

**NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C. 20594**

**PUBLIC HEARING CONCERNING
AVIATION IMAGE RECORDING**

**OPENING STATEMENT
BY MEMBER CAROL CARMODY
CHAIRMAN, BOARD OF INQUIRY
JULY 27, 2004**

Good morning ladies and gentlemen. I am Carol Carmody, Member of the National Transportation Safety Board, and Chairman of this Board of Inquiry.

We are convening a two-day hearing today on the subject of cockpit image recorders. I welcome all of you here today, and those who are watching these proceedings by way of a live web cast on our web site, www.nts.gov.

The purpose of this hearing is to explore feasibility, potential benefits and drawbacks of requiring crash-protected cockpit imaging systems, often called video recorders. Over the next two days we will hear from regulators, manufacturers, investigators and pilots to consider the issue from various points of view.

Subjects to be explored in this hearing include the following:

- the technical feasibility and cost associated with capturing, storing, and analyzing image data obtained from commercial aircraft cockpits;
- the applicability of technologies like data encryption and how this technology may be used to protect and secure image (and other) data;
- the potential accident investigation benefits of image recorders;
- the legal and privacy concerns of flight crews, air carriers, regulatory agencies and international organizations; and
- the regulatory difficulties surrounding implementation of image recorders.

This is not a new issue for us. Over the last 5 years, the Safety Board has conducted several symposia where individuals from industry, unions, and government made presentations pertaining to the issues of cockpit image recorders. The first of these, the May 1999 *International Symposium on Transportation Recorders*, was cosponsored by the Safety Board and the International Transportation Safety Association. This symposium prompted the FAA to form a committee composed of industry, labor, and government experts to examine emerging flight data recorder technology, including cockpit image recording devices.

This Committee – the Future Flight Data Collection Committee - issued its final report on December 4, 2001. Although the Committee indicated that it was not in their mandate to react to the Board’s video recorder recommendations, it did conclude that technical advances made image recording feasible.

A second NTSB symposium, *Transportation Safety and the Law*, held in April 2000, included presentations specifically addressing privacy issues, employee rights regarding recorder data, and the need for cockpit video recorders.

Finally, in June 2003, the Safety Board and the Society of Automotive Engineers cosponsored the *SAE Vehicle Recorder Topical Technical Symposium*. Again, industry provided significant input regarding the merits of video and image recording devices as well as data privacy issues. These symposia and the work of the Future Flight Data Collection Committee have significantly expanded the transportation community’s understanding of the technical and public policy issues inherent in the use of cockpit video recording devices.

The Safety Board has issued two sets of recommendations aimed at requiring cockpit image recorders – one for smaller turbine-powered aircraft that currently have no flight recorders, and the other for large, transport-category aircraft that already have data and voice recorders.

The Board first formally recommended crash-protected image recorders on February 8, 2000, following its investigation of the 1997 crash of a Cessna 208B Caravan near Montrose, Colorado. The accident aircraft was operated under 14 *Code of Federal Regulations* (CFR) Part 135 as an on-demand air charter for the U.S. Bureau of Reclamation. The accident airplane was neither equipped nor required to be equipped with a flight data recorder (FDR) or a cockpit voice recorder (CVR). There were no recorded communications between the accident aircraft and air traffic control or other aircraft. These limitations on the data available hampered investigators in their ability to reconstruct the events that led to the accident, although they were able to determine a probable cause. The Safety Board therefore issued safety recommendations asking the FAA to incorporate recorder standards which had been developed by the European Organization for Aviation Equipment (A-99-59), and to require the installation of a crash-protected video recording system on all turbine-powered, nonexperimental, nonrestricted-category aircraft in 14 CFR Part 135 operations that are not currently required to be equipped with a flight recorder (A-99-60).

Since these recommendations were issued, the Safety Board has investigated more than 100 additional accidents involving commercial aircraft not equipped with recorders, including the October 25, 2002, crash of a Raytheon (Beech) King Air near Eveleth, Minnesota, which killed Senator Paul Wellstone and seven other persons. In December, 2003, the Board issued Recommendation A-03-62 asking the FAA to require a crash-protected image recording system on all turbine-powered, nonexperimental, nonrestricted-category aircraft that are manufactured after January 1, 2007, that are not equipped with an

FDR, and that are operating under 14 CFR Parts 135 and 121 or that are being operated full-time or part-time for commercial or corporate purposes under Part 91. This recommendation superseded Recommendation A-99-60 that I previously described. The Board also issued Recommendation A-03-64, which called for retrofitting image recorders in those types of aircraft manufactured before January 1, 2007.

