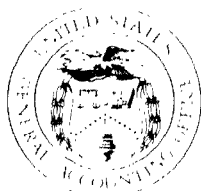


September 1990

MILITARY AIRLIFT

Information on Gander Crash and Improved Controls Over Military Charters



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National Security and
International Affairs Division

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September 11, 1990

The Honorable John Conyers, Jr.
Chairman, Legislation and
National Security Subcommittee
Committee on Government
Operations
House of Representatives

The Honorable C.W. Bill Young
House of Representatives

In response to your requests, we have developed information on the U.S. government's participation in the Canadian investigation of the 1985 crash of an Arrow Air aircraft in Gander, Newfoundland. Specifically, this report addresses (1) the roles of the U.S. federal agencies that assisted the Canadian Aviation Safety Board in its investigation, (2) the cargo that was loaded aboard the plane, and (3) the actions taken to ensure the safety and security of U.S. military airlift charters in response to our report, Military Airlift: Management Controls Over Charter Airlift Need to Be Strengthened (GAO/NSIAD-87-67, Mar. 6, 1987).

Results in Brief

Several U.S. federal agencies were involved in helping the Canadian Aviation Safety Board with the crash investigation. National Transportation Safety Board officials participated in all aspects of the investigation. A Federal Aviation Administration official was part of a team that conducted investigations in Egypt, Italy, and West Germany. The Armed Forces Institute of Pathology and the Federal Bureau of Investigation helped identify crash victims, and the Institute also performed autopsies. In addition, the Federal Bureau of Investigation assisted in obtaining details on the condition of the aircraft before it departed for Gander from members of the flight crew that had flown the aircraft from Cairo, Egypt, to Cologne, West Germany.

According to the manifest, cargo such as tool boxes, a camera, a repair parts kit, footlockers, communication antennae, medical records, books, and charts were on the aircraft. The manifest does not indicate that explosives were on the aircraft.

Our review indicated that most of the recommendations in our March 1987 report have been implemented, and controls over the safety of military airlift charter aircraft have improved. For example, we found that

the Military Airlift Command and the Military Traffic Management Command have improved flight safety and quality by improving the way they manage and monitor charter aircraft.

Background

On December 12, 1985, a DC-8 aircraft chartered from Arrow Air crashed and burned at Gander, Newfoundland, Canada. The crash killed 248 military personnel from the 101st Airborne Division, Fort Campbell, Kentucky, and 8 crew members from Arrow Air. The aircraft was en route from Cairo, Egypt, to Fort Campbell, Kentucky, with stops in Cologne, West Germany, and Gander, Newfoundland. The aircraft had been chartered by the Multinational Force and Observers, an independent international organization established to supervise the implementation of the security arrangements established by the Egyptian-Israeli Treaty of Peace. The United States and several other countries agreed to send troops to the Middle East to help enforce this treaty.

The nine-member Canadian Aviation Safety Board investigated the crash under provisions outlined in International Civil Aviation Organization procedures. Although the Board was unable to determine the exact sequence of events that led to this accident, the majority of the Board's members believed that most of the evidence supported the conclusion that shortly after lift-off, the aircraft experienced an increase in drag and reduction in lift, which resulted in a stall at low altitude from which recovery was not possible. They determined that the most probable cause of the stall was ice contamination on the leading edge and upper surface of the wing. Other possible factors, such as a loss of thrust from an engine and inappropriate takeoff speeds, may have compounded the effects of the contamination.

The other members of the Board concluded that the wings of the aircraft were not contaminated by enough ice for ice contamination to be a factor in the accident. They believed that an on-board fire and a loss of power caused the aircraft to crash.

A former Canadian Supreme Court Justice also reviewed the case. He concluded that nothing in the material the Board reviewed indicated the cause of the accident.

Scope and Methodology

To accomplish our objectives, we interviewed officials and reviewed available documents at Headquarters, Military Airlift Command, Scott Air Force Base, Illinois; Headquarters, Military Traffic Management

Command, and Criminal Investigation Division, Department of the Army, Falls Church, Virginia; and the Federal Aviation Administration, National Transportation Safety Board, Federal Bureau of Investigation, Department of State, and Armed Forces Institute of Pathology, Washington, D.C.

