

CIVIL AERONAUTICS BOARD
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ADDRESS

by

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CIVIL AERONAUTICS BOARD

before the

TENTH A.T.P.A. SAFETY FORUM
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The present procedures governing civil aircraft accident investigation in the United States are the direct result of legislation passed by Congress and supported by a hard-core of practical working knowledge gained through the years. Federal authority delegating responsibility for the investigation and cause determination of civil aircraft accidents in the United States was initially bestowed by Congress on the Civil Aeronautics Board, by the Civil Aeronautics Act of 1938, and reiterated again in successor legislation, the Federal Aviation Act of 1958, under which the Board now operates.

Thus, all legal authority for the powers exercised by the Civil Aeronautics Board in the field of air safety, and specifically in the task of investigation and cause determination of U. S. Civil aircraft accidents, stems directly from Section 701 of the Federal Aviation Act of 1958. I cite it here for your future reference so that you may better understand the legislative basis of CAB's authority and responsibility in this field.

"It shall be the duty of the Board to-

1. Make rules and regulations governing notification and report of accidents involving civil aircraft;
2. Investigate such accidents and report the facts, conditions, and circumstances relating to each accident and the probable cause thereof;
3. Make such recommendations to the Administrator as, in its opinion will tend to prevent similar accidents in the future;
4. Make such reports public in such form and manner as may be deemed by it to be in the public interest; and
5. Ascertain what will best tend to reduce or eliminate the possibility of, or recurrence of, accidents by conducting

special studies and investigations on matters pertaining to safety in air navigation and the prevention of accidents."

In passing, I should like to point out that the 1958 Act removed a dual responsibility held by the Board up until that year. You may recall that prior to 1958 the Board, in the field of air safety, was not only responsible for accident investigation and cause determination but also had the task of promulgating the U. S. Civil Air Regulations. Under the new Act this latter authority was removed from the Board and given to the Federal Aviation Agency, thus eliminating a situation which was repeatedly criticized by ~~your Association~~ ^{VARIOUS ORGANIZATIONS} as a conflict of interest.

Suffice to say that the Board today has no dual responsibilities or entangling alliances that can affect or influence its clinical approach to aircraft accident investigation and cause determination.

We have indeed come a long way from those early years of our existence when the investigation of aircraft accidents was a small and comparatively unnoticed operation of the Board's Bureau of Safety. In those days, as many of you well know, three or four investigators, whose principal qualification for the job was that they were pilots, would meet at the scene of an accident to examine the wreckage, usually a DC-2 or 3 or Lockheed Loadstar, and try to discover enough evidence that would lead to the cause of the accident.

In contrast, today an air carrier accident investigation usually involving a four-engine aircraft capable of carrying considerably more than one hundred persons, represents a major effort by the Board and utilizes a minimum staff of 15 to 25 skilled CAB aeronautic technicians working under a nationwide news spotlight.

The procedures followed by the Board have been marked by constant change through the years in order to meet the constant change that is the trademark of air transportation. The staff of the Board's Bureau of Safety has grown from a

few score pilots to nearly two hundred persons, more than one-half of whom are skilled and specialized in the many and varied aeronautics fields.

Before I discuss the procedures and techniques employed during an on-the-scene investigation, permit me to digress for a moment and discuss briefly the philosophy of accident investigation.

It is no secret that the compelling reason for accident investigation is to permit the determination of probable cause. Establishment of the sequence of events of accident causation is fundamental to the prevention of aircraft accidents. If we know and understand the many conditions which may combine in sequence and lead to an accident, we can apply corrective action and prevent the recurrence of similar type accidents.

Now consider for a moment that accident prevention through accident investigation is the negative approach to the solution of the problem since our prevention activities are predicated on the occurrence of an accident.

When an accident occurs it is of immediate and paramount importance ~~that~~ ^{AND} segments of the entire ^{industry} industry musters ^{its} combined strength to ~~exercise~~ ^{DETERMINE} that act of omission or commission that precipitated the accident.

Conversely it is extremely difficult to generate the same degree of intense interest in the accident that has not yet occurred.

Just last Monday the Bureau of Safety instituted the team concept of accident investigation. The concept is not new - it has been discussed for years, but only now have circumstances and resources permitted us to implement our new procedures. Ultimately, four or five teams will be formed and each team will function as a unit from the time of accident notification until the accident report is submitted for Board approval.

There are several advantages which accrue under the team concept. It allows the Bureau to organize along functional lines rather than job specialties; it permits the fixing of responsibility throughout the investigation. It provides the

Investigator in Charge with Board specialists on a permanent basis under his direct supervision until the investigation is completed.

We are convinced that this system will improve our investigative techniques and shorten considerably the time required to prepare and submit our reports for Board approval.

As in the past, we strongly urge the various "interested parties" such as the operators, manufacturers, ~~you~~ ^{the various} and ~~other~~ associations to participate in the investigation. I am convinced that this participation assures a thorough and complete investigation.

The Bureau must, however, impose certain restrictions on your participation. Let me explain these restrictions and I am certain that you will agree they are necessary.

