

Log 2548



National Transportation Safety Board

Washington, D.C. 20594
Safety Recommendation

Date: March 30, 1995

In reply refer to: A-95-38 and -39

Honorable David R. Hinson
Administrator
Federal Aviation Administration
Washington, D.C. 20591

On February 16, 1995, at 2027 eastern standard time, a Douglas DC-8-63, operated by Air Transport International (ATI), crashed as the flightcrew was attempting to make a 3-engine takeoff from runway 01 left at Kansas City International Airport (MCI), Kansas City, Missouri.

The airplane was to be ferried to a maintenance facility in Massachusetts because the No. 1 engine on the airplane could not be operated due to a mechanical problem. The first takeoff attempt was rejected because of directional control problems on the runway. On the second takeoff, directional control problems also occurred, and the captain rotated the airplane just before the airplane departed the paved surface off the left side of the runway. The tail of the airplane struck the runway and a tail skid mark was found on the paved surface and in the sod to the left of the paved surface.

The operational procedures at ATI for a three-engine takeoff begin by statically setting near maximum power on the symmetrical engines and partial power on the asymmetric engine. After brake release, maximum power should be set on the symmetrical engines. As soon as possible, the asymmetric engine should be smoothly advanced toward maximum power during airplane acceleration to the precomputed ground minimum control speed. The asymmetric engine should be set at maximum power upon reaching this speed. Rudder pedal steering should be used to maintain directional control. Normal rotation procedures should be followed at the precomputed rotation speed.

According to the ATI DC-8 Cockpit Operating Manual, specific three-engine limitations include a maximum enroute speed of 0.84 mach, a maximum takeoff weight of 260,000 pounds, a flap setting of 12 degrees, a maximum takeoff crosswind component of 10 knots, and a maximum tailwind component of 5 knots. Also, all three-engine takeoffs must be made from a dry runway with anti-skid operative, and all air conditioning and anti-ice systems must be off. Lastly, no three-engine takeoff shall be made unless VFR conditions exist at the airport of departure and exist or are forecast for the airport of destination. All of these conditions were met at the time of the attempted takeoff.

Witnesses reported that they observed the airplane rotate to a higher-than-normal pitch attitude. The flight data recorder (FDR) data revealed that the rotation occurred at 103 knots or about 20 knots before the 3-engine takeoff rotation speed (123 knots). The airplane briefly became airborne while in an unusually high pitch attitude. It then rolled, catching a wingtip on the ground during a slight descent. The airplane was destroyed by impact forces, and all three flightcrew members were fatally injured. Weather conditions were reported as good.

The Safety Board's investigation of this accident is continuing, and the probable cause(s) have not been determined. However, the investigation has raised several safety concerns that the Safety Board believes the Federal Aviation Administration (FAA) should take immediate action to correct.

As a routine part of this investigation, the Safety Board interviewed the FAA principal operations inspector (POI) for ATI at the Little Rock, Arkansas, Flight Standards District Office (FSDO). The POI has been employed by the FAA as an Aviation Safety Inspector (ASI) for about 12 years, all of which have been at the Little Rock FSDO.

The POI was trained and received a type rating in the DC-8. In addition, he has ratings in the Douglas DC-3 and the Falcon 10. He has had past experience as a POI with a 14 Code of Federal Regulations (CFR) Part 135 operator. He stated that he has about 13,000 hours of total flight time. He has been the POI for ATI for about 1 year, and the ATI certificate is the only one he oversees. He is responsible for oversight of the certificate by himself; however, two other ASIs in the Little Rock FSDO occasionally help with oversight activities. These ASIs are not qualified in DC-8s. The POI depends upon the Denver FSDO for geographic assistance, since ATI training occurs in Denver, Colorado. The interview revealed, in part, the following information:

The POI was asked about the effectiveness of the crew resource management (CRM) program that ATI had begun offering its flightcrews in January 1995. He was unaware that the company had a formal CRM program and he knew nothing about the classes.

The POI stated that he realized that the company had grown considerably in the past several years, and that he was concerned about its growth. However, when he was asked to describe ATI policies concerning its crew pairing program, he replied that he was not aware of such a program. The Safety Board believes that crew pairing is an important safety issue for an expanding company. It also believes that the POI should be familiar with the FAA's crew pairing standards, especially at a growing company.

The POI was asked to describe the ATI ground training program (this training also has been conducted in Denver since last spring) and how often he monitors it. He replied that he has not monitored ground training, and that he did not know whether the Denver FSDO monitors such training. ATI uses retired United Airlines instructors as simulator instructors in Denver. The POI replied that he had no knowledge of such an activity. However, a letter from the POI to ATI authorizing this practice was found in ATI training records.