We also contacted other agencies, such as the Central Intelligence Agency, Defense Intelligence Agency, U.S. Customs Service, and the Air Force Inspection and Safety Center to determine what role they had, if any, in the investigation. Our review indicated that none of these agencies had any involvement in the investigation. Appendix I provides additional information on our review.

We conducted our review from December 1989 through May 1990 in accordance with generally accepted government auditing standards. As requested, we did not obtain agency comments on this report. However, the views of responsible agency officials were sought during the course of our work, and they generally agreed with the facts as presented.

Unless you publicly announce its contents earlier, we plan no further distribution of this report until 30 days after its issue date. At that time we will send copies to the Director, Office of Management and Budget; the Secretaries of Defense, Transportation, the Army, the Navy, and the Air Force; the Director, Federal Bureau of Investigation; the Administrator, Federal Aviation Administration; the Chairman, National Transportation Safety Board; and appropriate congressional committees. We will also make copies available to others.

This report was prepared under the direction of Nancy R. Kingsbury, Director, Air Force Issues, who may be reached at (202) 275-4268 if you or your staff have any questions concerning this report. Other major contributors to this report are listed in appendix II.



Frank C. Conahan
Assistant Comptroller General

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Abbreviations

DOD	Department of Defense
FAA	Federal Aviation Administration
FBI	Federal Bureau of Investigation
MAC	Military Airlift Command
MTMC	Military Traffic Management Command
NTSB	National Transportation Safety Board

The Gander Crash and Investigation

Standards and recommended practices for aircraft accident inquiries were first adopted in 1951 at the Convention on International Civil Aviation and were designated as Annex 13 to the Convention. Annex 13 states that “the State in which the accident occurs will institute an inquiry, the State in which the aircraft is registered shall be given the opportunity to appoint observers to be present at the inquiry and the State holding the inquiry shall communicate the report and findings in the matter to that State.”

Canadian Aviation Safety Board Investigated the Accident

The Canadian Aviation Safety Board is an independent federal government body that reports annually to the Canadian Parliament. At the time of the accident, the Board consisted of nine members that set overall policy, adjudicated accident and incident reports and their associated findings and recommendations, and determined when all reports were to be released. The Board’s regulations stated that decisions were to be made by majority vote of the members present.

Most Members Concluded That Ice Contamination on the Wing Probably Caused the Accident

Five members of the Board concluded that most of the evidence supported the conclusion that shortly after lift-off, the aircraft experienced an increase in drag and reduction in lift, which resulted in a stall at low altitude from which recovery was not possible. The most probable cause of the stall was determined to be ice contamination on the leading edge and upper surface of the wing. Other possible factors, such as a loss of thrust from an engine and inappropriate takeoff speeds, may have compounded the effects of the ice contamination.

Other Members Concluded That an On-Board Fire Caused the Accident

The other members of the Board believed that the wings of the aircraft were not contaminated by enough ice for ice contamination to be a factor in the accident. They concluded that an on-board fire and a loss of power caused the aircraft to crash.

Justice Believes That Neither Conclusion Was Supported

The Canadian Minister of Transport asked Justice Willard Estey, formerly of the Supreme Court of Canada, to conduct a review of the entire record of the Gander accident investigation and provide a report on whether any further investigation or inquiry was warranted. Justice Estey concluded that nothing in the material the Board reviewed indicated the cause of the accident. Justice Estey also concluded that “no investigation or inquiry conducted five years after the accident is going to contribute to the public interest in the safety of aviation.”

U.S. Agencies Were Involved in the Crash Investigation

Several U.S. federal agencies were involved in the crash investigation because of the provisions outlined in Annex 13 to the International Civil Aviation Organization and because the Canadian Aviation Safety Board requested their assistance. These agencies included the National Transportation Safety Board (NTSB), the Federal Bureau of Investigation (FBI), the Federal Aviation Administration (FAA) and the Armed Forces Institute of Pathology.

