



National Transportation Safety Board

Washington, D.C. 20594

Safety Recommendation

Date: April 24, 2000

In reply refer to: A-00-28 and -29

Honorable Jane F. Garvey
Administrator
Federal Aviation Administration
Washington, D.C. 20591

On September 11, 1999, about 1958 central daylight time, a runway incursion involving United Airlines 2 (UAL2), a Boeing 767, and Delta Air Lines flight 1211 (DAL1211), a Boeing 727, occurred at Chicago O'Hare International Airport (ORD), Chicago, Illinois. UAL2, which was being repositioned on the airport by two UAL mechanics, crossed runway 9L without air traffic control (ATC) clearance. DAL1211, which was departing from runway 9L at the time, passed directly over UAL2 at an altitude of 200 to 300 feet. The incident occurred in darkness under visual meteorological conditions. Neither airplane was damaged, and no injuries were reported.

The UAL2 maintenance crew was repositioning the airplane from ORD's International West terminal east to gate C11. The ORD ground controller instructed the UAL2 crew to taxi from the International West terminal to the "north port"¹ via taxiway B, the Bravo bridge, runway 32R, and taxiway H. (See figure 1.) The crew became uncertain of the airplane's position, missed the turn onto taxiway H, and continued along runway 32R toward its intersection with runway 9L. The UAL2 crew and the tower ground controller simultaneously detected the error. As the crew was applying the brakes, the ground controller instructed UAL2 to stop and hold its position on runway 32R. Both the tower local and ground controllers independently observed UAL2's position and decided that the airplane had stopped clear of runway 9L.

Perceiving no conflict, the local controller then cleared DAL1211 for takeoff from runway 9L. Unknown to either of the tower controllers, the UAL2 crew believed that the airplane had entered runway 9L and was partially obstructing it. The UAL2 crew members attempted to contact the local controller when they saw DAL1211 beginning its departure roll on runway 9L but were told to "stand by." To prevent a possible collision, the UAL2 crew decided to taxi ahead

¹ The north port is the entrance to the nonmovement area located between terminals B and C.

and exit runway 9L on the opposite side. The DAL1211 crew statements stated that part way through the takeoff roll they saw UAL2 on the runway ahead of them, at which point, they performed an early rotation and proceeded to pass directly over UAL2 at an altitude of 200 to 300 feet.

