiality . . . (6) Affecting adversely the confidence of the public in the integrity of the government.⁹⁰

Similar provisions apply to investigations and to disciplinary and remedial actions.⁹¹ Hence, should any person believe that improper or unethical conduct has occurred in the course of an accident investigation, a mechanism is available to adjudicate his claims.

PART 821—*Rules and Practices in Air Safety Proceedings*

The title of this rule is misleading unless one remembers the time when "air safety proceedings" referred to the enforcement of violations of the rules. Tradition apparently has prevailed, carrying this terminology forward, although the proceedings today involve only those appeals related to certificate actions. They do not relate in any fashion to accident investigations of the NTSB. It is worthwhile to note that the only rule pertaining to evidence in these proceedings is as follows:

Every party shall have the right to present his case or defense by oral or documentary evidence, to submit evidence in rebuttal, and to conduct such cross-examination as may be required for a full and true disclosure of the facts.⁹²

This approach is virtually identical to that of the Administrative Procedures Act.⁹³ Thus it can be concluded that considerable latitude is available to the administrative law judge in the conduct of the hearing.

PART 830—*Rules Pertaining to the Notification and the Reporting of Aircraft Accidents or Incidents and Overdue Aircraft, and Preservation of Aircraft Wreckage, Mail, Cargo and Records.*

Successful accident/incident investigation requires prompt notification of the mishap to the appropriate authorities and the preservation of wreckage and relevant evidence. Part 830 applies to these concerns. It provides definitions of "aircraft accident," "incident," "fatal injury," "substantial damage," and "aircraft

⁹⁰ *Id.* § 805-3(c).

⁹¹ *Id.* § 805.735.27.

⁹² *Id.* § 821.38.

⁹³ 5 U.S.C. § 556 (Supp. 1980).

operator," and places limits upon what information must be reported and by whom it must be reported. The rule requires initial notification should be made as expeditiously as possible to any of the NTSB field offices. It states that the responsibility of the operator is to preserve wreckage, mail, cargo and records, subject to the overriding priority to protect persons from further injury.⁹⁴

As a practical matter, notification of aviation accidents most often is made through FAA sources, such as air traffic control facilities. Public sources, such as the local police and media, also provide early notification. The obligation always rests upon the operator, however, to follow the steps noted above.

PARTS 831 AND 845—*Aircraft Accident/Incident Investigation Procedures and Rules of Practice in Aircraft Accident/Incident Investigations*

An offshoot of Part 830, these two rules relate to the procedural practices followed by the NTSB. These practices have existed relatively unchanged for decades and are well-known to investigating authorities. They are the ones most frequently encountered by attorneys. Part 831 denies the status of "party to the field investigation" to persons representing claimants and insurers.⁹⁵ Such persons are distinguished from "those persons, Government agencies, companies and associations whose employees, functions, activities or products were involved in the accident and who can provide suitably qualified personnel who will actively assist in the field investigation."⁹⁶ The rule contains a provision for requesting that information acquired in the course of the investigation be withheld from public disclosure.⁹⁷ The right of any person interrogated by NTSB personnel to be "accompanied, represented, or advised by counsel or by any other duly qualified representative is also affirmed,"⁹⁸ and the duties and authority of the NTSB Investigator-in-Charge (ICC) are outlined.⁹⁹

⁹⁴ 49 C.F.R. § 830.10 (1979).

⁹⁵ *Id.* § 831.9.

⁹⁶ *Id.*

⁹⁷ *Id.* § 831.5.

⁹⁸ *Id.* § 831.6.

⁹⁹ *Id.* § 831.7.

Practices followed in conducting a public hearing are discussed in Part 845. These include the designation of parties to the hearing and the procedures for examining witnesses and introducing evidence.¹⁰⁰ The required form and content of the Board's accident reports are delineated. Such reports are to include "a detailed narrative accident report in connection with the investigation into those aircraft accidents which the Board determines to warrant such a report."¹⁰¹ This is the so-called "blue cover report." Further, "the probable cause and facts, conditions, and circumstances of all other accidents"¹⁰² are to be reported in a manner and form prescribed by the Board.¹⁰³ Procedures for requesting the reconsideration or modification of Board reports are discussed. These requests will be entertained only if they are based upon the discovery of new evidence or upon a showing that the Board's findings, as to the facts, conditions and circumstances surrounding an accident are erroneous.¹⁰⁴ A public docket is to be available which will include all factual information concerning the accident including any recommendations submitted by interested persons and requests for reconsideration and modification.¹⁰⁵

PART 835—*Testimony of Board Employees*

This NTSB rule has undergone a recent change in light of both the new statutory base of the NTSB under the Act of 1974 and recent court decisions. It "prescribes the policies and procedures regarding the testimony of employees of the . . . Board in suits or actions for damages and criminal proceedings arising out of transportation accidents."¹⁰⁶ It defines the Board's reports and restricts their use by employees "as a testimonial aid . . . to refresh [the witness'] memory."¹⁰⁷ The rule deals with the scope of permissible testimony, but does not address the subject of opinion or expert testimony. The manner in which testimony is to be given is discussed, limited under this rule to depositions and re-

¹⁰⁰ *Id.* §§ 845.13, 845.25, 845.26.

¹⁰¹ *Id.* § 845.40.

¹⁰² *Id.*

¹⁰³ *Id.*

¹⁰⁴ *Id.* § 845.41.

¹⁰⁵ *Id.* § 845.50.

¹⁰⁶ *Id.* § 835.1.

¹⁰⁷ *Id.* §§ 835.1, 835.7.

sponses to interrogatories. Employee testimony must be requested through the Board's Office of General Counsel.¹⁰⁸ Testimony of former Board employees may relate only to cases investigated by the person when he or she was employed by the NTSB.¹⁰⁹

What is not apparent from the above summary or from a full reading of Part 835 is the significant change that occurred when this rule was altered on July 17, 1975. While the manner and procedure for requesting and receiving testimony remained the same, the scope of permissible testimony and the allowable use of Board documentation for that testimony was modified substantially. As stated in the notification of the new rule in the Federal Register:

The only opinions of investigators proscribed now are those which reflect the ultimate determination of cause or probable cause determined by the Board and expressed in the Board's reports. The Board considers its revised policy to be consistent with the existing law, relying in particular on *Kline v. Martin*,¹¹⁰ The Board continues its prohibition against the requirement that investigators should testify on matters beyond the scope of their investigation.¹¹¹

Kline v. Martin involved a motion to compel testimony from NTSB and FAA investigators during the discovery stage of a case. The court's memorandum and order stated: "The witnesses should be allowed to testify even if it involves their opinions, so long as the opinion is not as to the ultimate conclusion of cause of the accident."¹¹² The Board has clearly taken exception to another case, *Falk v. United States*,¹¹³ in which an investigator was required to express an opinion as to the cause of an accident. The Board cited the repeal of Section 5 of the DOT Act of 1966 and the enactment of the Independent Safety Board Act of 1974, particularly Section 304(b)(10)(c), which reaffirms the proscription against the use of a "report of the Board" as evidence in litigation.

Use of investigators' *factual reports* is now permissible since

¹⁰⁸ *Id.* §§ 835.6, 835.7.

¹⁰⁹ *Id.* § 835.7.

¹¹⁰ 345 F. Supp. 31 (D.C. Ca. 1972).

¹¹¹ 40 Fed. Reg. 30,254 (1975).

¹¹² *Kline v. Markin*, 345 F. Supp. 31, 33 (D.C. Va. 1972).

¹¹³ 53 F.R.D. 113 (D.C. Conn. 1971).

these are no longer deemed reports of the Board. These factual reports include the information contained in NTSB Forms 6120.1/.2 and 6120.4¹¹⁴ and the results of the group chairmen's investigations which lead to "blue cover" reports. Indeed, according to the NTSB the only reports not presently available for use in litigation are the "blue cover" reports and computer briefs, both of which reflect the Board's determination of probable cause.

NTSB Internal Practices Regarding Accident Investigation

Like any Federal agency, the NTSB refines its statutory authority with internal standard operating procedures, instructional manuals, reference documents, and publications and presentations by key officials. These sources of information are rarely known or appreciated by any persons other than those who work directly in the field on a continuous basis. These internal practices govern the day-to-day investigative and support processes of the Board, and some familiarity with them is essential to a thorough knowledge of aviation accident investigation.