NTSB Participated Extensively in Investigation

NTSB appointed a representative that was responsible for overseeing all U.S. personnel involved in the investigation. The representative appointed a team that consisted of technical advisors from NTSB, FAA, McDonnell Douglas (the manufacturer of the aircraft), Pratt & Whitney (the manufacturer of the aircraft's engine), Arrow Air, and the U.S. Army. The team investigated the crash site, examined records, and interviewed personnel at Arrow Air. They also assisted in examining the engines and other aircraft hardware. During the Board's 8-day public hearing on the investigation, NTSB was permitted to examine witnesses and had full access to all factual data collected by the team.

NTSB staff reviewed and commented on the draft report of the investigation before the final report was issued. NTSB staff told us they did not find any problems with the draft or final reports.

FBI Helped Identify Remains and Interviewed Previous Flight Crew

The FBI assisted the Canadian Aviation Safety Board by interviewing members of the flight crew that had flown the aircraft from Cairo, Egypt, to Cologne, West Germany. The purpose of the interviews was to obtain details on the condition of the aircraft before it departed for Gander. Also, a representative of the FBI's identification division observed the removal of some of the bodies to the temporary morgue facilities at Gander Airport. In addition, the FBI assisted in the body identification efforts by providing fingerprint comparisons on all remains. After the fingerprint comparisons were completed, the FBI continued to help identify the bodies by gathering fingerprints from personal items and analyzing hair samples.

FAA Was Part of Investigation Team

An FAA official was part of the investigation team. This team conducted interviews with (1) maintenance and ground crew personnel in Rome, Italy; Cologne; and Cairo; (2) control tower officials in Cologne; and (3) Multinational Force and Observers officials in Cairo. The team also

interviewed military personnel that were flown from Fort Campbell, Kentucky, to Cairo on the same aircraft that subsequently crashed.

Armed Forces Institute of Pathology Led the Body Identification Efforts

One of the prime missions of the Armed Forces Institute of Pathology is to provide assistance in the medical investigation of all fatal military aircraft accidents. During the investigation, the Institute performed autopsies and led the efforts to identify the bodies.

Other Federal Agencies Were Not Involved in the Investigation

As part of our review, we contacted several other U.S. government agencies to determine what roles they had, if any, in the investigation of the crash. These agencies included the Central Intelligence Agency, Defense Intelligence Agency, U.S. Customs Service, and the Air Force Inspection and Safety Center. However, officials at those agencies said they were not involved. We also asked the National Security Council whether it was involved, but we had not received a response by the time we issued this report.

Manifest Details Cargo Aboard the Aircraft

We were asked to try to determine what cargo was loaded on the plane. We located a copy of the manifest of cargo on the aircraft. The manifest indicated that, in addition to troop duffel bags, 48 pieces of cargo were on the aircraft. These items consisted of tool boxes, a camera, a repair parts kit, footlockers, communication antennae, medical records, books, charts, training aids, legal forms, and a picture in a frame.

The FAA official that was part of the investigation team told us that he confirmed through interviews that some of the baggage loaded aboard the aircraft contained the troops' paperwork (dental records and other pertinent information). The manifest noted that 41 duffel bags were not on the aircraft because the aircraft's cargo hold was filled. The manifest did not indicate that explosives or any other volatile material were on the aircraft. Further, various officials told us they believe that explosives or any other volatile material were not on the aircraft.

Improvements Made in Safety and Security of U.S. Military Airlift Charters

In December 1985 we were asked to evaluate the Department of Defense's (DOD) policies and procedures for chartering commercial aircraft and monitoring their performance, including whether they comply with FAA safety regulations. We issued a report on our findings in March 1987.

The two DOD transportation agencies responsible for charter operations are the Military Airlift Command (MAC) and the Military Traffic Management Command (MTMC). MAC, an Air Force command, negotiates annual contracts for long- and short-range international passenger and cargo airlift as well as domestic and Alaskan operations expected to last 90 days or more. MTMC, an Army command, arranges domestic passenger airlift and air taxi operations expected to last less than 90 days through air transportation agreements with several airlines and air taxi operators.