In 2000 the Board addressed the larger category aircraft. Recommendation A-00-30 asked the FAA to require the retrofit of existing aircraft operated under 14 CFR Parts 121, 125, or 135, and currently required to be equipped with a CVR and digital flight data recorder (DFDR) with a crash-protected image recorder system. Safety Recommendation A-00-31 was identical, except it covered newly manufactured aircraft.

These recommendations were based on the Board's investigations of a number of accidents in which CVR and DFDR information alone did not provide definitive information on crew actions, the cockpit environment, or graphic information displayed to the flight crew. These accidents included the 1996 crash of ValuJet 592 into the Everglades near Miami, Florida; the 1997 crash of SilkAir flight 185 near Palembang, Indonesia; the 1998 crash of Swissair Flight 111 near Peggy's Cove, Nova Scotia; and the 1999 crash of EgyptAir Flight 990 south of Nantucket Island, Massachusetts. These accidents claimed all 550 persons aboard the 4 aircraft.

The Board added the issue of cockpit image recorders to our list of Most Wanted Safety Improvements.

At this point, I would like to introduce the other members of the Board:

Dr. Vernon Ellingstad, Director of Research and Engineering

Ron Battocchi, General Counsel

**Robert MacIntosh, Chief Technical Advisor for International
Safety Affairs for Aviation Safety**

**James Cash, Chief of the Vehicle Recorder Division and Hearing
Officer**

The Board will be assisted by a Technical Panel consisting of the following Safety Board staff:

Doug Brazy, Office of Research and Engineering

Dr. Deborah Bruce, Office of Research and Engineering

Dr. Evan Byrne, Office of Aviation Safety

Dennis Grossi, Office of Research and Engineering

Christopher Julius, Office of General Counsel

Sarah McComb, Office of Research and Engineering

Also here today is my special assistant, Mr. Jack Orlando.

Mr. Ted Lopatkiewicz from the Safety Board's Public Affairs Office is here to assist members of the news media.

Mrs. Carolyn Dargan and Ms. Jan Delorge are present to provide administrative support as needed. They will also be providing copies of exhibits to the witnesses.

The Safety Board's rules provide for the designation of parties to a public hearing. In accordance with these rules, those persons, governmental agencies, companies, and associations whose participation in the hearing is deemed necessary in the public interest and whose special knowledge will contribute to the development of pertinent evidence are designated as parties. The Safety Board designated the parties assisting in this hearing in accordance with these rules.

As I call the name of each party, would the designated spokesperson please give his or her name, title, and affiliation for the record:

Federal Aviation Administration, Mr. Steve Wallace
Air Transport Association, Mr. Basil Barimo
Regional Airline Association, Mr. David Lotterer
Air Line Pilots Association, Captain Lindsay Fenwick
Allied Pilots Association, Mr. John David
National Air Transportation Association, Ms. Jacque Rosser

On July 14, 2004, the Board of Inquiry held a prehearing conference in this facility. The Safety Board's Technical Panel and representatives of the parties to this hearing attended the conference. At that time we outlined the areas of inquiry and the scope of the issues to be explored at this hearing, and finalized the selection of the witnesses to testify on these issues.

Copies of the witness list developed at the prehearing conference are available in the foyer. There are numerous exhibits that will be used in this proceeding. Copies of the exhibits may be ordered through our Public Inquiries Branch at 202-314-6551. Copies of presentations at this hearing will be found on the Board's web site, www.nts.gov.

We have selected the witnesses testifying at this hearing because of their ability to provide the best available information on the issues related to aviation image recorders.

The witnesses will be questioned first by the Board's Technical Panel, then by the designated spokesperson for each party to the hearing, finally followed by the Members of the Board of Inquiry.

As Chairman of the Board of Inquiry, I will be responsible for the conduct of the hearing. I will make all rulings on the admissibility of evidence, and all such rulings will be final.

The record of the investigation including the transcript of the hearing and all exhibits entered into the record will become part of the Safety Board's public docket and will be available for inspection at the Board's Washington office. Anyone wanting to purchase the transcript, including parties to the investigation, should contact the court reporter directly.

Mr. Cash would you please call the first witnesses.

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