One principal document which required several years of preparation is the "Inquiry Manual: Aircraft Accidents and Incidents,"¹¹⁵ issued most recently on February 10, 1975. The Table of Contents, summarized as follows, provides insight into the scope of the manual:

- Section I Federal Authorities and Responsibilities
- II Preinvestigation Preparedness
- III Notification of Accidents/Incidents and Initial Response
- IV Field Investigation Procedures
- V Reports of Investigation Phase of Inquiry
- VI Public Hearings and Depositions
- VII Preparation of Final Report of Inquiry
- VIII Accident Prevention Actions
- IX Alerts, Bulletins and Notices¹¹⁶
- X Appendices

¹¹⁴ NTSB Order No. 6120.1/.2 is the Operator's Report (general aviation/air carrier). NTSB Order No. 6120.4 is the Factual Aircraft Accident Report.

¹¹⁵ NTSB Order No. 6200.1, Inquiry Manuals: Aircraft Accident and Incidents (1975).

¹¹⁶ Item IX pertains to investigation matters as distinguished from alert bulletins, or other similar bulletins which might be released by the FAA or a manufacturer.

The manual includes information regarding the organization and procedures for "go-teams," the division of notification and communications responsibilities, the procedures to be followed at the scene of the accident, and the investigation techniques and guidelines applicable to certain segments of the inquiry, such as systems, power plants and human factors. Procedures to be followed in the public hearings are detailed, and instructions on completing accident reports, including the submission of recommendations, are given.

Separate documents are promulgated periodically and these eventually may appear in the manuals. Some of the more useful documents include one entitled "Goals for Accident Investigation," an expression of NTSB policy, and another headed "Information for the Guidance of the Parties to the Investigation of Aircraft Accidents," a document distributed to the parties at the scene of a major accident by the Investigator-in-Charge. In addition, there are available other useful documents such as the "Opening Statement of Investigator-in-Charge at Organizational Meeting," the "Opening Statement at the Prehearing Conference," and the "Opening Statement at the Hearing." These documents contain a plethora of regulatory and procedural material for groups who are not familiar with the practices of the NTSB.

Knowledge of NTSB internal practices is essential to attorneys and to other individuals who may have an interest in air safety investigation. Not interfering with the NTSB's principal mission is the key to acquiring its cooperation and assistance. Experienced aviation litigation attorneys usually encounter the fewest difficulties because of their familiarity with Board procedures and their appreciation of the Board's role.

Two other internal NTSB documents also are worth mentioning: the "Manual of Code Classifications, Aircraft Accidents and Incidents,"¹¹⁷ and the "Analyst's Handbook . . . Guide for Using the Manual for Code Classifications."¹¹⁸ The former publication outlines the classification scheme used by the NTSB to categorize, store and retrieve accident data. Computers are used to sort, ana-

¹¹⁷ NTSB, *MANUAL OF CODE CLASSIFICATIONS, AIRCRAFT ACCIDENTS AND INCIDENTS* (3d ed. June, 1970) (with revisions).

¹¹⁸ BUREAU OF AV. SAFETY, SAFETY ANALYSIS DIV., *ANALYST'S HANDBOOK, PART II, GUIDE FOR USING THE MANUAL OF CODE CLASSIFICATIONS* (Jan. 1973).

lyze and print out this data. The latter document provides internal rules for coding a report for computerized storage and later retrieval. The data system employed by the NTSB is quite important; its product, the computer "brief," is the only "report" produced by the Safety Board in all of the approximately 4,000 cases it handles each year. Thus, assessment of probable cause is dependent upon the language selected to be compatible with the computerized system.

Totally absent from the publications regarding NTSB procedures and practices is any document outlining the roles individual Board members play in the investigation process, including the roles they play in determining probable cause. Traditionally, this has remained the prerogative of the individual member despite the fact that this has caused confusion to persons both inside and outside the NTSB.

FAA Internal Practices Regarding Accident Investigation

The FAA's authority in accident investigations has been well documented since passage of the FAA Act of 1958.¹¹⁹ The authority within the provision of that Act has been supplemented by a comprehensive manual, "Aircraft Accident and Incident Notification, Investigation and Reporting."¹²⁰ Besides providing guidelines and detailed procedures for investigations, the manual clearly reveals the function of each major organizational segment of the system and the exact function of many individual employees who would be expected to participate in an investigation. For example, the duties of the Office of General Counsel are described as follows:

The provisions of legal representation, counsel, and advice to the Office of the Administrator and other FAA offices and services, where required in connection with accident investigations, is a primary function of the Office and should be given a high priority at all times.¹²¹

A distinction is drawn for "investigations requiring full legal participation," those involving fatal air carrier mishaps, mid-air

¹¹⁹ See Federal Aviation Act, 49 U.S.C. §§ 1301, 1441 (Supp. II 1980).

¹²⁰ FAA Order No. 8020.11, Aircraft Accident and Incident Notification, Investigation and Reporting (July 16, 1979).

¹²¹ *Id.* Ch. 4, par. 124.

collisions, accidents in which governmental liability is possible, and incidents with high public interest. Fourteen specific tasks are then outlined which clearly go beyond any objective of air safety investigation and which relate to the normal duty of any attorney to protect his client's interest.

The identification of FAA practices in aircraft accident investigation also can be derived from the textbook used at the DOT Transportation Safety Institute at the FAA Aeronautical Center in Oklahoma City, Oklahoma.¹²² This school was originally a joint CAB/NTSB-FAA operation; hence, the investigative technology utilized there closely parallels that implemented in the NTSB investigations.

International Considerations

Standards and recommended practices for aircraft accident inquiries were first adopted by the International Civil Aviation Organization (ICAO) in April, 1951, pursuant to Article 37 of the Convention on International Aviation which had taken place in Chicago in 1944. These standards were designated Annex 13 to the Convention.¹²³ Five major amendments have been accepted since 1951, the most recent one resulting from the 1974 Accident Investigation and Prevention Divisional Meeting in Montreal.¹²⁴

United States procedures and practices have dominated the development of Annex 13 throughout the years. This is reflected in the ICAO's "Manual of Aircraft Investigation," a magnificent effort at the time of its original publication and still an excellent reference document for aircraft accident investigation.¹²⁵

Both Annex 13 and the Manual are explicit in citing the objective of an investigation—the prevention of accidents and incidents, not the determination of blame. Specifically, Annex 13 states: "The fundamental objective of the investigation of an accident or incident shall be the prevention of accidents and incidents. It is

¹²² DOT TRANSPORTATION SAFETY INSTITUTE, AIRCRAFT ACCIDENT INVESTIGATION PROCEDURES AND TECHNIQUES (5th ed. 1976).

¹²³ ICAO, STANDARDS AND PRACTICES, *supra* note 75.

¹²⁴ ICAO, Doc. No. 9106, Report of the Accident Investigation and Prevention Divisional Meeting, June 3-24, 1974 [hereinafter cited as ICAO, Report of Meeting].

¹²⁵ ICAO, Doc. No. 6920-AN/855/4, Manual of Aircraft Accident Investigation (4th ed. 1970).

not the purpose of this activity to apportion blame or liability.”

The Manual states:

The nature of the inquiry into an aircraft accident should not be accusatory as the object is to take remedial rather than punitive action; similarly the assessment of blame or responsibility should not be included in the duties of the accident investigation authority since this function is normally the prerogative of the judicial authorities of the State concerned.¹²⁶

Unfortunately, international accident investigation efforts have only recently begun to face the procedural problems inherent when civil litigation and air safety objectives clash.¹²⁷ Several key law-safety subjects were discussed at the September 1979 meeting of the ICAO Accident Prevention and Investigation Division in Montreal. These included: balancing the emphasis on accident prevention vis-a-vis investigative fact-finding; strengthening the role of the Investigator-in-Charge when he is “exposed to any influence which may jeopardize the objectivity and completeness of the investigation”; resolving conflicts between states’ Freedom of Information laws and the ICAO’s desire to communicate all accident investigation information freely; and defining the role of the operator’s State of citizenship, not always the State of registry or manufacture of the aircraft.

Thus, the international authorities are just beginning to resolve the informational problem faced by the United States in the last decade and other problems which were resolved here long ago.

PROBABLE CAUSE IN ACCIDENT INVESTIGATION AND IN THE LAW

The Cause Dichotomy

Causation is a central concern in accident investigation. It is also central to the task of a jury in the context of a trial. The facts from which causal determinations are made are identical, whether they are analyzed by a safety board during an accident investigation or by a jury at trial. Realistically, however, the factual demands of a safety-oriented investigation are usually not equal in scope or depth to those of a trial court. More often than not, the investigations conducted for purposes of litigation go be-

¹²⁶ See ICAO, STANDARDS AND PRACTICES, *supra* note 75, § 3.1.

