

NATIONAL TRANSPORTATION SAFETY BOARD  
WASHINGTON, D.C.

ISSUED: July 17, 1978

Forwarded to:

Honorable Langhorne M. Bond  
Administrator  
Federal Aviation Administration  
Washington, D. C. 20591

SAFETY RECOMMENDATION(S)

A-78-45 and 46

During the National Transportation Safety Board's investigation of the National Jet Services DC-3 accident at Evansville Dress Airport, Evansville, Indiana, on December 13, 1977, the Board found that fire-fighting and rescue vehicles may not be able to use the airport's perimeter road when responding to aircraft emergencies.

Following the accident, a quick response truck attempted to proceed to the accident scene via the airport perimeter road. En route, the truck's rear tires slid off the roadway, which was on top of a 5-foot embankment, and became mired. A second crash/fire/rescue (CFR) truck attempted to reach the scene via off-airport roads, but its driver was unable to locate the scene.

The airport's perimeter road was a privately owned road for many years until the airport was expanded and the road was incorporated into the airport as a perimeter road. Its soil surface has been leveled, smoothed, and, in some locations, topped and dressed with crushed asphalt, stone, sand, and other materials.

Following sustained periods of rain, drainage on portions of the airport is poor because of soil composition and a slate rock bed located beneath the soil. Consequently, the perimeter road can become impassable to all but four-wheel drive vehicles with high-flotation suspension systems. These conditions can impede or prevent vehicles from using portions of the road during emergencies.

To alleviate the drainage problem, a series of terraces are located on the field and a 5-foot embankment protects runway 27 from flooding. Additionally, selected areas of the airport are farmed as a soil conservation measure.

2382

AAR-78-10

At the request of the Evansville Airport operator, the U. S. Department of Agriculture and a private consulting firm have evaluated the soil condition on the airport. On February 10, 1978, the private firm reported on its evaluation of the soil within a 3,000-foot radius of the accident site. This area included about 60 percent of the length of the perimeter/access road, including that portion of the road on top of the 5-foot embankment. The report states:

"The capability of these types of soil to support unit loads as would be imposed by surface vehicular traffic is poor at best, but closely related to the moisture content of the soil. In engineering terms the soils above-described are lowest on the scale of load supporting capabilities."

The report concludes:

"From the above analysis, it is clear that the unsurfaced soil within a 3,000-foot radius or more of the accident site would not support any normal roadway surface vehicular load."

The FAA inspected Evansville Dress Airport on December 12, the day before the accident, as part of the airport's annual certification procedure. The response times of the CFR vehicles to the midpoint of the farthest runway were within the times allowed in 14 CFR 139. During the inspection, the vehicles were not required to travel on other than prepared surfaces of the ramps, taxiways, and runways; no requirement exists to demonstrate that CFR vehicles can safely travel on other airport roadways. During the Safety Board's public hearing on this accident, the FAA airport inspector who conducted the inspection testified that the FAA does not provide guidance to airport operators as to the location, construction, or maintenance of perimeter roads; there is also no requirement to inspect existing roads. Further, his testimony revealed that although an FAA inspector may observe an unsafe or poorly constructed road, he is not empowered to order the road repaired.

The Federal Aviation Act of 1958 clearly prescribes that CFR vehicles need only be capable of responding to airport areas normally used by aircraft. Consequently, the FAA cannot require that CFR vehicles be able to traverse roads or terrain adjacent to paved aircraft operating areas while responding to accidents or to other emergencies which may occur on an airport.

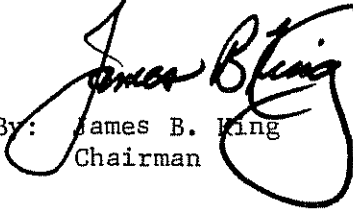
The Safety Board's Special Study entitled "U. S. Air Carrier Accidents Involving Fire, 1965 through 1974, and Factors Affecting the Statistics" (NTSB-AAS-77-1) identified 69 such accidents on airports. There were 301 persons killed in these accidents, and there were 4,041 persons who survived with varying injuries. Some of these survivors later died of the injuries sustained in these accidents. Since 1974, there have been 46 U. S. air carrier aircraft accidents on airports, 12 of which involved a postcrash fire. The Board believes that, regardless of the presence of fire, airport CFR vehicles should be able to proceed to the scene of any accident on the airport via the most direct route, whether it be on prepared airport surfaces used by aircraft, on perimeter roads, or on other airport roadways. Since the probability of a postcrash fire is always high, every effort should be made to insure that passengers and crew are afforded the protection of the available CFR equipment on the airport.

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

Seek amendment of the Federal Aviation Act of 1958 to require that both on-airport and off-airport firefighting and rescue vehicles be capable of traversing airport roads and prepared surfaces other than those designated for the movement of aircraft in order to reach the scene of an accident on the airport. (A-78-45.) (Class II - Priority Action)

Upon passage of the amendment to the Act, specify criteria for the construction of airport perimeter/access roads and require that these roads be inspected periodically as part of the annual certification procedure for airports. (A-78-46.) (Class III - Longer-Term Action)

KING, Chairman, McADAMS, DRIVER, HOGUE, Members, concurred in the above recommendations.

  
By: James B. King  
Chairman