L.A. Runways Are Worst in Near Crashes

by RICARDO ALONSO-ZALDIVAR
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WASHINGTON -- The runways of Los Angeles International Airport had the highest number of serious near collisions among the nation's busiest airports in a recent four-year period, according to the first government study to quantify such risks for the flying public.

The Federal Aviation Administration report, obtained by The Times, analyzed more than 1,300 runway safety incidents across the country from 1997 to 2000 and ranked them in four broad categories. It found that, on average, a serious near collision on a U.S. runway occurred more than once a week. At LAX, there were 13 serious incidents over the four years: one in 1997, two in 1998 and five each in 1999 and 2000. By contrast, the study found that, even though John Wayne and Long Beach airports had high numbers of total incidents, very few were serious.

With the ever-increasing volume of takeoffs and landings, experts say the potential for runway collisions has emerged as the gravest danger to domestic aviation. Technology has given pilots an edge over other hazards, such as midair crashes and sudden downdrafts from thunderstorms, but runway safety still depends heavily on peering out the cockpit window.

FAA officials said the new study will transform how agency managers, pilots and controllers approach a problem that thus far has resisted all efforts to find a solution. The data will help the FAA decide on deployment of a radar-based warning system for controllers, now being installed at more than 30 major airports, including LAX. It also will guide decisions about cockpit-based warning systems still under development.

"This illuminates the problem," said William Davis, manager of the FAA's runway safety program. "It allows us to better understand the risks and lets us target our resources on them. . . . If you want to manage it better, you have to measure it better." At LAX, efforts are already underway to improve safety. In the past, the FAA has listed Los Angeles in the top 10 airports for frequency of near collisions.

The most well-known runway collision there was in 1991, when a controller mistakenly placed a departing SkyWest commuter plane in front of an arriving USAir jet. The crash killed 34 people. Now that the airport has been designated as the nation's worst in severity of such incidents, the need for improvements is even more apparent. The airport has been recognized by the FAA for a wide-ranging campaign that includes everything from pilot education to better tarmac markings. Two warning systems for controllers are scheduled to be commissioned this summer, for the north and south sides of the airport. And LAX managers have proposed spacing some runways farther apart.

The study marks the first time the FAA has classified runway safety violations according to severity. In 2000, the agency logged a total of 431 incidents in which the safety zone around an active runway was breached. Termed "runway incursions," they typically involve one airplane trespassing on a runway being used by another aircraft to take off or land. They can range from the heart-stopping to the mundane. Among the most serious: Last month at Dallas-Fort Worth International Airport, a disoriented cargo pilot steered onto a runway at nightfall as a jetliner was barreling toward takeoff. They missed each other by less than 100 feet. And the less serious: little planes that scoot across the end of a runway when another plane is about to touch down on the opposite end. The FAA study divided incursions into four levels of risk. In the most serious, Category A, a collision was "barely avoided" and reaction time for pilots and controllers was termed "nil." These averaged 23 a year over the four-year study period.

In Category B, there was "significant potential" for a crash and reaction time was "minimal." These incidents occurred about 42 times a year, on average.

Taken together, Category A and B incidents--which the FAA considers serious--averaged more than one a week. The number of these serious incidents changed little from year to year.

In Categories C and D, there was enough time for evasive action, or the chances of a crash were remote. On average, there were 275 of these incidents a year.

By contrast with the most serious cases, Category C and D incidents climbed sharply in 2000, a year in which the FAA launched a high-profile campaign to improve runway safety.

That suggests that one result of the FAA's efforts was that controllers and pilots began reporting incidents they would not have otherwise bothered to write up.

"There are incursions that are absolutely harrowing events and others which are violations of the rules but would not be described as really close calls," said MIT mathematician Arnold Barnett, who has studied runway safety. In the context of more than 68 million takeoffs and landings nationwide last year, 431 runway incursions represent rare events. But just one crash could claim hundreds of lives. The worst aviation disaster in history was the 1977 runway collision of two jumbo jets in the Canary Islands, which killed 582. "The problem isn't going to go away on its own," Barnett added. "As traffic and congestion increase, absent intervention, it is going to get worse." Indeed, according to the FAA report, 17% of the most serious incursions, or about 1 in 6, occurred at the six busiest airports: Atlanta, Chicago O’Hare, Dallas-Fort Worth, LAX, Phoenix and Detroit.

The report also sheds new light on three Southern California airports. In addition to LAX, John Wayne and Long Beach have been on the FAA's runway safety watch list for several years.

The study found that John Wayne and Long Beach had only two serious incidents each, although they had a total of 27 and 25 incursions, respectively, during the four-year period. (The agency considers four

or more incursions a year at an airport to be a significant problem.) By contrast, 39% of the 33 incursions at LAX were in the two most serious categories. Reasons for the airports' differences were not spelled out in the report, nor did it include details about specific incidents. But a likely explanation is the varying mix of aircraft and the pace of takeoffs and landings at the three airfields. LAX conducts an intense round-the-clock choreography of big, fast jets on a relatively small piece of land. The other two airports have less overall traffic and are more likely to be used by small planes. Efforts to find new technologies that will increase runway safety have yet to bear fruit. The FAA is deploying a system that uses ground radars to alert controllers when a plane has trespassed on an active runway. Two of the systems will be installed at LAX, but critics say the technology isn't sophisticated enough to prevent all incursions. Several private companies, with the encouragement of the FAA, are developing warning devices for pilots. Akin to the satellite navigation aids available in automobiles, they would give pilots a cockpit display of their position on an airfield and the location of other planes. Meanwhile, the National Transportation Safety Board has recommended a simple but potentially effective low-tech remedy: that the FAA requires pilots to stop at every runway intersection and ask for clearance. But that would add to delays. The FAA is still considering the proposal.