¹²⁷ See ICAO Report of Meeting, *supra* note 124, at I-1-1.

yond those conducted by safety organizations. Although it is important in both contexts to determine the cause of the event in question, the safety-oriented investigation is often concerned with causation only as it leads to the development of recommendations for the prevention of similar accidents. The jury is concerned with causation as it is defined by the law in terms of legal cause or proximate cause to determine which party was legally at fault. Unfortunately, those who speak in terms of air safety and those who speak in legal terms do not always use the same language. Thus "probable cause" and "cause" as used in the context of accident investigations do not have the same meaning as "probable cause" or "proximate cause" have in the legal context.

Causal determination made its way into the legislative history of aviation acts as early as 1926.¹²⁸ "Probable cause" first appeared in the 1934 amendment to the Air Commerce Act of 1926:

At the conclusion of an investigation of or at a hearing on any such accident or as soon thereafter as circumstances permit, the Secretary of Commerce shall, if he deems it in the public interest, make public a statement of the *probable cause or causes* of the accident. . . . (emphasis added)¹²⁹

Similarly, the procedural manual developed within the Bureau of Air Commerce to implement the amendment stated: "The Final [Accident] Report should conclude with the statement as to the *probable cause or causes* of the accident"¹³⁰

The principal author of this procedural manual was Professor W. H. Wigmore, the renowned evidence scholar. Professor Wigmore's definition of causation in the context of accident investiga-

¹²⁸ Clearly causation has a significant role in accident investigation whether the general objective is social justice through the law or accident prevention through safety technology. It can be argued that the cognitive process of man demands structured thought which tests hypotheses in a cause-effect framework. It can also be argued that the average person as a member of the public wants simple answers to harm-causation questions, even to the complex questions that predominate in aviation accident investigation. Psychologically, this could relate not only to one's earliest learning processes but also to a desire to satisfy personal security needs. Finally, of course, requirements for cause determination are found in accident investigation statutes. M. Braunstein & O. F. Coleman, "An Information-Processing Model of the Aircraft Accident Investigator," *Human Factors* (Feb. 1967); personal communications with Chaytor Mayson, Prof. of Aviation Psychology, U.S.C., Los Angeles, Cal. (Mar. 1979).

¹²⁹ The Air Commerce Act of 1926, Pub. L. No. 69-254, 44 Stat. 568 (1926).

¹³⁰ *Id.*

tions for safety purposes clearly stops short of the more exacting cause in fact/proximate cause analysis familiar in the law of torts. Nevertheless, he had difficulty defining causation as it applied to investigations of aviation accidents for safety purposes. For example, the manual states: "A cause is a fact without which (i.e., if it had not taken place or had taken place in a materially different way) the event would not have taken place."¹³¹ When examining the role of the accident board, Wigmore noted that

[i]t is not required that the Board pronounce upon the *moral* or *legal quality* of any person's conduct (or failure to act) as being negligent or blameable, or the reverse. But it is the Board's duty and power to state all the *causative facts*, leaving it to others who may have authority to pronounce any moral or legal judgment upon those facts¹³²

After reflecting upon the different standards of proof required in civil cases (preponderance of the evidence) and in criminal matters (proof beyond a reasonable doubt), the manual recommended

that the Board . . . not confine itself, in stating its conclusions, to a choice between only two standards of belief. They may use any terms that seem to express the strength of their belief on a particular fact,—such as, 'We are convinced'; 'We are inclined to believe'; 'We are clearly of the opinion'; 'We are unable to reach any conclusion'; 'We find', etc.¹³³

Thus the element of probability was introduced into the determination of cause in aviation accident investigations.

Mr. Fred Glass, General Counsel of the Air Safety Board, has given two reasons for the application of the less rigorous definition of causation in aviation accident investigations. First, aviation was so new and mysterious when the definition was formulated that even the best efforts of the investigators could give no assurance of a complete determination of facts and cause. Second, the manual made a conscious effort to separate the safety proceedings

¹³¹ Dolder, R., *Inquiry Into the History of Cause and Related Procedures* (unpublished draft) (May 31, 1967).

¹³² DEPT. OF COMM., BUREAU OF AIR COMM., *THE CONDUCT OF INVESTIGATIONS AND HEARINGS*, § 2.642 (1938) (Manual of staff instructions drafted by J. H. Wigmore with B. M. Jacobs and H. E. Knotts).

¹³³ *Id.* § 2.643.

and reports from the tasks of lawyers to "head off litigation." Many people were "skittish of indictments" and were leery of the possible negative effect of communication of accident prevention information if the investigation was invaded by representatives of litigants.¹³⁴

"Probable cause" became a trademark of CAB and NTSB investigations, influenced by a well-received book by that title authored by Robert Serling in 1980. This book was the first to chronicle the task of the air safety investigator in a literary format. Unfortunately, "probable cause" is also found in the law, and there the confusion begins. The precise terminology of the phrase has little to do with relationships of cause and effect as they exist in an investigative analysis. Specifically, Black's Law Dictionary defines "probable cause" as "an apparent state of facts to exist upon reasonable inquiry . . . which would induce a reasonably intelligent and prudent man to believe, in a criminal case, that the accused person had committed the crime charged"¹³⁵ This connotation, of course, has its heritage in the Fourth Amendment to the United States Constitution.¹³⁶

"Probable cause" in air safety investigations has an entirely different meaning. The NTSB accident analysts handbook defines it as follows:

Probable Cause(s) . . . condition(s) and/or event(s) or the collective sequence of conditions and/or events that most probably caused the accident to occur. Had the condition(s) or event(s) been prevented or had one or more conditions and/or events been omitted from the sequence, the accident would not occur.¹³⁷

This definition is confusingly similar to the definition of proximate cause given in a legal encyclopedia, to wit, "that cause which, in a natural and continuous sequence, unbroken by an efficient, intervening cause, produces the injury, and without which the result would not have occurred."¹³⁸ Both of the latter definitions

¹³⁴ Personal Communications with Fred Glass, General Counsel of the Air Safety Board (Feb. 13, 1978).

¹³⁵ BLACK'S LAW DICTIONARY 1365 (4th ed. 1957).

¹³⁶ "The right of the people to be secure . . . shall not be violated, and no warrant shall issue, but upon probable cause. . . ." U.S. CONST., amend. IV.

¹³⁷ See Bureau of Aviation Safety, *supra* note 112, at 9, 26.

¹³⁸ 57 AM. JUR. 2d *Negligence*, § 131 at 9, 482 (1978).

encompass the "but for" test; *i.e.*, "but for" a given factor, the accident would not have occurred. However, "proximate cause" is clearly a legal concept by which a court places a limitation on the actor's responsibility for the consequences of his conduct.¹³⁹ Proximate cause connoted fault or blame, at least until the advent of the strict liability or "no fault" doctrine. Conversely, the purpose of NTSB investigations is allegedly not to establish fault or blame or to determine the rights or liabilities of the parties.

Thus "probable cause" and "proximate cause" are often confused and misused. It is an error for air safety investigators and lawyers to fail to make the necessary fine distinctions. It is probably hopeless to expect the public ever to see and understand the difference.

Recent Developments in Causation Philosophy

Parallel developments have recently occurred in the fields of law and air safety which could lead to resolution of some of the ill effects of the confusing probable cause/proximate cause dichotomy. In law, the simple "but for" test is an oversimplification; multiple causation of accidents is the norm and is so recognized by the courts.¹⁴⁰ A trend in tort law is toward the application of the doctrine of comparative negligence which, by its definition, encompasses multiple causation factors.¹⁴¹ This serves to reinforce the view taken by Kreindler many years ago that it is not necessary for a plaintiff to "individuate" a particular cause as the only proximate cause of an accident.¹⁴²

A somewhat different approach has developed in the area of air safety. The multiple causation theory has been appreciated by the military from the inception of its formalized aviation accident prevention programs.¹⁴³ The initial trend was to record the "primary" cause and the "contributing" causes. Typically, the "primary cause" would be defined as that factor which made the acci-

¹³⁹ W. PROSSER, *HANDBOOK OF THE LAW OF TORTS*, at 236 (4th ed. 1971).

¹⁴⁰ *Id.* at 239.

¹⁴¹ Dept. of Comm., *Draft Uniform Product Liability Law*, 44 Fed. Reg. 2996-3019 (1979).

¹⁴² L. KREINDLER, 1 *AVIATION ACCIDENT LAW* § 3.11 (1971), citing *Kendrick v. Piper Aircraft Corp.*, 265 F.2d 482 (3d Cir. 1959) [hereinafter cited as KREINDLER].