First, unless the "interested parties" representative can join the investigation and remain a member of the team throughout the investigation, we do not desire his part-time help, for the various CAB Group Chairmen base their activity schedule and progress on manpower availability.

Secondly, we want "indians". We always have a surplus of "chiefs." Seriously, accident investigation is hard work and the hours are long. We want men who are interested - yes, even dedicated - who recognize the importance of the effort.

Lastly, there must be a complete and free exchange of information. The Bureau has established procedures whereby all factual information will be made available to the group on a daily basis and in written form at the conclusion of the Field phase of the investigation. We recognize and acknowledge the need for rapid dissemination of factual information gathered during the course of the investigation.

Many of you unfortunately are familiar with the Bureau's organization of an investigation. However, for the edification of those of you who have never been exposed to an accident investigation, I ask the indulgence of the initiated.

Upon accident notification, local law enforcement agencies are contacted and security is established. Occasionally, but with the best of intent,

absolute and complete security is sometimes compromised to permit the recovery of bodies, however, through the efforts of our Human Factors Group great strides have been made to alleviate this condition.

Concurrently with the securing of the wreckage, our Investigation Team proceeds to the accident site and makes an on-the-scene appraisal of the accident and determines the equipment required to conduct the investigation. As soon as possible thereafter an organizational meeting is held and generally the following Groups are formed:

Operation, Air Traffic Control, Weather, Witness Interview, Structures, Systems, Powerplants, Human Factors, and Maintenance Record Review.

At this organizational meeting the spokesman or coordinator for each "Interested Party" is requested to supply a representative for each Group.

It should be noted here that this action conforms with the procedural regulations of the Board under Part 303 which initially became effective February 15, 1957. This regulation for the first time set forth the concept of "Parties to the Investigation"; to allow representatives of parties involved in the accident to participate actively in the investigation.

At the conclusion of the organization meeting each Group usually comprised of 6 to 8 members under the guidance of a CAB investigator proceed with their particular phase of the investigation.

At regular scheduled intervals the Investigator in Charge convenes a meeting at which all Groups report their progress and findings. This meeting provides a general exchange of information so essential to the conduct of a thorough investigation.

As each Group concludes their phase of the investigation, the CAB Group Chairman prepares a factual report of the findings which is submitted to each member of the Group for his concurrence.

As you can readily see, it is essential that each Group Member remain with the Group throughout the entire investigation in order that his concurrence or objection to the Group report is based on personal knowledge obtained during the course of the investigation.

This is a skeleton outline of the procedures we follow in organizing and conducting an investigation of an accident involving any large civil aircraft. These procedures, which are unduplicated in any other country of the world, have been criticized both in Congress and in the industry, and occasionally by aviation organizations and the public. It is said that the CAB, which is an agency of the Congress, should conduct its own accident investigation in the public interest and without outside assistance. It has also been charged that every Party of Interest invited to participate in an accident case, such as the Operator, the aircraft manufacturer or the Air Line Pilots Association, participate only because of the opportunity to serve its own ends and see to it that no blame is associated with their own particular organization. In actual practice we have found these charges to be entirely over-emphasized; instead, we have learned that by pooling the best engineering and technical knowledge from all the specialized fields concerned with air transportation, we have developed a better method of investigation and a more knowledgeable technique in investigation work. Revision of Part 303 effective March 21, 1959, some two years after its original enactment by the Board, stated:

"The purpose of permitting the participation of 'Parties to the Investigation' is not to enhance the position of these parties or to confer any 'rights' upon them, but rather to assist the Board in developing a more complete factual record. The manufacturer, the air carrier, or any other group designated as a 'Party to the Investigation' must be in a position to contribute specific, factual information or skill which would not otherwise be supplied. Thus, all of the available fact-finding sources outside of the Board's own staff are utilized as a means of developing a complete, factual record."

Indeed, this statement of philosophy and policy is perhaps a classic example of the democratic processes in action in a free society.

While the concept of the group method of aircraft accident investigation evolved through the years, and under the Board's sponsorship became a reality in 1957, equally significant developments were taking place in the techniques used by the Board in its investigative work. Today it is standard practice for the Board investigators to utilize all types of scientific data, laboratory equipment, engineering and flight tests, medical facilities and many other tools of modern science.

Congress has recognized the need of the Board in its accident investigative work, to call upon any highly qualified specialized service of the government and recently passed an amendment to the Federal Aviation Act giving CAB these broad powers. An excellent example of this cooperation was evident at the Florida-Northwest crash when the Board utilized the services of the U. S. Army, which supplied from five to nine helicopters daily, which were necessary to reach the scene of the accident, and also search for missing aircraft parts.

The Army also airlifted the entire wreckage of the Boeing 720 from its inaccessible site in the Everglade swamps to the Air Field at Opa Locka, Florida, some 30 miles distant. The Air Force photographed the entire wreckage, as they have on many other accidents.

The facilities of the Federal Bureau of Investigation and the Bureau of Standards were placed at our disposal during this investigation.

We have come a long way in developing our accident investigation procedures from the early years of the Civil Aeronautics Act. I would emphasize above all else, that our procedures are altered and amended and under constant self-examination as we move to keep abreast of the dynamic industry of which we are a part .