The POI was unaware of other functions that the Denver FSDO performs concerning oversight of ATI. He was shown a letter from the ATI training department (dated February 2, 1995) that indicated that two out of 278 ATI airmen proficiency check rides had been conducted by FAA personnel. The POI believed that those numbers were probably accurate. Concerning proficiency check rides, he stated that ATI bypasses him entirely in the scheduling and performance of these check rides and that this procedure expedites this check ride activity. He was unfamiliar with proficiency check ride failure criteria as outlined in the FAA Inspector's Handbook 8400.10. Also, he had no knowledge of what amount of training, if any, could be provided during proficiency check rides.

The POI for ATI was asked how often he had visited the ATI Denver training facility and the Denver FSDO, and he indicated "about three or four times last year." He indicated that funding problems in his office restricted his ability to travel to Denver from Little Rock. He was asked how often ATI conducted pilot safety meetings, and he thought that they did, but was unaware of how often. The investigation revealed that ATI does not hold formal safety meetings. He was asked to provide copies of the ATI check airmen authorization letters, and he produced

seven letters from his files. Company records show that 17 check airmen are currently performing check ride duties.

Based on the interview, the Safety Board believes that the POI's surveillance of ATI and his knowledge of the company were weak. Because of the growth of the company since 1993, and other factors such as the separate locations of the POI and the training center, he has been unable to monitor the safety level of ATI adequately.

ATI has experienced three catastrophic DC-8 accidents since 1991.¹ The Safety Board concluded that the probable causes were related to operational factors in the first two accidents.

In the accident that occurred in New York the Board determined that:

The probable causes of this accident were improper preflight planning and preparation, in that the flight engineer miscalculated the aircraft's gross weight by 100,000 pounds and provided the captain with improper takeoff speeds; and improper supervision by the captain. Factors relating to the accident were an improper trim setting provided to the captain by the flight engineer, inadequate monitoring of the performance data by the first officer, and the company management's inadequate surveillance of the operation.

In the accident that occurred in Ohio, the Safety Board determined that:

The probable cause of this accident was the failure of the flightcrew to properly recognize or recover in a timely manner from the unusual aircraft attitude that resulted from the captain's apparent spatial disorientation, resulting from physiological factors and/or a failed attitude director indicator.

Although the analysis of the circumstances of the recent accident is not complete, operational factors, such as computation errors and procedural discrepancies, are involved in the accident sequence of events.

¹Brief of Accident, JFK International Airport, New York, Air Transport International, March 12, 1991, NYC91-F-A086; Aircraft Accident Report, Loss of Control and Crash, Swanton, Ohio, Air Transport International, February 15, 1992, NTSB/AAR-92/05; and Kansas City International Airport, Missouri, Air Transport International, February 16, 1995, DCA95-M-A020, the accident currently under investigation.

ATI experienced much growth since 1993. For instance, 27 of the 64 line captains currently flying for ATI were hired since 1993, 75 of the 80 line first officers were hired since 1993, and 46 of the 73 line flight engineers were hired since 1993. Recently, ATI's operating certificate was reissued by the FAA, allowing it to carry passengers. In fact, it does so on some of the military contract flights that make up approximately 15 percent of its missions.

Because of ATI's growth rate, the common operational thread that appears to tie the three accidents together, and the apparent weak surveillance and oversight provided by the POI, the Safety Board believes that the FAA should take immediate action to examine ATI training, operational philosophy, and management oversight. In addition, the FAA should immediately examine the effectiveness of the oversight process of the Little Rock and Denver FSDOs. This examination of the company and the Little Rock and Denver FSDOs should be accomplished by FAA personnel not associated with any of these entities.

Lastly, all line ATI flightcrews are considered qualified to perform engine-out ferry flights, as long as they have been trained to do so in the simulator and appropriate engine-out ferry preflight procedures are followed. The captain involved in the Kansas City accident had a total of 3129 hours of flying time as a DC-8 captain and had just completed his probationary period with ATI. The first officer had been a line pilot with ATI for 4 months and had a total of 171 hours of DC-8 flying time. The flight engineer had been a line flight engineer with the company for 4 months also, and had a total of 218 hours of DC-8 flying time.

The McDonnell Douglas Aircraft Company and most operators of three or four-engine airplanes require that only a specially trained cadre of training, flight test, or standardization flight crewmembers be allowed to perform such engine-out operations. Considering the unusual nature of engine-out operations and the relative infrequency of the need for such operations, the Safety Board believes that limiting the engine-out qualified crewmembers within an organization to those with the most flying experience is critical.

Therefore, the National Transportation Safety Board recommends that the Federal Aviation Administration:

Conduct an immediate in-depth inspection of Air Transport International (ATI) to examine training, operational philosophy, and management oversight. Also, as part of this inspection, examine the effectiveness of

the oversight of ATI by the Little Rock and Denver Flight Standards District Offices. (Class II, Priority Action) (A-95-38)

Limit operations of engine-out ferry flights to training, flight test, or standardization flightcrews that have been specifically trained in engine-out procedures. (Class II, Priority Action) (A-95-39)

Chairman HALL, Vice Chairman FRANCIS, and Member HAMMERSCHMIDT concurred in these recommendations.

By: 
Jim Hall
Chairman