¹⁴³ C. MILLER, *THE ROLE OF SYSTEM SAFETY IN AEROSPACE MANAGEMENT* (1966).

dent most likely to occur and "contributing causes" would be those actions, events, conditions or circumstances which did not cause the accident but directly contributed to its occurrence. This delineation was motivated by the military's desire to have a "hit parade" of priority items requiring attention. It was also influenced by expanded data system and computer capabilities which matched the increased volume of events being investigated.

This analytical framework slowly disappeared and was replaced by what the Air Force calls an "all cause" concept.¹⁴⁴ The Army and Navy also moved away from the notion of primary or principal causes, even before the Air Force did so, although their change occurred less visibly.

The current regulation governing all Air Force mishaps defines cause as follows:

Causes are those findings which, singly or in combination with other causes, resulted in the damage or injury that occurred. A cause is an act, omission, condition, or circumstance which if corrected, eliminated, or avoided would have prevented the mishap. A cause may be an element of human or mechanical performance which started or sustained the mishap sequence. An environmental condition may be a cause if it was not avoidable. Findings which sustained the mishap sequence, but which were normal to the situation as it developed, are not causes These are often the unavoidable effects of a preceding cause.¹⁴⁵

According to Col. Richard H. Wood, the Air Force adopted this definition of causes for the following reason:

The problem was that "primary cause" depended a lot on your point of view. The word "primary" was interpreted as "most important" and the word "contributing" was interpreted as "less important than primary". In fact, the "primary cause" was an arbitrary point in the sequence and it was not necessarily the most important cause in terms of what could cause another accident or what could be done to prevent it. Furthermore, the concept of primary cause never established what was to be done with events that occurred after the primary cause. They certainly couldn't contribute to an accident that had already become inevitable.¹⁴⁶

¹⁴⁴ The Primary Cause is Dead, *AEROSPACE SAFETY*, Oct. 1973.

¹⁴⁵ USAF Reg. No. 127-4, Safety Investigation and Reporting of U.S. Air Force Mishaps (Jan. 16, 1978).

¹⁴⁶ R. Wood, All Cause Accident Reporting System, a report submitted to the USAF Directorate of Aerospace Safety, Norton AFB, Cal. (Apr. 27, 1974).

According to Col. Wood, the "all cause" concept has simplified the investigating board's task, and the data system has evolved from simply categorizing accident causes to prioritizing preventive actions. The analysts at the Air Force Safety Center now examine all of the causes of accidents to effect a meaningful prevention program, not just those which were subjectively considered to be "primary."¹⁴⁷

At the NTSB, attempts to move in this direction were made as early as 1969 with only partial success. This attempt was a two-pronged effort. The first proposal, accepted by the Board, was to change the definition of probable cause in the analyst's handbook to reflect the plural nature of cause, condition and event, so that the language would read cause(s), condition(s) and event(s). The second proposal was a suggestion to the Safety Board to approve the following definition of probable cause for use in narrative reports: "[A] description of the physical nature of the event producing injury or damage and amplified by those cause-effect relationships about which viable and timely preventive action can be taken in furtherance of air safety."¹⁴⁸ The Board rejected this proposal, saying:

It is the Board's view that since the determination of probable cause is the exclusive responsibility of the Board, it is inappropriate for the staff to prescribe a definition. If the Board subsequently decides that a definition of probable cause is necessary, it will take such action at a later date.¹⁴⁹

No such action has yet been taken. However, a review of recent NTSB "blue cover" reports reveals a distinct evolution in the narrative reports toward the primary/contributing construction of probable cause.

In the international forum, "cause" is defined in Annex 13 as: "Action(s), omission(s), event(s), condition(s) or a combination thereof which led to the accident or incident."¹⁵⁰ The ICAO

¹⁴⁷ Letter to C. O. Miller from Col. Richard H. Wood (Feb. 18, 1978).

¹⁴⁸ Memorandum to the Chairman of the NTSB from the Director of the Bureau of Av. Safety (Apr. 5, 1972).

¹⁴⁹ Memorandum to the Gen. Manager and the Director of the Bureau of Av. Safety, Board Decisions Concerning Certain Problems Involving the Bureau of Aviation Safety (July 13, 1973).

¹⁵⁰ See ICAO STANDARDS AND PRACTICES, *supra* note 123, at 9.

Accident Investigation Manual suggests that the "conclusions" of an aviation accident report should include "cause or probable cause(s)." This suggestion is amplified by the statement that "[t]he expression of cause should be a concise statement of the reason why the accident occurred and not an abbreviated description of the accident."¹⁵¹ Of course, wide variation exists in the implementation of these recommended practices. For example, the United Kingdom investigation of the Trident crash near London in 1972 resulted in a finding of five "immediate" causes and seven "underlying" causes.¹⁵² Conversely, a Taiwanese civil court, discussing a case in that country, stated that the pilot-in-command "failed to control altitude and the accident was therefore deemed to have arisen from pilot negligence."¹⁵³

Cause v. Fault

From the foregoing, it should be apparent that, given the different objectives of aviation accident investigation and the law, a philosophical conflict arises in the conduct of accident investigations and the reporting of findings from those investigations. In simplistic terms it is a question of cause, with all of its variations, versus fault. To the lay public, any person who is found guilty of a crime, who is found liable to another for damages, or who is simply found to have "caused" an accident will be considered to be at fault. The public equates such findings with a "failure to do what is right," a "responsibility for wrongdoing or failure," or a "defect in quality or construction," all commonly accepted dictionary definitions of fault.¹⁵⁴ Compare this with Prosser who states:

"Fault" is a failure to live up to an ideal of conduct to which no one conforms always and which may be beyond the capacity of the individual It may consist of sheer ignorance, lack of intelligence, or even an honest mistake. It may consist even in acts which are the normal and usual thing in the community.¹⁵⁵

¹⁵¹ See ICAO Report of Meeting, *supra* note 124, at IV-2-6.

¹⁵² UNITED KINGDOM DEP'T. OF TRADE AND INDUSTRY, REPORT OF THE PUBLIC INQUIRY INTO THE CAUSES AND CIRCUMSTANCES OF THE ACCIDENT NEAR STAINES ON 18 JUNE 1972 . . . TRIDENT I G-ARPI (1973).

¹⁵³ J. CROCKETT, PILOT SUSCEPTIBILITY TO THE COURTS (1978).

¹⁵⁴ WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY 924 (2nd ed. 1951).

¹⁵⁵ W. PROSSER, HANDBOOK OF THE LAW OF TORTS §§ 236, 239 (4th ed. 1971).

He admits that such an arbitrary connotation is different from personal guilt and moral blame, but submits that this is not important except in the descriptive sense. He argues:

There are many situations in which a person is held liable for an entirely reasonable mistake. Socially and legally these defendants are at fault; whether they are individually so, in spite of the fact they are blameless, appears to be entirely a matter of definition, rather than substance, and the argument leads only to a pointless dispute over the meaning of the word.¹⁵⁶

The tragedy occurs when over-simplified procedures are applied during the fact-finding process or during the subsequent analysis which leads to a final report. Despite protestations of the NTSB that they do not determine blame, if NTSB reports speak of a "failure to adhere to . . ." standards or if they phrase statements of causes in such accusatory language, the result is an oversimplification of the multiple causation factors present in every accident. Thus, the NTSB induces the lay public as well as itself to concentrate on the obvious "failure to . . ." factor of causation and to miss many of the other factors about which something can be done in a practical manner to prevent future accidents.

PROBLEMS OF THE INVESTIGATION IN RELATION TO LAW AND SOCIETY

Problems During the Investigative Process

"The impact of litigation begins when the aircraft strikes the ground."¹⁵⁷ This impact may be as simple as the crash site landowner resisting the influx of government investigators and gawkers onto his property.¹⁵⁸ A more perplexing difficulty frequently arises concerning the designation of parties to the field investigation.

Part 831.9 of the NTSB rules¹⁵⁹ permits those parties whose employees, functions, activities or products were involved in the

¹⁵⁶ *Id.*

¹⁵⁷ Statement of Fritz L. Puls, Gen. Counsel of the NTSB, before the meeting between the Bureau of Av. Safety and the aviation industry, Downingtown, Pa. (1975).

¹⁵⁸ The first aviation litigation in the United States entailed just these circumstances in 1822. A landowner was awarded \$90 compensation for the damages caused by curiosity seekers who swarmed to the scene of a balloonist's landing. *Cruise v. Swann*, 19 John Rep. 381 (1822).

