

Log 1792
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NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C.

ISSUED: April 19, 1985

Forwarded to:

Honorable Donald D. Engen
Administrator
Federal Aviation Administration
Washington, D. C. 20591

SAFETY RECOMMENDATION(S)

A-85-32 and -33

The National Transportation Safety Board is investigating the facts and circumstances involving an air traffic control (ATC) operational error at Minneapolis-St. Paul International Airport, Minneapolis, Minnesota, on March 31, 1985, at 2105 1/. The operational error resulted in a near collision between an airplane which was taking off and a taxiing airplane which was crossing the active runway.

The near collision involved Northwest Airlines Flight 51 (NW51), a McDonnell Douglas DC-10, and Northwest Airlines Flight 65 (NW65), also a DC-10. NW51 was taking off on runway 29L (see attached diagram) on a scheduled domestic passenger service flight from Minneapolis to Seattle, Washington. NW65 was taxiing to runway 4 for takeoff on a scheduled domestic passenger service flight from Minneapolis to Phoenix, Arizona. Both airplanes were operating on instrument flight rules flight plans. The near collision occurred at the intersection of runway 29L and taxiway C. This intersection is about 6,000 feet from the approach end of runway 29L, and about 4,500 feet from the air traffic control tower cab.

The reported weather at the time of the near collision was 1,900 feet scattered, 4,500 feet scattered, 20,000 feet thin broken, visibility 20 miles and wind direction 340°, at 16 knots. A recent storm which had passed through Minneapolis had left 14 inches of wet snow on the airport. Runway 29R was closed for snow removal; runway 4 was being used for departures and runway 29L was being used for landings. NW51 had requested to use 29L for takeoff because it was longer than runway 4; braking action on the runway 29L had been reported as fair and fair to poor. Taxiway D braking action had been reported as nil.

1/ All times shown are mountain standard time and based on the 24-hour clock.

Preliminary information indicates that NW51 was cleared for takeoff by the local controller at about the same time NW65 was cleared by the ground controller to cross the active runway. The captain of NW51 reported that, upon observing another airplane directly ahead crossing the runway from right to left, he rotated his airplane to take off at a lower than normal airspeed in order to avoid a collision. The captain of NW51 stated that his airplane flew directly over the top of NW65, and he estimated the distance between the airplanes was between 50 to 75 feet. There was no damage to either airplane, and there were no reported injuries to the 235 passengers and 9 crewmembers aboard NW51 nor the 247 passengers and 10 crewmembers aboard NW65. Following the near collision, both airplanes continued to their destinations.

The concurrent takeoff clearance to NW51 and taxi clearance to NW65 apparently were issued as a result of incomplete and/or misunderstood verbal coordination between the local and ground controllers. During the field phase of the investigation conducted in Minneapolis, Safety Board investigators interviewed both controllers on duty at the time of the near collision. The ground controller stated that he had coordinated with the local controller before clearing two preceding airplanes and then NW65 across runway 29L, but he could neither recall the exact phraseology he used nor that he stated the total number of airplanes that he wanted to clear to cross the runway. The coordination was conducted face-to-face between the controllers and not through an interphone circuit -- hence, there is no recording of their conversation. The local controller reported that he could not recall the exact phraseology used by the ground controller when he requested clearance to taxi airplanes across runway 29L, nor could he recall if the ground controller had requested clearance to taxi a specific number of airplanes across that runway.

Both the local and ground controllers stated that coordination procedures used at Minneapolis for clearing planes to cross an active runway include the ground controller's statement of the runway to be crossed, the location of the airplane with reference to a taxiway or intersection, and the type of airplane and operator's name. Additionally, both controllers said that if more than one airplane was involved in crossing the runway that the number is to be specified in the request from the ground controller.

Air Traffic Control Handbook 7110.65D, Chapter 3, Airport Traffic Control - Terminal, requires that "ground control must obtain approval from local control before authorizing an aircraft or vehicle to cross or use any portion of an active runway." This coordination and approval "may be accomplished via verbal means, flight progress strips, other written information, or automation displays. As a minimum, provide aircraft identification and applicable runway/intersection/taxiway...." The handbook does not contain specific procedures and standards or list responsibilities to be used during verbal coordination between the local and ground controllers regarding a request and subsequent approval to cross an active runway as it does for comparable situations involving transfer of control of airplanes and during position relief briefings.

