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NATIONAL TRANSPORTATION SAFETY BOARD
WASHINGTON, D.C.

FAA Memorandum
Regarding Runway 4R-22L Safety Area
(3 pages)

U.S. Department of Transportation
Federal Aviation Administration

Memorandum

Subject: **ACTION**: Runway Safety Area for Runway 4R/22L At Little Rock National Airport

Date: NOV 23 1999

From: Manager, Airport Safety and Operations Division, AAS-300

Reply to Attn. of:

To: Acting Manager, Accident Investigation Division, AAI-100

This is in response to a request from Mr. Lawrence Roman of the National Transportation Safety Board for information on the safety area for runway 4R/22L at Little Rock National Airport (LIT). The question has been asked as to why this runway safety area was not constructed in accordance with current Federal Aviation Administration (FAA) design standards since this airport is subject to the provisions of Part 139.309(a). This runway was opened to aircraft operations in September, 1991.

Part 139.309(a) became effective on January 1, 1988. This section provides:

(a) To the extent practicable, each certificate holder shall provide and maintain for each runway and taxiway which is available for air carrier use--

(1) If the runway or taxiway had a safety area on December 31, 1987, and if no reconstruction or significant expansion of the runway or taxiway was begun on or after January 1, 1988, a safety area of at least the dimensions that existed on December 31, 1987; or

(2) If construction, reconstruction, or significant expansion of the runway or taxiway began on or after January 1, 1988, a safety area which conforms to the dimensions acceptable to the Administrator at the time construction, reconstruction, or expansion began.

This section of the regulation is keyed to when the runway construction begins. Runway 4R/22L at Little Rock was constructed in phases over several years. Our records indicate five grants involving construction of this runway were issued prior to January 1, 1988 with the first one being in 1982. Consequently, under

the regulation the airport operator was required to comply with the requirements of Part 139.309(a)(1). The RSA at LIT met these regulatory requirements.

Since Federal funds were involved in the construction of this runway, we examined project files to see if we could determine why a full runway safety area was not constructed on both ends of Runway 4R/22L. Although no one definitive document could be found the following became apparent in review of the files.

The site placed constraints on the design and construction of this runway and its associated safety area. These included the flood plain of Fourche Creek, Roosevelt Road, and rising terrain to the southwest. In the northeast, the site was constrained by the flood plain of the Arkansas River. Total length available at the site for the runway and associated safety area was 8650'. The runway was being built for noise abatement purposes and a runway length of 7200' was needed. This would allow for 1450' of safety area beyond the runway ends.

Site constraints dictated the allocation of the safety area on each runway end. Rising terrain and obstructions would have precluded an instrument approach to Runway 4R if the threshold was located further to the southwest from its present location, which allows a full 1000' safety area on the southwest end of the runway. On the northeast end the Corps of Engineers would not grant a permit for construction involving fill in the flood plain beyond the 450'.

The objective of this noise abatement runway was to avoid making noise over communities located southeast of the airport. To accomplish this objective, Runway 22L was intended to be used primarily for landings and Runway 4R was to be used primarily for takeoffs.

In view of the above, the runway was designed with a 1000' safety area extending to the southwest and a 450' safety area extending to the northeast. Although not part of the project files, accident data for Part 121 operations indicate that overruns are more likely to occur on landing than on takeoff by a 2:1 ratio which reinforces the choices made in allocating the safety area between runway ends.

I think it is also valuable that the record reflects the efforts that have been undertaken to improve the runway safety areas at this airport during the past ten years. For Runways 4L-22R and 18-36, two of the safety areas extending beyond the runway ends have already been upgraded to meet current FAA design standards and a project is underway to upgrade a third runway end in a similar manner.

It was determined that it was not practicable to upgrade the safety area for the fourth runway end (4L) to meet the FAA standard of 1000'. However, this safety area was improved by extending it from 430' to 860'. This safety area extension involved relocating a road and railroad tracks. As you are aware, an Engineered

Material Arresting System is scheduled for installation on the northeast end of Runway 4R. As we previously mentioned, the safety area on the southwest end of Runway 22L already meets FAA standards.

When construction is completed four of the six runway ends at this airport will have safety areas that meet the current FAA standards and other safety areas extending beyond the other two runway ends will be improved to the extent practicable. In summary, the FAA and the airport operator have made a concerted effort to improve the runway safety areas at this airport.

Please let me know if Mr. Roman needs any additional information.

[redacted]

Robert E. David