¹⁵⁹ 49 C.F.R. § 831.9 (1979).

accident to participate in the field investigation, presumably because these parties would provide assistance to the investigator-in-charge. This same section, however, precludes representatives of "claimants or insurers." This limitation is actually an administrative fiction intended to focus the investigation on fact-finding during its critical early phase. Like most legal fictions, this one has served its purpose well. However, it must be continuously tested as conditions change.

For example, experts found at the scene of a crash are invariably in aid of claimants or insurers. As far as the FAA is concerned, it is the responsibility of each such office to provide, in each accident investigation, the legal participation appropriate to the accident and type of investigation conducted. Investigations require the "full legal participation" of the appropriate counsel's office. The duties of the legal representative include the issuance of a report to the FAA accident coordinator/investigator upon his arrival at the scene, the establishment of working arrangements sufficient to keep the FAA coordinator informed of the progress and development of the accident investigation, the determination of whether any additional evidence should be obtained regarding the legal aspects of the investigation, and the supervision of all statements, documents and related evidence presented by the FAA in an accident investigation.

Despite the restrictions upon their participation contained in section 831.9, the NTSB has often granted insurance company representatives discrete access to the scene of accidents and has even permitted examination of the wreckage in return for their expeditious removal of it to a site where it can be more readily examined by the accident investigators. Thus, as a practical matter, strict adherence to Part 831.9 often gives way to the need for cooperation to further the accident investigation. This issue has not been seriously tested in the courts, although some cases dealing with it have been adjudicated. In response to a petition to perpetuate evidence under Rules 27(a) and 27(c) of the Federal Rules of Civil Procedure, access to the scene of an accident recently was granted to the representatives of an insurance company who were permitted to inspect, photograph, and reconstruct the wreckage, including all engines, systems and components. This re-

quest involved the PSA mid-air collision in San Diego, California, that occurred on September 25, 1978.

To many attorneys, this procedure is the critical flaw in the aviation accident investigation system. In an overwhelming majority of cases, the wreckage has been examined and probably has been moved to a new location within a week of the accident's occurrence, long before the representatives of the dead or injured passengers are prepared to conduct their own investigation. This situation is not unique to aviation accidents, although the problem is more pronounced in aviation because both the formal and informal communications networks and the NTSB rules encourage participation by only some of the potential litigants. In terms of social justice, a tremendous responsibility is carried by public representatives from the NTSB and the FAA, whether or not these agencies recognize or accept that fact.

Closely related to the problem of the crash site examination of wreckage is that connected with the witnessing of tests, tear-downs and inspections of physical evidence. Under Part 831, the NTSB will attempt to limit participation in these actions to persons who have been formally designated parties to the investigation. The NTSB cites the needs of the Investigator in Charge (IIC) as the only criteria it must follow in regulating these activities.¹⁶⁰ Convenience and efficiency often require that parts be examined at the manufacturer's facility where unique test equipment and the manufacturer's expertise are available to the NTSB. When this issue of restricted participation has been taken to the courts, the petitioner's motion to observe the activity has usually been granted. In the spirit of compromise and to avoid time-consuming court appearances, the NTSB itself will sometimes grant "observer" status to qualified representatives of litigants. This is particularly true for experienced aviation attorneys who reflect an understanding of the Board's safety mission when communicating on the matter. Most motions relating to the perpetuation and observation of evidence are initiated in state courts where the petitioning counsel's superior knowledge of the local court often puts the federal government and the NTSB at a practical disadvantage.

The courts are not the only avenue for the preservation of evi-

¹⁶⁰ See Report of the Bureau, *supra* note 59, at 59.

dence. A letter to the Office of the General Counsel of the NTSB in Washington, D.C., and, where appropriate, the Chief of the NTSB field office possibly will prevent disposal of the wreckage. Potential litigants can establish contact with the legal owner of the evidence, his attorney, or his insurer and demand that the evidence be preserved. FAA air traffic control tapes can be preserved by contacting the FAA Regional Counsel. This request must be made within fifteen days of the accident since after this time the FAA's own procedures allow destruction of the information by a re-use of the tapes.

As for participation in NTSB public hearings, usually associated only with accidents of major interest, the situation is somewhat analogous to that prevailing at the scene of the accident. Part 845.10 allows the Board to order a public hearing as part of the accident investigation whenever such is in the public interest.¹⁶¹ When many of the parties' spokesmen are attorneys who, through force of habit, often incorrectly refer to the presiding Board Member as "Your Honor," it is difficult for an observer to perceive that a non-adversary proceeding is being conducted. Only the airline pilots' union and a few of the experienced airlines consistently use non-attorneys as their spokesmen at the hearing, although all of the parties of any significance usually have counsel immediately available.

Selection of parties to participate at a hearing is totally at the discretion of the presiding Board member who may choose from among those persons, government agencies, companies and associations who participated in the field investigation or whose special knowledge and aeronautical skills will contribute to the development of pertinent evidence. This discretion provides flexibility to allow participation by such parties as government agencies and consumer groups. Representatives of private litigants have never been permitted to be parties to NTSB hearings, even though they could in some cases provide expertise at least equivalent to that of the designated parties. This policy has been appealed informally to the NTSB on numerous occasions. The Board, however, continues to uphold its decisions, relying upon the policy announced by the Senate Commerce Committee when it issued its report on

¹⁶¹ 49 C.F.R. § 845.10 (1979).

the Independent Safety Board Act of 1974 that NTSB hearings "should be pursued entirely apart from civil suits arising out of the same accident."¹⁶²

As a practical matter, the decisions as to the scope and depth of the accident investigation are determined long before the NTSB public hearing, generally at the Pre-Hearing Conference. Only the presiding Board member can vary these decisions and it would be a startling exception for him or her to do so. NTSB public hearings do not develop probative evidence. Nevertheless, since they do provide an excellent overview of all the evidence gathered up to that point in the inquiry, representatives of the potential litigants are usually present in the audience. As in most administrative hearings, however, the rules of evidence are so loosely applied that the record is misleading if attempts are made to utilize it in civil proceedings either directly or for purposes of impeachment.

Similarly, the authentication and handling of evidence throughout the entire NTSB accident investigation process leaves much to be desired when viewed from the perspective of a litigating attorney. Transmission forms are completed when wreckage is returned to the owner or his insurance carrier. The Board will certify that copies of material in its files are from the accident record, but an attorney cannot depend upon the NTSB to make observations of evidence or to record data that will satisfy a court's scrutiny. This is one of the strongest arguments in favor of allowing litigants earlier access to the investigation process than that presently permitted.

Requests for the reconsideration or modification of Board reports "will be entertained only if based on the discovery of new evidence or on a showing that the Board's findings, as to the facts, conditions, and circumstances of the accident, are erroneous."¹⁶³ These criteria do not include errors made by the Board in the analysis of facts. The record will stand unless changes in the evi-

¹⁶² Also, four days prior to the scheduled public hearing in New York on the Eastern Airlines Flight 66 crash at John F. Kennedy Airport on June 24, 1975, an attorney sought a temporary restraining order delaying the hearing until the court could rule upon his motion for party status. The request was denied on the basis that there was no "irreparable damage" and that there was no showing that the plaintiff could be successful on the basic motion.

¹⁶³ 49 C.F.R. § 845.41 (1979).

dence are accepted. For this reason it is important that parties with an interest in the case comply with the Board's rules which specifically invite recommendations as to the proper conclusions to be drawn from the evidence. If a party does not have an interest in the case prior to the analysis of the facts, it is usually impossible for him to influence the findings. This time period can be as short as one or two weeks after the accident has occurred.

In recent years the Safety Board has occasionally followed public hearings in major cases with "technical review conferences" at which the evidence adduced at the hearing is informally discussed. This policy has not been abandoned, contrary to the desires of such groups as the Air Line Pilots Association.

It is also important to note that no system exists to return to the NTSB or to any other safety agency the investigative findings and judicial determinations which are made in the course of aviation accident litigation. This is unfortunate since investigations conducted by attorneys often uncover factors which were not subject to NTSB inquiry, factors which have meaning for accident prevention as well as evidentiary value in an adversary proceeding. Unless the attorney has some unique motivation for notifying the NTSB of his findings, this information may be lost.