The safety issues raised by runway incursions have been the subject of previous Safety Board Safety Recommendations. On June 8, 1979, the Safety Board issued Safety Recommendations A-79-42 and A-79-43 to the Federal Aviation Administration (FAA) as a result of a near collision between a North Central Airlines DC-9-30 and a Cessna Citation on runway 13 at LaGuardia Airport on June 21, 1978, a near collision involving a Delta Air Lines B-727-200 and a Flying Tiger Lines B747-100 on runway 9 right at O'Hare International Airport on February 15, 1979, and a collision involving a Federal Express Falcon Fan Jet and a Great Western Beechcraft B18 on runway 9 at Memphis International Airport on February 24, 1979. In all three of these occurrences, one airplane was under the control of the local controller, and the other airplane was under the control of the ground controller. In each case, the ground controller had cleared an airplane to taxi on or across an active runway. In two of these, the local and ground controllers did not effect complete coordination.

Safety Recommendation A-79-42 recommended that the Federal Aviation Administration:

Conduct a directed safety study, on a priority basis, to examine the runway incursion problem and to formulate recommended remedial action to reduce the likelihood of such hazardous conflicts. (Class II, Priority Action) (A-79-42)

On August 22, 1979, the FAA's response to the recommendation stated that it had commissioned the Transportation System Center (TSC) to conduct a study on "Runway and Taxiing Transgressions." In addition, the FAA said that it would keep the Safety Board advised of the progress and outcome of the study. On September 26, 1979, the Safety Board advised the FAA that Safety Recommendation A-79-42 was being maintained in an "Open--Acceptable Action" status pending receipt and review of the proposed changes in controller procedures. However, the Safety Board has not been made aware that any substantive actions have been taken to improve coordination procedures. The Safety Board requests that the FAA provide an update of the status of the TSC study and any other actions taken in response to Safety Recommendation A-79-42.

Safety Recommendation A-79-43 recommended that the Federal Aviation Administration:

Alert all controller/pilot personnel that runway incursion mishaps represent a serious safety problem which requires their immediate attention. Special emphasis should be placed on the need for both groups to maintain greater visual surveillance in those taxi operations involving any runway crossing. (Class II, Priority Action) (A-79-43)

The FAA initiated several actions in response to this recommendation which were directed to both air traffic controllers and pilots to increase their awareness of this problem. Two General Notices (GENOT) were issued to remind air traffic controllers that "specific coordination must be accomplished prior to authorizing an aircraft to use any portion of an active runway," and to "ensure that all facility managers/supervisors and specialists are thoroughly apprised of and adhere to the provisions of Handbook 7110.65A, paragraph 971." Also, the FAA revised Advisory Circular AC-90-48, Pilot's Role in Collision Avoidance, to include specific emphasis on visual scanning techniques during airplane taxiing. The Safety Board had classified Safety Recommendation A-79-43 as "Closed-Acceptable Action."

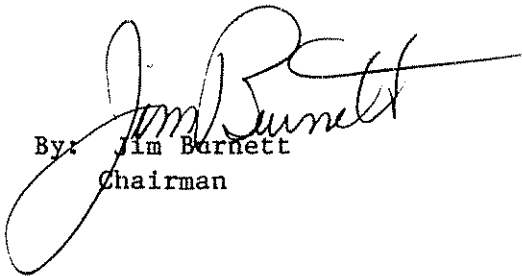
While the investigation of the near collision at Minneapolis is continuing, it already is evident to the Safety Board that a deficiency in coordination between a local and ground controller is one of the significant safety issues involved and that it requires immediate attention. This incomplete or misunderstood coordination appears to have occurred, at least in part, because sufficiently specific procedures, standards, and a listing of responsibilities are not provided for direct face-to-face and/or interphone coordination between local and ground controllers. The Safety Board believes that the FAA should develop and implement procedures and standards, and specify responsibilities to be used during coordination between local and ground controllers similar to those it has developed for use between controllers during the transfer of control of airplanes and during position relief briefings.

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

Issue a General Notice (GENOT) directing the management of all terminal air traffic control facilities to immediately brief all traffic controllers on the importance of complete and accurate coordination between local and ground controllers before taxiing airplanes on or across an active runway. (Class I, Urgent Action) (A-85-32)

Develop and implement, on a priority basis, specific procedures and standards, and specify responsibilities to be used during direct face-to-face and/or interphone coordination between local and ground controllers regarding requests and approvals to clear airplanes to taxi across an active runway. (Class II, Priority Action) (A-85-33)

BURNETT, Chairman, GOLDMAN, Vice Chairman, and BURSLEY, Member, concurred in these recommendations.


By: Jim Burnett
Chairman