We found that both MAC and MTMC needed to improve procurement and oversight procedures to ensure flight safety and enhance the quality of charter airlift. Specifically, the commands needed to make improvements in the following areas.

- Airlift capability surveys¹ were not as thorough and not performed as frequently as they should have been and did not include foreign airlines.
- Specific safety clauses were not included in contract agreements with foreign air carriers.
- MAC's ramp inspection² program did not cover MTMC's charter airlines and air taxi operators.
- Waivers of seat-row spacing criteria were being granted but not properly controlled.
- The process of providing feedback on passengers' comments needed to be improved to address specific safety concerns raised during a flight.
- FAA and DOD were not communicating effectively.
- FAA's security classification assessments³ were not being provided to DOD.

¹Airlift capability surveys are reviews of contractor and FAA records of operations, training, insurance, maintenance, safety, and other items. The surveys also provide for discussions between MAC survey personnel and FAA officials responsible for the airline being surveyed.

²A ramp inspection is a visual check of the aircraft performed by an experienced Air Force representative and an airline representative.

³Public Law 99-83, § 551 (a), codified at 49 U.S.C. App. § 1515 (a)(1), International Security and Development Cooperation Act of 1985, requires the Secretary of Transportation to conduct security assessments of the effectiveness of security measures maintained at foreign airports.

We recommended in our report that MAC and MTMC strengthen passenger charter procurement and oversight procedures. We also recommended that the Secretaries of Defense and Transportation work together to improve communication on air safety issues and coordination of foreign airport security evaluations and classifications.

Many of our recommendations have been implemented, and other actions have been taken to improve procurement and oversight of military charter airlift. Some of these improvements are as follows.

- MAC and MTMC have strengthened their oversight of airlift contractor agreements by conducting surveys of potential foreign and domestic contractors.
- Safety clauses specifically making contractors responsible for flight safety have been added to MTMC's airlift agreements.
- Detailed procedures have been established for approving waivers of the seat-row spacing criteria.
- Standard guidelines and permanent policies have been developed to inform contractors of passenger and baggage weight criteria.
- MAC and MTMC are periodically reminding personnel and contractors that hazardous substances are not allowed on passenger aircraft.
- MAC's ramp inspection program has been expanded to over 150 commercial airports and now includes MTMC charter aircraft.
- The process of providing feedback on passengers' comments has been improved by focusing passengers' attention on various safety and quality of service issues.

The DOD Inspector General conducted an independent follow-on assessment of military charter issues and found that the recommendations had been implemented with very few exceptions.

In addition to implementing our specific recommendations on flight safety and security issues, DOD and FAA have made other improvements.

DOD has established an Air Carrier Survey and Analysis Office to help ensure high standards of safety and airworthiness from commercial air carriers doing business with DOD. The office has five teams that survey the operation and maintenance of DOD charter aircraft, including oversight over FAA certification, dispatch operations, facilities, marketing plans, training programs, aircraft inspection programs, quality assurance, weight and balance determinations, maintenance control, and en route support. The survey results are discussed with local FAA officials,

communicated to DOD users, and input into the Air Carrier Analysis Support System.⁴

DOD and FAA have developed policies and procedures to improve communications through interagency liaison arrangements between MAC and FAA. Also, MAC and FAA have established liaison officers to ensure a continuing dialogue and exchange of information on areas such as equipment, certification methods, acquisition, research and development, training, personnel, international operations, and emergency actions. The results of FAA inspections and actions involving air carriers used by DOD are also shared with DOD.

Public Law 99-83, International Security and Development Cooperation Act of 1985, requires the Secretary of Transportation to conduct assessments of the effectiveness of security measures maintained at foreign airports. These assessments are now coordinated with DOD.

⁴The Air Carrier Analysis Support System is an automated system that includes all information on DOD air carriers. The system's objectives are to provide comprehensive and accurate information to DOD and FAA users in assessing a carrier's capability to complete assigned transport missions safely.

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