Availability and Use of Information Derived During NTSB Investigations

Information compiled in the course of an aviation accident investigation will normally fall into one of the following categories at the NTSB: the factual file which consists of factual determinations made by investigators, reports which have been adopted by the Board, transcripts of depositions and hearings, graphs, sketches, weather sequence reports, flight and maintenance records, and other evidentiary materials; the correspondence file, which includes communications with the Board regarding the accident under investigation; the data recordings file, which includes cockpit voice tapes, air traffic control tapes and flight data recorder tapes and foil records; the analysis file, which contains a collection of material used internally by the Board to process the accident record from the field investigation phase to the publication of a determination of probable cause; and the recommendations file, which contains a collection of Board safety recommendations and com-

ments from affected parties. In addition, two automatic data retrieval systems pertaining to aviation accidents are used by the NTSB, one of which stores all of the coded information while the other deals with recommendations.

Information in the factual and correspondence files is readily available to the public. Data recordings, however, are normally returned to the owner of the aircraft or destroyed after the investigation. Copies are retained for training purposes and for use in future investigations, but these are not generally made available to the public. Until recently, the contents of the analysis file had been considered privileged information within the exceptions of the Freedom of Information Act.¹⁶⁴ The Board has now found it easier to excise material from these files when it is requested rather than to deny all access. The accident file computer tapes are available from the NTSB as noted in the Appendix to Part 801 of the Board's rules. The staff of the Information Systems Division of the Board has also been helpful to organizations attempting to establish their own computer-based information retrieval systems. The Board will honor requests for computer runs of accident data provided that they have a direct bearing on accident prevention. This usually excludes requests from attorneys who desire to use the information in litigation. Retrieval of computerized data from the recommendation file is a recent innovation at the NTSB; hence, its use by outside parties has been limited. It is expected that the same policy will be followed for this information as has been applied to the accident data.

The fundamental question for an attorney is how much of this material can be used for evidentiary or impeachment purposes in the course of developing his case. In Part 45.40 of its rules, the Board has identified two types of reports:

- (a) The Board will issue a detailed narrative accident report in connection with the investigation into those aircraft accidents which the Board determines to warrant such a report
- (b) The probable cause and facts, conditions and circumstances of all other aircraft accidents will be reported in a manner and form prescribed by the Board.¹⁶⁵

The narrative reports referred to in subsection (a) are the so-

¹⁶⁴ 5 U.S.C. § 552 (1976), as amended by Pub. L. No. 93-502 (1974).

¹⁶⁵ 49 C.F.R. § 845.40 (1979).

called "blue cover" reports which contain facts, analysis, findings and a statement of probable cause. The reports of subsection (b) consist of computer briefs which give factual data, probable cause, factors and remarks but no analysis. Prior to the adoption of this concept arguments arose over what constituted the Board "reports." Generally much of what is known today as the "factual file" was deemed inadmissible at trial on the ground of hearsay objections and on the basis of statutory provisions. Today only the report as defined by the Board is inadmissible. This includes only the "blue cover" and "computer brief" reports.¹⁶⁶

The status of data records is presently unclear. To be valid evidence, these recordings must be accompanied by expert testimony or they will have little value to the trier of fact. Although they are available during litigation, they require special and expensive processing. The relaxed NTSB rules regarding testimony of its employees find clear support in the case law. *Beech Aircraft v. Harvey*,¹⁶⁷ *Keen v. Detroit Diesel*,¹⁶⁸ and *Seymour v. United States*¹⁶⁹ are recent decisions which endorse the case upon which the Board relied in formulating its rules, *Kline v. Martin*.¹⁷⁰ *Beech Aircraft* and *Keen* traced the rationale back further to *Berguido v. Eastern Airlines*, a 1963 case.¹⁷¹ The court in *Keen* was particularly articulate in reviewing the history of the NTSB/FAA employee testimony question and was "persuaded that the standards set forth in *Berguido* . . . and *Kline* control in the analysis and interpretation of § 1441(e)."¹⁷² This section reads: "Use of records and reports as evidence.—No part of any report or reports of the Board relating to any accident or the investigation thereof, shall be admitted as evidence or used in any suit or action for damages growing out of any matter mentioned in such report or reports." In other words, the test for admissibility of testimony in

¹⁶⁶ See KREINDLER, *supra* note 13, ch. 18; Galardi, *Use of Civil Aeronautics Board Investigation Materials in Civil Litigation*, 32 BROOKLYN L. REV. 58 (1965).

¹⁶⁷ *Beech Aircraft Corp. v. Harvey*, 558 P.2d 879 (Alaska 1976).

¹⁶⁸ *Keen v. Detroit Diesel Allison*, 569 F.2d 547 (10th Cir. 1978).

¹⁶⁹ *Seymour v. United States*, 15 Av. CAS. ¶ 17,141 (1978).

¹⁷⁰ *Kline v. Martin*, 345 F. Supp. 31 (E.D. Va. 1972).

¹⁷¹ *Berguido v. Eastern Airlines, Inc.*, 317 F.2d 628 (3d Cir. 1963).

¹⁷² *Keen v. Detroit Diesel Allison*, 569 F.2d 547, 551 (10th Cir. 1978); 49 U.S.C. § 144(e) (1976) (§ 304(10)(c) of the Independent Safety Board Act of 1974).

Keen relates to the same criteria as that derived for ascertaining the admissibility of the "report." Anything short of providing an opinion as to the probable cause of an accident would probably be admissible. *Seymour* did not go quite as far in allowing testimony as it not only excluded opinion testimony "when it embraces probable cause of accident"¹⁷³ but also that pertaining to the "negligence of the defendant."¹⁷⁴

Another information availability problem that involves questions of both law and safety is the issue of the confidentiality of communications with investigators. This author, along with many other persons, has been concerned about the threat to safety communications brought about by complete absence of a privilege for accident inquiry interrogation.¹⁷⁵ Such views have been met with objections from respected practicing attorneys who do not believe that significant information to aid in accident prevention could be gained through imposing confidentiality for such communications.

Regardless of which view is correct, it is generally appreciated that due process protections for individuals and organizations can be seriously jeopardized if all participants are not aware of and do not take care to adhere to the same rules regarding confidentiality. The NTSB rules regarding the confidentiality of information contained in any report or document or any other information obtained pursuant to provisions of its enabling legislation are explicit. A request to guarantee the confidentiality of such information must be in writing and must be approved by the Board. The Board may also order, on its own initiative, that such information be withheld to protect the public interest.¹⁷⁶ This policy relates to § 1104 of the FAA Act which deals more with matters affecting United States foreign relations than it does with investigation communications. The language is clearly a remnant of the CAB's earlier functions. In any case, it can be argued that the Sunshine Act has probably negated the dictate of § 1104.

¹⁷³ *Seymour v. United States*, 15 Av. Cas. ¶ 17,141 (1978).

¹⁷⁴ *Id.*

¹⁷⁵ M. Miller, Legal Ramifications of Aircraft Accident/Malfunction Data, Proceedings of the IAS National Systems Reliability Symposium, Salt Lake City, Utah (April 16, 1962); Address by C. Miller, The Engineer, Lawyer and Flight Safety, presented at the SAE-ASNE National Aero-Nautical Meeting, Washington, D.C. (Apr. 9, 1963).

¹⁷⁶ 49 C.F.R. § 831.5 (1979).

A final problem regarding the availability and use of NTSB/FAA accident information surrounds foreign accidents. The interest of the United States in such accidents is extensive because of its citizens' predominance in the manufacture of aircraft used throughout the world. Ninety to ninety-five percent of the free world's air carrier aircraft bear the labels of American companies as do about eighty percent of the free world's general aviation aircraft.¹⁷⁷ Furthermore, United States carriers and aviation corporations operate in all corners of the globe.

Under Annex 13 of the Chicago Convention¹⁷⁸ and upon notification by the state in which the accident has occurred, the state of the aircraft's registration has the right to send an accredited representative to participate in the investigation. The state in which the aircraft was manufactured has a similar right to participate in the investigation upon the invitation of the state in which the accident occurred. The NTSB provides accredited representation through the State Department; however, the Board will often recommend that the task be assigned to FAA personnel. In either instance, employees of the operator or manufacturer or other non-governmental advisors often accompany the government officials.

Until the implementation of the Freedom of Information Act and the recognition of its ramifications, accredited United States representatives freely returned with factual information from foreign accidents. If requested, they would provide assurances to the state in which the accident occurred that the privileged nature of the information would be respected.¹⁷⁹ The turning point in this procedure came in 1974 at the time of the Paris DC-10 crash. NTSB investigators and advisors in this and other foreign accidents had been subjected to extensive depositions, and the existence of notes and other documentation acquired during discovery proceedings became a matter of international concern. Finally, the Safety Board instructed its personnel not to bring back any documentation. The Board later unsuccessfully sought statutory relief in this area with an amendment to the Government in the Sun-

¹⁷⁷ Telephone conversation with James McCarthy, Air Transp. Ass'n of America (Aug. 2, 1979). Personal communication with Steven Varsano, General Av. Mfgs. Ass'n (Aug. 2, 1979).

