



National Transportation Safety Board

Washington, D.C. 20594
Safety Recommendation

Date: April 26, 1989
In reply refer to: A-89-22 and -23

Mr. Robert E. Whittington
Acting Administrator
Federal Aviation Administration
Washington, D.C. 20591

On February 8, 1989, Independent Air, Inc., flight 1851, a Boeing 707-331B, N231T, with 3 flight crewmembers, 4 flight attendants, and 137 passengers on board, crashed while on descent to Santa Maria Island in the Azores, Portugal. Flight 1851 was a charter flight, conducted under the provisions of Title 14 Code of Federal Regulations (CFR) Part 121, operating between Bergamo, Italy, and the Dominican Republic, with a refueling stop in Santa Maria. All 144 persons on board were killed, and the airplane was destroyed.

Flight 1851 was inbound to the Santa Maria VOR, 1/ located at the Santa Maria airport, and was informed to expect the ILS 2/ runway 19 approach. The published minimum altitude depicted on the approach chart for the inbound route segment was 3,000 feet msl. 3/ The airplane struck the only mountain on the island, Pico Alto, about 20 feet below the peak at an approximate altitude of 1,750 feet msl.

On February 19, 1989, Flying Tigers flight 066, a Boeing 747-200, N807FT, with three flight crewmembers and one mechanic aboard, struck a hill approximately 8 miles short of runway 33 at the Kuala Lumpur International Airport, Kuala Lumpur, Malaysia. Flight 066 was a scheduled cargo flight, conducted under the provisions of 14 CFR Part 121, operating between Singapore and Hong Kong, with an intermediate stop in Kuala Lumpur. All four persons aboard were killed, and the airplane was destroyed by impact forces and the postcrash fire.

At the time of the accident, flight 066 was proceeding direct to the Kayell NDB 4/, the final approach fix for the NDB runway 33 approach that flight 066 had been cleared to execute. The published minimum altitude pertaining to the final approach fix was 2,400 feet msl; the minimum descent altitude for the approach was 550 feet msl. The airplane struck the ground approximately 1 mile before reaching the final approach fix, at an altitude of about 450 feet msl.

1/ VOR--very high frequency omnidirectional range station.

2/ ILS--instrument landing system.

3/ msl--mean sea level.

4/ NDB--nondirectional radio beacon.

Although both accidents are currently being investigated by foreign authorities, the Safety Board has been actively involved through its accredited representatives. The Safety Board is concerned that both flightcrews failed to adhere to the published standard instrument approach procedures. The preliminary evidence obtained from the investigations of both accidents indicates that a misunderstanding may have developed in the exchange of communication between the flightcrews and the controllers. In both instances, the misunderstanding apparently involved altitude clearances in the terminal environment and resulted in the flightcrews descending below the altitude(s) prescribed on the instrument approach chart. Radar services were not available at the Santa Maria airport; primary radar service only was available at Kuala Lumpur.

The Safety Board believes that unique operating conditions can exist in the terminal environment of foreign airports, and that flightcrews should be adequately apprised of and be vigilant for these operating conditions. Difficulties associated with this environment include unfamiliar phraseology and dialect that could result in a lack of clear and understood communications between the pilot and air traffic controller. Also, flightcrews operating in a radar environment in the United States are accustomed to receiving radar vectors to intercept the final approach course, which obviates the need to complete the full approach procedure. In contrast, operations at many foreign airports are conducted in a nonradar environment and require flightcrews to fly the complete instrument approach procedure, including the procedure turn. Also, air traffic controllers in the United States routinely descend a flight to the minimum vectoring altitude, which may be lower than the minimum safe or sector altitude or lower than the initial approach fix altitude, as depicted on the approach chart. Consequently, flightcrews must not become predisposed to the type of air traffic control service experienced in the United States when preparing for an instrument approach to foreign airports.

Although both accidents occurred during the descent to the initial approach phase of the flight, the same operational difficulties apply to the departure phase of the flight when similar increased vigilance must also prevail. The Safety Board believes that the circumstances of these accidents indicate a need for increased emphasis on the difficulties posed by the operating environment when instrument flight operations are conducted at foreign airports, and the necessity for increased vigilance on the part of flightcrews. Accordingly, the Safety Board believes that the Federal Aviation Administration (FAA) should issue an air carrier operations bulletin to require its principal operations inspectors and their assistants to emphasize to their operators the unique operating conditions at foreign airports, and the need for heightened awareness and increased vigilance by flightcrews when conducting instrument approach and departure procedures at these airports.

The Safety Board believes that the training programs and operating procedures of operators engaged in international flight operations under provisions of 14 CFR Part 121 should be reviewed to ensure that adequate discussion is given concerning foreign airport operations. For example, the Safety Board believes that the training programs should stress thorough briefings by the captain before departure and arrival and that such briefings be reemphasized in operating practices. Furthermore, flightcrews should be advised to be alert to and to question any altitude clearance that is lower than the prescribed altitude on an approach chart, en route chart, or standard

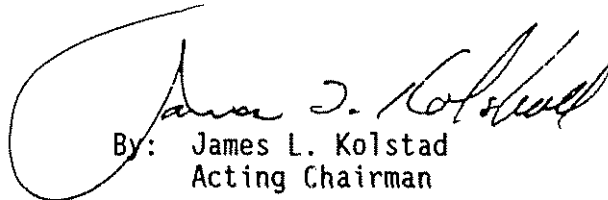
instrument departure (SID) procedure. Training programs should also emphasize the importance of situational awareness by flightcrews when flight operations are conducted at foreign airports where radar services may be limited or nonexistent and where unfamiliar dialect and phraseology used by air traffic control personnel increase the likelihood of being misunderstood by flightcrews.

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

Issue an air carrier operations bulletin requiring principal operations inspectors assigned to U.S. operators engaged in international flight operations under 14 CFR Part 121 to emphasize to the operators the unique conditions of instrument flight operations at foreign airports, and the need for increased vigilance by flightcrews when conducting instrument approach and departure procedures at foreign airports. (Class II, Priority Action)(A-89-22)

Require principal operations inspectors assigned to U.S. operators engaged in international flight operations under 14 CFR Part 121 to review their operators' training programs and operating procedures to verify that the programs and procedures are adequate to safely conduct instrument flight operations at foreign airports. (Class II, Priority Action)(A-89-23)

KOLSTAD, Acting Chairman, and BURNETT, LAUBER, NALL, and DICKINSON, Members, concurred in these recommendations.


By: James L. Kolstad
Acting Chairman