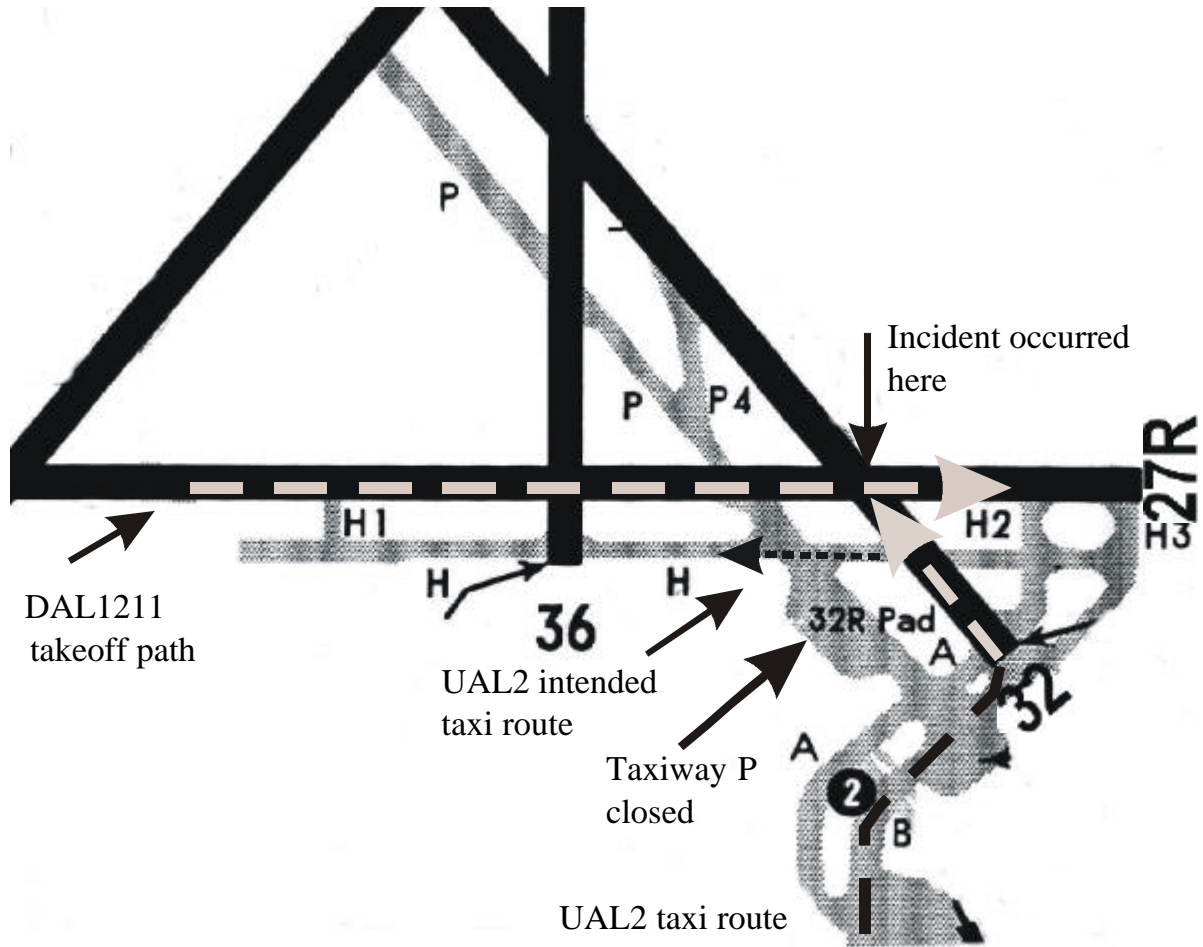


Figure 1. ORD Airport Diagram

Safety Board investigators found that the taxi route assigned for use between taxiways B and H at the time of the incident was not the taxi route usually assigned. Aircraft taxiing between taxiways B and H would normally follow taxiway P; however, a section of taxiway P had been closed for several weeks for reconstruction. The tower controllers elected to use runway 32R as a taxiway to bypass the closed section of taxiway P. The UAL2 crew was not familiar with that part of the route, and no signage identified taxiway H at its intersection with runway 32R.

Investigation revealed that the ORD airport certification manual approved by the Federal Aviation Administration (FAA), pursuant to 14 Code of Federal Regulations Part 139, does not require a sign at the intersection of taxiway H and runway 32R because it is close to the threshold of runway 32R and aircraft do not normally turn off there. However, when the tower controllers elected to use runway 32R to bypass the unusable segment of taxiway P, the intersection of

runway 32R and taxiway H became a frequently used taxi route for aircraft crossing the airport from west to east. The tower controllers involved in this incident reported that they were not aware that the intersection was unmarked, and airport management staff stated that they had not been informed of the tower's plan to route aircraft on runway 32R to taxiway H during the construction period. Following the incident, airport management constructed a temporary sign and installed it at the runway 32R/taxiway H intersection.

The mechanic who was taxiing UAL2 stated that he was looking for a sign identifying taxiway H. Both crewmembers stated that the area was very dark and that they did not see any signs or lights identifying taxiway H. Thus, the absence of appropriate signage and markings at the runway 32R/taxiway H intersection apparently contributed to the loss of situational awareness experienced by the UAL2 crew, causing them to miss the turn onto taxiway H. This potential problem might have been detected and addressed if ORD's ATC managers had informed airport management about its alternate taxi plan and asked that the route be checked for adequate signage and markings. Detection and correction of such problems is important because, especially in unfamiliar situations, flight and ground crews depend on proper signs and surface markings to maintain situational awareness and avoid runway incursions. Therefore, the Safety Board believes that the FAA should amend FAA Order 7210.3, "Facility Operation and Administration," to require tower ATC managers to monitor planned airport construction projects or other activities that may require significant use of nonstandard taxi routes and coordinate with airport management to ensure that such routes are inspected for adequate signage and markings.

Following this incident, UAL conducted a comprehensive review of its internal procedures for ensuring that maintenance personnel assigned to taxi aircraft are provided with appropriate airport surface charts and other information (such as notices to airmen) about construction activities related to airport surface operations. The Safety Board notes that there are no Federal Aviation Regulations that address ground operation of aircraft on an airport without intent to fly and that this lack of regulation essentially leaves the management of such activities up to individual aircraft operators. Safety would be enhanced if all air carriers currently employing nonpilot personnel to move aircraft on airports conducted reviews similar to that performed by UAL following this incident. Therefore, the Board believes that the FAA's Flight Standards service should publish a flight standards handbook bulletin to its principal operations inspectors describing the incident and recommending that carriers review the adequacy of their procedures for ensuring that personnel assigned to move aircraft have received sufficient training and information to do so safely.

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

Amend Federal Aviation Administration Order 7210.3, "Facility Operation and Administration," to require tower air traffic control managers to monitor planned airport construction projects or other activities that may require significant use of nonstandard taxi routes and coordinate with airport management to ensure that such routes are inspected for adequate signage and markings. (A-00-28)

Publish a flight standards handbook bulletin to its principal operations inspectors describing the September 11, 1999, runway incident between Delta Air Lines flight 211 and United Airlines 2 and recommending that carriers review the adequacy of their procedures for ensuring that personnel assigned to move aircraft have received sufficient training and information to do so safely. (A-00-29)

Chairman HALL and Members HAMMERSCHMIDT, GOGLIA, and BLACK concurred with these safety recommendations.

By: Jim Hall
Chairman