¹⁷⁸ See ICAO, STANDARDS AND PRACTICES, *supra* note 117.

¹⁷⁹ See *id.* § 5.12 for current provisions in this regard.

shine Act proposed by Senator Edward Kennedy.¹⁸⁰

The September, 1979 meeting of the Accident Prevention and Investigation Division of the ICAO contained an agenda item, " 'Freedom of Information' Legislation and Annex 13, Paragraph 5.12—Disclosure of Records." There was discussion regarding a working paper which proposed as follows:

- a) Confirm the need for specification 5.12 of Annex 13, regarding the privilege status to be granted certain investigation records; and
- b) Consider possible solutions to the problems which may arise when the State conducting the investigation releases documentation and Final Reports to States with "Freedom of Information" legislation.

The working paper cited above also was explicit in stressing the need for "frank, open, and full information" and the "need to protect [investigators'] sources of information" in the interest of accident prevention. It acknowledges the increasing incidence of "Freedom of Information" legislation throughout the world but states that disclosure of accident investigation records for purposes other than those of accident and incident investigation, including litigation, contravenes the spirit and objective of Annex 13. An interim solution which has been proposed and sometimes followed is the forwarding of information only to embassies of the state in which the accident occurred and the state of the aircraft's registration, with instructions to limit review to specified persons. Whereas these concerns were discussed by the meeting's participants, no significant progress was made. Thus we see that questions which have been raised in the United States during the last two decades concerning the dissemination of information are now expanding into the international sphere of aviation activity.

Scope, Depth and Accuracy of Investigations

No discussion of accident investigation would be complete without addressing the importance of the quality of accident investigations and of the process of gathering evidence. Certain investigative functions, such as witness interrogation and a records search, must be begun as soon as possible after the accident. Some tasks,

¹⁸⁰ Proposed amendment to S. 2661 by Sen. Kennedy (D. Mass.), 94th Cong., 2d Sess. (1976).

such as the reconstruction of impact dynamics, can only be accomplished at the scene of the accident. Some work, such as the examination of failed components, must be done with the utmost care at the accident scene and in the laboratory. If the investigation is not done quickly and correctly, the damage to future interests and rights may be irreversible.

Thus it becomes important to distinguish the roles of the NTSB, the FAA and attorneys in the investigation. The reputation of the agency notwithstanding, the NTSB takes a relatively broad view of the scope appropriate for accident investigations. The FAA takes a narrower view based upon the Federal Air Regulations and upon its own operating manuals. Even when it presumably is functioning on behalf of the NTSB, the FAA inquiries are more limited and more enforcement-oriented than those of the NTSB investigators. The attorney involved in the investigation also takes a narrower view than does the NTSB, but he will usually embark upon a more in-depth investigation than either the NTSB or FAA. He tends to focus on the theory that will secure recovery or aid the defense of his client, although he must look at other theories if they are raised by his adversary. In any event it is not surprising that as a matter of policy the NTSB does not acquire, retain or protect information to the degree required by other persons, including litigants.

In terms of the accuracy of the investigations, the situation is somewhat different. Errors by any party can be damaging to that party or to others. Unfortunately, in the areas of scope, depth and accuracy, the NTSB investigations in recent years have been deficient. The reasons for this are many but they do not include personal performance factors related to the individual investigators. The professional staff is comprised of highly competent, hard-working persons who are attempting to do a credible job. They suffer not only from the instability of aviation leadership but also from the misallocation of the limited available resources for aviation investigation, resources which have proven inadequate for the numerous and increasingly complex aircraft accidents.

In the fall of 1974, the total number of NTSB personnel was 271, 151 of whom were within the Bureau of Aviation Safety. The technical staff of the Bureau, those whose direct function was

the investigation of aviation accident and follow-up action, numbered 108. This group was composed of sixty-nine air safety investigators who could be expected to spend the vast majority of their time working with field investigations; seventeen technical support staff members, such as laboratory personnel and data analysts; and twenty-two aviation unit supervisors who were all qualified air safety investigators.¹⁸¹ This figure represented ten to twelve percent *fewer* staff members than were present in the Bureau of Safety in the CAB in 1963. A study of the 378 NTSB personnel employed during the fall of 1978 produced figures similar to those in 1974. One hundred eleven persons were assigned to or were available for aviation investigations. This figure included fifty-two air safety investigators whose responsibilities were solely aviation-oriented. Thirty-seven support personnel and twenty-two supervisors also could participate in such investigations. However, these support personnel and supervisors all belonged to groups which had multiple responsibilities. The one exception, the chief of the Aviation Accident Division, held the *only* pure aviation supervisory position in the entire NTSB.

A Freedom of Information Act request propounded in the course of this study revealed that the NTSB was unable to provide data for actual expenditures of manpower related to aviation prior to February, 1977.¹⁸² The only full year for which data was available was the 1978 fiscal year (October, 1977 through September, 1978); this data indicated that 341,553 man-hours had been expended for all activities applied to aviation. Accident/incident investigations occupied 178,228 man-hours or approximately fifty-two percent of total aviation activity. Using an average of 1,920 hours of technical staff man-hour expenditures per year, these figures translate into ninety-three equivalent staff members working on accident/incident investigations out of a total aviation effort of 177 equivalent personnel (including administrative support).

Thus it appears that at best the NTSB is not applying more

¹⁸¹ These and subsequent data in this discussion are based upon studies made by the Office of the Director, BAS, in 1973 and 1974, identification of staff members shown in NTSB telephone directories in October '74 and September '78 and inquiries of personnel who had retired from NTSB where the names of assignments were not recognized by the author. Due allowances were made for job title and organizational changes.

¹⁸² Letter to C. O. Miller from B. Michael Levins (May 7, 1979).

manpower to aviation now than it did in 1974, and that the amount is probably significantly less. In 1974, all of the 151 people in the BAS were working in aviation, and some proportion of the remaining eighty non-BAS NTSB personnel also would have been working in that area. Certainly such a combined effort would exceed that of the 177 personnel shown in the NTSB data for 1978. Further, it is reasonable to conclude that the nominal increase in the number of technical staff available for aviation matters in 1978 (111 compared to 108) is offset by the divided technical and supervisory responsibility of the fifty-nine people who support the fifty-two field investigators.

The resource situation is not expected to change. Not only is the 1980 socio-economic climate unfavorable to increased agency budgets, but the safety success record in aviation also remains relatively high. Except for the occasional high visibility accident, such as the Chicago crash of the DC-10 where no bounds on investigative resources were observed, there is no perception within NTSB management that an air safety manpower problem exists. The result has been a diminished level of quality in investigations, especially those in general aviation.

To the professional air safety investigator, this has become a matter of frustration; it is so severe that several highly qualified investigators from both the NTSB and FAA have taken "early retirement." To aviation attorneys, it has meant an increasing burden to pursue investigations earlier and to use more expert assistance. To the public, it has led to a misplaced confidence in the investigative job performed by the NTSB and FAA.

CONCLUSION

Tracing the history of the aviation accident investigation process in the United States reveals several precepts which have stood the test of time. First and foremost among these is the "blood priority" syndrome.¹⁸³ When catastrophes such as the Paris or Chicago DC-10 crashes catch the public eye because of the high number of fatalities, or when an accident such as the Cutting crash arouses public interest because of the notoriety of one of the deceased persons, an investigation will flourish and changes will probably

¹⁸³ Address by Maj. Gen. John D. Stevenson, *Ideas and Realities*, presented at the First Ann. USAF Safety Cong., Riverside, Cal. (Sept. 12, 1960).

result. Another influence upon accident investigations is the location and timing of a given accident. The TWA B727 crash which occurred while the aircraft was approaching Washington's Dulles airport came in the same year as the Paris DC-10 crash, a time when the political climate was sensitive.¹⁸⁴ In contrast, when a Boeing 747 flown by the Iranian Air Force crashed in Spain on May 9, 1976, due most likely to its being struck by lightning, a comprehensive technical investigation ensued but follow-up action has been lax.¹⁸⁵ Although this accident had significant ramifications for air safety, few persons, even those within the aviation community, have heard about the incident. Litigation related to the incident was minimal since only seventeen persons were killed. Ultimately, three climates exist which govern the investigative process: technological, political and legal. The attorney or air safety investigator must be aware of all three and must act accordingly.

History also has demonstrated that there is a need for *independent* investigations. Little argument exists today for the NTSB concept of investigative authority separate from the regulatory agency. The increasing complexity of the aviation system and its growing interaction with the law has produced better qualified and better organized participants in the system. More attorneys trained in the field of aviation appear at hearings and trials, and more air safety specialists are becoming knowledgeable of the law. Communications have improved immeasurably in this area, due to the annual air law symposiums sponsored by the Southern Methodist University School of Law, the Lawyer Pilots Bar Association's publications and meetings, and an influx of courses on law and safety at the university level. In addition, all parties to major aviation inquiries now have standby go-teams of their own; until only a few years ago such preparation was limited to the airline operators, the pilots' union, and to the large manufacturers.¹⁸⁶

¹⁸⁴ NTSB Aircraft Accident Rep. No. AAR175-16, Trans World Airlines, Boeing 727-231, N 54328, Berryville, Virginia (Dec. 1, 1974).

¹⁸⁵ NTSB Special Investigation Rep., Wing Failure of Boeing 747-131 Near Madrid, Spain (May 9, 1976); Letter to C. O. Miller from Chairman James B. King, NTSB (Jan. 30, 1979).

¹⁸⁶ It is not uncommon now in a major crash to see included among the parties the general aviation manufacturer, the Professional Air Traffic Controller Association (PATCO), the Association of Flight Attendants (AFA), the Aircraft Owner & Pilots Association (AOPA), the National Business Aircraft

The public's right and desire to be informed continues to grow. Influenced by the questions raised by Watergate, there is no longer any doubt that a government investigation must be open and that views of the participants can be expected to surface publicly during the resulting litigation, if not sooner. Closely allied to this precept is the continuing deep-rooted association of the concepts of cause and blame in the minds of the public, the media and members of the Congress. No change in this attitude has been discernible over the years. Finally, civil challenges to administrative procedures associated with investigations continue to provide a dynamic input to improving these procedures. This should not be surprising to any person familiar with the metabolism of law and should reassure others that the democratic process' system of checks-and-balances is alive and well.

The most complex and most difficult problem to be solved is the lack of understanding of the role of causal determination in accident prevention and in legal proceedings. Since the objectives and methodology of a safety investigation differ fundamentally in many respects from those implicit in a legal action, it is desirable to separate safety findings from determinations of legal responsibility to the greatest degree practicable. Today's system at the NTSB to accomplish this is a sham, illustrated by the blame-oriented descriptions used in their accident coding system and the Safety Board's attitudes toward "probable cause."

The deteriorating scope, depth and accuracy of the NTSB/FAA aircraft investigations is approaching the level of a national embarrassment. Instead of being a leader in this field, the United States government seems to be unwilling to provide the resources, leadership or motivation necessary to improve investigative techniques and procedures. A typical example is the well-known deficiency of human factors investigations. Despite repeated identification of the problem, little attention has been given to it at the NTSB or FAA.¹⁸⁷

Association (NBAA), and the Aviation Consumer Action Project (ACAP). All of these have made special effort to train personnel for investigation participation.

¹⁸⁷ Address by C. Miller, Legal and Litigation Barriers to the Communication of Human Factors Safety Information, presented at the Flight Safety Foundation Seminar, Williamsburg, Va. (Nov. 12, 1974); proceedings of the Air Line Pilots Association Symposium on Human Factors, Washington, D.C. (Feb. 8, 1977).

An imbalance exists among the parties to the field investigations of general aviation accidents and, to a lesser extent, among the parties to NTSB public hearings. As long as the NTSB or FAA refuse to allow more representatives of injured parties to participate in the field investigations, the NTSB/FAA investigations will continue to be deficient in the gathering and protection of evidence. Plagued by this system, the adversary process in civil litigation cannot function to give adequate social justice. The current public hearing process is now acceptable since the only cases that reach such a forum have so many adverse parties little additional evidence would surface through more non-governmental representation. Also, the media's investigative reporters tend to put pressure on NTSB panel chairmen during the large public hearings; hence they have become parties representing the public.

There is reason to believe that because of the excessive workload, the inadequacy of investigations, or the questionable nature of some board members' qualifications, some views of parties associated with a particular case are not communicated or understood by the Board's members. Petitions for reconsideration of the determination of cause or, more importantly, for changes in the report to present a fuller presentation or discussion of the facts, appear to be treated summarily and without the objectivity which normally characterize the Board's actions. It is rare for the Board to present in its report the contrary views of competent parties unless one of the members elects to write a minority opinion supporting such a view. Such dissents are infrequent.

The difficulty of assuring meaningful fact-finding and communication of information from foreign accident investigations continues to place unfair burdens on United States citizens and manufacturers and operators involved in litigation. Procedures for any attorney representing such clients are *ad hoc* at best. An unfair ethical burden is placed upon the investigators who may wish to communicate information which may aid in preventing accidents when they return from a foreign investigation, as legal and procedural constraints inhibit their doing so. This is a variation of the larger continuing problem of restrictions on the exchange of safety information within the aviation community because of legal constraints, real or imagined.

Closely associated with this problem is the parochialism that runs between many accident investigators and attorneys associated with aviation cases, as neither recognizes the mutually supportive objectives of accident prevention and social justice. The restrictions on information access and control, which vary somewhat between the two groups, are not recognized by the participants themselves nor are they acknowledged in their published doctrines.

Lastly, a mechanism for feedback does not exist, or is not being utilized, to communicate valuable accident prevention information which is gained during investigations made for purposes of litigation. On numerous occasions during this author's experience as a consultant, facts were discovered, analyses performed and general (not just judicial) agreement was reached as to facts which were different from those found in the NTSB docket. It would appear that the NTSB would be interested in such information, not only to improve the accuracy of the accident record but also to indicate the quality of their investigations.

Recommendations

To be effective, a recommendation must not only describe the task to be done with an achievable reasonableness, but it also must identify the party who will assume this task. Since the NTSB is the government agency with the statutory responsibility for aviation accident investigation, most of the recommendations presented below fall within their realm. Other readers of this study who agree with the author should also do what they can to endorse or otherwise implement the following recommendations.

The NTSB should issue a notice of proposed rule-making, citing their past use of the concept of "probable cause" and inviting comments in anticipation of a change in the definition, or, preferably, the elimination of the requirement through legislation. The NTSB should convert its data collection and recording system to an "all cause" concept if causal determination is to be maintained or, in the alternative, it should change to a remedial action concept for recording investigation results to determine the potential *preventive* steps identified in the accident. The NTSB should effect a procedure so that all parties whose reputation, potential recovery or liability may be at issue are allowed to be represented at all phases of the investigation by qualified

air safety investigators. In conjunction with this procedure, the Society of Air Safety Investigators should develop and implement a certification program for air safety investigators.

The NTSB should include summaries in its reports of the significant views of qualified parties which are contrary to the opinions of the NTSB staff or to findings by the Board. Use of the technical review conferences after the field fact-finding investigation and the public hearing is encouraged. The NTSB should delineate policies and procedures to define the minimum standards acceptable for all investigations, especially those in the human factors area. If existing economic constraints preclude satisfactory adherence to the desired standards of investigative proficiency, the total number of cases investigated by the NTSB should be reduced and the remaining cases should be remanded to other agencies which may apply whichever investigative efforts they choose. A distinction between these cases should appear in the NTSB annual summaries of accidents. The NTSB should form an Aviation Accident Investigation Advisory Committee, possibly part of a larger group, whose membership would be drawn from the public-at-large as well as from the legal advisors and other parties who normally participate in Board investigations and hearings. Alternatively, the Board should hold bi-annual meetings to ensure that it receives comprehensive feedback concerning the conduct of its operations.

The NTSB should modify its organization to encompass an aviation program manager concept, ensuring that adequate emphasis is given to aviation matters. The senior official over aviation matters should be placed at a civil service grade level equivalent to that of intermodal functional chiefs. This would not only ensure that quality air safety investigation advice is being given but would also be an effective point of contact and coordination on aviation safety technical matters. The American Bar Association, particularly the Aviation Committee, should develop a process so that findings concerning aviation accidents which are derived from litigation can be fed back to NTSB accident records, even if the system is nothing more than a citation reference system. A committee of the Society of Air Safety Investigators, comprised of both air safety specialists and attorneys or, alternately, a joint venture of the

Society with the Aviation Committee of the American Bar Association, should develop a policy statement regarding privilege and the acquisition and dissemination of information for the purpose of accident prevention as opposed to litigation. This statement should also address the issues raised by foreign accidents.

